

Redesigning the Census Bureau's Contact History Instrument to Improve Survey Paradata Collection

Matt Virgile, Laura Hergert, Lee Beck, Anne Russell, & Fane Lineback
Office of Survey and Census Analytics, U.S. Census Bureau

2025 DC-AAPOR/WSS Review-Preview Conference
September 16, 2025

*No disclosure review required for this presentation. All data displayed is fictional.
Originally presented at 2025 FedCASIC Workshops.

Background

- The Contact History Instrument (CHI) is a data collection instrument used since 2004 by Census interviewers (Field Representatives, or FRs) to collect data on each CAPI contact attempt in demographic surveys
- Launched automatically when FRs exit the questionnaire for a given survey, but may also be launched manually
- Data collected includes:
 - Whether making a contact attempt or a non-attempt action
 - Contact mode
 - Date and time of contact attempt
 - With whom contact was made, if anyone
 - Outcome of contact attempt (whether interview was completed, reasons for inability to complete)
 - Respondent concerns
 - Contact strategies

CAPI Surveys Currently using CHI

Survey Name	Acronym
American Community Survey – Group Quarters	ACS-GQ
American Community Survey – Housing Unit	ACS-HU
American Housing Survey	AHS
Consumer Expenditures Diary Survey	CED
Consumer Expenditures Quarterly Survey	CEQ
Current Population Survey*	CPS
National Crime Victimization Survey	NCVS
National Health Interview Survey	NHIS
Rental Housing Finance Survey	RHFS
Survey of Income and Program Participation	SIPP
Survey of Construction	SOC
Survey of Market Absorption of New Multifamily Units	SOMA

Contact History Instrument (CHI) Transition & Redesign

Current Way of Collecting Contact History Data: *Similar screens exist in the CAPI and CHI*

CPS CAPI

CPS specific screens to collect contact history for survey pathing

CPS specific screens to collect Survey Data (if partial or complete interview)

CPS specific screens to collect contact history for survey exiting

ACS CAPI

ACS specific screens to collect contact history for survey pathing

ACS specific screens to collect Survey Data (if partial or complete interview)

ACS specific screens to collect contact history for survey exiting

NHIS CAPI

NHIS specific screens to collect contact history for survey pathing

NHIS specific screens to collect Survey Data (if partial or complete interview)

NHIS specific screens to collect contact history for survey exiting

Contact History Instrument (CHI)

CHI screens to collect contact history and for CHI pathing

CHI screens to collect contact history for survey exiting

CHI screens for Strategies Used & Reluctance Reasons for contact history

After interview with respondent

During interview with respondent

Contact History Instrument (CHI) Transition & Redesign

Future Way of Collecting Contact History Data: *Integrate CHI and CAPI consistently collect all contact history as the interview occurs*

The screens shown in green would be based on standard modules with a selection of response options

CPS CAPI

Screens for survey pathing and contact history

CPS specific screens to collect Survey Data (if partial or complete interview)

Screens to collect contact history for survey exiting including Strategies Used & Reluctance Reasons

ACS CAPI

Screens for survey pathing and contact history

ACS specific screens to collect Survey Data (if partial or complete interview)

Screens to collect contact history for survey exiting including Strategies Used & Reluctance Reasons

NHIS CAPI

Screens for survey pathing and contact history

NHIS specific screens to collect Survey Data (if partial or complete interview)

Screens to collect contact history for survey exiting including Strategies Used & Reluctance Reasons

During interview with respondent

Contact History Instrument (CHI) Transition & Redesign

In the **CURRENT** design, the Contact History Instrument (CHI) is separate from the survey instrument. The CHI opens after the survey instrument is closed, and there are some redundancies between them.



In the **FUTURE** design, Case History Information (CHI) is collected within the same instrument, before and after survey data is collected to eliminate redundant questions.



