

Relationship and Fertility Data Wave IV

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Overview of Presentation

- ❖ Brief introduction: Relationship and fertility data in Add Health Waves I to III
- ❖ Distinct listing of relationships in Wave IV data
- ❖ Nested data structure: from relationship to pregnancy, live birth, and child
- ❖ Relationship and fertility data across sections
 - Contents
 - Data flows
 - Inter-sectional, hierarchical data relationships
 - Unique ID components

Overview of Presentation

- ❖ Computational and technical tips
 - Unique ID Creation
 - Summary counts
 - Different levels and units of analysis
 - Hierarchical file merging
- ❖ Some general advice
- ❖ Questions and answers

Relationship & Fertility Data across Waves

Waves I, II

Demographic
Family, siblings, friends
Education, work
Physical and mental health
Daily activities and sleep
Relationships
Sexual, & fertility histories
Substance use
Delinquency and violence
Attitudes, religion
Economics, expectations
Psychological, personality

Wave III

Demographic
Family, siblings, friends
Education, work, military
Physical and mental health
Daily activities and sleep
Relationships
Sexual, & fertility histories
Substance use
Involvmnt w/criminal justice system
Attitudes, religion
Economics, expectations
Psychological, personality
Children and parenting
Civic participation
Gambling
mentoring

Wave IV

Demographic
Family, siblings, friends
Educ, work, military (records)
Physical and mental health
Daily activities and sleep
Relationships
Sexual, & fertility histories
Substance use and abuse
Involvmnt w/criminal justice sys
Work attitudes and chars, relig
Economics, expectations
Big 5 Personality, stressors
Children and parenting
Civic participation
Cognitive function
Psychosocial factors

Relationship & Fertility Data across Waves

Wave I (1994-1995; Grades 7-12; N=20,745) &
Wave II (1996; Grades 8-12; N=14,738)

Name up to 3 “romantic” relationships

- *If none, then “Like” relationships*

Name up to 3 “non-romantic” relationships

Information about Relationships:

- Begin/end dates
- Social context when relationship began
- Partner demographics
 - ❑ *gender, age, race/ethnicity*
- First & most recent sexual intercourse
 - ❑ *date, contraceptive use*
- Verbal and physical abuse (W2 only)



Relationship & Fertility Data across Waves

Wave I & Wave II

Fertility experiences (female Rs only)

Pregnancies :

- Number of times, dates, outcome*
- Contraceptive use, want marriage*
- Child alive?*
- Gave up for adoption?*



Relationship & Fertility Data across Waves

Wave III (2001-2002; Aged 18-26; N=15,197)

- **Marriage history**
 - ❑ *Begin/end dates*
 - ❑ *Current?*
 - ❑ *Still living together – last date*
 - ❑ *How ended?*
- **Cohabitation history**
 - ❑ *Begin/end dates*
 - ❑ *Still living together – last date*
 - ❑ *Ever married to partner?*
 - ❑ *How ended?*



Wave III

Romantic and pregnancy relationships since 1995

(N = 42,330 relationship records)

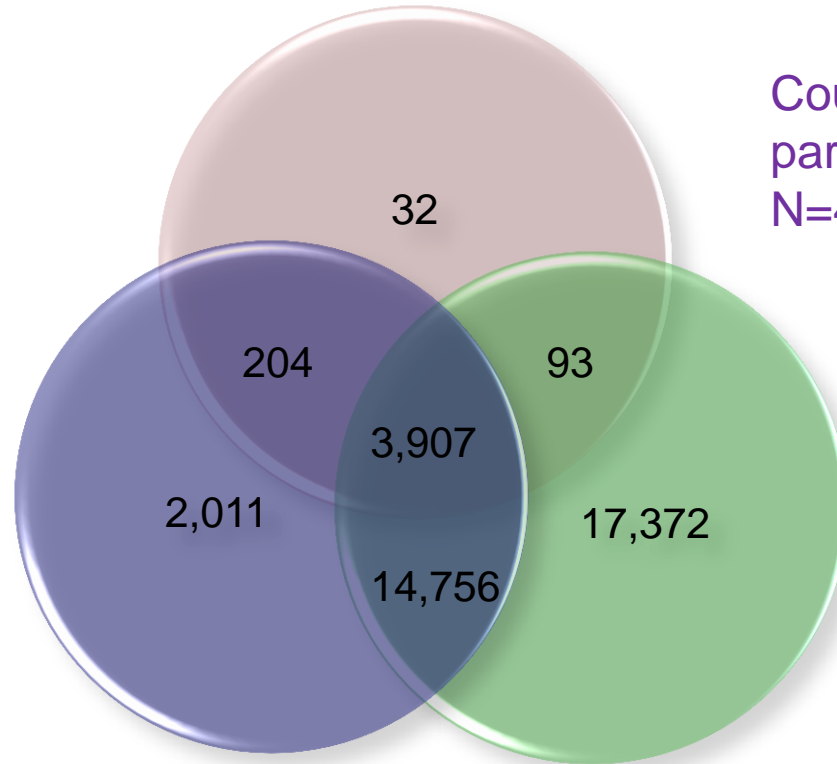
Relationships in Detail (N = 38,375)

- 3 sets selected according to different criteria:
 - ❑ Sexual relationships, N = 36,128
 - ❑ 2 most important relationships, N = 20,878
 - ❑ Couple (CP) sample for partner recruitment, N = 4,236



Relationship & Fertility Data across Waves

Wave III Relationships in Detail (N=38,375)



Couples Sample for partner recruitment
N=4,236

Sexual Relationships
N=36,128

2 Most important
N=20,878



Relationship & Fertility Data across Waves

Wave III Couples Sample

- Relationships are eligible if:
 - ❑ *Current*
 - ❑ *Opposite sex*
 - ❑ *Partner 18 or older*
 - ❑ *Relationship duration \geq 3 months*
- About 4,000 partners qualified to be enlisted for the couples sample recruitment.
- The Couples Sample was a purposive, quota sample (N=1,507) designed to collect information on 1/3 married, 1/3 cohabiting, and 1/3 dating partners.



Wave III Relationships in Detail

- **R & partner's age:**
 - ❑ *1st met; have a romantic relationship; sexual relationship*
- **Begin/end dates:**
 - ❑ *Romantic relationship; sexual relationship; marriage*
- **Duration:**
 - ❑ *Living together before marriage; sexual relationship before cohabitation; same residence*
- **Cohabitation:**
 - ❑ *Travel distance; other residence; who else lived there; no. nights together.*



Wave III Relationships in Detail (Cont.)

