

Centers for Disease Control and Prevention  
National Center for Injury Prevention and Control

Follow-up evaluation of a concussion tool kit for high school coaches:  
*Heads Up: Concussion in High School Sports*

This is a modification of approved OMB package # 0920-0674  
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## A. Justification

### 1. Circumstances Making the Collection of Information Necessary

The proposed data collection is a modification of approved OMB package # 0920-0674. Approval was received on 1/31/2005 and expires on 1/31/2008.

Every year, about 1.4 million Americans sustain a traumatic brain injury (TBI).<sup>1</sup> A TBI is defined as a blow or jolt to the head or a penetrating head injury that disrupts the function of the brain. The severity of a TBI may range from “mild” (i.e., a brief change in mental status or consciousness) to “severe” (i.e., an extended period of unconsciousness or amnesia after the injury). Approximately 75% of TBIs that occur each year are concussions or other forms of mild TBI.<sup>2</sup> Many who sustain a mild to moderate TBI are released from medical care without hospitalization or never receive medical care at all. An unknown proportion of those who are not hospitalized may experience long-term disability such as persistent headache, confusion, pain, cognitive and/or memory problems, fatigue, difficulties with sleep patterns, mood changes, or vision or hearing problems. Children ages 0 to 4 and teenagers ages 15 to 19 are two of the highest risk groups for TBIs.<sup>3</sup>

An estimated 300,000 sports- and recreation-related TBIs,<sup>4</sup> most of which can be classified as concussions, occur in the United States each year. The proportion of these concussions that are repeat injuries is unknown; however, there is an increased risk for subsequent concussion among persons who have had at least one previously.<sup>5,6</sup> Repeated concussions occurring over an extended period (i.e., months or years) can result in cumulative neurologic and cognitive deficits,<sup>7,8</sup> but repeated concussions occurring within a short period (i.e., hours, days, or weeks) can be catastrophic or fatal. The latter phenomenon, termed “second impact syndrome,” has been reported more frequently since it was first characterized in 1984.<sup>9,10, 11</sup>

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<sup>1</sup> Langlois JA, Rutland-Brown W, Thomas KE. Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations, and Deaths. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2004.

<sup>2</sup> Centers for Disease Control and Prevention (CDC), National Center for Injury Prevention and Control. Report to Congress on Mild Traumatic Brain Injury in the United States: Steps to Prevent a Serious Public Health Problem, Centers for Disease Control and Prevention, 2003.

<sup>3</sup> Langlois JA, Rutland-Brown W, Thomas KE. Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations, and Deaths. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2004.

<sup>4</sup> Sosin DM, Sniezek JE, Thurman DJ. Incidence of mild and moderate brain injury in the United States, 1991. *Brain Inj* 1996;10:47-54.

<sup>5</sup> Salcido R, Costich JF. Recurrent traumatic brain injury. *Brain Inj* 1992;6:293-8.

<sup>6</sup> Annegers JF, Grabow JD, Kurland LT, Laws ER Jr. The incidence, causes, and secular trends of head trauma in Olmsted County, Minnesota, 1935-1974. *Neurology* 1980;30:912-9.

<sup>7</sup> Jordan BD, Zimmerman RD. Computed tomography and magnetic resonance imaging comparisons in boxers. *JAMA* 1990;263:1670-4.

<sup>8</sup> Gronwall D, Wrightson P. Cumulative effect of concussion. *Lancet* 1975;2:995-7.

<sup>9</sup> Saunders RL, Harbaugh RE. The second impact in catastrophic contact-sports head trauma. *JAMA* 1984;252:538-539.

<sup>10</sup> Kelly JP, Nichols JS, Filley CM, Lillehei KO, Rubinstein D, Kleinschmidt-DeMasters BK. Concussion in sports: guidelines for the prevention of catastrophic outcome. *JAMA* 1991;266: 2867-9.

<sup>11</sup> Cantu RC, Voy R. Second impact syndrome: a risk in any contact sport. *Physician and Medicine* 1995;23:27-34.

The Centers for Disease Control and Prevention's (CDC) *Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations, and Deaths* reported that, of those who sustain a TBI each year, an estimated:

- 50,000 die;
- 235,000 are hospitalized; and
- 1.1 million are treated and released from an emergency department.<sup>12</sup>

Additionally, TBIs contribute to a substantial number of cases of permanent disability annually. CDC estimates that at least 5.3 million Americans, approximately 2% of the U.S. population, currently have a long-term or lifelong need for help to perform activities of daily living as a result of a TBI.<sup>13</sup>

To address these issues, CDC was charged under the Children's Health Act of 2000 to implement a national TBI education and awareness campaign. In response to this mandate, CDC has undertaken a number of education activities, such as the development of a TBI brochure, "Facts about Concussion and Brain Injury" and fact sheet, "Facts about Traumatic Brain Injury," in both English and Spanish.

In 2001, CDC's National Center for Injury Prevention and Control (NCIPC) also developed a tool kit on mild traumatic brain injury (MTBI) for health care providers. The purpose of the tool kit is to improve clinical management and outcomes for patients with MTBI. Since January 2003, CDC has disseminated more than 100,000 of these tool kits to health care providers.

In response to feedback from health care providers, CDC/NCIPC, developed a multi-media educational tool kit directed toward high school athletic coaches. This tool kit, *Heads Up: Concussion in High School Sports*, includes information on how to prevent concussions and identify symptoms and the immediate steps to take when an athlete is showing signs of a concussion. The goals of this project are to educate coaches about sports-related concussion and the need to prevent, recognize, and manage concussions appropriately.

In preparation for the national roll out, a pilot version of the tool kit was tested with a phone survey among 497 high school coaches in California, Maine, Michigan, North Carolina, and Texas. The pilot study assessed coaches' appraisal, perceptions, intentions to use, and actual use of the tool kit materials. Many coaches provided positive assessments of the overall look and visual appeal of the tool kit with nearly 57% rating the kit as very appealing and nearly 42% rating it as somewhat appealing. The majority of coaches indicated that the kit appeared easy to use, with 73.6% rating the kit as very easy to use, and 19.5% rating it as somewhat easy to use. Regarding the amount and level of detail of the tool kit content, 94% thought the kit had just the right amount of information and detail. Ninety-seven percent of coaches indicated that they would recommend the tool kit to others. Some coaches who offered ideas for enhancements

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<sup>12</sup> Langlois JA, Rutland-Brown W, Thomas KE. *Traumatic Brain Injury in the United States: Emergency Department Visits, Hospitalizations, and Deaths*. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2004.

<sup>13</sup> Thurman D, Alverson C, Dunn K, Guerrero J, Sniezek J. Traumatic brain injury in the United States: a public health perspective. *Journal of Head Trauma and Rehabilitation* 1999; 14(6):602-15.

indicated that the wallet card should be reduced in size in order to fit into a typical wallet, that both a video and DVD should be offered, and that the tool kit should be made available to coaches earlier in the sports season. These enhancements were incorporated into the materials of the tool kit for the follow-up to the pilot, the national roll-out.

The revised tool kit, *Heads Up: Concussion in High School Sports* (Appendix M) contains the following materials:

- Introductory letter from CDC
- Concussion guide for coaches (brochure)
- Coach's wallet card on concussion for quick reference
- Coach's clipboard sticker with concussion facts and space for emergency contacts
- Fact sheets for athletes and parents in English and Spanish
- Training room posters
- Educational video/DVD featuring a segment produced by PBS's News Hour
- CD-ROM with downloadable kit materials, relevant resource materials and journal articles

The revised tool kit content is intended to raise awareness and educate coaches about concussion; help coaches educate their athletes, athletes' parents, and other school officials about concussion; provide other related information that can facilitate coaches' understanding of the prevention and management of concussion; and act as a resource and catalyst for the use of CDC-identified recommendations for the prevention and management of concussions. The revised tool kit includes the following subject matter:

- Definitions of concussion, incidence, and risk factors
- Explanation of who is at risk
- Signs and symptoms of concussion
- Advice on management of concussion, regardless of degree of perceived seriousness
- Information about effective prevention strategies
- Suggestions for coaches' roles in concussion education, prevention, and communication with athletes, their families, and other school officials

The *Heads Up: Concussion in High School Sports* tool kit was distributed nationally beginning in September 2005. The timing of the national roll-out coincided with the beginning of the school year, which was suggested by coaches in the pilot.