DICE Program

- CHI is one of many data collection systems being redesigned at Census, as part of the Data Ingest and Collection for the Enterprise (DICE) program
 - Program goal is to simplify and modernize data collection
- Anticipated benefits of CHI redesign are:
 - More accurate case history information
 - Less time/burden on FRs to enter information
 - Improved monitoring of contact attempts by Field Supervisors and other Census Bureau management

CHI Transformation Logistics (1)

- New CHI design is loaded into Questionnaire Design and Metadata (QDM) system
 - Initial content
 - Block/screen/question names
 - Screen/question text
 - Answer lists/fields
 - Variable names and output values
 - Additional features
 - Branching logic
 - Validations (hard and soft edits)
 - Fills (address/name from input file, or text based on a prior response)

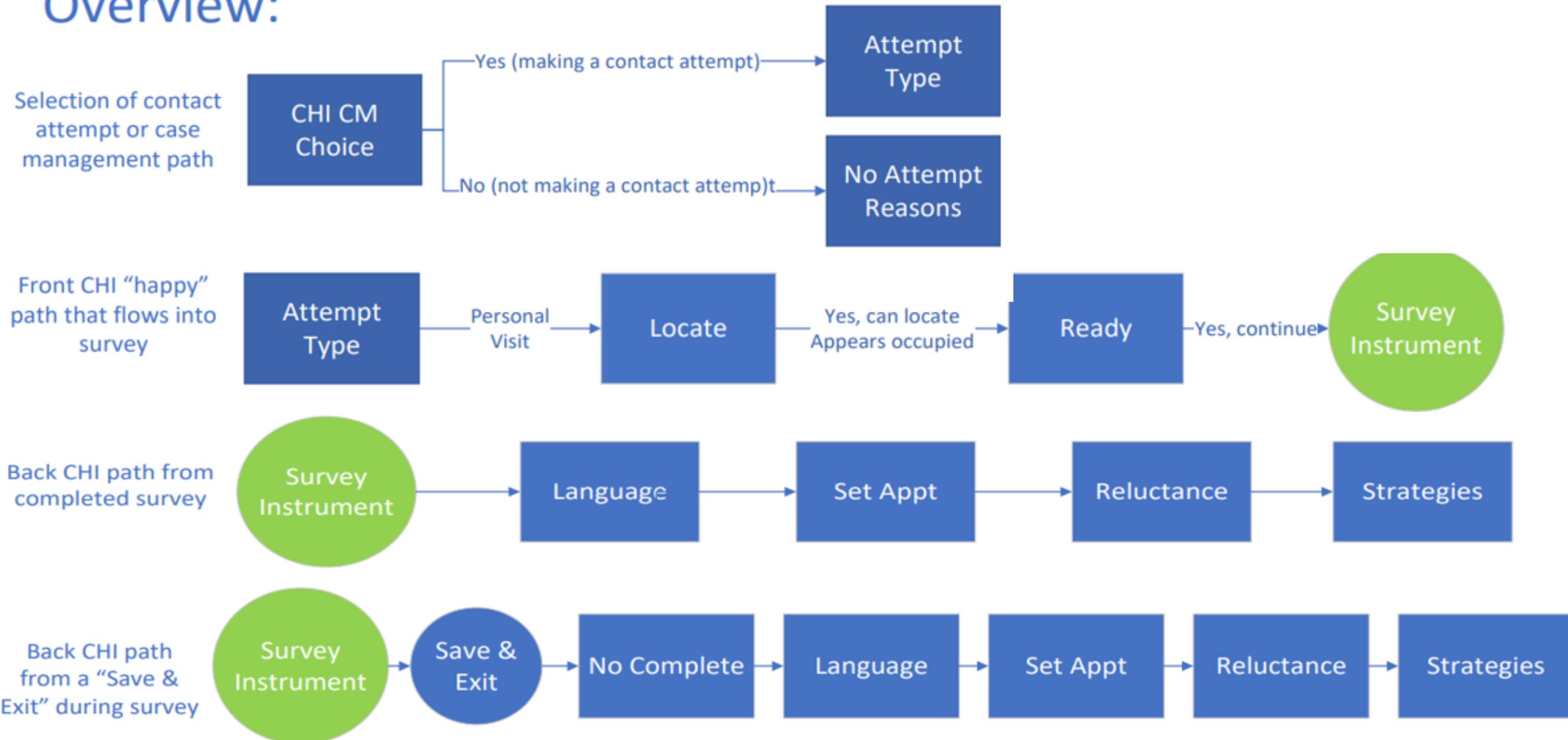
CHI Transformation Logistics (2)

- Coordination between CHI team and other teams, to ensure seamless integration
 - CAPI survey sponsors/team leads
 - Transition from CHI to survey (and vice-versa)
 - Identify redundant screens (e.g., contact mode, reason for noninterview)
 - Account for all relevant event codes
 - DICE POCs for new field data collection systems/teams/programs
 - QDM
 - MOJO/Casey
 - Centurion
 - Web/CAPI standards

