

**Attachment 4**

**Summary of  
Changes to  
Instruments for  
Wave 4**

## Attachment 4 - Summary of Changes to Instruments for Wave 4

The purpose of this attachment is to provide a high-level overview of changes to the PATH Study instruments from Wave 3 to Wave 4. This overview includes the change in total item counts per section across Waves (tables 'a'), as well as a description summary of the content that was added or deleted in Wave 4 that corresponds to the fluctuations in item counts (tables 'b').

The following tables outline changes in the (a) item counts and (b) instrument content across Waves for the:

- Adult Questionnaire (*see Tables 1a and 1b*),
- Youth Questionnaire (*see Tables 2a and 2b*),
- Parent Questionnaire (*see Tables 3a and 3b*), and
- Nicotine Exposure Questionnaire (*see Tables 4a and 4b*).

Changes to the instruments are implemented if they better serve the PATH Study's overarching goal and research objectives of measuring and understanding within-person change and between-person differences in tobacco product use and related health outcomes over time. The PATH Study's assessment of what changes are required to the instruments is informed by several factors. For example, changes in the tobacco marketplace (e.g., the evolving e-cigarette marketplace or new tobacco product images and terminology) often necessitate corresponding changes to questions in a given wave. Regulatory actions and activities can also influence whether to change questions in the instruments. Further, findings from one or more previous waves of the PATH Study can identify the need to make changes to the instruments. When making decisions about instrument changes, the PATH Study weighs whether such changes impact the established trend line from previous waves' data or lead to a net increase on respondent burden relative to prior waves. To ensure no net increase in burden, the PATH Study uses a deliberate, methodical approach to delete or cycle out questions to offset the increase in order to maintain stability in burden from one wave to the next.

See section A.2b in Supporting Statement A for more information on the different types of questionnaires.

## Attachment 4 - Summary of Changes to Instruments for Wave 4

**Table 1a. ADULT QUESTIONNAIRE - Change in Total Item Counts<sup>1</sup> from Wave 3 to Wave 4**

Adult Questionnaire Section	Total Number of Items per Section				Change in Total Item Count from W3 to W4	
	Wave 3		Wave 4		Extended	Aged-Up/ New
	Extended	Aged-Up	Extended	Aged-Up/ New		
Introductory Demographics	11	11	9	18	-2	+7
Tobacco Use	102	102	69	89	-33	-13
Cigarette	48	56	55	64	+7	+8
Electronic Nicotine Products	73	81	77	84	+4	+3
Cigar	63	79	75	82	+12	+3
Pipe	39	47	41	48	+2	+1
Hookah	51	59	51	58	--	-1
Snus	46	54	51	58	+5	+4
Smokeless Tobacco	43	51	50	57	+7	+6
New Product - Placeholder <sup>2</sup>	5	5	5	5	--	--
Polyuse	5	5	5	5	--	--
Nicotine Dependence	146	146	148	148	+2	+2
Packaging and Health Warnings	25	25	41	41	+16	+16
Risk Perceptions and Attitudes	57	58	66	67	+9	+9
Media Use	10	10	8	8	-2	-2
Secondhand Smoke Exposure	12	12	11	12	-1	--
Social Norms-Peer and Family Influences	31	31	13	13	-18	-18
Health	160	221	180	268	+20	+47
Marketing, Advertising and Promotion	21	21	17	17	-4	-4
Additional Demographics	27	27	27	27	--	--
Product Barcode Scanning	26	26	26	26	--	--
Contact Information	29	29	28	28	-1	-1
<b>Total (Entire Questionnaire)</b>	<b>1030</b>	<b>1156</b>	<b>1053</b>	<b>1223</b>	<b>+23</b>	<b>+67</b>

<sup>1</sup>This table reflects total item counts; it does not account for the conditions in which the items are asked and should not be considered an indicator of increased burden. For example, the item counts for the 'aged-up' respondents are included in the item counts for the 'new' respondents in this table. However, due to skip patterns and programmed routing, every respondent is not asked all items reflected in these counts. Consequently, the average time to complete the Adult interview remains at 60 minutes for the Wave 4 Extended instruments, and increases to 68 minutes for the Wave 4 Aged-Up/New instrument.