CDC is authorized to collect this data under section 301 of the Public Health Service Act (42 USC 241). See Appendix A.

## **2. Purpose and Use of Information Collection**

The proposed data collection is a follow-up study to assess high school coaches' use of the tool kit materials, as well as the tool kit's impact upon coaches' concussion knowledge and concussion prevention and management behaviors. A pilot study assessed coaches' appraisal,

perceptions, intentions to use, and actual use of the tool kit materials. Based on findings from this preliminary part of the study, tool kit materials were revised and distributed in a national roll-out. The follow-up evaluation of the tool kit is necessary to measure the impact the tool kit had on coaches' concussion knowledge and concussion prevention and management behaviors, as well as to gauge coaches' use of the revised tool kit materials, which were delivered during a more useful stage of the sports year. The follow-up study of the tool kit will also help to inform future efforts and the development of additional concussion-related educational materials. The study data collection is particularly important given that this project represents the first time a Federal agency has developed and nationally disseminated a concussion tool kit for high school coaches.

Information will be collected from two groups of coaches: those who have already received the tool kit materials and those who have not yet received the tool kit materials.

High school coaches who have received the tool kit obtained it as a free mailing through the CDC/NCIPC website [http://www.cdc.gov/ncipc/tbi/Coaches\\_Tool\\_Kit.htm](http://www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm). This follow-up study will target all coaches who have received the tool kit between September 2005 when it was first made available online and May 2006 (n= an estimated 1000 coaches) to complete a survey at 12-months after the national roll-out. The data collection will ask coaches to:

- Identify basic demographics about themselves
- Describe their knowledge of concussions
- Express their attitudes toward the severity of concussions
- Report access to concussion materials and policies, other than the tool kit
- Rate the usefulness of each piece of the tool kit (e.g., concussion guide, coach's wallet card, clipboard sticker, fact sheets for athletes, fact sheets for parents, video/DVD, CD-ROM)
- Indicate whether they have used or plan to use the materials
- Signify whether tool kit materials increased their knowledge of concussions
- Identify whether tool kit materials changed the ways in which they prevent or manage concussions

A control group of high school coaches, who have not yet received the tool kit, will be included in the follow-up study in order to gauge differences in concussion knowledge and attitudes, compared to coaches who have received the tool kit. Coaches in the control group will be identified through the Clell Wade Coaches directory ([www.coachesdirectory.com](http://www.coachesdirectory.com)). The Clell Wade directory offers a nationally representative listing of coaches of a variety of sports at all grade levels including high school. Coaches in the control group will be offered a tool kit after they complete a brief survey that asks them to:

- Identify basic demographics about themselves
- Describe their knowledge of concussions
- Express their attitudes toward the severity of concussions
- Report access to concussion materials and policies, other than the tool kit



### **3. Use of Improved Information Technology and Burden Reduction**

Use of technology is not appropriate for this population because not all coaches, especially those in rural and/or impoverished areas, have technological access. In order to obtain a representative sample in this population and avoid drop-out bias due to lack of technology, CDC/NCIPC has chosen to conduct a mail survey.

### **4. Efforts to Identify Duplication and Use of Similar Information**

The proposed data collection is unique and does not duplicate any past, current, or planned data collection. In its work to develop the concussion tool kit for high school coaches, CDC/NCIPC has conducted literature searches and conferred with numerous experts in the field. In addition, coaches who participated in pre-testing focus groups confirmed that they were unaware of any single resource for information about concussion and usually had to collect any information they could find from a variety of sources. This work confirmed that there is not another similar effort to develop and test a tool kit either presently, occurring, or planned.

### **5. Impact on Small Businesses and Other Small Entities**

High school coaches are the subjects of this data collection. The high schools in the sample will include public and private entities. Efforts have been made to keep response burden to a minimum. The mail survey is succinct and is only expected to take 10 minutes to complete. The survey is designed to obtain information on coaches' assessment, possible use, and actual use of the tool kit materials with a minimum of items. A brief set of items concerning coach and school demographics will provide a descriptive profile of respondents and will allow for analyses that assist CDC/NCIPC in identifying differences between coaches' assessments of tool kit materials, intentions to use the tool kit materials, and actual use of the tool kit materials.

### **6. Consequences of Collecting the Information Less Frequently**

The feedback obtained in this data collection will assist CDC/NCIPC in measuring the impact the tool kit had on coaches' concussion knowledge and concussion prevention and management behaviors, as well as to gauge coaches' use of the revised tool kit materials. These findings will be used to evaluate the success of the revised *Heads Up: Concussion in High School Sports* tool kit to raise awareness about sports-related concussions and the need to manage concussions appropriately. Collecting data from coaches less frequently would result in CDC/NCIPC not having the information necessary to assess the national campaign objectives, complete an outcome evaluation, or show accountability for tax payers' funds that contributed to the creation and national distribution of the tool kit. There are no legal obstacles to reduce the burden.

## **7. Special Circumstances Relating to the Guidelines of 5 CFR 1320.5**

This data collection request fully complies with Guidelines of 5 CFR 1320.5. No special circumstances exist outside the guidelines.

## **8. Comments in Response to the Federal Register Notice and Efforts to Consult Outside the Agency**

**A.** The notice required in 5 CFR 1320.8(d) was published in the Federal Register on April 19, 2004, volume 69, number 75, pages 20880-20881 (Appendix B). There were no public comments.

The 30-day Federal Register notice is included in Appendix C.

**B.** CDC/NCIPC consulted with CDC staff and representatives from other organizations about conducting the study, including the data collection.

Those outside the CDC who have been consulted about this study during 2005 include:

- Cynthia Klein, Constella Health Sciences  
(678) 553-4548; cklein@constellagroup.com
- Sharon Wong, Constella Health Sciences  
(678) 539-5705; swong@constellagroup.com
- Jennifer Lyden, Constella Health Sciences  
(919) 313-7686; jlyden@constellagroup.com
- Jack Leiss, Constella Health Sciences  
(919) 313-7595; jleiss@constellagroup.com
- Beverly Warden, Constella Health Sciences  
(919) 313-7558; bwarden@constellagroup.com
- Deepak Mav, Constella Health Sciences  
(919) 544-8500; dmav@constellagroup.com
- Kelly Sarmiento, Lockheed Martin  
(770) 488-1384; egz8@cdc.gov

CDC staff who have been consulted about this study during 2005 include:

- Richard Sattin, CDC/NCIPC  
(770) 488-1658; richard.sattin@cdc.hhs.gov
- Mark Faul, CDC/NCIPC  
(770) 448-1276; mgf7@cdc.gov
- Jane Mitchko, CDC/NCIPC  
(770) 488-1043; zlo5@cdc.gov

## **9. Explanation of Any Payment or Gift to Respondents**

There will be no payment made to respondents. A small, non-monetary token, such as a magnet, sticker or pen with the *Heads Up* campaign logo will accompany the survey mailing. The token will be mailed to all coaches who receive a survey mailing and is not contingent upon survey response. Thus, respondents are not required to complete the survey in order to receive the token. The tokens will have a value of less than \$0.40 each.

Additionally, all coaches in the control group will be sent a tool kit approximately 6-8 weeks after the initial survey is sent. All coaches in the control group will be sent the tool kit regardless of whether or not they participated in the survey.

## **10. Assurance of Confidentiality Provided to Respondents**

The CDC Privacy Act Officer has reviewed this OMB application and has determined that the Privacy Act is not applicable. No names or other contact information will be collected on the surveys and the collection will not involve the gathering of sensitive information. In place of identifying information, unique identifiers for each study participant will be printed on each survey. The Constella Evaluation Manager, Dr. Cynthia Klein, will hold the master file that links each coach with his/her unique identifier in a separate database from the survey data. Constella employees who perform data entry will have access to the survey data, but not the master file of names linked with the unique identifiers.