Timeline

- CHI blocks currently loaded in QDM for integration with CPS
 - First survey for DICE onboarding
 - Completed User Acceptance Testing and Systems Test
 - CPS Field Test 1 in May –September 2025, Field Test 2 in 2026
- Remaining CAPI surveys will have CHI blocks updated in QDM between 2025-2028
 - Some surveys require additional or different CHI screens from CPS, since sample unit is something other than a household (e.g., person, or Group Quarters/facility)
 - Some surveys require additional CHI screens, to collect neighborhood observations for personal visit attempts at sample unit

Overview:



CHI Front Screen – CHI/CM Choice



221 TERRAPIN WAY B-521
ANYTOWN, MA 99997

Are you making a contact attempt for this housing unit?

☒ Yes

☐ No

Next

CHI Front Screen – Attempt Type



Describe this attempt.

- ☒ Personal Visit
- ☐ Telephone
- ☐ Text
- ☐ Email

Back

Next

CHI Front Screen - Locate



221 TERRAPIN WAY B-521
ANYTOWN, MA 99997

Are you able to locate this housing unit?

- ☒ Yes, can locate
- ☐ No, cannot locate
- ☐ No, does not exist
- ☐ Restricted access

Which of the following best describes this housing unit?

- ☒ Appears occupied
- ☐ Appears vacant
- ☐ Appears not to be a housing unit

CHI Front Screen - Ready



Show your badge and identify yourself. Ask if is available; if not, consult the household roster. Introduce the survey. For MIS-2 and later, adjust the introduction to take into account last month's status and respondent. For new households, show the introductory letter and allow them to read it.

The household address is: 221 TERRAPIN WAY B-521
ANYTOWN, MA 99997

Are you ready to start the interview?

- ☒ Yes, continue
- ☐ Contact made, unable to interview
- ☐ No, unable to make contact

Back

Next

CHI Back Screen – No Complete



What is the reason you are unable to complete an interview at this time?

- ☐ Eligible respondent not available
- ☐ Inconvenient time
- ☐ Language barrier
- ☐ Hearing barrier
- ☒ Reluctance/refusal by respondent
- ☐ Health problem
- ☐ Wrong address / wrong number
- ☐ Respondent absent for whole interview period
- ☐ Dangerous situation
- ☐ Inaccessible due to weather/disaster

CHI Back Screen - Language



What language did the respondent speak during this interview attempt?

- ☒ English
- ☐ Spanish
- ☐ Other

Back

Next

CHI Back Screen – Set Appt



Do you want to schedule an appointment?

☐ Yes

☒ No

Back

Next

CHI Back Screen - Reluctance



What respondent behaviors, concerns, or reluctance did you notice during the attempt?
Select all that apply.

- ☒ Not interested
- ☐ Too busy
- ☐ Interview takes too much time
- ☐ Scheduling difficulties
- ☐ Survey is voluntary
- ☒ Privacy concerns
- ☐ Local / State / Federal government concerns
- ☐ Ask questions about the survey
- ☐ Hang-up / slams door on FR