<sup>2</sup>The section enables the PATH Study to be responsive to the changing marketplace and can be rapidly deployed. The module collects basic usage information about products that are not currently included in the PATH Study. The module will remain suppressed until such time that emerging products dictate its deployment.

### Attachment 4 - Summary of Changes to Instruments for Wave 4

**TABLE 1b. ADULT QUESTIONNAIRE – Description of Content Changes from Wave 3 to Wave 4**

Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Introductory Demographics</b>	Added	New Cohort Adults	On respondent’s sex, race, ethnicity, active duty military status, and residency in the U.S. during 2014.	These questions collect baseline demographic information from respondents who are new to the PATH Study in Wave 4.
	Deleted	Continuing Adults	On military branch in which respondent served.	Assessed in previous waves. It is not necessary to ask continuing respondents again; however, question will be asked of youth who age-up to the adult cohort in Wave 4.
	Deleted	Continuing Adults	On US citizenship.	Assessed in previous waves. It is not necessary to ask known US citizens again; however, question will be asked of all respondents who did not previously report being a US citizen.
<b>Tobacco Use</b>	Added	New Cohort Adults	On whether respondent has heard of a given product (not including cigarettes), and whether respondent has ever used a given product (including blunts).	These questions collect baseline assessments of tobacco use history from respondents who are new to the PATH Study in Wave 4.
	Added	All Adults Age 25+	On the likelihood of smoking a cigarette or hookah, or using smokeless tobacco soon among non-users.	In Wave 3, these items were asked of young adult non-users aged 18 to 24. In Wave 4, these items will be asked of all non-user adults.
	Deleted	All Young Adults Age 18-24	On non-user’s susceptibility to becoming a user of traditional cigars, cigarillos, filtered cigars or pipe tobacco including curiosity about using, likelihood of using in the next year or using soon, and whether respondent might use if offered by best friend.	These questions were deleted for young adults aged 18 to 24 to make time for new questions that are of higher priority.
	Deleted	All Adults Age 25+	On curiosity about using snus, likelihood of using snus in the next year, and whether respondent might use snus if it were offered by best friend.	These questions were deleted for adults aged 25 or older to make time for new questions that are of higher priority.
	Deleted	All Adults Age 25+	On non-user’s susceptibility to becoming an ENDS user including curiosity about using, likelihood of using in the next year or using soon, and whether respondent might use if offered by best friend.	These questions were deleted for adults aged 25 or older to make time for new questions that are of higher priority; construct will still be assessed for young adults aged 18 to 24.
	Deleted	All Adults	On use of Skoal Bandits.	Changed in Wave 4 to ask about use of all pouched smokeless tobacco and snus use. It is no longer necessary to ask about Skoal Bandits (a brand of pouched smokeless tobacco) specifically.

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Cigarette</b>	Added	New Cohort Adults	On age first smoked a cigarette and on the amount smoked 12 months ago.	These questions collect baseline assessments of tobacco use history from respondents who are new to the PATH Study in Wave 4.
	Added	All Adults	On whether favorite cigarette to smoke is the first one in the morning, if they smoke more frequently in the first hours after waking, and if they smoke when they are ill.	To further enhance assessment of nicotine dependence. These questions are from the Fagerstrom Test for Nicotine Dependence.
	Deleted	All Adults	On frequency of coupon use when purchasing cigarettes.	These questions were deleted to make time for new questions that are of higher priority.
<b>Electronic Nicotine Products</b> <i>(formerly the "Primary Electronic Nicotine Products" section)</i>	Added	New Cohort Adults	On age first used ENDS and on the amount used 12 months ago.	These questions collect baseline assessments of tobacco use history from respondents who are new to the PATH Study in Wave 4.
	Added	All Adults	On frequency of flavored ENDS use in the past 30 days.	To assess how often respondents used ENDS flavored like menthol, mint or other flavors in the past 30 days.
	Added	All Adults	On dual use of cigarettes and ENDS.	To assess whether dual users of cigarettes and ENDS use one product more than the other on days when both products are used.
	Added	All Adults	On frequency of using ENDS to smoke marijuana or marijuana derivatives.	To identify respondents who use their ENDS device solely for smoking marijuana.
	Added	All Adults	On number of times ENDS used on average day and number of puffs taken each time.	To assess ENDS dosage.
	Deleted	All Adults	On using ENDS as an alternative to quitting tobacco.	This measure is assessed by other questions in the PATH Study and was deleted to avoid redundancy.
	Deleted	All Adults	On changing the voltage on ENDS devices.	These questions were cycled off to make time for new questions that are of higher priority.
	Deleted	All Adults	On frequency of coupon use when purchasing ENDS or e-liquid.	These questions were deleted to make time for new questions that are of higher priority.
<b>N/A</b> <i>(formerly the "Secondary Electronic Nicotine Products" section)</i>	Deleted	All Adults	On use behaviors of secondary electronic nicotine products.	Previously, respondents who use more than one ENDS product reported on their primary and secondary products separately. In Wave 4, respondents will report on their combined use of all ENDS products. As such, this section is no longer relevant to the PATH Study in Wave 4 and has been deleted.

