

# Using Hierarchical Data to Manage Sample and Contact Attempts in Microsoft Access

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# Contact attempts differ by mode

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- CATI and CAPI surveys
  - Interviewers
    - Telephone calls 
    - In-person visits 
- Mail and Web surveys
  - Advance letters and postcards 
  - Email invitations and reminders 
  - Paper questionnaires  

# Mail and Web Surveys

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- Self-administered surveys don't administer themselves
  - No interviewers
    - Who initiates contact?
      - Is sample member eligible to be contacted?
      - What address or email should be used?
    - Who records outcome of contact attempt?
      - Is sample member **still** eligible?
      - Is address or email **still** usable?
    - What tools do they use?
      - No CATI or CAPI front-end

# Project Operations Database (POD)

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- Microsoft Access database
  - Front-end
    - Case Management
    - Contact Management
    - Progress reports
  - Users
    - Mail Department
    - Tracking & Locating Department
    - Project Directors

# Project Operations Database (POD)

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- Where are data stored?
  - **Microsoft Access Back-End**
    - Single-mode mail surveys
  - **MySQL Back-End**
    - In-house web surveys
    - CAPI surveys
    - Central data repository
      - Multi-mode surveys
      - Longitudinal studies
- Open Database Connectivity (ODBC)
  - Link MySQL back-end and Access front-end

# Project Operations Database (POD)

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- How are data stored?

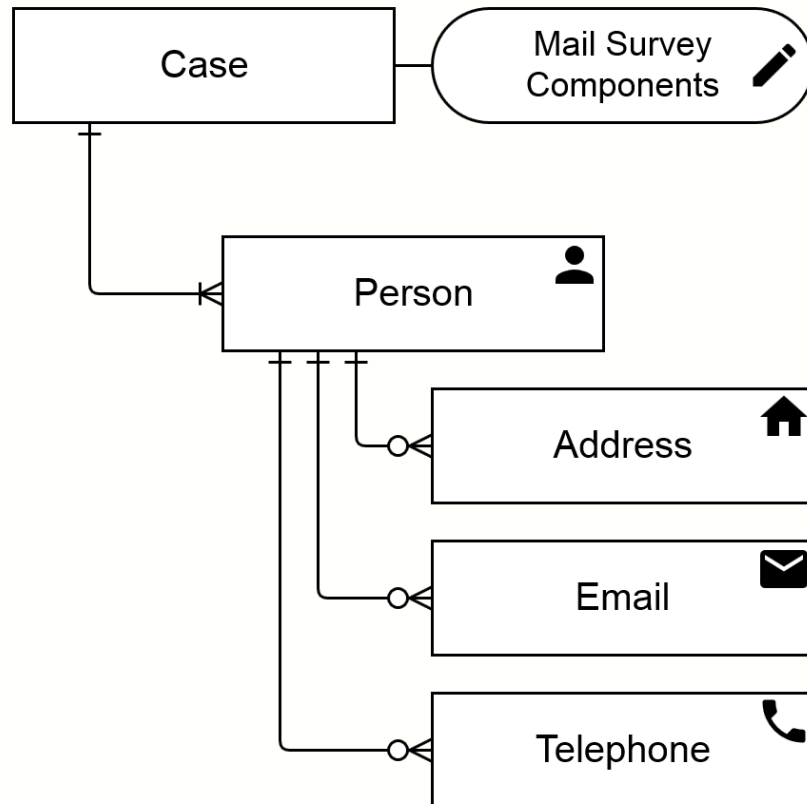


- How many peas are in a pod?
  - It depends on the variety
    - 2-3 snow peas
    - 6-7 green peas

# Hierarchical Data

# Hierarchical Database Structure

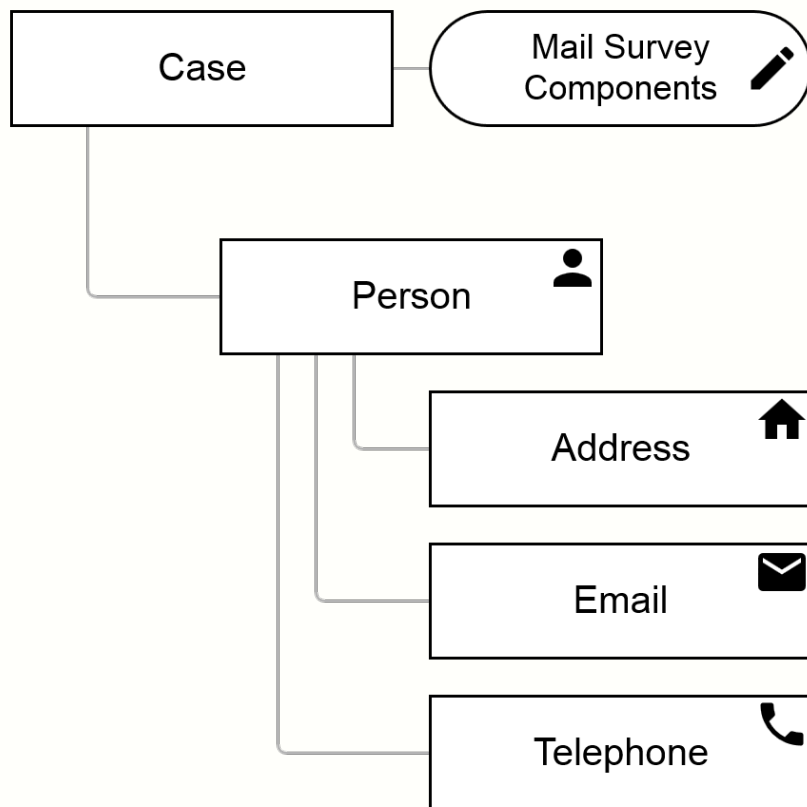
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# Data about Contact Attempts

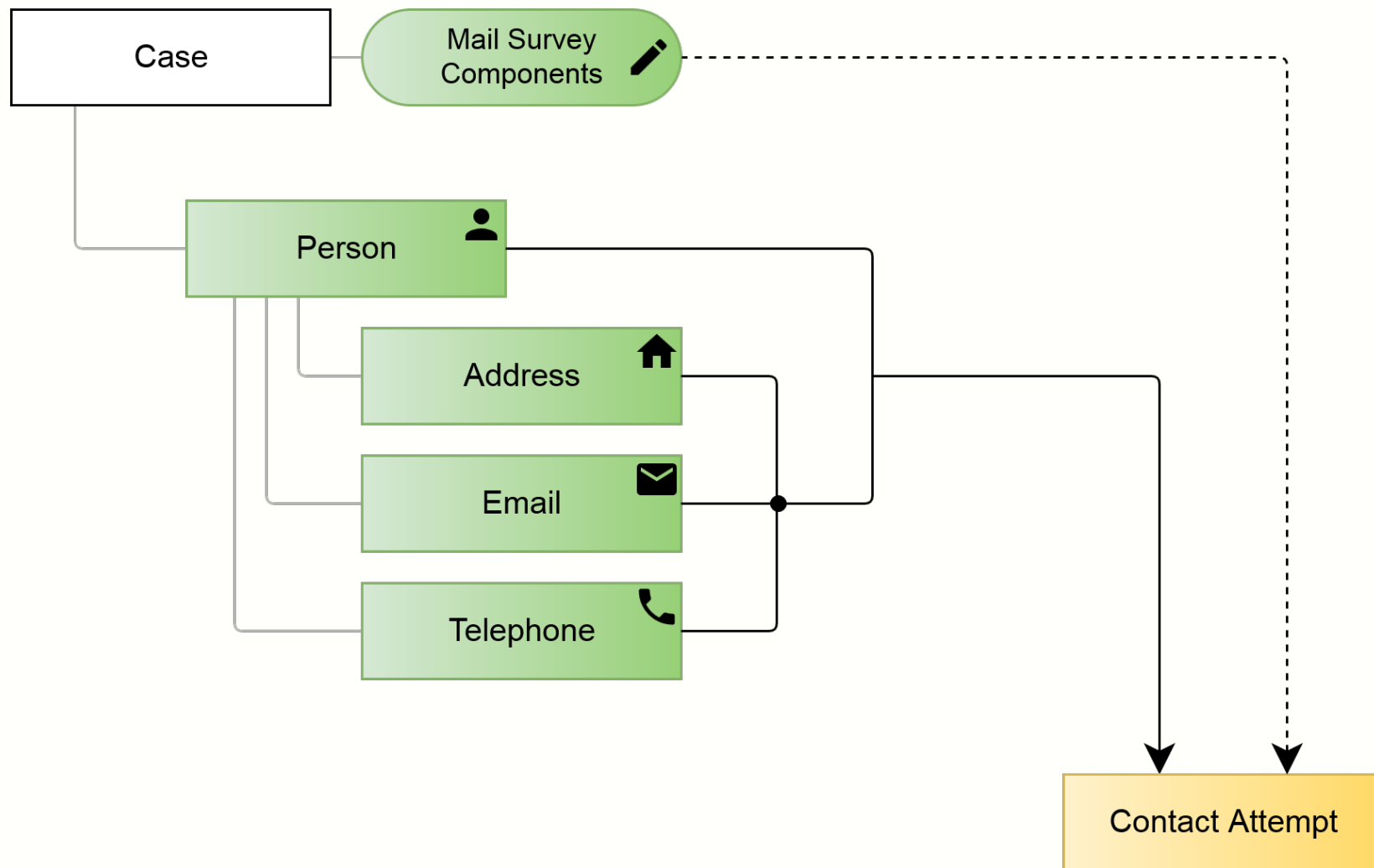
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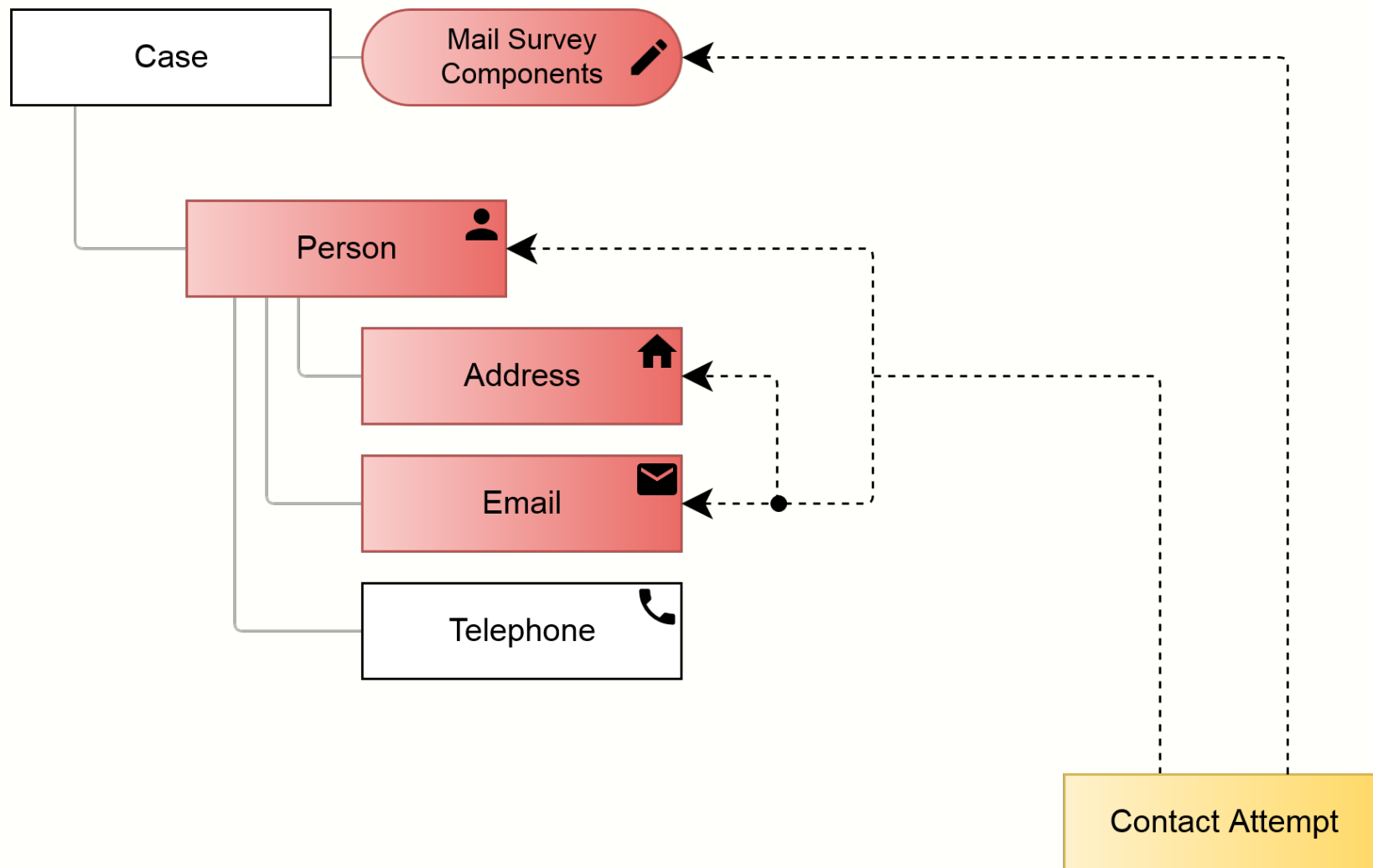
Contact Attempt

