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The Importance of Leveraging a Parent's Influence in an ABS Push-to-Web Survey of Adolescents

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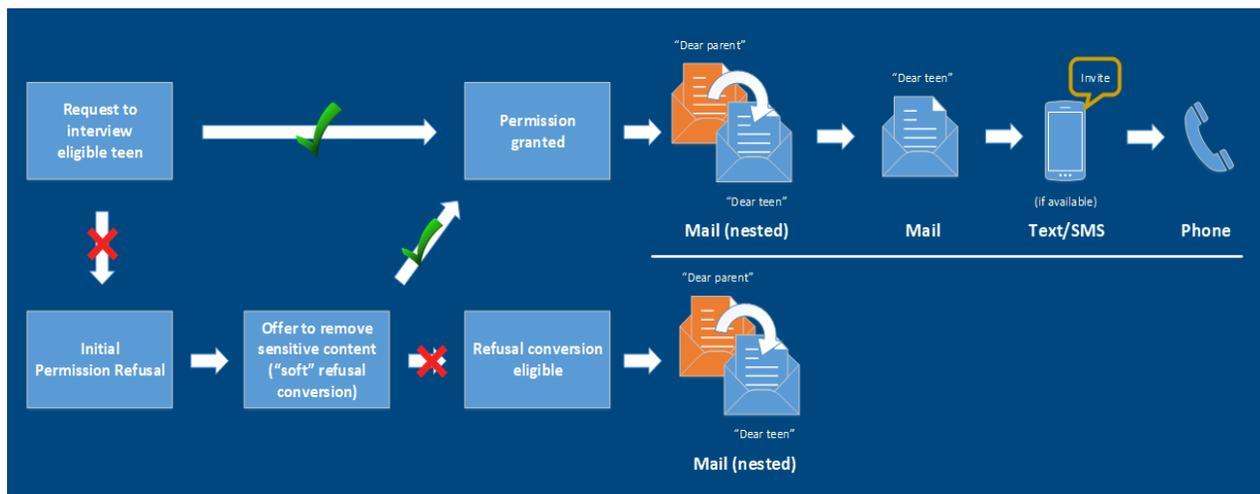
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CHIS Adolescent 2019-2020 Quick Guide

The **final** CHIS 2019-2020 methods for parental permission and adolescent data collection are as follows:

- **Parental permission.** CHIS requests permission to interview eligible adolescent (aged between 12 to 17) in halfway through the adult survey
 - If the parent initially refused permission, a revised request was made allowing the parent to opt their adolescent out of sensitive content including questions on drugs and sexual activity.
 - Adolescents were offered a \$10 promised incentive for completing the survey.
 - If the parent completed the survey over the phone, the interviewer immediately tried to complete the adolescent interview.
- **Adolescent recruitment.** For adolescents whom we received permission to survey, CHIS contacted the adolescent as follows:
 - Nested mailing with a letter to parent and a sealed envelope for the eligible adolescent with a letter.
 - About one week later, a reminder letter addressed to the adolescent was mailed.
 - If the parent provided the adolescent's cellular phone number, a text reminder was sent.
 - If the parent provided a best contact phone number, an interviewer would attempt to complete the interview with the adolescent over the phone.
- **Permission refusal conversion.** For adolescents whom we did not receive permission, CHIS mailed a nested mailing with a letter to the parent asking them to reconsider and offering the parent a \$10 promised incentive if their adolescent completes the survey.



Summary

The precipitous drop in adolescent response rate in previous cycles of the survey has driven the CHIS to develop and test new experimental methods to increase adolescent survey participation. In 2018 and 2019, CHIS conducted two experiments to examine new methods to obtain parental permission and to recruit adolescents to complete the survey. This report summarizes the results of these experiments and provides an evaluation of the effectiveness of the redesign adolescent recruitment in the production survey, as follows:

1) Implementation of Fall 2018 CHIS parental permission experiment

This experiment evaluated the following methods:

- A parental incentive during the **initial** permission request
- An increased parental incentive was randomly assigned during the permission refusal conversion follow-up:
 - If no original parental incentive, then \$10 for refusal conversion
 - If \$10 original parental incentive, then \$20 for refusal conversion

Given the null effect on permission and the negative effect on groups like single parent and foreign-born households, CHIS opted to not include the \$10 parental incentive in 2019. However, the success of the permission refusal follow-up portion of the experiment warranted additional testing leading to an experiment designed for CHIS 2019.