CHI Back Screen - Strategies



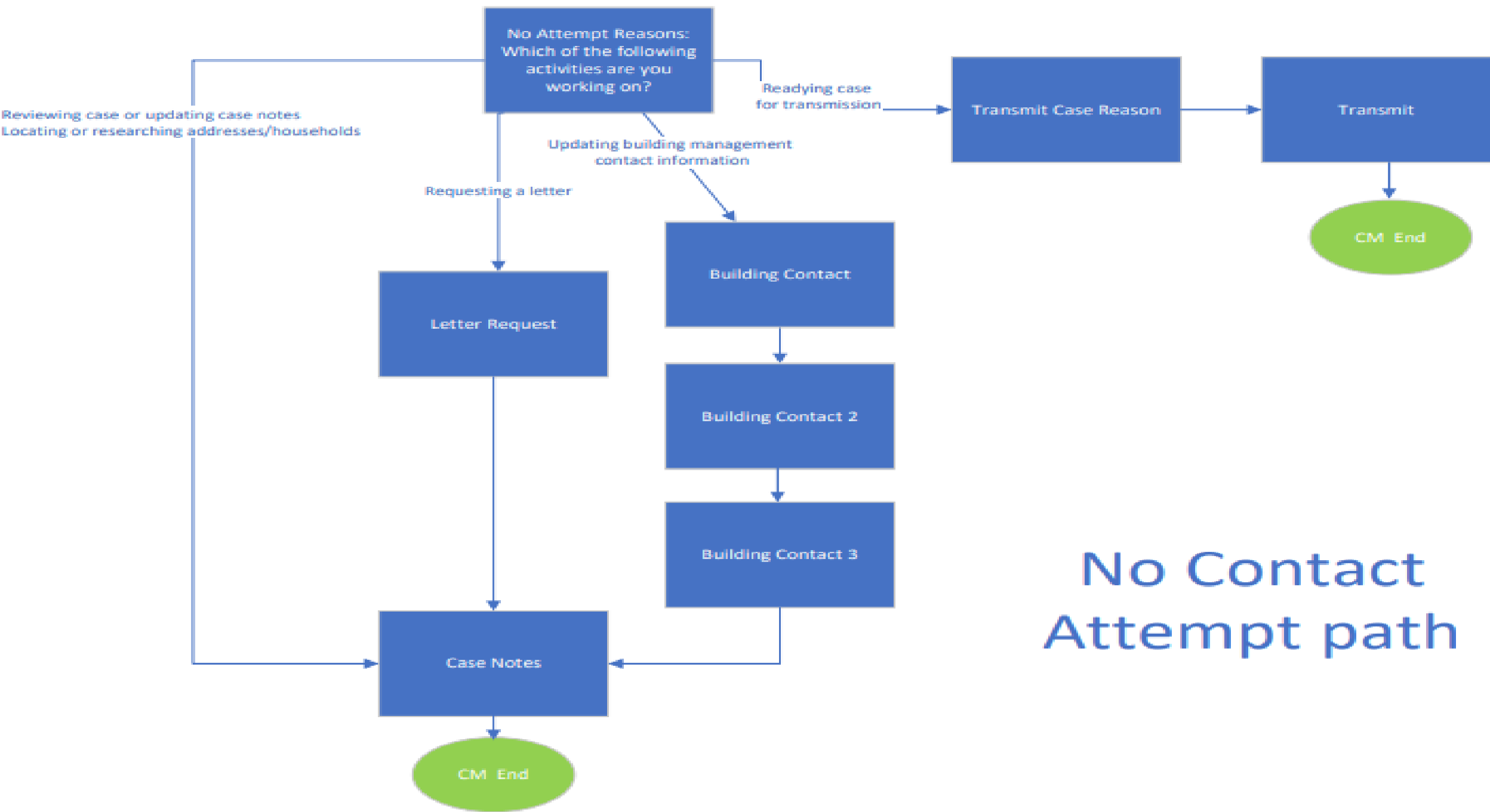
What strategies were used during the attempt?

Select all that apply.

- ☐ Advance letter given
- ☐ Scheduled appointment
- ☐ Left note / appointment card
- ☒ Left promotional packet / informational brochure
- ☐ Called household
- ☐ Left message on answering machine / voicemail
- ☐ Waited for respondent
- ☐ Checked with neighbors

Other CHI Functions

- The current CHI allows collecting data about case management functions other than contact attempts, such as:
 - Ready case for transmission
 - Reviewing or changing case information
 - Locating activities
- Due to changes in other data collection systems, a need was identified for CHI to collect additional actions, such as:
 - Requesting a letter
 - Updating respondent contact information
 - Updating building management contact information
 - Updating case notes
- The future CHI will allow capturing all of these action types for CPS



No Contact
Attempt path

CHI Front Screen – CHI/CM Choice



221 TERRAPIN WAY B-521
ANYTOWN, MA 99997

Are you making a contact attempt for this housing unit?

☐ Yes

☒ No

Next

CM Screen – Non-Attempt Activities



Which of the following activities are you working on?

Select one or more relevant case management activities.