# Disposition Determines Eligibility for Contact

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# Outcome of Contact May Affect Disposition



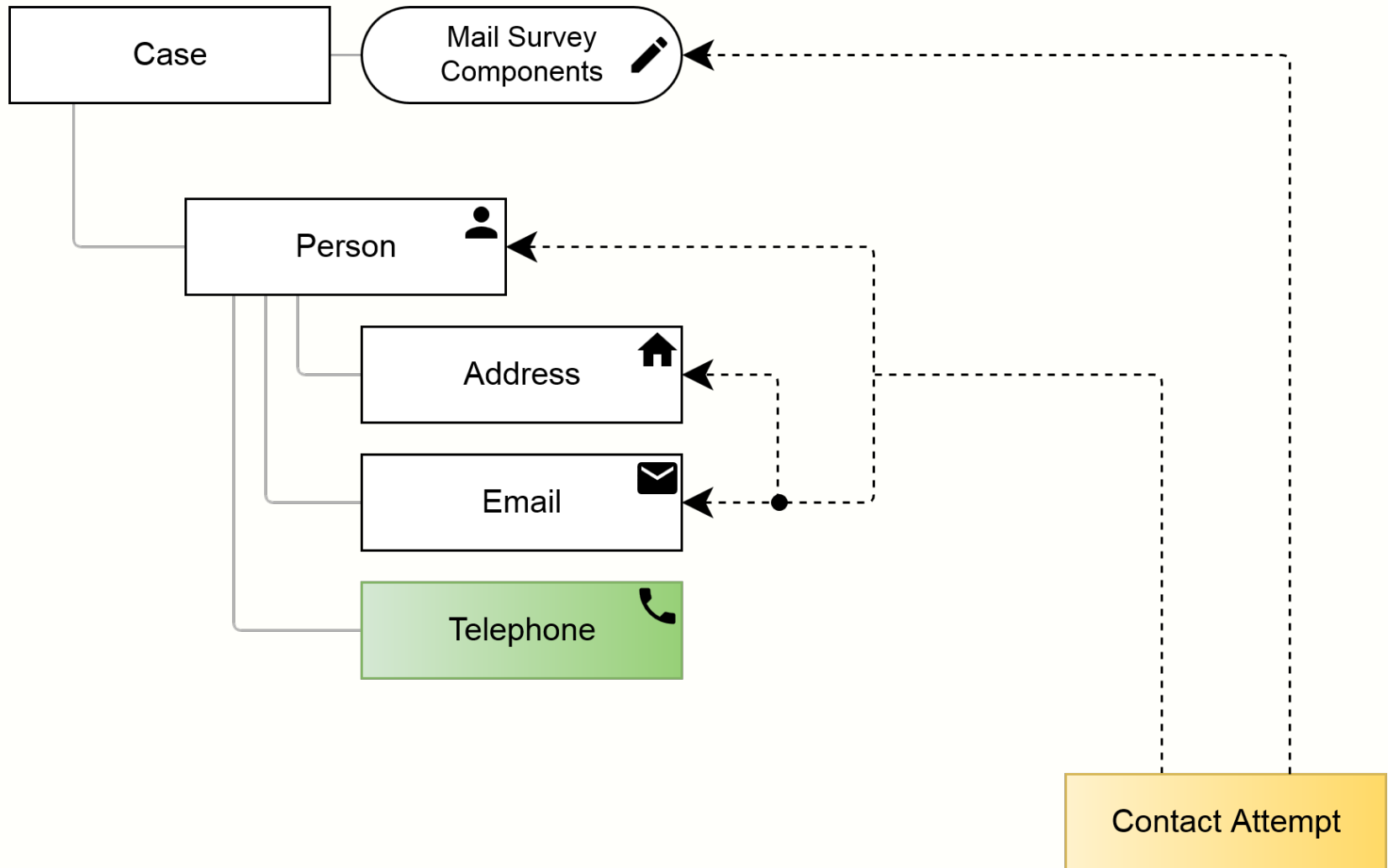
# Disposition and Outcome Code

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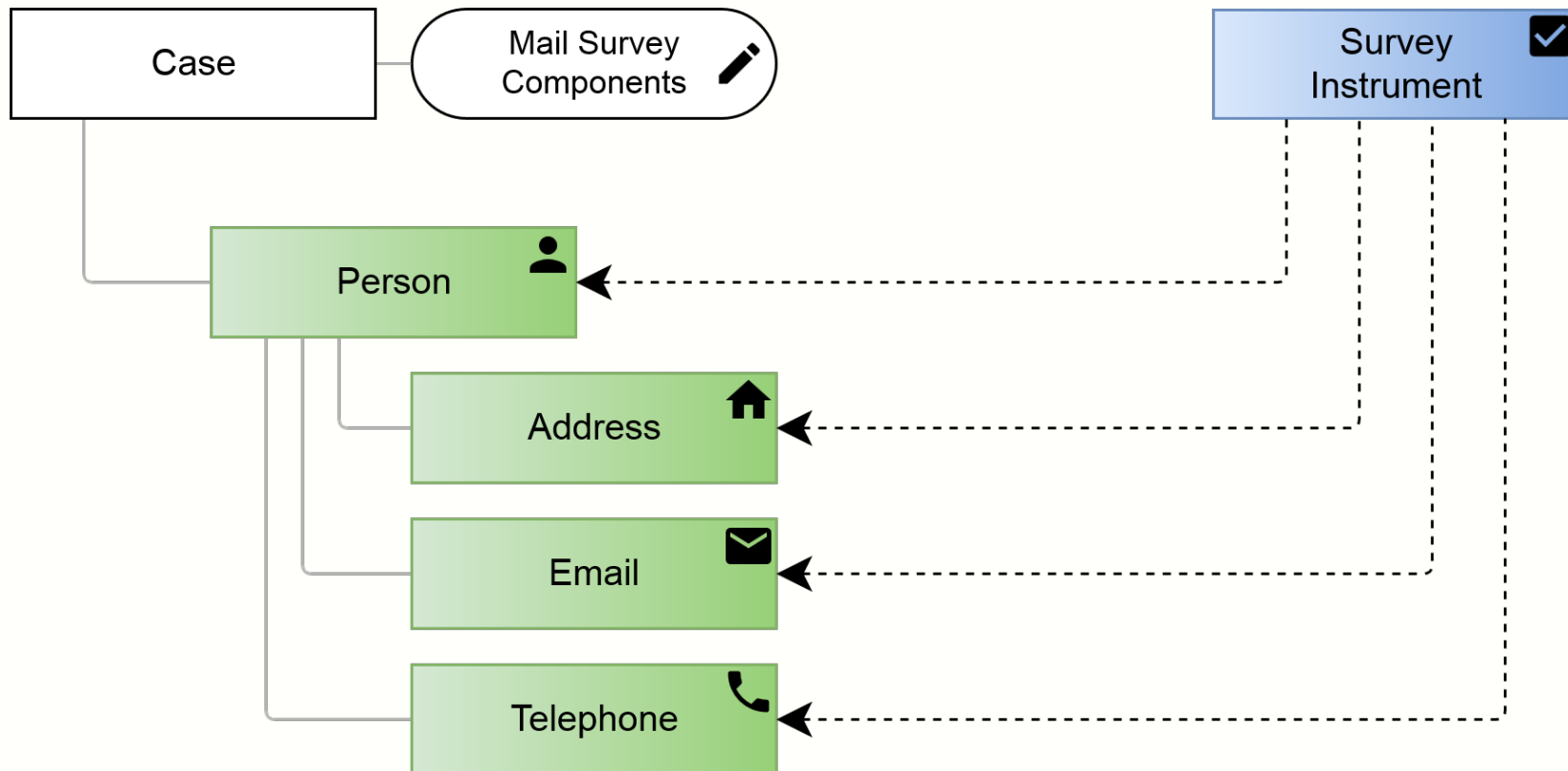
- Common codes
  - Derived from AAPOR Final Disposition
  - Interim codes for Tracking & Locating
- Code Definitions Table
  - How does code affect disposition of...
    - 👤 People
    - 🏠 Addresses
    - ✉ Email Addresses
    - 📞 Telephone Numbers
    - ✍ Mail Survey Components

- More than just a code
- Contact Eligibility
  - Enabled
  - Disabled
  - Permanently Disabled (Final)
- Recency
  - When was contact last enabled?
- Tracking and Locating
  - Referred for Tracking & Locating
  - Referred for Review
  - Returned from Department

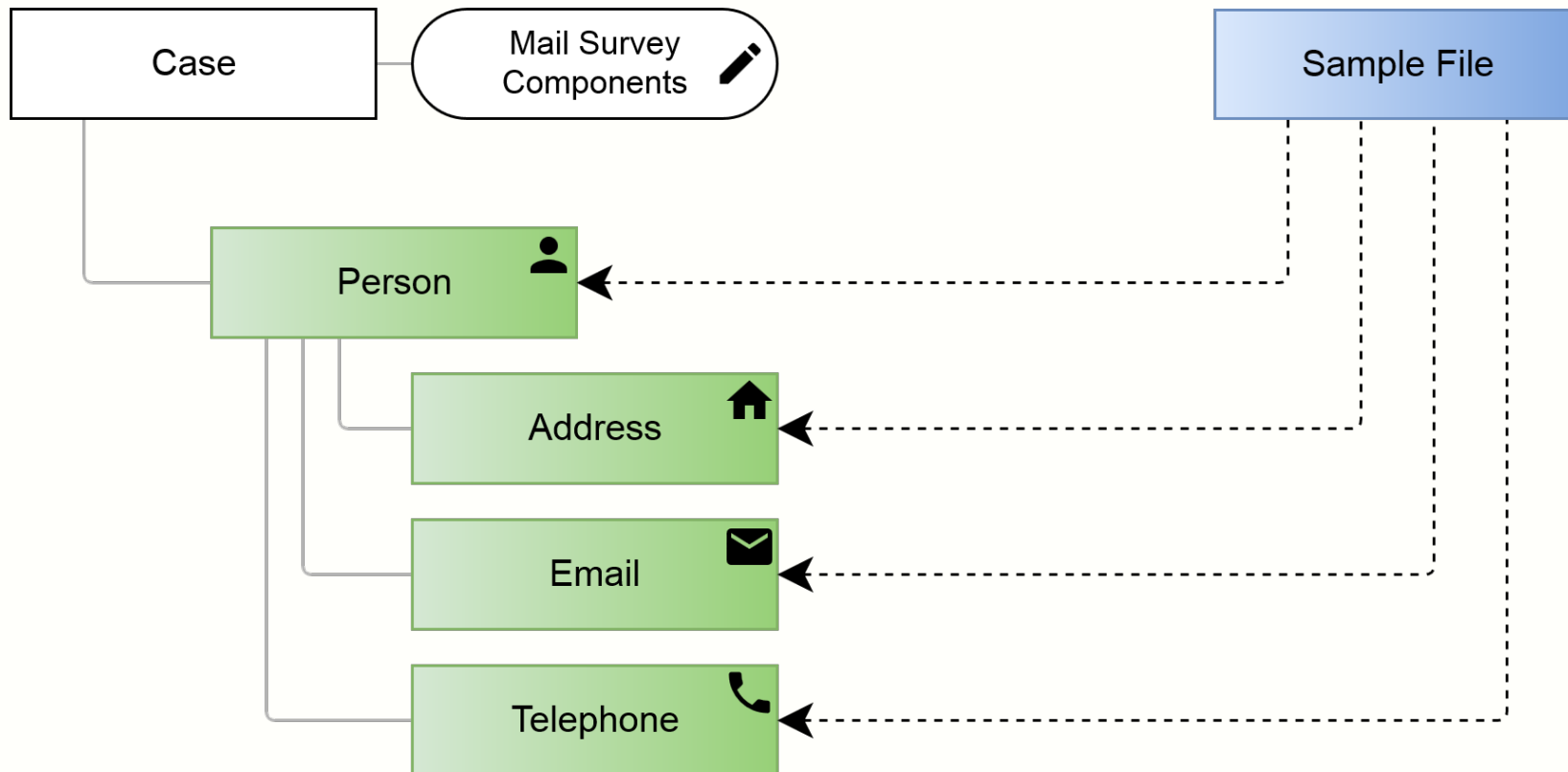
# Telephone as Mode of Contact



# Data Imported from Survey Instrument



# Data Imported from Sample File





# Why use hierarchical data?

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- A case can any number of records
- Records can be of any type
- Each record has its own disposition
- Why not just use “current home address”?
  - When was it current?
    - Possible addresses, not yet confirmed
    - Past addresses, confirmed as incorrect