- **Various types of sexual activities**
 - ❑ *When: first/most recent time – dates, frequencies*
- **Different types of birth control/condom use**
 - ❑ *Combined with different types of sexual activities*
 - ❑ *When used: first/most recent time – dates, frequencies*
- **Relationship qualities**
 - ❑ *Best describes current relationship*
 - ❑ *Currently engaged to marry*
 - ❑ *Abuses (verbal, physical, forced sex, resulted injuries)*
 - ❑ *Satisfaction; love; dominance*
 - ❑ *Joint account; purchase; chores*



Relationship & Fertility Data across Waves

Wave IV (2007-2008; Aged 24-32; N=15,701)

❖ Relationship data collection structure differs from Wave III

- Specific romantic/sexual relationships R have had
- Exclusive listings by partner types
 - ❑ Married ('M')
 - ❑ Cohabitated ('C')
 - ❑ Pregnancy ('P')
 - ❑ Currently Dating ('CD')
 - ❑ Most Recent ('MR')



❖ You cannot update Wave III with V relationships -- It's not an add-on!

Wave IV Relationships, pregnancies, live births, and children

- **Nested Data Structure**

- Respondent's reporting on *total number of relationships/partners* (by types)

- Section 16A [H4TR*]

- Married ('M')
- Cohabitated ('C')
- Pregnancy ('P')
- Currently Dating ('CD')



- *Time-segments* associated with each Relationship/partner

- Section 16B & C [H4TR*]

Wave IV Relationships, pregnancies, live births, and children

- **Nested Data Structure (Cont.)**
 - Selected *Relationship in Details*
 - Section 17 *[H4RD*]*
 - All *pregnancies* associated w/ the reported relationship/partners
 - Section 18 *[H4PG*]*



Wave IV Relationships, pregnancies, live births, and children

- **Nested Data Structure (Cont.)**

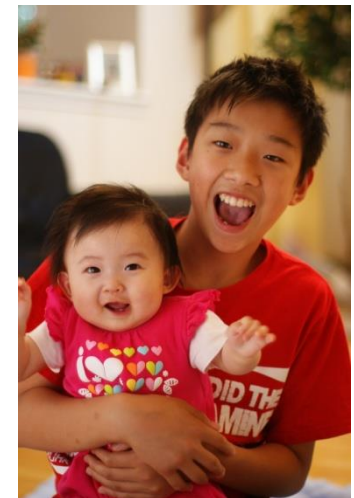
- All *live births* resulted from pregnancies

- Section 19 [H4LB*]



- All live births who are still living and not given up for adoption (*Children*)

- Section 20A [H4KK*]



Wave IV Relationships, pregnancies, live births, and children

- **Nested Data Structure (Cont.)**
 - Respondents who have at least 1 child at home reporting on their *parenting attitudes*.
 - Section 20B [*H4KK**]



Wave IV Romantic/Sexual Relationships

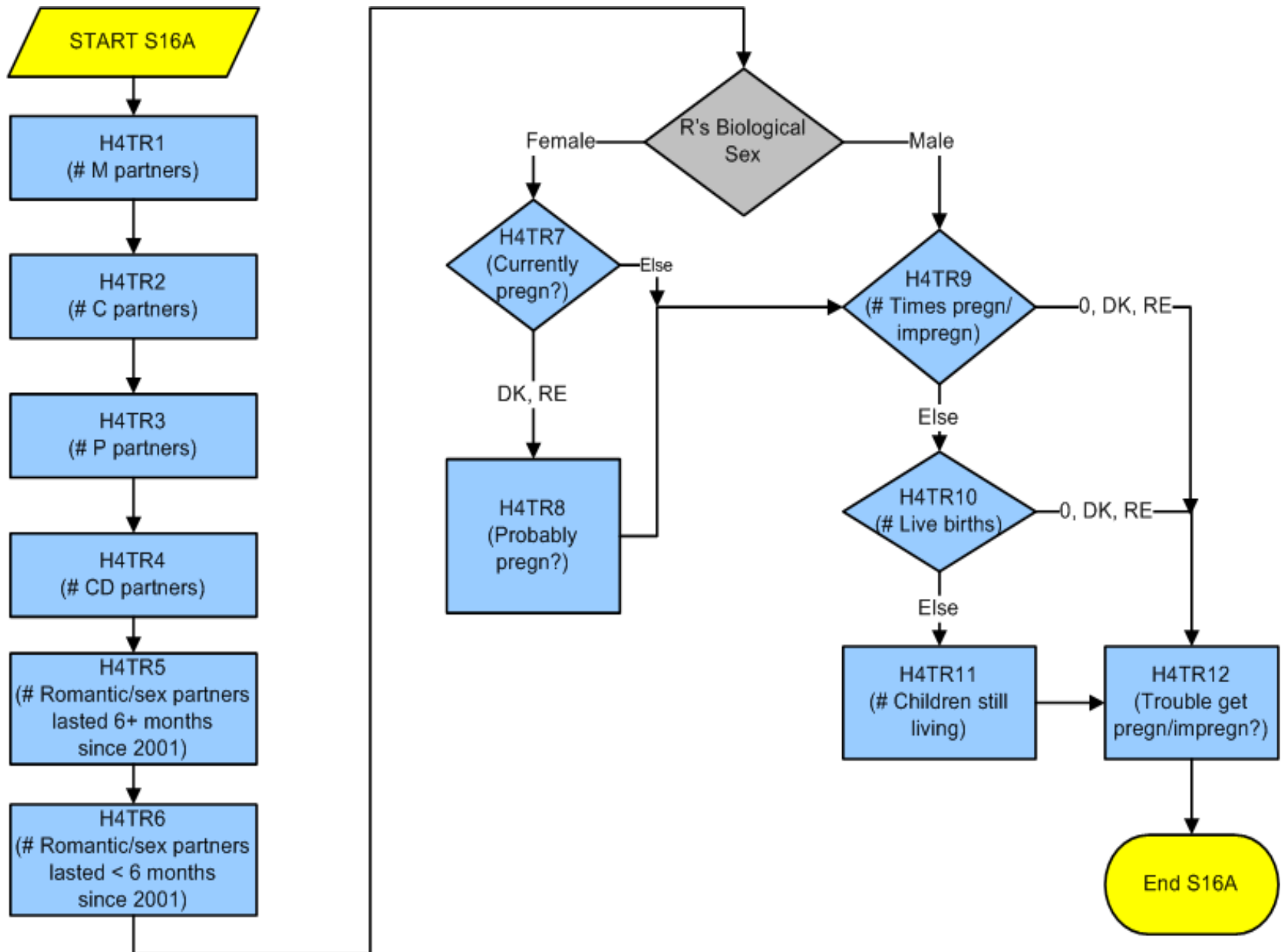
S16A: R's description of total no. of relationships, pregnancies, live births, children still living.

