ATTACHMENT A

CHIPRA 10—STATE EVALUATION: EVALUATION DESIGN REPORT

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CHIPRA 10—State Evaluation: Evaluation Design Report

Final Report

April 21, 2011

Mathematica Policy Research
Mary Harrington
Christopher Trenholm
Kimberly Smith
Margo Rosenbach
Julie Ingels
Danna Basson
Eric Grau
Sheila Hoag
Patricia Higgins
Victoria Peebles

Urban Institute
Genevieve Kenney
Ian Hill
Sarah Benatar
Lisa Clemans-Cope
Jennifer Haley
Adela Luque
Timothy Waidmann

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Submitted to:
U.S. Department of Health and Human Services,
Office of the Assistant Secretary for Planning
and Evaluation
200 Independence Ave., SW
Washington, DC 20201

Project Officer: Elizabeth Pham

Submitted by:
Mathematica Policy Research
555 S. Forest Ave.
Suite 3
Ann Arbor, MI 48104-2583
Telephone: (734) 794-1120
Facsimile: (734) 794-0241

Project Director: Mary Harrington

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I. BACKGROUND AND PURPOSE OF THE REPORT

The Children's Health Insurance Program (CHIP) was enacted in 1997 to help close coverage gaps for low-income children whose families could not afford private coverage for them but had incomes too high to qualify for Medicaid. Since that time, CHIP has grown to cover more than 5 million children—the largest expansion of public health insurance coverage for children since Medicaid. CHIP is funded as a block grant to states, with federal matching rates higher than those typically received under Medicaid. States have some control over the design of their CHIP programs, including program type (Medicaid expansion, separate program, or a combination of the two); eligibility thresholds; outreach strategies; and enrollment and retention policies. States also have flexibility, within parameters set by the statute, to design CHIP benefit packages and cost-sharing rules. Because of this flexibility, the characteristics of CHIP programs vary across states (Rosenbach et al. 2007). By 2005, 29 states had adopted eligibility thresholds under CHIP of 200 percent of the federal poverty level (FPL); 13 set thresholds below 200 percent of the FPL; and 8 expanded eligibility to children in families with incomes above 200 percent of the FPL (First Focus 2009). Furthermore, about two-thirds of states chose to implement their CHIP expansions through a separate program, either alone or in combination with a Medicaid expansion, which introduced variations in benefits and cost-sharing. The coverage offered by separate CHIP programs more closely resembles the very broad coverage available under Medicaid than that typically available under private health insurance, and most are operated under capitated managed care arrangements (Kenney and Dorn 2009; Wooldridge et al. 2005).

Research evidence from CHIP's early years indicates the program has made great progress in several areas. With expansions in the program, new investments in outreach, and enrollment simplifications introduced beginning in the late 1990s, uninsured rates declined among children, both for those made newly eligible for public coverage under CHIP and those already eligible for Medicaid (Hudson and Selden 2007; Davidoff et al. 2005; Kenney and Yee 2007; Kenney and Chang 2004; Dubay et al. 2007; Kenney et al. 2005; Rosenbach et al. 2007). The early research also indicates improvements in access to care and increases in receipt of preventive care among the children who gained public coverage (Rosenbach et al. 2007; Kenney and Chang 2004). At the same time, however, millions of children remained uninsured despite being eligible for Medicaid or CHIP, and many enrolled in public coverage did not receive recommended levels of care (DeNavas et al. 2009). Moreover, uninsured rates among low-income children vary widely from state to state and across subgroups (Lynch et al. 2010).

The Children's Health Insurance Program Reauthorization Act. Uncertainty surrounding ongoing funding ended in February 2009 when CHIP was reauthorized for an additional four and a half years through the Children's Health Insurance Program Reauthorization Act (CHIPRA) (Georgetown Center for Children and Families 2009). CHIPRA provided states with new tools to address shortfalls both in enrollment and in access to and quality of care. A number of provisions were designed to expand eligibility for public coverage among children and increase takeup of public coverage among uninsured children already eligible for Medicaid and CHIP (Georgetown Center for Children and Families 2009).[1] CHIPRA authorized new outreach and enrollment grants, as well as bonus payments to states that both adopted five of eight enrollment/retention strategies and exceeded target enrollment numbers. States also received new options to use Express Lane Eligibility strategies to facilitate eligibility determination, enrollment, and retention, and for meeting citizen documentation requirements. CHIPRA allowed states to use federal dollars to cover legal immigrant children who had been in the United States less than five years (previously, coverage for such children had to be financed exclusively with state funds), provided higher federal matching rates for translation and interpreter services and additional federal allotments to states to cover the costs of expanding eligibility and enrolling more eligible children. Other provisions were designed to improve access to and quality of care for the children served by Medicaid and CHIP (HHS 2010).

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[1] These provisions include (1) adopting 12-month continuous eligibility for all children, (2) eliminating the asset test for children, (3) eliminating in-person interview requirements at application and renewal, (4) using joint applications and supplemental forms and the same application and renewal verification process for the two programs, (5) allowing

The CHIP Program Today. Since the enactment of CHIPRA in early 2009, a number of states have introduced policy changes to their Medicaid and CHIP programs: 15 have expanded eligibility to higher-income children; 17 have sought approval to introduce improvements in their enrollment and retention processes; 4 states have received approval to take advantage of the new Express Lane option for Medicaid (Alabama, Iowa, Louisiana, and New Jersey), and one state (Alabama) has also received approval to do this for CHIP; and 19 states have begun using federal funds to cover legal immigrant children and/or pregnant women who had been in the country less than five years (HHS 2010; Families USA 2010). An initial $40 million in outreach grants was awarded to 42 states and the District of Columbia, and an additional $10 million was awarded for targeting Native American children.

In addition, as required under CHIPRA, a core set of quality measures has been developed by the Agency for Healthcare Research and Quality (AHRQ), and Quality Demonstration Grants have been awarded that include both single-state projects and multistate collaborations involving 18 states overall; an evaluation of the Quality Demonstration Grants has been funded; and a contract to develop a model electronic health record format for children in Medicaid and CHIP has been awarded. Also, the Government Accountability Office (GAO) has initiated three mandated studies on, respectively, Medicaid/CHIP dental services for children, parent and caretaker coverage, and Medicaid/CHIP primary and specialty services for children; and the Institute of Medicine has formed a committee to study Pediatric Health and Pediatric Health Care Quality.

CHIP covered 5 million children in June 2009 and 7.7 million children over the course of federal fiscal year 2009 (Cohen Ross 2009). As of December 2009, all but 4 states (Alaska, Idaho, North Dakota, and Oklahoma) had eligibility thresholds for children at or above 200 percent of the FPL, with almost half (24 states) having thresholds at or above 250 percent of the FPL and 18 with thresholds of 300 percent or higher (HHS 2010; Cohen Ross et al. 2009). Most states have chosen to expand coverage of children through separate programs, either alone or in combination with smaller Medicaid expansions, while 12 states have relied exclusively on Medicaid expansions for child populations covered by CHIP. Still, most states have not taken full advantage of the flexibility in CHIP to streamline eligibility policies and thus maximize their potential for enrollment. For example, while most have dropped the asset test as part of the eligibility determination process and

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(continued)

for administrative or paperless verification at renewal through the use of prepopulated forms or ex parte determinations, (6) exercising the option to use presumptive eligibility when evaluating children's eligibility for coverage, (7) exercising the new option in the law to use Express Lane Eligibility procedures; and (8) exercising the new options in the law regarding premium assistance.

no longer require an in-person interview at enrollment or renewal, fewer than half have 12-month continuous eligibility for children, and just 14 states have presumptive eligibility (Cohen Ross 2009). Most states charge premiums and/or copayments in their CHIP programs, but the amount charged varies across income groups and states (Cohen Ross 2009).

CHIP in the Future. CHIP's evolution is occurring within a rapidly changing health care environment. The 2010 Patient Protection and Affordable Care Act (PPACA) introduces comprehensive health reforms, including an expansion of Medicaid to adults and children up to 133 percent of the FPL; a maintenance of effort (MOE) requirement through 2019 on state Medicaid and CHIP coverage for children; new subsidies for coverage for families with incomes up to 400 percent of the FPL; the creation of state health insurance exchanges and reforms to health insurance markets; the development of streamlined enrollment systems; and the introduction of coverage mandates for both individuals (including children) and employers. PPACA also provides two additional years of federal funding for CHIP (extending it through 2015) and increases federal CHIP matching rates by as much as 23 percentage points in 2015 and beyond. Starting in January 2014, more parents below 133 percent of the FPL will become eligible for Medicaid, and children in that income group who are enrolled in CHIP will be transitioned to Medicaid. The MOE requirements under PPACA limit the ability of states to change eligibility and enrollment procedures for Medicaid and CHIP but may lead to cuts in provider payment rates for the next few years. Also, despite the MOE requirement on CHIP and Medicaid coverage for children through 2019, it is not clear how long states will be able to continue their CHIP programs beyond 2015 unless additional federal allotments are provided. With no additional federal funding for CHIP after 2015, many children enrolled in separate CHIP programs will likely be shifted into health insurance exchanges or employer-sponsored insurance (ESI) plans.

Mandate for the Evaluation. The 1997 CHIP legislation called for a congressionally mandated evaluation and Mathematica Policy Research (Mathematica) and its subcontractors, the Urban Institute and Mayatech, Inc., conducted that evaluation on behalf of the Assistant Secretary for Planning and Evaluation (ASPE), Department of Health and Human Services (HHS). The CHIPRA legislation includes a mandate for an updated evaluation of CHIP patterned after the previous evaluation. Congress stipulated that the evaluation include surveys of enrollees and disenrollees in 10 states and specified several criteria to be used in selecting these states.[2] A report on the evaluation is to be submitted to Congress by December 31, 2011. In September 2010, Mathematica and its subcontractor the Urban Institute were awarded the contract to conduct this second congressionally mandated evaluation of CHIP, which will be conducted over a three-year period.

Goals of the Evaluation. Coming 5 years after completion of the first evaluation, the current evaluation will provide new and detailed insights into how the program has evolved since its early years, what impacts on children's coverage and access to care have occurred, and what new issues have arisen as a result of policy changes related to CHIPRA and PPACA. Building on prior evaluations focused on the early years of CHIP, it will explore how states have grappled with important implementation challenges as the program matured and their experiences in enrolling, retaining, and delivering care to children in low-income families. It will place particular emphasis on understanding enrollee experiences in getting care and the types of services received, as well as how CHIP compares with other public and private coverage. Using a mixture of quantitative and qualitative research methods, the evaluation will document how CHIP programs have developed, where they stand today, and where they may be headed in the future. It will draw on new primary data collection efforts modeled after the previous evaluation, including surveys of enrollees and disenrollees in CHIP (10 states) and Medicaid (3 states), site visits and focus groups in the 10 survey states, and a survey of program administrators in every state. To analyze states' progress in enrolling and retaining children and to document effective policies and practices, the evaluation will also make use of various secondary data sources, including annual reports, other program data states submit to the Centers for Medicare & Medicaid Services (CMS), and administrative data files from state eligibility and enrollment systems. It also will tap data from other national surveys to understand how CHIP and Medicaid are perceived by low-income families with uninsured children who may be eligible and to gauge the extent to which CHIP is reducing the share of low-income children who are uninsured.

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[2] Legislation calling for the 1997 and 2009 congressionally mandated evaluations is reproduced in Appendix A.

Structure of the Report. In the remainder of this report we describe the approach we will use to address a broad range of questions. We describe how we plan to collect the primary and secondary data needed for the evaluation and our approach to analyzing these data. Our goal is to provide enough detail so that our plans are clear while also recognizing that some of the particulars, especially regarding the analysis, will take shape after we collect the data and assess the type of analyses they can support.

In **Chapter II**, we introduce a conceptual framework, summarize the main research questions and data sources, describe the core analytic components, and highlight how we plan to address some of the challenges we expect to face in the evaluation. In **Chapter III**, we describe the state selection process and steps we will take to secure their participation and acquire the data needed for the evaluation.

The next six chapters are the core of the report, presenting our plans for collecting and analyzing various types of primary and secondary data. We describe in **Chapter IV** how we will support ASPE in securing clearance from the Office of Management and Budget (OMB) for the three primary data collection efforts: case studies, the survey of enrollees and disenrollees, and the survey of state program administrators. We then describe our approach for conducting the main qualitative data components: case studies involving site visits and focus groups in 10 states (**Chapter V**) and a telephone survey of CHIP administrators in every state (**Chapter VI**). In **Chapter VII**, we cover all aspects of the survey of enrollees and disenrollees: the sample design and sampling process, developing the survey instrument, fielding the survey, and conducting the core components of the analysis. In the next two chapters, we focus on key secondary data components. We describe in **Chapter VIII** how we will use annual reports and other program data from states, as well as detailed administrative data from state eligibility and enrollment systems, to analyze enrollment and retention trends and dynamics and state efforts to influence these outcomes. In **Chapter IX**, we present the plan for analyzing data from the 2011 National Survey of Children's Health to gain insight into why some low-income families with uninsured children chose not to enroll or remain enrolled in Medicaid or CHIP.

The report concludes with a discussion of the reports that will be produced under the evaluation (**Chapter X**).

II. OVERVIEW OF THE DESIGN

While the evaluation consists of more than a dozen tasks, it is perhaps more easily thought of as a set of five coordinated components with findings that will be integrated to address a large number of overlapping research questions:

1. The most ambitious component involves the design, administration, and analysis of data from a major **survey of CHIP enrollees and disenrollees** to be conducted in 10 carefully chosen states. Administered to the parents or guardians of children with current or recent CHIP coverage, the study will address questions that cannot be examined satisfactorily from existing data. The survey will provide a critical source of information on the demographic and socioeconomic characteristics of CHIP children and their families; perceptions of and experiences with application and renewal processes; the health status and health care needs of CHIP enrollees; enrollee experiences with accessing health care; and satisfaction with the program. A complementary **survey of Medicaid enrollees**, administered in 3 of the 10 CHIP survey states, will extend findings on these and other questions to the children and families enrolled in Medicaid.
2. A second major component involves the design, execution, and analysis of qualitative data from **CHIP case studies** in the same 10 states selected for the survey. Featuring **site visits** to various state and local stakeholders (such as program administrators, providers, and child advocates) and **focus groups** with families of CHIP-enrolled children, these studies likewise will address many questions that cannot be explored well through existing data. Examples include understanding perceptions of CHIP in the selected states, the barriers eligible families may experience when enrolling in the program or accessing health care, the extent to which CHIPRA has changed the programs' design or administration, and the likely ramifications of health care reform.
3. The last component to feature primary data is a **survey of CHIP program administrators** conducted in all 50 states and the District of Columbia; this component also involves the design, execution, and analysis of data. Reprising a similar survey conducted as part of the original CHIP evaluation, the survey of program administrators will focus on providing context for many of the questions examined through the case studies, helping us to interpret findings in a national perspective.
4. The fourth component will make use of **state program data—**CHIP annual reports and related data submitted by states, as well as administrative data from state eligibility and enrollment systems—to analyze enrollment and retention trends and dynamics and identify program features and other factors influencing these outcomes. We will explore enrollment and retention trends, including transitions between CHIP and other coverage and trends in churning out of and into the program. Using information from the case studies and other program documents, we will investigate how state-specific factors, such as innovative outreach practices and enrollment and retention policies, affect the rates and patterns observed in these data.
5. Drawing on data from several **national surveys** (the NSCH module of the State and Local Area Integrated Telephone Survey [SLAITS], CPS, and ACS), we will estimate program participation rates, explore how low-income families with uninsured children

perceive CHIP and Medicaid, and determine the implications of health reform provisions for the larger population of families with uninsured children.

Each of these components will yield findings that will be captured in **source-specific reports** released over the course of the evaluation. Despite their seeming independence, however, the design and execution of the different components will be closely coordinated. For example, we will coordinate instrument development for the stakeholder interviews conducted as part of the case studies with the discussion guide for the CHIP survey of program administrators to ensure that we address common research questions as completely and consistently as possible. Likewise, we will coordinate the instrument development for the CHIP survey with the moderator guides for the focus groups. Moreover, the findings from the source-specific reports will be synthesized into two major reports. The first will be a **2011 evaluation report** that will include findings from the analysis of state program reports and other secondary data. The more comprehensive **2013 evaluation report** will integrate findings and lessons from all of the study components to address the full range of research questions effectively. Details regarding the contents of these reports (and any alternatives to the source-specific reports we may want to consider) will be discussed and refined during the first year of the evaluation.

In the remainder of this chapter, we introduce the conceptual framework guiding our evaluation approach, the major research questions and analytic methods we will use to address them, and our plans for addressing several overarching challenges we will face during the evaluation.

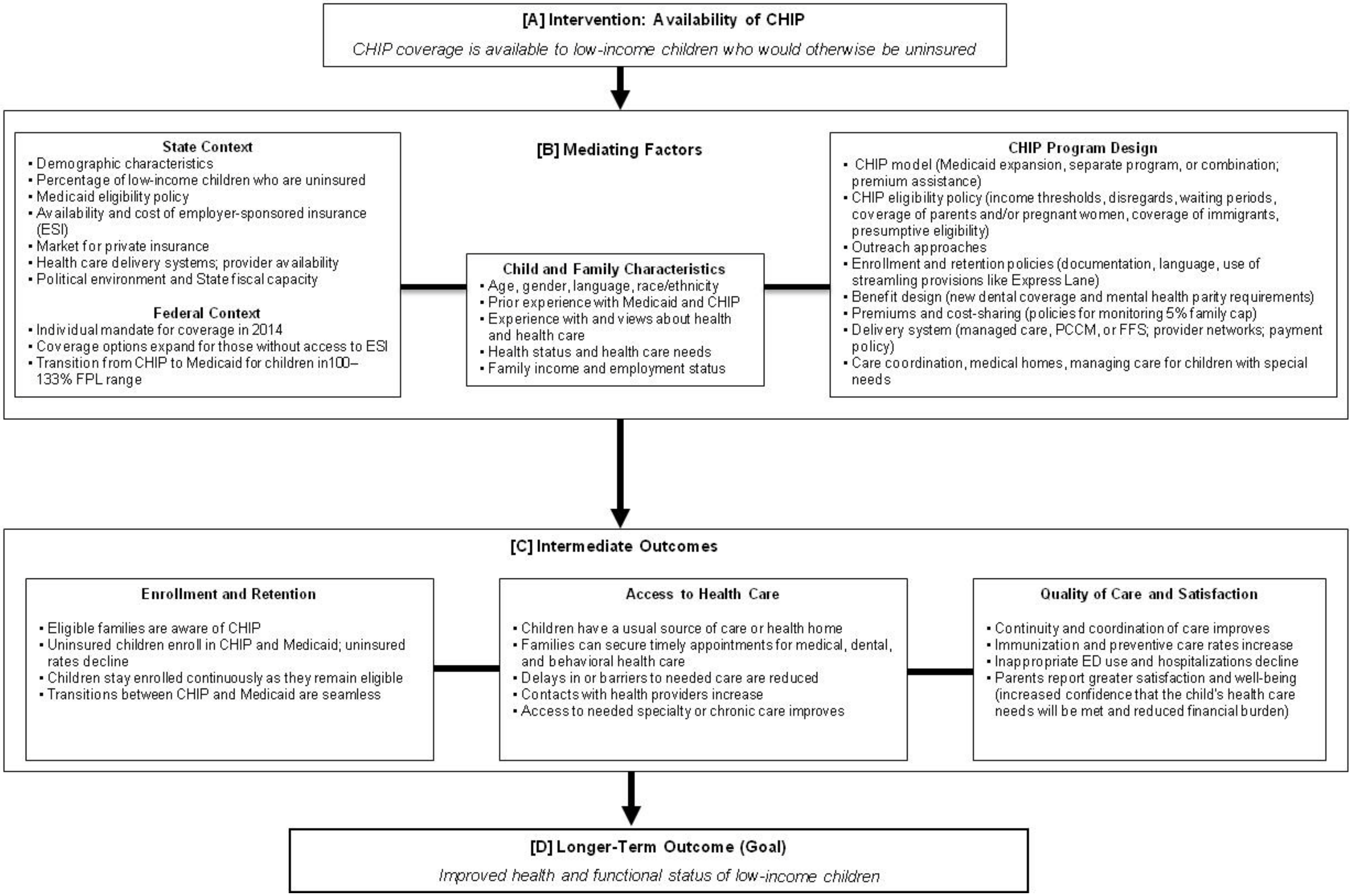
A. Conceptual Framework

The conceptual framework guiding decisions on the design and execution of the major evaluation components is shown in Figure II.1. The framework illustrates the process by which CHIP contributes to the health and well-being of eligible low-income children. Several important factors may mediate the effects of CHIP (Box B), including the state and federal program contexts (left side) and the design of the program in a given state (right side)—all of which must be considered carefully in the evaluation. Examples of contextual factors at the state level include the demographic characteristics of the target population, the baseline rate of uninsured children, Medicaid eligibility policies, and the structures of private insurance markets and health care delivery systems. At the federal level, contextual factors include the implementation of significant health care reform provisions, such as the individual mandate and the movement of many low-income citizens into Medicaid. Changes such as the individual mandate could result in a large influx of first-time applicants to CHIP as parents pursue coverage for their children.

Program design features (right side of Box B) long have been recognized as a major potential influence on CHIP enrollment and service delivery. Examples of these features include program model, outreach approaches, eligibility determination and redetermination processes, benefit design, delivery system, and premiums and other cost-sharing. The flexibility afforded by CHIPRA only adds to this list of potential design features (such as coverage of recent immigrants) and the variation in features across states.

Child and family characteristics are also important mediating factors. Prior experiences with Medicaid and CHIP and with health care more broadly, health status, age, race/ethnicity and cultural background, and socioeconomic status are among the characteristics that may influence enrollment and service use experiences and outcomes.

Figure II.1 Conceptual Framework for the Evaluation of CHIP



[A] Intervention: Availability of CHIP

CHIP coverage is available to low-income children who would otherwise be uninsured

[B] Mediating Factors

State Context

- Demographic characteristics
- Percentage of low-income children who are uninsured
- Medicaid eligibility policy
- Availability and cost of employer-sponsored insurance (ESI)
- Market for private insurance
- Health care delivery systems; provider availability
- Political environment and State fiscal capacity

Federal Context

- Individual mandate for coverage in 2014
- Coverage options expand for those without access to ESI
- Transition from CHIP to Medicaid for children in100–133% FPL range

Child and Family Characteristics

- Age, gender, language, race/ethnicity
- Prior experience with Medicaid and CHIP
- Experience with and views about health and health care
- Health status and health care needs
- Family income and employment status

CHIP Program Design

- CHIP model (Medicaid expansion, separate program, or combination; premium assistance)
- CHIP eligibility policy (income thresholds, disregards, waiting periods, coverage of parents and/or pregnant women, coverage of immigrants, presumptive eligibility)
- Outreach approaches
- Enrollment and retention policies (documentation, language, use of streamling provisions like Express Lane)
- Benefit design (new dental coverage and mental health parity requirements)
- Premiums and cost-sharing (policies for monitoring 5% family cap)
- Delivery system (managed care, PCCM, or FFS; provider networks; payment policy)
- Care coordination, medical homes, managing care for children with special needs

[C] Intermediate Outcomes

Enrollment and Retention

- Eligible families are aware of CHIP
- Uninsured children enroll in CHIP and Medicaid; uninsured rates decline
- Children stay enrolled continuously as they remain eligible
- Transitions between CHIP and Medicaid are seamless

Access to Health Care

- Children have a usual source of care or health home
- Families can secure timely appointments for medical, dental, and behavioral health care
- Delays in or barriers to needed care are reduced
- Contacts with health providers increase
- Access to needed specialty or chronic care improves

Quality of Care and Satisfaction

- Continuity and coordination of care improves
- Immunization and preventive care rates increase
- Inappropriate ED use and hospitalizations decline
- Parents report greater satisfaction and well-being (increased confidence that the child's health care needs will be met and reduced financial burden)

[D] Longer-Term Outcome (Goal)

Improved health and functional status of low-income children

To understand the role that these mediators may have in CHIP's success, the evaluation will focus considerable attention on their linkages to important intermediate outcomes (Box C), including participation and uninsurance rates, patterns of program enrollment and retention, access to health care, and quality of and satisfaction with care. For example, various outcomes pertaining to health care access—such as the likelihood of having a usual source of care, the use of health care services, and levels of unmet need—all may be affected by the backgrounds and experiences of CHIP enrollees and/or the features of their state programs. Understanding these and other linkages in turn forms the basis for assessing not merely whether CHIP is effective but also how and for whom it is most effective, thereby greatly advancing our understanding of how well the program is achieving its ultimate goal: the improved health of low-income children (Box D).

B. Analytic Approach: Key Questions and Methods

Our approach will combine a vast amount of data to address a broad range of research questions (see Table II.1). As shown in the table, these research questions cluster into seven often interrelated topic areas: (1) program context and design features; (2) outreach and enrollment; (3) retention and disenrollment; (4) access, utilization, content of care, and satisfaction; (5) the relationship between CHIP and other coverage; (6) effects on the uninsured; and (7) implications for health reform. As further shown in the table, our investigation of these questions often will feature a mix of qualitative and quantitative data sources, yielding a "mixed-methods" approach to addressing many questions that will improve the depth, rigor, and generalizability of our findings. For some questions, we will rely primarily on qualitative information and analysis, while for others the primary approach will incorporate quantitative data and methods. Most often, the two types of data and analyses will complement one another so that the final results will benefit from the specificity and rigor associated with quantitative methods and the explanatory richness and contextual value of the qualitative work.

Below, we briefly summarize our plans for analyzing research questions within each topic area. Details on how we will conduct the various analyses to inform these different topics are contained in Chapters V through IX.

Program Context and Design Features. A thorough understanding of the design features of state CHIP programs, and the context within which they operate, is vital for assessing their influence as mediating factors in several analyses, encompassing the experiences of both CHIP enrollees and children eligible for CHIP but not enrolled. The primary data sources we will tap for information on design features of state programs will include CHIP annual reports submitted to CMS and other national data, site visits, and the survey of state program administrators. Questions explored in this area will include the following: What are the key design features of state programs (program model; eligibility policies; waiting periods and other policies to deter crowd-out of other coverage; enrollment and renewal policies and practices; benefit packages and cost sharing; delivery systems, managed care arrangements, provider networks, and payment policies)? How and why have these features changed over time? How do program design features influence key program outcomes (enrollment, retention, access, service use, and satisfaction)? What is the current budget picture for states, and how has the passage of CHIPRA changed the funding debates in each state?

Outreach and Enrollment. CHIPRA provides new funding for state and local agencies to engage in outreach activities for difficult-to-reach populations, such as minorities and immigrants. In addition, the law encourages adoption of new processes to streamline enrollment. To understand which strategies are most effective at promoting enrollment, we will combine findings from analyses of several data sources, including (1) the focus groups and key informant interviews conducted through the case studies, (2) the survey of program administrators, (3) data on application/enrollment experiences from the CHIP survey, (4) enrollment and other administrative data that may highlight promising activities, and (5) data from SLAITS on the eligible-but-uninsured population. The analysis will address such questions as: What are effective and ineffective outreach strategies for CHIP and Medicaid? How have combined CHIP/Medicaid enrollment practices affected enrollment in both programs? What are the trends in program churning and transitions between Medicaid and CHIP?

Retention and Disenrollment. ASPE is interested in understanding enrollment and retention trends and dynamics and why these trends may have changed over time. Of particular concern is whether there are barriers that prevent low-income children from remaining enrolled in the program and to what extent CHIP acts as a long-term source of insurance coverage. We will address these issues by using CHIP (and when available, Medicaid) enrollment/administrative data to measure the flow of low-income children into and out of the program, combining these measures with qualitative data from the case studies and the survey of program administrators to understand patterns. Data from SLAITS will provide insights into why some uninsured children disenroll despite still being eligible. The analyses will address such questions as: Why do children disenroll from CHIP? How effective are streamlining practices, such as paperless verification or the elimination of in-person interviews, at improving the retention rate in CHIP? How long do children typically remain enrolled in CHIP?

Access, Utilization, Content of Care, and Satisfaction. CHIP aims to reduce barriers to care and unmet needs and improve access to needed services and receipt of appropriate preventive and acute care services. Achieving good quality of care for children requires coordination across multiple providers and systems, especially for children with special health care needs. Another key issue is understanding how cost-sharing affects the use of services. To address questions in these areas, we plan to focus primarily on data from the CHIP surveys, supplemented with findings from the case studies and the survey of program administrators to help explain the basis for any positive effects and how any variation in outcomes across states may be linked to program design. Questions addressed in this analysis include: What experiences do CHIP enrollees have in seeking or obtaining health care, and how does this compare with their experiences prior to enrollment? How satisfied are enrollees with CHIP and the health services they receive? What impact does CHIP have on the type of health care received, the content of care, and family well-being (i.e., financial concerns and confidence in the ability to obtain needed care)?

Relationship Between CHIP and Other Coverage. The CHIP program is positioned as an important bridge between Medicaid and private health insurance. To explore the dynamic between these types of coverage, we will rely on three main data sources/analyses—the CHIP survey, the Medicaid survey, and the SLAITS data. In addition, data from our case studies will supplement the findings by providing insights into how CHIP affects family coverage decisions and the basis for any notable variation in findings across states. The analysis will address such questions as: How has CHIP altered or factored into the movement of low-income children between public coverage, private coverage, and uninsurance? Do families view the CHIP program as a long-term or short-term coverage option?

Table II.1. Key Evaluation Questions and Data Sources

Key Evaluation Questions	Qualitative Data/Analyses	Quantitative Data/Analyses
Program Context and Design Features		
How do key design features vary across states? What design changes have states made, and why?	CARTS, SEDS,other program data Site visits Survey of program administrators	
How do CHIP benefit packages and delivery system features compare with Medicaid and private coverage?	CARTS, SEDS,other program data National data sources on Medicaid and private insurance Site visits Survey of program administrators	
What effect do program design features have on key program outcomes (enrollment, retention, access, use, and satisfaction)? Do states with specific program features experience increased enrollment and/or lower rates of uninsurance?	CARTS, SEDS,other program data Site visits Survey of program administrators	CHIP survey SLAITS CPS/ACS
How has the economic downturn affected states? What is the current state budget picture? How has the passage of CHIPRA changed the funding debates in each state? In what ways are states preparing for implementation of national health care reform? How has the enactment of PPACA affected state CHIP programs?	Site visits Survey of program administrators National data sources on state economic indicators	
How do findings in this area compare with findings from the previous evaluation?	All of the above	All of the above
Outreach and Enrollment		
How do families learn about CHIP and Medicaid? What information is most helpful in their decisions about applying/enrolling? What aspects of the program are most appealing, and what factors influence enrollment decisions?	Site visits Focus groups	CHIP survey Medicaid survey SLAITS
What are effective and ineffective outreach strategies for Medicaid and CHIP? How do different outreach strategies affect families' knowledge of public programs and motivation to enroll?	Site visits Focus groups Survey of program administrators	CHIP survey Medicaid survey Enrollment/admin data SLAITS
What are the principal barriers to enrollment for Medicaid and CHIP? What role do waiting lists and waiting periods play?	Site visits Focus groups CARTS, SEDS,other program data Survey of program administrators	CHIP survey Medicaid survey Enrollment/admin data SLAITS
What policies and practices are states employing to improve enrollment outcomes? What strategies are used for specific populations, such as children with special needs, racial/ethnic minorities, and children in immigrant families?	Site visits CARTS, SEDS,other program data Survey of program administrators	
What are the trends in CHIP enrollment, Medicaid enrollment, and enrollment in public coverage overall for the study states? How do trends differ across states? To what extend are trends driven by changes in new enrollment versus changes in disenrollment/retention?	CARTS, SEDS,other program data	Enrollment/admin data
What are the trends in program churning and transitions between Medicaid and CHIP? How do these vary across states? What effect do these have on enrollment in public coverage?	CARTS, SEDS,other program data	Enrollment/admin data

Table II.1 *(Continued)*

Key Evaluation Questions	Qualitative Data/Analyses	Quantitative Data/Analyses
In states that are more successful in enrolling eligible children in Medicaid and CHIP, what practices make them more successful? If other states adopt these practices, are they likely to get the same results?	Site visits Focus groups CARTS, SEDS,other program data Survey of program administrators	CHIP survey Medicaid survey Enrollment/admin data
How do premiums, cost–sharing, and other program design features influence enrollment outcomes?	Site visits Focus groups CARTS, SEDS,other program data	Enrollment/admin data
How does coordination (or lack of coordination) between Medicaid and CHIP affect the enrollment of children in both programs?	Site visits CARTS, SEDS,other program data Survey of program administrators	CHIP survey Medicaid survey Enrollment/admin data SLAITS
What are the impacts of state budget constraints and maintenance-of-effort requirements on the level of state outreach and enrollment efforts?	Site visits Survey of program administrators	Enrollment/admin data
How do outreach and enrollment findings compare with findings from the previous evaluation?	All of the above	All of the above
Retention and Disenrollment		
How do families learn about program renewal requirements and procedures? What are their experiences with the renewal process?	Site visits Focus groups	CHIP survey Medicaid survey SLAITS
How long do children remain enrolled? How does this vary across states? What policies and practices seem to influence enrollment duration?	Site visits Focus groups CARTS, SEDS,other program data	CHIP survey Medicaid survey Enrollment/admin data
Why do children exit the program? To what extent are exits intended/voluntary versus unintended?	Focus groups	CHIP survey Enrollment/admin data SLAITS
What portion of children exiting to uninsured status may still be eligible for CHIP or Medicaid? What portion returns to the program after a spell of disenrollment?	Site visits CARTS, SEDS,other program data	CHIP survey Medicaid survey Enrollment/admin data
How do premiums, cost–sharing, and other program design features influence retention outcomes?	Site visits Focus groups CARTS, SEDS,other program data	Enrollment/admin data
What are more and less effective retention practices for Medicaid and CHIP?	Site visits Focus groups CARTS, SEDS,other program data Survey of program administrators	CHIP survey Medicaid survey Enrollment/admin data
How do retention and disenrollment findings compare with findings from the previous evaluation?	All of the above	All of the above
Access, Utilization, Content of Care, and Satisfaction		
What experiences do enrollees have in seeking and obtaining health care? Have they had difficulties in finding a doctor or dentist? Have they been able to get timely appointments? How do these experiences compare with their experiences before enrollment?	Focus groups	CHIP survey Medicaid survey
Where do enrollees usually access care? Do they have a usual source of care?	Focus groups	CHIP survey Medicaid survey

Table II.1 *(Continued)*

Key Evaluation Questions	Qualitative Data/Analyses	Quantitative Data/Analyses
How adequate are provider networks in meeting the needs of enrollees?	Site visits Survey of program administrators	CHIP survey Medicaid survey
What types of services do enrollees receive? To what extent does the care received include recommended preventive care screenings, guidance, immunizations, and other services?		CHIP survey Medicaid survey
How well does the process of care align with the core principles of a patient-centered medical home?	Focus groups	CHIP survey Medicaid survey
How well are providers communicating with families?	Focus groups	CHIP survey Medicaid survey
How do cost-sharing and other benefit design features affect access and use?	Site visits Focus groups	CHIP survey Medicaid survey
How do the costs incurred by families compare with other coverage the child may have had before, or to which they currently have access?	Focus groups	
What unmet health care needs do children have while enrolled? Are costs a factor?	Focus groups	CHIP survey Medicaid survey
How has the program affected family well-being (financial burden and confidence that their child's health care needs will be met)?	Focus groups	CHIP survey Medicaid survey
How satisfied are families with the health services received and with the program overall?	Focus groups	CHIP survey Medicaid survey
What impact does CHIP have on access, use, content of care, and satisfaction?		CHIP survey
How do findings in this area compare with findings from the previous evaluation?	All of the above	All of the above
Relationship Between CHIP and Other Coverage		
What type of coverage do children have prior to enrollment and after disenrolling? How long do they have that coverage and why do they lose it?	Focus groups	CHIP survey Medicaid survey Enrollment/admin data
What share of CHIP enrollees has private coverage prior to enrolling? What share has access to private coverage while enrolled? How does that vary with program design/crowd-out policies?	Focus groups	CHIP survey Medicaid survey Enrollment/admin data
For those uninsured prior to enrolling, how long were they uninsured? Was this influenced by CHIP waiting period policies?	Focus groups	CHIP survey Medicaid survey Enrollment/admin data
How does the coverage children have before enrolling and after they exit compare with coverage under CHIP? What are the major differences in covered services and costs?	Site visits Focus groups	CHIP survey Medicaid survey
To what extent is CHIP substituting for (crowding out) private coverage? What share of new enrollees was uninsured prior to enrolling?	Site visits Focus groups	CHIP survey Medicaid survey
How has CHIP affected the Medicaid program (e.g., structure, scope, enrollee perceptions, relationship with other coverage)?	Site visits Focus groups Survey of program administrators	CHIP survey Medicaid survey
How has CHIP altered or factored into the movement of low-income children between public coverage, private coverage, and uninsurance?	Site visits Survey of program administrators	CHIP survey Medicaid survey Enrollment/admin data

Table II.1 *(Continued)*

Key Evaluation Questions	Qualitative Data/Analyses	Quantitative Data/Analyses
Does CHIP serve as a short- or long-term coverage approach for low-income children?	Site visits CARTS, SEDS,other program data	CHIP survey Enrollment/admin data
Are children making seamless transitions from CHIP to Medicaid and vice versa? What policies are in place to promote these transitions? What improvements could be made?	Site visits	CHIP survey Medicaid survey Enrollment/admin data
How does the role of public coverage for low-income children vary from state to state? How has CHIP affected this dynamic?	Site visits	CHIP survey Medicaid survey Enrollment/admin data
How do findings in this area compare with findings from the previous evaluation?	All of the above	All of the above
Effects on the Uninsured		
What effect has CHIP had on the rate of health insurance among low-income children?		Enrollment/admin data CPS, ACS
How well are states covering children in specified target groups?	Site visits	Enrollment/admin data CPS, ACS
Implications for Health Reform		
What lessons from CHIP are most applicable to health reform?	Site visits Survey of program administrators	
How has PPACA affected state programs, and what future changes are expected?	Site visits Survey of program administrators	
How are families of CHIP enrollees likely to respond to coverage options introduced through health reform? How important are different plan/coverage features in their health insurance decisions?	Focus groups	CHIP survey Medicaid survey

CARTS = CHIP Annual Report Template System

SEDS = Statistical Enrollment Data System

CPS = Current Population Survey.