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
Cigars	Added	All Adults	On frequency of flavored cigar and blunt use in the past 30 days.	To assess how often respondents smoked flavored cigars or used flavored cigars to smoke blunts in the past 30 days.
	Added	New Cohort Adults	On age first smoked a cigar and on the amount smoked 12 months ago.	These questions collect baseline assessments of tobacco use history from respondents that are new to the PATH Study in Wave 4.
	Deleted	All Adults	On smoking cigars as an alternative to quitting tobacco.	This measure is assessed by other questions in the PATH Study and was deleted to avoid redundancy.
	Deleted	All Adults	On frequency of coupon use when purchasing traditional cigars, cigarillos, and filtered cigars.	These questions were deleted to make time for new questions that are of higher priority.
Pipe	Added	New Cohort Adults	On age first smoked a pipe and on the amount smoked 12 months ago.	These questions collect baseline assessments of tobacco use history from respondents who are new to the PATH Study in Wave 4.
	Deleted	All Adults	On smoking pipes as an alternative to quitting tobacco.	This measure is assessed by other questions in the PATH Study and was deleted to avoid redundancy.
	Deleted	All Adults	On frequency of coupon use when purchasing pipe tobacco.	These questions were deleted to make time for new questions that are of higher priority.
Hookah	Added	New Cohort Adults	On age first smoked hookah and on the amount smoked 12 months ago.	These questions collect baseline assessments of tobacco use history from respondents who are new to the PATH Study in Wave 4.
	Added	All Adults	On frequency of flavored shisha use in the past 30 days.	To assess how often respondents smoked flavored shisha or hookah tobacco in the past 30 days.
	Deleted	All Adults	On smoking hookah as an alternative to quitting tobacco.	This measure is assessed by other questions in the PATH Study and was deleted to avoid redundancy.
	Deleted	All Adults	On price paid for shisha.	These questions were deleted to make time for new questions that are of higher priority.
Snus	Added	New Cohort Adults	On age first used snus and on the amount used 12 months ago.	These questions collect baseline assessments of tobacco use history from respondents who are new to the PATH Study in Wave 4.
	Added	All Adults	On frequency of flavored snus use in the past 30 days.	To assess how often respondents use flavored snus in the past 30 days.
	Added	All Adults	On use of pouched or loose snus.	To assess how the product being used most often is being consumed (in pouched or loose form).
	Deleted	All Adults	On using snus as an alternative to quitting tobacco.	This measure is assessed by other questions in the PATH Study and was deleted to avoid redundancy.
	Deleted	All Adults	On using a coupon when purchasing snus.	These questions were deleted to make time for new questions that are of higher priority.