2) Implementation of CHIS 2019 permission refusal conversion experiment

This experiment built upon the results of the Fall 2018 experiment and evaluated the following modified methods:

- The permission request was moved to halfway through the adult web survey
- A “soft” refusal conversion (allowing parents to opt-out sensitive content) was implemented
- For refusal conversion, three different incentive types were randomly provided: \$2 prepaid, \$10, and \$20 promised incentives

The completion rates were statistically equivalent for the refusal conversion incentives, therefore the decision comes down to cost, with the \$10 promised incentive being the least expensive approach.

3) Evaluation on effectiveness of the redesigned adolescent recruitment

The results of these experiments led to the final methods described in the quick guide on the previous page. Under the new design, the parental permission rate doubles and the adolescent completion rate is largely maintained, successfully reversing the downward trend of adolescent response rate over the past years.

Introduction

Imagine, if you will, a parent who has just completed a lengthy health survey over the phone and the interviewer asks if they can speak to the parent's teenager to ask them a similar set of health-related questions. Assuming the parent had a positive experience with the main survey and is interested in their teenager participating, the parent can find (or drag over) their teenager and ask them (or tell them) to cooperate with the interviewer. In the event the teenager is not home or available, the interviewer can call the household again and complete the interview with the teenager at another time. Two key decision points exist in this scenario: 1) the parent granting permission for the teenager to participate in the survey and 2) convincing the teenager to participate in the survey.

The California Health Interview Survey (CHIS) found the first step in this process increasingly more difficult in recent years with a parental permission rate below 25% in 2018. However, the CHIS found the second step to be extremely effective, often resulting in an adolescent cooperation rate above 90%. The key to the higher cooperation rate is the spoken and unspoken influence or encouragement of a parent on their teen. The physical and verbal cues from the parent (e.g., holding out the phone, an insistent tone) help to persuade the adolescent to participate.

Now picture another scenario. A parent has just completed a similarly lengthy health survey on their computer following a survey request via mail. As they finish, the survey asks if they are willing to allow their teenager to answer a couple questions. Assuming the parent has a positive experience and is interested in their teenager participating, the parent can find (or drag over) their teenager and ask them (or tell them) to participate. By clicking "Next", the teen survey can begin.

The two key decision points still exist in this scenario, but now there are additional complications. First, the web survey will eventually timeout. How can we ensure the teenager gets back into the survey later, if they are not immediately available? Second, there is no longer an interviewer to verify the identity of the teenager. Could a well-intentioned parent, or parent who is not reading the instructions thoroughly, choose to complete the adolescent section on behalf of their teenager? Third, there is no longer an interviewer just waiting for the teenager to complete the survey or to check back in with the teenager if they were previously unavailable. The pressure of an interviewer waiting for the hand-off of the telephone from the parent to the teenager is gone. The straightforward hand-off of the telephone interview design, though plagued with various forms of resistance before and during the hand-off, cannot be directly replaced with some equivalent approach using a web survey.

Building on the principles that made the adolescent telephone design successful, CHIS redeveloped the adolescent data collection procedure for CHIS 2019 trying to reverse the precipitous drop in permission and cooperation by introducing new concepts and design elements found to be effective in other survey contexts. This report seeks to detail the new

adolescent survey design and discuss the impacts these changes may have made on the participation of adolescents in the CHIS.

Surveys of Adolescents

Collecting population-based data from adolescents outside of a school-based frame is relatively uncommon. Research on adolescent recruitment through address-based sampling (ABS) frames are limited (Cantrell et al., 2018). Research on contact methods for adolescents in push-to-web surveys are even more limited (Matthews et al., 2017).