All data collection activities will be conducted in full compliance with the CDC regulations to maintain the privacy of data obtained on persons and to protect the rights and welfare of human assessment subjects, as contained in Title 28 of the Code of Federal Regulations, Parts 22 and 46. Data will be treated in a confidential manner, unless otherwise compelled by law. All evaluation staff will be trained in the importance of privacy and will be required to sign confidentiality and professional ethics statements (Appendix D). Pre-stamped envelopes will be provided to each interviewee to return completed surveys addressed to Dr. Cynthia Klein.

The data gathered from this study, as well as the corresponding data collection forms and analysis plans, will be maintained by Constella. As the Evaluation Manager at Constella, Dr. Cynthia Klein will be responsible for preserving the confidentiality of all data stored on Constella premises. Data stored on easily transportable media (e.g., diskettes or compact disks) and all working files and documents are physically secure in locked offices, desks, or filing cabinets at the end of each day. Upon completion of Constella's contract with CDC, Constella will relinquish all data files to Ms. Jane Mitchko, the CDC Technical Monitor for this project, to allow for any future analysis or review of the data by CDC project staff. Ms. Jane Mitchko will be responsible for preserving the confidentiality of any survey data stored on CDC premises. In addition, Ms. Jane Mitchko will ensure that all study data are stored in a locked and secure cabinet on CDC premises. Upon completion of the larger project, the data files will be destroyed.

All participants will be sent advance notice about the study including information on the purpose of the data collection effort, the expected length of time to complete the data collection, confidentiality of the information provided, name and telephone number at Constella for respondents to contact if they have questions about the data collection effort. The CDC will be provided with non-aggregated data; however, only summary data will be published.

The data collection instrument utilized in this project is a survey for coaches. A copy of the data collection instrument for coaches who have received the tool kit can be found in Appendix E. The data collection instrument for coaches in the control group, who have not yet received the tool kit, is provided in Appendix F. Immediately prior to the conduct of each survey, the following points will be made regarding privacy of the respondent's answers:

- Participation in the survey is voluntary.
- Identifying information such as respondent's name will not be collected on the surveys.
- The participant may skip any question he/she chooses not to answer.
- All data collected by Constella is for CDC use and will be kept in a confidential manner, unless compelled by law. Neither the CDC nor Constella will publish or release non-aggregated data directly to the public.
- CDC will retain ownership of all data collected. When these data are submitted to the CDC, no identifying information will appear.

## **11. Justification for Sensitive Questions**

There are no questions of a sensitive nature.

## **12. Estimates of Annualized Burden Hours and Costs**

Table A-1 presents burden estimates for the collection of information for the survey of high school coaches. The time required for a respondent to complete each survey is expected to be 10 minutes or less. The estimate of burden for the survey is based on Constella and CDC staff experience and expertise in addition to pretests with no more than 9 individuals from each target population. For the data collection instrument, it is estimated that the total burden will be 234 hours.

**Table A-1. Estimated Annualized Burden Hours**

	<b>Number of Respondents</b>	<b>Number of Responses per Respondent</b>	<b>Hours per Response (Hours)</b>	<b>Response Burden (Hours)</b>
Tool Kit Survey	1000	1	10/60	<b>167</b>
Control Group Survey	400	1	10/60	<b>67</b>
Total	1400			<b>234</b>

Table A-2 presents the annualized cost to respondents that was calculated by applying appropriate wage rate categories identified from the Department of Labor tables to hours of burden estimates. According to the U.S. Department of Labor’s Bureau of Labor Statistics, the median annual earnings of coaches employed in elementary and secondary schools was \$24,740 in 2002<sup>14</sup>. To calculate an hourly wage, we divided this figure by 225 working days, and assumed an 8-hour work day. The resulting hourly wage is \$13.74. The estimated total burden cost is \$3,215.16.

**Table A-2. Estimated Annualized Cost to Respondents**

	<b>Number of Respondents</b>	<b>Number of Responses per Respondent</b>	<b>Response Burden (Hours)</b>	<b>Hourly Wage Cost</b>	<b>Respondent Cost</b>
Tool Kit Survey	1000	1	167	\$13.74	<b>\$2,294.58</b>
Control Group Survey	400	1	67	\$13.74	<b>\$920.58</b>
Total	1400				<b>\$3,215.16</b>

### **13. Estimates of Other Total Annual Cost Burden to Respondents or Record Keepers**

There will be no capital or start-up costs and no operating/maintenance costs to respondents in this follow-up study.

### **14. Annualized Cost to the Government**

<sup>14</sup> U.S. Department of Labor Bureau of Labor Statistics, Bulletin 2540  
Internet source: <http://www.bls.gov/oco/print/ocos251.htm#earnings>

The estimated annual cost to the federal government for this follow-up study is \$170,132. This figure includes survey design and development, survey implementation, data analysis, and report writing, and oversight by a federal Technical Monitor.

Survey design and development is expected to take place in 2005; data collection and preliminary analysis are expected to take place in 2006; and final analysis and report writing are expected to take place in 2007. Table A-3 presents the estimated annualized cost to the federal government from 2005-2007. As this information collection will be conducted under a task order awarded to Constella Health Sciences, the estimated costs reflect those in the task order contract and 25% of a CDC FTE's (Grade 12) time for oversight and supervision of the data collection. Constella labor costs were budgeted by estimating the number of hours of staff at the various wage levels that are required, multiplying by the applicable wage rates, and multiplying the results subtotals by factors to cover fringe benefits and burden expense. Wage levels for the labor categories expected to contribute to this project range from \$16.34 per hour for Program Support labor to \$43.96 per hour for Senior Management labor. The second year of the contract is expected to be more labor-intensive which explains the higher annualized cost for 2006 compared to 2005. The basis for estimating other direct costs varies with the type of cost being estimated. Constella telephone costs are estimated to be \$80 for 2005, \$220 for 2006, and \$20 for 2007; Constella reproduction/printing costs are estimated to be \$125 for 2005, \$1,765 for 2006, and \$100 for 2007; and Constella mailing costs are estimated to be \$3310 for 2006. There are no anticipated travel costs. The 25% of a CDC FTE's time for oversight and supervision is estimated to be \$22,187 for the term of the project.

**Table A-3. Annualized Cost to the Government**

<b>Year</b>	<b>Constella</b>	<b>CDC</b>	<b>Total</b>
2005	\$12,818	\$5,916	\$18,734
2006	\$125,016	\$13,170	\$138,186
2007	\$10,111	\$3,101	\$13,212
<b>Total</b>	<b>\$147,945</b>	<b>\$22,187</b>	<b>\$170,132</b>

### **15. Explanation for Program Changes or Adjustments**

This data collection is a follow-up to the OMB-approved pilot study. The pilot study collected data from five states to assess high school coaches' appraisal, perceptions, intentions to use, and actual use of tool kit materials in order to inform improvements for the materials. The tool kit materials were adjusted based on feedback from the pilot study and then distributed nationally. This follow-up to the pilot study is necessary to measure the impact the tool kit had on coaches' concussion knowledge and concussion prevention and management behaviors, as well as to gauge coaches' use of the revised tool kit materials. The follow-up study of the tool kit will also help to inform future efforts and the development of additional concussion-related educational materials.

### **16. Plans for Tabulation and Publication and Project Time Schedule**

A period of 9-months will be necessary to distribute surveys, collect data, analyze data and write reports. Constella will be prepared to begin distribution of surveys as soon as OMB approval is obtained. In order to begin the distribution of surveys 12-months following national availability of the tool kits and to target coaches during the beginning of the school year, OMB approval is required by early August 2006.