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Smokeless Tobacco</b>	Added	New Cohort Adults	On age first used smokeless tobacco and on the amount used 12 months ago.	These questions collect baseline assessments of tobacco use history from respondents who are new to the PATH Study in Wave 4.
	Added	All Adults	On frequency of flavored smokeless tobacco use in the past 30 days.	To assess how often respondents use flavored smokeless tobacco in the past 30 days.
	Added	All Adults	On use of pouched or loose smokeless tobacco.	To assess how the product being used most often is being consumed (in pouched or loose form).
	Added	All Adults	On quantity contained in a package of pouched smokeless and length of time taken to consume it.	To complement other measures related to packaging and dosage.
	Deleted	All Adults	On using smokeless tobacco as an alternative to quitting tobacco.	This measure is assessed by other questions in the PATH Study and was deleted to avoid redundancy.
	Deleted	All Adults	On using a coupon when purchasing smokeless tobacco.	These questions were deleted to make time for new questions that are of higher priority.
<b>Nicotine Dependence</b>	Added	All Adults	On reasons for using NRT.	To explore whether respondents are using NRT for reasons other than to quit tobacco.
<b>Packaging and Health Warnings</b>	Added	All Adults	On whether respondent noticed health warnings on packages of ENDS, traditional cigars, cigarillos, filtered cigars, pipe tobacco, and hookah tobacco.	Questions were cycled out in a previous wave; they are cycled back in for Wave 4 to assess respondent exposure to health warnings on packaging.
	Added	All Adults	On health warning labels on ENDS, traditional cigars, cigarillos, filtered cigars and hookah tobacco packages including how often a respondent looked closely at them and how they make a respondent feel about the health risks associated with use.	Questions were asked about other products in Wave 3; they are added for ENDS, traditional cigars, cigarillos, filtered cigars, and hookah in Wave 4 to assess respondent exposure to and impact of health warnings on packaging.
<b>Risk Perceptions and Attitudes</b> <i>(formerly the "Product Regulation – Modified Risk Tobacco Products" section)</i>	Added	All Adults	On perceived harmfulness of the nicotine in cigarettes, ENDS, and NRT.	To assess whether respondents' perceptions of harm of nicotine vary by product.
	Added	All Adults	On perceived addictiveness of reduced nicotine cigarettes.	To assess respondents' understanding and perceptions of modified risk products.
	Added	All Adults	On perceived harm of using flavored ENDS compared to tobacco-flavored or unflavored ENDS.	To assess whether respondents' perceptions of harm vary by flavoring.
	Added	All Adults	On perceived harm of using e-cigarettes/ENDS compared to NRT.	To assess respondent's perception of harm amongst reduced harm or modified risk products.
<b>Media Use</b>	Deleted	All Adults	On smartphone or tablet ownership and on using online apps related to tobacco/ENDS.	These questions were deleted to make time for new questions that are of higher priority.

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Health</b>	Added	All Adults	On frequency of tooth brushing.	To inform analysis of oral/dental health.
	Added	All Adults	On diagnosis of schizophrenia, schizoaffective disorder or psychosis, or psychotic illness or episode and age of diagnosis/onset.	To ascertain prevalence of these diagnoses among respondents.
	Added	New Cohort Adults	On pregnancy history.	These questions collect baseline assessments of pregnancy history and outcomes from respondents who are new to the PATH Study in Wave 4.
	Added	New Cohort Adults	On substance use history of alcohol, marijuana, prescription drugs of abuse, and illicit/street drugs.	These questions collect baseline assessments of substance use history from respondents who are new to the PATH Study in Wave 4.
	Deleted	All Adults	On treatment for gum disease.	These questions were deleted to make time for new questions that are of higher priority.
	Deleted	Continuing Adults	On respondent's in-utero exposure to tobacco products.	Asked at Wave 3; not necessary to ask again in Wave 4; however, will be asked of youth who age-in to the adult cohort.
	Deleted	All Adults	On COPD, chronic bronchitis, emphysema, asthma, lung or respiratory conditions.	Respondents who indicate they have not seen a medical doctor and/or dentist in the past 12 months will not be asked if a medical doctor and/or nurse told them they had these conditions in the past 12 months; past 12 month status for respondents who indicate they have seen a medical doctor and/or dentist in the past 12 months will be assessed for these conditions.
	Deleted	All Adults	On gum disease, teeth cleaning, bone loss around teeth.	
	Deleted	All Adults	On ulcer or gastrointestinal bleeding.	
	Deleted	All Adults	On cataract or glaucoma.	
	Deleted	All Adults	On cancer and precancerous oral lesions.	
	Deleted	All Adults	On osteoporosis, fragile bones.	
	Deleted	All Adults	On rapid vision loss.	
	Deleted	All Adults	On heart conditions such as high blood pressure, high cholesterol, congestive heart failure, stroke, heart attack or bypass surgery.	
	Deleted	All Adults	On whether a doctor advised respondent to stop using ENDS.	
Deleted	All Adults	On whether a doctor advised respondent to stop using ENDS.		
<b>Marketing, Advertising, and Promotion</b>	Added	All Adults	On exposure to anti-tobacco messaging, generally.	Questions on exposure to specific FDA and other national media campaigns were replaced with a general question about exposure to any anti-tobacco messaging.
	Deleted	All Adults	On exposure to specific FDA and other national media campaigns.	