Parental Permission

Parents are often gatekeepers to directly interviewing teenagers, as they are most often the permission giver. The use of an active consent procedure with the parent is consistent with the goal to protect vulnerable populations. However, previous research has shown that active consent procedures generally result in underrepresentation of key groups including marginalized communities such as Blacks or Asian Americans, students with poor grades or those who are deemed low achievers, and teens engaged in health risk behaviors like smoking (Esbensen et al., 1999; Unger et al., 2004; Brooks et al., 2017). Apart from underrepresentation of minority groups, active consent procedure applied in student surveys also leads to lower response rate and prevalence rate for most drug use and antisocial behaviors (e.g., school suspension, selling illegal drugs, carrying handgun) (Courser et al., 2009). A lack of representation for these groups and biased estimates may systematically bias results from adolescents who are most in need of health interventions.

If a parent initially refused permission for their adolescent to participate, the research team needs to either 1) increase emphasis of an existing attribute or 2) introduce a new attribute as part of a refusal conversion protocol (Groves et al., 2000). That provokes the question: what survey attributes can be emphasized or introduced to alter a parent's initial decision?

Emphasize the authority/importance of study and their participation. Existing study suggests that interviewers emphasize the survey sponsor will achieve higher participation rate if the sponsor is regarded as legitimate and authoritative to collect the information (usually government or educational institutions) (Groves & Couper, 1992).

Offer to remove sensitive content. Previous research consistently suggests that topic sensitivity is a factor that influences a respondent's willingness to participate. Highly sensitive topics such as sexual behavior are generally associated with significantly lower levels of willingness to participate in a survey (Couper et al., 2008, 2010). Furthermore, concerns about disclosure and confidentiality may also play a role in the misreporting or refusal to answer questions related to illegal or socially undesirable behaviors such as alcohol and drug consumption (Singer von Thurn & Miller, 1995).

While potentially detrimental for key survey areas (e.g., drug use, sexual behavior), allowing the adolescent to skip particular sections requires minimal effort and helps to address a parent's chief concern regarding the survey content.

Incentives. We know from previous studies that the inclusion of monetary or sample product incentives can be motivating for encouraging survey completion and can be perceived as a direct benefit to the participant, leading to increased willingness to participate. Studies indicate that larger incentives are generally associated with a higher willingness to participate; however, there is no evidence to suggest that respondents are willing to trade higher risks for larger incentives (White, 2005; Couper et al., 2008, 2010). Sample products or small gifts are often less effective than money (Church, 1993; Singer et al., 1999). The effect of the timing of incentive disbursement on a subject's willingness to participate and overall response rates is also a factor of interest. Researches have also shown that prepaid incentives perform better than promised incentives (Singer, 2002). Incentives for refusal conversion have had mixed results (Singer & Ye, 2013).

However, if the incentive is directed at the adolescent instead of the parent, the incentive's benefit is indirect for the parent and may not have the same effect as seen with direct incentives. An incentive for the parent to allow permission to interview a teenager could be perceived as a form of encouragement in an attempt to convince them to provide their teenager's information. While a parent may appreciate the compensation an incentive has for the teenager's time and competing priorities, the indirect benefit to parents may not be sufficient to motivate them to provide permission. This poses the question of whether a direct incentive for the parent, in addition to a direct incentive for the teen, may help increase the likelihood of providing permission.

Adolescent Cooperation

Previous studies have examined surveys of youth, from the relationship between sensitive topics and parents' permission to survey mode, in order to better cooperate with adolescents to improve survey data quality. Cognitive interview and fieldwork from the U.S. Census Bureau shows that adolescents are willing to participate in survey with sensitive topics (cigarette and alcohol use, sex and contraception) and their parents also willing give permission to the survey (Hess et al., 1998). Additionally, researchers also consistently demonstrate that online surveys are more attractive to adolescents and are able to enhance response rate (Borgers et al., 2000; Dillman et al., 2014; Omrani et al., 2019).

An adolescent's decision to participate in a survey is influenced by all of the standard factors considered for an adult survey (e.g., topic, incentive, completion time). However, parents as a gatekeeper can provide a strong motivation for the adolescent to participate. In Computer-assisted Telephone Interviewing (CATI) surveys of adolescents, the telephone hand-off plays a critical role between the permission-giving parent and the selected adolescent, enabling parents to play an active role in encouraging their teen's cooperation in the survey whether

through gentle persuasion or encouragement. As discussed previously, the strength of the old CATI design was the power a parent had on encouraging the adolescent to participate.