ACS = American Communities Survey.

SLAITS = State and Local Integrated Telephone Survey.

Impact on Uninsured Children. A central objective of CHIP is to provide insurance coverage to low-income children who are not eligible for Medicaid and do not have other insurance. ASPE is particularly interested in assessing what impact the CHIP program is having on the uninsured rate for low-income children, how this varies from state to state, and how well states are reaching their targeted populations. To inform ASPE about this issue, we will draw on analyses of the CPS and ACS, along with national sources of program enrollment data, to estimate participation rates among eligible low-income children. We will supplement these data with enrollment data from states and CHIP survey data to examine this issue more closely in the 10 targeted states. As with several other analyses, qualitative data from the case studies and CHIP program administrator survey will help us interpret findings and provide a qualitative assessment of this vital matter. The analysis will inform such questions as: What are the implications of setting eligibility at higher levels to target (uninsured) children?

Implications for Health Reform. The passage of health reform legislation in early 2010 substantially changed the context for this evaluation. ASPE now must gather information to help inform the role CHIP will play in an environment with broader Medicaid enrollment and a mandate for coverage supported by state-based exchanges for purchasing private insurance and facilitating enrollment in public coverage. Discovering all we can about family coverage preferences and parents' ability to navigate the insurance market are important first steps for predicting future CHIP enrollment and easing the transition from one program to another. We mainly will use a combination of the CHIP survey and focus group data to address such questions as: Do parents prefer to have everyone in the family under the same coverage (CHIP or ESI)? What do parents know about purchasing coverage in the health insurance market and through such mechanisms as exchanges?

C. Addressing Key Challenges

Our ability to address rigorously many of the research questions summarized in Table II.1 will depend in large part on our ability to address important analytic challenges. Our mixed-methods approach, combining different sources to tackle individual questions, is one of the central ways that we address these challenges, four of which are of particular concern:

1. **Drawing Causal Connections: CHIP Impacts.** To draw causal inferences on the effects of CHIP—for example, on the rate of uninsured children and the heath care outcomes for those it serves—we must have a valid (counterfactual) measure of what the outcomes would have been in the absence of the program. Lacking any opportunity for random assignment, this evaluation must rely on quasi-experimental design (QED) methods, which estimate program impacts using a comparison group that proxies for an experimentally based control group. Fortunately, as we detail in Chapter VII.E, the methods that we will draw on for these "CHIP impact" questions have been used previously to produce credible estimates of coverage programs. For example, to measure CHIP's impact on children's health care access, use, and other outcomes, we will follow the design successfully adopted for the prior CHIP evaluation; in this case, the pre-coverage outcomes of new enrollees (on the CHIP survey) can be used as a credible counterfactual for the outcomes of more established enrollees. As with prior studies, this and other causal analyses will use a series of sensitivity tests to determine the robustness of our estimates and incorporate qualitative data to explore further the validity of the findings. While important for all impact studies, these added steps are essential when implementing QED designs.
2. **Drawing Causal Connections: Impacts of Program Design Features.** Given the large number of program design features that may impact outcomes of CHIP enrollees and disenrollees, we most likely cannot isolate their individual impacts through a ten-state study sample. A possible exception is for design features that vary among enrollees within states, such as premiums and co-payments that (if imposed) often vary by household income. Such variation would allow us to introduce state fixed effects into models that estimate their impacts, thereby accounting for state-specific features that could otherwise not be accounted for in a ten state analysis. Assessing the impact of even these features through formal causal models remains challenging and uncertain, however, as there also needs to be sufficient variation in the program design features across states to distinguish these design effects from the effects of family income.

This limitation in assessing the causal impact of program design features was true for the prior CHIP evaluation as well and, as an alternative, we often explored their possible influence through a descriptive, mixed-mode approach – drawing on the survey and site visit data to look for linkages between enrollee outcomes and the adoption of different program design features. In some instances, this analysis yielded findings that were quite robust, though it is not possible to know in advance when such findings will emerge. For example, findings from the prior evaluation offered substantial evidence that the adoption of the S-CHIP model was associated with greater disruptions in coverage among children disenrolling from CHIP, despite the evidence being largely descriptive. In the current study, we would continue to explore these kinds of linkages, drawing on the range of both qualitative and quantitative data to assess the extent to which program design may be contributing to differences in the outcomes for CHIP children within and across states.

3. **Integrating Findings.** The intent to combine data across many sources to inform most questions can be both a strength and a challenge. To be meaningful, such integration should begin in the design phase of the project; we have done so, and will continue to coordinate design aspects as the project unfolds. Fortunately, the project team has experience with such coordination, having teamed successfully in the prior CHIP evaluation, which had many of the same features and complexities. We thus are confident of achieving a high level of coordination on the proposed evaluation, thereby enhancing research results and minimizing redundancies.

4. **Generalizing Findings.** As in the prior CHIP evaluation, a major focus is placed on ten diverse but purposefully chosen states that together represent more than half of all CHIP enrollees nationwide. Findings from data collected in these states (through site visits and a major household survey) will provide a rich understanding of the policy context and experience of CHIP families that reside in them. Generalizing these findings outside the study states, to all states, must naturally be done with caution as each state's program, target population and context is distinct. Nevertheless, based on the prior evaluation, we anticipate that many important findings from the ten study states can be generalized with credibility, in large part because we expect findings to be largely consistent across the states. In addition, drawing on data from interviews with CHIP administrators in all 50 states and from the SEDS/CARTS, we will be able to provide a profile of CHIP nationwide – for example, its program characteristics, policy context and patterns of enrollment across all states. Through this profile, we will gain an understanding of how the 10 focal study states compare with states nationally, providing a strong foundation for assessing how our survey findings generalize to states outside the study.

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III. STATE SELECTION AND PARTICIPATION

A. State Selection

Our choice of states was guided first by the legislation authorizing the procurement for this evaluation, which specifies that the 10 states chosen must (1) utilize diverse approaches to providing child health assistance, (2) represent various geographic areas (including a mixture of rural and urban areas), and (3) each contain a significant portion of uncovered children. In addition to these criteria, with ASPE's input we developed a robust list of criteria for selecting states and a set of decision rules for applying them (Table III.1). We grouped these criteria into three stages:

1. Stage I includes criteria that are vital to informing policy and so must be met in selecting the 10 states. Three of these criteria (noted above) come directly from the federal legislation that authorized this evaluation.
2. Stage II includes additional policy-relevant criteria that should be considered in selecting the 10 states, such as eligibility rules and other state program features.
3. Stage III includes two practical criteria that states must meet to be enrolled/selected for the study: that a state's data system(s) can support the evaluation's needs, and that a state is willing to participate.

1. Ten States Selected to Participate

We applied the Stage I and Stage II selection criteria sequentially, which produced a primary list of 10 states:[3] (1) Texas, (2) California, (3) Florida, (4) Ohio, (5) Alabama, (6) Louisiana, (7) New York, (8) Wisconsin, (9) Utah, and (10) Virginia. These states successfully meet all of the Stage I and Stage II selection criteria described in Table III.1. After ASPE sends letters to each state encouraging their participation, we will begin contacting states. If the letters from ASPE are sent out by the end of April, we would hope to have signed Memorandum of Understanding (MOU) documents (either with these states or substitutes agreed upon by Mathematica and ASPE, discussed below) by July 1, 2011. Table III.2 provides more details about how each state, and the states in combination, satisfy the Stage I selection criteria. Highlights include:

- **Size of the Target Population.** The 10 states together include 53 percent of the overall target population and represent 2.6 million children eligible for, but not enrolled in, CHIP, as measured by the share of uninsured children with family income below 200 percent of the federal poverty level (Lynch et al. 2010). Table III.3 provides more detail on the income distribution of uninsured children under 400 percent of the poverty level. As the table shows, in all of the selected states nearly two-thirds of uninsured children have incomes under 200 percent of the FPL (the upper income limit for CHIP in 4 of the 10 states). A smaller percentage of uninsured children have incomes over 250 percent of the FPL. During the site visits we will investigate states' outreach strategies for reaching higher income children in states where they are eligible for CHIP (for example, Alabama, New York, and Wisconsin, have income thresholds of 300 percent or higher).

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[3] A more detailed discussion of the process used to select the states is provided in Appendix B to this report.

Table III.1. Criteria for Selecting States for the CHIPRA 10- State Evaluation

Criteria and Rationale	Proposed Decision Rule(s) for Meeting Criteria
Stage I: Primary Selection Criteria (must be satisfied)	
1. **Program type**: Legislation specifies importance of selecting states with diverse approaches to providing coverage	Selected states should approximate the national distribution on program type: a) 2 or 3 states with Medicaid expansions only (either pure M-CHIP programs or Combination programs with more than 80 percent of enrollees in the M-CHIP program) b) 5 or 6 states with separate programs (either pure S-CHIP programs or Combination programs with more than 80 percent of enrollees in the S-CHIP program) c) 1 or 2 states with Combination programs with enrollment relatively evenly divided between M-CHIP and S-CHIP
2. **Size of the uninsured population**: Legislation specifies that selected states should contain a significant portion of children not covered	Selected states include: a) at least 50 percent of nation's low-income uninsured children b) at least 2 states from among the 10 with highest rate uninsured children below 200 percent FPL
3. **Program size:** Larger programs will support generalizing findings at the national level. Moderate sized programs will help generalize findings to more states	Selected states include: a) at least 40 percent of CHIP enrollees nationally b) at least 5 states from the top 10 largest programs nationally
4. **Program participation and retention:** Programs with varied success in enrolling and retaining eligible children can improve generalization of findings and provide basis to compare and contrast state experiences	Selected states include: a) at least 2 in the top and bottom quartiles in estimated participation rate b) those meeting at least one of the four subcriteria for "best practices" in enrollment/retention (see Stage II.1 below) c) at least 2 states that report their S-CHIP enrollment in MSIS
5. **Geographic characteristics:** Legislation specifies the need to represent various geographic areas (including mix of more rural and more urban states, variation in race/ethnicities)	Selected states include: a) at least 2 states where at least 25 percent of the population lives in an urban area and at least 2 states where at least 25 percent lives in a rural area b) at least one state from every Census region c) at least 7 must be in top half of states in percentage non-white; at least 3 in the top quartile in percentage Hispanic; at least 3 in top quartile in percentage African American
Stage II: Secondary Selection Criteria (will be satisfied in proposed order of priority)	
1. **Best practices for enrollment and retention:** Inclusion of states with different policies and procedures for enrolling and retaining eligible children can help link the impact of these various approaches on enrollment and reductions in the number of uninsured children	Selected states include: a) at least 2 with (separate) program components that have integrated their Medicaid and CHIP eligibility systems b) at least 2 that have received CHIPRA bonus payments c) at least 2 that have adopted ELE and 2 that have adopted SSA matching d) at least 2 that do not satisfy a through c above

Table III.1 (*Continued*)

Criteria and Rationale	Proposed Decision Rule(s) for Meeting Criteria
2. **Cost- sharing:** Inclusion of states with different cost sharing approaches can help inform about the impact on access, use, and other key health care outcomes	Selected states include: a) at least 2 states that charge premiums and at least 2 that do not charge premiums b) at least 2 states that have co-payments and at least 2 that do not have co-payments
3. **Delivery system:** Including states with different approaches to care delivery can help inform their possible links to access, use, and other key health care outcomes	Selected states should approximate the national distribution on use of capitation-based managed care arrangements: a) at least 2 states enrolling 90 percent or more of the CHIP population in managed care b) one state with no managed care enrollment c) at least 4 states with a mix of managed care, PCCM, and FFS
4. **Program eligibility:** Including states with different income eligibility limits, those that use or do not use buy-in programs, and those that include or exclude parents in their CHIP programs can help inform about the effects on take-up of offers of health insurance	Selected states include: a) at least 2 with income eligibility limits above 300 percent FPL and at least 2 with income eligibility limits below 200 percent FPL b) both those that have and do not have buy-in programs c) at least 2 states with an adult/parent CHIP expansion
5. **Participation in other key research:** Opportunities to leverage findings from other studies	Selected states include: a) at least 4 that participated in the prior CHIP evaluation b) at least 2 that received CHIPRA quality grants (and are the focus of the evaluation of those grants) c) at least 2 that are participating in the Maximizing Enrollment for Kids program and evaluation
Stage III: Screening Criteria (must be satisfied for final selection)	
1. **Sufficient capability of state data systems:** State data systems must be able to provide accurate, complete, and timely data for survey sampling	Qualitative assessment of study team as to whether criterion is met. (Note that ready access to Medicaid data will be part of the assessment and could affect whether criterion is met.)
2. **Willingness of state to participate:** State cooperation is essential to ensuring accurate, complete, and timely data for survey sampling	Signed MOU with state that specifies roles and responsibilities of both state staff and evaluation team members

Note: CHIP = Children's Health Insurance Program; CHIPRA = Children's Health Insurance Program Reauthorization Act; ELE = express lane eligibility; FFS = fee for service; FPL = federal poverty level; M-CHIP = Medicaid expansion CHIP program; MOU = memorandum of understanding; MSIS = Medicaid Statistical Information System; PCCM = primary care case management; S-CHIP = Separate CHIP program; SSA = Social Security Administration.

- **Size of the CHIP Program.** The 10 states together include an estimated 2.8 million children, or roughly 57 percent of children nationwide enrolled in CHIP as of June 2009 (Kaiser Family Foundation 2010). Half of the states selected are from the top 10 largest CHIP programs in the nation.

- **Program Model**. The 10 selected states are distributed across program models as follows:
    - 6 states operate **Separate CHIP (S-CHIP) models** (either pure S-CHIP programs or Combination model programs with more than 80 percent of enrollees in the S-CHIP portion of the program).
    - 2 states operate **Medicaid-expansion (M-CHIP) models** (either pure M-CHIP programs or Combination model programs with more than 80 percent of enrollees in the M-CHIP portion of the program).
    - 2 states operate true **Combination programs (Combo)**, with a relatively even split in M-CHIP and S-CHIP enrollment
- **Regional and Urban/Rural Representation.** The regional distribution of the 10 states is as follows: South, 5 states; West, 2 states; Midwest, 2 states; Northeast, 1 state. In 2 of the states (Alabama and Wisconsin), at least 25 percent of child residents live in a rural area; in all 10 states, at least 25 percent of child residents live in an urban area.
- **Program Participation and Retention**. Among the 10 states, 3 are in the top quartile in terms of Medicaid/CHIP participation rates (in all 3 states, more than 85 percent of their eligible population participates). Three are in the bottom quartile of participation rates (with rates below 75 percent). Several have implemented enrollment and retention best practices: 2 have received CHIPRA bonus payments; 2 have adopted express lane eligibility; 6 have adopted SSA matching.
- **Population Characteristics.** Seven of the 10 states are in the top half of states ranked by the percentage of non-white child residents (they range from 38 percent to 68 percent non-white child residents). Four of the 10 states are in the top quartile of states for percentage of Hispanic child residents, and 4 are in the top quartile of states for percentage of African American child residents.

We will next apply the Stage III selection criteria to assess state data capabilities and willingness to participate. To assess whether state data systems can support the sampling and analysis needs of the evaluation, we will draw on existing expertise from other projects involving many of these states.[4] For other states, we will conduct brief screening calls with state staff to learn more about those aspects of their data systems more essential to the evaluation. While we will include an assessment of whether we would be able to link Medicaid and CHIP data to identify transitions between the two programs, we recognize that some states will need to remain under consideration even if this capability is lacking.[5]

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[4] Mathematica has considerable knowledge of state data system capabilities for five of the states: Alabama, Louisiana, New York, Wisconsin, and Virginia. Texas, California, and Florida were included in the previous evaluation and we have experience from other projects in working with California's data. Our existing knowledge of data system capabilities in Ohio and Utah is more limited.

[5] Larger states, such as California, Texas, and Florida, cannot be ruled out on this basis without sacrificing the study's ability to produce findings that represent a majority of the CHIP population (both enrolled and eligible but unenrolled).

Table III.2. Primary Selection Characteristics of the Ten Selected States

State	Stage I: Primary Selection Criteria (Must be Satisfied)																
	1.	2.a.	2.b.	3.a.	3.b.	4.a.	4.b.	4.b.	4.b.	4.b.	4.c.	5.a.	5.a.	5a.	5.b.	5.b	5.b.
	Program type	At least 50% share of uninsured children under 200% FPL	At least 2 of the top 10 states, highest rate of uninsured children	At least 40% share of CHIP enrollees nationally	At least 5 states outside top 10, CHIP program size	At least 2 states each, top and bottom quartile, Medicaid and CHIP participation rate	At least 2 states that received CHIPRA bonus payment	At least 2 states with ELE	At least 2 states, SSA Matching	At least 2 states that meet none of the other 4.b. criteria	At least 2 states reporting S-CHIP enrollment in MSIS	At least 3 states where at least 25% of the population lives in a rural area	At least 3 states where at least 25% of the population lives in an urban area	At least one state from each of the 4 Census Regions	At least seven states in top half, percent non-white children	At least 3 states in top quartile, percent Hispanic children	At least 3 states, top quartile, percent African American children
Texas	S	16.64%	•	10.97%		• (Bottom)				•			•	S	•	•	
California	C (S: 82%)	14.57%	•	22.71%					•				•	W	•	•	
Florida	C (S:99.6%)	9.74%	•	4.53%		• (Bottom)				•			•	S	•	•	•
Ohio	M	2.66%	•	3.09%					•				•	MW			
Alabama	S	1.33%		1.39%	•		•	•	•			•	•	S	•		•
Louisiana	C (M:97%)	1.06%		2.55%	•	• (Top)	•	•	•		•		•	S	•		
New York	S	3.15%	•	7.71%		• (Top)				•			•	NE	•	•	
Wisconsin	C (mix)	0.92%		1.45%	•	• (Top)			•		•	•	•	MW			
Utah	S	1.51%		0.84%	•	• (Bottom)				•	•		•	W			
Virginia	C (mix)	1.86%		1.94%	•				•		•		•	S	•		•

Source: Program type data: Centers for Medicare & Medicaid Services 2010.

Uninsured rate among low-income children: Lynch et al. 2010.
CHIP enrollment as of June 2009: Kaiser Family Foundation 2010.
Medicaid and CHIP participation rate: Kenney et al. 2010.
CHIPRA bonus payments: U.S. Department of Health and Human Services 2009.
Express Lane Eligibility information: Families USA 2010.
SSA Matching information: Cohen Ross 2010.
Reporting of S-CHIP data in MSIS: Matthew Hodges, Research Analyst, Mathematica Policy Research, personal communication, November 16, 2010.
Geographic Data: U.S. Census Bureau, 2010.
Racial and Ethnic data: Urban Institute and Kaiser Commission on Medicaid and the Uninsured, 2010

Table III.3. State CHIP Income Limits and Percentage of Uninsured Children at Selected Income Ranges

	State's CHIP income limit as a percent of the FPL[a]	Number of uninsured children	Percent of uninsured children with incomes					
			Under 100% FPL	100 - 199% FPL	200-249% FPL	250 - 299% FPL	300 - 399% FPL	400% FPL and higher
Texas	200	1,163,000	37.7	32.2	9.9	6.0	7.0	6.8
California	250	1,009,000	39.8	30.7	9.1	6.0	6.0	7.7
Florida	250	712,000	33.7	33.1	10.7	6.7	8.1	7.2
Ohio	200	194,000	36.1	30.9	12.4	5.7	7.2	6.7
Alabama	300	90,000	43.3	28.9	7.8	6.7	6.7	6.7
Louisiana	250	86,000	43.0	17.4	12.8	9.3	8.1	9.3
New York	400	253,000	35.2	25.7	9.9	6.7	7.9	12.6
Wisconsin	300	66,000	33.3	34.8	7.6	6.1	9.1	7.6
Utah	200	107,000	28.0	41.1	9.3	10.3	5.6	5.6
Virginia	200	139,000	39.6	25.9	12.9	6.5	7.2	7.9

Source: Urban Institute analysis of American Community Survey (ACS) 2008 data from the Integrated Public Use Microdata Series (IPUMS), as reported in Lynch et al. 2010; and Heberlein et al. 2011.

Note: Number of children are rounded to nearest thousand; percentages may not total to 100% due to rounding.

[a] In states with combination programs, the limit reported is whichever limit is higher (for example, in Louisiana, the M-CHIP program's income limit is 200% of the FPL, but the S-CHIP program permits children up to 250% of the FPL to enroll, thus we reported 250%).

2. Replacement Criteria for Any States Unable to Participate

Concurrent with developing the list of states recommended for inclusion, we developed a list of substitute states, using the Stage I and II criteria. The back-up states we recommend are Colorado, Nevada, Pennsylvania, Michigan, Kentucky, Maryland, Oklahoma, North Carolina, Oregon, and Illinois.

If we need to replace one or more states, either because they are unwilling to participate or because they cannot provide the essential data needed for the evaluation in a timely manner, we will draw from the list of potential substitute states identified during the state selection process. In recommending a substitute for a given state, we will look for a replacement with characteristics similar to the state being replaced, so that we preserve the balance represented in the initial mix of states to the extent possible. Final decisions about any substitutions will be made in close consultation with ASPE.

B. Securing State Participation

After government approval of the selected states and an assessment of core data capabilities, we will contact the states and work to secure their participation. Prior to contacting them, we will work with ASPE to send a letter to the governors in each state that describes the study and asks for their support. We then will send a letter to the CHIP/Medicaid directors in the selected states that describes the study and the state selection process and provides a general description of what will be involved in participation. After sending the letters, we will contact CHIP/Medicaid directors to set up a time to discuss the evaluation more fully and address their questions or concerns. Prior to the calls, we will send a project summary and a table summarizing our data and access needs. Senior team members will lead these calls. In addition to discussing the evaluation and data requirements, we will explain how states would be compensated for providing the data and discuss how we plan to develop a MOU that will confirm in principle the state's willingness to participate.

Subsequent conversations with state technical staff will be scheduled to open further conversation regarding the details of the data request, specific features of the state data system, and procedures for producing and transmitting the required data. The particular documents and data elements that will be provided by each state, as well as procedures for transmitting these documents and data, will be detailed in subsequent discussions between Mathematica and state technical staff. A description of the specific arrangements regarding the files to be acquired and the frequency with which they will be transmitted will be attached as an addendum to the signed MOU.

Exhibit III.1 shows a model MOU, which will serve as the starting point for developing a MOU tailored to each state, and Table III.4 provides a summary of the data required for the study. In addition to the MOUs, some states may require review by an institutional review board, and we expect that most states will require a formal data use agreement.

C. Data Acquisition

A critical component of this evaluation is the ability of the state data systems to provide timely eligibility and enrollment data for use in drawing samples for the surveys of enrollees and disenrollees. Because these data are complex, we have developed a strategy that aims for the timely acquisition of the necessary data without excessively burdening state staff. Our data-acquisition strategy consists of two further steps once the MOU is signed:

1. **Assessing the State Data Systems**. Based on discussions with state technical staff (as well as our existing knowledge of some state data systems), we will develop a profile that summarizes broadly the CHIP and Medicaid data systems, their interrelationship, and the availability of specific data elements needed for the evaluation. These profiles will serve as the basis for the development of data use agreements (discussed below), as well as the preparation of state-specific technical questions regarding the characteristics of the systems and the availability of specific data elements.
2. **Developing Data Use Agreements**. Based on a review of the preliminary assessment of the states' data capabilities and initial contacts with key program staff in each state, we will develop a detailed data use agreement for each state, which will serve as an addendum to the state's MOU. This agreement will describe in detail the types of data and access to program staff that the state will provide to Mathematica and the timeframes within which the data or access will be provided. These combined MOUs and data use agreements subsequently will be formalized as a subcontract between Mathematica and each of the 10 selected states.

We will work with the technical staff identified in each state to develop the best approach for specifying, processing, and transmitting the relevant data files while adhering to the confidentiality guidelines of each state. Our contacts with technical staff usually will conform to the timeframes that appear in the data use agreements, although we might need to contact staff occasionally at other points to follow up on specific issues regarding the structure and content of specific files or other technical questions.

Exhibit III.1 Illustrative Memorandum of Understanding Template

Memorandum of Understanding, CHIPRA 10-State Evaluation

This memorandum of understanding (MOU) outlines an agreement between the state of [State Name] and Mathematica Policy Research (Mathematica), regarding the state's participation in the 2010–2013 Congressionally mandated evaluation of CHIP being conducted by Mathematica and its subcontractor, The Urban Institute (Urban), for the Office of the Assistant Secretary for Planning and Evaluation (ASPE) of the U.S. Department of Human Services (HHS). A description of this evaluation is provided in Attachment A. This MOU describes in general terms the types of data and access to program staff that the state agrees to provide to Mathematica and/or Urban, the timeframes within which the data or access will be provided, and the payments that will be made to the state by Mathematica to defray data collection costs. Table 1 provides a summary of the type of data or access required. The particular documents and data elements that will be provided by the state, as well as procedures for transmitting the documents and data to Mathematica or Urban, will be specified by Mathematica in consultation with the state at a later date.

Access to State Staff. The state agrees to give Mathematica and Urban access to CHIP [and Medicaid if applicable] program staff for (1) assistance between July and October 2011 in selecting local communities and identifying informants to participate in a site visit, (2) in-person interviews during a one-week site visit between October 2011 and May 2012, (3) assistance in constructing sample frames for focus groups with parents of CHIP enrollees and disenrollees, (4) telephone follow-up with participants as necessary between November 2011 and June 2012, and (5) participation in a one-hour telephone survey of program administrators in [fall 2012].

Program Documents. The state agrees to provide Mathematica and Urban with various existing documents describing policies, design, implementation, and performance of the state's CHIP, as requested, between February 2011 and September 2013.

Data for Survey Sampling and Related Analysis. The state agrees to provide extracts from CHIP [and Medicaid, if selected for that survey] enrollment files that include data from the application process, contact information, and eligibility and disenrollment history. These data will be provided up to four times between July 2011 and March 2012: test data in July 2011, up to three extracts for sampling purposes between September 2011 and March 2012, and a final extract in summer 2012 for an analysis of enrollment patterns. The final extract will include both CHIP and Medicaid enrollment history. Mathematica will also need the state's assistance in acquiring data for locating sample members, including contact information that may be contained in application or eligibility determination data systems that are separate from the CHIP enrollment data system. The content and structure of these files will be specified further in consultation with state technical staff. A detailed schedule of data requests will be developed by Mathematica in consultation with state technical staff by June 2011 and will be attached to this MOU as an addendum. Table 2 provides an example of such a schedule. The state agrees to provide Mathematica with access to the appropriate state technical staff for assistance related to these data requests.

Data Confidentiality. Each party shall protect the confidentiality of information provided by the other party, or to which the receiving party obtains access by virtue of its performance under this MOU, that either has been identified as confidential by the disclosing party or by its nature warrants confidential treatment. The receiving party shall use such information only for the purpose of this MOU and shall not disclose it to anyone except those of its employees who need to know the information. These nondisclosure obligations shall not apply to information that is or becomes public through no breach of this MOU; that is received from a third party; or that is required by law, regulation, or subpoena to be disclosed. Confidential information shall be returned to the disclosing party upon request. Mathematica shall ensure that all information, records, data, and data elements pertaining to applicants and recipients of public assistance, or to providers, facilities, and associations, shall be protected by Mathematica, its employees, its subcontractor, and their employees from unauthorized disclosure pursuant to [42 USC 654(26) and 42 CFR Part 431, Subpart F – confirm and update as needed].

Payment Schedule. Mathematica agrees to compensate the state for the cost of extracting data from its CHIP enrollment files as follows: [TBD].

Name and Date (State): ______________________________
Name and Date (Mathematica): ______________________________

Table III.4 Memorandum of Understanding Summary of Data Required

Evaluation Component	Type of Data or Access Needed	Frequency	Timing
Analysis of state program data reported to CMS	Access to state staff as needed to clarify information reported to CMS through CARTS or SEDS.	Occasional	Winter/Spring 2011
Case studies (site visits; focus groups)	Assistance in identifying informants for site visit interviews and selecting local communities and informants. Access to state staff for in-person interviews.	Once	Fall 2011 or Winter 2012
	Assistance in constructing sample frames for focus groups with parents of CHIP enrollees and disenrollees.	Once	
	Access to state staff for telephone follow-up.	As needed	
	Existing documents describing relevant state policies, program design, implementation experiences, and outcomes or performance.	As available	February 2011 through September 2013
Surveys of enrollees and disenrollees CHIP: 10 states Medicaid: 3 states	Eligibility and enrollment and disenrollment files that contain application and contact information and historical enrollment and disenrollment data.	Once for test data	July 2011
	Documentation on file structures, variable definitions and coding, and access to state technical staff for guidance as needed.	Two times for survey sampling	Late Summer and Fall 2011
	Access to additional data files necessary to support the locating of sample members.		
Analysis of enrollment and retention	CHIP and Medicaid eligibility and enrollment history data for up to 24 months prior to first extract for survey sampling and 12 months after final extract for survey sampling.	Once	Spring 2012
	Documentation on file structures, variable definitions and coding, and access to state technical staff for guidance as needed.		

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IV. OMB CLEARANCE PROCESS

Overview: Obtaining clearance from the Office of Management and Budget (OMB) ensures the quality and utility of the data collected by a federal agency and minimizes the public burden incurred by the collection process. Using HHS's OMB guidelines, Mathematica will assist ASPE in navigating the OMB process, preparing submissions, responding to public and OMB questions, and obtaining clearance for the three data collection components of CHIP10: (1) a quantitative survey of CHIP enrollees and disenrollees in the selected states (including a Medicaid sample in three states); (2) qualitative case studies including focus groups in the 10 selected states; and (3) a qualitative survey to collect contextual data from a census of state CHIP program administrators in 50 states and the District of Columbia. For efficiency—the first two data collections will start in close proximity to one another (early fall 2011)—we will combine the requests for OMB clearance into a single package (OMB Package #1). OMB Package #2 will be prepared in time for a May 2012 data collection start. Both processes will be monitored by the TOO, an HHS internal reviewer, and a Mathematica quality assurance officer. Below, we outline the schedule for the two OMB submissions and then discuss the content of the packages.

Table IV.1. Schedules for Two OMB Submissions

OMB Process	OMB Package #1 Survey of Enrollees & Disenrollees and Case Studies	OMB Package #2 Survey of State Program Administrators
Submit the 60-day Federal Register Notice (FRN) for TOO review	1/14/11	9/29/11
TOO publishes 60-day FRN	3/28/11	~10/7/11
During 60-day public comment period, conduct survey pretest and submit pretest report	3/28 - 5/27/11	10/10 – 10/24/11
Respond to public comment after 60 days	5/27 – 6/3/11	11/28 – 12/6/11
Submit DRAFT OMB package for HHS review: includes responses to public comment, final protocols/survey instruments, pretest memo	6/3/11	1/10/12
TOO publishes 30-day FRN, submits FINAL OMB package to OMB	6/15/11	~1/24/12
OMB review usually takes ~60 days	8/14/11	3/21/12
Assist TOO in responding to any OMB questions	8/24/11	3/28/12
Receive final OMB clearance	9/7/11	4/30/12

Starting the OMB Process: 60-Day FRN. For OMB packages #1 and #2, we will assist the TOO in preparing the 60-day FRNs and developing a preliminary set of supporting documents in case the public wishes to review them at some time during the public comment period. For OMB package #1, the documents will include the preliminary supporting statement, the pretest version of the survey of enrollees and disenrollees, and the preliminary case study protocols. For OMB package #2, the documents will include the preliminary supporting statement and the pretest version of the state program administrator survey. We will wait 60 days to receive public comments to the FRNs and then will assist the TOO in responding to them.

Pretesting Instruments in Preparation for Submitting the Final Packages to OMB. While waiting to receive public comments, we will conduct pretests of the surveys (the case study protocols need not be pretested) and will present the two pretest reports with recommendations for TOO consideration before including them in the draft and final OMB packages to be submitted to the TOO.

30-Day FRN. Mathematica will assist the TOO in preparing the 30-day FRNs. Based on public comments and the pretest reports, we will prepare draft and final versions of OMB packages #1 and #2 for submission to the TOO and internal review at ASPE. For both packages, we will respond succinctly to OMB's established Part A and Part B questions using HHS guidelines. Both final OMB packages will include copies of the federal authorizing legislation, the 60-day and 30-day FRNs, pretest reports, public comments and responses from the 60-day FRN, and final versions of instruments and protocols. As OMB prescribes, we will package Submissions Part A and Part B separately, as they are read by different OMB staff. Both Part A and Part B will include the same brief study overviews to frame the studies for reviewers.

Receiving Clearance. Once OMB receives the packages, it takes 60 days or often more before ASPE will learn the outcome of the review (approved, approved with change, disapproved). If "approved with change" (a not uncommon occurrence), OMB will present questions to ASPE and Mathematica will assist the TOO in responding to them. Once OMB issues a control number and expiration date, we can finalize instrument programming and training materials and begin data collection.

IRB Clearance for the Enrollee and Disenrollee Studies. Because OMB expects that Institutional Review Board (IRB) approval will be obtained in the same timeframe as OMB clearance, we here briefly describe the IRB process. The IRB process focuses on ensuring that all survey materials are understandable by the target population, participation risks and benefits are stated clearly, confidentiality is assured, and respondents understand they may refuse to respond to the whole or any part of the survey. Mathematica finds it more efficient to use a single external IRB to review survey instruments and materials seen by respondents rather than seeking approval from ten different states, each of which may suggest instrument changes peculiar to itself. The IRB we normally use employs a set series of questions (focused on the topics listed above) to be answered and reviews the responses, questionnaires and all materials seen by respondents. The process usually takes two to three months and for complex studies such as CHIP10 may involve a presentation to the IRB in its home office. It is possible, however, that each state may prefer to use its own IRB, in which case we will work with the TOO to complete the IRB forms for each. Whether CHIP10 must prepare a single IRB package or multiple ones, we will assist the TOO in the preparation.

V. CASE STUDIES

The qualitative component of this evaluation hinges on our ability to collect information systematically on a broad range of topics and from a large number of sources, and to organize this information consistently within an analytical framework that addresses the key research questions of interest. Document review, case studies, and focus groups will facilitate the characterization of program implementation and impacts, implications of the Affordable Care Act, and enrollment, retention, access, and utilization trends. This analysis will allow us to capture and distill the tremendous variation across state CHIP programs by answering many questions directly, generating hypotheses about program impacts that can be explored further through the quantitative analysis of survey and administrative program data, and adding depth to quantitative findings. The three components of the case studies include:

1. Review of documents, reports and summary materials produced by states, research studies, national organizations, and others involved in studying CHIP program features and outcomes
2. In-depth site visits in 10 states
3. Focus groups in the same 10 states with families of children enrolled in CHIP and representing other key groups of children

In the following sections we discuss the qualitative methods by which data will be collected and organized, the manner in which findings will be analyzed, and the cross-cutting syntheses we will develop based on these analyses.

A. Document Review

As a first step in our qualitative assessment, we will draw on the extensive documentation of CHIP program features, coverage and participation trends, and access and quality impacts that has been produced over the past decade. Specifically, we will review:

- Annual reports by states to CMS
- State evaluations and policy briefs
- Materials produced by research and policy organizations (including Mathematica and the Urban Institute)
- Findings generated from new national research studies currently under way

This step will be conducted in conjunction with preparation of the 2011 Report to Congress; as renegotiated with ASPE, the 2011 report will be based on an analysis of secondary data and information. Materials gathered and analyzed for the report will also provide a basis for our preparation for the case studies.