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
	Deleted	All Adults Age 25+	On whether respondent has a favorite tobacco advertisement.	Question was deleted for adults aged 25 or older to make time for new questions that are of higher priority; construct will still be assessed for young adults aged 18 to 24.
Additional Demographics	Added	All Adults	On interest in completing a web-based PATH survey.	To assess interest in completing the PATH survey online if it became available as a web survey in future waves. This is expected to be asked once, in Wave 4.
	Deleted	All Adults	On whether tobacco users paid more for health insurance premiums compared to non-tobacco users.	These were deleted to make time for new questions that are of higher priority.

## Attachment 4 - Summary of Changes to Instruments for Wave 4

**Table 2a. YOUTH QUESTIONNAIRE - Change in Total Item Counts<sup>1</sup> from Wave 3 to Wave 4**

Youth Questionnaire Section	Total Number of Items per Section				Change in Total Item Count from W3 to W4	
	Wave 3		Wave 4		Extended	Aged-Up/ New
	Extended	Aged-Up	Extended	Aged-Up/ New		
Introductory Demographics	8	11	7	10	-1	-1
Cigarette	33	41	42	44	+9	+3
Electronic Nicotine Products	62	69	70	73	+8	+4
Cigar	72	79	84	88	+12	+9
Pipe	10	11	13	14	+3	+3
Hookah	46	53	54	57	+8	+4
Snus	38	44	46	49	+8	+5
Smokeless Tobacco	34	40	45	48	+11	+8
Dissolvable Tobacco	2	3	2	4	--	+1
Bidis and Kreteks	2	4	2	4	--	--
Other Tobacco	1	1	1	1	--	--
New Product - Placeholder <sup>2</sup>	5	5	5	5	--	--
First Tobacco Product	1	1	1	1	--	--
Nicotine Dependence and Cessation /Quitter	30	30	39	39	+9	+9
Packaging and Health Warnings	26	33	31	31	+5	-2
Risk Perceptions and Attitudes	43	43	56	56	+13	+13
Media Use	11	12	7	8	-4	-4
Secondhand Smoke Exposure	5	5	2	2	-3	-3
Health	40	40	46	49	+6	+9
Marketing, Advertising and Promotion	17	17	11	11	-6	-6
Social Norms-Peer and Family Influences	39	39	21	21	-18	-18
Accessibility	5	5	5	5	--	--
Psychosocial	12	15	12	15	--	--
Substance Use	19	29	18	33	-1	+4
Additional Demographics	11	11	13	13	+2	+2
Contact Information (Emancipated Youth)	29	29	26	24	-3	-5
<b>Total (Entire Questionnaire)</b>	<b>601</b>	<b>670</b>	<b>659</b>	<b>705</b>	<b>+58</b>	<b>+35</b>

<sup>1</sup>This table reflects total counts of items; it does not account for the conditions in which the items are asked and should not be considered an indicator of increased burden. For example, due to skip patterns and programmed routing, every respondent is not asked all items reflected in these counts. The average time to complete the Youth interview remains at 35 minutes for the Wave 4 Extended instrument, and 45 minutes for the Wave 4 Aged-Up/New instrument.

<sup>2</sup>The section enables the PATH Study to be responsive to the changing marketplace and can be rapidly deployed. The module collects basic usage information about products that are not currently included in the PATH Study. The module will remain suppressed until such time that emerging products dictate its deployment.