Dillman’s method, a scientifically proven format for conducting mail surveys, will be used to contact all prospective survey respondents to encourage participation. Constella is tasked with the survey distribution, collection, and analysis and has successfully used Dillman’s method in the past for large mail survey efforts. This technique includes the following elements:

1. Survey designed and formatted in a respondent-friendly manner and pre-tested with respondents
2. Five contacts by mail including the following:
  - (a) Pre-notification letter (Appendix G) sent a few days before the survey mailing
  - (b) Initial survey mailing includes a cover letter (Appendix H), instruction sheet (Appendix I), survey (Appendix E and F), and a return envelope
  - (c) A thank-you or reminder postcard (Appendix J)
  - (d) Replacement survey mailing with replacement cover letter (see Appendix K)
  - (e) Final survey mailing with final cover letter (see Appendix L) using special delivery
3. Return envelopes with first-class stamps as opposed to pre-franked envelopes
4. Personalized correspondence
5. Inclusion of a small, project-related token, such as a magnet, sticker or pen

The table below outlines the project time schedule, by activity:

**Table A-4. Project Time Schedule**

<b>Data Collection</b>	<b>Timing</b>
<b>Mail survey instruments</b> (including pre-notification letter, survey mailings, thank you/reminder postcard)	2 months after OMB approval
<b>Conduct survey</b>	2 – 6 months after OMB approval
<b>Analyze results from surveys</b>	6- 9 months after OMB approval
<b>Prepare final report of evaluation data</b>	10 months after OMB approval

Survey responses will be manually entered into a database. All data will be entered using rigorous data entry procedures that involve double data entry for a percentage of the surveys employed by a senior level data manager from Constella for quality control purposes.

Quantitative data will be analyzed using quantitative data analysis software, such as SAS. Summaries will be provided using descriptive statistics such as percentages, means, medians, modes and standard deviations. Variables such as type of sport, size of school, school demographics, and gender of athletes will be analyzed and compared for significance of survey

results and reporting. Where appropriate, questions will be presented overall, as well as cross tabulated by significant variables.

Data analyses will include frequencies, as well as chi-square tests. Frequencies of responses to all survey items will be tabulated to provide a summary on items such as how coaches rate the overall appeal of the kit, the kit’s ease of use, the usefulness of specific kit materials (e.g., concussion guide, coach’s wallet card, clipboard sticker, fact sheets for athletes, fact sheets for parents, video/DVD, CD-ROM), and the proportion of schools that have an existing school or district policy for addressing concussions.

Frequencies can be compared across various response categories or variables (i.e., comparative frequencies of responses to items by coaches’ demographics, type of sport, or over time, etc.) or on subsets of the population. Frequencies will be depicted in tables, charts, and graphs, and reported to CDC/NCIPC as part of the survey findings. After tabulating frequencies, Constella will conduct chi-square tests, or cross tabulations of responses by relevant response categories or variables. An illustrative table shell is shown below.

**Table A-5. Coaches Who Did and Did Not Receive the Tool Kit by Perceived Seriousness of the Issue of Concussions**

	<b>% Coaches who rated the issue of concussions as serious (3-4 on Likert scale)</b>	<b>% Coaches who rated the issue of concussions as not serious (1-2 on Likert scale)</b>
<b>% Coaches who received the tool kit</b>		
<b>% Coaches who did not receive the tool kit</b>		

**17. Reason(s) Display of OMB Expiration Date is Inappropriate**

The proposed data collection does not seek approval to be exempted from displaying the expiration date for OMB approval of the information collected.

**18. Exceptions to Certification for Paperwork Reduction Act Submissions**

The proposed data collection does not seek exceptions to Paperwork Reduction Act certification.

**B. Collections of Information Employing Statistical Methods**



## 1. Respondent Universe and Sampling Methods

Information will be collected from two groups of coaches: those who have already received the tool kit materials and those who have not yet received the tool kit materials. Based on current rates, CDC/NCIPC expects to obtain approximately 1000 tool kit requests by May 2006, the end of the 2005-2006 school year. All high school coaches who have received tool kits will be contacted for this survey. The control group will consist of 400 coaches, identified through the Clell Wade Coaches directory ([www.coachesdirectory.com](http://www.coachesdirectory.com)) who have not yet received the tool kit. The Clell Wade directory offers a nationally representative listing of coaches of a variety of sports at all grade levels including high school. All selected coaches will complete the survey only once.

Dillman’s method, a scientifically proven format for conducting mail surveys, will be used to contact all prospective survey respondents to encourage participation. Both the tool kit group and control group will be mailed surveys at the same time and following Dillman’s method. This technique includes five contacts by mail per survey instrument with a pre-notification letter sent a few days before the survey mailing; initial survey mailing including a cover letter, instruction sheet, survey, and a return envelope; a thank-you or reminder postcard; replacement survey mailing; and final survey mailing using special delivery. Anema and Brown (1990) noted that 28 studies using Dillman’s method produced an average response rate of 77%. Each survey mailing is expected to yield approximately a third of the total completed surveys for each phase. We do not expect any differences in the response rates of the tool kit group (n=1000) and control group (n=400). A summary of the assumptions made for the tool kit group and control group and the approximate yield of each survey mailing is outlined in Table B-1 and B-2, respectively.

**Table B-1. Yield Assumptions from Dillman’s Method for the Tool Kit Group**

Survey Mailing Using Dillman’s Method	Respondents Targeted	Completed Surveys
1. Initial survey mailing	1000	267
2. Replacement survey mailing	733	267
3. Final survey mailing	466	266
		<b>Total: 800</b>

**Table B-2. Yield Assumptions from Dillman’s Method for the Control Group**

Survey Mailing Using Dillman’s Method	Respondents Targeted	Completed Surveys
1. Initial survey mailing	400	107
2. Replacement survey mailing	293	107
3. Final survey mailing	186	106
		<b>Total: 320</b>

As shown in Table B-3, a combined sample size of 1120 participants will be sufficient to perform chi-square testing on the hypothesis that coaches who received the tool kit will be more likely than coaches who have not received the tool kit to perceive the issue of concussions as serious. Because we anticipate there will be variations in perceived seriousness of concussion based on the sport coached, we will also conduct analyses by whether the sport is a high-, medium- or low-impact sport. Table B-4 shows that a combined sample size of 415 will be sufficient to perform chi-square testing on the hypothesis that coaches of high-impact sports (such as football) who received the tool kit will be more likely (80%) than coaches of high-impact sports who did not receive the tool kit (60%) to perceive the issue of concussions as serious.

**Table B-3. Power Calculations**

<b>Proportion of coaches who have received the tool kit (n=800) and perceive the issue of concussions as serious</b>	<b>Proportion of coaches who have <u>not</u> received the tool kit (n=320) and perceive the issue of concussions as serious</b>	<b>Power (Pearson's chi-square) alpha = .05, one-sided</b>
90%	60%	>.999
85%	60%	>.999
80%	60%	>.999
75%	60%	>.999

**Table B-4. Power Calculations for Coaches of High-impact Sports**

<b>Proportion of coaches of high-impact sports who have received the tool kit (n=300) and perceive the issue of concussions as serious</b>	<b>Proportion of coaches of high-impact sports who have <u>not</u> received the tool kit (n=115) and perceive the issue of concussions as serious</b>	<b>Power (Pearson's chi-square) alpha = .05, one-sided</b>
90%	60%	.999
85%	60%	.994
80%	60%	.988
75%	60%	.880

**2. Procedures for the Collection of Information**

Upon OMB approval, Constella will commence data collection. Dillman's method, a scientifically proven format for conducting mail surveys, will be used to contact all prospective survey respondents whether they are in the tool kit group or the control group to encourage participation. This technical approach has been used successfully by Constella in the past for large mail survey efforts and has been approved by Dr. Richard Sattin, CDC/NCIPC's Associate Director of Science. The data collection methodology includes multiple mailings and is described in Table B-5 below.