- **Unit of Analysis** – Respondent (N=15,701)
- **Record ID:** AID
- **Contents:**
 - # Persons ever married ('M' partners)
 - # Persons ever lived with but not married ('C' partners)
 - # Persons ever had a pregnancy with besides 'M' and 'C' partners ('P' partners)
 - # Persons currently dating besides 'M', 'C', and 'P' partners ('CD' partners)
 - # Other relationships < 6 months since 2001
 - # Other relationships 6+ months since 2001

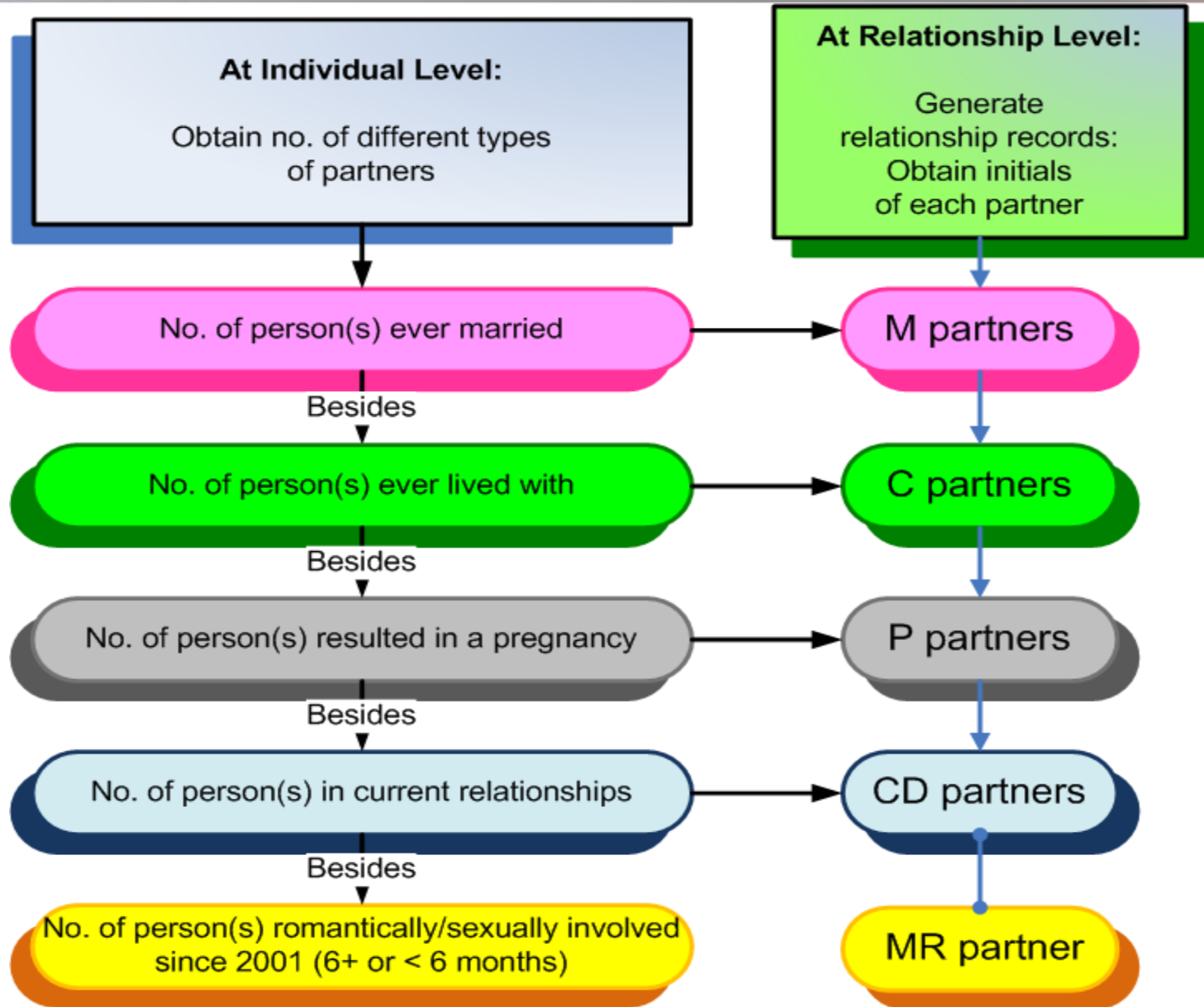
S16A: R's description of total no. of relationships, pregnancies, live births, children still living (Cont.)

- **Contents:**
 - {For **female** Rs} Currently pregnant?
 - Total # (life-time) pregnancies (including current)
 - Total # (life-time) live births
 - Total # biological children still living
 - {For R and any partners} Ever trouble getting pregnant or avoid a miscarriage

Section 16A: Relationships – Individual Level



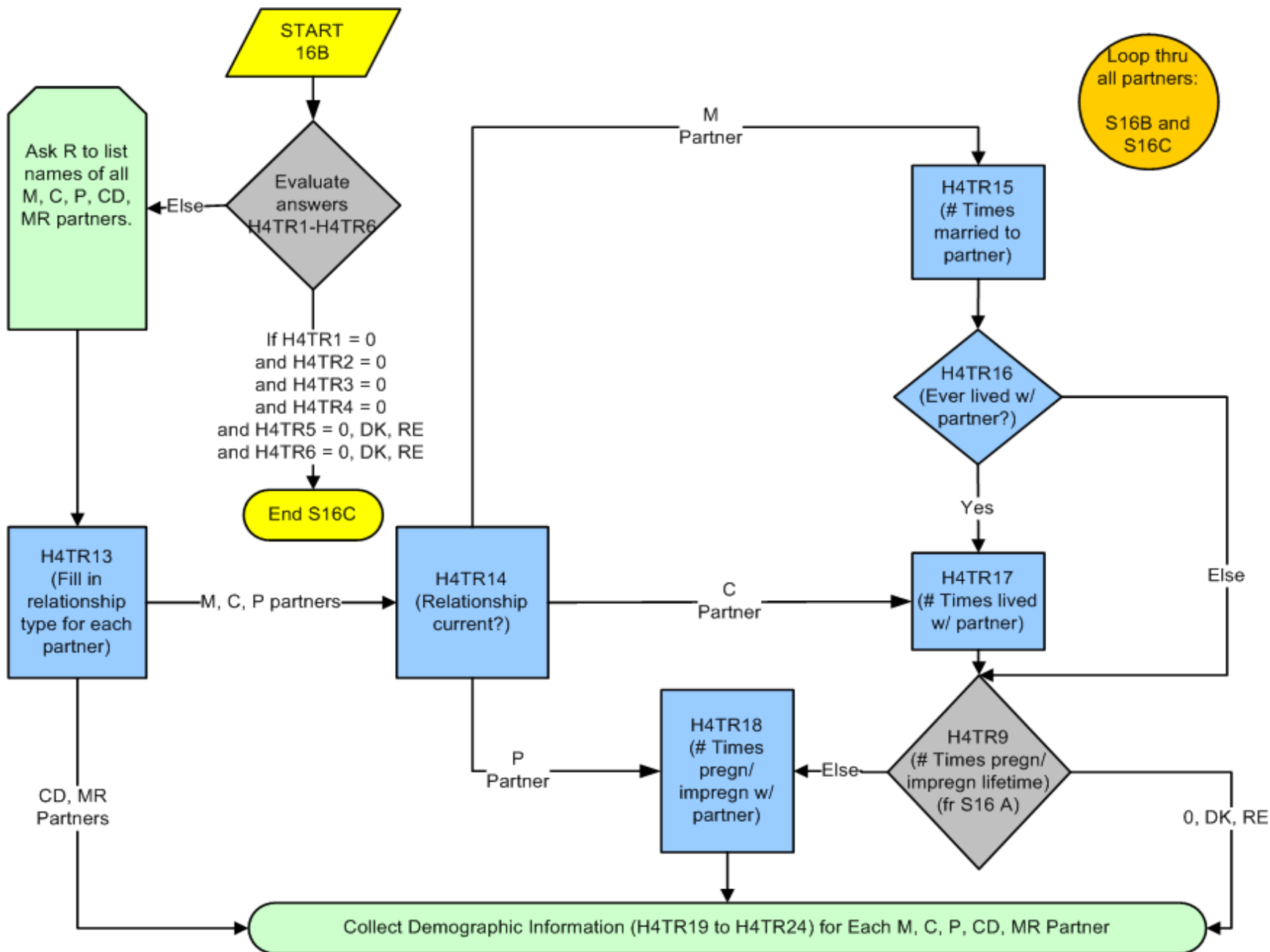
Wave IV Hierarchical Data Structure of Individual, Relationship, Pregnancy, Live Birth, and Child Records