# The Life of a Case

## Importing Sample

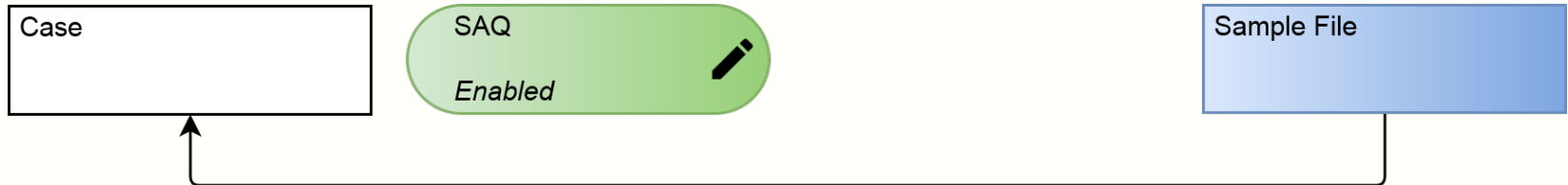
# Importing Sample

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- Sample Field Definition Table
  - Crosswalk
- Example:
  - Fields in sample file:
    - **haddr1, haddr2, hcity, hstate, hzip**
  - Fields in database:
    - **street1, street2, city, state, zip**
  - Type of data: **address**
  - Type of record: **home**

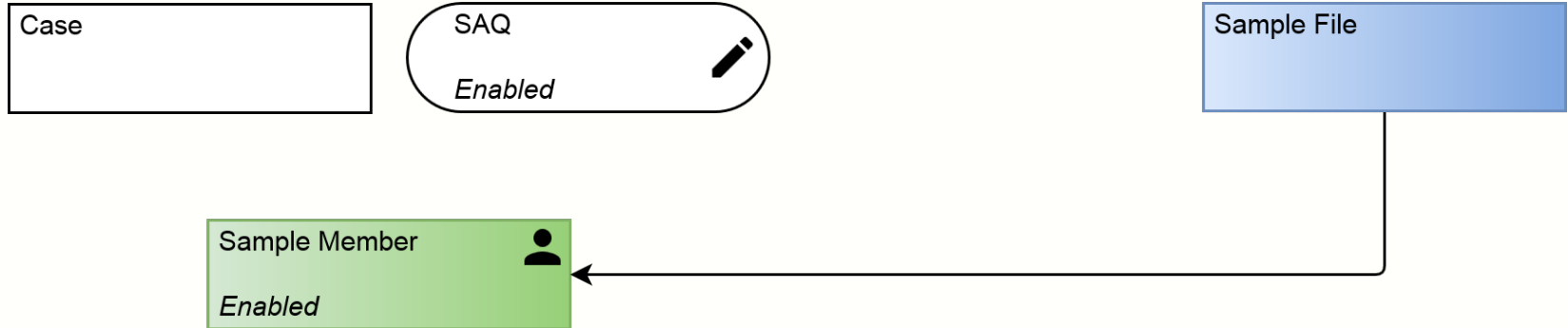
# Case-Level Data Imported into MySQL

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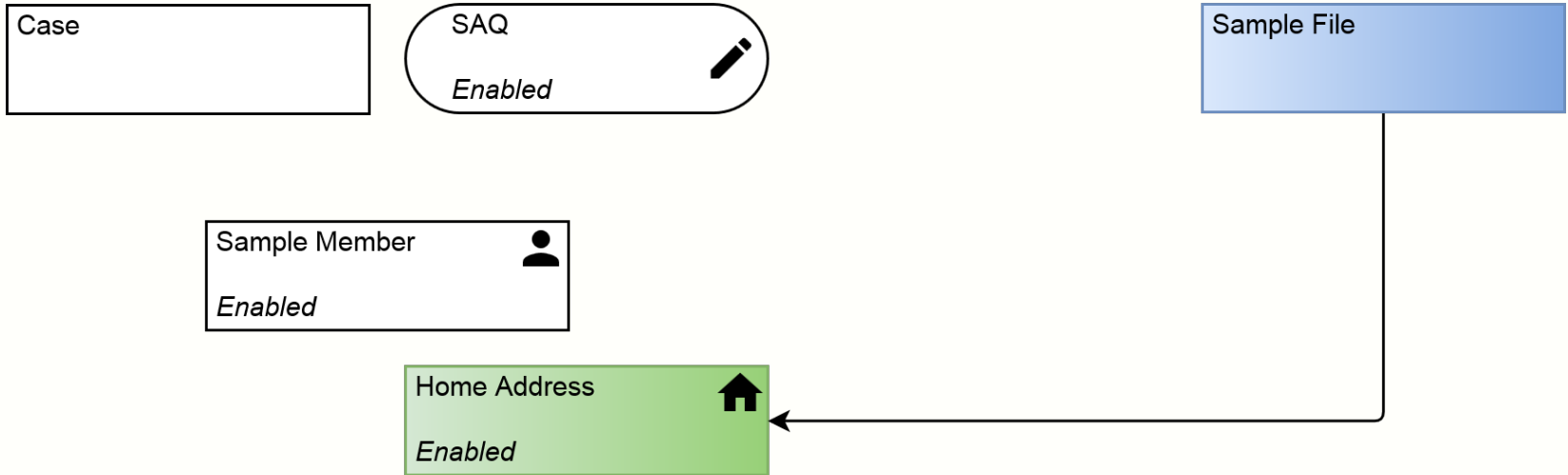
# Person Data Imported

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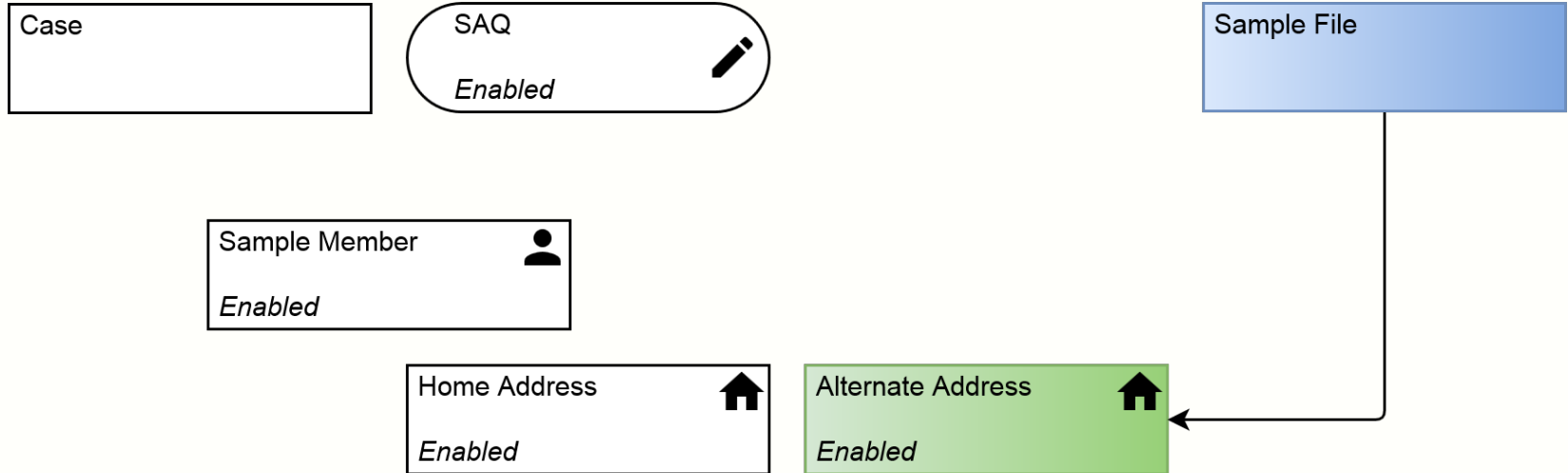
# Home Address Data Imported

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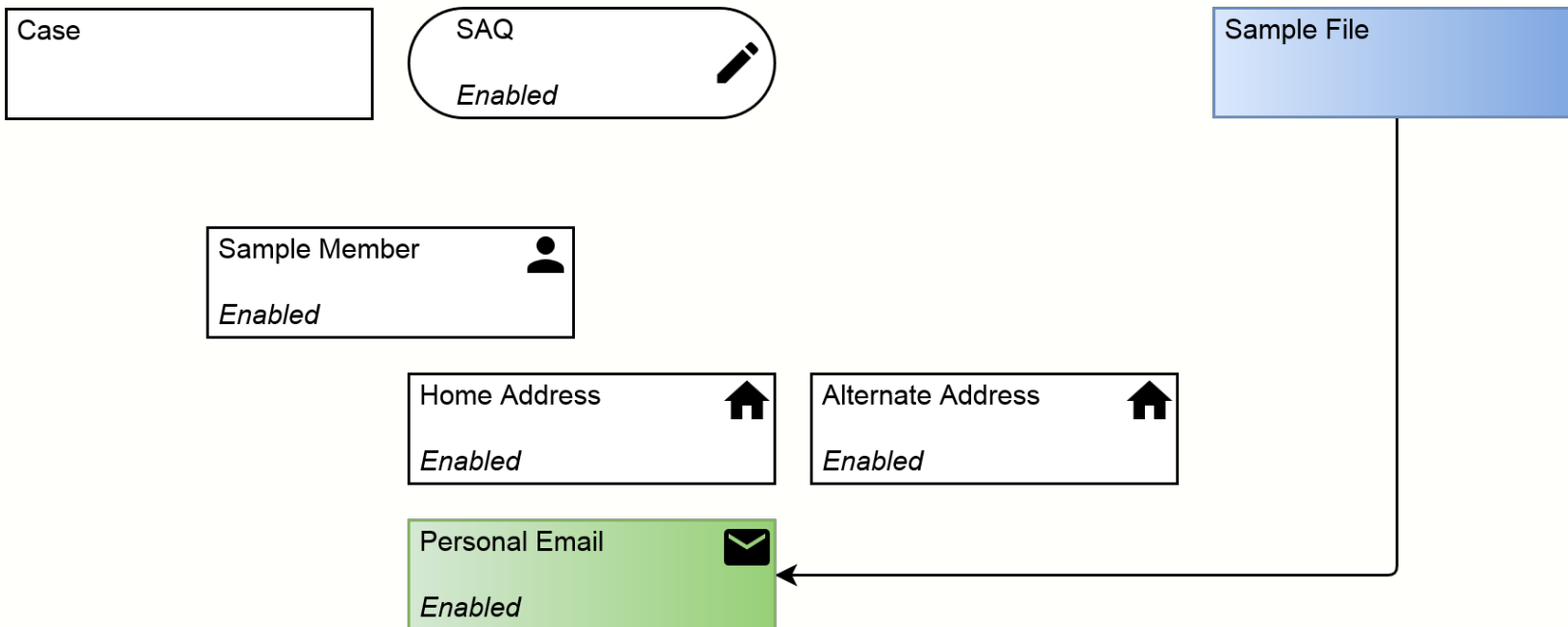
# Alternate Address Data Imported