Research questions

This paper will address research questions from three perspectives:

Prepaid vs. conditional incentive: Does a prepaid incentive to the parent as part of permission refusal conversion increase teenager interview completion rates more than a conditional incentive to the parent?

Optimization of incentives: Does the amount of conditional incentive for parental permission refusal conversion affect teenager interview completion rates? Additionally, taking both cost per adult/adolescent invited and completion rate into consideration, what is the optimum amount of incentives for future CHIS adolescent interviews?

Effectiveness of redesign to recruit adolescents: Overall, how does the redesign impact CHIS adolescent recruitment, and can we say the new design is equally or more effective than previous methods?

Methods

The following sections will discuss the newly designed adolescent data collection strategies and operation, which is aimed to tackle the precipitous drop in parental consent and cooperation from adolescents. As discussed before, the adolescent response rate can be decomposed into two parts: 1) parental permission rate, and 2) adolescent completion rate. Therefore, the new adolescent recruitment design will focus on improving (or at least maintaining) the two rates, aiming to reach a higher overall adolescent response rate.

New CHIS Adolescent Recruitment Procedure Overview

There are 14 sections in CHIS 2019 web survey for adults, from Section A to Section S. During the adult web survey in the middle of Section G (Demographics section II), adults with eligible adolescents were asked to provide permission for CHIS to survey their teenager. The placement of the permission request was moved up to halfway through the adult survey compared to the end of the survey observed under the CATI design (CHIS 2018 and earlier). This change in placement is based on the administrative data linkage consent literature finding that linkage requests made earlier in the survey resulted in more assent (e.g., Sakshaug, Tutz, & Kreuter, 2013; Cooney & Jans, 2017; Sakshaug & Vicari, 2018). While the permission request could have been moved earlier into the survey more consistent with the placement of the Child survey, we felt that placement of this question too close to the Child section could get lost or be a deterrent to Adult survey completion if they had an eligible child. For households where they did not have an eligible child age 0-11, placement partway through the Adult survey allowed

parents to get a feeling for the survey content before agreeing to have their teenager participate.

The permission language was adapted from the permission procedure implemented by CHIS over the phone. However, a new condition was added to the permission request offering a \$10 conditional incentive to the teenager after successfully completing the survey. Following affirmative permission, respondents were asked to provide the teenager's name and the best phone number to contact their teenager in case they did not complete the survey online. We then verified if the phone number was the teenager's personal cell phone number and, if so, asked for permission to send their phone a text reminder to complete the survey.

After receiving permission to survey an adolescent, we mailed a letter to the parent thanking them for providing permission and requesting them to provide an enclosed sealed envelope to their teen. The enclosed envelope contained an invitation letter addressed to the teenager inviting them to participate. This invitation letter included consent language, the survey URL, their unique secure access code, and discussed the promised incentive for completing the survey. This enclosed envelope method was inspired by the success of the Science Education Tracker study conducted in England (Matthews et al., 2017). The nested mailing design was more reminiscent of the telephone hand-off in CATI allowing the parent to physically provide the teenager with the survey request and information.