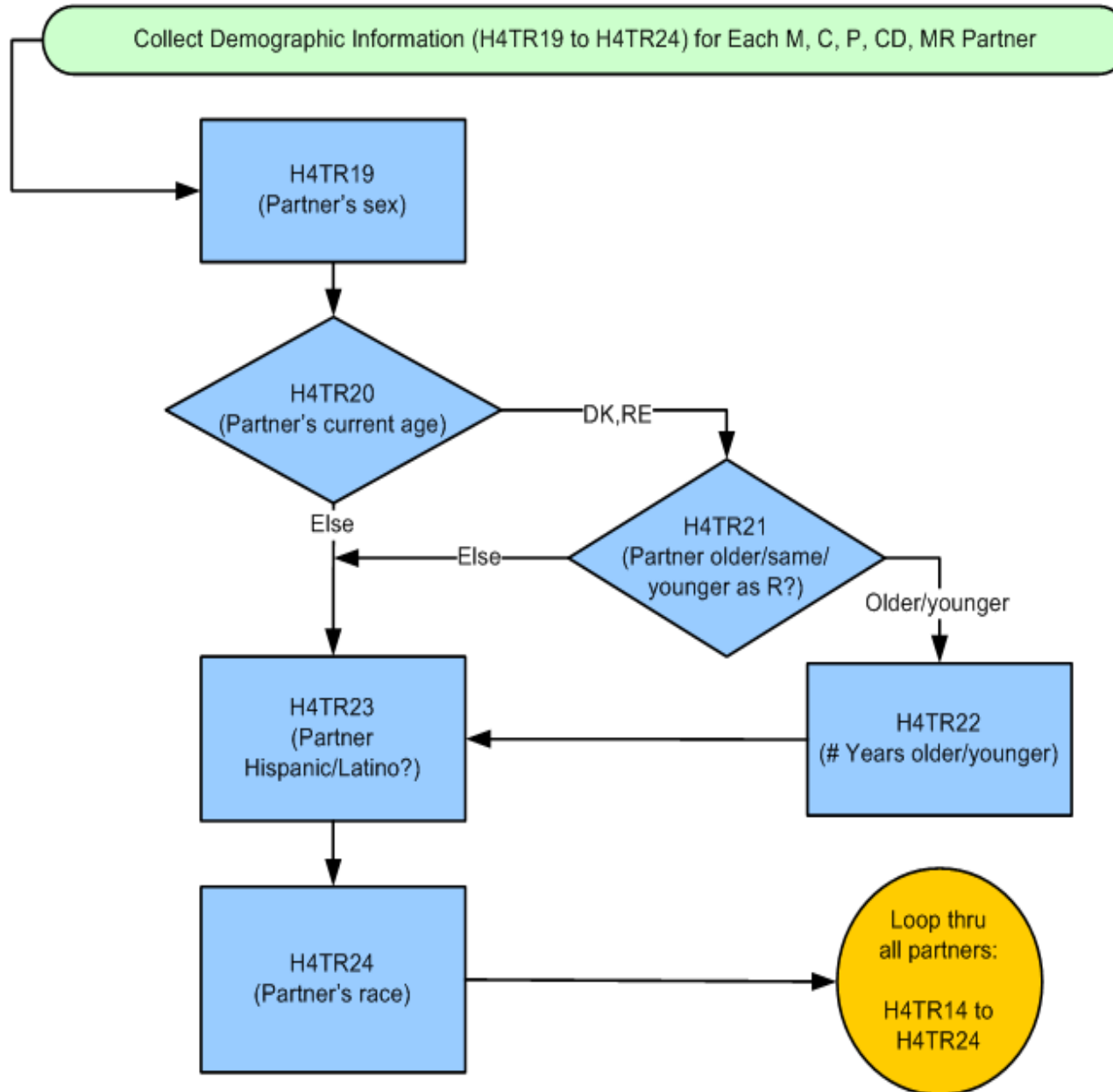
S16B: Relationship/Partner characteristics

- **Unit of Analysis** – Partners (N=30,263)
- **Record ID:** AID + PTNR_ID
- **Contents:**
 - Type of relationship listed with R ('M', 'C', 'P', 'CD', 'MR' partner)
 - Relationship current?
 - # Times married to partner ('M')
 - Ever lived together? ('M')
 - # Times lived together with partner ('M', 'C')
 - # Times pregnant with partner ('M', 'C', 'P')
 - Partner's biological sex, age, Hispanic background, and race.

Section 16B: Relationships – Partner Level



Section 16B: Relationships – Partner Level (Cont.)