### Attachment 4 - Summary of Changes to Instruments for Wave 4

**TABLE 2b. YOUTH QUESTIONNAIRE – Description of Content Changes from Wave 3 to Wave 4**

Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Introductory Demographics</b>	Deleted	Continuing Youth	On US citizenship.	Assessed in previous waves. It is not necessary to ask known US citizens again; however, question will be asked of all respondents who did not previously report being a US citizen.
<b>Cigarette</b>	Added	All Youth	On cigarette smoking in the past 3 days and on identifying last brand smoked.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.
	Deleted	All Youth	On frequency of coupon use when purchasing cigarettes.	These questions were deleted to make time for new questions that are of higher priority.
<b>Electronic Nicotine Products</b> <i>(formerly the “Primary Electronic Nicotine Products” section)</i>	Added	All Youth	On ENDS use in the past 3 days and on identifying last brand used.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.
	Added	All Youth	On frequency of using ENDS to smoke marijuana or marijuana derivatives.	To identify respondents who use their ENDS device solely for smoking marijuana.
	Added	All Youth	On frequency of flavored ENDS use in the past 30 days.	To assess how often respondents used ENDS flavored like menthol or mint or other flavors.
	Added	All Youth	On number of times ENDS used on average day and number of puffs taken each time.	To assess ENDS dosage.
	Deleted	All Youth	On changing the voltage on ENDS devices and the number of milliliters of e-liquid an ENDS tank system holds.	These questions were cycled off to make time for new questions that are of higher priority.
	Deleted	All Youth	On frequency of coupon use when purchasing ENDS or e-liquid.	These questions were deleted to make time for new questions that are of higher priority.
<b>N/A</b> <i>(formerly the “Secondary Electronic Nicotine Products” section)</i>	Deleted	All Youth	On use behaviors of secondary electronic nicotine products.	Previously, respondents who use more than one ENDS product reported on their primary and secondary products separately. In Wave 4, respondents will report on their combined use of all ENDS products. As such, this section is no longer relevant to the PATH Study in Wave 4 and has been deleted.

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Cigar</b>	Added	All Youth	On cigar and blunt smoking in the past 3 days and on identifying last brand smoked.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.
	Added	All Youth	On frequency of flavored cigar and blunt use in the past 30 days.	To assess how often respondents smoked flavored cigars or used flavored cigars to smoke blunts in the past 30 days.
<b>Pipe</b>	Added	All Youth	On pipe smoking in the past 3 days.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.
<b>Hookah</b>	Added	All Youth	On hookah smoking in the past 3 days and on identifying last brand smoked.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.
	Added	All Youth	On frequency of flavored shisha use in the past 30 days.	To assess how often respondents smoked flavored shisha or hookah tobacco in the past 30 days.
	Deleted	All Youth	On price paid for shisha.	These questions were deleted to make time for new questions that are of higher priority.
<b>Snus</b>	Added	All Youth	On snus use in the past 3 days and on identifying last brand used.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.
	Added	All Youth	On frequency of flavored snus use in the past 30 days.	To assess how often respondents used flavored snus in the past 30 days.
	Added	All Youth	On use of pouched or loose snus.	To assess how the product being used most often is being consumed (in pouched or loose form).
	Deleted	All Youth	On use of Skoal Bandits.	Changed in Wave 4 to ask about use of all pouched smokeless tobacco and snus use. It is no longer necessary to ask about Skoal Bandits (a brand of pouched smokeless tobacco) specifically.
	Deleted	All Youth	On using a coupon when purchasing snus.	These questions were deleted to make time for new questions that are of higher priority.