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# Email Data Imported

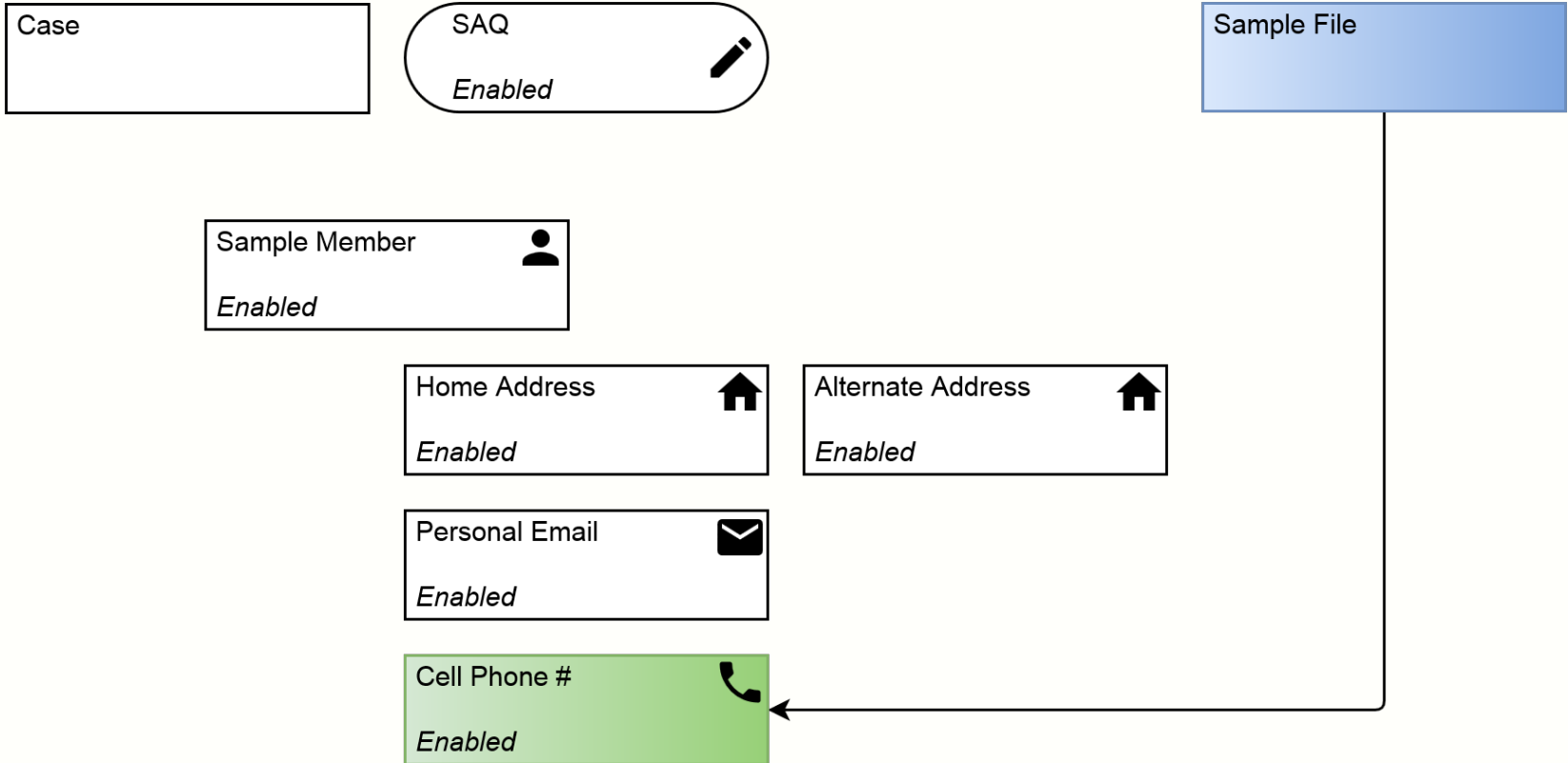
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# Telephone Data Imported

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# In-House Web Survey

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Case

SAQ  
*Enabled*

Web Survey  
☒

Sample Member  
*Enabled*

Home Address  
*Enabled*

Alternate Address  
*Enabled*

Personal Email  
*Enabled*

Cell Phone #  
*Enabled*

# Record Selection

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- Which address, email, or telephone should be used?
- More than one usable address?
  - Prioritize by **type**
  - Which type of address should we try first?
- Addresses of the same type?
  - Prioritize by **recency**
  - Which address was most recently enabled?
- Addresses enabled at same time?
  - Prioritize by **position**
  - Which record was created first?

# Record Type Definitions Table

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- Position of each unique record type in hierarchy
  - Which should be selected first?
- **Hierarchy of Address Types:**
  - Home Mailing
  - Home
  - Seasonal Mailing
  - Seasonal
  - Alternate Mailing
  - Alternate
  - Work

# The Life of a Case

## Contact Attempts

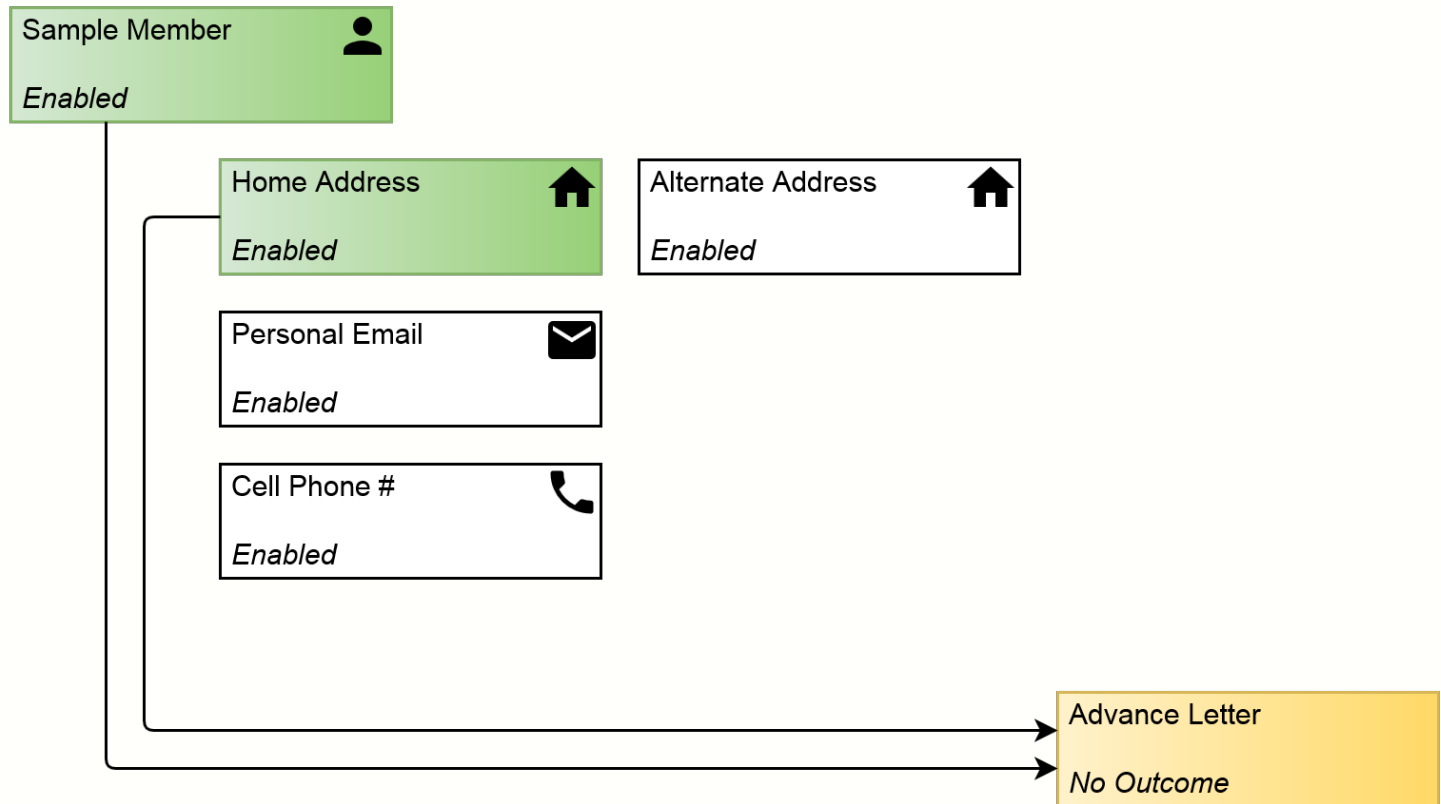
# Contact Definition Table

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- Defines each contact attempt
  - Who is the recipient?
  - What is the mode of contact?
  - Is a mails survey component attached?
  - Any conditions or pre-requisites?
- Other options
  - Resend materials returned undelivered
  - Attach incentives
  - Automate mail merges

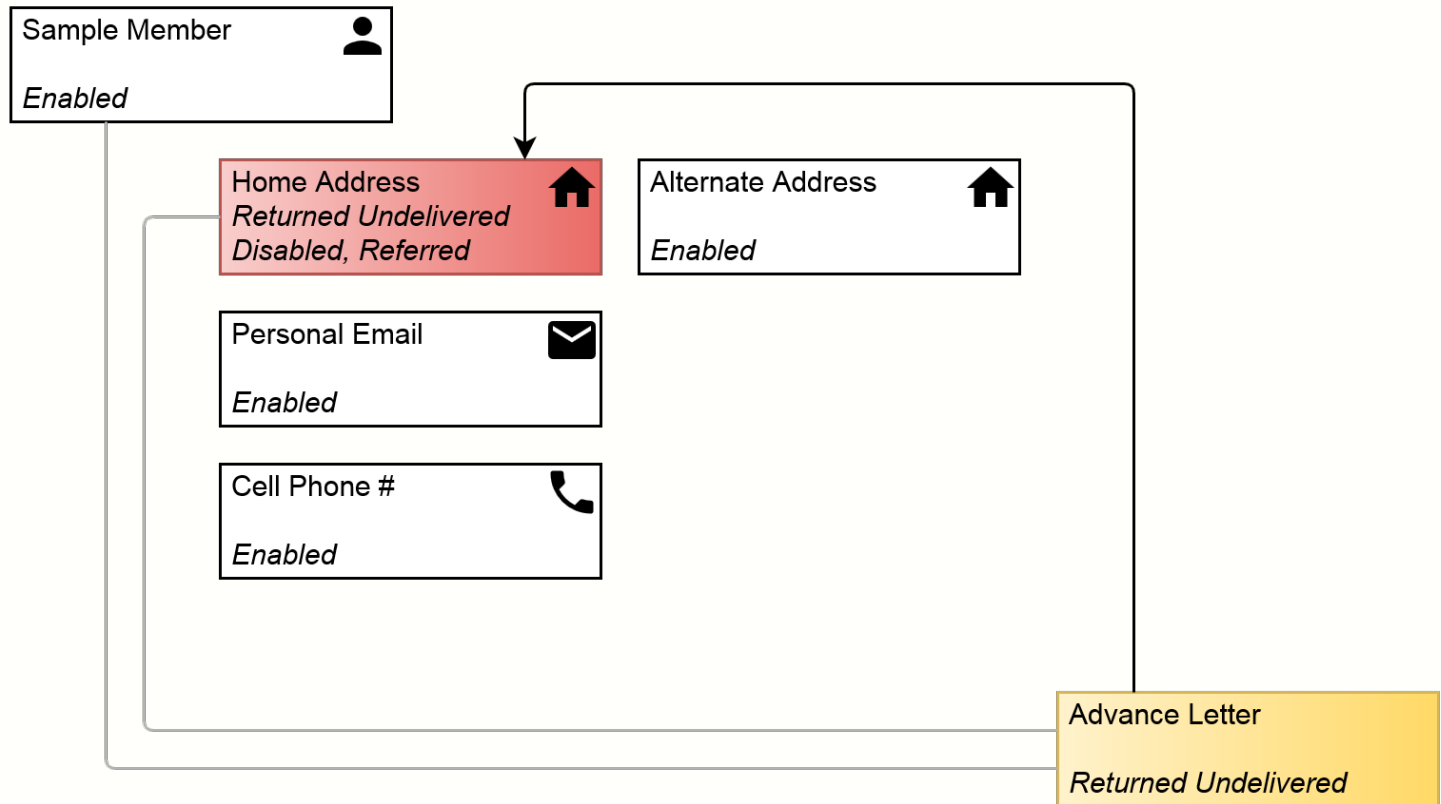
# Advance Letter Created and Sent

Case	SAQ <i>Enabled</i>	Web Survey <i>No Outcome</i>
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# Advance Letter Returned Undelivered