Our document review will allow us to develop an analytic framework of critical CHIP design features, policy variations, and implementation issues. This synthesis will inform our preparation for conducting the site visits and focus groups, help us to tailor our interview protocols to explore state-specific issues, and ensure that interview time is used efficiently.

B. Site Visits

Site visits in 10 states will allow the research team to develop an in-depth understanding of CHIP implementation over the past decade and the effects of recent policy changes. We will inquire about which program design features have and have not worked, persistent challenges states have faced, and opportunities upon which they have capitalized. We will consider the implications of CHIPRA and health reform, and the anticipated benefits and challenges associated with those developments. Such qualitative findings provide a critical complement to the quantitative components of this evaluation, allowing for a more nuanced understanding of state experiences as well as the opportunity to explore the strengths, weaknesses, and effects of varied state contexts and alternative approaches to ensuring children's coverage.

Protocol. The interview protocol is a critical tool for conducting high-quality site visits within a case study framework. A carefully structured protocol permits a range of issues to be discussed in a consistent and thorough manner across all interviews and sites while also allowing the flexibility for interesting issues to be considered as they arise. (Table V.1 provides an outline of the core site visit protocol. Draft site visit protocols and focus group guides are in an attachment to this report.) The protocols are organized into sections that correspond with the major topic areas for the evaluation, including:

- Program design features and the rationale behind both initial decisions and changes over time, including eligibility criteria, outreach and marketing efforts, enrollment and renewal procedures, screening and enrollment processes, benefit packages, service delivery and payment arrangements, and initiatives for special populations, such as racial and ethnic minorities and children with special health care needs
- Participation trends over time
- Enrollment successes and challenges, including the impacts of outreach initiatives and strategies to simplify and streamline enrollment and renewal, coordinate with Medicaid, and prevent crowd-out
- Access and utilization trends, including the impacts of program design on access and utilization and the extent to which contracted providers, especially managed care organizations, are able to meet the needs of CHIP enrollees
- Cost sharing and premiums, including the rationale for employing them; their influence on enrollment, retention, and service utilization; changes over time; and family reports regarding levels and the impact of changes
- Role of CHIP and Medicaid as long-term strategies for reducing uninsurance among children
- Anticipated impacts of health reform on CHIP, including family awareness, anticipated policy and program changes, and states' plans for integrating mechanisms into health insurance exchanges for assessing eligibility and facilitating enrollment in Medicaid and CHIP

Table V.1. Outline of Core Site Visit Protocol, CHIPRA 10- State Evaluation

I. History/Evolution of CHIP Policy Development

- What is the organizational structure of your state's CHIP/Medicaid agencies?[a] Has this structure changed in recent years (that is, since 2005)? Did enactment of CHIPRA cause any changes to program administration?
- What is the history surrounding CHIP policy development in the state? [a]
- Have there been significant changes to the design of the CHIP program in your state since 2005 (that is, Medicaid versus Separate versus Combination approach)? [a] When did they occur?
- What were the various and most important debates that surrounded these changes in your state's CHIP model design?

II. Eligibility/Outreach/Enrollment Strategies

- What have been your state's primary efforts to simplify or streamline eligibility determination for CHIP? [a] Are the same strategies employed for Medicaid? [a]
- Did your state qualify for a "performance bonus" by virtue of having enrolled Medicaid-eligible children above target levels and adopting at least 5 of 8 strategies aimed at simplifying enrollment? [a] If so, what were the strategies utilized? If not, what was missing?
- To what extent has CHIPRA led to eligibility expansions? [a] Which populations have been targeted?
- How do you conduct "screen and enroll"? What have been the major challenges to this process?
- Did your state change its enrollment and retention processes as a result of CHIPRA? If so, what impacts have you seen?
- Does your state utilize Express Lane Eligibility? [a] If so, what have been your early experiences?
- What strategies have you pursued to raise public awareness of the importance and availability of no-/low-cost insurance under CHIP? During what time periods did your state operate such outreach campaigns?
- What are your processes for eligibility redetermination/renewal under CHIP and Medicaid?
- If a child is being disenrolled from CHIP, is their eligibility for Medicaid assessed? How does the referral process between CHIP and Medicaid work in your state in such a situation?
- If a child is being disenrolled from Medicaid, is their eligibility for CHIP assessed, and if so, how does that process work?
- Overall, what have been the most/least effective strategies for reaching, enrolling, and retaining children?
- Has effectiveness of outreach, enrollment, and retention strategies varied across subpopulations of children (for example, by race/ethnicity, immigration status, urban/rural, adolescents, CSHCN)?
- What impact do you anticipate raising income eligibility standards will/would have on enrollment in your state?

III. Benefit Package Design

- Describe the current benefit package under CHIP. [a] What do you see as the primary strengths and weaknesses of the package?
- Has the CHIP benefit package changed at any point since 2005? How, if at all, did it change with CHIPRA? If so, what changed?
- Did controversy surround the inclusion (or exclusion) of any particular benefits?
- What are the key differences between your state's CHIP and Medicaid benefits packages? [a]
- How do CHIP benefits in your state compare with private insurance?
- Overall, how well does the current CHIP benefit package in your state appear to be meeting the needs of enrolled children?

IV. Service Delivery and Payment Arrangements

- Describe the current service delivery systems used for children enrolled in CHIP. [a] Do you rely primarily on capitated managed care or fee-for-service systems? Or on some combination of the two?
- What are the primary differences between CHIP and Medicaid delivery and payment systems?
- How do the systems differ with regard to use of managed care arrangements? To what extent do you contract with the same health plans/provider networks under the two programs?
- Has the number or array of health plans changed/fluctuated much over the years? Please describe.
- Is your state pursuing any quality improvements for CHIP service delivery? What is the scope and progress of this effort? What do you anticipate will be the challenges and benefits of this model?
- How about Quality Assurance? What monitoring efforts do you have in place? Are there any financial incentives, such as pay for performance programs, to improve quality care provided? If so, please describe these arrangements and how they are working to date.
- What care coordination or medical home features—if any—has your state implemented? Please describe your experiences to date.
- What is the role of safety net providers in serving CHIP-enrolled children?

Table V.1 *(Continued)*

- How do CHIP service delivery networks in your state compare with Medicaid or private insurance?
- What is the rate of participation among private physicians in your state in CHIP? In Medicaid? What factors appear to be affecting physicians' decisions about whether or not to participate in these programs? How is the state monitoring physician participation?
- Do you believe there is an adequate supply of providers to serve CHIP enrollees? Medicaid enrollees? For what populations or services is availability particularly strong? Weak?
- How difficult is it for enrollees to find and see a doctor or dentist? What are average wait times for appointments?
- Overall, how would you rate your CHIP program's ability to extend primary care access to children? How does this compare to Medicaid?
- How well are children accessing dental care under CHIP? Under Medicaid? How do service delivery and payment arrangements for dental differ under CHIP, compared to Medicaid?
- Overall, how would you rate your CHIP program's capacity to serve special populations, including adolescents and children with special health care needs? Has your service delivery approach facilitated children's access to (and use of) high-quality care?

V. Cost Sharing

- Has your state changed its policies regarding cost sharing (premiums, copayments, coinsurance) since 2005? [a] Please describe.
- What were the debates surrounding these changes? (For example, was cost sharing reduced because it was seen as posing a barrier to access or use? Or was cost sharing increased because it was seen as appropriate for higher-income families?)
- What is your perception of affordability of premiums and other cost-sharing amounts for low-income families?
- What are your methods for collecting premiums and tracking families' aggregate out-of-pocket costs?
- What have been the impacts of premiums on enrollment and retention, and of copayments on access and utilization?
- Do you have any plans to increase premiums in the future?

VI. Crowd-Out

- Is fear of "crowd-out" (that is, that CHIP coverage will substitute for available employer-sponsored coverage) an issue in your state?
- What debates surround the issue of crowd-out today, and how do they differ from those that existed while your state's CHIP program was being formulated?
- What strategies have you adopted in an effort to deter crowd-out? [a]
- Have those policies changed since 2005?
- Overall, what are your perceptions of the impact of crowd-out prevention strategies (such as waiting lists) on enrollment, employer behavior, and special populations?
- In your opinion, how has the existence of CHIP affected private insurance markets? For example, has the long-term availability of CHIP led employers to decrease their offers of dependent or family coverage to their employees?

VII. Family Coverage

- Has your state extended CHIP coverage to parents of enrolled children? [a]
- If so, when did this occur and what was the impetus for pursuing this coverage? Which stakeholders supported the strategy, and why?
- What have been your experiences implementing family coverage?
- How does family coverage change the nature of your program? Do you believe families are more attracted to a program that can cover the whole family? Has family coverage improved rates of enrollment and/or access?

VIII. Employer Subsidy Efforts and "Buy-In" Programs

- Did your state consider subsidizing employer-based coverage under CHIP?
- If so, what have been your experiences implementing employer subsidy programs?
- What do you see as the major strengths, weaknesses, and impact of incorporating employer subsidy arrangements into CHIP?
- Does your state permit employers to purchase coverage for their employees through CHIP?
- If so, what have been your experiences implementing such a buy-in program?
- What do you see as the major strengths, weaknesses, and impacts of incorporating employer buy-in arrangements into CHIP?

Table V.1 *(Continued)*

IX. Coverage of Special Populations

- How do various features of your CHIP program affect children with special health care needs?
- Have you modified any policies—such as those related to outreach, enrollment, benefits, cost sharing, crowd-out, or service delivery—to make your program more responsive to the needs of children with special health care needs?

X. Financing

- Please discuss the size of your state's federal CHIP allocation, your views on its adequacy, and current aggregate spending in the most recent year.
- How did limited/uncertain funding over the past five years impact your state policies? At any point did you need to freeze enrollment? Institute a waiting list? Tighten eligibility requirements?
- What have been the primary sources of state funding for your CHIP program?
- What is the current state budget picture?
- Has the budget environment affected CHIP and Medicaid in your state? If so, what elements of the programs have been targeted (i.e., provider payment, cost sharing, enrollment caps, etc.) to try to alleviate budget pressures? Have these changes been implemented? If so, what observations or effects have been seen on access to care and quality of care? Have there been other effects?
- How has the passage of CHIPRA changed the funding debate in your state?

XI. PPACA

- In what ways is your state preparing for implementation of national health care reform?
- How has the enactment of the ACA affected your state's CHIP program?
- Have federal "maintenance of effort" rules safeguarded your state's CHIP and Medicaid eligibility policies during the recent economic downturn? Have these rules had other effects on CHIP and/or Medicaid?
- Do you anticipate increasing payments for primary care providers consistent with mandated Medicaid increases?
- To what extent do you anticipate funding uncertainty after 2015 will impact your state's CHIP policies?
- Does your state anticipate including CHIP enrollees in health insurance exchanges?

XII. Local Context

- How has CHIP administration operated at the local level?
- Has the program's implementation varied significantly from county to county? If so, what factors have contributed to this variation? (For example, do counties autonomously administer eligibility and renewal systems, or do they operate under state authority and consistent state rules?)
- Has program implementation varied between urban and rural areas of the state? If so, please describe variations in outreach and enrollment approaches, service delivery approach, access to care, etc.

XIII. Lessons Learned

- To what degree have lessons learned through CHIP implementation and administration "spilled over" to affect Medicaid policy?
- Overall, based on your implementation experiences, how well is your program (and its design features) promoting enrollment, retention, access, use, family satisfaction, and strong coordination with Medicaid and the private insurance system? In retrospect, are there any policies you would change so as to improve your state's attainment of these goals?

[a] Such information will be gathered prior to site visits and reviewed/confirmed during key informant interviews.

Key Informants. The site visits will gather in-depth information and insights from a broad range of stakeholders at both the state and local level. We will divide our time on-site between each state's capital and up to two local communities. Through discussions with federal and state officials, and based on our experiences conducting CHIP case studies in the prior evaluation, we will identify key informants to interview during our site visits, ensuring that all appropriate perspectives are represented. These informants will likely include:

- At the state level: officials responsible for CHIP and Medicaid administration, public health and maternal and child health officials, governors' health policy staff, state legislators and their staffs, family and child advocates, vendors under contract with the state (such as those responsible for eligibility review and plan enrollment), and providers representing such groups as the American Academy of Pediatrics and the state Primary Care Association

- At the local level: county social services administrators, front-line eligibility workers, local public health officials, managed care organizations, health insurance plans, representatives of the business and employer communities, local clinic- and office-based pediatric providers, and community-based organizations involved with outreach

During interviews at the state capital we will focus on state-level policy and program implementation decisions and experiences. We will inquire about how programs and policies have changed over time, persistent challenges states have encountered, and innovations that have been successfully implemented. At the local level our questions will focus on the actual implementation of the CHIP program. We will ask about the impacts of strategic policy efforts and budget constraints on the program and the target population, and generally assess the impacts of the program on consumers, providers, and communities.

Conducting the Site Visits. The site visit approach will systematically follow a series of steps designed to ensure consistent collection of information and data from a broad and representative set of key informants. The first site visit will serve as a pilot to test the proposed case study methodology and interview protocols. Results from this site visit may prompt revisions to the methodology; if so, we will implement them during the remaining nine site visits. We will conduct a training session in advance to ensure that all team members are comfortable with the interview guides and with the steps involved in planning and conducting the site visits. The steps are summarized below. In total, the site visit team is comprised of six staff (three from the Urban Institute and three from Mathematica), with two team members conducting each site visit. One team member will conduct the interview, while the other team member takes detailed notes.

- **Contact State Officials**. As a first step, we will call key CHIP and Medicaid officials to discuss the goals, objectives, and process of the case study; the types of organizations and individuals we would like to interview; potential communities to be visited; and possible dates for those visits. This task will launch the case study effort and secure the participation and support of key state officials.
- **Obtain and Review State Program Documents and Other Background Materials**. As described earlier, we will collect and review background materials pertinent to each state's CHIP program. Information and insights we garner will not only help us understand the program from the outset, but also feed directly into our development of state-specific questions for the interview protocols.
- **Identify Key Informants and Local Sites**. Working with state officials, we will identify the full complement of state agencies, policymakers, vendors, child health advocates, and associations involved with CHIP program design, implementation, and monitoring, and select appropriate individuals and organizations to interview. We will also discuss and identify several communities that might represent the typical experiences of localities in implementing CHIP. We anticipate identifying a total of approximately 30 state and local respondents for interviews in each study state.
- **Establish Site Visit Logistics**. Working with state and local officials, we will schedule site visits lasting four to five days in each state; two days will be spent in the state capital and two to three days in communities.

- **Conduct Interviews**. We will conduct interviews with approximately 30 respondents drawn from the aforementioned groups. Senior members of the Urban Institute and Mathematica teams will have primary responsibility for conducting the interviews.
- **Compile Notes**. Upon completion of each site visit we will compile and clean notes using qualitative analytic software (ATLAS.ti) that will ensure consistent coding, in preparation for rigorous analysis by the evaluation team.

C. Focus Groups

As part of the case studies, in each state we will conduct three focus groups with families touched by state CHIP and Medicaid programs, for a total of 30 focus groups across the 10 case study states. Focus groups will be conducted during the same week that we are conducting site visit interviews with key informants. We expect the focus group findings to enrich the other evaluation components in several ways, while providing intrinsically valuable information regarding state and local context. First, they will provide valuable detail about the concerns and experiences of families affected by CHIP and Medicaid policies and program practices. Second, insights from the focus groups will also highlight particular focal areas for our analysis of site visit findings. Third, and perhaps most important, focus groups will bring to our evaluation the voices of parents and other family members vividly describing their experiences with CHIP, while also enhancing our understanding of concepts and issues identified through other components of the evaluation.

Sample Selection. We will hold focus groups with parents and other family members of children who represent the following categories:

- Enrolled in CHIP or Medicaid
- Disenrolled from CHIP/Medicaid
- Eligible for CHIP or Medicaid but uninsured
- Covered under employer-sponsored insurance (ESI)

We believe that the most critical groups from the array above are parents of enrolled children (since they will be able to discuss direct experiences with CHIP), parents of disenrollees (since they will shed light on the various factors that led to disenrollment), and parents of children who are eligible for CHIP and Medicaid, but are not enrolled and remain uninsured (since they will help us understand more about this critical target group and what factors contribute to their not enrolling their children into available coverage). On occasion, and to the extent possible, within these categories we will attempt to conduct focus groups with selected special populations of particular interest, including parents of children with special health care needs, non-English-speaking families (we plan to conduct Spanish-language groups, led by a focus group leader fluent in Spanish and English, in states with large Latino populations, such as California, New York, Texas and Florida), newly eligibles, and certain racial and ethnic groups. These focus groups will provide insights about the unique experiences of these populations and the particular challenges or circumstances they face.

Moderator Guides. The focus group moderator guide is a critical tool for consistent and systematic information gathering. (A sample guide, focused on one type of respondent—parents of CHIP enrollees--appears in Table V.2. Draft guides for each type of focus group are included in an attachment to this report.) The moderator guides are designed to elicit both individual perspectives

Table V.2 Outline of Core Focus Group Moderators Guide for Parents of CHIP Enrollees, CHIPRA 10-State Evaluation

I. Outreach

- How did you first hear about CHIP?
- What were your initial thoughts or perceptions about the program and what it might provide for you and your children?

II. Eligibility Determination and Renewal

- How did you enroll in CHIP? (For example, fill out an application, visit a county eligibility office, apply online, and so on.)
- How did you find the CHIP eligibility/enrollment process? Was it easy and/or convenient? Was it difficult? Why? How?
- Did you receive any help in completing enrollment in CHIP?
- How did you find the CHIP renewal process? Was it easy? Was it difficult? Why? How?

III. Cost Sharing

- Do you pay monthly premiums or copayments for services under CHIP?
- What do you think about paying premiums and copayments? Is it fair, in your opinion?
- Would you be willing to pay higher premiums in order to retain your coverage?
- Are premiums large enough to ever discourage you from enrolling (or renewing coverage for) your children?Are copayments large enough to ever discourage you from obtaining care for your children?
- Has your child's coverage ever lapsed because you haven't been able to pay CHIP premiums?
- Are you aware that there is a 5 percent cost sharing limit for families? Has your family ever reached this limit? How do you keep track of how much you have spent?

IV. Benefits and Access to Care

- What do you think of the benefits covered by CHIP? Do they meet the needs of your children? Have your children ever needed a service that was not covered by CHIP?
- What do you think of your choice of primary care providers under CHIP? Is your child's doctor close and convenient? How easy has it been to find a doctor?
- What about dentists? Did you have a good array of choices of a dental care provider for your child? And is the dentist you chose close and convenient for you to use? How easy has it been to find a dentist?
- Have you ever had difficulty accessing services for your child under CHIP? What kinds of services? Why was it difficult? (For example, was it hard to get a timely appointment? Were there no providers of the type you needed? Was transportation a problem? Other reasons?)
- Do you believe your children are receiving high quality care under CHIP?

V. Overall Impacts on Daily Life

- What do you think about CHIP, overall? What benefits (if any) do you see from having your children covered for health care?
- How do you feel, knowing your child has health insurance?
- What do you feel are the strongest features of CHIP? What are the weakest?
- What changes to CHIP would you like to see in the future?

and an enriched understanding based on group dynamics. They include questions that explore such critical issues as the following.

- **Outreach.** How did parents first hear about CHIP and what were their initial perceptions about what the program could do for their children? For parents of eligible but uninsured children, have they ever heard of CHIP, and if so, have they ever tried to enroll their children in it?

- **Enrollment.** What did parents think about the enrollment and renewal processes (for CHIP and employer-sponsored insurance, as applicable)? Were they simple and convenient or difficult and challenging? Why?

- **Cost Sharing.** What do parents think about the cost sharing imposed by CHIP programs? Are the costs so high that they discourage enrollment (in the case of premiums) or service use (in the case of copayment)? Have overall out-of-pocket expenses been significant enough to discourage renewal of coverage or do parents think that cost-sharing levels are fair and affordable? Are parents of CHIP enrollees aware there is a 5 percent cost sharing limit? If so, how do parents keep track of their spending? For parents of uninsured children, how affordable is health care for them? For parents of children with employer-sponsored insurance, do they pay premiums and/or copayments, and if so, do these payments seem affordable and fair?
- **Access to Care.** What do parents think about their choices of primary care providers and dentists? Have they found providers who are close and convenient? Do they perceive that their children are receiving high-quality medical and dental care? Are some services still difficult to obtain and, if so, which ones and why?
- **Overall Impacts on Daily Life.** What do they think about CHIP overall? What benefits do they perceive from having their children covered for health services? What are the strongest features of CHIP and what are the weakest? What changes to CHIP would they suggest for policymakers? For parents of uninsured children and CHIP disenrollees, would they be interested in signing up for a program like CHIP?

Recruitment. Eight participants is the optimal number for a focus group, but to ensure adequate participation, we will recruit approximately 12 individuals per group. Recruitment strategies will vary based on the different types of groups proposed, but we plan to enlist the help of community-based organizations and providers, child health advocates, policy groups, and/or health plans to gain access to potential participants in many of our groups. For other populations, we will rely on enrollment and disenrollment files of appropriate state or county social services agencies. We describe our recruitment approaches in more detail below.

One proven approach to recruitment that we have often used to good effect enlists the help of local providers and community-based agencies as "partners" in recruitment. Specifically, this approach entails developing a series of recruitment materials (for example, flyers announcing the group, recruitment "scripts" that describe the purpose and process of the focus group, and sign-up sheets), and asking local agencies or providers if they would be willing to recruit focus group participants from among their clients. If they agree to help, administrative staff will use our recruitment materials to either directly recruit from clients they are serving during their routine course of business or telephone potential participants from a roster of clients. We instruct administrative staff to emphasize to clients that participation is entirely voluntary. To help with recruitment, we will offer incentives (for example, $50 cash or a gift card of equivalent value) and also inform parents that light refreshments and child care will be provided during the groups. An added benefit of this approach to recruitment is that local providers such as Federally Qualified Health Centers are often willing to offer their conference or meeting rooms free of charge for focus groups. We believe that this approach to recruitment is both effective and efficient for most of our groups, in particular enrollees, eligibles but not enrolled, non-English speakers and members of racial/ethnic minorities, and parents of children with special health care needs.

An alternative recruitment approach will be needed for the other populations of interest: disenrollees, newly eligibles, and low-income families with ESI. For disenrollees, we will request enrollment and disenrollment files from state or county eligibility agencies and then sample a pool of potential participants from these rolls. Research staff will telephone these families directly and recruit them for the groups using a script similar to that employed for the other groups. For families with ESI, we will need to develop a special recruitment strategy that could, for example, sample families from the largest health plan operating in a local jurisdiction, thus giving us access to families with a range of private policies. Alternately, we could decide to sample from a prominent employer or two in the locality that provides coverage to its low-income employees, thus permitting us access to families that would represent a significant portion of the low-income ESI population. Once again, in these scenarios, research staff will work with the health plans or employers to develop a sampling frame for potential participants, then telephone the families directly to solicit participation in our focus groups. We will work with our federal project officers to discuss alternative approaches and finalize our recruitment plans.

Conducting the Focus Groups. All focus groups will be scheduled for 1.5 to 2 hours and will be facilitated by a senior member of the evaluation team.[6] Written informed consent will be obtained from all participants prior to the start of the focus groups. Moderators will be supported by research staff who will take extensive notes during the proceedings and digitally record the sessions. During these discussions with parents and/or family members, we will ask about enrollment processes, barriers to enrollment and retention, impressions of cost-sharing responsibilities, access to and quality of care, and awareness and impact of outreach. As previously described, moderator guides will be tailored to probe into specific issues relevant to each subgroup. For example, focus groups with families of children with special health care needs will home in on access and quality of care questions, particularly whether the scope of services available through CHIP is adequate to meet their children's needs. Similarly, groups held with non-English-speaking families will consider the accessibility of program materials and the transparency of enrollment processes. Focus group recordings will be transcribed verbatim and, along with notes taken during the groups, will be analyzed and used to support and further illustrate findings from the case studies and quantitative data analysis.

D. Analysis

This section describes our plans for analyzing the various sources of qualitative data we will collect, including background materials, data obtained through site visits, and information from focus groups. Analysis and synthesis of these rich sources of data will be aided by our use of standardized coding schemes and ATLAS.ti software. The analysis will address a broad range of evaluation questions regarding program design, implementation, and effects of the program on intermediate outcomes.

The case studies will draw on data from background materials, site visits, and focus groups to construct a comprehensive assessment of each state's CHIP program. Additional cross-cutting analyses will explore similarities and differences in the findings from these same data sources across the states. The analysis of case study data in preparation for report writing will involve a series of systematic steps to ensure our interpretation of findings is accurate and comprehensive.

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[6] Focus groups in the states led by Urban will be facilitated by the case study task leader or, for Spanish-speaking groups, another Urban researcher who is fluent in Spanish and English. The focus groups in states led by Mathematica will be facilitated by a senior survey researcher who is fluent in Spanish and English and who has been involved in several previous evaluations of child coverage programs.

We plan to use ATLAS.ti, a software program designed to facilitate the analysis of qualitative data. The software will make it easier to organize the large amounts of information we expect to gather from the different case study data sources so that common themes and contrasting points of view can be identified and analyzed more readily. The primary structure for the coding scheme will build on the interview protocol for the site visits and on the moderator guides for the focus groups, along with the research questions the findings will inform.

For the site visits, the process will begin with a review of the clean version of the notes from the first two site visits. A senior team member will construct a list of the topics and themes we would want to capture with codes; other team members will review this list and add to it as appropriate. In addition to coding topic areas and the content of responses, the coding scheme will include codes for different types of informants. When the team comes to a consensus about the coding scheme, two trained analysts will code the site visit notes. A senior team member will review the first set of coded notes for quality and consistency across the two coders. Inconsistencies in the coding will be discussed and resolved before the analysts code the notes for the remaining site visits. The basic elements of this initial coding scheme likely will be applicable to interview notes collected in subsequent site visits in other states. However, as each state is unique, we will revisit the basic coding scheme as needed to add state-specific codes.

We will use a similar process to code the notes from the focus groups, using the moderator guides as the basic structure for the coding scheme and adding codes as appropriate to capture important themes and categories of perspectives. We will create theme tables for each state, categorizing findings across the different focus groups conducted in that state; this will allow us to compare and contrast results across the different types of groups within each state. To ensure the coding is completed within the demanding timeline for the case studies, and because the content of the site visit and focus group material will largely be distinct from one another, we will have separate teams code the notes from the site visits and the focus groups. When the coding process is complete, we will use ATLAS.ti to sort and query the data by topic or theme so we can identify commonalities and points of dissent across different types of interview respondents.

While the coding process will facilitate the analysis for individual case study reports, it will also help immensely in the cross-cutting analyses. The volume of information across 10 states will be enormous; ATLAS.ti will greatly facilitate searching for key words and themes, and enable grouping portions of text to allow for comparisons across states, groups of states, and regions. Using output reports generated from ATLAS.ti, we will organize findings by theme and develop matrices that will facilitate the synthesizing and summarizing of evidence gathered from the key informant interviews and focus groups. This will help in developing cross-cutting reports that illuminate commonalities and differences within the key research areas across states, program types, and types of informants.

E. Challenges and Limitations

Qualitative methods of data collection provide textured and nuanced findings that other research methods are unable to capture, however, certain challenges are inherent to this method of inquiry. Most notably, sample size is a limitation that will impact the generalizability of the evidence gathered through interviews and focus groups. By their nature, key informant interviews and focus groups obtain information from a relatively small number of individuals and thus cannot be presumed to be representative of the entire population of interest. For key informant interviews, we will work closely with well-known contacts at the state and local level to identify persons and organizations that hold the greatest promise for providing us with exposure to a broad and representative group of stakeholders. But as we will be limited to conducting only 20 to 30 interviews, we may inadvertently miss important individuals and/or perspectives. In addition, with regard to the focus groups, because we will rely on the assistance of community-based organizations and providers in recruiting our participants, the parents with whom we speak might disproportionately include those who are more active users of community service systems; thus, again, they may not be representative of families as a whole. Still, our qualitative approach will allow us to obtain a broad picture of the CHIPRA design, implementation, and impacts on families across each state and in selected localities. Through cross-cutting analysis of these efforts, the research team will identify common themes with regard to program implementation and perceived effects, and synthesize the data in as useful and generalizable a manner as possible.

VI. SURVEY OF STATE PROGRAM ADMINISTRATORS

To supplement the intensive assessment of program experiences in the 10 case study states, we will conduct a census survey of CHIP program administrators in all 50 states and the District of Columbia.[7] This telephone survey will complement other aspects of the qualitative analysis by providing a larger context within which to interpret findings from the case studies. Going beyond facts and basic descriptive information, it will gather insights about program accomplishments and setbacks to date, changes since the last CHIP national evaluation, and pressing new issues requiring attention in the future. To some extent, the survey will also provide a sense of how findings from the case study states might be generalized to the nation as a whole.

A. Instrument Content and Development

We will design the survey instrument as a tool for collecting information consistently while also allowing for nuances within each state's program. Our approach will also make use of available state-produced documents, other research reports, and skilled research staff to conduct semi-structured interviews, recognizing that state CHIP administrators are busy and, since CHIP's inception, have already responded to many other requests for program information. As specified in the RFP, we plan to conduct one interview per program (although we anticipate that more than one state representative may be present during the interview in some states) and will ensure that the instrument can be administered within a reasonable amount of time.

The survey will follow the case studies; therefore, survey instrument development will benefit from insights drawn from the site visits and focus groups. As with the survey of enrollees and disenrollees, we will incorporate those components of the instrument for the previous survey of program administrators that are still relevant. Topics from the original survey that will be updated for the current survey include:

- **Outreach.** Confirmation of types and timing of outreach activities, outreach targeted at special populations, joint outreach with Medicaid, effective and ineffective strategies
- **Enrollment and Retention.** Enrollment trends overall and in subpopulations, changes in enrollment and redetermination processes as a result of CHIPRA, eligibility and renewal processes under CHIPRA, role of media and community-based organizations in enrollment, differences in enrollment between CHIP and Medicaid, facilitators and barriers to enrollment and retention, practices that facilitate retention and prevent disenrollment
- **Benefit Package Design.** Benefit package under CHIP, changes in the benefit package due to CHIPRA or for any other reason, strengths and weaknesses of the benefit package, key differences in the CHIP benefit package compared to Medicaid and private insurance, overall impressions of whether benefits meet the needs of enrolled children

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[7] Depending on the timing of the survey, it may not be advisable to conduct interviews with program administrators in the 10 case study states. The current schedule has the survey of program administrators being conducted within less than a year from the timing of the case studies. In the previous evaluation there was more time between the case studies and the program administrator survey. We will discuss this issue with ASPE in the near future.

- **Service Delivery and Payment Arrangements.** Confirm brief description of the state's delivery and payment systems, primary differences between CHIP and Medicaid delivery and payment systems, changes in number or array of health plans over time, quality improvement initiatives for CHIP service delivery care coordination or medical home features implemented
- **Cost Sharing.** Cost sharing policy changes in recent years; debates surrounding these changes (if any); effect (if applicable) of cost sharing on utilization, enrollment, and coverage retention/disenrollment
- **Crowd-Out.** Confirm whether crowd-out is a concern, strategies to deter this phenomenon, changes in these policies over time, current debates surrounding crowd-out versus when CHIP was first being formulated, determination of how states monitor crowd-out, opinion on whether and how CHIP has affected private insurance markets
- **Family Coverage.** Confirm whether state extends CHIP coverage to parents of enrolled children; impetus for family coverage in states where it exists; experiences implementing family coverage (strategies, facilitators, barriers); monitoring effects of family coverage on enrollment of children or use of services by children
- **Future Plans and Issues.** Recommendations for improving CHIP, and how the state is preparing for health reform implementation.

Additional topics will include:

- **Employer Subsidy Efforts.** Decision to subsidize employer-based coverage under CHIP; experiences with implementation of subsidies (if applicable); strengths, weaknesses, and impact of incorporating employer subsidy arrangements into CHIP
- **Financing.** Size of state's federal CHIP allocation, views on funding adequacy, current aggregate spending to date; effects of limited/uncertain funding in recent years on state policies (e.g., need to freeze enrollment, institution of waiting list, tightening of eligibility requirements, cut provider payments, etc.); primary sources of state funding; current state budget picture; effect of CHIPRA and PPACA passage on funding debates in state.
- **Coordination.** How states coordinate CHIP, Medicaid, and private insurance programs (especially for mixed-coverage families); how coordination (or its lack) between Medicaid and CHIP affect the enrollment of children in both programs
- **Quality of Care.** Whether states are pursuing quality improvements in CHIP service delivery; if so, scope and progress of these efforts; what quality assurance monitoring, of plans and/or providers, is conducted; whether states are using financial incentives, such as pay for performance, to improve care quality and how that is working to date; whether states have pursued care coordination or medical homes features and experiences to date with those approaches
- **Changes Since the Last National Evaluation.** Nature of and rationale for any changes in program design not already discussed, effects of key provisions of CHIPRA and health reform legislation, effects of the economic recession and how states have modified their programs in response to budgetary constraints

As with the other survey components, the survey of program administrators will require OMB clearance prior to implementation (this survey will be cleared through OMB Package #2). To estimate respondent burden and identify clarifications that may be needed in the survey instrument, we will pilot the instrument in three non-case study states (so that we do not need to be concerned with the timing of this instrument versus the timing of the case studies). Ideally, we would test the instrument in one state with a Medicaid expansion program, one with a state-only program, and one with a combination program. The materials included in the OMB submission will incorporate any revisions to the instruments and approach that arise from the pilot test experience.

B. Data Collection Approach

After receiving confirmation from the TOO that we are cleared for data collection, a team of experienced research analysts will conduct the telephone interviews. We will hold a training session before fielding the survey to ensure that everyone understands the protocol and is prepared to address different state circumstances and issues that may arise during the interviews. Training will also give team members involved in this activity a common understanding of their roles and responsibilities.

Before implementing the survey, we plan to gather and review available background information to tailor the instrument for each state and develop a brief fact sheet to reference during the interview. Fact sheet development will leverage background research conducted as part of Task 801 (Analysis of CARTS and SEDS Data). As discussed in Chapter VIII, Section A, by July 2011, we will conduct an extensive analysis of state annual reports and state plans to prepare summary tables on all states as well as more detailed descriptions of the 10 study states. The case studies will make use of this background material and augment information for these 10 states as appropriate. Subsequently, we will draw on these background materials for the development of fact sheets for the survey of program administrators.

Fact sheets will include information on the following program features:

- **State Context.** Percentage of low-income children uninsured (trends over time); Medicaid eligibility policy; financing (federal allotment and matching percentage, state funding level and source of state funds)
- **Program Design.** State plan submissions and amendments; general characterization of state approach to CHIP (including Medicaid or CHIP waivers employed); eligibility policies; outreach approaches (methods employed, timing of campaigns); benefit design and delivery system (provider networks, payment policies, similarities and differences compared to Medicaid, premiums and cost sharing)
- **Enrollment and Disenrollment.** Estimated number of eligible children, number enrolled to date

We will also review state-specific findings from the previous evaluation as a reference for the current survey of program administrators. This step will help ensure that the questions directed to program administrators are appropriate and the interview time is used productively. We will take the same approach as we did for the case study visits and use a common template for extracting information as well as, to the extent possible, using existing summary tables of state characteristics and program features.

Less than a week before initiating the telephone survey of program administrators, we will mail a letter to each state CHIP administrator, possibly co-signed by the ASPE project officer and the Mathematica project director, which provides a brief overview of the evaluation and explains the purpose and general topic areas for the telephone interviews. The letter will also explain the time commitment involved and how information from the survey will be used. Sending a letter prior to a telephone survey is a standard way to increase response rates and is one of the strategies we will use to achieve a high participation rate. Roughly one week after we mail the letter, we will contact the state CHIP administrators to schedule interviews. In some states, we anticipate needing to make several calls to one or more people before finalizing a schedule.

The lead interviewer will be joined by an analyst, who will take notes during the call. The interviews will last approximately one hour each (a range of 45 to 90 minutes). After the call, the interviewer and note-taker will clean the notes, which will serve as textual data for analysis. Notes will be saved on a secure LAN file. (Due to time and budgetary restrictions, verbatim transcripts will not be used. Detailed notes proved to be sufficient data sources in the previous CHIP evaluation.) In cases where a telephone interview cannot be scheduled, we will make arrangements for the survey to be completed in another mode, such as email or a mailed questionnaire.

C. Analysis

Analysis of data from the telephone survey of state program administrators will identify important state-specific contextual information; CHIP implementation experiences, changes, challenges, and successes; and program administrators' views on CHIPRA and health reform.

We will organize and synthesize survey findings in a manner similar to the methods described above for case study and focus group data. We expect that the coding scheme for the survey of the 50 states and the District of Columbia will be largely the same as that used for the site visits, because the two components will be designed to be complementary. After cleaning each set of survey notes, we will import the data into ATLAS.ti and apply our standardized coding scheme to the notes. We also will use ATLAS.ti to group findings by theme.