**Table B-5. Data Collection Methodology for both the Tool Kit Group and Control Group**

<b>Timing</b>	<b>Action</b>
1 week before survey launch	A <b>pre-notification letter</b> is sent to coaches to notify recipients about the survey and emphasize the importance of participation in the survey.
Survey launch	<p>The <b>initial survey mailing</b> (including cover letter, instruction sheet, survey, survey return envelope, and token incentive) is sent to coaches.</p> <ul style="list-style-type: none"> <li>• The cover letter will explain the goals of the survey and solicit the recipient’s support and response. The cover letter will be signed by the CDC/NCIPC Technical Monitor and will be printed using CDC letterhead. Cover letters will be individually addressed to survey recipients.</li> <li>• The instruction sheet will contain instructions for completing and returning the survey.</li> <li>• The survey will be provided with clear instructions for completion.</li> <li>• We will provide pre-addressed, pre-stamped reply mail envelopes for the respondents to return the completed surveys. The envelopes will be addressed to Constella’s Atlanta Post Office Box and contain space to record a coach’s updated mailing address. Each recipient’s unique identification number will be printed on the envelope as a bar code with the numeric digits printed below to facilitate tracking of returned surveys received by Constella.</li> <li>• Constella will consult with NCIPC to design a small, non-monetary incentive such as a magnet, sticker or pen to be included in the survey mailing.</li> </ul>
2 weeks after survey launch	All survey recipients will be sent a colorful <b>postcard</b> thanking them for responding and urging them to complete the survey if they have not yet responded.
1 month after survey launch	A <b>replacement survey mailing</b> (including cover letter, instruction sheet, survey, and survey return envelope) will be sent to coaches in the sample who did not complete the initial survey.
1 ½ months after survey launch	A <b>final survey mailing</b> (including cover letter, instruction sheet, survey, and survey return envelope) will be sent by overnight mail to coaches who did not complete either the initial or replacement surveys.

Constella will track survey responses on a daily basis and provide CDC/NCIPC with periodic updates. To facilitate tracking, the bar codes appearing on each survey will be scanned into the survey database to allow for real-time updates. Before the replacement and final survey mailings, Constella will track the number of survey responses and identify non-responders for future mailings. Only individuals who have not returned a survey will be sent an additional mailing.

Some mailings will be returned by the U.S. Postal Service (USPS) for one of several reasons. The USPS will return mail to addressees who have changed address more than six months ago.

This mail will be marked “Forwarding Service Expired” but will contain the addressees’ new mailing address. New addresses will be recorded in the mailing database and another mailing will be sent to the new address.

### **3. Methods to Maximize Response Rates and Deal with Nonresponse**

CDC/NCIPC will undertake considerable efforts to maximize response rates by using material design and methodology to make survey response as compelling and convenient as possible. Dillman’s method of survey distribution (as illustrated in Table B-3 above) has a proven record of achieving high response rates through multiple contacts, and Constella has used this technique successfully in the past. This method will be utilized to encourage participation for both the tool kit group and the control group participants. The five mail contacts remind respondents about the importance of providing feedback on the tool kit. Three survey mailings supply both a survey and a pre-paid return envelope in order to ensure that the materials needed to complete and return a survey are both convenient and free of charge for respondents.

Furthermore, the survey was designed to address research questions in a clear and succinct manner so that respondents’ time burden in completing a survey is kept to a minimum. The estimated time involved in filling out a survey is stated on the cover letter of survey mailings so that respondents will realize that surveys will take only a small amount of time to complete. The outbound mailing envelopes will be distinctive and clearly indicate that the survey is contained within and that the recipient’s participation in the survey is requested. Constella will process and update mailings on an ongoing basis so that the best possible list of current addresses of respondents is available on the mailing database. Current addresses are critical to obtaining high response rates. CDC will be clearly identified as the sponsor of this project on the cover letters and envelopes because coaches in formative focus groups stated that CDC was a respected source that would cause them to pay attention. A small, non-monetary token, such as a magnet, sticker or pen with the Heads Up campaign logo to be included in the survey mailing. In the past, Constella has successfully used this sort of token to encourage survey response.

### **4. Tests of Procedures or Methods to be Undertaken**

A pretest of the surveys was conducted using a sample of school coaches representing different sports. Respondents were informed that they were participating in a pretest of the survey. They were informed that they would be asked all survey items and then asked to provide feedback and suggestions on clarity and appropriateness of language, clarity of survey directions, comprehension of item content, need to either delete or add items, and any other suggestions for improving the survey.

The pretest of both surveys was conducted with less than 9 respondents. Feedback from the respondents indicated that the language of the survey is appropriate and that the questions are clear. No substantive revisions to the survey were made.

### **5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data**

CDC/NCIPC has contracted with Constella Group LLC to direct and implement all aspects of the study, including the proposed data collection and analysis. Constella's Cynthia Klein, PhD, will direct the development of the data analysis plan, including statistical procedures, of the data collected. She will be supported in these functions by Constella's Sharon Wong, MPH. Constella's Deepak Mav, PhD, will perform all statistical programming, prepare tables and summary statistics for all reports, and assist in interpretation of the results yielded from the quantitative analysis.

Jane Mitchko, M.Ed., CHES, of CDC/NCIPC will serve as the Technical Monitor and the federal agency personnel responsible for receiving and approving all contract deliverables. Ms. Mitchko's phone number is 770-488-1043.

**APPENDIX C**  
**CONFIDENTIALITY AGREEMENT**  
**for Access to Information Technology Resources**  
**and Limitation on Disclosure of Sensitive Information**  
**(HEADS UP: CONCUSSION IN HIGH SCHOOL SPORTS CAMPAIGN)**

As an employee or subcontractor of Constella Group, Inc., the Employee requires a wide range of access to confidential information and federal information technology (IT) resources and information maintained by the Centers for Disease Control and Prevention, (CDC), agencies of the U. S. Department of Health and Human Services. In consideration for the following mutual covenants, the parties agree as follows:

1. The Employee acknowledges that within the CDC environment, a variety of restricted access information is held, the vast bulk of which is categorized as "Sensitive but Unclassified", and that in the performance of this contract, the employee may require access to such limited access information. Categories of limited access information include the following:
  - Health and health-related data on individuals, groups, and entities, some of which may identify individuals
  - Federal Privacy Act "systems of records"
  - Information exempted from release under Freedom of Information Act
  - Proprietary data
  - Data collected under other specific legislative mandates
  - Data identified as pre-release, internal working papers, etc., of a Federal agency

Therefore, the Employee further agrees to make no use of the identity of any person or establishments discovered inadvertently and will advise CDC of any such discovery.

2. The Employee acknowledges the sensitive and confidential nature of the information covered by this agreement and agrees to employ all reasonable efforts to maintain such information secret and confidential, such efforts to be no less than the degree of care employed by Constella to preserve and safeguard Constella's own information.
3. The Employee agrees to utilize any information accessed through the performance of this contract solely for the purpose of performing activities as agreed.
4. The Employee has read and agrees to be bound by CDC policies and standards regarding confidentiality and use of federal IT resources. Further, the Employee agrees to attend one hour of training on information security and the use of IT resources related to this contract.

5. The Employee agrees to refrain from any of the following prohibited uses:
  - A. Disclosing, revealing, or giving to anyone information accessed under this contract except to employees of Constella who have a need for the information and who are bound to it by like obligation as to confidentiality, without the express written permission of CDC.
  - B. Attempting to override or avoid security and integrity procedures and devices established by CDC, or its components, to control access to federal IT resources.
  - C. Attempting to override or avoid security and integrity procedures and devices established by outside organizations to control access to their information systems and IT resources.
  - D. Using hardware and/or software, or downloading software, that is not specifically authorized in writing by the Project Officer.
  - E. Violating copyrights or software licensing agreements.
  - F. Using CDC's name or logos to misrepresent, as falling under CDC auspices, personal materials or materials one produces on behalf of an approved group.
6. Upon expiration of this Agreement or this contract, the Employee agrees to destroy or return to CDC any information accessed through the performance of contract that falls under one or more of the categories listed under paragraph 2 above and that was copied, printed, or otherwise duplicated.
7. CDC has the capability and the authority to audit its federal IT resources, and under appropriate circumstances, monitor their use.
8. CDC may terminate this access with or without cause at any time without advance notice.
9. The Employee's authorized access automatically expires at the end of the contract period, or sooner if necessary. A written renewal request must be submitted *two months* prior to the termination, with appropriate justification for each access to be continued. A new Agreement for Access and Limitation on Disclosure is required for each renewal.
10. U.S. Federal law shall govern the construction, interpretation, and performance of this Agreement. Violations of this agreement or misuse of CDC's federal IT resources may subject the Employee to criminal penalties in accordance with federal law. In addition, the Employee understands that other federal laws and regulations govern CDC's maintenance and operation of these federal IT resources and may apply to the Employee.