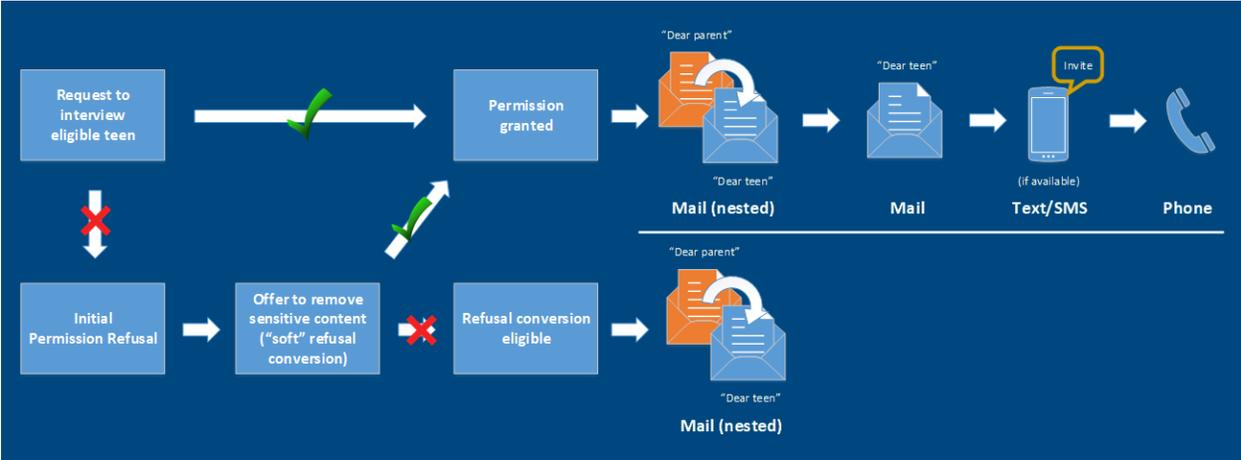
One week after the original nested mailing invitation was sent, a second letter addressed directly to the teenager was sent asking them again to participate. Two weeks later, interviewers attempted to complete a CATI interview with teenagers whose parents provided a phone number. If the parent provided permission to text a teenager's cell phone, a reminder text was sent at least three days before the CATI follow-ups began.

If the parent completed the interview by phone and had a sampled teenager, CATI interviewers attempted to obtain a response from the sampled teenager following the standard CATI protocols employed by CHIS. No attempt to invite the teenager to complete the web survey was attempted for these cases. This choice is based on a desire to preserve the CATI protocols currently in place and not disrupt the broader data collection via CATI.

A second design element was the introduction of a parental permission refusal conversion letter mailed to parents who had not initially provided permission. The refusal conversion letter mimicked the nested mailing with a letter to the parent, thanking them for completing the Adult survey and emphasizing the importance of their teenager's participation and offering the parent their own monetary incentive for their teenager completing their survey. The refusal conversion protocol did not include a second mailing. An identical refusal conversion follow-up mailing was sent to parents who completed on CATI and refused permission to participate over the phone.

The overall redesigned CHIS adolescent recruitment procedure is illustrated in Figure 1.

Figure 1. Re-designed CHIS Adolescent Recruitment Procedure



Results

Fall 2018 Parental Permission Experiment

CHIS conducted a statewide pilot test of the new methodology in the Fall of 2018 (Fall 2018 Pilot) before the beginning of 2019 production and served to inform the 2019 design. Overall, the permission and adolescent contact procedure was nearly identical to the 2019 design described previously. One distinct feature of the pilot was a two-fold experiment that included (1) a parental incentive during the initial permission request and (2) an increased parental incentive during the permission refusal conversion follow-up. For a random half-sample, we offered a \$10 check to the parent if they provided permission for their teenager to participate and was not contingent on their teenager completing the survey. This incentive was provided to the parent as part of the enclosed envelope invitation. The control condition was offered no incentive for permission. Regardless of their experimental assignment, if the parent refused permission, the incentive was increased by \$10 in the permission refusal conversion mailing from the initial request, but was now contingent on the teenager completing the survey. For the control condition, the parent was offered \$10 following a successful adolescent complete. For the experimental condition, the parent was offered \$20 following a successful complete.

The results of the parental incentive experiment found that there was no difference between the permission rates when offering no incentive versus a \$10 incentive (53.1% vs. 53.3%, respectively). While the \$10 incentive condition resulted in slightly higher completion rates among teenagers (52.1% vs. 47.8%), this difference was not found to be statistically significant. The nonresponse follow-up did see a significant difference in teenager response for the \$10/\$20 condition with 15.6% responding while the \$0/\$10 condition only saw 4.9% of those who initially refused responding. However, these increases do not significantly change the final response between the two conditions.

Given the null effect on permission and the negative effect on groups like single parent and foreign-born households, CHIS opted to not include the \$10 parental incentive in 2019. However, the success of the permission refusal follow-up portion of the experiment warranted additional testing leading to an experiment designed for CHIS 2019.