Wave IV Romantic/Sexual Relationships

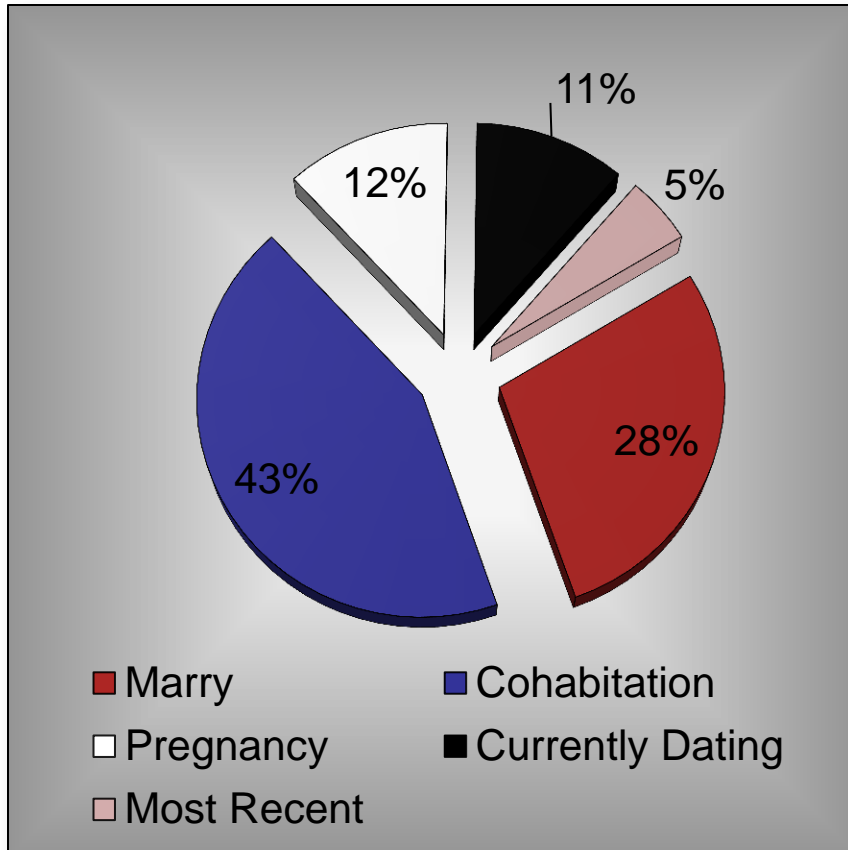
S16B: Relationship/Partner characteristics

- Among 15,701 respondents, 2.5% did not report any partner records in S16B.

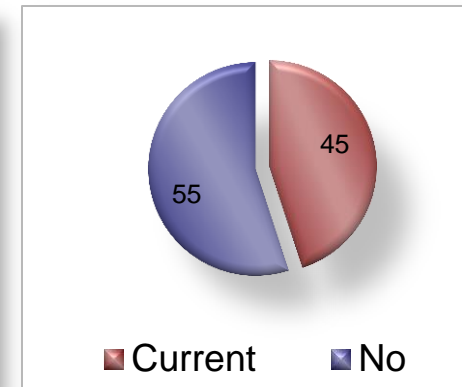
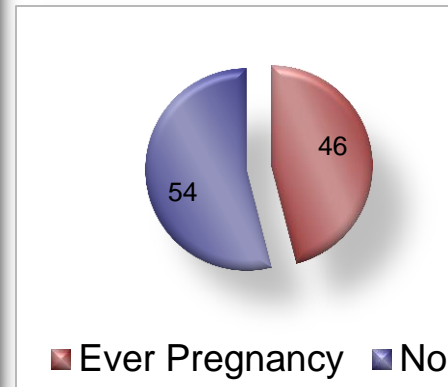
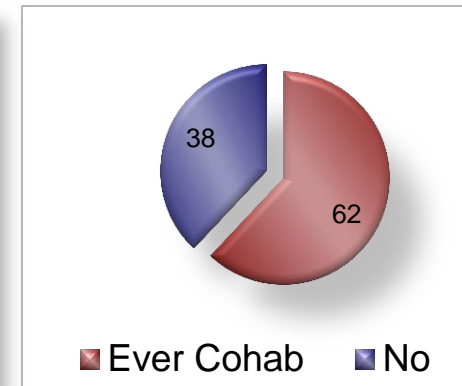
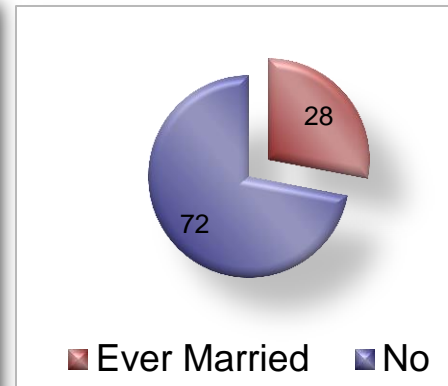


Wave IV Hierarchical Data Structure of Individual, Relationship, Pregnancy, Live Birth, and Child Records

Relationship Type (H4TR13)



Among all relationships, percent ...



S16C: Relationship Time-segments

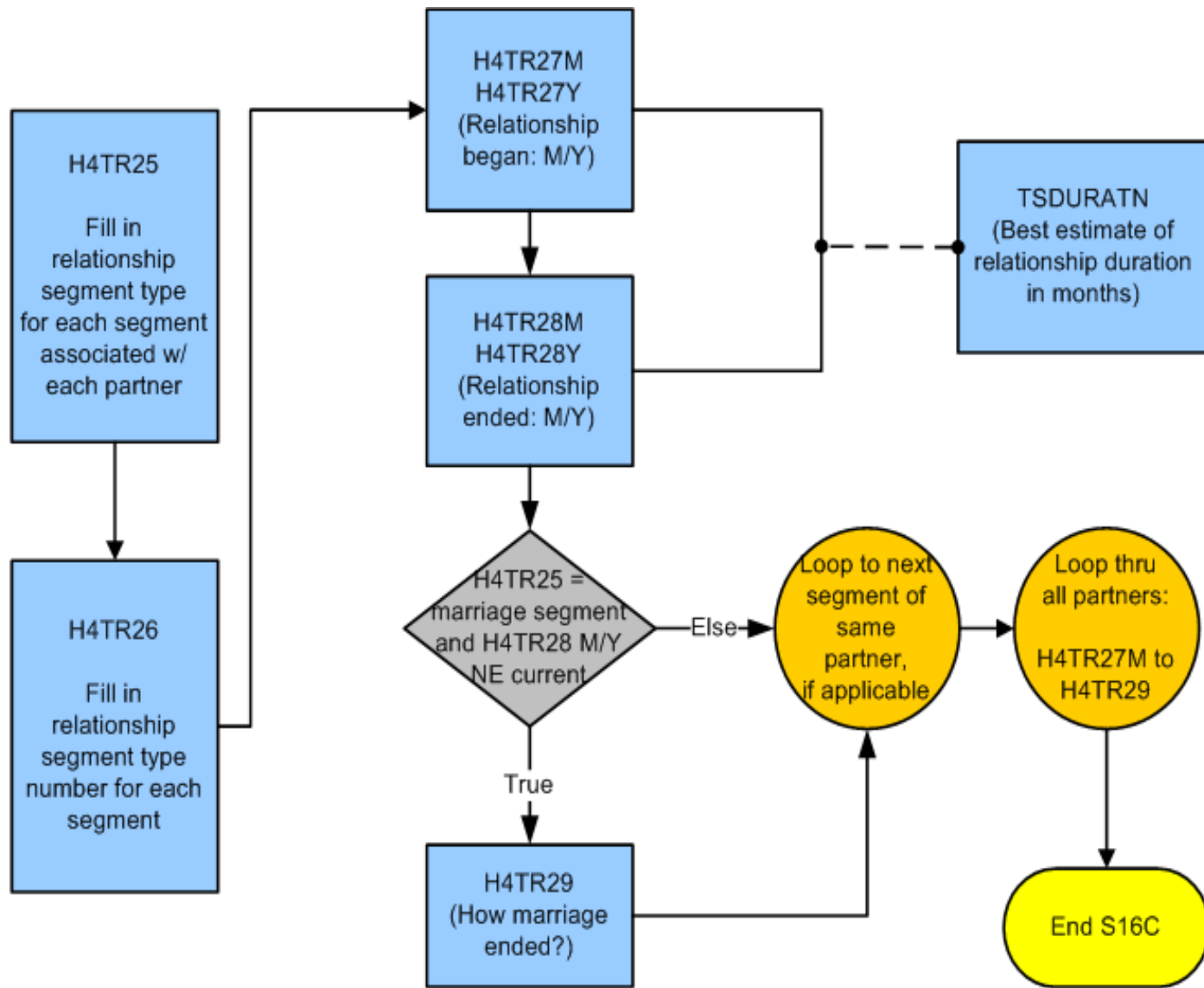
- **Unit of Analysis** – Time-segment (N=36,133)
- **Record ID:** AID + PTNR_ID + H4TR25 + H4TR26
- **Contents:**
 - Type of relationship time-segment ('M', 'C', 'P', 'CD', 'MR') [H4TR25]
 - Time-segment number [H4TR26]
 - Relationship begin and end dates
 - Best estimate of relationship duration
 - How marriage ended