**CONFIDENTIALITY AGREEMENT**  
**for**  
**Access to Information Technology Resources**  
**and**  
**Limitation on Disclosure of Sensitive Information**

***(HEADS UP: CONCUSSION IN HIGH SCHOOL SPORTS CAMPAIGN)***

The undersigned Employee has read, understood, and agrees to comply with the statements outlined in this Confidentiality Agreement.

\_\_\_\_\_  
*EMPLOYEE's Name: Last, First, MI*

\_\_\_\_\_  
*EMPLOYEE's Current Position*

\_\_\_\_\_  
*EMPLOYEE's Signature*

\_\_\_\_\_  
*Date: (mm/dd/yyyy)*

\_\_\_\_\_  
*OFFICIAL WITNESS' Name:*

\_\_\_\_\_  
*OFFICIAL WITNESS' Position*

\_\_\_\_\_  
*OFFICIAL WITNESS' Signature*

\_\_\_\_\_  
*Date: (mm/dd/yyyy)*



## APPENDIX D

### ABOUT YOU

1. Are you a coach of high school-aged athletes?

YES (*Continue.*)

NO

The rest of the survey is for coaches of high school-aged athletes. It is important that you return this survey even if you are not a coach of high school-aged athletes. Please stop here and return the survey in the envelope provided to ensure that you will not receive future mailings. Thank you very much for your time.

2. The Centers for Disease Control and Prevention (CDC) mailed tool kits called ***Heads Up: Concussion in High School Sports*** in a light blue box to coaches. Have you received it?

YES (*Continue.*)

NO

Not sure

The rest of the survey is for coaches of high school-aged athletes who received a tool kit called ***Heads Up: Concussion in High School Sports*** in a light blue box. It is important that you return this survey even if you have not received the tool kit. Please stop here and return the survey in the envelope provided to ensure that you will not receive future mailings. Thank you very much for your time.

3. How did you receive the tool kit?

I ordered the tool kit online and received it through the mail.

I received the tool kit from my Athletic Director or other school staff.

I received the tool kit at a conference.

Other: \_\_\_\_\_

Public Reporting burden of this collection of information is estimated at 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Reports Clearance Officer, 1600 Clifton Road NW, MS D-74, Atlanta, GA 30333; Attn: PRA (0920-XXXX)

4. How long have you had the tool kit?
- 1 month or less**
  - 2-5 months**
  - 6-9 months**
  - 10 months or more**
5. Have you reviewed any of the tool kit materials, even if only briefly?
- YES**
  - NO** *(If NO, we would greatly appreciate if you spent a few minutes reviewing the tool kit materials before proceeding.)*
6. Please identify the category (or categories) that best describe you:  
(Check all that apply.)
- High school coach of a varsity sport**
  - High school coach of a club sport**
  - Private club coach**
7. What is your gender?
- Male**
  - Female**
8. How many years have you coached high school-aged athletes?
- 1 year or less**
  - 2-10 years**
  - 10 years or more**

9. Please identify the high school-aged boys' or girls' sport(s) you coach. (*Check all that apply.*)

BOYS' Sports
<input type="checkbox"/> Baseball
<input type="checkbox"/> Basketball
<input type="checkbox"/> Cheerleading
<input type="checkbox"/> Football
<input type="checkbox"/> Gymnastics
<input type="checkbox"/> Ice Hockey
<input type="checkbox"/> Lacrosse
<input type="checkbox"/> Soccer
<input type="checkbox"/> Rugby
<input type="checkbox"/> Volleyball
<input type="checkbox"/> Wrestling
<input type="checkbox"/> Other: _____

GIRLS' Sports
<input type="checkbox"/> Basketball
<input type="checkbox"/> Cheerleading
<input type="checkbox"/> Field Hockey
<input type="checkbox"/> Gymnastics
<input type="checkbox"/> Ice Hockey
<input type="checkbox"/> Lacrosse
<input type="checkbox"/> Soccer
<input type="checkbox"/> Softball
<input type="checkbox"/> Rugby
<input type="checkbox"/> Volleyball
<input type="checkbox"/> Wrestling
<input type="checkbox"/> Other: _____

10. How would you describe the main setting of your school or sports club? (*Choose one.*)

- Urban
- Suburban
- Rural
- Not sure

11. Which of the following best describes the economic status of your athletes' parents? (*Choose one.*)

- High income
- Middle income
- Low income
- Not sure

12. If you work for a school, approximately how many students attend the main high school where you work?

- Less than 1000 students
- 1000 – 3000 students
- More than 3000 students
- Not sure

13. If you work for a school, is your school public or private?

- Public school
- Private school

**YOUR THOUGHTS ON CONCUSSIONS**

14. A concussion is a brain injury. Concussions are caused by a bump, blow or jolt to the head. Are you aware of any incidents of sports-related concussions among your athletes during the last playing season (2005-2006)?

- YES
- NO
- Not sure

15. My role as a coach includes educating my athletes about sports-related concussions.

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

**For questions 16-19 please list each sport that you coach in the first column and then answer the questions for each sport.**

16. How serious is the issue of concussions in the high school sport(s) you coach?

*(Fill in sport and circle one answer per sport.)*

<b>Sport:</b>	<b>Never Serious</b>			<b>Very Serious</b>	<input type="checkbox"/> No concussions experienced
	1	2	3	4	
<b>Sport:</b>	<b>Never Serious</b>			<b>Very Serious</b>	<input type="checkbox"/> No concussions experienced
	1	2	3	4	
<b>Sport:</b>	<b>Never Serious</b>			<b>Very Serious</b>	<input type="checkbox"/> No concussions experienced
	1	2	3	4	

17. During the last playing season (2005-2006), how many of your high school-aged athletes would you estimate experienced a sports-related concussion? (Fill in sport and circle one answer per sport.)

<b>Sport:</b>	<b>None</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Nearly All</b> <b>4</b>
<b>Sport:</b>	<b>None</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Nearly All</b> <b>4</b>
<b>Sport:</b>	<b>None</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Nearly All</b> <b>4</b>

18. How seriously do you think your athletes view the issue of concussions? (Fill in sport and circle one answer per sport.)

<b>Sport:</b>	<b>Never Serious</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Very Serious</b> <b>4</b>	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Very Serious</b> <b>4</b>	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Very Serious</b> <b>4</b>	<input type="checkbox"/> <b>No concussions experienced</b>

19. How seriously do you think your athletes' parents view the issue of concussions? (Fill in sport and circle one answer per sport.)

<b>Sport:</b>	<b>Never Serious</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Very Serious</b> <b>4</b>	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Very Serious</b> <b>4</b>	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> <b>1</b>	<b>2</b>	<b>3</b>	<b>Very Serious</b> <b>4</b>	<input type="checkbox"/> <b>No concussions experienced</b>

### ABOUT THE TOOL KIT

**For questions 20 & 21 please answer the questions for each tool kit material.**

<b>20. Have you used:</b>	<b>YES</b>	<b>NO</b>	<b>If YES, how useful was the material?</b> (Circle one answer for each material.)			
<b>Small blue booklet: Guide for Coaches</b>	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>
<b>Wallet card: Signs and Symptoms of Concussion</b>	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>
<b>Clipboard Sticker</b> with concussion facts and space for emergency contacts	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>
<b>Video/DVD</b>	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>
<b>Posters</b>	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>
<b>Fact Sheet for Athletes</b>	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>
<b>Fact Sheet for Parents</b>	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>
<b>CD-ROM: research articles and downloadable materials</b>	<input type="checkbox"/>	<input type="checkbox"/>	Not Useful <b>1</b>	<b>2</b>	<b>3</b>	Extremely Useful <b>4</b>