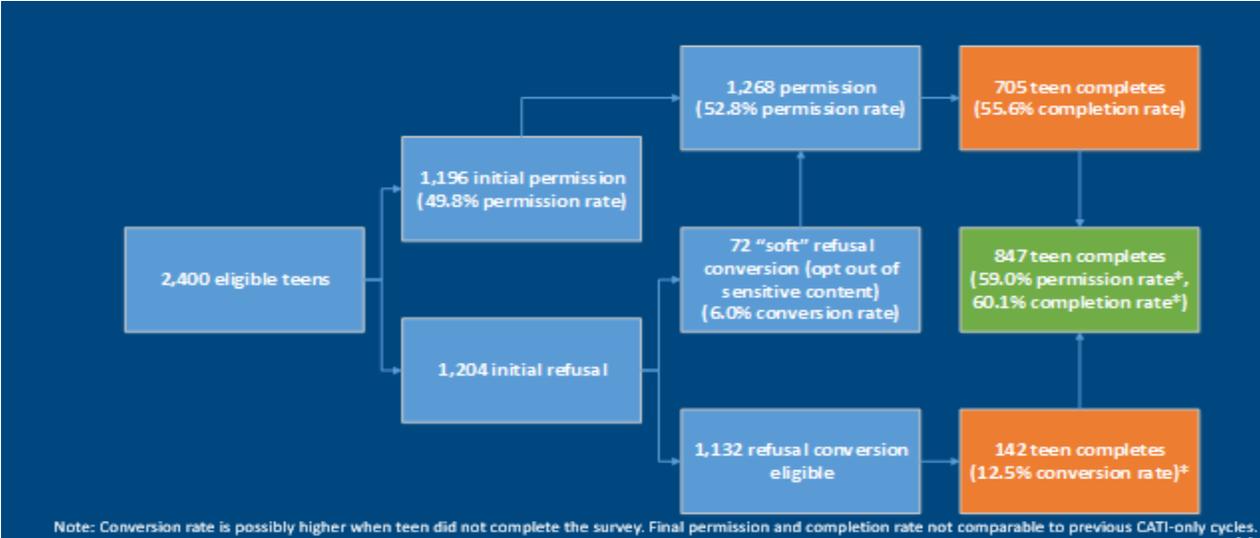
CHIS 2019 Permission Refusal Conversion Experiment

CHIS 2019 permission refusal conversion experiment included adult recruitment (September 2019 – December 2019) and adolescent recruitment (October 2019 – January 2020). In this experiment, there is no initial parental incentive for adolescent survey. Adolescents were provided with \$10 incentives once they completed the survey.

When parental permission refusal occurred, there were 3 experimental conditions for the refusal conversion incentive: \$2 prepaid incentive for parents (regardless of completed teen interview), \$10 promised incentive for parents, and \$20 promised incentive for parents (the latter two conditional on completion of the teen interview). Parents were randomly assigned to one of the three incentives.

Figure 2 illustrates the CHIS 2019 permission refusal conversion flow. Amongst the 2,400 eligible adolescents, we obtained 1,196 initial parental consents, plus 72 “soft” refusal conversion cases (opted out of sensitive content) from 1,204 initial refusals, resulting in a total parental permission rate of 52.8%. Of those who received consent in the survey, 705 teens completed the survey (55.6% completion rate). Of the 1,132 refusal conversion eligible adolescents, 142 completed the survey (12.5% conversion rate). This resulted in a total of 847 teen completes.

Figure 2. CHIS 2019 Permission Refusal Conversion Experiment Flowchart



*Note: Conversion rate is possibly higher when teens did not complete the survey. Final permission and completion rate not comparable to previous CATI-only cycles.

Table 1 shows the CHIS 2019 adolescent response rate breakdown by parental permission and adolescent characteristics. As anticipated, we see that the adolescent response rate for cases whose initial permission was granted is higher (46.9%) than cases whose permission was not granted initially (9.8%), and this pattern is consistent when parsed by gender and age group. We also observe initial parental permission differences by adolescent’s gender and age group. Initial parental permission for females is higher than males (47.5% vs. 46.3%) and initial permission for younger adolescents is higher than older adolescents (49.4% vs. 46.3%).