Wave IV Romantic/Sexual Relationships

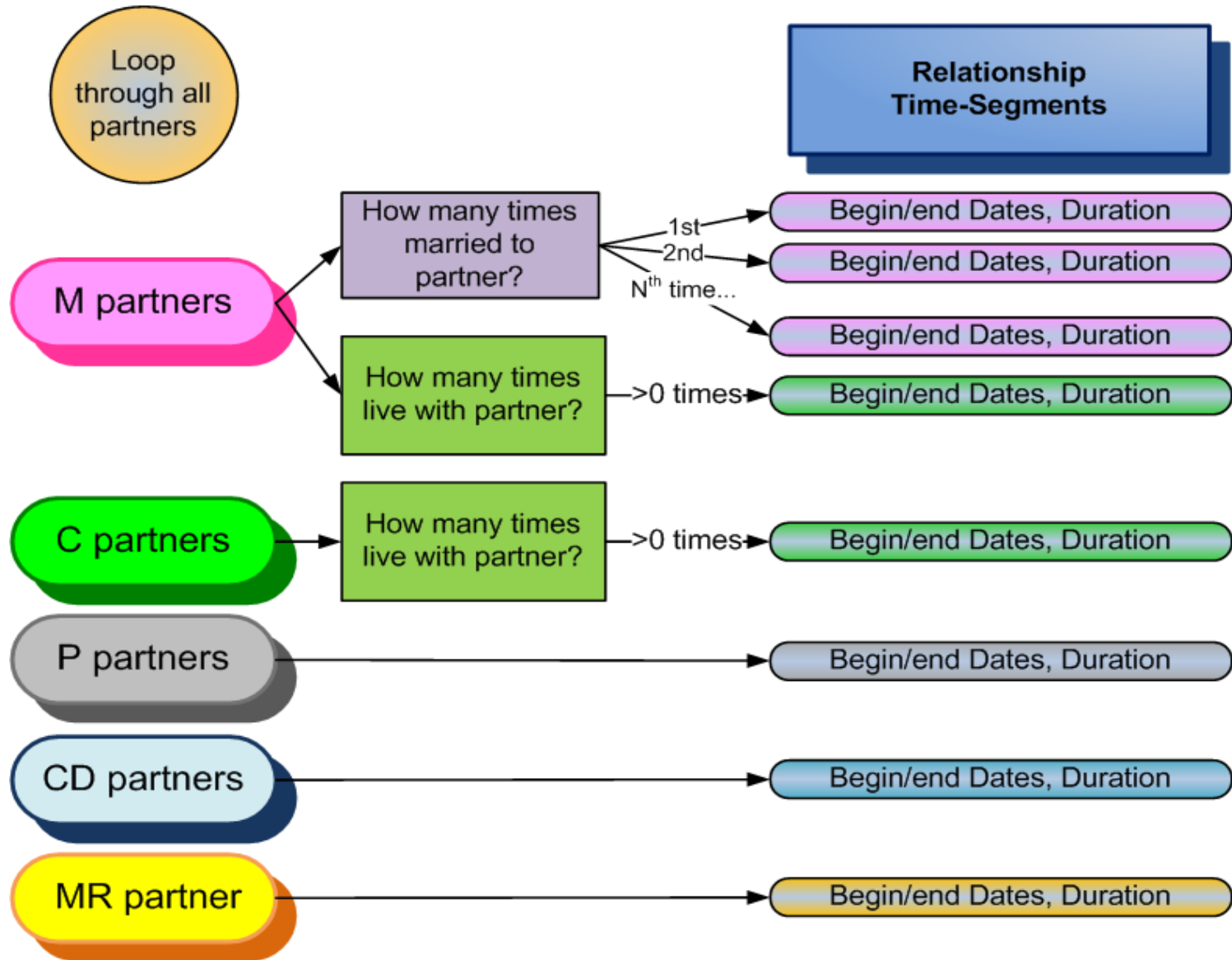
S16C: Relationship Time-segments

Partner ID	Partner Type	Relationship Time-segment Type	Time-segment number
<i>PTNR_ID</i>	<i>H4TR13</i>	<i>H4TR25</i>	<i>H4TR26</i>
1	M	M (1 st time)	1=1 st time
		M (2 nd time)	2=2 nd time
2	M	M(1 st time)	1=1 st time
		C	8=All
3	C	C	8=All
4	P	P	8=All
5	CD	CD	8=All