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Smokeless Tobacco</b>	Added	All Youth	On smokeless tobacco use in the past 3 days and on identifying last brand used.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.
	Added	All Youth	On frequency of flavored smokeless tobacco use in the past 30 days.	To assess how often respondents used flavored smokeless tobacco in the past 30 days.
	Added	All Youth	On use of pouched or loose smokeless tobacco.	To assess how the product being used most often is being consumed (in pouched or loose form).
	Added	All Youth	On quantity contained in a package of pouched smokeless and length of time taken to consume it.	To complement other measures related to packaging and dosage.
<b>Nicotine Dependence and Cessation/Quitter</b>	Added	All Youth	On NRT and prescription stop smoking medication use in the past 3 days.	To assess usage of these medications and to inform biospecimen analysis. Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform this analysis.
<b>Packaging and Health Warnings</b>	Added	All Youth	On whether respondent noticed health warnings on packages of ENDS, traditional cigars, cigarillos, filtered cigars, pipe tobacco, and hookah tobacco.	Questions were cycled out in a previous wave; they are cycled back in for Wave 4 to assess respondent exposure to health warnings on packaging.
	Added	All Youth	On health warning labels on ENDS, traditional cigars, cigarillos, filtered cigars and hookah tobacco packages including how often a respondent looked closely at them and how they make a respondent feel about the health risks associated with use.	Questions were asked about other products in Wave 3; they are added for ENDS, traditional cigars, cigarillos, filtered cigars, and hookah in Wave 4 to assess respondent exposure to and impact of health warnings on packaging.
	Deleted	All Youth	On noticing health warning labels on packages of bidis and kreteks.	The question was deleted to make time for new questions that are of higher priority.
	Deleted	All Youth	On health warnings on packages of snus and smokeless tobacco including whether they stopped respondent from using product, whether respondent tried to avoid looking at them, how believable they are, and degree to which they make respondent never want to use the product again (among ever users).	The questions were cycled off to make time for new questions that are of higher priority.
	Deleted	All Youth	On whether health warnings on packages of snus and smokeless tobacco made respondent less likely to start using (among never users).	

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Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
	Deleted	All Youth	On how frequently the respondent saw a list of chemicals contained in tobacco products.	
<b>Risk Perceptions and Attitudes</b> <i>(formerly the "Product Regulation – Modified Risk Tobacco Products" section)</i>	Added	All Youth	On perceived harmfulness of the nicotine in cigarettes, ENDS, and NRT.	To assess whether respondents' perceptions of harm of nicotine vary by product.
	Added	All Youth	On perceived harm of using flavored ENDS compared to tobacco-flavored or unflavored ENDS.	To assess respondents' perceptions of use/harm as influenced by flavoring.
	Added	All Youth	On likelihood of becoming addicted to cigarillos or filtered cigars.	Questions were cycled out in a previous wave; they are cycled back in for Wave 4 to assess respondent perceptions of addiction and harm.
	Added	All Youth	On perceived harm of intermittent versus daily use of cigarettes, cigarillos, filtered cigars, snus, and smokeless tobacco.	
	Added	All Youth	On length of time product can be used before harm occurs from smoking cigarettes, traditional cigars, cigarillos, filtered cigars, shisha or hookah tobacco, and using snus or smokeless tobacco.	
	Deleted	All Youth	On perceived ease of use between flavored and unflavored products for: ENDS, traditional cigars, cigarillos, filtered cigars, shisha or hookah tobacco, snus, and smokeless tobacco.	The questions were cycled off to make time for new questions that are of higher priority.
<b>Media Use</b>	Deleted	All Youth	On smartphone or tablet ownership.	These questions were deleted to make time for new questions that are of higher priority.
	Deleted	All Youth	On using online apps related to tobacco/ENDS.	The questions were cycled off to make time for new questions that are of higher priority.
	Deleted	All Youth	On exposure to movies that depict tobacco use.	
<b>Secondhand Smoke Exposure</b>	Deleted	All Youth	On rules of using combusted and non-combusted tobacco products and ENDS inside the home.	The questions were cycled off to make time for new questions that are of higher priority.
<b>Health</b>	Added	All Youth	On use of anti-inflammatory medications.	To assist us in interpreting biomarker data. There are biomarkers such as hsCRP that are impacted by use of anti-inflammatory meds. Controlling for the use of these medications informs the models & allows for a more accurate comparison of biomarker levels within & across participants.
<b>Marketing, Advertising, and Promotion</b>	Added	All Youth	On exposure to anti-tobacco messaging, generally.	Questions on exposure to specific FDA and other national media campaigns were replaced with a general question about exposure to any anti-tobacco messaging.
	Deleted	All Youth	On exposure to specific FDA and other national media campaigns.	