When data collection from all of the state surveys is complete, we will use ATLAS.ti to compile and examine cross-cutting themes. Given the large amount of data we will collect through the surveys, ATLAS.ti will greatly facilitate searching for key words and themes and grouping portions of text to allow for comparisons across states, groups of states, and regions. Using output reports generated from ATLAS.ti, we will assemble state matrices or theme tables for all 50 states and the District of Columbia. Some of these tables will capture more descriptive or factual information, such as specific population groups targeted by special outreach efforts and cost-sharing elements of state programs. Other tables will capture insights or perspectives on, for example, the reasoning behind state decisions and important factors influencing the direction the program is likely to take in the future. These tables will form the foundation for writing the draft and final reports on the survey results.

We will provide the TOO with a draft report of the findings by week 100, as requested in the RFP. The report will address CHIP program features, with an emphasis on the accomplishments of state programs to date, challenges and barriers states have faced, and programmatic and contextual changes since the first national evaluation. After incorporating comments from the TOO, the final report will be delivered by week 120.

D. Challenges and Limitations

We anticipate several challenges in undertaking the survey of program administrators, but will draw on our experience in performing the first evaluation to minimize them. For instance, while we anticipate that most administrators will be responsive to our efforts to contact them, the process of scheduling interviews with these very busy individuals will be time-consuming and logistically complex. To mitigate this challenge, we will use a systematic protocol for contacting administrators and tracking contacts and follow-up attempts. In addition, we will use a centralized calendar to ensure that schedulers have the most up-to-date information on interviews currently scheduled versus yet to be scheduled. Another challenge will be managing the sheer volume of data we collect through the stakeholder interviews. As noted earlier, we anticipate that ATLAS.ti will be a great help in sorting through the data to help researchers identify themes and compare results across states. Comparing information across states will pose challenges as well, due to variations in state approaches to CHIP implementation, service delivery models, financing, and other characteristics. The use of summary tables, as in the previous evaluation, will help researchers identify groups of states with similar characteristics that may be grouped together feasibly for the purpose of making comparisons.

We anticipate gathering a great deal of rich and nuanced information from state program administrators, who are intimately familiar with their state's approach to CHIP; nevertheless, state program administrators' perspectives necessarily are limited by their specific roles within the program. For this reason, a limitation of the survey of program administrators will be the lack of multiple viewpoints expressed during the interviews. However, other components of this evaluation, particularly the case studies, will complement the survey of program administrators by including perspectives from individuals with many different roles within CHIP. Analyzing findings across all of the components of this evaluation will provide a more holistic picture of CHIP implementation.

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VII. SURVEY OF ENROLLEES AND DISENROLLEES

A survey of parents or guardians of children currently and previously covered by CHIP and Medicaid will provide a detailed description of the characteristics of these children, their movement in and out of the programs, and their experiences accessing and using health care. Using specially trained telephone interviewers, we will administer a survey to parents and guardians of CHIP children (in 10 states) and Medicaid children (in 3 of the states) to understand their experiences navigating the application, enrollment, and renewal processes; the child's health status (measured along several dimensions); access to and use of health care services; experiences with the care process; provider communication and coordination of care; barriers and unmet needs; and the perceptions of parents and guardians of the value and quality of their child's health care. These data will be linked to child and family demographic characteristics, as well as to key program features measured in the qualitative components of the evaluation.

This chapter describes the survey, including the sample and instrument designs, the data collection approach, and core elements of the analysis. In each of these sections, we discuss the challenges we may confront and how we plan to minimize any problems or limitations associated with these challenges.

A. Sample Design

The target populations for the CHIP survey will be new enrollees, established enrollees, and recent disenrollees in 10 selected states, defined as follows:

- **New enrollees** include children who have been enrolled in CHIP for at least 60 days (two months), but less than 90 days (three months), at the time of sampling. In addition, the children must have been disenrolled for more than one month prior to their current new enrollment.
- **Established enrollees** include children who have been enrolled for five months or more at the time of sampling.
- **Recent disenrollees** include children who have been disenrolled from CHIP for at least 60 days (two months), but less than 90 days (three months), at the time of sampling. In addition, the children must have been previously enrolled for at least two months prior to their current disenrollment.

In addition, to be part of the target population, an individual must be age 18 or younger, in the case of the two enrollee domains, or age 19 or younger in the recent disenrollee domain. (Including 19-year-olds in the sample allows us to capture children who lost eligibility because of age restrictions.) We also require that the individual live in the selected state at the time of sampling.

The definition for each of the three sample domains is the same as the one used in the prior evaluation and, in each case, reflects a balance of sometimes competing considerations. For example, the new enrollee definition balances the need for a period sufficiently long to reflect a true period of coverage and a period sufficiently short for the respondent to successfully recall their experience prior to enrolling. In addition, by including new enrollees who return to CHIP after some kind of gap in coverage, we appropriately reflect the cross-section of children who enter CHIP, some of whom will have had prior public coverage experience and some of whom will have not. Likewise, the disenrollee definition balances having a period of disenrollment sufficiently long for a respondent to describe their coverage status after leaving CHIP and sufficiently short to successfully locate and interview a sizeable fraction of a domain that may be highly mobile. In addition, by including children who had coverage for as little as two months, the disenrollee definition reflects the fact that some children leave CHIP after quite short periods of coverage, though the vast majority remain enrolled for some time. As with the prior evaluation, exceptions may need to be applied to these definitions. For example, in the prior evaluation, the adoption of presumptive eligibility in New York led us to extend the definition of new enrollment from two to three months for cases sampled with a presumptive eligibility indicator. To the extent such exceptions arise in this study, they will be described in a subsequent memorandum that details the specific sampling criteria in each state, submitted after we have obtained and assessed each state's eligibility data.

One complication with the sample design that arose in the prior evaluation is that we had a sizeable fractions of interviews completed with respondents who reported start and end dates of coverage that were not at all close to what was shown in the administrative records. For two of the sample domains, new enrollees and disenrollees, such confusion greatly limits the value of the information provided. For example, when respondents of new enrollees fail to identify the child's new enrollment, they are unable to provide meaningful information about their pre-CHIP coverage or pre-CHIP experiences accessing and utilizing care. Likewise, when respondents of disenrollees fail to identify the child's disenrollment, they are unable to provide meaningful information on the factors that contributed to their disenrollment or their coverage or other experiences since they left the program. For these reasons, we plan to end the survey of new enrollees and recent disenrollees if the interviewer determines that the period of reported coverage is far different than what the administrative records show. (A subsequent memorandum will specify the decision rule that we will adopt for this termination, pending further survey piloting after OMB approval). For established enrollees, however, this disconnect is less problematic as the data reported on their recent access, use and other health care experiences still reflects their true period of coverage no matter what their self-reported coverage status. Indeed, dropping cases that show a disconnect between self-reported and actual (administrative) coverage periods would risk biasing the findings for established enrollees, as the sample ultimately interviewed in this domain would not accurately reflect the outcomes of the population that was actually covered by the program.

The disconnect between the self-reported CHIP coverage period and the period shown on the administrative files arose most often for two groups in the prior evaluation. The first are new CHIP enrollees that had either experienced a short gap in CHIP coverage or who had transferred from Medicaid, both of whom often reported a period of CHIP coverage far longer than indicated from the administrative records (presumably because they never recognized the transition to CHIP). The second are CHIP disenrollees that subsequently either returned to CHIP after a short gap in coverage or who had transferred to Medicaid, both of whom often reported never having disenrolled (again presumably because they never recognized the transition from CHIP). To minimize the need to drop either of these cases at the time of the interview, we anticipate greatly reducing the proportion of these cases that are actually sampled for the study in each state (and perhaps omitting them altogether). However, before we can commit to this sampling approach and apply a specific decision rule for cases to which this approach applies, we need to acquire each state's data and be sure we can identify these cases successfully. (This is particularly true of the cases reflecting transitions to and from Medicaid, which will require linking data from two entirely different eligibility systems). Thus, as with any exceptions we adopt for our sample domain definitions, the specific sampling rule we adopt for these cases will be shared in a subsequent memo, completed after we have had an opportunity to asses each state's data.

We define enrollment for each sample domain based on when we expect the parent would consider the child enrolled—a date that might differ from that on which the state actually began paying for services. For example, some states retroactively enroll children as of the first day of the month in which the parent applied for CHIP, but they might not determine the child to be eligible until one or more months after the application was received. As a result, the date services began to be covered by the state might be a month or more earlier than the date the parent is notified of the child's enrollment. In this instance, we would define enrollment from the date associated with the notification of coverage to the parent, as opposed to application date or the retroactive coverage date.

Sampling Frame. The sampling frame for a given domain is the population of enrollees and disenrollees in each state meeting the definition of the target population summarized above. This frame will be constructed for each state using data from its administrative files. Constructing the sample frame as quickly as possible will be essential for this survey, particularly with respect to the populations of new enrollees and recent disenrollees, for whom risks of recall bias and survey non-response increase with time.[8] One key step in assuring timely frame construction is receiving accurate administrative data from the states on a regular basis. In our discussions with the program and technical staff in each state, we will request delivery of data within two weeks of the specified data extract cutoff date.

Using information about the children and families that is contained on the sample frame, we will have the option of oversampling particular groups within each sample domain.[9] Examples of such information include the income level or eligibility classification of the household, the age of the child and the prior coverage of child – ideally in both CHIP and Medicaid. While oversampling can result in reduced precision for the full sample (due to design effects from weighting) it can have a couple of benefits that may outweigh these costs. First, it can result in a sample that is larger for relatively small but important subgroups, such as children in upper income households that may be subject to relatively high co-payments. Second, its converse (undersampling) can result in fewer cases that may offer marginal analytic value to the study, such as new CHIP enrollees with recent public coverage experience who (as noted above) will often not even be reported as having newly enrolled.

Given these benefits, we do anticipate using the administrative data to oversample children on the sample frame in at least some sample domains. However, a final decision on whether and how to conduct this sampling will need to wait until we have the actual eligibility files from the states and we can assess the quality and content of the available data elements on which such oversampling would take place. (For example, in order to consider any sampling based on transitions to or from Medicaid, we must know that we can reliably link the Medicaid and CHIP data in each state -- information that we will not have until the MOUs with states have been signed and the enrollment data made available). Once we have completed this assessment, we will submit to DHHS a memorandum detailing the exact sampling strategy for each of the three sample domains, including the numbers of cases to be sampled within each stratum defined for purposes of oversampling.

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[8] Delays in construction of the frame could necessitate extending the definition of the new enrollee and recent disenrollee sample domains to include longer periods on or off the program.

[9] A related option is to use data obtained from a screener at the start of the survey interview to overrepresent groups of particular analytic interest that cannot be identified from the frame, such as those with special health care needs. This approach can be valuable for obtaining precise measures for relatively small subgroups, particularly those defined by the child's health; however, it is also very costly, as the initial contact amounts to a screening interview that for some respondents (not meeting the criteria for oversampling) results in a non-completed survey. Thus, we do not expect to adopt this approach.

Sampling Approach. Our sampling approach will use an innovative version of the classic sub-sampling for non-response follow-up design. The advantages of this approach are that it minimizes data collection costs while maintaining the desired response rate. It has two independent components:

- **A multi-stage, clustered sample** will be interviewed by telephone, with face-to-face follow-up of unlocatable and nonresponding households.[10] Use of face-to-face (field) follow-up is more costly than telephone alone and requires the less efficient cluster-sampling approach, but it results in high response rates and improved population coverage. Without field follow-up of unlocatable and nonresponding households, we would miss some parents of CHIP children who belong to minority or other sub-groups, especially Hispanics, Native Americans, and African Americans (Cybulski et al. 1999).
- **A stratified, unclustered random sample** representing the same population as the clustered sample will be interviewed by telephone only. Besides reducing costs, the telephone-only sample design benefits from increased statistical efficiency associated with unclustered designs.

In both sampling components, we will draw and field up to two rounds of samples for each sample domain in each state, allowing two months between each sample draw.[11] This staged fielding will be particularly important in reducing the time between sample frame construction and the collection of survey data, since the fielding period will be as close as possible to the time when the administrative data are provided by the states and cleaned by Mathematica. In addition, for states with the smallest populations of CHIP enrollees, these multiple draws may be needed to ensure that sample sizes are sufficient for certain domains (most notably, recent disenrollees). We will draw these samples in such a way as to avoid sampling more than one child from the same household or sampling the same household for more than one draw.

Each sample draw will be derived from the universe that exists at the time of sampling but will take into account whether a household was in the sampling frame or in the sample of the prior draw(s). To speed up the sampling process and ensure timely fielding, we will request an advance test data file from each state to check the database and our sampling algorithms. In addition, our design assumes that the state will send the database of enrollees and disenrollees on two different occasions, each two months apart. On each occasion, we will classify the enrollees based upon month of initial enrollment, with disenrollees in a separate category, so as to create the enrollee domains for use in sampling. Then, we will determine how quickly each of the ten states can deliver enrollee data for a particular month and set the exact domain definitions.

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[10] Unlocatable households may be more accurately described as "households that cannot be located from the central office." This group also includes households without any type of telephone service. Households that cannot be located from the central office generally have current unlisted numbers that are not recorded in the CHIP enrollment files, or have numbers that have been changed to new numbers that cannot be determined. This is more likely to occur when the new number is a cell phone.

[11] For the prior CHIP survey, there were a total of 20 sample draws—two states with one draw; six states with two draws, and two states with three draws.

Some sample members may change (or at least report a change in) classification between the time of sampling and interview; for example, a recent disenrollee sample member may return to CHIP by the time of interview, effectively becoming a new enrollee. (This type of transition is most likely to occur when locating or face-to-face follow-up activities are required, extending the time between sampling and interview.) As with the prior CHIP survey, we will address these transitions by allowing sample members to respond on the basis of whatever domain they consider themselves to be in. Because our approach to analyzing the survey data may be affected by such transitions, we will identify them as part of the data and maintain a frequency count for them over the course of fielding the survey.

Multistage Clustered Sample Selection. For the clustered sampling component with face-to-face followup, the first step in sample selection will be defining primary sampling units (PSUs) for each state. These PSUs will be defined based upon ZIP codes or combinations of ZIP codes that provide a specified minimum number of enrollees and disenrollees. The same set of PSUs will be used for all sample draws. A composite size measure will be developed for each PSU in the frame that reflects the desired total state sample of new enrollees, established enrollees, and recent disenrollees (Folsom et al. 1987). We will select a total of 30 PSUs from each state, with probability proportional to this composite size measure and with minimal replacement using Chromy's (1979) sequential sampling procedure. In selecting the 30 sample PSUs from the frame of $N_1(h)$ PSUs in state h, Chromy's procedure partitions each state's $N_1(h)$ total PSUs into 30 zones of equal size, based upon the size measure $S(h,i,+)$. Exactly one PSU is selected from each zone. The zones are defined so that all pairs of PSUs have a chance of appearing together in the sample—a requirement for unbiased estimation of sampling variances. Using a controlled ordering of the PSUs, this zoned sequential selection makes possible an implicit stratification of PSUs that ensures they are as representative as possible of selected variables of interest. To ensure selection of both urban and rural PSUs and the distribution of the sample across each state, candidate variables for ordering the PSUs in the frame before sampling will include urbanicity and the geographic location of the PSU.

We will also use a composite size measure to ensure that the desired sample sizes are achieved for the domains of interest (new enrollees, established enrollees, and disenrollees). With this procedure, we will be assured of equal selection probabilities within states for children in each domain. The composite size measure will be defined as

$$(1) \qquad S(h,i,+) = \sum_j S(h,i,j) = \sum_{d=1}^{D} \sum_j f_d(h) C_d(h,i,j) ,$$

where $C_d(h,i,j)$ is the number of children in domain d of household j of PSU i from state h and $f_d(h)$ is the desired overall sampling rate for domain d in state h.

Prior to selection of households, as with the selection of PSUs, we will use a controlled ordering procedure of households within each PSU. Variables for ordering will be the sampling domains and, when available, the race of the children in the households. For each selection of the ith PSU from the hth state, we will select $n_2(h)$ households, with probability proportional to size. When multiple enrollee domains are present within a household, we will randomly determine the enrollee type to interview using differential probabilities based upon the desired state h sampling rates $f_d(h)$ for domain d. If multiple children are present in the sampled household for the selected enrollee domain, we will randomly designate one child to be interviewed. Using the composite size measure for each household will enable us to oversample households with multiple eligible children while ensuring that the selection probabilities are equal within enrollment domains, regardless of household size.

Stratified, Unclustered Sample Selection. For the unclustered, telephone-only sampling component, we will first sample households. To ensure representation throughout each state, we will explicitly stratify households by a geographic measure specific to that state. As with the clustered design, if the household includes children in two or more domains, we will randomly determine the domain for which a child will be selected and, finally, select the child within it. For households with multiple children eligible for interview, we will randomly select one for interview. Prior to sample selection, we will sort the households by the various combinations of enrollment domain(s) to which their eligible children belong (recent enrollee only, recent enrollee and established enrollee, recent enrollee and recent disenrollee, established enrollee only, and so forth). Then, within each combination, we will further sort the households to create an implicit stratification of households. Candidate variables to use will include race and ethnicity, metropolitan status, and geographic area.

Households will be selected with probability proportional to their composite size measures. For sampled households with multiple survey-eligible children, we will randomly sample one child for interview using the desired sub-sampling rates for the enrollee domains. This composite size measure approach will ensure that we achieve equal selection probabilities within each state for each enrollee domain, regardless of the household size. Similar to the approach used for the clustered sample, the selection process for the unclustered sample will prevent selection of the same household in multiple draws.

Weighting Procedures. For this survey, we will calculate sampling weights within each sample (clustered and unclustered) based upon the inverse of the probability of selection across all draws. Each eligible household has a probability of being selected for the clustered and unclustered sampling components, as each sample represents the full population. We will first calculate design-specific sampling weights for each component (clustered and unclustered), for each sample draw and state, using the product of the sampling weight of the household and the conditional sampling weight of the child, given that his or her household was selected. We will then combine the design-specific sampling weights across draws to create a single base sampling weight for each sampled child for each design for each state.

We will pursue households that were unlocatable by the central office only when they have been selected for the clustered sampling component, essentially having sub-sampled them for non-response follow-up. For the unclustered sampling component, we will consider households unlocatable by the central office as nonsampled nonrespondents. The following table shows how the different sample components are dealt with in the composite weights, to be used when combining both sample components.

Unclustered Sample (sampling weights sum to W)		Clustered Sample (sampling weights sum to W)	
Located by Central Office (sampling weights sum to A)	Unlocated by Central Office (sampling weights sum to W-A)	Located by Central Office (sampling weights sum to B)	Unlocated by Central Office (sampling weights sum to W-B)
- located -	- not pursued in field -	- located -	- pursued in field -
Composite weight C1 = sampling weight times (1-lambda)	Composite weight = 0	Composite weight C2 = sampling weight times lambda	Composite weight = sampling weight times (W – (C1+C2))/(W-B)
Represents locatable population		Represents locatable population	Represents unlocatable population

To compute a survey estimate, Est(Y), using information from both samples, one cannot simply combine the two samples without adjusting the weights, since the clustered and unclustered located samples represent the same target population. Separate estimates can be computed from each sample and combined using the equation

(1) $\text{Est}(Y) = \lambda\, Y(\text{clustered}) + (1 - \lambda)\, Y(\text{unclustered})$

where Y(clustered) is the survey estimate from the clustered sample, Y(unclustered) is the survey estimate from the unclustered sample, and λ is an arbitrary constant between 0 and 1. Any value of λ will result in an unbiased estimate of the survey estimate, but not necessarily an estimate with the minimum sampling variance. We used an approach that calculates a single lambda using sample sizes and design effects due to unequal weighting for the two samples. In particular, λ acts as a weighting factor, with more weight given to the larger sample, with the sample sizes adjusted by the design effect due to unequal weighting. The formula for λ is given by:

$$(5)\quad \lambda = \frac{n(clustered)/deff(clustered)}{n(clustered)/deff(clustered) + n(unclustered)/deff(unclustered)}$$

where n(clustered) and n(unclustered) are the sample sizes of the clustered and unclustered central office-located samples respectively, and deff(clustered) and deff(unclustered) are the design effects due to unequal weighting for the clustered and unclustered central office-located samples, respectively.

The clustered unlocated households are ratio adjusted so that they add up to the estimate of unlocatable households in the population, represented by themselves and the comparable households in the unclustered sample that were not pursued. This adjustment is comparable to that done for a standard subsample among nonrespondents.

The next step will be to implement within-state non-response adjustments among located households (or clustered cases that were not located despite field efforts) to account for non-response to eligibility screening and to the interview. First, we will conduct a non-response analysis to assess the response patterns for the samples, using data from the sampling frame, such as age and race of the sampled child, along with county-level information from the Area Resource File (ARF), such as the percentage of children living in households with family incomes under the poverty level, the percentage of households headed by females, and urbanicity. Based on the results, we will develop logistic regression models to compute response propensity scores to compensate for non-response. We will develop separate models for each sample component (clustered and unclustered), for each domain (recent enrollees, established enrollees, and recent disenrollees, as defined on the frame), and for each state. Finally, we will use the estimated population counts in each state and each domain to post-stratify within each state based on enrollment status at the time of sampling of the child. The final weight will consist of the product of the combined-draw base weight, the inverse of the response propensity score, and the post-stratification adjustment.

Response Rates. We will calculate weighted and unweighted response rates for this survey following the procedures outlined by the American Association for Public Opinion Research

(AAPOR, 2008).[12] When combining the unclustered and clustered samples, only the weighted response rates will be calculated, as the sampling weights and composite adjustments properly account for overlap between the two samples and for nonresponse subsampling as described in the weighting section above.

Based on our experience in previous studies with a similar sample design, we expect that about 90 percent of the sample in both the unclustered and clustered samples will be locatable by the central office, and that about 85 percent of these located cases will complete the interview. For those in the clustered sample and among the 10 percent not able to be located by the central office,[13] based on past experience we expect 65% to be ultimately located and to respond to the interview after field followup. Combining the various sample components, the cumulative response rate for the entire sample would be about 75 percent (77 percent for the central office located and 65% percent for those initially unlocated but pursued vigorously in the field).

Sample Allocation and Sample Sizes. To allocate the sample across the clustered and unclustered sampling components, we adapted the optimum allocation procedure described by Hansen and Hurwitz (1946) for mail surveys with telephone follow-up, where the optimum allocation yields the specified precision for minimum costs. Our application of this procedure suggested a sub-sampling rate of 50 percent for unlocatable households. To achieve this result, we will allocate 50 percent of the total completed interviews to the clustered sampling component and 50 percent to the unclustered, telephone-only component.

Although a proportional allocation of interviews across states would produce the smallest design effects, it would result in sample sizes that are too small in some states to generate sufficiently precise estimates. For this reason, we recommend using a common sample size in each state (of 500 survey completes in each domain, or 1,500 completes total; see below). The target sample size for the study will therefore be 15,000 completed interviews. Once the states have been chosen for the survey, we will work with ASPE to determine the exact allocations of completed interviews across the states and sample domains that best address research priorities.

To meet the target sample size, we will initially select an estimated 21,538 CHIP enrollees and recent disenrollees from the sample frame, calibrating their allocation to the clustered and unclustered sampling components so that the number of completed cases turns out roughly equal between the two components.[14] Because unlocatable households in the unclustered sample are considered non-subsampled nonrespondents, we expect that only 80 percent of these sampled children will be eligible. Allocation of 11,538 of the total selected from the sample frame to the unclustered sample and 10,000 to the clustered sample, then, will yield 19,230 eligibles—9,230 in the unclustered sample and 10,000 in the clustered sample. For each sampling component, we anticipate completing interviews with 65 percent of the total sample (including non-subampled unlocatables) by telephone and an additional 10 percent for the clustered sampling in person. This will yield 7,500 completed interviews under each sample component, resulting in a total of 15,000 completed interviews. All 7,500 interviews in the unclustered sample will be completed by telephone, while an approximate 6,500 in the clustered sample will be completed by telephone, with the additional 1,000 completed by field interviewers (most often by giving the respondent a cell phone to contact the telephone interviewer).

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[12] RR AAPOR = # of completed interviews / (# of sampled cases – estimated # of ineligible cases).

[13] As explained above, these cases represent the 10 percent unlocatable in the unclustered sample.

[14] For both components, a child will be deemed ineligible for the sample due to relocation out of the state or death. Because the time elapsed between frame construction and data collection will be short, the number of these children will be negligible. Hence, in the clustered sample, nearly all sampled children will be eligible for the study.

Precision. In order to examine the precision of the target sample size and distribution across the states, we first estimated the likely design effects associated with clustering and non-response adjustments, and the unequal weighting arising from the (equal) allocation of the sample sizes across states. Based on our experience fielding the prior survey, we looked at a range of possible design effects, and determined that a design effect of 1.5 would be reasonable for this exercise for analyses within states.[15] When pooling data across states, the design effect due to unequal weighting is 2.26, resulting in a design effect of 3.39. When making comparisons using subgroups, these design effects are slightly reduced when the cluster size is reduced.

Next, using these design effects, we analyzed the confidence interval (CI) half widths for a series of descriptive statistics, calculated for different combinations of states, domains and subgroups. In Table VII.1, we illustrate the findings from this analysis for the CHIP survey, focusing on three illustrative proportional outcomes having sample means: (1) 50 percent; (2) 25 percent (or, equivalently, 75 percent); and (3) 10 percent (or, again equivalently, 90 percent). In each row of the table, we display for each illustrative outcome the associated CI half width for a specified sample size and sample composition of interest.

The half-width estimates illustrated in Table VII.1 show that there is clearly sufficient precision for anticipated outcomes when pooled across states. This is true whether the outcomes focus on the full population or on subgroups. For example, for outcomes measured for a full sample domain of roughly 5,000 respondents (shown in row one of the table), the half widths are 2.6 percentage points for a 50 percent proportion, 2.2 points for a 25/75 percent proportion, and 1.5 points for a 10/90 percent proportion. Half widths naturally rise when focusing on subgroups. However, even for a 25 percent subgroup within a domain, the half widths for the illustrative outcomes are less than 5 percentage points.[16]

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[15] Based upon our experience in the previous iteration of this survey, we assumed an intracluster correlation coefficient of 0.03 and a design effect due to nonresponse adjustments of 1.32.

[16] Based on findings from the earlier study, a 25 percent subgroup approximates many of the focal subgroups for the evaluation, including children with elevated health care needs, children in low-education households, and children in Spanish-speaking households.

Table VII. 1. Confidence Interval (CI) Half Widths for Illustrative Outcomes Given Equal Allocation of the CHIP Sample Across States

	Estimated CI Half Widths for Illustrative Proportions (shown in percentage points)		
Sample Size [Composition]	$\overline{X} = 50\%$ (E.g., Had Recent Preventive Visit)	$\overline{X} = 25\%$ (or 75%) (E.g., Has Elevated Health Care Need)	$\overline{X} = 10\%$ (or 90%) (E.g., Has Unmet Dental Need)
10 States Pooled			
5,000 [full sample domain]	2.6	2.2	1.5
2,500 [50% domain subgroup]	3.5	3.0	2.1
1,250 [25% domain subgroup]	4.9	4.2	2.9
Single State			
500 [full sample domain]	5.4	4.6	3.2
250 [50% domain subgroup]	7.3	6.4	4.4

Note: The confidence interval half width is equal to the standard error of an outcome multiplied by the standard normal deviate used in a 95% confidence interval, 1.96. Standard errors have been adjusted to reflect the expected design effect under a compromise allocation of sample members to states (see text for details).

While the primary focus of the evaluation will be on outcomes and subgroups defined across states—an approach we adopted successfully for the prior study—we naturally plan to explore these outcomes at the state level as well. As seen in the lower rows of TableVII.1, precision falls when focusing on state-specific outcomes. For a full sample domain, the largest half width shown (for a proportion of 50 percent) is 5.4 percentage points. This number increases to 7.3 percentage points under a 50 percent subgroup.

An alternative to the planned equal allocation of sample members across states is proportional allocation, whereby the number of sample members in each state would be approximately proportional to the total population of CHIP recipients in that state. Under this scenario, weights across states are approximately equal, substantially reducing the design effects and improving precision when states are pooled. For example, the half width for a proportion of 50 percent decreases from 2.6 to 1.7 percentage points (not shown). However, proportional allocation can be expected to dramatically reduce the sample size for states with relatively small CHIP populations, substantially reducing precision of these states' statistics. For example, based on the ten states currently recommended for the evaluation, the half width for a relatively small state like Oregon is estimated to be over 12.4 percentage points for a proportion of 50 percent (not shown).

Another alternative to equal allocation is a compromise allocation, which applies an initial proportional allocation but then reallocates some of the sample members from large states to small states. The benefit of compromise allocation is that it can improve precision (relative to equal allocation) when pooling samples across states without precluding a sufficiently-powered analysis in small states. As an example of compromise allocation, Table VII.2 shows half widths given a maximum of approximately 800 sample members (per domain) in large states and 400 sample members in small states. Under this scenario, the design effect due to unequal weighting across states is again reduced, though less substantially, from 2.26 to 1.60. While the half widths for all specified sample sizes and compositions are below those estimated under equal allocation (shown in TableVII.1), the reduction is particularly evident for the subgroup of 25 percent. For example, the half width for a proportion of 50 percent declines by nearly one full percentage point, from 4.9 points under equal allocation (Table VII.1) to 4.0 points under compromise allocation (Table VII.2).

This gain does come at the cost of reduced precision for a small-state estimate, but the reduction is not severe. For example, the half width for a full-domain sample estimate in Oregon would increase from 5.4 percentage points under equal allocation (Table VII.1) to 6.0 points under compromise allocation (Table VII.2).

Table VII.2. Confidence Interval (CI) Half Widths for Illustrative Outcomes Given a Compromise Allocation of the CHIP Sample Across States

	Estimated CI Half Widths for Illustrative Proportions (shown in percentage points)		
Sample Size [Composition]	$\overline{X}=50\%$ (E.g., Had Recent Preventive Visit)	$\overline{X}=25\%$ (or 75%) (E.g., Has Elevated Health Care Need)	$\overline{X}=10\%$ (or 90%) (E.g., Has Unmet Dental Need)
10 States Pooled (CHIP Sample)			
5,000 [full sample domain]	2.1	1.9	1.3
2,500 [50% domain subgroup]	2.9	2.5	1.8
1,250 [25% domain subgroup]	4.0	3.5	2.4
Individual State			
800 [domain in larger state; e.g. CA]	4.2	3.7	2.5
400 [domain in smaller state; e.g. OR]	6.0	5.2	3.6

Note: The confidence interval half width is equal to the standard error of an outcome multiplied by the standard normal deviate used in a 95% confidence interval, 1.96. Standard errors have been adjusted to reflect the expected design effect under a compromise allocation of sample members to states (see text for details).

Finally, to assess the available precision when comparing outcomes among samples (for example, between new and established enrollees) or among sub-groups (for example, defined by race and ethnicity or other demographics), we estimated minimum detectable differences, or "MDDs," for alternative sample sizes. We calculated all MDDs with powers of 80 percent for two-tailed tests of significance with 95 percent confidence.

Table VII.3 shows MDDs for comparisons of two sample domains for a pair of illustrative proportions under an equal allocation per state. When pooling the 10 states' data and comparing outcomes between two full sample domains (top panel; row one), we have sufficient statistical power to detect differences of 5.2 percentage points for a proportion of 50 percent and differences of 4.5 percentage points for a proportion of 25 (or 75) percent. These differences are relatively modest—both equivalent to effect sizes of just over 10 percent (not shown), which is commonly considered "small" in social science research (Cohen 1988). MDDs naturally increase for comparisons of subgroups, but they remain around levels that can detect meaningful differences at desired power. For example, for a comparison between domains for a 50 percent subgroup (top panel; row two), the MDD on a 50 percent proportion is 7.1 percentage points, again equivalent to a "small" effect size. Perhaps not surprisingly, comparisons between domains or other subgroups within a single state have relatively weak statistical power. For example, a comparison of two domains within a state (top panel; row four) has an MDD of 10.9 percentage points on a 50 percent proportion—a large jump even from the sub-group comparisons across states. We assume that the study of such within-state differences will be a relatively low priority for this study, as it was for the prior CHIP evaluation.

Table VII.3. Minimum Detectable Differences (MDDs) for Illustrative Outcomes Given Equal Allocation of the CHIP Sample Across States

	Estimated MDDs for Illustrative Proportions (shown in percentage points)	
Sample Size [Comparison/Composition]	$\overline{X}$ =50% (E.g., Had Recent Preventive Visit)	$\overline{X}$ =25% (or 75%) (E.g., Has Elevated Health Care Need)
Comparisons of two domains with equal (1:1) sample sizes		
Ten States Pooled		
5,000 : 5,000 [full domain vs. full domain]	5.2	4.5
2,500 : 2,500 [50% subgroup comparison]	7.1	6.1
1,250 : 1,250 [25% subgroup comparison]	9.9	8.5
Single State		
500 : 500 [full domain vs. full domain]	10.9	9.4
250 : 250 [50% subgroup comparison]	14.8	12.8
Comparison of two domains with unequal (2:1) sample sizes		
Ten States Pooled		
5,000 : 2,500 [full domain vs. half domain]	6.3	5.5
2,500 : 1,250 [50% subgroup comparison]	8.6	7.5
1,250 : 625 [25% subgroup comparison]	12.1	10.5
Single State		
500 : 250 [full domain vs. half domain]	20.0	17.3
250 : 125 [50% subgroup comparison]	28.3	24.5

Note: The MDD is equal to the smallest difference between two samples that can be detected for a specified level of power and statistical significance. (We calculated the MDD above under standard assumptions of 80% power and 95% statistical significance, two-tailed test). Standard errors for calculating the MDD have been adjusted to reflect design effect that we expect for the different sample compositions shown, based on the results from the prior CHIP survey (see text for details).

For certain comparisons, we anticipate that we may not be able to have an unequal number of sample members in the two domains. This is particularly likely in the case of the comparison of established and new enrollees in support of the impact analysis, where a sizeable fraction (perhaps half) of the new enrollee domain may have to be excluded because it serves as a poor counterfactual.[17]. Naturally the MDDs rise appreciably under such a comparison. For example, for sample comparisons involving the full sample domain (row one of each panel), the MDDs rise roughly one percentage point. Perhaps more notably, comparisons within states are no longer meaningful, since only very large differences can be detected with appropriate power. For example, for a proportion of 50 percent, the MDD under the "unequal comparison" rises to 20 percentage points -- far too large to support a credible analysis.

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[17] For this analysis, the reported outcomes of new enrollees prior to CHIP coverage will serve as the counterfactual for the reported outcomes of established enrollees during coverage. However, because CHIP children cannot be eligible for Medicaid at the same time, the counterfactual must exclude new enrollees who report Medicaid coverage prior to enrolling in CHIP. Conservatively, we estimate that this exclusion could lead to loss of half the new enrollee sample for purposes of this analysis, resulting in a sample size ratio of 2:1 between established enrollee and new enrollee domains.

Table VII.4 shows an equivalent set of 10-state comparisons as Table VII.3 given the compromise allocation discussed above. As with the half width estimates, the MDDs improve with this approach compared with equal allocation. For example, for a proportion of 50 percent, the MDD declines by roughly a full percentage point, from 5.2 points (Table VII.3) to 4.3 points (Table VII.4) given a comparison of two full domains (5,000 : 5,000) and from 6.3 points (Table VII.3) to 5.3 points (Table VII.4) given a comparison of a full and half domain (5,000 : 2,500). This difference becomes even larger for subgroups; for example, the decline for this same proportion given a 25 percent subgroup is close to two points, from 9.9 points to 8.2 points for a comparison of two full domains. The tradeoff with compromise allocation is again the loss of detection power for smaller states -- which were already marginally sufficient at best in the case of equal allocation. For example, for smaller state in which we have just 400 sample members, the MDD for a comparison of two full domains with a proportion of 50 percent is 11.7 points, arguably too large for a meaningful test of differences in outcomes, but not much worse than that given with an equal allocation (10.9 points, as shown in Table VII.1).

Table VII.4. Minimum Detectable Differences (MDDs) for Illustrative Outcomes Given a Compromise Allocation of the CHIP Sample Across States

	Estimated MDDs for Illustrative Proportions (shown in percentage points)	
Sample Size Comparison and Composition	$\overline{X} = 50\%$ (E.g., Had Recent Preventive Visit)	$\overline{X} = 75\%$ (or 25%) (E.g., Has Elevated Health Care Need)
Comparisons of two domains with equal (1:1) sample sizes		
Ten States Pooled		
5,000 : 5,000 [full domain vs. full domain]	4.3	3.8
2,500 : 2,500 [50% subgroup comparison]	5.9	5.1
1,250 : 1,250 [25% subgroup comparison]	8.2	7.1
Comparisons of two domains with unequal (2:1) sample sizes		
Ten States Pooled		
5,000 : 2,500 [full domain vs. half domain]	5.3	4.6
2,500 : 1,250 [50% subgroup comparison]	7.3	6.3
1,250 : 625 [25% subgroup comparison]	10.1	8.7

Note: The MDD is equal to the smallest difference between two samples that can be detected for a specified level of power and statistical significance. (We calculated the MDD above under standard assumptions of 80% power and 95% statistical significance, two-tailed test). Standard errors for calculating the MDD have been adjusted to reflect design effect that we expect for the different sample compositions shown, based on the results from the prior CHIP survey (see text for details).