Section 16C: Relationships – Time-segment Level

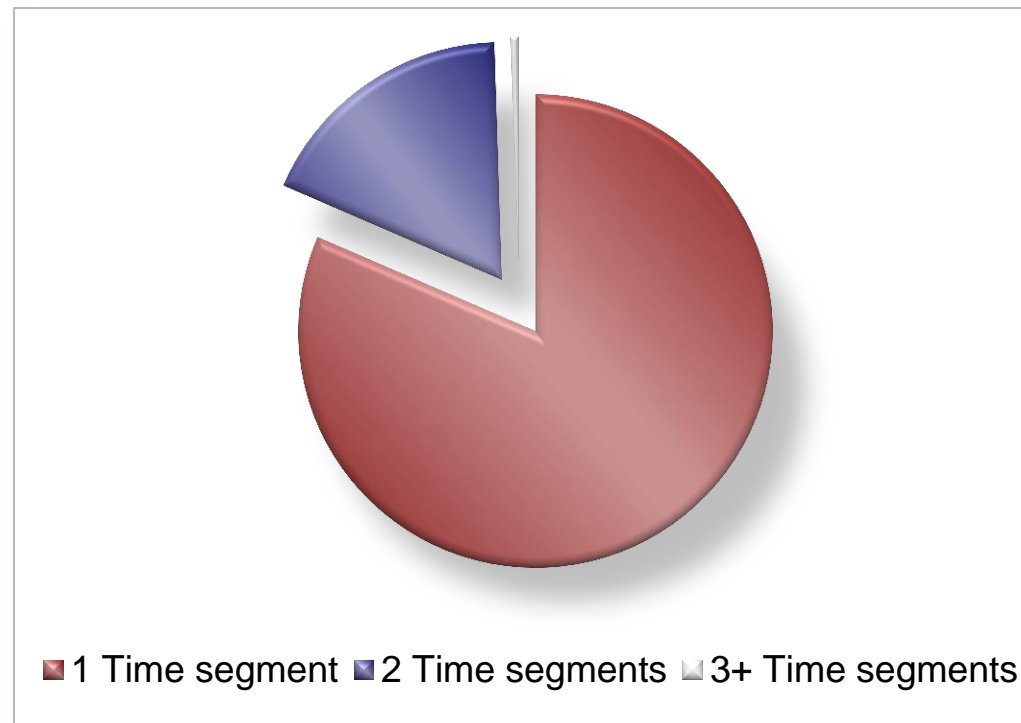


Wave IV Hierarchical Data Structure: Relationship and Relationship Time-Segments



S16B: Relationship/Partner characteristics

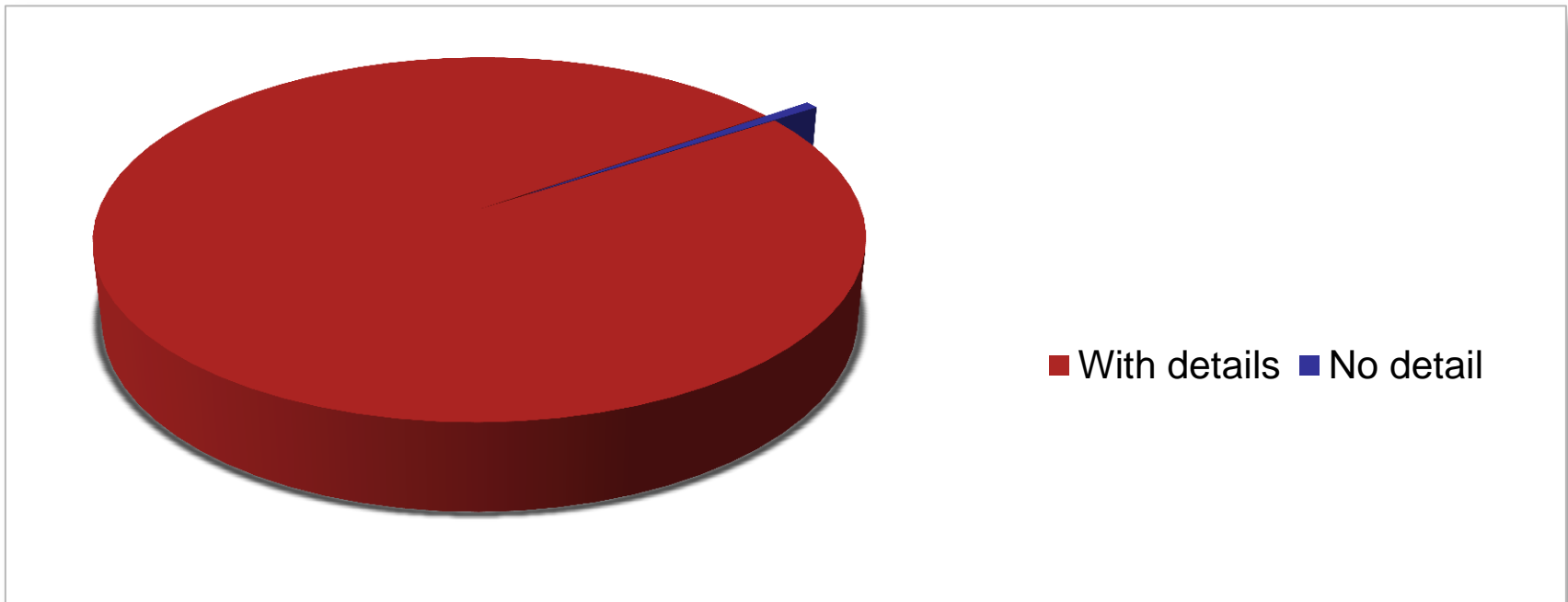
- Among 30,263 partner records, 81% link to 1 time-segment in S16C; 19% to 2 segments; only a few to 3 or more.