<b>21. In the future, do you plan on using:</b>	<b>YES</b>	<b>NO</b>	<b>Not sure</b>
<b>Small blue booklet: Guide for Coaches</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Wallet card: Signs and Symptoms of Concussion</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Clipboard Sticker</b> with concussion facts and space for emergency contacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Video/DVD</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Posters</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Fact Sheet for Athletes</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Fact Sheet for Parents</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>CD-ROM: research articles and downloadable materials</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. Since you have had the tool kit, have you witnessed any sports-related concussions?
- NO
  - YES→ If YES, how did you generally respond? *(Check all that apply.)*
    - Let athlete resume play immediately
    - Removed athlete from play
    - Had athlete evaluated by an appropriate health care professional
    - Informed athlete's parents/guardians about the known or possible concussion
    - Allowed athlete to return to play only with permission from an appropriate health care professional
    - Other: \_\_\_\_\_
23. Are you aware of your school/district or club policy for addressing sports-related concussions?
- NO
  - YES→ If YES, how does the information included in the tool kit compare with your school or district policy for addressing sports-related concussions?
    - Much more comprehensive
    - Somewhat more comprehensive
    - Somewhat less comprehensive
    - Much less comprehensive
24. Do you currently have access to materials, other than the tool kit we sent you, about preventing and managing concussions?
- NO
  - YES→ If YES, how would you describe your overall satisfaction with the tool kit compared to other materials about concussion you already have?
    - Much more satisfied
    - Somewhat more satisfied
    - Somewhat less satisfied
    - Much less satisfied
25. During the past 6 months, have you educated others about preventing or managing sports-related concussions?
- NO
  - YES→ If YES, with whom? *(Check all that apply.)*
    - Athletes
    - Athletes' Parents
    - Principal
    - Athletic Director
    - Other Coach
    - Athletic Trainer
    - Other: \_\_\_\_\_

26. Has the tool kit changed the way you view the seriousness of concussions?

NO

YES → If YES, how have your views changed?

I believe concussions are more serious than I thought before.

I believe concussions are less serious than I thought before.

27. Has the tool kit taught you anything about concussions that you weren't aware of before?

NO

YES → If YES, what has the tool kit taught you about concussions?

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28. Since you have used the tool kit, have you made any changes in the ways you prevent or manage concussions?

NO

YES → If YES, what changes has the tool kit helped you to make in the ways you prevent or manage concussions?

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**Thank you very much for your time.**

**Your participation in this survey will have a meaningful impact upon the future creation and distribution of concussion prevention and management materials.**

**Please return this survey in the pre-stamped envelope provided.**



## APPENDIX E

### ABOUT YOU

1. Are you a coach of high school-aged athletes?

YES (*Continue.*)

NO

The rest of the survey is for coaches of high school-aged athletes. It is important that you return this survey even if you are not a coach of high school-aged athletes. Please stop here and return the survey in the envelope provided to ensure that you will not receive future mailings. Thank you very much for your time.

2. If free educational materials to prevent sports-related concussions were available online, would you request them?

YES

NO

Not sure

3. The Centers for Disease Control and Prevention (CDC) offers tool kits called ***Heads Up: Concussion in High School Sports*** in a light blue box to coaches. Have you received one of these tool kits?

YES

NO

Not sure

Public Reporting burden of this collection of information is estimated at 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to CDC/ATSDR Reports Clearance Officer, 1600 Clifton Road NW, MS D-74, Atlanta, GA 30333; Attn: PRA (0920-XXXX)

4. Please identify the category (or categories) that best describe you:  
(*Check all that apply.*)
- High school coach of a varsity sport**
  - High school coach of a club sport**
  - Private club coach**
5. What is your gender?
- Male**
  - Female**
6. How many years have you coached high school-aged athletes?
- 1 year or less**
  - 2-10 years**
  - 10 years or more**
7. How would you describe the main setting of your school or sports club? (*Choose one.*)
- Urban**
  - Suburban**
  - Rural**
  - Not sure**
8. Which of the following best describes the economic status of your athletes' parents? (*Choose one.*)
- High income**
  - Middle income**
  - Low income**
  - Not sure**

9. Please identify the high school-aged boys' or girls' sport(s) you coach. (Check all that apply.)

<b>BOYS' Sports</b>
<input type="checkbox"/> Baseball
<input type="checkbox"/> Basketball
<input type="checkbox"/> Cheerleading
<input type="checkbox"/> Football
<input type="checkbox"/> Gymnastics
<input type="checkbox"/> Ice Hockey
<input type="checkbox"/> Lacrosse
<input type="checkbox"/> Soccer
<input type="checkbox"/> Rugby
<input type="checkbox"/> Volleyball
<input type="checkbox"/> Wrestling
<input type="checkbox"/> Other: _____

<b>GIRLS' Sports</b>
<input type="checkbox"/> Basketball
<input type="checkbox"/> Cheerleading
<input type="checkbox"/> Field Hockey
<input type="checkbox"/> Gymnastics
<input type="checkbox"/> Ice Hockey
<input type="checkbox"/> Lacrosse
<input type="checkbox"/> Soccer
<input type="checkbox"/> Softball
<input type="checkbox"/> Rugby
<input type="checkbox"/> Volleyball
<input type="checkbox"/> Wrestling
<input type="checkbox"/> Other: _____

10. If you work for a school, approximately how many students attend the main high school where you work?

- Less than 1000 students
- 1000 – 3000 students
- More than 3000 students
- Not sure

11. If you work for a school, is your school public or private?

- Public school
- Private school

**YOUR THOUGHTS ON CONCUSSIONS**

12. A concussion is a brain injury. Concussions are caused by a bump, blow or jolt to the head. Are you aware of any incidents of sports-related concussions among your athletes during the last playing season (2005-2006)?

- YES
- NO
- Not sure

13. My role as a coach includes educating my athletes about sports-related concussions.

**Strongly Disagree**

**Disagree**

**Agree**

**Strongly Agree**

**For questions 14-17 please list each sport that you coach in the first column and then answer the questions for each sport.**

14. How serious is the issue of concussions in the high school sport(s) you coach?

*(Fill in sport and circle one answer per sport.)*

<b>Sport:</b>	<b>Never Serious</b>		<b>Very Serious</b>	<input type="checkbox"/> <b>No concussions experienced</b>
	1	2	3	4
<b>Sport:</b>	<b>Never Serious</b>		<b>Very Serious</b>	<input type="checkbox"/> <b>No concussions experienced</b>
	1	2	3	4
<b>Sport:</b>	<b>Never Serious</b>		<b>Very Serious</b>	<input type="checkbox"/> <b>No concussions experienced</b>
	1	2	3	4

15. During the last playing season (2005-2006), how many of your high school-aged athletes would you estimate experienced a sports-related concussion? *(Fill in sport and circle one answer per sport.)*

<b>Sport:</b>	<b>None</b>		<b>Nearly All</b>
	1	2	3
	4		
<b>Sport:</b>	<b>None</b>		<b>Nearly All</b>
	1	2	3
	4		
<b>Sport:</b>	<b>None</b>		<b>Nearly All</b>
	1	2	3
	4		

16. How seriously do you think your athletes view the issue of concussions?  
*(Fill in sport and circle one answer per sport.)*

<b>Sport:</b>	<b>Never Serious</b> 1            2            3	<b>Very Serious</b> 4	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> 1            2            3	<b>Very Serious</b> 4	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> 1            2            3	<b>Very Serious</b> 4	<input type="checkbox"/> <b>No concussions experienced</b>

17. How seriously do you think your athletes' parents view the issue of concussions?  
*(Fill in sport and circle one answer per sport.)*

<b>Sport:</b>	<b>Never Serious</b> 1            2            3	<b>Very Serious</b> 4	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> 1            2            3	<b>Very Serious</b> 4	<input type="checkbox"/> <b>No concussions experienced</b>
<b>Sport:</b>	<b>Never Serious</b> 1            2            3	<b>Very Serious</b> 4	<input type="checkbox"/> <b>No concussions experienced</b>

18. Are you aware of your school/district or club policy for addressing sports-related concussions?  
 **NO**  
 **YES**

19. Do you currently have access to materials about preventing and managing concussions?  
 **NO**  
 **YES**

20. During the past 6 months, have you educated others about preventing or managing sports-related concussions?
- NO
  - YES → If YES, with whom? (*Check all that apply.*)
    - Athletes
    - Athletes' Parents
    - Principal
    - Athletic Director
    - Other Coach
    - Athletic Trainer
    - Other: \_\_\_\_\_
21. If you suspect that one of your athletes has a concussion, how do you generally respond? (*Check all that apply.*)
- Let athlete resume play immediately
  - Remove athlete from play
  - Have athlete evaluated by an appropriate health care professional
  - Inform athlete's parents/guardians about the known or possible concussion
  - Allow athlete to return to play only with permission from an appropriate health care professional
  - Other: \_\_\_\_\_
  - I have never witnessed a concussion.