B. Instrument Content and Design

1. Substantive Content of the Instrument

The survey instrument is designed to capture data on outcomes in the following areas: (1) application and enrollment; (2) access, use, content of care and satisfaction; (3) program retention, renewal and disenrollment; and (4) relationship between CHIP and other coverage. Additional sections obtain data on various characteristics of children and their families that will be used to support a range of descriptive and multivariate analyses, including age, income, language, and other demographic and socioeconomic characteristics; health status and chronic conditions; and parental attitudes about the efficacy of health care. Separate modules will be developed for the three types of sample members (new and established enrollees, and disenrollees). The concepts covered will be largely the same across the different modules but the reference time period will depend on the enrollment or disenrollment status of the child at the time of sampling. The amount of time required to complete the survey will be 30 to 40 minutes. Key issues addressed in the survey will include:

- **Application and Enrollment**. We will ask how families learned about the program, their experiences applying and enrolling, and, as applicable, their experiences with the renewal and disenrollment processes. Questions will cover failed application attempts; mode of application; problems encountered in applying to the program, such as supplying the required documentation; language and other types of assistance provided during the application process; waiting periods; notification of impending program status changes; and the relationship to the child of the person who applied for the program.
- **Access, Use, Content of Care, and Satisfaction**. This section will focus on experiences accessing and using health services, including questions about receipt of specific types of services (such as well-child visits, emergency room visits, dental visits, prescription drugs, and so on), whether care was delayed or they did not receive a service they thought they needed, and the reasons why this happened. Expanding on the prior survey, we plan to include a new emphasis on process and outcome measures, particularly for children with asthma, and more detail on the content of care. While the final content has not been decided, we hope to explore whether families receive anticipatory guidance on, for example, diet and exercise, and whether the child receives recommended screenings and preventive care, including flu shots. Additional questions will ask about the child's usual source of care for medical and dental care and the caregivers' experiences and satisfaction with this care. Patient-centered medical home concepts will be explored, including how providers communicate with families and how care is coordinated across different settings. Access issues explored will include experiences finding a provider and obtaining timely appointments, travel times and office hours (general and dental), whether needed services are adequately covered, and the financial burdens families face in meeting the child's health care needs.
- **Program Retention, Renewal, and Disenrollment**. Questions in this section will address awareness of program renewal requirements, and experiences with the renewal process. We will explore why children remain enrolled or become disenrolled from the program and their coverage experience following CHIP.
- **Health Insurance Coverage**. This section of the survey will examine coverage transitions and assess the extent to which CHIP appears to be displacing employer coverage ("crowd-out"). We hope to expand the previous evaluation's analyses and estimates by drilling down by income group and by taking into account the availability and affordability/generosity of dependent coverage through employer-sponsored insurance (ESI). We will also explore how the costs and benefit packages of employer plans compare with CHIP in light of ACA's provisions regarding interactions between employer coverage and CHIP. In addition, we will examine how the transitions between public coverage, private coverage, and uninsurance, as well as crowd-out estimates, vary across states and, to the extent possible, we will explore the association between state-specific CHIP policy choices and these outcomes.
- **Child and Family Characteristics, Including Child Health.** Questions in this section will target the characteristics of covered children and their families, such as age, race and ethnicity, gender, primary language, household income, family structure, parental

employment and coverage status, among others. Questions about the health of the child will assess the presence of special health care needs and chronic health conditions, including asthma and behavioral health conditions, and whether the child is limited in any way because of health conditions. Parent attitudes toward health and health care will cover questions related to the importance of being covered by health insurance, attitude toward risk-taking behaviors, current health status of respondent, and the importance of regular checkups.

The survey instrument from the first ASPE-sponsored CHIP evaluation is the foundation for the new instrument. We modified prior questions to improve wording as needed and added questions to address new topics of interest, using other validated survey questions on child health and coverage as the first source for any new questions. For example, questions about the concept of a patient-centered medical home were not included in the first survey, but given the importance of this topic we include questions in the current survey that will allow us to characterize the medical home-related aspects of the care setting and process of care, using existing instruments that offer validated questions on the topic).[18] The surveys we examined include the National Survey of Children's Health, the National Health Interview Survey, the Medicaid Expenditure Panel Survey, and several surveys of Healthy Kids programs in California fielded by Mathematica during the past decade.

2. Instrument Development Process

As a first step in developing the survey instrument, we developed a matrix showing the domains, subdomains and topics being considered for possible inclusion. The matrix included all of the content areas from the previous enrollee/disenrollee survey along with new content areas being considered for the current evaluation. The matrix has columns for capturing input on whether questions on a given topic should be added, modified, or dropped. For new or modified content, the matrix notes survey instruments to examine for possible questions or wording changes. The content matrix and supporting materials along with a preliminary set of recommendations were shared with ASPE and federal workgroup members and we met to get their feedback in mid-February 2011. We then developed an initial draft of the survey instrument for the pretest. We shared the pretest version of the draft instrument with ASPE and the federal workgroup and will address their comments along with input arising from the pretest interviews. A final draft instrument will be submitted with the final OMB clearance package submitted in mid-May 2011. The pretested version of the instrument is included as an attachment to this report.

3. Instrument Design Challenges

We faced three design challenges in developing the survey instrument: (a) adjusting for program status changes that occur after sample selection, (b) anchoring questions to optimize recall, given program status changes, and (c) minimizing measurement error through rigorous use of survey best practices, such as pretesting and use of question-by-question specification during training.

a. Adjusting for Program Status Changes

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[18] For example, both the National Survey of Children with Special Health Care Needs and the National Survey of Children's Health have tested medical home components.

At the time of sampling, the sample children will be selected into one of three enrollment-based strata: new enrollees, established enrollees, and recent disenrollees. Members of each stratum will be assigned a primary recall period based on their enrollment status: for new enrollees, this will be the 12 months before their enrollment dates; for established enrollees, the 12 months prior to the date of interview; and for recent disenrollees, the 12 months before their disenrollment dates. The survey goal is to interview the respondent (parent/guardian) for each sample child as close to selection time as possible in order to minimize program status changes and maximize recall of events. However, as the fielding period for each of the two projected sample releases is estimated to require eight months to allow for both CATI and field data collection, inevitably some sample members will change program status during this fielding period. While the primary recall period will remain unchanged for all sample children, the instrument will be designed to capture changes in program status and adjust secondary recall periods accordingly. The different recall periods are described below and illustrated in Figures VII.1 to VII.3.

Figure VII.1 Illustrative Recall Periods by Program Status at Interview for New Enrollees Sample

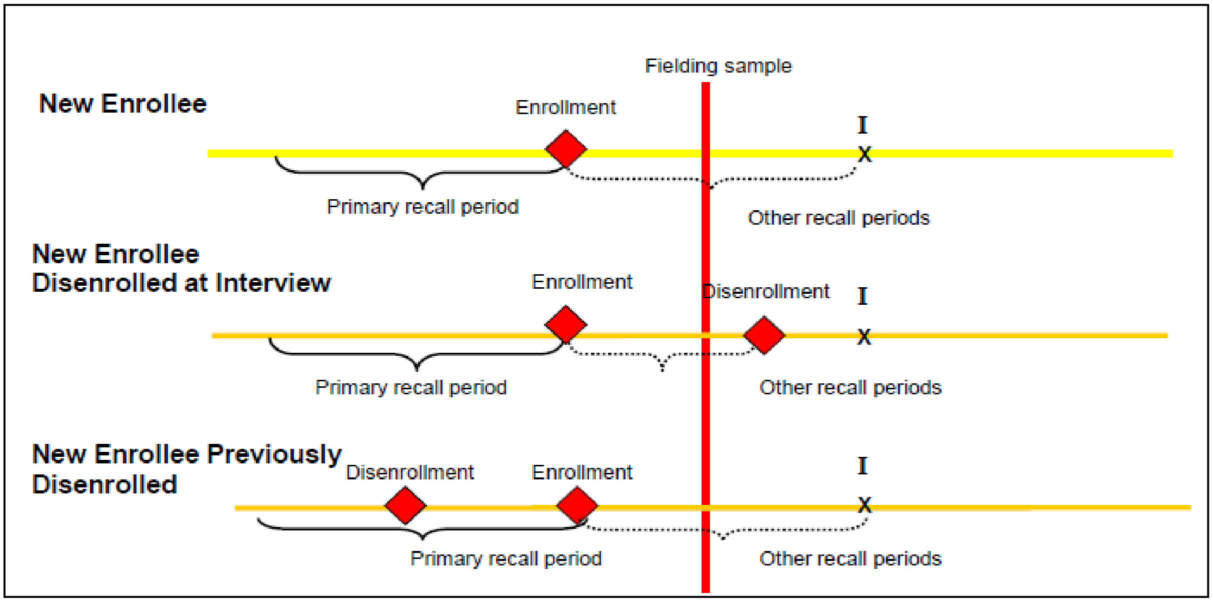

Fielding sample
New Enrollee
Enrollment
I
X
Primary recall period
Other recall periods
New Enrollee
Disenrolled at Interview
Enrollment
Disenrollment
I
X
Primary recall period
Other recall periods
New Enrollee Previously
Disenrolled
Disenrollment
Enrollment
I
X
Primary recall period
Other recall periods

Figure VII.2 Illustrative Recall Periods by Program Status at Interview for Established Enrollees Sample

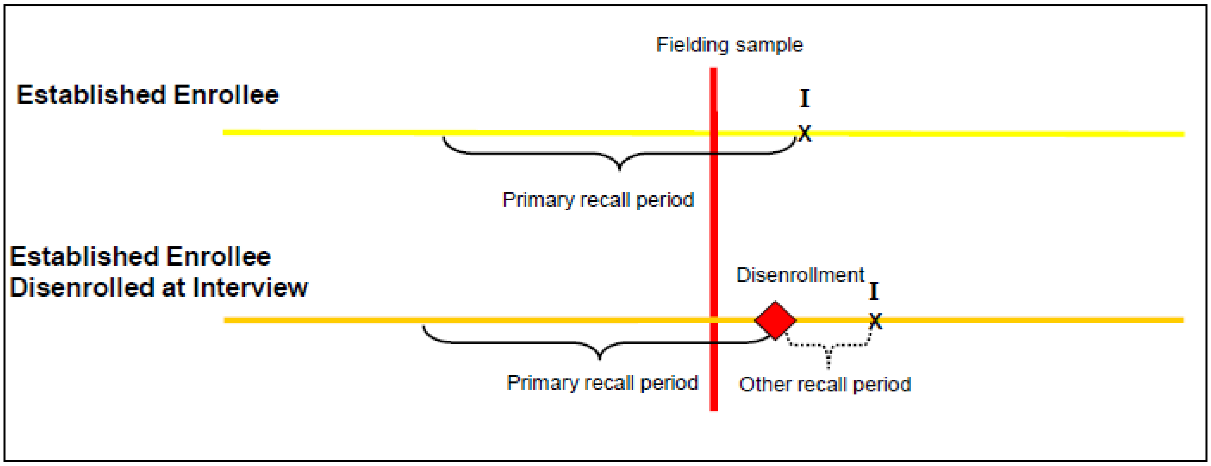
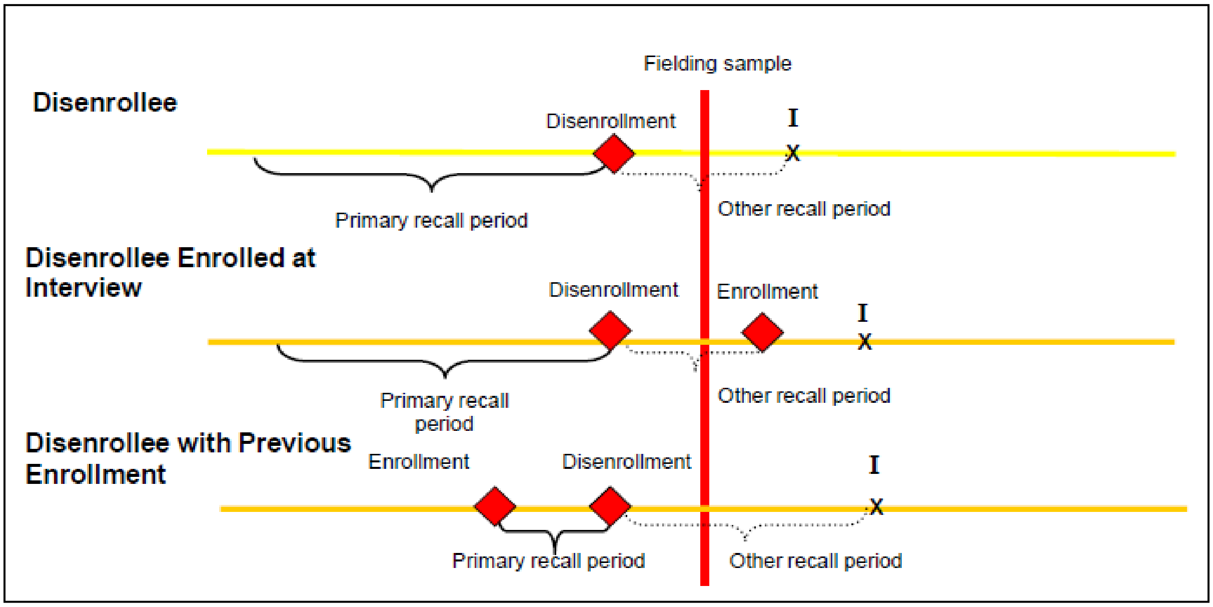

Fielding sample
Established Enrollee
I
X
Primary recall period
Established Enrollee
Disenrolled at Interview
Disenrollment
I
X
Primary recall period
Other recall period

Figure VII.3 Illustrative Recall Periods By Program Status at Interview for Sample of Disenrollees


Fielding sample
Disenrollee
Disenrollment
I
X
Primary recall period
Other recall period
Disenrollee Enrolled at Interview
Disenrollment
Enrollment
I
X
Primary recall period
Other recall period
Disenrollee with Previous Enrollment
Enrollment
Disenrollment
I
X
Primary recall period
Other recall period

- **New enrollees**. New enrollees will be asked about events and experiences during their primary recall period. They also will be asked about their enrollment experiences and about program events and experiences from enrollment until the date of the interview. Some new enrollees may leave the program before we can locate and interview them. When we interview them, we will ask them about their experiences and events during their primary recall period, during program participation, and with the disenrollment process ending at date of disenrollment. Sample members will not be excluded based on change of status.

- **Established enrollees**. Established enrollees will be asked about events and their experiences participating in the program during their primary recall period. Some established enrollees may have left the program after selection into our sample. In those cases we will ask them about program events and experiences in the 12-month period before the date of disenrollment, during the disenrollment process, and in the time between the disenrollment date and the date of the interview.

- **Recent disenrollees**. Recent disenrollees will be asked about events and experiences while participating in the program and while disenrolling from it during their primary recall period. We will also ask about events and experiences between the date of disenrollment and the date of the interview. Some recent disenrollees may have reenrolled subsequent to their selection into the sample. In those cases, we will ask them about program events and experiences in the primary recall period, during the disenrollment process, and in the time between the disenrollment date and the reenrollment date.

b. Anchoring the Questions

The fact that states have different eligibility rules means that no single set of questions or probes will suffice for anchoring respondents to events that determine the beginning and end of the primary recall period and other recall periods. Correct anchoring will be crucial for the validity and reliability of the data. For questions related to access and experiences with services before and after enrollment in the program, respondents will have to recall correctly when their child became eligible for services. In states with presumptive eligibility, or where children become eligible for services on the first day of the month after they are enrolled in the program, this may not be the date the parent received the child's CHIP or Medicaid enrollment card. In some cases, we may have to include additional questions or probes for respondents with specific eligibility and disenrollment codes, or limit certain questions to respondents in specific states.

Ensuring that respondents understand which program the questions refer to may necessitate another important set of clarifying questions. Recipients may know the program by its state-specific name, rather than as CHIP. State CHIP and Medicaid program names (often in both English and other languages) will be imported into the CATI software and pre-filled based on the state. State health care plans may also offer CHIP and Medicaid services under different names. We will ascertain the variability in discussions with states during the first year of the evaluation add plan names if needed to the CATI software to ensure that respondents know what we're talking about.

c. Minimizing Measurement Error

Measurement error may occur randomly or systematically. While random error affects data provided by individuals, it has no biasing affect on the data from the entire sample. Systematic measurement error can result in bias in the data. Almost all data for the 10-state survey will be collected exclusively from the sample child's primary caregiver. Respondents may introduce measurement error into the data as a result of faulty recall of service use or enrollment status (discussed above). Other error may occur when respondents overreport socially desirable outcomes (use of dental care, well-child checkups) or underreport socially undesirable outcomes (need for mental health care). We plan a number of proactive steps to avoid the biases caused by measurement error.

- Through carefully constructed screening questions, we will identify and seek to interview the primary caregiver who can best answer questions about the child's receipt of health services and program participation events. The relationship of this respondent to the child will be recorded so that, if necessary, analysts can later control for the respondent's degree of familiarity with the child's health care and program participation.
- To the extent possible, we will rely on modules from the prior CHIP survey instrument and will incorporate new modules from existing instruments that have been successfully used on other surveys.
- To minimize potential systematic mode effect (which could play a role in bias), we will conduct all surveys using the same CATI software whether an interviewer at our phone center calls the respondent or a field locator calls into the center to have the interview conducted by a CATI interviewer. All interviews will be conducted on the telephone by the same extensively trained interviewers.
- We will conduct two separate pretests of the instrument to ensure that we are using unambiguous, clear language. A special focus during the first pretest will be on exploring the language that will make the primary and secondary recall periods as salient as possible to all respondents. The first 50 to 100 completed cases will constitute a second pretest. The pretests are described in more detail below.
- We will train all interviewers extensively on the use of the survey instrument, focusing on question-by-question intent and appropriate, neutral probes for each. Ten percent of all interviews will be monitored using equipment that allows the monitor to hear both the

interviewer and respondent as well as see the keystrokes the interviewer enters. While 10 percent of all interviews are monitored, the bulk of monitoring will occur during the first two weeks of interviewing in order to catch and correct any errors as quickly as possible. Note that interviewers bilingual in Spanish will be given additional Spanish-specific training in question-by-question intent and probing.

- We will conduct a frequency review at the end of the second pretest and after 20 percent of the cases are complete. Early frequency reviews will identify any systematic errors in programming so that they can be quickly corrected and tested.
- In addition, we will examine the validity of the estimates from our survey by comparing our findings to those from other comparable studies such as National Health Interview Survey, the California Healthy Kids surveys, and the National Survey of Children's Health.

4. Translation and Interpretation

In order to give voice to non-English speakers who constitute significant proportions of the CHIP/Medicaid population, our in-house Spanish translation team will translate the instrument into Spanish, maintaining the original meaning as closely as possible. Our translation capabilities are consistent with procedures recently established by the Bureau of the Census. English and Spanish versions of the instrument will be programmed into the CATI software (Blaise) so that bilingual interviewers will be able to "toggle" between English and Spanish versions as required. All advance materials (letter, brochure) will also be translated into Spanish.

Because we cannot know beforehand the number of sample members who will speak languages other than English and Spanish, programming the instrument into languages other than English and Spanish would be cost prohibitive. We will meet this challenge by using an interpretation service vendor we have used on numerous previous studies and with whom we have a good working relationship. As a new language is identified, the vendor will translate the advance letter and brochure into that language. (We will independently verify the translation using a second vendor.) Mathematica has developed culturally sensitive trainings based on characteristics of different ethnic groups. We will work with the vendor to identify critical and/or culturally sensitive questions and have them translated (and independently verified) before any interviews are conducted. We will use a module we developed for a previous study (for Healthy Start) to train interpreters in basic interviewing skills (for example, maintaining a professional relationship, reading the question only as written, and using only approved probes). Specially trained Mathematica interviewers will work with the vendor's interpreters to contact the respondents and convince them to participate in their own languages. The interviewer will ask the question in English; the interpreter will interpret into the target language and then translate the responses for the interviewer, who will record the response in the questionnaire.

5. Pretesting

To be valid and reliable, the survey instruments must effectively communicate their questions in the same ways to different subpopulations or types of respondents. Thorough pretesting ensures the instruments reflect and properly measure the outcomes and subjective experiences we want to measure. To achieve this, we will conduct two pretests:

First pretest. The schedule of the first pretest is shown below in Table VII.5.

Table VII.5 Schedule of First Pretest

Activity	Start date	Completion date
Recruit pretest respondents	Tue 3/21/11	Fri 3/25/11
Pretest the survey instrument	Wed 4/6/11	Tue 4/19/11
Prepare pretest report	Mon 4/20/11	Thur 5/5/11
Send pretest report to TOO for comment	Fri 5/6/11	

The first pretest of nine respondents having characteristics similar to our sample members (recent CHIP enrollees, recent CHIP disenrollees, some English-speaking, some Spanish-speaking) will be conducted by telephone interviewers and monitored by the survey director and associate survey director. It will take place during the interval between publication of the 60-day federal register notice (FRN) and the 30-day FRN/submission of the supporting statements to the Office of Management and Budget (OMB). We will pretest the survey, advance letter, and brochure, and conduct a debriefing with the respondents at the end of each interview. We will evaluate respondent comprehension of individual survey items and determine the length of the survey (our goal is a 35-minute survey). A special focus of the pretest will be on new items that have not been used in either the prior CHIP or other previous surveys. For recall questions, we will examine whether the reference periods in the questions allow for reliable recall and whether the anchor points are unambiguous and clear. Importantly, during instrument development we have carefully crafted subjective questions and questions about events and behaviors to make cognitive sense to the respondents in light of their own experiences; we will probe during the pretest to examine whether specific terms convey the intended meaning to respondents. Based on the pretest outcome, we will submit a pretest report to the TOO, describing any problems identified and recommending improvements for consideration. The report will also describe the average length of interview so that this information can become part of the OMB public burden statement. With the TOO's approval we will implement any needed changes in the instrument and prepare it for the final OMB package to be submitted at the time of the 30-day FRN.

Second pretest. The first 50 to 100 completed interviews will constitute a second "live" pretest. At the end of 100 cases, we will stop interviewing in order to review the data frequencies to identify any software errors. We also will debrief the interviewers to identify and seek suggestions for revising language or solving procedural issues. We will then submit a second, brief report to the TOO on any problems encountered in fielding the survey, proposing solutions. We will then assist the TOO in communicating any substantive the changes to OMB. Finally, with TOO and OMB approval we will make any needed changes to the Blaise program and test them thoroughly before resuming data collection. Depending on the magnitude of problems and the types of corrections needed, we may stop work for as long as one week.

6. CATI Programming

CATI technology will automatically route respondents through the primary and secondary recall periods. It will fill subsequent questions based on responses to earlier ones, thus promoting a seamless administration of the survey without interviewers having to worry about the sample members' enrollment status during the interview. Mathematica implements its survey instrument in Blaise software. Blaise is versatile and readily integrates with Mathematica's Survey Management System (SMS) and Call Scheduling software. Together these three systems give the interviewers access to the instrument on a controlled schedule, track the outcome of each case, provide daily production reports based on structured status codes, and keep track of all locating information. Range checks built into the CATI program identify out-of-range responses when they are recorded and prompt the interviewer to probe whether the responses are correct. The program ensures that correct routing is followed throughout, depending on sample stratum and on responses to earlier questions. The software displays all prompts and interviewer instructions for more complex questions. The software will also fill state Medicaid and CHIP names according to the respondent's state name. The interviewer will be able to access the question-by-question instructions via Blaise as needed.

C. Data Collection Approach

1. Sample Release Schedule

Our experience suggests that the effort required to locate and contact sample members will be reduced by releasing the sample in stages so that we can begin making calls soon after state data are received. Releasing in stages will help to ensure that contact information for sample members is still relatively fresh.

Releasing the sample at all sites on two separate occasions will result in 20 individual releases. The sample (total = 22,220) would be released in two waves of 11,110 each. This will require a total field period of approximately 10 months. By using this method of release, we will be more likely to make contact with all of the sample members than if we were to release the entire sample all at once; recall problems also will be reduced. While releasing the entire sample at one time would reduce the field period to a single eight-month time period and minimize the statistical and sample management time required, it also would mean that we would be contacting many sample members toward the end of the year, which could affect recall adversely. Moreover, the recall period would be variable for different sample members, depending on when we contacted them relative to when they enrolled or disenrolled. Conversely, releasing the sample three or more times during the year may be cost prohibitive, as it would require increased statistical sampling and sample management time. Thus, releasing the sample in two stages provides a good balance between keeping recall periods short and not increasing management costs excessively.

2. Optimizing Contact Information, Locating Sample Members, and Scheduling Interviews

To achieve a high response rate, we must optimize contact information by beginning locating soon after we receive the sample from the state, using a variety of national databases to locate sample members, and coordinating the initial telephone calls to them with the mailing of the advance letter.

a. Optimizing Contact Information

The success of the data collection will depend greatly on keeping the time between sampling and data collection as short as possible. Ideally, we would like to interview respondents while they have the same program status they had at sampling so that retrospective recall will not be influenced by changes in program status. However, because we are aware of some movement in and out of the program, it is important that we expedite the acquisition and processing of the files for sampling and fielding, and contact and interview respondents as quickly as possible.

Immediately after receiving the sample from the states, and prior to sending out the advance letter, we will begin locating sample cases to maximize the number of cases we contact. Once we mail out the letter, we will use the U.S. Postal Service (USPS) Return Service Request to obtain new addresses for sample members who have moved. Mathematica's locating module is part of our Survey Management System (SMS), which allows us to document and organize contact information and locating histories in electronic form. Locators will enter new contact information numbers into the automated system for transfer to computer assisted telephone interviewing (CATI). If the numbers prove to be invalid, interviewers will transfer the cases back to the locating group electronically.

b. Locating Sample Members

In preparing the sample for fielding, we will use commercial databases to increase the accuracy of the information obtained from the state files and add additional contact information that may not be available in the files. To make locating operations as cost effective as possible, we will begin our efforts by searching major national databases, such as Accurint, that supply cell phone as well as land line numbers. Using Accurint, locators can search for sample cases, matching by name, Social Security number, or date of birth. Mathematica uses a range of other databases to supplement Accurint, including the following:

- **Social Security death index,** to identify sample members who may have died or confirm deaths reported by informants
- **Military locator database,** which contains name, address, branch of service, and assignment for all U.S. military personnel
- **Property/deed transfer records,** which are indexed by name and contain addresses and sometimes telephone numbers
- **State, county, and civil court records,** which contain information about lawsuits, marriages, divorces, and bankruptcy filings
- **Agency databases,** including motor vehicle, social service, and correctional agencies, as well as city and county tax assessors, local employment security and welfare offices, schools, and voter registration lists; although response times and relevant local regulations vary and so must be reviewed, these sources have proven very useful in previous surveys
- **Other locating databases—**Mathematica has direct links to the MetroNet system, DTec Search, Lexis-Nexis, and residential telephone listings available on the Internet. Each provides specialized locating capabilities

c. Contacting Respondents to Schedule Interviews

Our first contact with each sample member will be by USPS mail. The letter, on HHS/ASPE letterhead, will convey the importance and legitimacy of the survey and assure sample members of confidentiality. It will also indicate that they will receive $20 for their participation in the survey and assure them that the $20 will not affect their benefits from Medicaid, CHIP, or any other program.

It is crucial that we interview respondents as soon as possible after we draw the sample, when the events covered in the interview are still fresh in their minds. Advance letters will be sent to all sample members and timed to maximize the impact of the letter when we first call. For example, to ensure that the letter arrives just before telephone contact, we have found it most efficient to send letters on Fridays and begin CATI interviewing on the following Tuesdays.

For all cases, an automatic call scheduler will follow a protocol of calls in different time slices and days of the week, with "no answer" cases going to locating after a set number of calls and on different days of the week. Each nonresponding sample case will be reviewed to determine whether to continue with the case or to discontinue the effort to reach the family by phone.

3. Survey Respondents

The key characteristic of the respondents is that they are eligible for CHIP or Medicaid and are thus low income. The respondent to the survey will be a primary caregiver of the child who is familiar with the child's health and health care. In most cases, the respondent is expected to be the mother of the child. For a small percentage of the cases, however, the respondent may be the father, a grandparent, or another person in the household familiar with the child's health care. We expect respondents to live in the same household as the child. Some adult or emancipated minor children will act as respondents for themselves.

4. Conducting the Interviews (Unclustered and Clustered Samples)

Using CATI, we will begin collecting survey data from enrollees and disenrollees in both the clustered and unclustered samples at Mathematica's Survey Operations Center (SOC). Professional and experienced interviewing staff will administer the survey interviews. In-person field locators will supplement the CATI interviewing to maximize the response rate and will help to ensure the representativeness of those who complete the interview.

When a sample member speaks a language other than English or Spanish, another adult living with the sampled child may be asked to complete the interview, or translate. If no such adult is present, we will schedule an interview with the respondent at a time when an interviewer fluent in that language is available. When we anticipate languages other than English and Spanish, interpreters trained in the interviewing conventions for this study will attempt the interview.

If in-house locators have found no identifiable telephone numbers for respondents within the clustered sample (expected to be approximately 20 percent), the field locators will search for them, as well as CATI nonrespondents. Upon finding the correct sample member, the locator will ask him or her to call the SOC on a Mathematica-provided cell phone to conduct the interview. If necessary, the locator can instead conduct the interview in person, using a paper questionnaire.

For the unclustered sample, we will make every attempt to contact and interview members by telephone. We will follow up in person only if their locations fall within the same area as the clustered sample in their state. We expect to close out cases in the unclustered sample that cannot be located after 15 attempts.

To make sure that the criteria for closing cases not located by telephone are the same in the clustered and unclustered sample at the end of the telephone phase of the study, we will ensure that the level of effort in finding families by phone is the same for both samples. We will avoid any differential treatment in locating cases during the telephone phase of the study by ensuring that interviewers, telephone locators, and supervisors do not know whether a case belongs to the clustered or unclustered sample.

5. Minimizing Nonresponse

To achieve a 75 percent response rate for this study, we will address two sources of nonresponse: non-contact and non-cooperation. Mathematica has sustained high response rates in its nationwide and special population surveys—even in the more challenging data collection environment we have faced in recent years—through extensive follow-up efforts and implementation of innovative methods. These include providing specialized interviewer training, contacting households at different times of the day, and attempting to reach all households within the first few days of calling to establish refusals and begin attempts at conversion as early as possible. Interviewers will be trained to leave messages identifying their calls as part of a legitimate, important research study and stress that they are not selling anything or asking for a donation, thereby reaching people who otherwise screen their calls. In addition, as soon as we receive the sample from the states, we will run all cases through Accurint to obtain the most updated contact information for each case (described in more detail above under "Locating Sample Members").

An important factor in reducing nonresponse is understanding that, for various reasons, sample members do not participate in surveys, so solutions to preventing nonresponse should address those reasons most relevant to a particular respondent. These may include the following:

- **Social environmental factors.** Households inundated with unwelcome telephone solicitations may have difficulty in distinguishing the initial survey contact from a telemarketing call. Mathematica has addressed this concern successfully by sending well-written and persuasive notification letters, which have been shown to have a positive effect on response to the subsequent telephone calls (Link and Mokdad 2005; Redline et al. 2004). We will pay special attention to training interviewers in conveying the most important messages about the study in the first few seconds of their calls and in leaving effective answering machine messages. We will establish a dedicated toll-free number that sampled households can call to verify the legitimacy of the survey, discuss concerns, or complete the interview. We will include this number in the advance letters, and interviewers will leave the number in answering machine messages.
- **Household characteristics.** Sometimes respondents are still reluctant to participate because they are concerned about the confidentiality and privacy of their information. To address these concerns, our advance letters emphasize that maintaining confidentiality is the cornerstone of our work, and we train interviewers not only to address confidentiality routinely in their introductions but also to recognize specific confidentiality concerns that can lead to refusals if left unaddressed. As part of their training, interviewers role play these scenarios and thus can readily reassure respondents about our data security procedures. Mathematica has also developed strategies to accommodate respondents under time pressures—for instance, training interviewers to offer to administer the survey in segments rather than in one session.
- **Refusal conversion.** Refusal conversion efforts will be critical in achieving a high response rate. Interviewers will be trained in refusal conversion techniques and refusals will be flagged in the CATI scheduler as they occur. Such sample members will be sent a customized letter that addresses the member's reasons for refusing and emphasizes the importance of the study. Interviewers highly skilled at converting refusals then will contact the sample member. For the clustered sample, sample members who refuse a second time will be assigned to a field locator for an in-person follow-up. At Mathematica, refusal converter staff are supervisors or senior interviewers who receive

specialized training and have considerable experience in working with difficult-to-persuade households. The same interviewer who generated the initial refusal will not make the refusal conversion attempt. The converter will address the respondent's reason for refusing and stress the importance of the survey.

6. Staffing, Training, and Monitoring for QA

We expect to train enough staff to have sufficient telephone interviewer and locator coverage at different times of day and days of the week, and to have enough field locator coverage in the clustered sample areas to attend appointments. We will train all data collection staff collectively regarding the study and will use individualized training modules for different staff roles. Monitoring will help to ensure adherence to all study protocols and achievement of interviewer performance of the highest quality.

a. Staffing

We expect to train 43 telephone interviewers, 17 telephone locators, and 28 field locators. This level of staffing will ensure that we will be able to call respondents on different days of the week and at different times of day. It will also ensure that field locator staff is available to attend appointments with respondents and that there are enough bilingual interviewers.

b. Training

For interviewers and field locators, Mathematica requires two types of training: general interviewing and locating training and project-specific training for all surveys. Our general training introduces our interviewing and locating staff to survey research and Mathematica. Interviewers become proficient in using the Blaise CATI technology before learning interviewing techniques. During the latter portion of the training, they develop the tools they need to collect accurate and complete data: an understanding of the concept of samples, the importance of reaching the correct respondent, and confidentiality; and skills in listening, neutral probing, persuasion, and recording responses carefully and completely. Before the interviewers are certified or recommended for project work, they must demonstrate the knowledge and skills needed for telephone interviewing. Locators become proficient in the different databases and other sources of information that may help us locate sample members. Field locators must also display proficiency in asking questions of neighbors and relatives that will help us to locate the sample members we would like to contact. At Mathematica, we conduct this type of intensive interview and locator training in person at our SOC.

For the study-specific training, we will produce manuals and other training materials for interviewers, locators, monitors and supervisors, and data coders. The core training modules will cover the purpose of the study, its funding, planned use of the data, characteristics of the sample members, and an outline of data collection activities. The survey director and deputy director will present all of this material at the training session, which ASPE staff will be invited to attend. All data collection staff will participate in this portion of the training, which may be conducted using a web-based training technology—Remote Training Site (RTS); this will avoid costly travel to a centralized training site. We currently are using RTS on three field projects and have found it effective in providing training, offering trainees the opportunity to practice skills, and serving as a vehicle for quality review of trainees' performance. The RTS also serves as a library and resource for staff during the data collection period, as all training-related documents are available to staff at all times.

In addition to the common modules of the training that pertain to all staff, we will offer some training modules specific to staff with certain roles in the survey. For example, interviewer modules will cover each item of the questionnaire in detail, followed by structured practice interviews. We will require interviewers to practice until the trainers ascertain that they have mastered the material. Trainers will offer telephone locators the core modules, plus refreshers on the latest telephonic, web, and electronic searching techniques. Field locators will be trained similarly but will receive additional training modules that focus on locating techniques, cell phone handoff protocols, and reporting. They will be given role-play scenarios to use in person to communicate the legitimacy of the data collection effort and our organization, convey the importance of the study, and encourage participation. They will also be briefed on confidentiality protections and locating techniques. Coders will be trained on the purposes of specific questions and the appropriate coding rules. Because interviewers, locators, and coders will have different roles, we will individualize these training modules to accommodate their needs.

In addition to the training manual documenting procedures to be used for data collection, we will provide interviewers and locators with hands-on training that gives them an opportunity to become fully proficient with the CATI instrument before beginning data collection. We also will devote time to a discussion of the respondent population and procedures designed to ensure that Mathematica reaches the designated respondents. In addition, we will also cover the importance of reassuring sample members that their benefits will not be affected by their participation in the survey (or by the incentive payment), and that we will keep their information confidential.