#### Attachment 4 - Summary of Changes to Instruments for Wave 4

Wave 4 Section	Wave 4 Change	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
	Deleted	All Youth	On whether respondent bought a product because of a promotion.	The question was cycled off to make time for new questions that are of higher priority.
<b>Social Norms, Peer and Family Influences</b>	Deleted	All Youth	On how many of respondent's best friends smoke traditional cigars and filtered cigars.	These questions were deleted to make time for new questions that are of higher priority.
<b>Additional Demographics</b>	Added	All Youth age 17	On serving active duty in the military and branch in which respondent served.	To inform Wave 4 weighting.
	Added	All Youth	On interest in completing a web-based PATH survey.	To assess interest in completing the PATH survey online if it became available as a web survey in future waves. This is expected to be asked once, in Wave 4.

## Attachment 4 - Summary of Changes to Instruments for Wave 4

**Table 3a. PARENT QUESTIONNAIRE - Change in Total Item Counts<sup>1</sup> from Wave 3 to Wave 4**

Parent Questionnaire Section	Total Number of Items per Section				Change in Total Item Count form W3 to W4	
	Wave 3		Wave 4		Extended	Aged-Up/ New
	Extended	Aged-Up	Extended	Aged-Up/ New		
Family Composition	13	20	15	22	+2	+2
School, Home, and Tobacco Use	9	9	9	9	--	--
Health	21	42	31	48	+10	+6
Respondent Characteristics	14	14	19	19	+5	+5
Contact Information	31	31	31	31	--	--
<b>Total (Entire Questionnaire)</b>	<b>88</b>	<b>116</b>	<b>105</b>	<b>129</b>	<b>+17</b>	<b>+13</b>

<sup>1</sup>This table reflects total item counts; it does not account for the conditions in which the items are asked and should not be considered an indicator of increased burden. For example, the item counts for the 'aged-up' respondents are included in the item counts for the 'new' respondents in this table. However, due to skip patterns and programmed routing, every respondent is not asked all items reflected in these counts. Consequently, the average time to complete the Parent interview remains 16 minutes for the Wave 4 Extended instrument, and 19 minutes for the Wave 4 New/ Aged-Up instrument.

### Attachment 4 - Summary of Changes to Instruments for Wave 4

**TABLE 3b. PARENT QUESTIONNAIRE – Description of Content Changes from Wave 3 to Wave 4**

Wave 4 Section	Wave 4 Status	Affected Respondent Category	Description of Questions	Description of/Rationale for Change
<b>Family Composition</b>	Added	All Parents	On the name, age and relationship youth respondent’s guardians who live in the home.	To obtain information about any other parental figures or guardians in the household in addition to youth’s parents.
<b>Health</b>	Added	All Parents	On youth respondent’s diagnosis of schizophrenia, schizoaffective disorder or psychosis, or psychotic illness or episode and age of diagnosis/onset.	To ascertain prevalence of these diagnoses among respondents.
<b>Contact Information</b>	Added	All Parents	On interest in completing a web-based PATH survey.	To assess interest in completing the PATH survey online if it became available as a web survey in future waves. This is expected to be asked once, in Wave 4.

## Attachment 4 - Summary of Changes to Instruments for Wave 4

**Table 4a. NICOTINE EXPOSURE QUESTIONNAIRE - Change in Total Item Counts<sup>1</sup> from Wave 3 to Wave 4**

NEQs	Total Number of Items		Change in Total Item Count from W3 to W4
	Wave 3	Wave 4	
Total (Entire Questionnaire)	38	38	--

<sup>1</sup>This table reflects total counts of items; it does not account for the conditions in which the items are asked and should not be considered an indicator of increased burden. For example, due to skip patterns and programmed routing, every respondent is not asked all items reflected in these counts. The average time to complete the Nicotine Exposure Questionnaire remains 5 minutes in the Wave 4 interview. NEQs are asked of all respondents that consent to bio-specimen collection; there is no distinction made between the extended, new and aged-up respondent categories.

### Attachment 4 - Summary of Changes to Instruments for Wave 4

**TABLE 4b. NICOTINE EXPOSURE QUESTIONNAIRE – Description of Content Changes from Wave 3 to Wave 4**

Wave 4 Section	Wave 4 Status	Affected Respondent Category	Changes from Wave 3	Description of/Rationale for Change
NEQs	Added	All Youth	On tobacco use in the past 3 days.	Urine biospecimens will be collected from youth respondents in Wave 4; Nicotine Exposure Questions (NEQs) will be asked of youth respondents in Wave 4 to inform biospecimen analysis.