Case	SAQ <i>Enabled</i>	Web Survey <i>No Outcome</i>
------	-----------------------	---------------------------------





# Alternate Address Selected

Case

SAQ

*Enabled*



Web Survey

*No Outcome*



Sample Member



*Enabled*

Alternate Address



*Enabled*

Home Address  
*Returned Undelivered*  
*Disabled, Referred*



Personal Email



*Enabled*

Cell Phone #

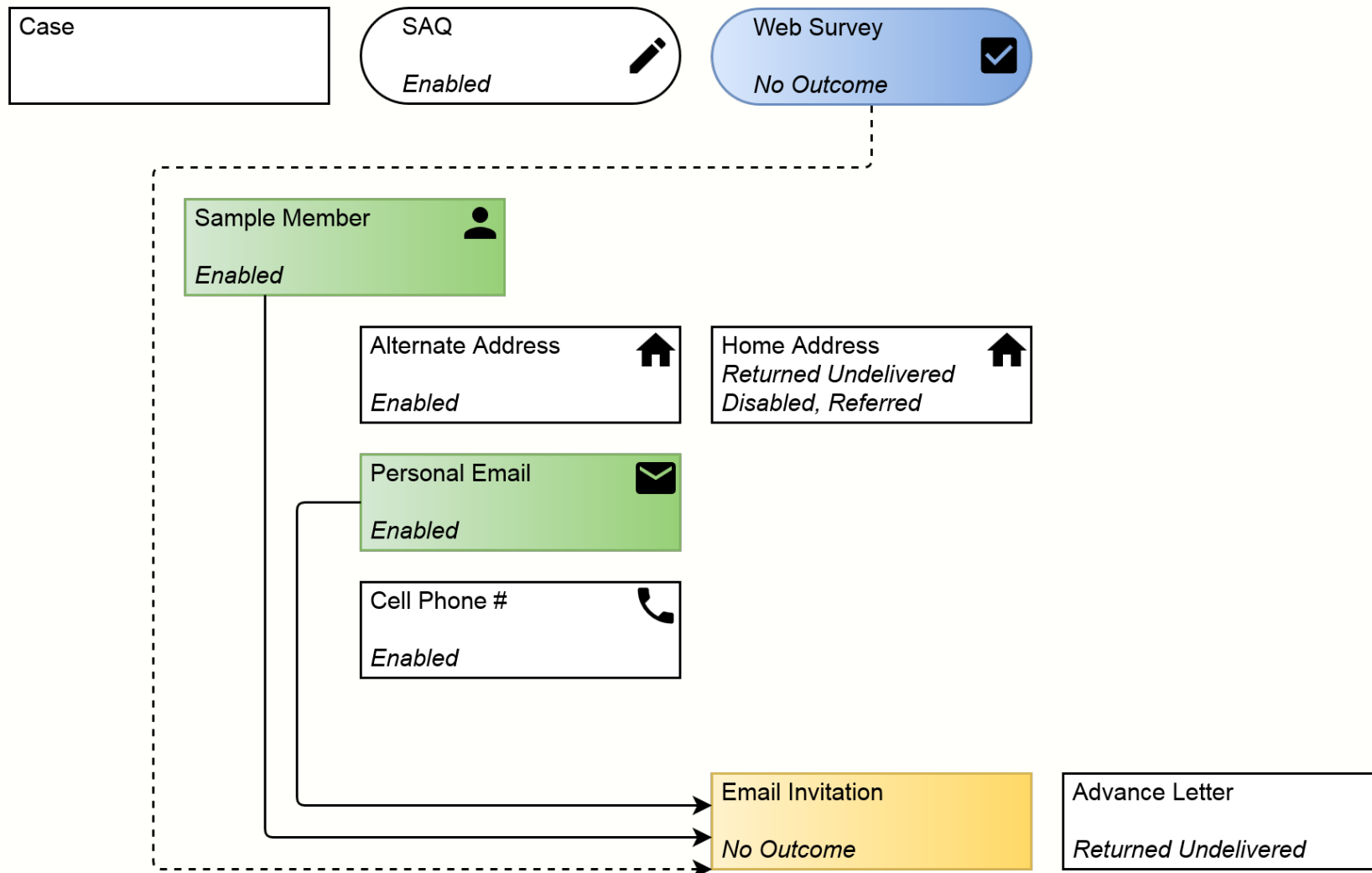


*Enabled*

Advance Letter

*Returned Undelivered*

# Email Invitation Created and Sent



# Web Survey Break-off

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Case

SAQ  
*Enabled*

Web Survey  
*Break-off or partial*

Sample Member  
*Enabled*

Alternate Address  
*Enabled*

Home Address  
*Returned Undelivered*  
*Disabled, Referred*

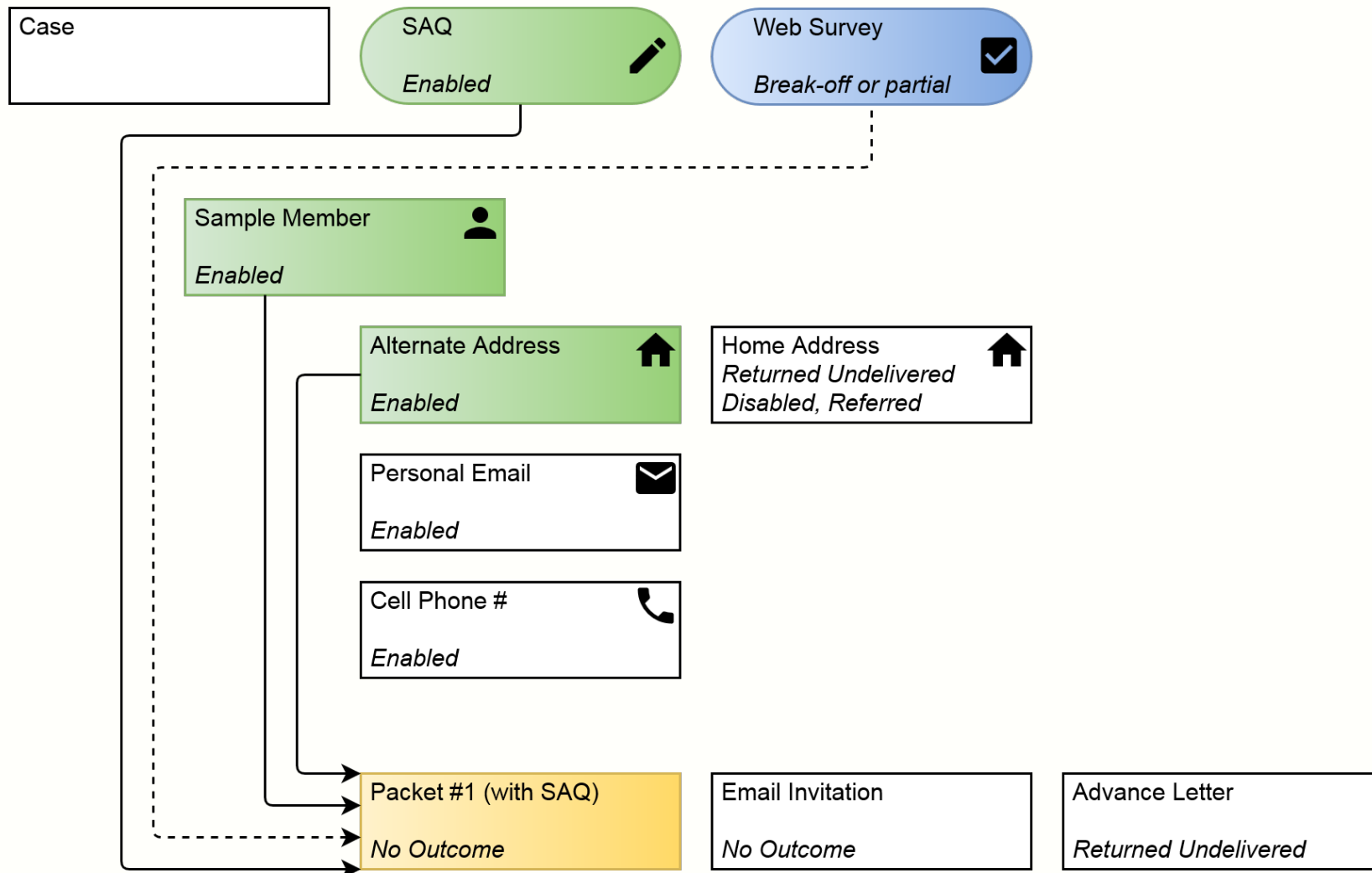
Personal Email  
*Enabled*

Cell Phone #  
*Enabled*

Email Invitation  
*No Outcome*

Advance Letter  
*Returned Undelivered*

# SAQ Packet #1 Created



# Assembly and Delivery

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- Contact by mail is not instantaneous
  - **Step 1:** Create contact data records
    - Database evaluates eligibility
  - **Step 2:** Run mail merge
  - **Step 3:** Print and assemble materials
  - **Step 4:** Deliver materials
    - Recipients may no longer be eligible
- **Solution?**
  - Database re-evaluates eligibility
  - Mail Department removes materials