**Thank you very much for your time.**

**Your participation in this survey will have a meaningful impact upon the future creation and distribution of concussion prevention and management materials.**

**Please return this survey in the pre-stamped envelope provided.**

## APPENDIX F

(CDC LETTERHEAD)

September 1, 2006

John Smith  
5 Smith Street  
Durham, NC 27713-5956

Dear Coach,

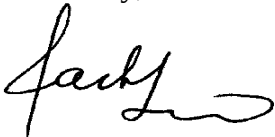
A few days from now, you will be receiving a request in the mail to complete a survey for the **Heads Up: Concussion in High School Sports** educational campaign. The purpose of this important national study is to ask coaches of high school-aged athletes about preventing and managing sports-related concussions. I am writing in advance because many people like to know ahead of time what they will be receiving.

The goals of this project are to educate coaches about sports-related concussion and the need to prevent, recognize, and manage concussions appropriately. The study findings will be used to update and expand concussion prevention, awareness, and management materials.

This study is funded by the Centers for Disease Control and Prevention (CDC) / National Center for Injury Prevention and Control (NCIPC). It is being conducted by researchers at Constella Health Sciences, a public health research firm located in Atlanta, Georgia.

Thank you for your time and consideration. With your help, we can gain the knowledge needed to protect high school athletes from sports-related concussions. If you have any questions or want more information, please do not hesitate to contact the Evaluation Manager for this project, Dr. Cynthia Klein, at 1-800-XXX-XXXX or [cklein@constellagroup.com](mailto:cklein@constellagroup.com).

Sincerely,



Jane Mitchko, MEd  
Health Communications Specialist

P.S. You will receive a small token of appreciation with the questionnaire as a way of thanking you for your time.

## APPENDIX G

(CDC LETTERHEAD)

September 5, 2006

John Smith  
5 Smith Street  
Durham, NC 27713-5956

Dear Coach,

I am writing to request your assistance in the ***Heads Up: Concussion in High School Sports*** educational campaign. This study, funded by the Centers for Disease Control and Prevention (CDC), seeks to ask coaches of high school-aged athletes about preventing and managing sports-related concussions.

You were selected to participate in this study because we are surveying high school coaches to collect information about your perceptions of sports-related concussions.

Your answers to this survey are completely confidential. Only summary statistics from the survey will be publicized, not individual answers, and individual respondents will not be identified through these publications. Your employer is not identified in this survey and therefore cannot be contacted. Participation in this survey is voluntary. If you do not wish to participate, please let us know by returning the blank questionnaire in the envelope provided. However, your contribution is very important to the goal of reducing negative health outcomes due to sports-related concussions.

A small token of appreciation is enclosed to thank you for your time and your vital contribution to this research. In addition, a stamped addressed envelope is enclosed for your convenience in returning the survey.

If you have any questions or comments regarding this study, please contact the Evaluation Manager for this project, Dr. Cynthia Klein, at 1-800-XXX-XXXX or [cklein@constellagroup.com](mailto:cklein@constellagroup.com).

Thank you for your valuable assistance with this worthy study.

Sincerely,



Jane Mitchko, MEd  
Health Communications Specialist



## APPENDIX H

### Instructions:

- There are no right or wrong answers – this is NOT a test.
- Please read the directions carefully.
- Answer each question as thoughtfully and honestly as possible.
- If you do not find an answer that fits exactly, use the one that comes closest.
- This survey is expected to take about 10 minutes to complete.
- Once you have completed the survey, please seal it in the attached pre-stamped envelope and place it in the mail.

### Please Note:

Participation in the survey is voluntary. Identifying information such as respondent's name will not be collected on the surveys. The participant may skip any question he/she chooses not to answer. All data collected by Constella is for the use of the Centers for Disease Control and Prevention (CDC) and will be kept in a confidential manner, unless compelled by law. Neither the CDC nor Constella will publish or release non-aggregated data directly to the public. CDC will retain ownership of all data collected. When these data are submitted to the CDC, no identifying information will appear.

## APPENDIX I

September 12, 2006

Last week a survey was mailed to you requesting your participation in an important national study of the ***Heads Up: Concussion in High School Sports*** educational campaign.

If you have already returned the survey, let me take this opportunity to thank you for your contribution to this vital research. If not, please do so today. Your participation in the study is critical to its success and to improving the understanding of the prevention and management of sports-related concussions.

If you did not receive the survey, or if you have misplaced it, please contact the Evaluation Manager for this project, Dr. Cynthia Klein, at 1-800-XXX-XXXX or [cklein@constellagroup.com](mailto:cklein@constellagroup.com) and we will quickly send you a replacement.

Thank you for your participation.



Jane Mitchko, MEd  
Health Communications Specialist

## APPENDIX J

(CDC LETTERHEAD)

September 20, 2006

John Smith  
5 Smith Street  
Durham, NC 27713-5956

Dear Coach,

About four weeks ago I sent you a survey about the ***Heads Up: Concussion in High School Sports*** educational campaign. As of the date of this letter, we have not received your survey.

I am writing again because of the importance of your participation to us. Although the survey was sent to other coaches, the value of this study is dependent upon obtaining a good representation of *all* coaches' unique insights and experiences. We need you and your story, so I hope that you will take a moment to complete and return your survey.

Please remember that your answers are completely confidential. Your employer will not be notified of your responses. We will publish and report summary data only. Reports will not include any individual responses or identifiers, so please do not put your name on the survey. Your participation is appreciated and completely voluntary.

We hope that you are willing to complete this questionnaire. However, if you do not wish to participate in this study, please fill out the first page of the survey and return it in the postage paid envelope so that we can cross you off the mailing list.

Thank you very much for your contribution to this important study. If you have any questions or want more information, please do not hesitate to contact the Evaluation Manager for this project, Dr. Cynthia Klein, at 1-800-XXX-XXXX or [cklein@constellagroup.com](mailto:cklein@constellagroup.com).

Sincerely,



Jane Mitchko, MEd  
Health Communications Specialist

## APPENDIX K

(CDC LETTERHEAD)

October 2, 2006

John Smith  
5 Smith Street  
Durham, NC 27713-5956

Dear Coach,

We have been trying to reach you about an important research study on the ***Heads Up: Concussion in High School Sports*** educational campaign that we are conducting for the Centers for Disease Control and Prevention (CDC). The purpose of the study is to use input from coaches like you to better understand how coaches prevent and manage sports-related concussions among high school athletes. Ultimately, this study hopes to reduce negative outcomes due to sports-related concussions.

This study is drawing to a close. We want to include your unique insights and opinions in updating policies and guidelines, but we cannot do that unless you return your survey within the next week. I urge you to take about 10 minutes to complete the survey and return it in the pre-stamped envelope.

We are concerned that those coaches who have not responded to our survey may have unique views and experiences compared to those who have already returned surveys. In order to make accurate conclusions from our study, we need to hear from all types of coaches who work in all types of settings.

Participation in this study is confidential and voluntary. We hope very much that you will take part. If you do not feel that you are eligible for the study or you do not wish to participate, please let us know by returning the blank questionnaire to us in the pre-stamped envelope.

Thank you for your willingness to consider this request. Your participation in the study is critical to the understanding of the prevention, awareness, and management sports-related concussions.

If you have any questions or want more information, please do not hesitate to contact the Evaluation Manager for this project, Dr. Cynthia Klein, at 1-800-XXX-XXXX or [cklein@constellagroup.com](mailto:cklein@constellagroup.com).

Sincerely,



Jane Mitchko, MEd  
Health Communications Specialist

**APPENDIX L**

*(Heads Up: Concussion in High School Sports Tool Kit Materials)*

[http://www.cdc.gov/ncipc/tbi/Coaches\\_Tool\\_Kit.htm](http://www.cdc.gov/ncipc/tbi/Coaches_Tool_Kit.htm)