Finally, we will provide question-by-question instruction on the instrument, along with a discussion of commonly asked questions and approved responses. Supervised, carefully scripted role plays will be incorporated into the training to enable interviewers to practice contact procedures (including locating the correct respondents), methods of persuasion and refusal avoidance, and the full administration of the CATI instrument. Under our training program, use of the systems, movement between screens, and other aspects of CATI become so familiar to interviewers that they can spend their time and attention listening, recording, and responding to concerns without experiencing technical distractions. They learn to record verbatim open-ended responses carefully, select appropriate precoded categories, and assign the correct outcome code to each contact attempt (which is key to proper sample management). Supervisors at the SOC conduct role plays and CATI training in person.

c. Monitoring for Quality Assurance.

Mathematica routinely monitors 10 percent of all completed interviews, using a more intense monitoring schedule for the first weeks of the study. This monitoring system enables supervisors to listen to interviews without the interviewers being aware of it. The system also allows supervisors to view the interviewers' input screens to monitor their accuracy in recording responses. Monitoring during the first few weeks is very important to ensure that each telephone contact with a sample member is professional and productive, and that interviewers are reading and recording accurately. During this period, monitors are particularly interested in evaluating how the interviewers initiate contact procedures and present information about the study; screening to ensure that interviewers have reached the appropriate respondent; ensuring interviewer competency with the CATI instrument; and monitoring interviewer accuracy in reading questions, providing neutral probes, providing appropriate feedback to respondents, and accurately recording responses.

Monitors complete reports for each interviewer for each session; these are available to project staff and the interviewer. Interviewers with high refusal or low productivity rates are given immediate feedback about their performance and taken off the study if their performance does not improve immediately. Monitors on this study will be required to attend the project-specific training and may participate in debriefings and project meetings as appropriate. Supervisors with Spanish-language capabilities will monitor interviews conducted in Spanish.

7. Tracking the Data Collection Effort

We will use a tracking and reporting system that will detect problems as soon as they occur and enable us to make timely adjustments to sample releases and data collection procedures when needed. Because we will draw the sample from 10 states, with each state including a clustered and an unclustered sample of new and established enrollees and disenrollees, to be released at two different time points, we will need to track required sample sizes and response rates for 120 separate sample components. In addition, we will also have both a telephone and a field data collection phase.

Depending on our focus, we may group the total sample by any of these variables (state, clustered sample, unclustered sample, new enrollee, established enrollee, disenrollee) to monitor survey progress at any time during the survey field period. For instance, we may monitor first-time refusals by enrollment status so that we can pay closer attention to issues related to differential refusal rates.

We will use the survey progress monitoring process to target our resources efficiently during data collection. For example, we might track outcomes for the clustered sample to evaluate whether certain geographic areas need more staff than others or ascertain whether additional training of locators or some adjustment in the introductory script is necessary.

8. Challenges

Although we have designed a robust, mixed-mode survey design, there still are potential challenges to obtaining a high response rate, which we will address proactively to ensure a successful data collection effort. In particular, we foresee challenges pertaining to the representativeness of the respondents and locating respondents.

a. Challenge of Ensuring the Representativeness of Respondents in Relation to the Sample Population

Although we will strive for as high a response rate as possible, we should expect some nonresponse, and the level of nonresponse may vary for different subgroups. We expect that this variation can be corrected through weighting adjustments after the data are collected, as is customary. However, if the differences are substantial, we may need to increase our efforts to convert refusing sample members into respondents and lengthen the data collection period to obtain enough respondents.

To address the challenge of representativeness, we will examine the response rate overall at regular intervals during the data collection period, as well as response by key sample characteristics. This may include characteristics such as state, clustered vs. unclustered sample status, and enrollment status. For example, we may find that disenrollees respond at lower levels than new and established enrollees. We will compare the distributions of respondents to those in the sample population. If there are large differences in response rates by these key characteristics, we will focus our resources on increasing response among those groups of sample members with lower rates. In this example, we could increase the saliency of participating in the survey by tailoring the request to participate.

b. Challenges Pertaining to Locating

As the members of our sample may be particularly vulnerable to recent economic events, such as high unemployment and the housing bubble crash, some may have lost their homes or become more mobile as they search for work. For these reasons, it will be particularly important to begin locating as soon as we receive samples from the states. We also believe that scheduling the sample release in each state in two waves instead of one will be important so that we can increase the probability of contacting sample members in a timely manner.

Given our experience and the well-tested procedures described above, and based on our success in conducting other telephone interviews with field followup, we believe a response rate of 75 percent is achievable for these surveys. On the National Beneficiary Survey, for example (a survey of SSI beneficiaries), we achieved a response rate of 82 percent, and approximately three-quarters of the completed interviews were obtained by CATI. We expect a similar proportion of completed CATI interviews in this survey and that the locators will obtain the remaining interviews by searching for and finding sample members at their current addresses.

D. Descriptive Analyses of CHIP Enrollees and Disenrollees

Our analysis of the survey data will begin by exploring descriptively the characteristics and experiences of CHIP enrollees in the 10 study states.[19] The objective of the descriptive analyses will be to provide a comprehensive picture of CHIP children and their experiences at each stage of the CHIP life cycle—during the period prior to their program start, through their CHIP application and initial enrollment in the program, on through the period of established enrollment, and, finally, during and after their eventual disenrollment from the program—based on a single cross-section of CHIP enrollees and disenrollees. Over these stages we will study a wide range of descriptive topics, such as how families hear about CHIP and become enrolled, the characteristics of covered children and their families, how children are faring in different states and programs, why children and families leave the program, and what their insurance status is after leaving.

A key component of the descriptive analyses will be to examine whether there are large and systematic differences in the various outcomes related to each stage of the CHIP life cycle across states, programs, and particular subgroups of children, such as children with special health care needs and children in racial and ethnic minorities.

1. Research Questions

The descriptive analyses will address a broad range of research questions that can be grouped into three categories:

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[19] We will also conduct a parallel analysis of the Medicaid survey of enrollees and disenrollees in three of the 10 CHIP survey states. The Medicaid analysis will include the same presentations of measures and analytical approach as the descriptive analyses of the CHIP survey described in this section.

- **Characteristics of CHIP enrollees**. What are the socioeconomic and demographic characteristics of CHIP enrollees and their parents? What proportion of children enrolled in CHIP have special health care needs or an elevated need for medical care? What type of insurance coverage, if any, do children have before entering the program? Are their parents insured, and is dependent coverage available? How costly are coverage alternatives?
- **Experiences with the program**. What are families' experiences **enrolling** in CHIP? What sources of information are important to families in deciding to enroll their children in CHIP? Do they receive information on **renewal processes** upon enrollment? How well is CHIP meeting the **health care needs** of children enrolled in the program? To what extent are enrollees **using health services**, such as doctor visits, specialist visits, and prescription drugs? Are enrollees receiving well-child care, flu shots, dental check-ups, and anticipatory guidance on healthy behaviors and risk factors? Do they have a **usual source of care** and how does the care they receive align with core **medical home** concepts? What **access barriers** do enrollees encounter? Have they been able to find a doctor and get timely appointments for needed specialty and dental care? Why do families **disenroll** from CHIP, and what coverage, if any, do they obtain after leaving the program? Among those who become uninsured, what share might still be eligible for coverage through CHIP?
- **Differences across individual subgroups, states, and programs.** How do enrollment experiences vary by race/ethnicity, parent education, family income, and other sociodemographic characteristics? Do enrollment experiences differ by prior insurance coverage or across states and program types? Which families are more likely to use application assistance? Is the program meeting the health care needs of some children better than others? To what extent do access to and use of different types of health services vary across types or subgroups of enrollees, or across states? Which groups of enrollees are more likely to disenroll from the program? Are certain types of disenrollees more likely to obtain coverage after leaving the program, or to remain uninsured?

2. Data and Measures

To explore the wide range of topics that will be examined in the descriptive analyses, information from the survey will be used to construct an extensive set of outcomes measures that together span the main research topics to be addressed by the evaluation. The measures, summarized in Table VII.6, fall into four broad categories: (1) application and enrollment; (2) access, use, content of care, and satisfaction; (3) retention and disenrollment; and (4) the relationship between CHIP and other public and private coverage. Most of these outcomes will be constructed for each of the three sample domains—new enrollees, established enrollees, and disenrollees—which will permit a detailed analysis of how outcomes differ among children in the different enrollee groups. For example, comparisons between recent enrollees and established enrollees will provide insight into how the experiences of CHIP enrollees in seeking and obtaining care compare with their experiences prior to enrollment. Similarly, comparisons between established enrollees and disenrollees in such matters as reasons for originally enrolling, satisfaction with care, and service utilization can provide insight on factors affecting disenrollment.

Table VII.6. Illustrative Outcome Variables[a]

	Measures	Relevant Sample
Application and Enrollment		
Sources of information	Sources of CHIP information Most important source of CHIP information	Recent enrollees
Experiences with application and enrollment process	Ease of enrollment Received assistance with application Wait time to enroll Understanding of renewal requirements	Recent enrollees
Access, Use, Content of Care, and Satisfaction		
Usual source of care (USC)	Had USC in past 6 months (medical, dental) USC type Having a person doctor or nurse	Recent enrollees Established enrollees Disenrollees
Access	Availability and ease of finding a doctor Can reach doctor after hours Ease of obtaining a timely appointment Wait time before getting care for scheduled appointment Affordability of care	Recent enrollees Established enrollees Disenrollees
Service use	Any physician visit Preventative care (well-child visits; immunizations; flu shot) Dental care Vision care Prescription drugs Mental health Specialty care Hospitalizations and ER visits	Recent enrollees Established enrollees Disenrollees
Content of Care	Provider asked parent to fill out questionnaire on child's development, communication, and social behaviors Provider measured child's height and weight Provider offered anticipatory guidance	Recent enrollees Established enrollees Disenrollees
Characteristics of Care (medical home principals)	Received needed referrals to receive care or services Received help arranging or coordinating care Received family-centered care Providers spend enough time with child Providers listen carefully to family concerns Providers are sensitive to family values and customs Providers give needed information Providers make family feel like a partner in child's care Availability of an interpreter when needed	Recent enrollees Established enrollees Disenrollees
Unmet need	Doctor/other health professional Dental care Vision care Physical, occupational, speech therapy Prescription drugs Mental health Specialist care Hospital care	Recent enrollees Established enrollees Disenrollees

Table VII.6 *(Continued)*

	Measures	Relevant Sample
Parent perceptions of their ability to meet child's health care needs	Confidence that child could get care needed Stress about meeting child's health care needs Adequacy of insurance coverage Relative quality of care under CHIP Provider views of CHIP enrollees	Recent enrollees Established enrollees Disenrollees
Renewal and Disenrollment		
Disenrollment experiences	Reason for disenrolling	Disenrollees
Renewal experiences	Knowledge of renewal process Receipt of renewal communication materials Ease of renewing coverage	New enrollees Established enrollees Disenrollees
Relationship Between CHIP and Other Coverage		
Coverage prior to enrollment	Type(s) of coverage 12 months before enrollment Length of time coverage was held Reason(s) for ending coverage/being uninsured	New enrollees
Coverage after leaving the program	Type of coverage after disenrolling Reason for remaining uninsured	Disenrollees
Parent coverage & substitution	Any parent with employer insurance Any parent with public insurance Availability and cost of dependent coverage	Established enrollees
Preferences about coverage options	Factors considered when choosing a health plan Importance of select factors when choosing a health plan, including: services covered, choice of providers, ability to keep providers, premium, out of pocket costs, transportation covered, and having covered under one policy	Recent enrollees Established enrollees Disenrollees

[a] This table presents an illustrative set of measures for each outcome category. The actual outcome measures used in our analyses of the CHIP survey data may vary from what is presented in the table, depending on the content of the final survey instrument, which is in the process of being developed.

We will also use survey responses to construct a base set of demographic and other explanatory variables across all of the descriptive analyses (Table VII.7) to be used in three ways, to (1) describe the characteristics of the CHIP population across sample domains and states, (2) form key subgroups for the analysis, and (3) serve as covariates for multivariate analyses. In some cases, a variable might be both an outcome and a subgroup variable. For example, respondents' satisfaction with CHIP would be both an important outcome variable and a key subgroup variable when examining rates of disenrollment.

3. Analytic Approach

The methodological approach to the descriptive analysis will include three parts—descriptive univariate and bivariate analyses, multivariate analysis, and benchmark comparisons of outcomes.

Descriptive analysis. The descriptive analysis will generate a series of descriptive statistics for each of the outcomes categories shown in Table VII.6 in two stages. In the first stage, we will calculate simple frequency distributions of each outcome variable within each sample domain and state. This univariate analysis will provide basic but valuable information on enrollee characteristics, behaviors, and perceptions at each stage of the CHIP life cycle within and across the study states.

Table VII.7. Illustrative Explanatory Variables

Child Characteristics	Family Characteristics	State-Level Variables
Age	Residence (urban/rural)	Type of Program
Gender	Parental education	- S-CHIP
Race/ethnicity	Household income	- M-CHIP
Primary language	Parental employment status	- Combination
Self-reported health status	Household size	Program Design Features
One or more chronic health conditions	Family structure	Economic indicators
Diagnosed with asthma; presence of behavioral health condition	Parental satisfaction	
Prior insurance coverage	Attitudes and perceptions about efficacy of health care	

In the second stage, we will investigate in more detail children's and families' experiences and behaviors in each stage of the CHIP life cycle, by examining whether and how they vary across different groups of enrollees and states. Specifically, we will conduct a series of bivariate analyses (or cross-tabulations) to examine whether and how the descriptive statistics vary across key individual subgroups and states. For this analysis, we will focus on individual subgroups listed in Table VII.D.2 that are of particular policy interest for the outcome considered. For example, we will examine how reported experiences with the CHIP application and enrollment process vary by such child and family characteristics as race/ethnicity, primary language spoken, and parent's education. This bivariate analysis can tell us, for instance, which demographic groups report the greatest barriers to enrollment, the types of barriers they identify, and whether the barriers are more prevalent in certain types of programs (for example, Medicaid expansion versus stand-alone programs).

For each cross-tabulation, we will generate simple test statistics to determine whether statistically significant differences are evident in the distribution of the outcome across categories. The specific test will depend on the structure of the measure. For example, for continuous or bivariate measures we will use a t-test and for categorical variables we will use a chi-square test. All testing will account for the complex sampling design by adopting appropriate sampling weights and by applying appropriate corrections to standard errors due to design effects from sample clustering and nonresponse.

Samples used for the univariate and bivariate analyses will often be pooled across selected domains or states (or both) to further inform a given research question. One motivation for pooling is that it will increase the sample size and thus improve the precision of our outcome estimates. Such gains in precision will be particularly important when analyzing differences between unbalanced categories, such as English-speaking and non-English-speaking households. A second reason for pooling is to explore differences in outcomes between sample domains or state-level characteristics. For example, by pooling the samples of new and established enrollees, we will be able to examine outcomes that can be generalized to nearly the entire enrollee population in a state (at the time of sampling), such as the proportion with a usual source of care, or the extent of program satisfaction. Pooling across states will enable an examination of how differences in program types may be related to such factors as enrollment barriers and experiences.

Multivariate analysis. While the bivariate analyses will provide an informative view of how the reported experiences and behaviors of CHIP enrollees differ across demographic subgroups and states, they cannot explain the source(s) of these differences. For example, the bivariate results may suggest that established enrollees in non-English-speaking households are less likely to report having a preventive care visit. Such a finding has potentially significant policy implications, but this type of analysis cannot tell us whether the source of this difference is a language barrier or other factors, such as education or income level, which could be highly correlated with both the primary language spoken and preventive-care-seeking behaviors. Similarly, we may observe different levels of access and use among CHIP enrollees across different types of CHIP programs, but these cross-state differentials may be driven by cross-state differences in the underlying sociodemographic characteristics of the CHIP populations.

To isolate the association between outcomes and key explanatory variables, we will use a multivariate regression framework. Regression analysis will allow us to control for possible confounding variables and to investigate the extent to which various factors explain the bivariate results (by examining differences between the unadjusted and regression-adjusted comparisons). We will use a standard set of regression models (linear regression and logistic regression) for the multivariate analyses; the specific model will depend on the nature of the dependent variable (whether it is a dichotomous or continuous outcome measure). The basic model specification will include an extensive set of covariates that encompass characteristics of the child and family (health status, health care needs, age, race/ethnicity, household income, family structure, and so forth) and state indicators (for cross-state models). Like the univariate and bivariate analyses, our multivariate analyses will first investigate samples defined at the state and domain level, followed by analyses of samples pooled across states and/or domains. As with all descriptive analyses, we will apply statistical weights, when appropriate, to draw inferences about the whole population, and will take into account the complex sampling design when calculating standard errors on which our tests of statistical significance will be based.

We will use the parameter estimates from the multivariate models to calculate adjusted means on key outcomes for each subgroup of interest, which we will use to make inferences about differences in these outcomes between groups of enrollees and across states. In addition, differences between the unadjusted and regression-adjusted outcomes will be probed to determine how much and which factors explain the unadjusted differences. For example, we may observe different levels of access and use among CHIP enrollees in different states, but find that such cross-state differences become smaller after controlling for sociodemographic characteristics of the CHIP populations in each state.

It is important to note that multivariate models will be estimated for exploratory reasons only—namely, to better understand the linkages between important policy outcomes and individual and state-level characteristics. We will not be able to draw any causal inferences from this analysis. For example, a finding that CHIP enrollees with less-educated parents receive fewer services would not be interpreted to mean that low parental education reduces access to care. Instead, we would conclude, more simply, that a significant association exists between education and access to care, which may or may not be causal. Even with this more limited interpretation, such a finding would remain important since it pinpoints a group for which improved program services should be targeted. Caution must also be used when interpreting associations between state program types or specific design features (such as use of cost sharing) and outcomes (such as enrollment or access to services) due to the small number of states included in the analysis and our inability to control for all potentially important policy or other state-level variables.

Benchmark comparison of outcomes. The descriptive analyses described above will generate an extensive set of outcome measures related to enrollees' experiences, behaviors, and satisfaction during each stage of the CHIP life cycle. While these measures will provide rich insight into the characteristics and effectiveness of the program, further insight can be gained by comparing survey outcomes to historical, national, and state benchmark measures, as well as to evidence-based pediatric care recommendations. Two sources of "internal" benchmarks are the 2002 survey of CHIP enrollees and disenrollees in 10 states and the Medicaid survey conducted under that same Congressionally-mandated evaluation. Comparing outcomes between the 2002 and current CHIP survey (in overlapping survey states) will provide a sense of how the CHIP program has evolved over the past decade, including changes in enrollees' experiences with the application and enrollment process, health care access and use while in the program, and reasons for disenrolling. In the three study states where we will also have Medicaid survey data, we will contrast the enrollment and access experiences of CHIP and Medicaid enrollees to gain insight into how different aspects of the programs may affect key outcomes.

We will also use external benchmarks from various sources to better assess the extent to which CHIP is meeting the health needs of children enrolled in the program. Such benchmarks may include federal targets set by Healthy People 2020, types and levels of care recommended by the American Academy of Pediatrics, HEDIS measures, and specific health care access and use measures from state or national survey data.

E. Analysis of CHIP's Impact on Children's Access, Use, and Other Outcomes

Ultimately, the impact of CHIP on the lives of children and their families depends on the extent to which the program improves access to care, receipt of services, and satisfaction with care, and reduces the financial burden of care for the children who enroll. To measure the impact of CHIP on the health and well-being of children and their families, improvement in intermediate access and use outcomes will be critical. These factors may also influence whether parents want their children to remain in the program and whether they are willing to pay premiums.

Prior studies have demonstrated that uninsured children experience more access problems and receive fewer services relative to children with public health insurance coverage (Rosenbach 1989; Monheit and Cunningham 1992; Stoddard, St. Peter, and Newacheck 1994; Currie and Thomas 1995; Newacheck et al. 1998; Davidoff et al. 2000; Moreno and Hoag 2001; Dubay and Kenney 2001). Past research has also shown the existence of access and use differentials for children in different demographic and socioeconomic subgroups. Numerous studies have found further that expansions of CHIP and investments in outreach and enrollment in Medicaid and CHIP have led to improvements in children's access to care, preventive services, or reductions in unmet needs (Damiano et al. 2002; Dick et al. 2004; LoSasso and Buchmueller 2004; Szilagyi et al. 2004, 2006; Kempe et al. 2005; McBroome, Damiano, and Willard 2005; Shone et al. 2005; Hudson and Selden 2007; Gruber and Simon 2008; Dubay and Kenney 2009). In addition, gaps in access to health care by race/ethnicity and income have narrowed for children due to gains in public coverage for children (Shone et al. 2005; Dick et al. 2004). The findings from these papers suggest that differences in service use found between the uninsured and those in Medicaid and CHIP are not all driven by unmeasured differences in characteristics of the two groups, but instead reflect greater access to care afforded to children with health insurance coverage.

Our analysis will extend this previous research by examining the effects of CHIP across a combination of both traditional and emerging outcome domains associated with children's health care access, use, and unmet needs, and families' well-being. For example, despite research indicating that anticipatory guidance provided by medical providers has positive outcomes on children's lives, many parents do not routinely receive advice in these areas from their children's physicians (Perry and Kenney 2007). To address this, we will analyze the extent to which children receive certain types of care and anticipatory guidance that have been shown to have positive outcomes on children's lives. For example, we plan to analyze the receipt of flu shots (Committee on Infectious Diseases 2010), vision screenings (USPSTF 2004), and hearing screenings (Harlor et al 2009), as well as anticipatory guidance, such as counseling on diet and exercise (Chen et al. 2007; USPSTF 2010).

We will conduct analyses of CHIP's impacts for specific subgroups of children, such as children with special health care needs, asthma, or mental health problems, to assess how CHIP enrollment is affecting children who have the greatest health needs. We will also examine how impacts vary across the study states. Notably, states have made several design decisions in their CHIP programs that could influence access, use, satisfaction, and financial burden. CHIP program choices regarding the benefit package, service delivery and payment provider arrangements, cost-sharing, and degree of care coordination vary within and across states (Hill et al. 2005; Cohen Ross et al. 2009; Decker 2010). The sum total of these design choices could affect the access and use experiences of children under CHIP programs in different states and programs. In addition, access and use may be influenced by the supply of health care services available to low-income children and by the characteristics of children enrolling in CHIP and their families.

1. Research Questions

Among the research questions addressed by the impact analysis will be:[20]

- **Impacts on children's health care access, use, and unmet needs.** How much does CHIP increase the extent to which enrolled children have a usual source of care or a patient-centered medical home? Does CHIP increase the receipt of well-child and dental care checkups? Does CHIP increase the extent to which children receive flu shots or vision and hearing screenings, or their parents receive anticipatory guidance on critical issues? How much does CHIP reduce unmet needs among children who enroll?
- **Impacts on child and family well-being.** Does CHIP increase parents' confidence that their enrolled children will obtain needed care? To what extent does CHIP increase their satisfaction with health care provided to enrolled children? To what extent does it reduce the financial burden of health care for families, particularly those who have children with special health care needs?
- **Impacts among and between key subgroups.** To what extent do estimated CHIP impacts appear to vary across states and subgroups? Are impacts larger among children who enrolled in CHIP for a specific medical reason, such as an illness or injury, compared to others? What are the impacts among children with special health care needs?

2. Data and Measures

The impact analysis will draw on data from the 10-state survey of CHIP enrollees and disenrollees, focusing on a subset of the measures that will be the focus of the extensive descriptive analysis described above in Section D. Specifically, the analysis will focus on outcome measures in the following areas.

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[20] In addition to the impact analysis, all of the outcomes explored through these questions will be examined through the

1. Access to care, including ability to find a doctor and get timely appointments
2. Service use
3. Usual source of care (medical and dental)
4. Content of care, including provider communication and medical home concepts
5. Unmet needs
6. Parent perceptions about ability to meet the child's health care needs and financial burdens associated with care

To minimize the risks of confounding influences, and to form subgroups, the analysis will also use the survey to construct a series of explanatory variables—many of which will likewise be the focus of the descriptive analysis. Among these are (1) the child's age, sex, and race/ethnicity, interacted with the parent's interview language; (2) the health status of the child (that is, general health status, presence of chronic conditions, or special health care needs); (3) household income (defined as a percentage of the federal poverty level) and household size (the number of children in the household); (4) the educational attainment, work status, health status, and insurance status of the parent; (5) the parent's attitudes regarding the efficacy of medical care (defined as the extent to which the parent believes that he or she can overcome most illness without help from a doctor and that home remedies are often better than prescribed drugs); and (6) the child's county of residence.

3. Analytic Approach

Ideally, to estimate how CHIP enrollment affects access, service use, unmet needs, satisfaction, and financial burdens, children would be randomly assigned to the CHIP program (the treatment group), and their experiences would be compared to those of a control group. With random assignment, differences observed between the treatment and the control group could be attributed to CHIP. Such a strategy is not an option here; instead, we will define a comparison group to provide a counterfactual for what would have happened to CHIP enrollees in the absence of CHIP. We also will use multivariate methods to minimize systematic differences between the comparison and the treatment group.

We considered several different comparison groups for the purpose of defining a counterfactual for CHIP, including using the pre-CHIP experiences of established enrollees, a longitudinal design, or a comparison group of near eligibles. The most advantageous design for this analysis is the use of two different cross-sections of new and established enrollees, as demonstrated in Kenny (2007). This quasi-experimental approach uses a separate sample pretest and posttest design (Campbell and Stanley 1963; Singleton, Straits, and Straits 1993). The experience of established enrollees (that is, children who have been enrolled in the program for at least five months)—the treatment group—will be compared with the pre-CHIP experiences of newly enrolling children—the comparison group. Thus, the pre-CHIP experiences of the recent enrollee sample serve as a counterfactual for the CHIP experiences of the established enrollee sample. In an effort to minimize the differences between the comparison and the treatment group, the analysis will control for other potentially confounding factors related to the characteristics of the children and their parents. In addition, numerous alternative model specifications are estimated to assess the robustness of the impact estimates.

Regression model. The model aims to estimate the effect of CHIP enrollment on access to care, unmet needs, service use, satisfaction, and financial burdens. We accomplish this by comparing measures obtained from the treatment and comparison groups described above, using multivariate techniques to statistically control for differences in the characteristics of the samples. The model specification may be written as follows:

$$Y_{js} = \beta_0 + \beta_1 T_{js} + \beta_2 \text{Age}_{js} + \beta_3 \text{Sex}_{js} + \beta_4(\text{Race/Ethnicity*Interview Language})_{js} + \beta_5 \text{Health Status}_{js} + \beta_6 \text{Household Income}_{js} + \beta_7 \text{Household Size}_{js} + \beta_8 \text{Parental Education Attainment}_{js} + \beta_9 \text{Parental Work Status}_{js} + \beta_{10} \text{Parental Attitude To Medical Care}_{js} + \beta_{11} \text{County}_{js} + \varepsilon_{js}$$

where Y is a measure of access to care or use for child j in state s; T is a (0, 1) indicator variable for treatment or comparison group; Age represents the child's age; Sex represents the child's sex; Race/Ethnicity*Interview Language represents the child's race/ethnicity interacted with the interview language; Health Status represents measures of the health status of the child (that is, general health status and presence of elevated health care needs); Household Income is defined as a percentage of the federal poverty level; Household Size is defined as the number of children in the household; Parental Education Attainment and Parental Work Status reflect those characteristics of the parent; Parental Attitude To Medical Care represents the parent's attitudes regarding the efficacy of medical care; County is the child's county of residence (county fixed effects capture unobserved factors that could be related to characteristics of CHIP enrollees and their parents); and ε is residual error.

In addition to the state-specific models, separate models will also be estimated for a number of key subgroups to assess the extent to which the findings hold up for different types of children. Separate impact estimates will be derived for children in different subgroups defined by the child's race/ethnicity, age, health status, and the parent's educational attainment. In addition, interaction terms will be added to test whether CHIP impacts appeared to vary with the characteristics of the child and his/her family. Models will be estimated on recent and established enrollees who had been uninsured just before enrolling in CHIP and will include all the demographic and socioeconomic control variables from the core model, a dummy variable for whether the child is a recent or established enrollee, and a set of terms that interact that dummy variable with the child's health status, age, and race/ethnicity/primary language, the parent's educational attainment, and the child's state of residence.

Robustness testing. Our confidence in the summary impact estimates we derive will depend on several different factors, including how sensitive the regression estimates are to alternative specifications, the confidence we have in the counterfactual for established enrollees, and our success at minimizing differences between comparison and treatment groups. In order to assess whether the findings are robust with respect to alternative specifications, and to address potential concerns about the validity of the impact estimates, we will test a broad range of alternative model specifications.

The most fundamental concern is that the pre- CHIP experiences of the recent enrollees may not serve as a reliable counterfactual for the experiences of established enrollees because of differences between the two samples. We will address this issue by conducting a number of sensitivity analyses to assess the robustness of the findings. To address possible unobserved differences between recent and established enrollees, models can be estimated with only recent enrollees who stay enrolled in the program for at least five months. We will also estimate the model with the subset of established enrollees who were enrolled in CHIP closer to the time period during which children in the recent enrollee sample were entering CHIP. To make the recent and established enrollee samples as homogeneous as possible, we can also use the information regarding the presence of insurance coverage just before enrolling in CHIP for both established and recent enrollees, estimating one set of impacts for recent and established enrollees who were uninsured just before enrolling in CHIP, and another set for recent and established enrollees who were insured just before enrolling.

An additional concern is that the access and use experiences of children just prior to enrolling may not reflect what these children typically face. They may have had atypically high service needs, which, in turn, triggered their enrollment into CHIP. To address this possibility, children who had an emergency room visit (a hospital stay) or unmet health needs before enrollment can be excluded from the analysis to assess the extent to which the impact estimates for the other outcomes are sensitive to these exclusions. In addition, as in Howell and Trenholm (2007), we will estimate the models after limiting the study sample to children who did not enroll for a medical reason, to attempt to exclude children who enrolled in CHIP due to a temporary health problem that would have improved regardless of enrollment.

The analysis will also address the concern that the experiences of established enrollees may overstate the access to care that children typically have under CHIP. Other analysis (Kenney et al. 2005) suggests that disenrollees might have had slightly worse access and use experiences with CHIP coverage relative to the established enrollees, therefore an additional set of CHIP impacts will be estimated using disenrollees as the treatment group in place of established CHIP enrollees. In addition, alternative models will be estimated replacing the county fixed effects with dummy variables for the child's state of residence and for whether the child lives in a county that is in a metropolitan statistical area (MSA).

Finally, there is a risk that some of our control variables may be endogenous to the access and use outcomes being studied. This is a particular concern for the health status measures because receipt of care may improve a child's health status. While including health status controls may introduce bias, excluding health status altogether may introduce omitted variable bias. We will address this issue by controlling for the presence of chronic conditions that had an onset prior to the period under study, which should be exogenous to the services received in the recent past. We also will examine how sensitive the findings are to the inclusion of additional health status controls, such as perceived health status of restricted activity days, and when findings are estimated for subgroups of children who are more homogeneous with respect to health status.

F. Analysis of Relationship Between CHIP, Medicaid, and Private Coverage

CHIP was created to offer health care coverage to eligible low-income children as long as "the plan does not substitute for coverage under group health plans" (CHIP statute) and to serve as a bridge between Medicaid and employer coverage. Between 2000 and 2009, the percentage of low-income children (<200 percent FPL) with Medicaid/CHIP coverage increased, while the percentage who were uninsured decreased by five percentage points (Urban Institute estimates).[21] At the same time, the percentage of uninsured low-income nonelderly adults increased by 6.3 percentage points (Urban Institute estimates).

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[21] The health insurance coverage numbers are based on data from the 2001 and 2010 Annual Social and Economic Supplement (ASEC) to the Current Population Survey (CPS) and are adjusted for changes in the survey questions over time.

Concerns that CHIP could displace or "crowd out" employer coverage led Congress to require that states implement such policies as waiting periods to minimize this type of substitution. The Congressional Budget Office's review of the literature (2007) found that estimates of the proportion of children enrolling in CHIP who would have been covered by employer-sponsored insurance in the absence of CHIP ranged between 25 percent and 50 percent,[22] consistent with projections made when CHIP was authorized in 1997. Concerns about crowd-out remain (GAO 2009), especially as CHIP eligibility expands to higher-income children, a group with a greater risk of substituting private coverage.

Understanding coverage transitions and dynamics between CHIP and private coverage is even more critical today, given (1) the more recent CHIP income eligibility expansions to cover children with family incomes above 200 percent FPL; (2) the deterioration of employer coverage, which has become less generous and more costly (Claxton et al. 2010; Kogan 2010); (3) a decrease in the availability of dependent coverage through ESI (Vistnes et al. 2010); and (4) ACA provisions regarding CHIP, employer coverage, and pediatric plans offered through the state health insurance exchanges to be established. While the substitution of CHIP for employer coverage may reduce the target efficiency of the former (Blumberg et al. 2000) because some of the dollars are going to those already insured rather than to the uninsured, low-income families who choose to substitute public for private coverage may be improving the quality and affordability of health care for their children (e.g., Dubay and Kenney 2001; Davidoff 2004). In this context, it is crucial to understand the cost and generosity of the different types of coverage available to low-income children to assess the implications of moving from one type to another.

Using data from the survey of new and established enrollees, we will examine coverage transitions and assess the extent to which CHIP appears to be displacing employer coverage. Using the two alternative measures for defining crowd-out employed in the prior CHIP evaluation,[23] we will expand that evaluation's analyses and estimates by drilling down by income group and taking into account the availability and affordability/generosity of dependent coverage through ESI.

We will also explore how the costs and benefit packages of employer plans compare with CHIP in light of ACA's provisions regarding interactions between employer coverage and CHIP. In addition, we will examine how the transitions between public coverage, private coverage, and uninsurance, as well as crowd-out estimates, vary across states. To the extent possible, we will also explore the association between state-specific CHIP policy choices and these outcomes. However, our ability to draw conclusions about the effect of state programs and anti crowd-out measures will be limited significantly by the small number of states included in the study, as well as the risk of potentially confounding factors that cannot fully be factored into the analysis, such as state unemployment rate differentials arising from the recent recession.

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[22] These figures include estimates from the two general approaches to calculating substitution. The first approach relies on econometric methods applied to national datasets to derive substitution estimates by measuring differences in insurance trends between CHIP-eligible children and a comparison group. The second approach uses surveys of CHIP enrollees to estimate crowd-out, examining the extent to which children had employer coverage before they enrolled in CHIP or to which CHIP enrollees could obtain employer coverage through their parents.

[23] These measures are discussed below and are referred to as 'Substitution at the Time of Enrollment' and 'Potential for Substitution After Enrollment. Also, see Sommers et al. (2005) for the previous evaluation's findings.

To the extent possible we will also contrast our findings with those obtained in the prior evaluation. However, our ability to make relevant comparisons over time will be limited by factors such as differences in the underlying economic situation, given the recent nearly unprecedented recession; and differences in the profile of new CHIP enrollees (due to program maturity, potential secular changes, and/or the influence of the recent recession).

1. Research Questions

Research questions center on the coverage experience of children prior to enrolling in CHIP and the extent to which families retained access to private coverage despite this enrollment:

- **Insurance Coverage Prior to CHIP**. What was children's distribution of coverage prior to enrolling in CHIP? For those who had employer-sponsored coverage, why did they drop or lose it? What fraction retains ESI coverage once enrolled in CHIP? For those with no insurance, how long had they been uninsured? To what extent was this due to a need to satisfy a waiting period prior to enrolling in CHIP?
- **Extent of Crowd-Out from CHIP**. What share of new CHIP enrollment can be attributed to crowd-out, and what can be attributed instead to reductions in uninsurance? To what extent is crowd-out evident among established enrollees?
- **Variation with State Policy Choices**. Does the share of new CHIP enrollees who had prior private coverage vary by whether states have waiting periods and by the length of the waiting period? Does it vary by whether the state imposes premiums or by program type (separate, Medicaid expansion, combination approach)?

2. Data, Measures, Analytic Approach

In previous literature, crowd-out has been estimated for the CHIP program using two main approaches. The first approach relies on econometric methods applied to national datasets to derive substitution estimates by measuring differences in insurance trends between CHIP-eligible children and a comparison group (Dubay and Kenney 2009; Gruber and Simon 2007; Hudson et al. 2005). In these studies, impacts are derived using either variation in eligibility thresholds over time, or comparison groups, to provide a counterfactual to measure what coverage the CHIP-eligible children might have had if CHIP were not available. These types of studies have produced a range of estimates but they suggest that approximately one-quarter to one-half of CHIP-eligible children (with family incomes around 200 percent FPL) would have had employer coverage if CHIP were not available. The second approach to the estimation of crowd-out relies either on estimates derived from state surveys of CHIP enrollees[24] (Shone et al. 2008; Hughes et al. 2002; Shenkman et al. 2002; Sommers et al. 2007) or national data (Kenney and Cook 2007) to examine the extent to which children had employer coverage before they enrolled in CHIP or to which CHIP enrollees could obtain employer coverage through their parents. These types of studies also have produced a range of estimates and suggest that approximately 0.7 to 35 percent of children enrolled in CHIP potentially could be substituting CHIP for employer coverage.[25]

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[24] This is the general approach we will employ in our crowd-out estimation.