# Web Survey Completed During Assembly

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Case

SAQ  
*Enabled*

Web Survey  
*Complete*

Sample Member  
*Enabled*

Alternate Address  
*Enabled*

Home Address  
*Undeliverable*  
*Disabled, Referred*

Personal Email  
*Enabled*

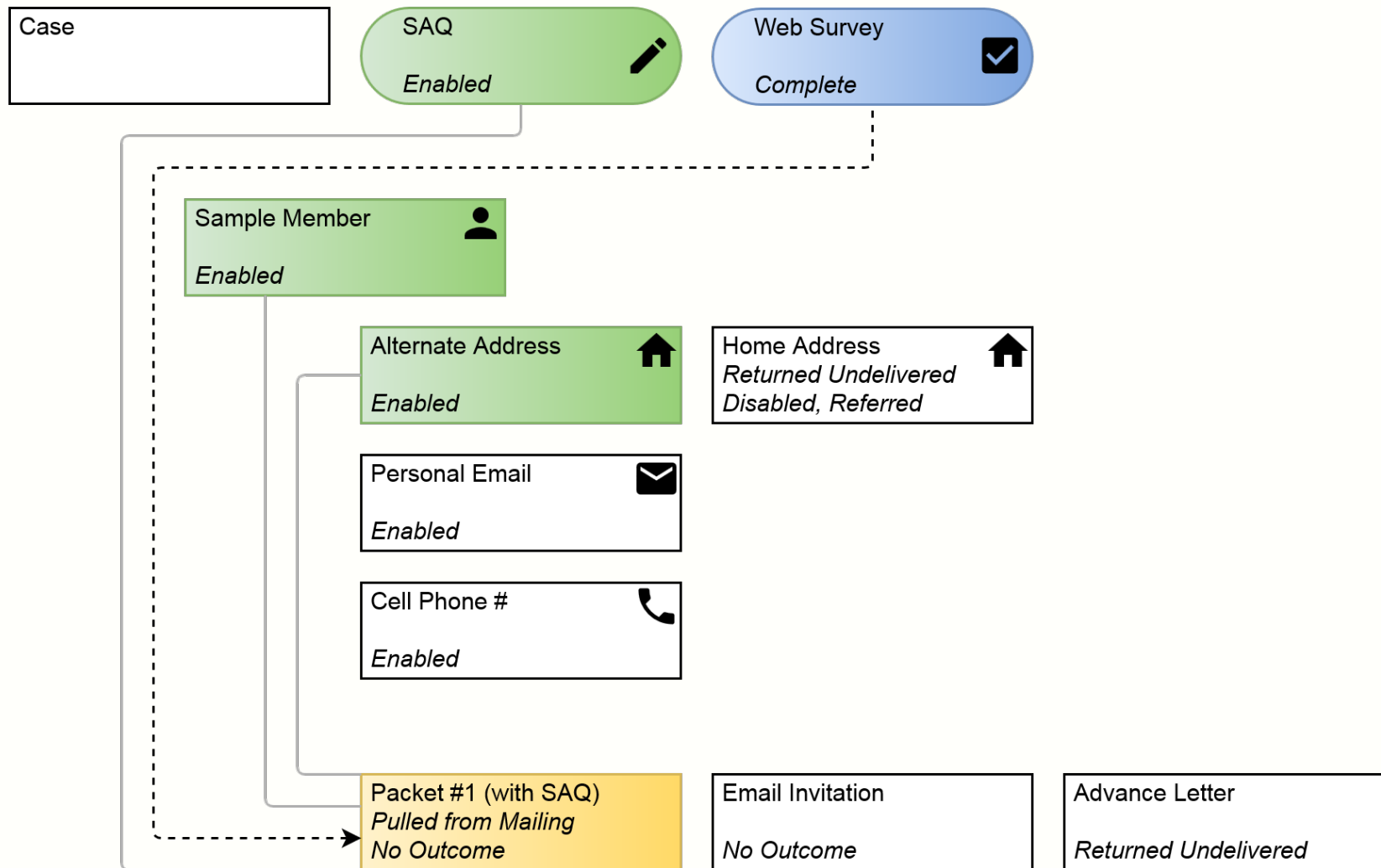
Cell Phone #  
*Enabled*

Packet #1 (with SAQ)  
*No Outcome*

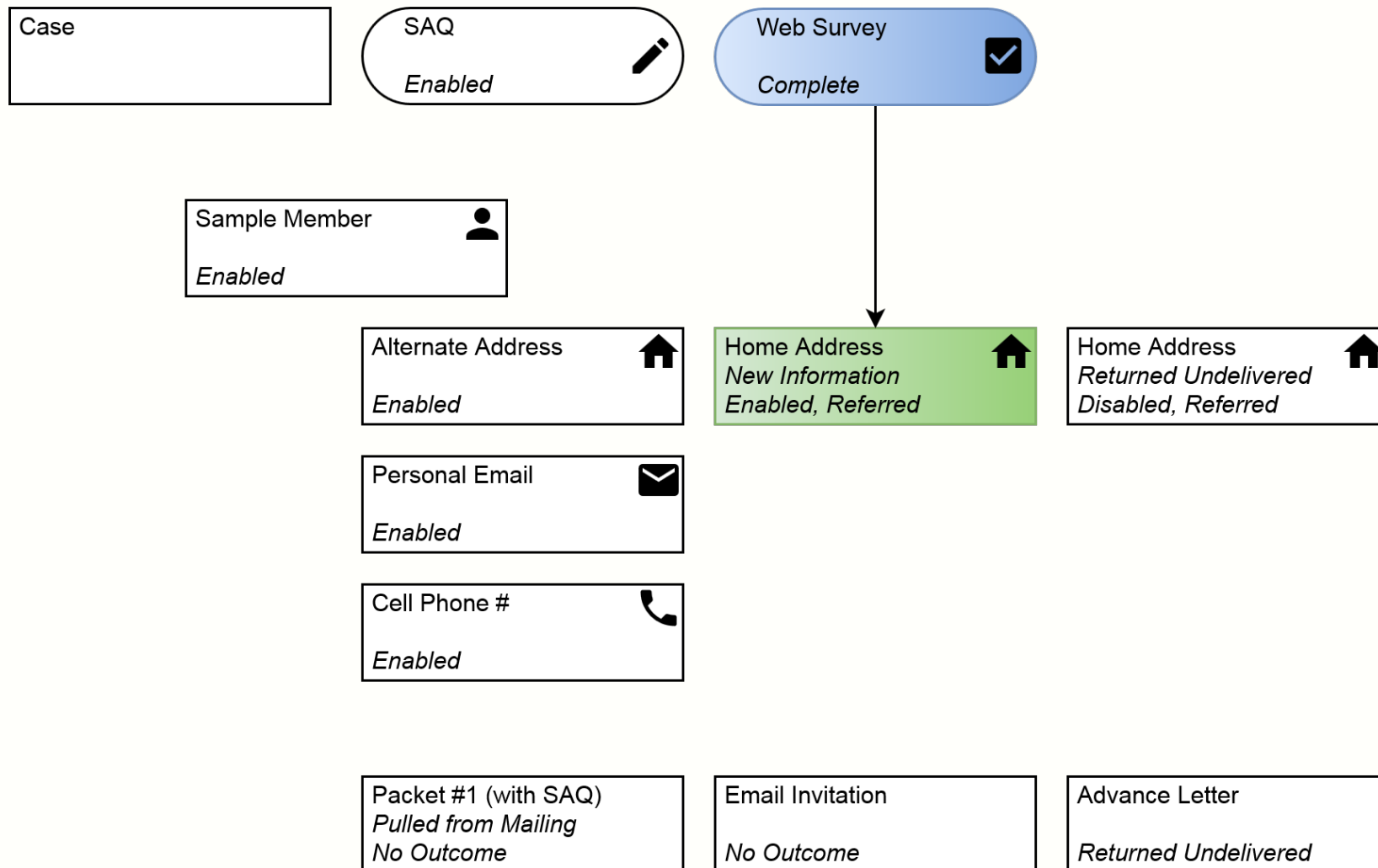
Email Invitation  
*No Outcome*

Advance Letter  
*Returned Undelivered*

# SAQ Packet #1 Pulled from Mailing



# New Home Address Imported From Web Survey





# New Home Address Selected

Case

SAQ

*Enabled*



Web Survey

*Complete*



Sample Member



*Enabled*

Home Address  
*New Information*  
*Enabled, Referred*



Alternate Address  
*Enabled*



Home Address  
*Returned Undelivered*  
*Disabled, Referred*



Personal Email  
*Enabled*



Cell Phone #  
*Enabled*



Packet #1 (with SAQ)  
*Pulled from Mailing*  
*No Outcome*

Email Invitation  
*No Outcome*

Advance Letter  
*Returned Undelivered*

# New Home Address Reviewed

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Case

SAQ  
*Enabled*

Web Survey  
*Complete*

Sample Member  
*Enabled*

Home Address  
*Confirmed as Correct  
Enabled, Returned*

Alternate Address  
*Enabled*

Home Address  
*Returned Undelivered  
Disabled, Referred*

Personal Email  
*Enabled*

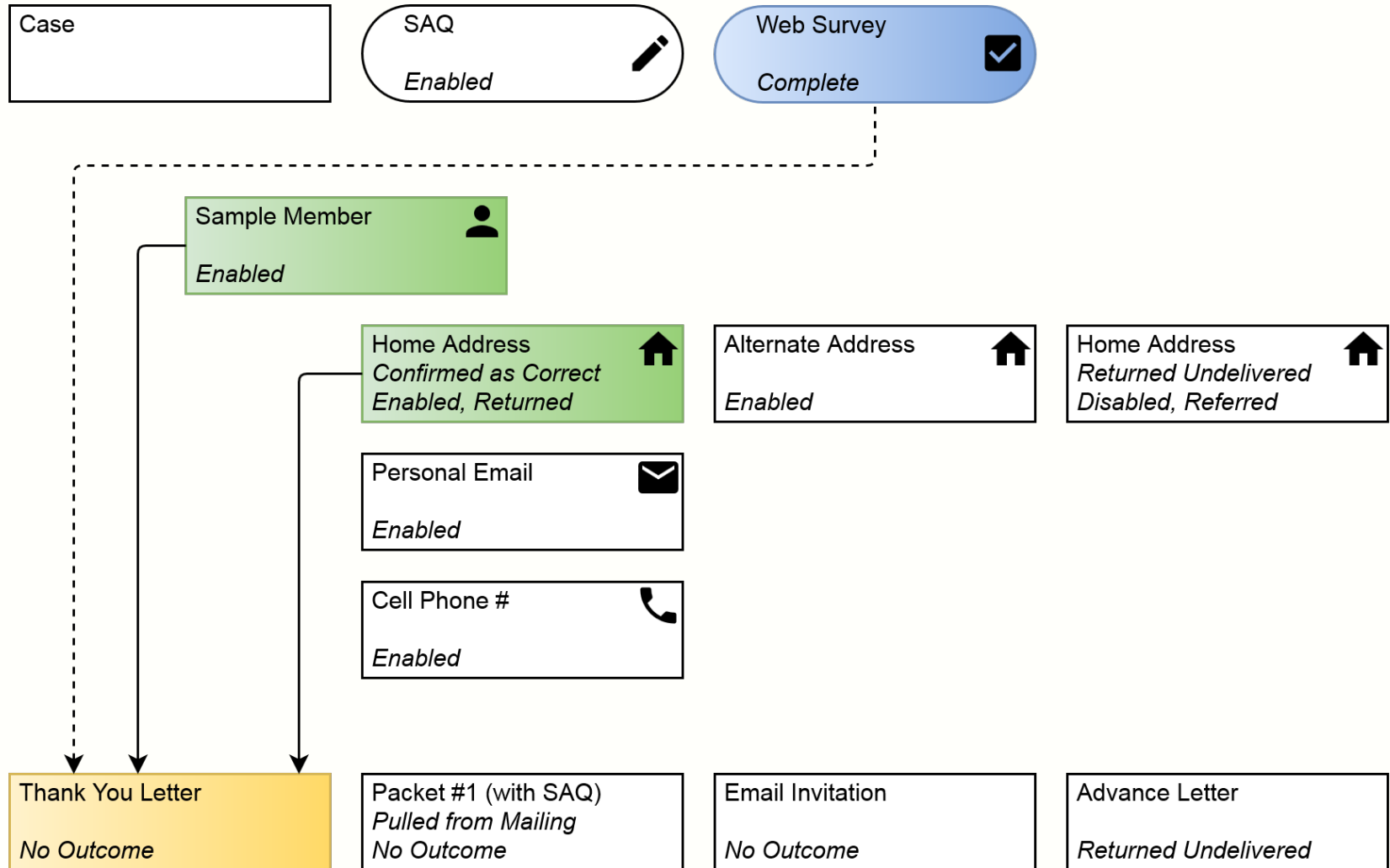
Cell Phone #  
*Enabled*

Packet #1 (with SAQ)  
*Pulled from Mailing  
No Outcome*

Email Invitation  
*No Outcome*

Advance Letter  
*Returned Undelivered*

# Thank You Letter Created and Sent



# Data Duplication

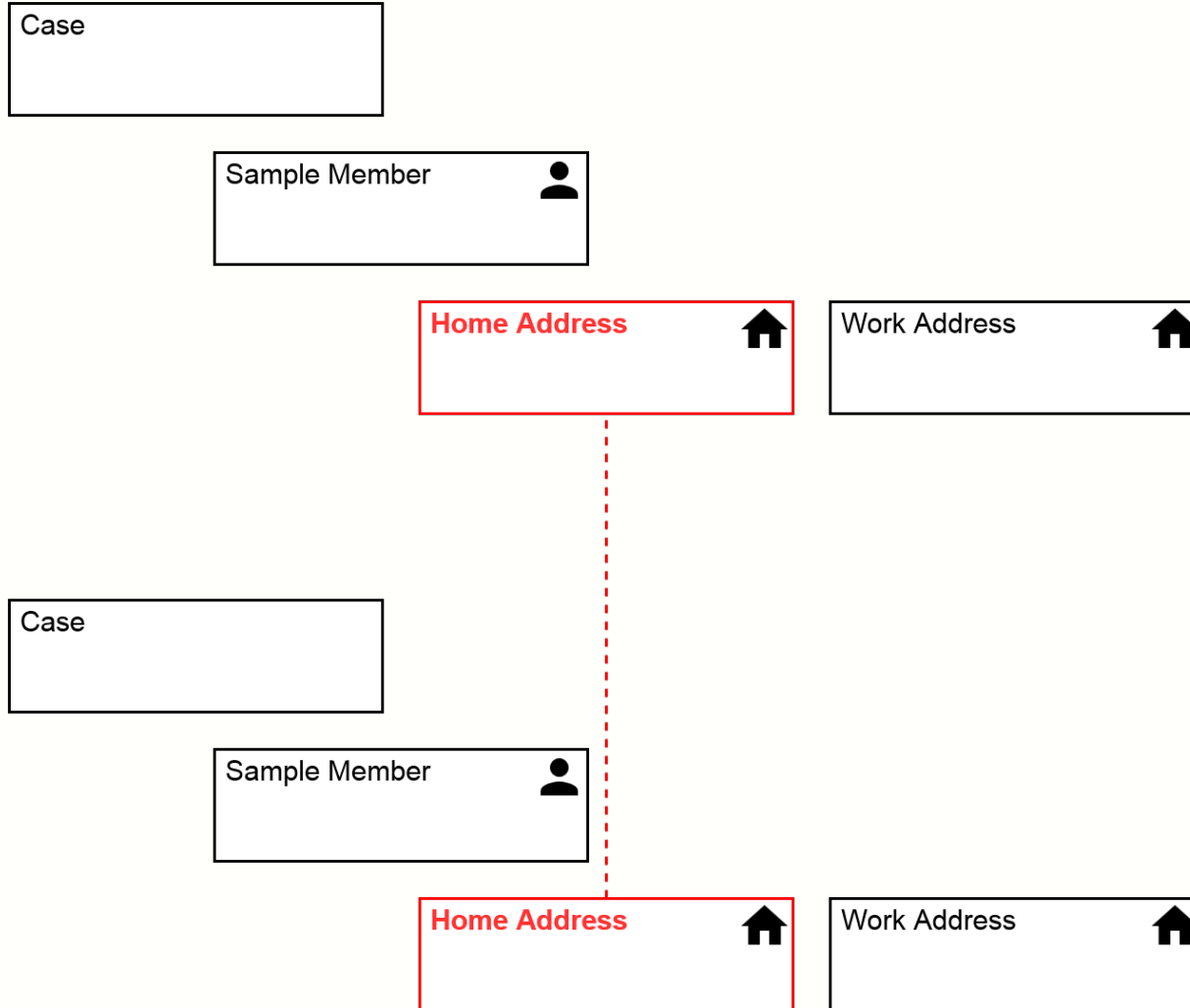
# What makes the data “hierarchical”

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- Each case is self-contained
  - Sample members who live together cannot share the same data
    - Data stored in separate cases
- What if sample members live together?
  - May share the same **address**
  - But cannot share the same address **record**

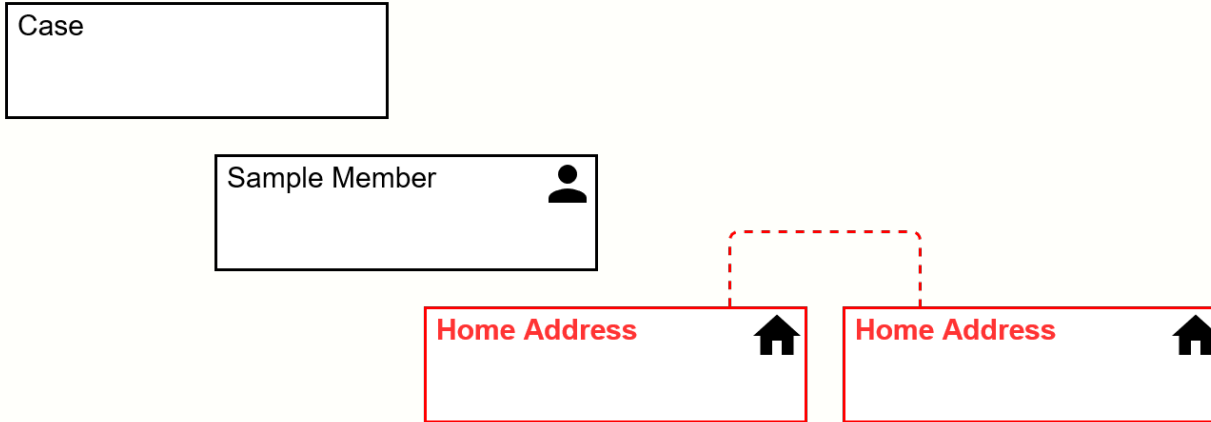
# Address Duplicated Across Cases

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# Address Duplicated Within Case

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# Why is Data Duplication Problematic?

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- Each record has own disposition
  - Ambiguous if recorded twice
    - Which record should we use?
    - Current address or a past address?
    - Confirmed correct or incorrect?
- Loss of functionality
  - Is the address eligible for selection or not?
- Increased complexity for users
  - Which record should be updated?
  - Identifying and disabling duplicates takes time



# Standardizing Address Data

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## Address #1:

10 West Sunshine Ave  
AL 12345

## Address #2:

10 W. Sunshine Avenue  
Alabama 12345

## Standardized Value:

10WSUNSHINEAVEAL12345

Standardized Value	Original Value
AL	ALABAMA
AK	ALASKA
AZ	ARIZONA
AR	ARKANSAS
ALY	ALLEY
ANX	ANNEX
APT	APARTMENT
ARC	ARCADE
AVE	AVENUE
BSMT	BASEMENT
BYU	BAYOU
BCH	BEACH
BND	BEND
BLF	BLUFF
BTM	BOTTOM
BLVD	BOULEVARD
BR	BRANCH
BRG	BRIDGE
BRK	BROOK
BLDG	BUILDING
BG	BURG
BYP	BYPASS
W	WEST

# Hierarchical Data

## Advantages and Disadvantages

# Advantages of Hierarchical Data

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- Scalable
  - Any **number** of addresses
  - Projects of varying size and complexity
- Adaptable
  - Different **types** of addresses
  - Complex or unpredictable sample files
- Comprehensive
  - Old addresses are not overwritten with new

# Advantages of Hierarchical Data

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- Central Data Repository
  - Multiple Departments and Users
    - Mail Department
    - Tracking & Locating Department
    - Project Directors
  - Multiple Applications
    - Email delivery scripts
    - CAPI survey instruments
  - Multi-mode projects
  - Longitudinal studies

# Disadvantages of Hierarchical Data

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- Increased complexity for users
  - Each record has its own disposition
  - What is the overall disposition of the case?
    - Multi-mode projects
      - Sample member
      - Mail survey
      - Web survey
- Data duplication
  - Coding and cleaning
  - More prevalent if multiple people per case

Thank You!

For copies of this presentation or more information, contact:

Brendan Day  
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**[www.uwsc.wisc.edu](http://www.uwsc.wisc.edu)**



# Access Database

## Forms and Tables



# Sample Field Definitions

sample_field_definitions									