- ☐ Reviewing case or updating case notes
- ☐ Locating or researching addresses/households (e.g., management or government office, telephone/online research, LiMA, DAAL)
- ☐ Updating Respondent/Contact Information
- ☐ Requesting a letter
- ☐ Updating building management contact information
- ☐ Ready case for transmission

Back

Next

Next Steps – Varying Sample Units by Survey

- While CPS uses household as sampling unit, some other surveys use person within household, or Group Quarters/facility
- Since NHIS samples up to two household members, CHI team will design modified or additional CHI screens/flowcharts that are compatible for NHIS, with person-level contact attempt info
 - These could have a single CHI Front block for the household, but may administer separate CHI Back blocks for each sampled person
- Since ACS-GQ and other surveys sample Group Quarters or facilities, some CHI screens would have distinct options that apply to only these sample units, and not to households or persons

Next Steps – Neighborhood Observation Instrument (NOI)

- Two surveys (NHIS and SIPP) require an additional block of CHI screens known as NOI
- CHI team held a focus group in February 2025 with Field Supervisors from each Regional Office, to collect feedback on NOI screen mockups
 - Feedback was incorporated into future NOI screen design, and new draft screens have been loaded into QDM
 - Focus group discussion centered on new screen layout, scrolling to combine some screens, response options/orderings, and placement of NOI before or after survey questionnaire
 - Participants also volunteered feedback on new instrument functionality, question wordings, and their purpose

Current NOI Design (Blaise)

- Only launched if FR is attempting a personal visit
 - Currently meant to be completed once and only once per unit
- 16 total screens, with one question per screen
 - Whether FR observed sample building or unit (1 screen)
 - If “Yes”, continue to rest of NOI; if “No”, exit NOI and go to other CHI screens
 - Graffiti (1 screen)
 - Unit or building condition (1 screen)
 - Select building or unit features (4 screens)
 - Select unit features only (5 screens)
 - Unit demographics (4 screens)

NOI Focus Group – Main Takeaways (1)

- Support for new “screener” question about multi-unit address, and whether able to observe unit within building
 - This would allow FRs to skip some items if they indicate they are at a multi-unit building, but could not observe the sample unit
 - This would reduce burden from current CHI, where FR must indicate “Unable to observe sample unit” on five screens about unit features
- Support for combining similar questions into one screen with scrolling
 - Reduces screens on select building/unit features, from 4 to 1
 - Reduces screens on unit features only, from 5 to 1
 - Reduces screens on unit demographics, from 4 to 1

NOI Focus Group – Main Takeaways (2)

- Mixed thoughts on best placement of NOI screens (Front vs Back)
 - Placement in CHI Front could avoid bias of answers based on interview
 - Placement in CHI Back may be safer/less burden for FRs to start interview
 - Placement in CHI Back is also more similar to how they fill out NOI right now
- Also shown possible “hybrid” placement, with NOI starting in Front but asking FR if they can complete NOI at this time
 - If “Yes”, continue with NOI in CHI Front
 - If “No”, skip NOI and fill out in CHI Back
 - Most FRs preferred this, over placing in only CHI Front or only CHI Back

Future NOI Design (Centurion)

- 7 total screens, with up to 19 questions
 - Whether FR observed sample building or unit, **and whether they can complete NOI at this time** (2 questions)
 - If “Yes” to both Qs, continue to rest of NOI
 - If “Yes” to first Q and “No” to second Q, skip NOI but return to it in CHI Back
 - if “No” to first Q, exit NOI and go to other CHI screens
 - Graffiti (1 question)
 - Unit or building condition (1 question)
 - Select building or unit features (4 questions)
 - **Whether address is in a multi-unit building, and whether they observed unit** (2 questions)
 - If “Yes” to first Q and “No” to second Q, skip to Unit demographics
 - Otherwise, proceed
 - Select unit features only (5 questions)
 - Unit demographics (4 questions)

Next Steps – Additional Differences between Surveys

- QDM allows adjustment of CHI programming for a given survey, without overwriting earlier settings that are needed for another survey
- Differences between surveys may require:
 - Adding or removing CHI screens
 - Adding, removing, or modifying text or response options on CHI screens
 - Changing branching logic between CHI screens, or to/from survey
- CHI programming will take survey differences into account, including:
 - Procedural differences
 - Longitudinal vs non-longitudinal
 - Whether vacant units are in scope, or occupied only
 - Whether proxy response is permitted
 - Whether a self-administered mode is offered

Questions? Comments?

Matt Virgile

Business Analytics Branch, Office of Survey and Census Analytics (OSCA)

Matthew.Virgile@census.gov