As in the prior evaluation, we will use methods that fall under this second approach. Using data from the survey of recent enrollees, we will examine the coverage patterns of new CHIP enrollees during the six months prior to enrollment (see Table VII.8). We will also explore the reasons behind the different transitions for both the entire sample and subgroups of special interest, such as higher income children. We will also conduct analyses for a state and groups of states based, for example, on program type or presence of particular policy programs (e.g., waiting periods).

Table VII.8. Patterns of Insurance Coverage in 6 Months prior to CHIP Enrollment

Status in the 6 Months Before CHIP Coverage	Share of New Enrollees
Private coverage in prior 6 months[a]	%
– ESI	%
– Nongroup private	%
Medicaid coverage in prior 6 months[b]	%
Uninsured for 6 months	%
Other coverage in prior 6 months	%

Source: Survey of New CHIP Enrollees.

[a] Includes children who had private coverage at some point in the 6 months prior to CHIP enrollment.

[b] Includes children who had Medicaid coverage at some point in the 6 months prior to CHIP enrollment.

Substitution at the Time of Enrollment. Our first measure for estimating the potential substitution of CHIP for ESI will identify the share of entrants into CHIP that had private coverage at some point in the six months before enrolling in CHIP and for which employer coverage might still be available.[26] To estimate the extent of substitution among this share of new enrollees, we need to distinguish between those with prior ESI coverage whose parents dropped it voluntarily and those whose parents dropped it involuntarily. We will do this by examining the reasons parents report a child's ESI insurance coverage as ended before enrolling in CHIP. Broadly, these can be classified under the categories shown in Table VII.9.

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[25] A third approach estimates crowd-out through a state-specific review of CHIP applicant data, producing estimates of the percentage of applicants declined due to existing or prior private health insurance (Limpa-Amara et al. 2007). This approach produces estimates which suggest that few children enrolled in CHIP (less than 15 percent) drop private coverage for CHIP.

[26] The survey of CHIP enrollees may be supplemented with state administrative data reporting Medicaid and CHIP enrollment histories to clarify coverage prior to enrollment in CHIP in those cases where parents' recall of prior coverage was problematic because their children had been enrolled in CHIP for more than one year.

Table VII.9. Broad Categories for Why Coverage Ended Among Recent Enrollees with Prior ESI

Reason for Loss of ESI	
Employment or benefit loss/change	Involuntary
Family structure change/loss of parent	Involuntary
Preference for CHIP/dislike of other insurance	Voluntary
Affordability/cost-sharing concerns	Ambiguous
Miscellaneous (e.g., moved/relocated, failed to reapply)	Not enough information to determine

Reasons classified as involuntary indicate that the child would not have been able to keep his or her private coverage and thus do not constitute crowd-out. Reasons of affordability are considered ambiguous because it is hard to differentiate between those families that simply considered CHIP cheaper than their ESI coverage and voluntarily chose to enroll their child in CHIP (voluntary substitution) and those that would have dropped ESI coverage for their child (who would have become uninsured) even if CHIP were not available (involuntary substitution). Finally, there are cases for which there is not enough information and so cannot be classified as either voluntary or involuntary substitution.

We will expand the analysis used in the prior evaluation[27] in a number of ways:

1. To address CHIP income eligibility expansions during the last decade, we will drill down by income category (sample size permitting), paying particular attention to higher income group(s).
2. As mentioned above, the deterioration of affordability and quality of care in private coverage has become a critical issue in the last several years. Basic information on the cost and quality of the coverage being dropped is crucial to discussing the focus of policy directed at crowding-out. We will examine this issue by adopting an affordability-quality "typology" similar to Kogan et al. (2010).[28] We will attempt to identify cases in which prior private coverage was inadequate/unaffordable (i.e., underinsurance) and revise substitution estimates taking this new dimension into consideration. Sample size permitting, we also plan to examine children with special health care needs (SHCN), since these children are more likely to be underinsured (Kogan et al. 2010).
3. Another important trend in ESI is the decreasing availability of dependent coverage. Not considering this possibility might cause us to overestimate the substitution of CHIP for ESI (Howell et al. 2008; Shone et al. 2008). However, we plan to obtain information on the availability of dependent coverage in the current enrollee survey to examine the sensitivity of our substitution estimates to this emerging trend.

Potential for Substitution After Enrollment. Using the survey of established enrollees, our second measure of substitution will estimate the potential for CHIP to substitute for ESI over the longer term: the share of established enrollees who could be covered by employer-based coverage through their parents if CHIP were not available. Following the analysis conducted in the previous evaluation,[29] we will present alternative estimates based on several scenarios of parents' employer coverage and their children's health needs (see Table VII.10). To the extent our data allow, we will also expand this analysis along the same lines as our substitution measure at enrollment time, as discussed, by calculating substitution estimates by (1) income group, (2) taking into consideration underinsurance, and (3) whether dependent coverage is available through parents' ESI.

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[27] See Sommers et al. (2005, 2007) for findings.

[28] Kogan uses the following questions to identify underinsurance: (i) Does the child's health insurance offer benefits or cover services that meet his/her needs? (ii) Does the child's health insurance allow him/her to see the health care providers he/she needs? Not including health insurance premiums or costs covered by insurance, (iii) does the parent pay any money for the child's health care? If yes, (iv) how often are these costs reasonable? If a parent answered "sometimes" or "never" to either (i), (ii), or (iv), the child was considered to be underinsured.

Table VII.10. Potential Substitution for Established CHIP Enrollees

Aspects of Parents' Employer Coverage and Children's Needs	Potential Substitution Estimates (%)
Employer Pays Some or All of the Premium	%
Employer Pays Some or All of the Premium + Child Does Not Have Special Health Care Needs	%
Employer Pays Some or All of the Premium + Child Does Not Have Special Health Care Needs or Greater Health Care Needs	%

To the extent possible, and with the caveats mentioned above, we then will contrast our findings on the two measures of substitution to those obtained in the previous evaluation.

Limitations. Several analytic challenges will limit our ability to measure crowd-out accurately. One, and perhaps the most important, is the impossibility of producing a counterfactual because we cannot actually observe what parents would have done if CHIP were not available. For instance, would a parent have dropped ESI coverage after an increase in premiums or accepted a job not offering dependent coverage had CHIP not existed? Another issue relates to instrumentation. As mentioned above, underinsurance has become a relevant issue that may have important policy implications. However, there is no standard definition of "underinsurance"[30] and obtaining information on the cost and quality of coverage dropped by new enrollees is challenging. Finally, there are issues regarding measurement error (e.g., ability of respondents to characterize accurately the reasons for changing insurance coverage) and omitted variable bias (e.g., trends and/or shocks related to changes in the underlying economic situation or health care costs) that cannot be controlled for properly in this type of analysis.

Careful survey instrumentation can address these limitations, at least to some degree. For example, by augmenting questions about the reasons why parents do not take up ESI for their children with reliable questions on the qualities of this coverage, we can further explore the question of the likely take-up of the coverage in CHIP's absence (the counterfactual). In addition, we can refine the questions related to cost of care in the original CHIP survey, drawing on our experience in analyzing these questions in the past as well as on more recent instrumentation. Through this approach, we expect to better examine and understand the issue of underinsurance among income-eligible children in the absence of CHIP.

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[29] See Sommers et al. (2005) for how children with elevated needs were defined in the prior evaluation. In this evaluation, we propose to use the definition of SHCN developed by the Maternal and Child Health Bureau. In addition, we will consider the subset of children who meet the SHCN definition and who also have greater care needs (for instance, those classified as being in fair or poor health) to focus on children with the greatest health care needs.

[30] See Kogan et al. (2010), Oswald et al. (2005), Ward (2006).

G. Analysis of Retention and Reenrollment

A central question to be addressed by this evaluation is the extent to which CHIP is providing continuous coverage for eligible children, and whether and when children who lose CHIP coverage obtain some other type of health insurance. While CHIP provides coverage to more than seven million children during the year, a large percentage experience uninsurance spells or disenroll entirely (Sommers 2005, 2007; Wooldridge et al. 2005; Haley and Kenny 2001). Children uninsured for even short periods of time have reduced access to care and report more unmet health care needs than those with continuous coverage (Olson et al. 2005; Aiken et al. 2004). In 2006, more than 40 percent of uninsured children eligible for public coverage were enrolled in CHIP or Medicaid in the previous year, suggesting that gaps in coverage could be reduced in part through increases in retention (Sommers 2007). To improve the retention of eligible children in CHIP—and, ultimately reduce the incidence and duration of uninsurance spells among low-income children—states need detailed information on CHIP enrollment patterns, transitions between CHIP and other types of health insurance, and how coverage dynamics vary across states and subgroups of children eligible for public insurance.

In an effort to provide this information to states, this analysis will examine CHIP enrollment and exit (or disenrollment) spells, including what coverage children obtain during their time out of the program. It will expand on the analysis of state administrative data by linking enrollment data from the 10 study states with data from the survey of enrollees and disenrollees. This merged dataset will provide a valuable additional means of examining coverage dynamics among CHIP enrollees, particularly during gaps in public insurance coverage, and for key subgroups. It will update and build on previous research examining coverage duration and transitions among CHIP enrollees, most notably the work of Trenholm et al. (2009), Wooldridge et al. (2005), and Moreno and Black (2005). In addition to providing analysis on states not included in this previous work, we will examine an extended set of enrollment and coverage transition outcomes, including reenrollment and program "cycling" (when children lose and regain coverage over a short period of time). We will also introduce a competing hazards framework that explicitly accounts for different transitions out of CHIP enrollment and disenrollment spells, including exits into Medicaid, private insurance, or an uninsured state. We will also examine enrollment and disenrollment spells for public health insurance (CHIP and Medicaid combined).

1. Research Questions

The primary purpose of this analysis is to broaden our knowledge about coverage dynamics among CHIP enrollees, and whether and how they are affected by individual-, family-, and state-level factors. The key research questions that the analysis will address fall into three categories:

- **Duration of CHIP Enrollment**. How long do families stay in CHIP? What proportion of enrollees has single short-term, medium-term, and long-term enrollment spells and multiple enrollment spells? What percentage of children remains enrolled at selected time points since enrollment? Does the probability of disenrollment increase at certain time points (for example, at first renewal) or vary by time in the program? Does length of enrollment differ across key subgroups and states, and what factors explain this variation?
- **Coverage After Leaving CHIP**. What type of coverage, if any, do children obtain after leaving the program? How long are enrollees continuously covered under public health insurance coverage (Medicaid and CHIP) after program entry? How long do children

who lose coverage after leaving CHIP remain uninsured? What proportion of children who exit into an uninsured state may still be eligible for CHIP? How do enrollee- or state-level factors affect coverage transitions?

- **Reenrollment and Cycling.** What proportion of children who disenroll from CHIP returns to the program after a period of disenrollment? What percentage of children re-enrolls at selected time points since their exit from the program? What is the median time out of CHIP between enrollment spells? Does the rate of reenrollment decrease over time out of the program? What factors are associated with reenrollment rates and the duration of exit spells?

2. Data and Construction of Analytic File

One benefit of using administrative program records is the sheer size of the data set, which includes all children who have been enrolled in public insurance (CHIP or Medicaid) and allows for precise state-level estimates of enrollment and exit durations. However, a limitation of using administrative records only is the lack of information on the coverage status of children after they leave public insurance. In addition, administrative data typically contain very limited information on the characteristics of program participants other than eligibility-related measures such as age. To overcome these limitations, we will link the survey data to individual-level data from the state enrollment files on the survey sample of CHIP enrollees and disenrollees in the 10 study states. In addition to providing rich data on the health, demographic, and socioeconomic characteristics of CHIP enrollees, the survey data will provide key information on the insurance coverage of children upon entry into and exit from CHIP during the months preceding and following the survey period. This additional information will enable us to create complete enrollment histories for the survey sample over a multiyear period that starts before the sampling month and ends before the last month for which administrative data are available, or are right-censored in that month. Because the availability of administrative data will limit how far back we can observe children's start dates, we will exclude left-censored spells from the analysis sample (enrollment spells that begin before the first month for which we have administrative data).

The first step in implementing this analysis will be to construct an analytical file. Using the individual-level state monthly enrollment files, we will create one enrollment history record for each individual included in the survey sample for the entire study period (which will be determined by the period for which we obtain enrollment files from each state). The format and content of the enrollment files will vary across the study states but will contain, at a minimum, information on the month-by-month eligibility status of each child, including whether the child was enrolled in M-CHIP, S-CHIP, or the Medicaid program, and the eligibility group within each of these coverage types. We will use this information to construct enrollment and exit spells and measures for the coverage type during these spells. An enrollment spell will be defined as beginning on either the first day of the month when enrollment is first recorded or the first day of the month following a period of disenrollment. An enrollment spell will end on the last day of the month immediately before the next disenrollment period. We will take the CHIP or Medicaid eligibility category for an enrollment spell from the first month of the spell. If an enrollment spell has not ended by the end of the study period, we will define that spell as censored. Similarly, an exit spell will begin on the first day of the month immediately following a period of enrollment and end on the last day of the month immediately before the next enrollment period; spells that do not end before the last month of the study period will be defined as censored. Data from the individual-level enrollment and exit spells—namely, the length of the spells and whether or not the spell was censored—will be the basis for the survival analysis described in this section.[31] Each child in the survey sample will contribute one or more spells to the analysis sample.

For the months during the study period when a child was not enrolled in either CHIP or Medicaid, we will rely primarily on self-reported answers on insurance coverage from the survey to determine whether the child was privately insured or uninsured during these months. For cases in which we are unable to determine insurance coverage during exit spells based on the survey data, we will consider imputing a child's insurance status based on children with similar enrollment patterns, health status, and demographics living in the same state.

We will also use the survey data and, to a limited extent, administrative data, to construct a number of person-level variables to explore variations in coverage dynamics across key subgroups. These variables will include the subgroup measures listed in Table VII.7, such as children's health status and health care needs, family demographic characteristics, prior insurance coverage, and state of residence.

3. Analytic Approach

Our general methodological approach will consist of two parts. First, we will analyze the characteristics of CHIP enrollment and exit spells observed for the period covered by the state administrative data, using life table analysis. Second, we will conduct multivariate survival analyses to examine the factors that influence coverage dynamics. All analyses will use individuals as the unit of analysis.

Life Table Analysis. We will use "life table analysis," a descriptive approach for analyzing data on duration of participation in a given status (Elandt-Johnson and Johnson 1980), to examine spells of coverage and uninsurance among the survey sample. Using a life table similar to the example shown in Table VII.11, we will generate descriptive information for the full sample and specific subgroups. For each month that a particular spell of enrollment or disenrollment lasts, the life table will contain six pieces of information: (1) the number of spells in the sample lasting at least that long; (2) the number of spells lasting at least that long that we continue to observe in the following month (are not right-censored), (3) the number of uncensored spells ending in that month, (4) the hazard rate, (5) the survival rate, and (6) the cumulative exit rate. The hazard rate represents the probability that a spell will end in a particular month, given that it has lasted that many months. The survival rate, which can be derived from the hazard rate, gives the unconditional probability that a spell will last at least a given number of months. Finally, the cumulative exit rate is the unconditional probability that a spell ends within a given number of months (the survival and cumulative exit rates total 100 percent). The month in which the cumulative exit rate (or survival rate) equals 50 percent provides the median spell duration.

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[31] To inform and complement the survival analysis described in this section, we will also use information on the enrollment and exit spells of survey sample members (and linked survey data on their characteristics and coverage transitions) to conduct a standard descriptive analysis that examines the prevalence of different types of coverage transitions, the prevalence and nature of program churning, and the factors associated with program churning.

Table VII.11. Life Table of CHIP Enrollment Spells

Month	Number of Spells at Beginning of Month (a)	Number In-Sample in Following Month (b)	Number Exiting During Following Month (c)	Survival Rate (d)	Hazard Rate (e)	Cumulative Exit Rate (f)
1						
2						
3						
4						
5						
...						

Note: Column (a) represents the number of enrollment spells that have lasted at least the indicated number of months, regardless of when the spell first started. Column (b) indicates the number of the spells from (a) that we continue to observe in the following month (that is, spells that are not right- censored). Column (c) is the number of spells from (b) that exit CHIP in the following month. The hazard rate (e) is 100*(c)/(b). The cumulative exit rate (f) is the sum of the previous row's cumulative exit rate and the product of the current row's hazard rate and previous row's survivor rate, divided by 100. The survival rate is 100-(f).

The survival and hazard rates represent two important pieces of information for policymakers. The survival rate provides policymakers with information about the fraction of individuals starting an enrollment spell that remains covered for a given number of months—that is, the percentage of individuals that remains enrolled at specific intervals since entry into that status. It provides answers to such questions as: "Among children who enroll in CHIP, how many will still be enrolled after 24 months?" Similarly, when applied to exit spells, the survival rate can address the question, "Among children who disenroll from CHIP, how many experience a coverage gap of at least six months?" An examination of changes in the hazard rate by time in the program can be used to determine whether there are certain months when the probability of disenrollment increases (for example, at the time of first renewal), and whether that likelihood of disenrollment decreases the longer that children stay in the program. This information can provide insight into whether renewal processes may be a factor in the retention of children on CHIP and whether efforts to retain children should focus on outreach at certain time points. Similarly, questions related to the duration of exit spells and how the probability of reenrollment varies by time out of the program can be answered using life tables of CHIP exit spells.

A major advantage of using life table analysis to generate descriptive statistics on enrollment and exit spells is that it easily handles right-censored spells (spells that are ongoing at end of the study period). If such censoring is not taken into account, any estimate of spell length will be biased downward. Right-censored spells contribute information to the life table only up to the month that they are censored. For each month prior to censoring, we know that the spell lasts at least that long, and we know that the spell does not end in that month. After censoring, the spell contributes no more information to the table and is dropped from the analysis.

For the life table analysis, we will define enrollment as consecutive months of CHIP enrollment. One issue with this definition involves what to do about one-month gaps in enrollment identified in the administrative data. One option is to fill these gaps under the assumption that they not "real" but rather due to administrative or data error. However, if these gaps are real, closing them may lead to an overestimate of the length of enrollment spells. We will test the sensitivity of our results in addressing one-month gaps by generating some of the basic life tables under the assumption that the gap is real and the one-month gaps should be closed up.

For the analysis of subgroups, we will generate separate life tables for each subgroup of interest. We will use the log-rank statistic within each subgroup category (e.g., race/ethnicity, state) to test the significance of differences in the life table measures (e.g., median spell duration) across subgroups. This information will help policymakers determine the most effective ways to target resources that can improve retention and reduce the duration of coverage gaps among children eligible for CHIP (or public coverage).

The summary outcomes generated from the life table analysis of the full sample and subgroups will be presented in a format similar to Table VII.12.

Multivariate Analysis. Although the life table analysis will provide a rich description of enrollment and disenrollment spells and the relationship between the spell duration measures and key subgroups, it does not allow us to control for factors that may be driving (or confounding) these bivariate relationships. To address this limitation, we will use a multivariate framework to isolate and explain the linkages between specific factors, such as demographics and state policies, and the duration of enrollment and disenrollment. In particular, we will estimate several multivariate hazard models of time in and out of the program.

The proportional hazards model is the standard multivariate model to analyze duration until an event. In a proportional hazard model, the hazard function, $h(t \mid X, \beta)$, depends on a baseline hazard component that is a function of time, t, a set of covariates, X, and a vector of parameters, β. This model enables us to answer the question of how the likelihood of disenrollment/reentry depends on the length of enrollment/disenrollment and a set of individual-, family-, and state-level characteristics.

Because CHIP enrollment (or disenrollment) spells completed in the sample window may end with a transition to Medicaid, private insurance, or no insurance, we will estimate proportional hazards models in a competing risks framework, which allows spells to terminate with a transition into any of these three alternative insurance states. [32,33] This model is similar to a simple proportional hazards model, except that it allows the effect of any covariate on the overall hazard rate to vary by the type of transition made out of CHIP. For example, having special health care needs, such as asthma, may increase the likelihood of transferring from CHIP into Medicaid but may not change the likelihood of moving from CHIP to private insurance. Accounting for possible variation in the effect of covariates on different coverage transitions, the model can identify factors that affect each distinct transition and how the effects of these factors vary across transition types and over time.

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[32] See Kenney et al. (2007), Dolton and van der Klaauw (1999), Van den Berg et al. (2008), and Wolbers et al. (2009) for recent applications of competing risk hazard models.

[33] The proportional hazard model is one of the most general regression models because it is not based on any assumptions concerning the nature or shape of the underlying survival distribution. However, a key assumption of the model is that the hazard function for an individual depends on the values of the covariates and the value of the baseline hazard. Given two individuals with particular values for the covariates, the model assumes that the ratio of the estimated hazards over time will be constant, which may not be a valid assumption. We will test this proportionality assumption to determine whether the proportional hazards model is valid for our data.

Table VII.12. Duration of Enrollment Spells by Subgroup

Subgroup	Sample Size	Median Length of Enrollment (Months)	Proportion Enrolled After 12 Months[a]	Proportion Enrolled After 18 Months[a]	Proportion Enrolled After 24 Months[a]	Log-Rank Statistic to Test Differences Across Subgroups[b]
All Individuals						
Household Structure						
Two Parents						
One Parent						
Other						
Highest Education level of Parent(s)						
No GED or HS diploma						
GED or HS Diploma						
Some College/College Degree						
Household Income by FPL Range						
< 150% FPL						
150–199% FPL						
>200% FPL						
Child's Overall Health Is Fair or Poor						
Child Has Elevated Health Care Need						
Child Has Asthma						
Child Has Mental or Behavior Health Condition						
Age of Child (at enrollment)						
Age 0–5						
Age 6–12						
Age 13–20						
Child's Race/Ethnicity						
Hispanic						
White						
Black						
Asian						
All Other Races						
Main Language Spoken at Home						
Spanish						
Other						
Prior Insurance Coverage						
No insurance						
Medicaid						
Private coverage						

[a] Cumulative exit rate at specific intervals.

[b] The log-rank test is a hypothesis test to compare the survival distributions of two samples. It compares the estimated monthly hazard rate to the expected monthly hazard rate, where the expected rate is calculated based on the null hypothesis that the hazard rate is the same for each time period of the subgroup category. The null hypothesis, that the distributions are the same across categories, is not rejected if the aggregate difference between the estimated and expected hazard rate is small relative to the aggregate variance of the difference. The null hypothesis is rejected if the difference is large.

For each state, we will estimate separate hazard models for each exit route j (e.g., Medicaid, private insurance, uninsurance). Each of the models will have the following functional form:

$$(1) \qquad h_j (t \mid X, \beta) = h_{j,o}(t) \exp \{ X'\beta_j) \text{ for } j = 1, 2, \text{ or } 3$$

where h_j is the hazard rate for exit route j, $h_{j,o}(t)$ is the baseline hazard rate for exit route j (the hazard when all covariates are equal to zero), and X is a set of covariates. The set of covariates will include individual-, family-, and state-level characteristics hypothesized to affect enrollment (or disenrollment) durations. In this framework, the overall hazard rate $h (t \mid X, \beta)$ is the sum of the hazards of the three types of transitions (Medicaid, private insurance, and uninsurance) that can be observed. This model can be fitted non-parametrically using a Cox proportional hazards approach (Cox 1972), where the baseline hazard is unspecified, or by assuming a functional form for the baseline hazard, the most common of which is the Weibull distribution. The most appropriate specification will be determined by the data at the time of analysis.

Using data on CHIP enrollment spells, we will use the hazard models to estimate the effect of individual and groups of factors on length of time in the program for each type of coverage transition among CHIP disenrollees. Similarly, using data CHIP exit spells, we will examine the determinants of exit spell duration. In addition to examining CHIP spell lengths, we will also estimate a similar model for enrollment/disenrollment spells for public insurance (CHIP and Medicaid combined). The specification of the public insurance model is identical to that presented above, except the overall hazard rate out of a public insurance enrollment/disenrollment spell is the sum of the two hazard rates corresponding to a transition into private coverage or the uninsured state.

We will also use the model estimates to create tables of regression-adjusted life table outcomes, such as median length of enrollment (or disenrollment), for the full sample and specific subgroups. These adjusted outcomes control for possible confounding and can be used make inferences about differences between subgroups. The adjusted outcomes also can be compared to the unadjusted outcomes produced by the life table analysis to examine possible causes of variation in outcomes across subgroups and states.

Finally, all analyses will be weighted using survey sampling weights to ensure that our estimated outcomes are representative of the CHIP population at the time of sampling. It is important to note, however, that the survey sample does not represent the population of all children who have been enrolled in CHIP because it includes a smaller proportion of children who were enrolled for just a short time (a result of being a point-in-time sample). While this can lead to overestimates of enrollment spell durations, differences are likely to be small due to the exclusion of left-censored spells and right-censoring, both of which act to counterbalance the effects of this so-called "length-time bias" on duration estimates (Flinn 1986). However, recognizing that restricting our analysis to the survey sample has some drawbacks relative to using all state enrollment records, including some loss of precision and statistical power due to the smaller size of the sample, we will test the robustness of results based on the survey sample by replicating select analyses using all administrative records. Due to the limited information on enrollee characteristics in the administrative data, we will focus our robustness tests on key univariate statistics, including the median duration of enrollment and exit spells and the probability of disenrolling/reenrolling at specified intervals.

VIII. STATE PROGRAM DATA

We will collect state program data to conduct a descriptive analysis of the characteristics of the CHIP program in all 50 states and the District of Columbia, as well as to provide in-depth analysis about the 10 study states' recent progress in enrolling and retaining children in the program. Our findings will inform Congress and HHS about the evolution of CHIP program features and operations nationwide, particularly following CHIP reauthorization and the economic downturn. In addition, the findings from the analysis of enrollment data from the 10 study states will inform HHS and the individual states of the policies and procedures that appear most able to expand coverage of children in public programs—a particularly important issue in light of the pending major expansion in public coverage through the Affordable Care Act. In this chapter, we describe our plans for the analyses of state program data.

A. Analysis of CHIP Annual Reports and Other Secondary Data

During the first year of the contract, using data from the CHIP Annual Report Template System (CARTS), the CHIP Statistical Enrollment Data System (SEDS), and other secondary data sources Mathematica will conduct a descriptive analysis of the characteristics of the CHIP program. The CARTS and SEDS data systems are maintained by the Centers for Medicare & Medicaid Services (CMS) and contain data submitted by states for program monitoring and tracking purposes. This analysis will be included in the report to Congress and will document how CHIP has evolved since the previous ASPE-sponsored CHIP evaluation and the program's reauthorization in February 2009. The analysis will provide a comprehensive profile of CHIP in all 50 states and the District of Columbia and place the 10 study states in a national context. In addition to CARTS and SEDS, the analysis will draw on information from other secondary sources, including past evaluations and studies, state plans and amendments, and other published reports. In the remainder of this section, we describe the two main data sources—CARTS and SEDS—our plan for accessing the data, and our data analysis approach.

1. CARTS

States are mandated to assess the performance of their CHIP programs annually and report the results to the Secretary of Health and Human Services by January 1 following the end of each federal fiscal year (FFY). States submit their annual reports using the CARTS standardized template, which includes quantitative measures and qualitative perspectives on each state's performance and progress during the previous year. Although CHIP programs vary widely, the template provides a structured approach for each state to describe its program characteristics, report on core national performance and state-specific measures, assess its program implementation and operations in key areas, and discuss its major challenges and accomplishments. Table VIII.1 summarizes the content of the CARTS reports.

Table VIII.1. Overview of Content of the CHIP Annual Report Template System (CARTS)

Report Section	Content
Section I: Snapshot of CHIP Program and Changes	Program characteristics, including income limits, methods of application, type of delivery system, and changes since the previous report
Section II: Program's Performance Measurement and Progress	
Section IIA: Reporting of Core Performance Measures	Four core performance measures (current year performance compared to two previous years) – standardized measures for every state 1. Well child visits in the first 15 months of life 2. Well child visits in the 3rd, 4th, 5th, and 6th years of life 3. Use of appropriate medications for children with asthma 4. Children's access to primary care practitioners
Section IIB: Enrollment and Uninsured Data	Enrollment data are provided directly from SEDS data, but states have an opportunity to make corrections or explain changes. Uninsured data are provided directly from the Current Population Survey (CPS) (three-year averages), but states are given an opportunity to supplement these data with alternative data sources and comment on any limitations in the CPS data that may affect the reliability or precision of those estimates.
Section IIC: State Strategic Objectives and Performance Goals	Each state defines its own objectives and goals and provides data and an explanation of progress for the current year and previous two years
Section III: Assessment of State Plan and Program Operation	
Outreach	How outreach strategies have been modified, most effective methods of outreach, and strategies to target specific populations
Substitution of Coverage	Description of substitution policies, how they are monitored and modified
Eligibility	Medicaid and CHIP eligibility and eligibility for a CHIPRA performance bonus
Eligibility Renewal and Retention	Most effective strategies to renew/retain CHIP eligibles
Eligibility Data	Percentage of children retained or disenrolled at redetermination, percentage of children denied at enrollment
Cost Sharing	Description of state tracking policies on cost sharing, assessment of cost sharing on utilization and participation
Employer-Sponsored Insurance Program	Description of employer-sponsored insurance program for children and/or adults using Title XXI funds (Data not available for FFY 2006)
Program Integrity (for separate CHIP programs only)	Plan for prevention, investigation, and referral of cases of fraud and abuse
Section IV: Program Financing for State Plan – Budget Information	Budget information for current year and projected budget for 2 years
Section V: 1115 Demonstration Waivers	Identify demonstration waivers financed through CHIP (if any)
Section VI: Program Challenges and Accomplishments	Narrative covering state's political and fiscal environment, program challenges, accomplishments, and future changes (either planned or already made)

Source: Centers for Medicare & Medicaid Services 2008.

Mathematica will analyze CARTS data for four years, beginning with FFY 2006 and continuing through FFY 2009. With the exception of information on employer-sponsored insurance, the CARTS content has not changed significantly from FFY 2006 to FFY 2009. We anticipate that CHIP annual reports for FFY 2010 will not be available in time for analysis for the 2011 report to Congress, as states are not required to submit their 2010 reports until January 1, 2011; also, they are frequently delayed in their submissions. However, we will do our best to capture information from the FFY 2010 reports for the 10 study states.

2. SEDS

The SEDS contains aggregate CHIP enrollment data submitted by each state on a quarterly basis using standardized statistical reporting forms. The data are housed in an online system maintained by CMS. States are required to submit quarterly enrollment data within 30 days of the end of the quarter and aggregate annual data within 30 days of the end of the fourth quarter. We will use data primarily from three forms: (1) Form CMS-21E, which gathers data on children enrolled in separate CHIP programs; (2) Form CMS-64.21E, which gathers data on children in Medicaid expansion CHIP programs; and (3) Form CMS-64EC, which gathers data on children enrolled in Title XIX—funded Medicaid coverage.[34] Table VIII.2 lists the enrollment measures reported in SEDS.

Table VIII.2. SEDS Enrollment Measures and Definitions

Enrollment Measure	Definition
Unduplicated number ever enrolled during the quarter	Number enrolled in the program for any length of time during the quarter
Unduplicated number of new enrollees in the quarter	Number enrolled in the program at any time during the quarter who were not enrolled in the program as of the last day of the previous quarter
Unduplicated number of disenrollees in the quarter	Number disenrolled from the program at any time during the quarter who were not re-enrolled as of the last day of the quarter
Number of member-months of enrollment in the quarter	Sum of member-months for each child ever enrolled during the quarter, calculated by counting one month for each month in which the child was enrolled for at least one day and then aggregating the number of months across all children ever enrolled during the quarter
Average number of months of enrollment	Automatically calculated by dividing the member-months of enrollment by the number ever enrolled
Number of children enrolled at quarter's end	Number enrolled in the program on the last day of the quarter
Unduplicated number ever enrolled in the year	Number enrolled at any time during the FFY
Unduplicated number of disenrollees ever enrolled in the year	Number disenrolled in the program at any time during the FFY

Source: Centers for Medicare & Medicaid Services 2009.

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[34] Other forms submitted through SEDS cover populations not relevant to our study, including Form CMS21-PW, which gathers data on low-income pregnant women and Form CMS-21 Waiver, which gathers information on adults enrolled in CHIP under a Section 1115 waiver.

SEDS provides these measures along several other dimensions, including the child's age; service delivery system (fee-for-service [FFS], managed care [MC], primary care case management [PCCM]); type of CHIP program (M-CHIP, S-CHIP, or combination); family income; race; ethnicity; and gender. We will assess the completeness of reporting across these various dimensions (that is, the extent of missing/unknown data) and will present trends by each of these to the extent the data permit. At a minimum, we will present SEDS data for FFY 2006 through FFY 2009; however, more recent SEDS data may also be used to highlight trends after CHIPRA's implementation.

3. Accessing the Data

To access both SEDS and CARTS data electronically, Mathematica employees required to use these data have completed an "Application for Access to CMS Computer Systems" form. The forms have been sent to Jeffrey S. Silverman, the CMS contact person for CARTS and SEDS, who will review the applications and grant access. Once granted access, our team members can enter the electronic systems and extract the data for specific measures and populations.

To complement CARTS and SEDS data, Mathematica will obtain information from other secondary resources. State plan data is one available option. The CMS website contains the currently approved CHIP state plans, all state plan amendments, and press releases for all states. Other resources include reports by the Kaiser Family Foundation, the Georgetown University Health Policy Institute's Center for Children and Families, and Health Management Associates, all of which publish CHIP enrollment figures and policies by state.

4. Analyzing the Data

We will draw on our experience in analyzing CARTS and SEDS data under Mathematica's CMS-sponsored evaluation of CHIP. Under the CMS evaluation, we abstracted data from CHIP annual reports to develop a national profile of the program and document how it evolved over its first decade. Because the reports are not maintained in a database per se, we will create a state-level database and populate it with information from CARTS. This will involve targeted data entry of selected state program characteristics or quantitative indicators (such as the core performance measures) and the "cutting and pasting" of narrative, open-ended items (such as state descriptions of their challenges and accomplishments or program operations). A common challenge is ensuring the comparability and completeness of the data across states and over time. To accomplish this, we will make a significant effort to assess data quality from CARTS, particularly by comparing state reports over time and identifying any unusual patterns not explained in them. If necessary, we will contact CMS to review outliers or anomalies to ensure the integrity of the data for the report to Congress. Given the limited time available to prepare this report, we recognize the need to be selective in our use of CARTS and SEDS and so will focus on items for which reporting is comparable and complete across states and over time, excluding items for which the reporting lacks comparability (such as the state-specific performance measures in CARTS).

Our focus will be on characterizing the evolution of state program features and operations over the four- to five-year period, particularly following CHIP reauthorization and the economic downturn. We will focus on changes in eligibility criteria, eligibility determination and redetermination policies and procedures, benefits and cost sharing, and coordination with employer-sponsored insurance coverage. We will create a series of state-level tables highlighting the features of

CHIP programs over time, with a particular emphasis on changes that occurred between FFY 2006 and 2009. We also will abstract the most recent data on the four core performance measures.[35] As in the past, we will benchmark state CHIP performance against Medicaid and commercial plans for the four core measures. We also plan to synthesize state reports on major challenges and accomplishments, although we recognize that the specificity and quality of the information may vary from state to state. Nevertheless, such information will provide a state perspective on the challenges and opportunities facing the CHIP program as it enters its second decade.

To complement the operational perspective contained in the CHIP annual reports, we will track CHIP enrollment trends using SEDS. We will refer to information from state annual reports in CARTS to explain anomalies in the trends (such as large increases or decreases over time). One of the factors complicating the use of SEDS is that state reporting may vary over time. For example, some states do not report data in every time period or for their entire CHIP population; moreover, some states have changed their specifications (such as how they count children enrolled in both M-CHIP and S-CHIP during a quarter). Using our knowledge of SEDS data (coupled with the cross-checking we routinely conduct against Medicaid Statistical Information System [MSIS] data), we will develop a time-series of CHIP enrollment that is as consistent as possible, focusing on quarterly ever enrolled and annual ever enrolled. We will also use SEDS data to classify the dominant delivery system in the state and examine how it has evolved over time (FFS, MC, PCCM, or mixed), using the approach developed for the CMS-sponsored CHIP evaluation. Finally, we will examine variations in continuity of enrollment across states based on the average number of months of enrollment and the percentage of enrollees who were disenrolled during the quarter or year.

B. Analysis of CHIP and Medicaid Enrollment and Eligibility Data

Between December 2007 and December 2009, the number of children covered by CHIP and Medicaid grew by nearly 7 million nationwide (Kaiser Commission on Medicaid and the Uninsured 2010; Smith et al. 2010). Some of this increase is almost certainly tied to a decline in families' access to affordable coverage for their children, as unemployment has grown and the cost of employer-based coverage for working families has continued to rise. At the same time, however, many states have also been taking aggressive steps in recent years to facilitate enrollment and retention of children eligible for CHIP and Medicaid—from expansions in income eligibility to the adoption of simplified enrollment procedures and improvements in renewal procedures to speed the process and reduce the potential burden on eligible families (Ross et al. 2009). Such changes have been fueled not only by states' recognition of the growing importance of CHIP and Medicaid as a source of affordable coverage but by the new flexibility and financial incentives offered by the federal CHIPRA legislation to adopt these changes.