sequence	element	field_name	record_type	record_source	sample_field_name	default_value			
100	survey	caseid	Production	sample	caseid				
200	person	person_caseid	Respondent	sample	caseid				
201	person	name_last	Respondent	sample	name_last				
202	person	name_first	Respondent	sample	name_first				
203	person	relationship	Respondent	sample		Respondent			
301	address	street1	Home	sample	home_street1				
302	address	street2	Home	sample	home_street2				
303	address	city	Home	sample	home_city				
304	address	state	Home	sample	home_state				
305	address	zip	Alternate	sample	home_zip				
311	address	street1	Alternate	sample	alternate_address				
313	address	city	Alternate	sample	alternate_city				
314	address	state	Alternate	sample	alternate_state				
315	address	zip	Alternate	sample	alternate_zip				
401	telephone	telephone	Cell	sample	cell_phone				
501	email	email	Personal	sample (email1)	email1				
502	email	email	Personal	sample (email2)	email2				
*									

Record: 17 of 17

Filtered

Search

survey

person

address

email

telephone

# Record Type Definitions

record_types		
element	record_type	sequence
address	Home Mailing	1
address	Home	2
address	Seasonal Mailing	3
address	Seasonal	4
address	Alternate Mailing	5
address	Alternate	6
address	Work	7
email	Personal	1
email	Alternate	2
email	Work	3
person	Respondent	1
person	Other	2
person	Relative	3
telephone	Cell	1
telephone	Home	2
telephone	Alternate	3
telephone	Work	4

Record: 1 of 17 Filtered Search

# Contact Definitions

contact_definitions							
sequence	contact	contact_label	component	recipient_type	contact_mode	contact_condition	attachment
1	AL	Advance Letter		respondent	address		
2	E1	Email #1		respondent	email		
3	S1	SAQ #1	saq	respondent	address		
4	TY	Thank You		respondent	address	code=1100	post_incentive
*							

Record: 1 of 4

No Filter

Search

# Contact Definition

---

Identifier: **AL**

Label: **Advance Letter**

Recipient: **Sample Member**

Mode of contact: **Address**

Mail Survey Component? **No**

Conditions or pre-requisites? **No \***

- \* Default rule for in-house web surveys:  
**Ineligible if web survey complete (code=1100)  
unless overridden**

# Contact Definition

---

Identifier: **TY**

Label: **Thank You**

Recipient: **Sample Member**

Mode of contact: **Address**

Mail Survey Component? **No**

Incentive: **\$10**

Conditions or pre-requisites? **code=1100 \***

- \* Default rule for in-house web surveys:  
**Ineligible if web survey complete (code=1100)**  
**unless overridden**

# Contact Management Form

File Home Create External Data Database Tools PROJECT OPERATIONS Datasheet Tell me what you want to do

Case Management Management Refresh All Project Director Mail Tracking and Locating Unassigned Objects All Tables All Queries All Modules All Objects

**Mail Department**

- Case Management
- Contact Management**
- Data Entry
- Contact Codes
- Survey Codes
- Contact Data for Merges
- Mail Merge; TY 5/13/2017 10:28:13 AM
- Mail Merge; S1 5/13/2017 10:10:51 AM
- Mail Merge; AL 5/13/2017 9:34:03 AM

Contact Type:

Date Created:

Create Contact Records

Pull Contact Records

Reprint Pulled Contacts

Schedule Delivery

Select address, email, and telephone for all cases

**Contact Types and Definitions**

Sequence	Contact	Label	Recipient Type	Person type dependency	Component	Condition
1	AL	Advance Letter	respondent			
2	E1	Email #1	respondent			
3	S1	SAQ #1	respondent		saq	
4	TY	Thank You	respondent			code=1100
*						

**Contact History**

Contact	Label	Date Created	Date Scheduled	Condition	Attachment	Records Created	Date Last Pulled	Records Last Pulled
TY	Thank You	5/13/2017 10:28:13 AM	5/22/2017	code=1100		7		0
S1	SAQ #1	5/13/2017 10:10:51 AM	5/18/2017			7	5/13/2017 10:14:15 AM	4
E1	Email #1	5/13/2017 10:08:08 AM	5/14/2017			10		0
AL	Advance Letter	5/13/2017 9:34:03 AM	5/13/2017			10		0

# Case Management Form

Case Management - Access

Brendan Day

File Home Create External Data Database Tools PROJECT OPERATIONS Datasheet Tell me what you want to do

Case Management Management Forms Refresh All Project Director Mail Tracking and Locating Roles Unassigned Objects All Tables Objects All Queries Modules Objects

**Mail Department**

Case Management

Contact Management

Data Entry

Contact Codes

Survey Codes

Contact Data for Merges

Mail Merge: TY 5/13/2017 10:28:13 AM

Mail Merge: S1 5/13/2017 10:10:51 AM

Mail Merge: AL 5/13/2017 9:34:03 AM

**Caseid:** 9001 **SAQ Code:** 0. Uncoded **Survey Code:** 1100. Complete

**Survey Record Type:** Production **Send Incentive to:**

**Person ID:** 9001p1 **Address Prioritized:** **Telephone Prioritized:**

**Person Group ID:** Jane Doe1 (9001p1) **Selected Address ID:** 9001a3. Home (922) **Selected Telephone ID:** 9001t1. Cell (0)