Table 1. CHIS 2019 Adolescent Response Rate by Parental Permission, Gender and Age Group

Characteristic	Initial Parental Permission		Final Permission Granted
	Granted	Not Granted	
Total	46.9%	9.8%	27.6%
n	705	142	847
Adolescent’s Gender			
Male	46.3%	11.3%	28.3%
Female	47.5%	8.3%	28.0%
Adolescent Age Group			
12-14	49.4%	8.8%	28.3%
15-17	46.3%	11.3%	29.4%

*Source: CHIS 2019 Methodology Series: Report 4 – Response Rate

Table 2 shows the CHIS 2019 permission conversion experiment results. Across the three experimental groups, we see similar completion rates, around 12%. These three rates are not statistically significant from each other. The results illustrate that there is no substantive difference to promote completion rate between the small prepaid incentive and promised incentive. As for the promised incentive group, additional promised \$10 shows no impact on response rate improvement.

Table 2. CHIS 2019 Permission Refusal Conversion Experiment Results

Incentive	Screen Interview	Adult Interview	Adolescent Interview	Complete Rate	Cost Per Screen Adult/Invited Teen
\$2 repaid	379	306	48	12.7%	\$7.46
\$10 promised	347	273	43	12.4%	\$6.99
\$20 promised	350	292	46	13.1%	\$8.49

*Note: 5 teenager completes are excluded because their corresponding parent received a CATI-specific version of the refusal conversion letter which is not discussed here.

With the completion rates statistically equivalent, the decision comes down to cost. The \$10 promised incentive is the least expensive approach amongst three incentive categories, at under \$7 per screened adult over each invited teen. The cost of \$2 prepaid and \$20 promised incentives are \$7.46 and \$8.49, respectively. Based on the experiment results, CHIS chose to offer the promised \$10 refusal conversion incentive in CHIS 2020 and future cycles.

Effectiveness of the Adolescent Recruitment Redesign

While the experiment results demonstrate that incentives — regardless of timing (prepaid vs. promised) or the amount — show limited impact on adolescent completion rate, we do have gains under the new design when we inspect adolescent response rates. Before the discussion of the empirical evidence, we will break down response rate into different types of rates (R) and clarify them first in this section.

$$R_{teen\ unconditional} = R_{screener} * R_{teen\ conditional} \quad (1)$$

$$R_{teen\ conditional} = R_{parental\ permission} * R_{teen\ completion} \quad (2)$$

Formula (1) details the unconditional adolescent response rate and is the product of screener response rate and conditional adolescent response rate. Formula (2) illustrates the conditional adolescent response rate which is the product of the parental permission rate and adolescent completion rate.

Table 3. CHIS Adolescent Conditional Response Rates, Permission and Completion Rates

	CHIS 2017-2018	CHIS 2019	CHIS 2019-2020
Conditional Adolescent Response Rate	21.3%	27.6%	33.2%
Parental Permission Rate	23.4%	52.8%	54.5%
Adolescent Completion Rate	74.5%	52.5%	60.1%

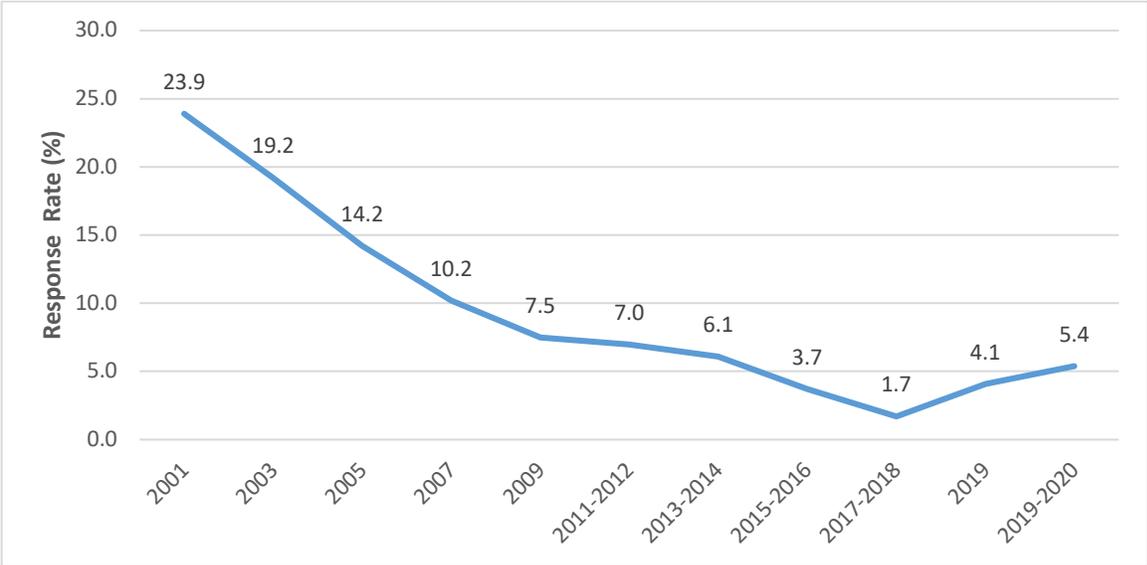
*Note: completion rate is calculated as Completes / Permissions Given.