In the 10 states that are the focus of the CHIP survey, we will use CHIP administrative data to analyze in detail the states' recent progress in enrolling and retaining children in the program. In addition, in states where we can link these data with similar data from the state's Medicaid program, we will extend the analysis to examine trends in the transition of children between the two programs and the retention of children in overall public coverage (that is, in the two programs combined). Through these analyses, we will also examine how recent gains in new enrollment and/or retention may be linked with specific policy or procedural changes in the states, such as the adoption of presumptive eligibility, express lane eligibility, or administrative renewal policies. Our findings will in turn inform HHS and individual states of the policies and procedures that appear most able to expand coverage of children in public programs—a particularly important issue in light of the pending major expansion in public coverage through the Affordable Care Act.

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[35] The FFY 2010 CARTS report template introduces substantial changes in the performance measures must report. In particular, the asthma medications measure will no longer be available and is being replaced with other asthma measures. Should the FFY 2010 CARTS data be available for the 10 study states, we will assess the quality and completeness of these new measures before using them. This may be a non-issue, given the delay in data submission for many states.

1. Research Questions

More specifically, the main research questions we will address through this analysis include:

- **Enrollment Trends.** What are the recent trends in overall CHIP enrollment, Medicaid enrollment, and enrollment in public coverage across the 10 study states? How do these enrollment trends differ across states? To what extent are changes in these trends a function of changes in new enrollment? To what extent are they a function of changes in disenrollment/retention?
- **Program Churning and Transition Trends**. How do states differ in program churning and transition? To what extent has program churning declined over time in the study states? To what extent has program transition increased? How do any improvements observed in program churning or transitions translate into improvements in retention? For which programs and in which states are these gains most evident?
- **Role of State Policy and Procedural Changes**. To what extent have outreach or policies/procedures designed to simplify program application and enrollment been responsible for any gains in new and overall enrollment across the states? To what extent are policies/procedures designed to simplify program renewal or otherwise extend retention responsible for any gains in retention across the states? On a related topic, to what extent are they responsible for any declines in program churning or any gains in program transition?

2. Data

Data for this analysis will be acquired from each of the 10 CHIP survey states for a period of up to five years, as available—from approximately July 2007 to June 2012. (The latter date is estimated based on the anticipated timing of the request in summer 2011). These data typically reside in one of two administrative sources. The first is the CHIP management information system (MIS)—the same system from which we expect to acquire the sample frame for the CHIP survey in each of the 10 states. The types of information we expect to request from this system include the timing of CHIP coverage for each child enrolled in the program over the five-year period; the child's date of birth, county and zip code of residence, and eligibility category (for defining co-payment) for each spell of coverage; and a unique identifier that can be used for linking the child across multiple CHIP coverage spells and between CHIP and Medicaid coverage spells (as relevant). The second source of information is the Medicaid MIS—the same system from which we expect to acquire the sample frame for the Medicaid survey in each of the 3 states where we will be surveying Medicaid enrollees. The information that will be requested from this system is equivalent to that expected to be requested from the CHIP MIS, except that it will pertain to the child's period(s) of coverage in Medicaid, as opposed to CHIP.

In most states, we expect the process of acquiring these data to be straightforward, in large part because it centers on the same systems (and the same data elements) that will support the earlier construction of the CHIP and Medicaid survey sample frames. In addition, in several of the states, we expect that the request may need to center on only a single system, either because the state has an M-CHIP component only or because it has taken the step of integrating its S-CHIP and Medicaid enrollment data into a single MIS. In any states where neither of these conditions is met, however, the process of acquiring the state's Medicaid data could present a challenge. Specifically, in states that (i) have only an S-CHIP component, (ii) maintain their S-CHIP enrollment data in a separate MIS, and (iii) are not selected for the Medicaid survey, the request for Medicaid data will be new and may focus on a relatively antiquated Medicaid MIS (given that it has not been integrated with CHIP). We still anticipate ultimately acquiring all of the requested data from these states. Nevertheless, given the relative challenge of the process, we must acknowledge the possibility that, in one or two S-CHIP-only states, our analysis might focus only on CHIP.

One important question that may arise regarding our data acquisition is why it excludes data elements tied specifically to the application and renewal process, such as the number of denied applications or renewals or the reasons children are disenrolled. We recognize that these data elements are potentially quite useful for our analysis; for example, they could be used to determine which children disenrolling from CHIP may remain eligible for public coverage—a potentially useful indicator of states' progress with retention. Nevertheless, we do not plan to request these data for two reasons. First, because they often reside in a separate eligibility data system, these data elements can be time consuming and costly to acquire. Second, because they are less critical to states for managing their programs—compared with, say, whether a child has coverage and their basis of eligibility—the reliability of these data elements could be suspect and, even to be considered for the analysis, substantial resources would need to be invested to assess their quality and usefulness.

3. Focal Measures

Drawing on the requested data elements from the states' MIS files, we will construct a series of measures spanning the course of children's coverage—from their program entry and retention to their eventual program disenrollment and possible return (either through transfer between programs or churning back into the same program following a gap in coverage). All measures will be constructed on a monthly basis over the five-year period, creating a substantial time series from which to investigate trends and their links to state policies.

Three basic measures allow us to monitor the number of children covered in a given month, as well as the number entering and exiting coverage. They are:

- **Total Enrollment**. The total number of children enrolled in coverage in a given month
- **Total New Enrollment**. The total number of children who have newly enrolled in (i.e., entered) coverage in a given month
- **Total Disenrollment.** The total number of children who have newly disenrolled (i.e., left) coverage in a given month

To understand the coverage experiences of children prior to their becoming newly enrolled in a program, we will use a set of four basic enrollment source measures; they are:

- **Churners**. The proportion (or count) of new enrollees in a particular program who have recently disenrolled from that same program. A downward trend in this measure reflects a positive retention outcome.
- **Seamless Transfers**. The proportion (or count) of new enrollees in one program (i.e., S-CHIP or Medicaid) who transfer, without a gap in coverage, from the other program. An upward trend in this measure reflects a positive retention outcome.
- **Non-Seamless Transfers**. The proportion (or count) of new enrollees in one program (S-CHIP or Medicaid) who transfer, with a short gap in coverage, from the other program. Absent a decline in seamless transfers, an upward trend in this measure reflects a positive retention outcome.
- **New Entries**. The proportion (or count) of new enrollees who show no prior public coverage for at least a year. (In other words, they are truly "new" to public coverage). An upward trend in this measure reflects a positive enrollment outcome.

A similar set of post-disenrollment measures will help us to understand children's coverage experiences after leaving a program; they include:

- **Churners**. The proportion (or count) of disenrollees from a particular program who return to that same program within a short time. A downward trend in this measure reflects a positive retention outcome.
- **Seamless Transfers**. The proportion (or count) of disenrollees from one program (i.e., S-CHIP or Medicaid) who transfer, without a gap in coverage, to the other program. An upward trend in this measure reflects a positive retention outcome.
- **Non-Seamless Transfers**. The proportion (or count) of disenrollees from one program (S-CHIP or Medicaid) who transfer, with a short gap in coverage, to the other program. Absent a decline in seamless transfers, an upward trend in this measure reflects a positive retention outcome.

Finally, a series of duration measures will provide an effective and relatively straightforward way to monitor the retention of children in public coverage. While the specific intervals listed below are somewhat arbitrary, they have been chosen to reflect the retention outcomes of children before, during, and after a state's annual renewal process.

- **Retention After 6 Months**. The proportion of new enrollees who remain in public coverage for at least 6 months. An upward trend in this measure reflects a positive retention outcome.
- **Retention After 12 Months**. The proportion of new enrollees who remain in public coverage for at least 12 months. An upward trend in this measure reflects a positive retention outcome.
- **Retention After 18 Months**. The proportion of new enrollees who remain in public coverage for at least 18 months. An upward trend in this measure reflects a positive retention outcome.

To the extent that the practice is beneficial, we can limit any of these measures to a particular demographic or eligibility group of interest. Such a delimitation can be particularly useful when examining links between these measures and specific policy changes, as the measure can become more sensitive to the change. For example, to examine the role of a major outreach effort in a particular part of a state, our basic count measure of new enrollment could be divided into separate counts for the region(s) that the outreach did and did not target. Then, by comparing trends for these two measures before, during, and after the period of the outreach campaign, we could gain a reliable gauge of how the campaign may have translated into additional enrollment.

4. Analytic Approach

For each of the 10 states, a preliminary descriptive analysis will assess trends for the series of measures above. Through this analysis, we will gain a full understanding of states' progress in enrolling and retaining children in CHIP, Medicaid, and public coverage—addressing the first two of the three overarching research questions for this analysis. In addition, we will be able to contrast progress among states, providing a preliminary understanding of how differences in states' economic conditions, program models, or other major program features may be associated with variations in coverage. Finally, by identifying any major shifts or "spikes" in our measures over time, the descriptive analysis will provide a starting point for understanding the role that specific policy or procedural changes may be having on enrollment and retention across the states.

Building on the findings from the descriptive analysis, a more focused multivariate analysis will examine more rigorously how specific policy and procedural changes may be affecting coverage trends—addressing the third overarching research question. To conduct this analysis, we first will pool our data across the 10 states, creating a panel (cross-time, cross-state) data file of the various enrollment and retention measures described above. Next, drawing on information from the site visits and other descriptive/qualitative sources, we will add to the file a series of explanatory variable(s) for when, and in which states, major policy or procedural changes have been adopted. (Examples include the adoption of express lane eligibility, centralization of the renewal process, and elimination of income verification.) Using basic multivariate models, we then will regress each measure on the relevant policy variable(s) of interest, adding time- and state-fixed effects to control for the influence of any secular trends and state-specific factors that have a mostly constant effect on outcomes over time. (The model will also include a control variable for the state unemployment rate and possibly other economic indicators to account for possible fluctuations in eligibility due to economic conditions.) A general specification of this model is as follows:

$$\text{Outcome}(s,t) = \text{Policy}(s,t)^*B_1 + S(s)\ ^*B_2\ + T(t)\ ^*B_3\ + [\text{Characteristics}(s,t)]^*B_4 + \varepsilon(s,t),$$

where:

Outcome (s,t) is the outcome of interest, measured for a given state s in time period t (e.g., in a given month). The regression model that we will use to estimate this equation will depend on the properties of the outcome variable. For example, for a simple continuous variable (such as total new enrollment), the model can be estimated through linear or log-linear regression.[36]

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[36] For proportional measures—such as the fraction of new enrollees that retain coverage for a specific period or the fraction of disenrollees that churn—the model can be estimated at the individual level (rather than this aggregate level) using logistic regression. This approach may in fact be preferred because the model can include control variables for various individual-level characteristics available from the administrative data (such as the child's age and eligibility

Policy(s,t) is a vector of (one or more) binary indicator variables equal to one if the policy was in place in state s in period t, and zero otherwise.

S(s) is a dummy variable that captures fixed differences across states (state fixed effects).

T(t) is a dummy variable that captures time effects common to all states (time fixed effects).

Characteristics(s,t) is a vector of variables measuring the characteristics of the state s in time period t, such as the unemployment rate.

B_1, B_2, B_3, and B_4 are vectors of coefficients estimated for the four sets of covariates.

$\varepsilon(s,t)$ is a random error term.

For each policy variable, the corresponding coefficient from the vector B_1 provides an estimate of its effect on the measure of interest. To the extent that this estimate is statistically significant, it indicates that the policy has had a significant impact on the measure. However, before we can draw this causal conclusion with any confidence, we must rigorously assess the robustness of the estimate as to the risk that other, unobserved factors may be influencing the outcome trends and possibly biasing the coefficients associated with the policy variable. (Examples of possible unobservables include major fluctuations in the numbers of children eligible for public programs that go unaccounted for and unobserved differences between the families eligible for or enrolled in programs over time.) Indeed, adding to this risk of bias—which is evident for any study that exploits cross-time, cross-state variation in policies to estimate their effects—is the limited degrees of freedom afforded by a 10-state sample, which may preclude inclusion of all relevant policy variables in a given model.

The specific robustness tests to be conducted will depend on the nature of the measure and the possible sources of bias in the policy estimate. For example, to address the risk associated with the simultaneous effect of different policies (which, as noted, may arise because we cannot include all of them in the model simultaneously), we will re-estimate the model for a given outcome, including variables one at a time and in different combinations. To the extent that the original estimate is significant for a given policy and the robustness test(s) shows consistency in the estimate's size and, ideally, significance, we can more credibly interpret the estimate as causal. Alternatively, if the tests do not show such consistency, the credibility of this interpretation is reduced. Instead, in this latter scenario, we will interpret the estimate more cautiously, characterizing it as evidence of an association rather than an impact.

(continued)

group and whether the family's residence is rural or urban). With such control variables, the model can account for changes in the composition of the enrollee/disenrollee population over time that might otherwise introduce bias in the estimated policy effects.

IX. NSCH/SLAITS

The 2011 National Survey of Children's Health (NSCH), a module of the State and Local Area Integrated Telephone Survey (SLAITS), is a national survey of households with children under 18 years of age. One section of the NSCH targets uninsured children in households below 400 percent of the Federal Poverty Level (FPL). Questions in this section focus on awareness and perceptions of Medicaid and CHIP, children's prior enrollment in both public and private coverage, and families' potential access to employer-sponsored insurance. Data collection for the NSCH, expected to begin in January 2011, is slated to identify thousands of uninsured children nationally.[37] Together with the information collected about these children elsewhere in the NSCH, the survey provides information on the reasons eligible children continue to be unenrolled in Medicaid/CHIP, differences in these reasons across subgroups, the characteristics of uninsured children, whether reasons for nonparticipation may have changed over time, and the extent to which uninsured children may be able to enroll in coverage.

A. Design/Content of the NSCH and Uninsured Component

Design of NSCH. Like its predecessors in 2003 and 2007, the 2011 NSCH is sponsored by the Department of Health and Human Services' Maternal and Child Heath Bureau. It is conducted by the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS) as a module of the SLAITS. SLAITS surveys are random digit dial (RDD) telephone surveys conducted using the sampling frame of the CDC's National Immunization Survey. Interviews are conducted in each of the 50 states and the District of Columbia and are designed to produce both national and state-specific estimates. To be included in the NSCH, households are screened to identify those having at least one child under age 18; detailed interviews are conducted for one randomly selected child in the household. Interviews are conducted in English, Spanish, Mandarin, Cantonese, Vietnamese, or Korean with the adult (usually a parent) most knowledgeable about the health and health care of the sampled child (Blumberg et al. 2009).

Identification of Uninsured Children. All children in the NSCH are screened for eligibility for the detailed uninsurance section of the survey, defined as being uninsured and living in a household below 400 percent of the FPL. Uninsurance is defined as not having "any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicaid" at the time of the survey. Income below 400 percent of the FPL is calculated by comparing the household's total income in the past calendar year (ascertained through a single question) to the federal poverty guidelines for that household size and the appropriate year. Respondents who do not answer the income question are asked a series of questions to determine whether their income falls within certain income ranges that represent multiples of the poverty level for the specified household size. For the cases that do not provide a response, NCHS will likely conduct an income imputation, and the analysis of this section will only include those cases imputed to have incomes below 400 percent of the FPL.

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[37] The prior round of the NSCH, in 2007, identified approximately 6,800 uninsured children of all income groups (Centers for Disease Control 2010).

Notably, the eligible income range of below 400 percent of the FPL in the 2011 NSCH is higher than the range of below 200 percent of the FPL for inclusion in the Low-Income Uninsured Supplement to the 2001 SLAITS Survey of Children with Special Health Care Needs (SHCN) used in the prior evaluation (Kenney, Haley, and Tebay 2004). There are two main reasons for the emphasis on higher-income uninsured children in the new SLAITS analysis.

- First, many states have expanded CHIP eligibility to higher-income children. Since the enactment of CHIPRA in early 2009, 15 states have expanded eligibility to higher-income children. As of January 2011, in all but four states, children in families with income up to 200 percent of the FPL are covered under either Medicaid or CHIP. In half of states (24 states and DC) children in families with income of 250 percent of the FPL or higher are eligible for Medicaid or CHIP.[38] Yet 21 percent of uninsured children are in families with incomes between 200 and 400 percent of the FPL. [39] Even in 2008, before the expansions of CHIP to higher-income children, a significant share of eligible but uninsured children were in families with incomes above 200 percent of the FPL.[40]
- Second, new provisions in the ACA will provide coverage subsidies for families with incomes between 138 and 400 percent of the FPL, and new questions in this survey dealing with offers of employer coverage in the family, the extent to which employers contribute to premiums, and firm size can help to identify which children likely will be eligible for this subsidized coverage. To complement the analysis of reasons uninsured children do not participate in Medicaid/CHIP, we plan to examine how many of these children may become eligible for subsidized coverage through the new health insurance exchanges.

Topics. Table IX.1 provides the topics to be covered in the uninsurance section of the survey. Questions about Medicaid and CHIP will use state-specific program names. (CHIP questions will not be asked in states whose two programs use the same name; analysis of awareness and perceptions of CHIP will be limited to children in states with separate CHIP programs.) Perceptions of Medicaid and CHIP will be obtained for those respondents who are familiar with Medicaid and/or CHIP.

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[38] "Health Policy Brief: Enrolling More Kids in Medicaid and CHIP," Health Affairs, January 27, 2011.

[39] "Health Policy Brief: Enrolling More Kids in Medicaid and CHIP," Health Affairs, January 27, 2011.

[40] Genevieve M. Kenney, Victoria Lynch, Allison Cook, and Samantha Phong, "Who And Where Are The Children Yet To Enroll In Medicaid And The Children's Health Insurance Program?" Health Aff October 2010 29 In 2008, of the 4.7 million children eligible for Medicaid or CHIP but not enrolled, "3 million had family incomes below 133 percent of the federal poverty level, 1.2 million had family incomes of 133–200 percent of poverty, and 500,000 had incomes above 200 percent of poverty."

Table IX.1. Topics Covered in Uninsured Section of the 2011 National Survey of Children's Health

Health
Medicaid/CHIP Awareness, Perceptions, and Experiences
– Awareness of Medicaid
– Awareness of CHIP
– Whether respondent knows where to go to get more information about Medicaid/CHIP
– Whether respondent knows how to enroll child in Medicaid/CHIP
– How difficult respondent thinks it is to enroll or re-enroll in Medicaid/CHIP
– Whether respondent believes child is eligible for Medicaid/CHIP and, if not, why not
– Whether respondent is interested in enrolling child in Medicaid/CHIP and, if not, why not
– Whether ever enrolled in Medicaid
– Whether ever enrolled in CHIP
Child's Insurance Coverage History
– Main reason child is uninsured
– Length of time uninsured
– Whether ever had employer-sponsored coverage
– Whether ever had private nongroup coverage
– If ever enrolled in Medicaid, when and why enrollment ended
– If never enrolled in Medicaid, whether ever applied for Medicaid and, if so, when and why unable to enroll
– If ever enrolled in CHIP, when and why enrollment ended
– If never enrolled in CHIP, whether ever applied for CHIP and, if so, when and why unable to enroll
Availability of Employer- Sponsored Insurance (ESI) for Child (asked about both mother and father if both are present in household; if respondent is not parent, questions are asked about the respondent)
– Whether parent has insurance coverage and, if so, whether coverage is provided through employer
– If parent does not have ESI, whether parent is eligible
– If parent has or is eligible for ESI: whether child is eligible (and, if so, why child is not covered); whether employer pays for all/some/none of the cost for family coverage; and size of firm

For all sampled children, the NSCH collects information on a range of characteristics, including health insurance coverage (classified as uninsured, Medicaid/CHIP, or other at the time of the interview); health status and access (such as access to care, utilization, medical home, identification of children with SHCN, presence of common conditions, child well-being, and parental health); demographic and socioeconomic characteristics (such as the gender and age of the child, race/ethnicity/interview language, and educational attainment of the respondent); household characteristics (such as income, household size, and participation in other public programs, such as cash assistance and food stamps); and geographic characteristics (such as region and residential location) that will be used to conduct subgroup analysis.

Weights. NCHS plans to develop child-specific sample weights for each record. These will take into account the probability of selection of households and children into the sample. They will include adjustments for unit nonresponse and noncoverage of nontelephone households. At the final stage of weighting, a post-stratification adjustment will be made to "known" population totals, which may include race/ethnicity, age, gender, household income, mother's education, and number of children in the household.

Imputations. Imputations will be made to address item nonresponse for all variables used to construct weights.[41] Additional imputations may be made for analytic purposes. We will examine levels and patterns of item nonresponse to assess whether variables are reliable. If analytic variables, such as income, are not reliable, and imputed versions are not available, we may not be able to use them for detailed analysis.

Precision. Because of the complex design of the SLAITS, the variances of estimates will be higher than they would be with a simple random sample. We will use software developed to produce correct variances based on stratum identifiers and primary sampling unit (PSU) codes appended to the data files.

B. Analysis

Description of Uninsured Children. The breadth of information collected in the NSCH will allow for a description of the characteristics of uninsured children below 400 percent of the FPL. For example, we will examine health expenses and barriers to care, usual source of care, utilization of care, delayed/unmet needs, and communication with providers as well as individual and family characteristics, such as age, race/ethnicity/language, parents' health status, and parents' educational attainment and employment. We will also contrast uninsured children in this income group with (1) children with Medicaid/CHIP and (2) children with other types of coverage.

Reasons Potentially Eligible Children Do Not Participate in Medicaid and CHIP. The main goal of this analysis is to understand why some uninsured children eligible for Medicaid and CHIP do not participate in these programs. Following the analysis conducted in the prior evaluation, the tabulations will distinguish three basic reasons for nonparticipation: lack of knowledge, lack of interest, and difficulty in enrolling. These tabulations will build on the indicators included in the 2001 survey and will also utilize two new questions (drawn from the 2007 Kaiser Survey of Children's Health Coverage) to identify other knowledge gaps that may impede enrollment among eligible children (Kaiser Commission on Medicaid and the Uninsured 2009).[42] A summary measure of potential barriers to enrollment in Medicaid/CHIP will classify children into one of five mutually exclusive categories based on the responses their parents provide:

1. **Lack of knowledge about the programs only** – including those whose parents have not heard of either program, as well as those who have heard of at least one program, would enroll the child, and see the application process as easy, but are confused about eligibility or do not know how to get more information or enroll
2. **Enrollment not considered easy only** – including those whose parents have heard of at least one program, would enroll the child, are not confused about eligibility, and know how to get more information or enroll, but do not see the application process as easy

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[41] Standard hot deck imputation procedures will be used for all variables except income and household size. These will be imputed using multiple imputations.

[42] The two questions from the Kaiser Survey are: (1) If you wanted to get more information about [PROGRAM], do you know where to go to get that information? and (2) If you wanted to enroll [SC] in [PROGRAM], do you know how to do that?

3. **Both lack of knowledge and enrollment not considered easy** – including those whose parents have not heard of either program, as well as those who have heard of at least one program, would enroll the child but are confused about eligibility or do not know how to get more information or enroll, as well as those whose parents do not see the application process as easy
4. **Lack of interest** – including those whose parents have heard of at least one program but said they would not enroll the child or do not know whether they would want to enroll the child
5. **No reported reason** – including those whose parents have heard of at least one program, would enroll the child, are not confused about eligibility or know how to get more information or enroll, and see the application process as easy

Additional tabulations will explore reasons children lack coverage, reasons for lack of interest in enrolling, past history with public coverage, and reasons for nonenrollment among those who had tried to enroll but did not succeed. We will also use the questions on insurance coverage history and perceptions of re-enrollment to examine issues related to retention. For example, we can identify which children had been enrolled in Medicaid or CHIP previously and examine how long ago they were enrolled, why they are no longer enrolled, and their parents' perceptions of re-enrollment processes.

Subgroup Differences. Reasons for nonparticipation will also be examined based on a variety of characteristics, such as income, race/ethnicity/language, experience with private coverage, experience with public coverage, parents' employment and insurance status, and other demographic and socioeconomic characteristics. Differences will illuminate how perceptions of Medicaid and CHIP differ between segments of the uninsured and can also help to explain how these segments may react differently to implementation of the Affordable Care Act (ACA) as more low-income children and parents become eligible for public coverage.

Changes in Awareness and Perceptions over Time. The prior evaluation, which analyzed 2001 data, found that, while awareness of Medicaid coverage was high among low-income families with uninsured children, many had not heard of the separate CHIP program in their state, especially if that program was relatively new. In addition, the majority of families said they would enroll their child if told he or she was eligible for coverage, but fewer than half believed their child was eligible (Kenney, Haley, and Tebay 2004).

Over the last decade, coverage through Medicaid and CHIP has grown substantially, which makes it likely that more families are aware of the programs at this point. For the survey questions included in both the 2001 Low-Income Uninsured Supplement and the uninsurance section of the 2011 NSCH (such as awareness of Medicaid and CHIP, how difficult the respondent thinks it is to enroll, whether the respondent believes the child is eligible, and whether the respondent is interested in enrolling the child), and for families below 200 percent of the FPL, we will track changes in the responses and composition of the low-income uninsured families over time.

Potential Eligibility for Subsidies in the ACA. New provisions in the ACA will provide coverage subsidies for families with incomes between 138 and 400 percent of the FPL, and new questions in this survey dealing with offers of employer coverage in the family, the extent to which employers contribute to premiums, and firm size can help to identify which children likely will be eligible for this subsidized coverage. To our knowledge, this survey will offer the only nationally representative observation of these indicators among uninsured children. To complement the analysis of reasons uninsured children do not participate in Medicaid/CHIP, we plan to examine how many of these children may become eligible for subsidized coverage through the new health insurance exchanges.

Consequences of Nonenrollment. We will analyze differences in access to care between a variety of subgroups, including (1) eligible but unenrolled children, (2) children just above the income eligibility threshold, (3) children enrolled in Medicaid/CHIP, and (4) children who are potentially eligible for subsidies under the ACA. Both cross-tabs and regression analyses will be used to estimate differences between these groups on a set of access measures, controlling for other individual characteristics. Access indicators available on the survey include health expenses and barriers to care, usual source of care, utilization of a variety of types of health services, delayed/unmet care, and communication with providers.

C. Challenges and Potential Limitations

Survey Differences over Time. The prior evaluation included analysis of the Low-Income Uninsured Supplement, part of the 2001 SLAITS National Survey of Children with SHCN. Much of the content of that survey will be repeated in the 2011 NSCH; however, attempts to compare the results from the two surveys directly would be biased because the NSCH uninsurance questions will include families of higher incomes and because of other differences in the surveys. Other questions are new to this instrument for 2011 and cannot be used for comparisons over time.

Lack of Precision in Measuring Poverty Status. Poverty level is an important variable in this data source because it is used to screen respondents into the section on uninsurance and categorize children by poverty level during analysis. However, measurement of income in the NSCH represents a potential source of error because (1) income is measured through a single question, which is less precise than asking about multiple sources of income; (2) income is collected as a total amount for the entire household, rather than just the child's family unit; and (3) income is collected for the previous calendar year, so respondents in different phases of data collection will be asked about different calendar years, thus possibly causing more misclassification of households in some phases of the data collection period than others.

Random Digit Dial (RDD) Mode. SLAITS is an RDD telephone survey, a less expensive and faster method than in-person data collection. While the RDD method has significant cost advantages, it also has several drawbacks: (1) lower response rates, (2) exclusion of nontelephone households (which will be addressed to some extent by adjustments to the weights based on telephone service interruptions), and (3) exclusion of some linguistically isolated households (despite being conducted in six languages).

Selection into Public Coverage. Comparisons of access and utilization between uninsured children and those enrolled in Medicaid/CHIP may be biased because of selection issues. If the reasons that families obtain coverage for their children are related to the reasons for better or worse access (for instance, if sicker children are both more likely to be insured and have a usual source of care), then the relationship between insurance status and access will be biased. Similarly, findings related to geographic differences among uninsured children may be biased. In states with high levels of participation in Medicaid/CHIP (because of success in enrolling and retaining eligible children), the remaining uninsured may have more antipathy toward the programs or differ in other unmeasured ways from those in states with lower levels of participation, thus encompassing a more varied population of uninsured. We will attempt to control for these differences by using multivariate analysis that takes into account health status, health conditions, participation in other public programs, and other indicators of families' preferences, but unmeasured differences may remain.

Plans to Assess the Reliability of Estimates. To examine the sources of potential bias outlined above, we will undertake extensive external and internal validation of the estimates. For external validation, we will conduct benchmarking, using the March 2011 Current Population Survey and the 2011 American Community Survey, to examine how weighted distributions compare across these surveys. Planned comparisons include distributions of health insurance status, income, age, race/ethnicity, and other demographic characteristics. We will also conduct internal validation of consistency of responses across questions and within and across households.

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X. REPORTING

As our experience conducting the first CHIP evaluation demonstrated, information about the design and implementation of CHIP and its effects on children's health and coverage status at the state and national level is eagerly awaited. In the new policy environment since health reform was enacted, the thirst for timely and updated information is even greater, as policymakers consider the role CHIP might play in the context of an individual mandate, universal enrollment in Medicaid for the lowest-income Americans, and state-based exchanges for purchasing health insurance. To support these information needs, we will deliver timely, accurate, and policy-sensitive findings to the target audiences at critical junctures during and at the end of the project.

In our proposal we described plans to present our results in two reports to Congress as well as in a series of task-specific reports. Because this is a Congressionally mandated evaluation, our first priority is to present the two reports to Congress, in 2011 and 2013. We recognize the central importance of these integrated reports and that they must draw on information from various task-specific analyses. For the task-specific reports, however, we introduce a potential alternative that would produce a set of topic-oriented reports that integrate findings across evaluation components. We describe this concept further in Section C below, but the next step will be to discuss with ASPE the relative benefits and drawbacks of the alternative and take a closer look at the feasibility with respect to both the schedule and budget. We also recommend preparing a standalone executive summary that provides a cross-cutting synthesis of evaluation findings at the end of the project.

All of the reports (and any other analytic products) will be reviewed by a senior member of the Mathematica staff and professionally edited before submission to ASPE. All reports will be submitted as a draft and revised based on ASPE feedback before a final version is submitted. Final reports will be made 508 compliant for posting on ASPE's website.

The remainder of this chapter highlights our approach to four types of reports: (1) reports to Congress in 2011 and 2013, (2) case study reports, (3) other reports, and (4) a standalone executive summary.

A. Reports to Congress

The Mathematica-Urban team has consulted with ASPE and members of the federal workgroup for the CHIP evaluation to develop a plan for the 2011 report to Congress, which presents a challenge because of the limited time available to collect and analyze primary data (especially given the need for OMB clearance) and to gather state administrative data (especially given data security provisions). As shown in Table X.1, our plan for the 2011 report is to focus on information submitted by states through CARTS and SEDS from FFY 2006 through FFY 2009 (or FFY 2010 if possible) to assess how the CHIP program has evolved following the implementation of CHIPRA. Our analysis will include information from all 50 states to provide a national profile, with more in-depth analysis of the 10 study states in order to set the stage for the CHIP evaluation. We also will describe the design and scope of the evaluation to preview the contents of the 2013 report to Congress.

Table X.1. Data Sources for the 2011 and 2013 CHIP Reports to Congress

Data Sources	2011 Report to Congress	2013 Report to Congress
Secondary data from CARTS and SEDS	X	
Individual case study reports		X
Cross-cutting case study synthesis report		X
Analysis of enrollment data		X
Analysis of survey of CHIP enrollees and disenrollees		X
Analysis of survey of program administrators		X
Analysis of NSCH/SLAITS survey		X

The 2013 report to Congress will synthesize findings from all of the evaluation data sources—both quantitative and qualitative—to tell a comprehensive story of the implementation and impacts of CHIP. The report will focus on the 10 selected study states, although the survey of program administrators and NSCH/SLAITS analysis will place the 10 states in a national context.

While Congress requires detailed reports, we also appreciate that members of Congress and their staffs may have limited time to review and digest the depth of the findings presented. Accordingly, we will prepare a concise executive summary for both reports to Congress, drawing on the expertise of Mathematica's editorial and design staff to lay out each chapter for maximum readability. Up-front chapter summaries, easy to understand graphics, and call-out boxes, for example, would improve the accessibility of these documents.

B. Case Study Reports

The 10 state case studies and accompanying cross-cutting synthesis report are central to understanding how CHIP is being implemented, and how states are envisioning the role of CHIP in the context of health care reform. Not only do the case studies provide an opportunity for extensive stakeholder input into the evaluation, they also gather insights and perspectives from families of CHIP enrollees to provide a richer understanding of how they view the program. We will use a standardized template to summarize case study findings in each state, integrating findings from stakeholder interviews and focus groups to describe program features, strengths, and challenges. The cross-cutting report will summarize lessons learned and promising practices across the 10 states, with an emphasis on outreach, enrollment, retention, and service delivery. The report will also synthesize state perspectives on how CHIP has evolved and how CHIP is likely to be incorporated in health insurance exchanges.

C. Other Reports

In addition to the individual and crosscutting case study reports, the original plan calls for individual reports for several other evaluation components: the analysis of enrollment data, the 10-state survey of enrollees and disenrollees, the survey of state program administrators, and the analysis of NSCH/SLAITS data. Table X.2 lists these source-specific deliverables and the schedule for completion of draft and final reports.

The source-specific reports are valuable in documenting in one place all aspects of the data collection and analysis undertaken as well as serving as a reference that can be consulted when questions are raised about evaluation findings that require more detailed information than would be appropriate in a report to Congress or journal publication. An important limitation of these source-

Table X.2. Other Source- Specific Reports

Data Source	Scheduled Completion[43]	
	Draft	Final
Report on Analysis of State Program Reports	July 2011	August 2011
Report on Analysis of State Program Administrator Survey	August 2012	January 2013
Report on Analysis of NSCH/SLAITS	March 2013	May 2013
Report on Analysis of Enrollment Data	March 2013	May 2013
Report on Analysis of Survey of Enrollees and Disenrollees (CHIP and Medicaid)	March 2013	May 2013

specific reports, however, is that they present findings on a given research question from only one data source and, by detailing that source extensively, may be less well suited for a policy audience interested in key findings on specific topics or questions. This limitation is particularly true of a source-specific type of report on the 10-state survey, which has the potential to be quite lengthy given the extensive number of topics and questions this survey can inform.

In the next few months we would like to discuss with ASPE the feasibility of an alternative approach that would reconfigure some of the source-specific reports to support a set of standalone topical publications that would bring together relevant information from multiple components. Under the alternative plan, we would identify which of the source-specific reports could be reconfigured into topic-oriented reports, identify the topics of greatest interest, and develop a plan for producing these reports within the current schedule and budget. Although priorities are likely to change over the next year or two, the following list illustrates the kinds of topics that could be addressed through this alternative approach.

- Changes in State Program Design and Operations Following Implementation of CHIPRA
- CHIP Outreach, Enrollment, and Retention: Trends and Best Practices
- Coverage and Care: How CHIP Serves Children in Ten States (a broad overview of coverage and care in the CHIP program in the 10 study states).
- Impact of CHIP Coverage on Health Care Access, Use, Satisfaction, and Financial Burden
- CHIP Enrollees' Experience Getting Health Care: How Does It Measure Up? (a closer look at CHIP enrollees experiences, benchmarked against other national data sources).
- Access to Dental Care in CHIP
- State Policies, Practices, and Outcomes in Coordinating Between CHIP and Other Coverage

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[43] The dates shown here reflect the revised schedule tentatively approved by ASPE; the revised schedule will be incorporated formally after the contract is modified, which is expected to take place early in 2011.

- Variation in Public Program Experiences Among Low-Income Children in Three States
- Looking Ahead to 2015: The Role of CHIP in Health Care Reform

Resources likely do not permit us to produce reports on all of these topics. Therefore, should APSE express support for this general approach, we would next prepare a memorandum detailing the number and types of reports we anticipate to be feasible within the existing schedule and budget. In preparing this memorandum, we would naturally appreciate any initial feedback from ASPE on topics that are of particular interest to HHS, including topics not reflected in the illustrative list above.

D. Standalone Executive Summary

At the end of the project, we will prepare an executive summary that synthesizes results across all the study components, highlighting key themes and evidence related to program performance and progress. We envision this report will be approximately 25 pages in an easy-to-read layout with minimal technical detail. Brief text will introduce the key themes and lessons learned, accompanied by graphics and simple tables to provide supporting evidence. The executive summary will address the major domains of the evaluation: (1) program design features and their influence on outcomes, (2) enrollment and retention trends and dynamics, (3) access and utilization experiences and impacts, (5) relationship with Medicaid and private coverage, (6) findings related to uninsured children, and (7) implications for health reform.

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APPENDIX A

ENABLING LEGISLATION FOR THE ORIGINAL AND CURRENT EVALUATION

APPENDIX B

STATE SELECTION MEMO

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