**Person Code:** 0. Uncoded **Address Code:** 922. New information **Telephone Code:** 0. Uncoded

**Person Type:** Respondent **Address Type:** Home **Telephone Type:** Cell

**Relationship:** Respondent **Street 1:** 200 Twilight Street **Telephone:** 608-231-9001

**First Name:** Jane **Street 2:** **Street 3:**

**Middle Name:** **City:** City **Email Prioritized:**

**Last Name:** Doe1 **State:** State **Selected Email ID:** 9001e1. Personal (0)

**Gender:** **Zip:** **Email Code:** 0. Uncoded

**Birth Date:** **Country:** **Email Type:** Personal

**Death Date:** **Email:** jane\_doe1@sunlight.com

**Is Deceased:** No

**Contacts** Person Address Email Telephone Reference

Caseid	Contact	Contact Code	Street #1	Street #2	Street #3	City	State	Zip Code	Email Address	Contact Mode
9001	AL	3300. Mailing returned undelivered	101 Sunshine Ave			City	State		jane_doe1@sunli	address
9001	E1	0. Uncoded	101 Moonlight Drive			City	State	12345	jane_doe1@sunli	email
9001	S1	0. Uncoded	101 Moonlight Drive			City	State	12345	jane_doe1@sunli	address
9001	TY	0. Uncoded	200 Twilight Street			City	State		jane_doe1@sunli	address

**Date Received:** **Pre-defined Filter:**

**Contact:** TY **Find in Table:**

**Code:** **Code Instructions** **Find in Field:**

**Caseid:** 9001 **Assign Code** **Find Value:**

**Caseid / Record:**

# Case Management Form (Contact Attempts)

Case Management - Access

Brendan Day

File Home Create External Data Database Tools PROJECT OPERATIONS Datasheet Tell me what you want to do

Case Management Management Forms Refresh All Project Director Mail Tracking and Locating Roles Unassigned Objects All Tables All Queries All Modules All Objects

**Mail Department**

- Case Management
- Contact Management
- Data Entry
- Contact Codes
- Survey Codes
- Contact Data for Merges
- Mail Merge: TY 5/13/2017 10:28:13 AM
- Mail Merge: S1 5/13/2017 10:10:51 AM
- Mail Merge: AL 5/13/2017 9:34:03 AM

**Caseid:** 9001 **SAQ Code:** 0, Uncoded **Survey Code:** 1100, Complete

**Survey Record Type:** Production **Send Incentive to:**

**Person ID:** 9001p1 **Address Prioritized:** **Telephone Prioritized:**

**Person Group ID:** Jane Doe1 (9001p1) **Selected Address ID:** 9001a3, Home (922) **Selected Telephone ID:** 9001t1, Cell (0)

**Person Code:** 0, Uncoded **Address Code:** 922, New information **Telephone Code:** 0, Uncoded

**Person Type:** Respondent **Address Type:** Home **Telephone Type:** Cell

**Relationship:** Respondent **Street 1:** 200 Twilight Street **Telephone:** 608-231-9001

**First Name:** Jane **Street 2:** **Telephone:**

**Middle Name:** **Street 3:** **Email Prioritized:**

**Last Name:** Doe1 **City:** City **Selected Email ID:** 9001e1, Personal (0)

**Gender:** **State:** State **Email Code:** 0, Uncoded

**Birth Date:** **Zip:** **Email Type:** Personal

**Death Date:** **Country:** **Email:** jane\_doe1@sunlight.com

**Is Deceased:** No

**Contacts** **Person** **Address** **Email** **Telephone** **Reference**

Caseid	Contact	Contact Code	Street #1	Street #2	Street #3	City	State	Zip Code	Email Address	Contact Mode
9001	AL	3300, Mailing returned undelivered	101 Sunshine Ave			City	State		jane_doe1@sunlight.com	address
9001	E1	0, Uncoded	101 Moonlight Drive			City	State	12345	jane_doe1@sunlight.com	email
9001	S1	0, Uncoded	101 Moonlight Drive			City	State	12345	jane_doe1@sunlight.com	address
9001	TY	0, Uncoded	200 Twilight Street			City	State		jane_doe1@sunlight.com	address

**Date Received:** **Contact:** TY **Code:** **Caseid:** 9001

**Pre-defined Filter:** **Find in Table:** **Find in Field:** **Find Value:** **Caseid / Record:**

**Code Instructions** **Assign Code**



# Case Management Form (Addresses)

Case Management - Access | Brendan Day

File Home Create External Data Database Tools PROJECT OPERATIONS Datasheet Tell me what you want to do

Case Management Management Forms Refresh All Project Director Mail Tracking and Locating Roles Unassigned Objects All Tables All Queries All Modules All Objects

### Mail Department

- Case Management
- Contact Management
- Data Entry
- Contact Codes
- Survey Codes
- Contact Data for Merges
- Mail Merge: TY 5/13/2017 10:28:13 AM
- Mail Merge: SI 5/13/2017 10:10:51 AM
- Mail Merge: AL 5/13/2017 9:34:03 AM

**Caseid:** 9001 **SAQ Code:** 0, Uncoded **Survey Code:** 1100, Complete **Send Incentive to:**

**Survey Record Type:** Production

**Person ID:** 9001p1 **Address Prioritized:** **Telephone Prioritized:**

**Person Group ID:** Jane Doe1 (9001p1) **Selected Address ID:** 9001a3, Home (922) **Selected Telephone ID:** 9001t1, Cell (0)

**Person Code:** 0, Uncoded **Address Code:** 922, New information **Telephone Code:** 0, Uncoded

**Person Type:** Respondent **Address Type:** Home **Telephone Type:** Cell

**Relationship:** Respondent **Street 1:** 200 Twilight Street **Telephone:** 608-231-9001

**First Name:** Jane **Street 2:** **Street 3:**

**Middle Name:** **City:** City **Email Prioritized:**

**Last Name:** Doe1 **State:** State **Selected Email ID:** 9001e1, Personal (0)

**Gender:** **Zip:** **Email Code:** 0, Uncoded

**Birth Date:** **Country:** **Email Type:** Personal

**Death Date:** **Email:** jane\_doe1@sunlight.com

**Is Deceased:** No





Contacts	Person	Address	Email	Telephone	Reference					
Address ID	Address Person ID	Street 1	Street 2	Street 3	City	State	Zip	Address Type	Address Source	Address Code
9001a2	Jane Doe1 (9001p1)	101 Sunshine Ave			City	State		Home	sample	3300, Mailing returned undelivered
9001a3	Jane Doe1 (9001p1)	200 Twilight Street			City	State		Home	p9999_web	922, New information
9001a1	Jane Doe1 (9001p1)	101 Moonlight Drive			City	State	12345	Alternate	sample	0, Uncoded
*										

**Date Received:** **Contact:** TY **Code:** **Caseid:** 9001 **Code Instructions:** **Assign Code:**





**Pre-defined Filter:** **Find in Table:** **Find in Field:** **Find Value:** **Caseid / Record:**

# Code Definitions

# Code Definitions

<div>     </div>													
Code	Label	Contact	Person			Address			Email			Component	
0	<u>Uncoded</u>	Yes	Yes			Yes			Yes			Yes	
1100	Complete	Yes	No			No			No			Yes	Finalized
2110	Explicit refusal	Yes	Yes	Finalized		No			No			Yes	Finalized
2111	Other person refusal	Yes	Yes	Finalized		No			No			Yes	Finalized
2112	Known respondent-level refusal	Yes	Yes	Finalized		No			No			Yes	Finalized
2113	Blank questionnaire mailed back, implicit refusal	Yes	No			No			No			Yes	Disabled
2260	Respondent was unavailable during field period	Yes	Yes	Finalized		No			No			Yes	Finalized
2270	Completed, but not returned during field period	Yes	No			No			No			Yes	Finalized
2310	Deceased	Yes	Yes	Finalized		No			No			Yes	Finalized
2320	Physically or mentally unable or incompetent	Yes	Yes	Finalized		No			No			Yes	Finalized
2330	Language barrier	Yes	Yes	Finalized		No			No			Yes	Finalized
2400	Mailing forwarded by USPS with address update	Yes	No			Yes	Disabled		No			No	
3190	Nothing ever returned	Yes	No			No			No			Yes	
3191	Email returned with automatic response	Yes	No			No			Yes			No	
3300	Mailing returned undelivered	Yes	No			Yes	Disabled	Refer	Yes	Disabled	Refer	Yes	
3313	No such address	Yes	No			Yes	Disabled	Refer	No			Yes	
3314	Vacant	Yes	No			Yes	Disabled	Refer	No			Yes	
3400	Mailing returned with forwarding information	Yes	No			Yes	Disabled		Yes	Disabled		Yes	
4700	No eligible respondent	Yes	Yes	Finalized		No			No			Yes	Finalized
4910	Duplicate complete (survey already complete)	Yes	No			No			No			Yes	Finalized
4911	Duplicate complete (mail survey already complete)	Yes	No			No			No			No	
8000	Request resend or reprint	Yes	No			No			No			No	

# Code Definitions

<div>     </div>													
Code	Label	Contact	Person			Address			Email			Component	
910	Refer to tracking and locating	No	Yes		Refer	Yes		Refer	Yes		Refer	No	
911	Refer for tracing review	No	Yes		Review	Yes		Review	Yes		Review	No	
920	No new information	No	Yes		Return	Yes		Return	Yes		Return	No	
921	Confirmed as correct	No	Yes	Enabled	Return	Yes	Enabled	Return	Yes	Enabled	Return	No	
922	New information	No	Yes	Enabled	Return	Yes	Enabled	Return	Yes	Enabled	Return	No	
931	Confirmed as incorrect	No	Yes	Disabled	Return	Yes	Disabled	Return	Yes	Disabled	Return	No	
942	New information, Review	No	Yes	Enabled	Review	Yes	Enabled	Review	Yes	Enabled	Review	No	
951	Confirmed as incorrect, Refer	No	Yes	Disabled	Refer	Yes	Disabled	Refer	Yes	Disabled	Refer	No	
1200	Partial or break-off with sufficient information	No	No			No			No			Yes	Disabled
2100	Break-off or partial with insufficient information	No	No			No			No			No	
2121	Logged on to survey, did not complete any items	No	No			No			No			No	
4100	Selected respondent screened out of sample	No	Yes	Finalized		No			No			Yes	Finalized
4900	Duplicate listing	No	Yes	Finalized	Return	Yes	Finalized	Return	Yes	Finalized	Return	No	
9001	Enable contact	No	Yes	Enabled		Yes	Enabled		Yes	Enabled		Yes	Enabled
9002	Disable contact	No	Yes	Disabled		Yes	Disabled		Yes	Disabled		Yes	Disabled

# Code 3300: Returned Undelivered

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Contact Outcome? **Yes**

 Applicable to Person? **No**

 Applicable to Address? **Yes**

Effect on Address: **Disable, Refer for Tracking & Locating**

 Applicable to Email? **Yes**

Effect on Email: **Disable, Refer for Tracking & Locating**

 Applicable to Telephone? **No**

 Applicable to Mail Survey Component? **Yes**

Effect on Mail Survey Component: **none**

# Code 920: No New Information

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 Applicable to Person? **Yes**

Effect on Person: **Return from Tracking & Locating**

 Applicable to Address? **Yes**

Effect on Address: **Return from Tracking & Locating**

 Applicable to Email? **Yes**

Effect on Email: **Return from Tracking & Locating**

 Applicable to Telephone? **Yes**

Effect on Telephone: **Return from Tracking & Locating**


 Applicable to Mail Survey Component? **No**

# Entity Association Records


# Non-Hierarchical Data


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Case  
1210

Person   
John Doe

Address   
66 River Street

Person   
Jane Doe

Address   
123 Sunshine Drive

Case  
3424



# Entity Association Records