The effectiveness of the new adolescent recruitment design is quantified and illustrated in Table 3. We observe the conditional adolescent response rate increasing, comparing CHIS 2017-2018 to CHIS 2019. This is primarily driven by the parental permission rate which doubles from 23.4% to 54.5%. Noting that the survey mode transition from dual-frame random-digit-dial (RDD) technique (prior to 2019) to ABS push-to-web is also one of contributors to response rate improvement, thus, we included 2020 data to gauge the “net effect” of the redesigned adolescent recruitment¹. We still see the conditional adolescent response rate and parental permission rate going up to 33.2% and 54.5% respectively in the 2019-2020 cycle. While the adolescent completion rate declined from the old design to the new design, the final sample sizes remain high, because we achieved a larger number of permissions given (denominator) in the 2019-2020 cycle.

In general, the new design improves the parental permission rate significantly while maintaining the adolescent completion rate at a high level.

¹ After 2011, CHIS typically provides data for two-year cycles. Single-year data is available when and only when the second year of a two-year cycle is unfinished.

Figure 3. CHIS Unconditional Adolescent Response Rate over the Past Two Decades (2001-2020)



Finally, as part of our effectiveness evaluation, we discuss the unconditional adolescent response rate. Figure 3 displays the CHIS overall adolescent response rate trend over the past two decades. We observe the downward trend since the inception of CHIS. While dropping to the lowest point in CHIS 2017-2018 cycle (1.7%), this trend is reversed in 2019 (4.1%) and continues to increase when including CHIS 2020 (5.4%).

Discussions and Conclusions

Due to the continuing declines in adolescent response rate in the CHIS survey over the past years, new adolescent data collection methods were developed and tested in two experiments in 2018 and 2019. Considering that adolescent response rate can be decomposed as two parts — parental permission rate and adolescent completion rate — we implemented new recruitment features that focus on both components. Empirical evidence from the two experiments shows that the nested mailing approach and teen incentive proved effective at increasing both parental permission rate and adolescent completion rate.

In this paper, we describe key findings about how incentives interact with parental permissions. From the Fall 2018 experiment, we conclude that \$20 parental incentive for refusal conversion is more effective than \$10. In the 2019 experiment, we find that a small prepaid incentive (\$2) produces no statistical difference in completion rates compared to promised incentives (\$10 or \$20) and cost becomes the primary driving factor for incentive design. Thus, a promised \$10 was set as the refusal conversion incentive in CHIS 2020 and future cycles.

We conclude that the implementation of these various redesigned adolescent recruitment approaches demonstrates effectiveness, although we must acknowledge that the adolescent response rate increase in 2020 also benefited from the stay-home orders due to the COVID-19

pandemic. Under the new design, we see that the parental permission rate doubled from the old to new design, and the downward trend of adolescent response rate is reversed since the implementation of the new design. As a result, the redesigned adolescent recruitment has been embedded as part of the ongoing CHIS adolescent data collection procedures.

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Disclaimer

The analyses, interpretations, conclusions, and views expressed in this working paper are those of the author and do not necessarily represent the UCLA Center for Health Policy Research, the Regents of the University of California, or collaborating organizations or funders.

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