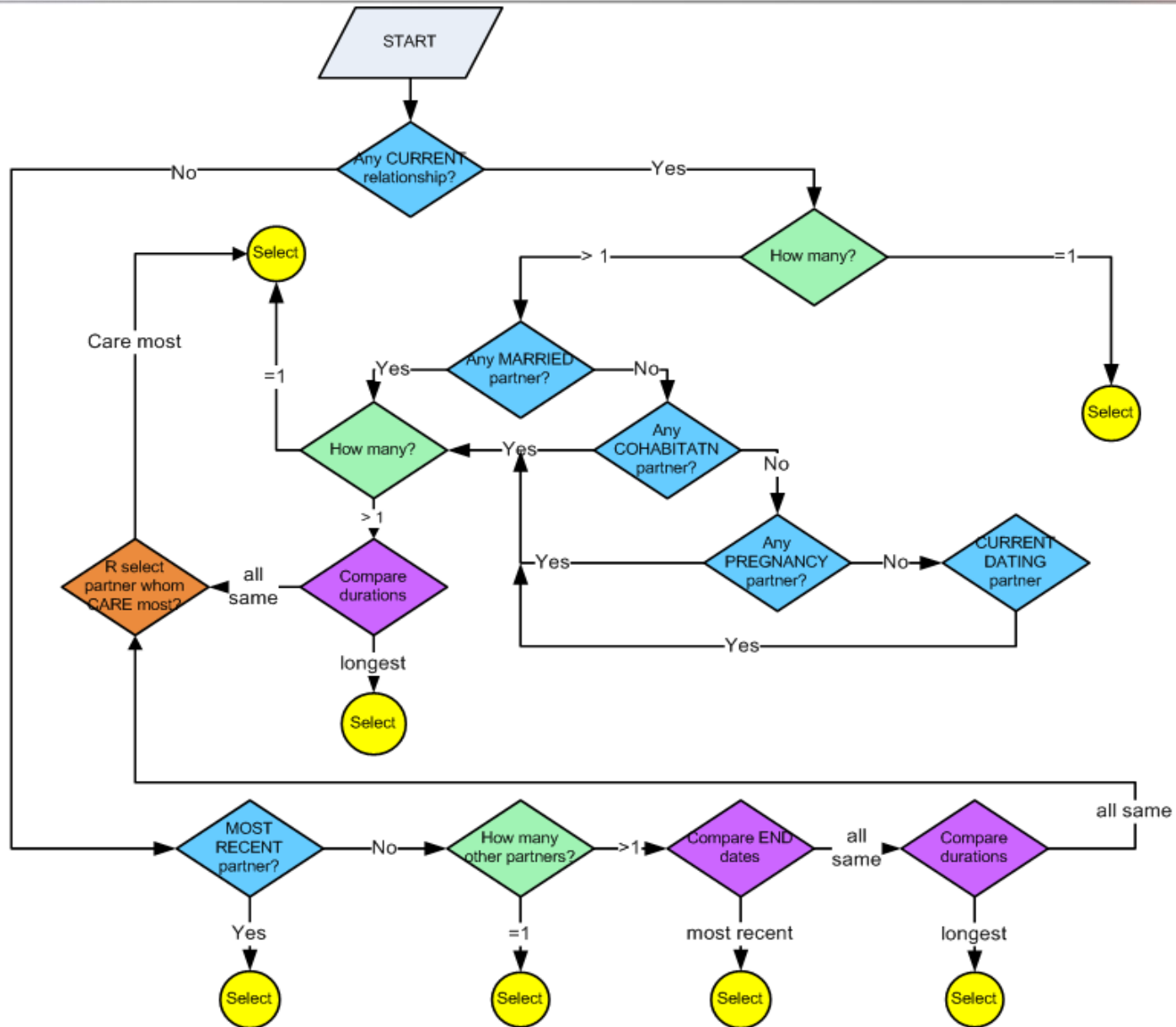
Wave IV Romantic/Sexual Relationships

S17: Relationship in Detail

- Among 15,315 respondents who have at least 1 partner record in S16B, 15,216 of them have given details on 1 partner in S17.



Criteria to Choose 1 Partner among All Reported For Gathering Detailed information in S17



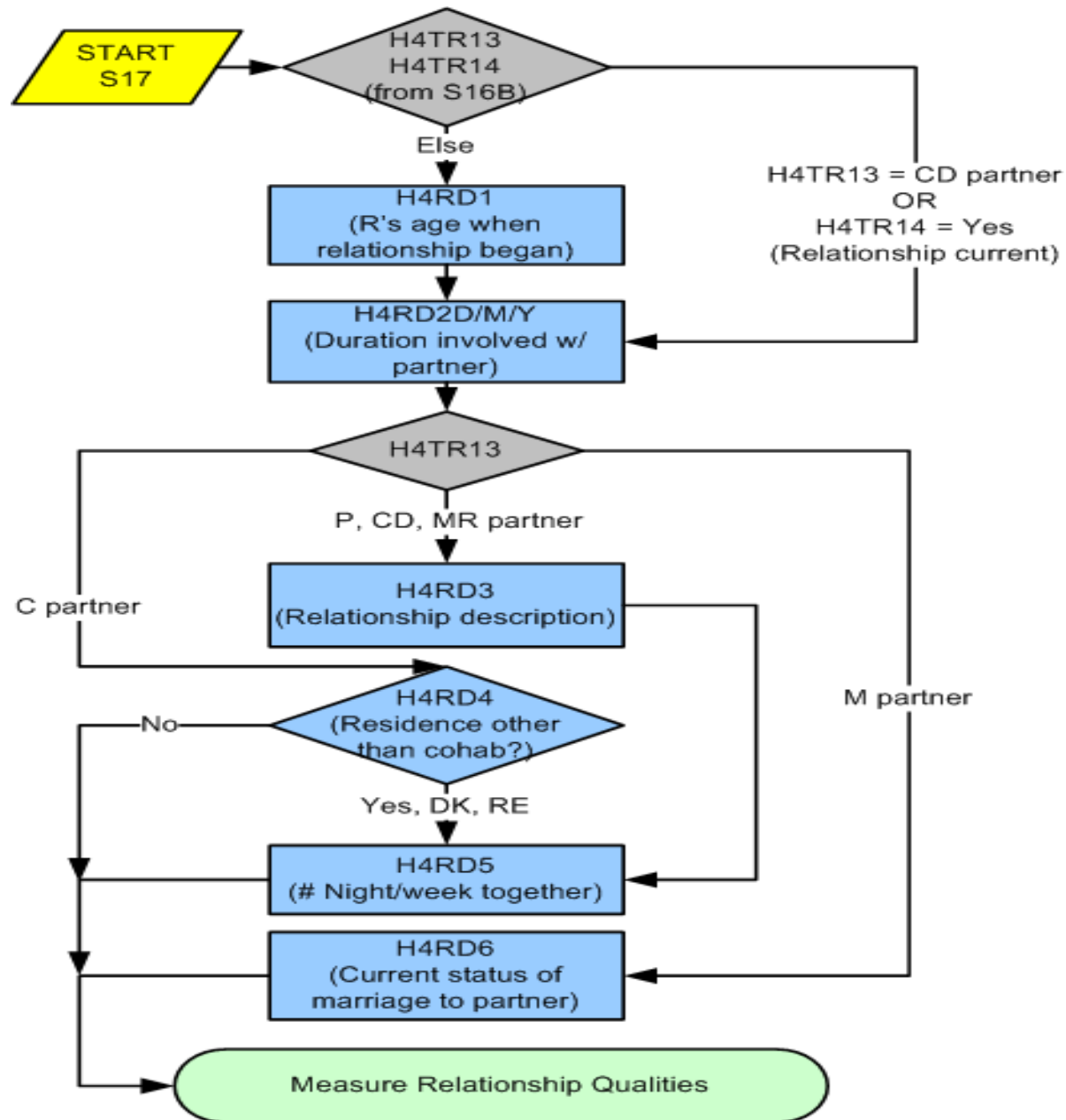
S17: Relationship in Detail

- **Unit of Analysis** – Partner (N=15,216)
- **Record ID:** AID + PTNR_ID
- **Contents:**
 - Age when relationship began
 - Duration involved current partner
 - Relationship description
 - Home other than the one cohabiting
 - # nights together
 - Current marital status to partner
 - Relationship qualities (enjoy ordinary things, handling problems, finances, partner listens, sex life, trust partner, love for partner, happy w/ partner, commitment)

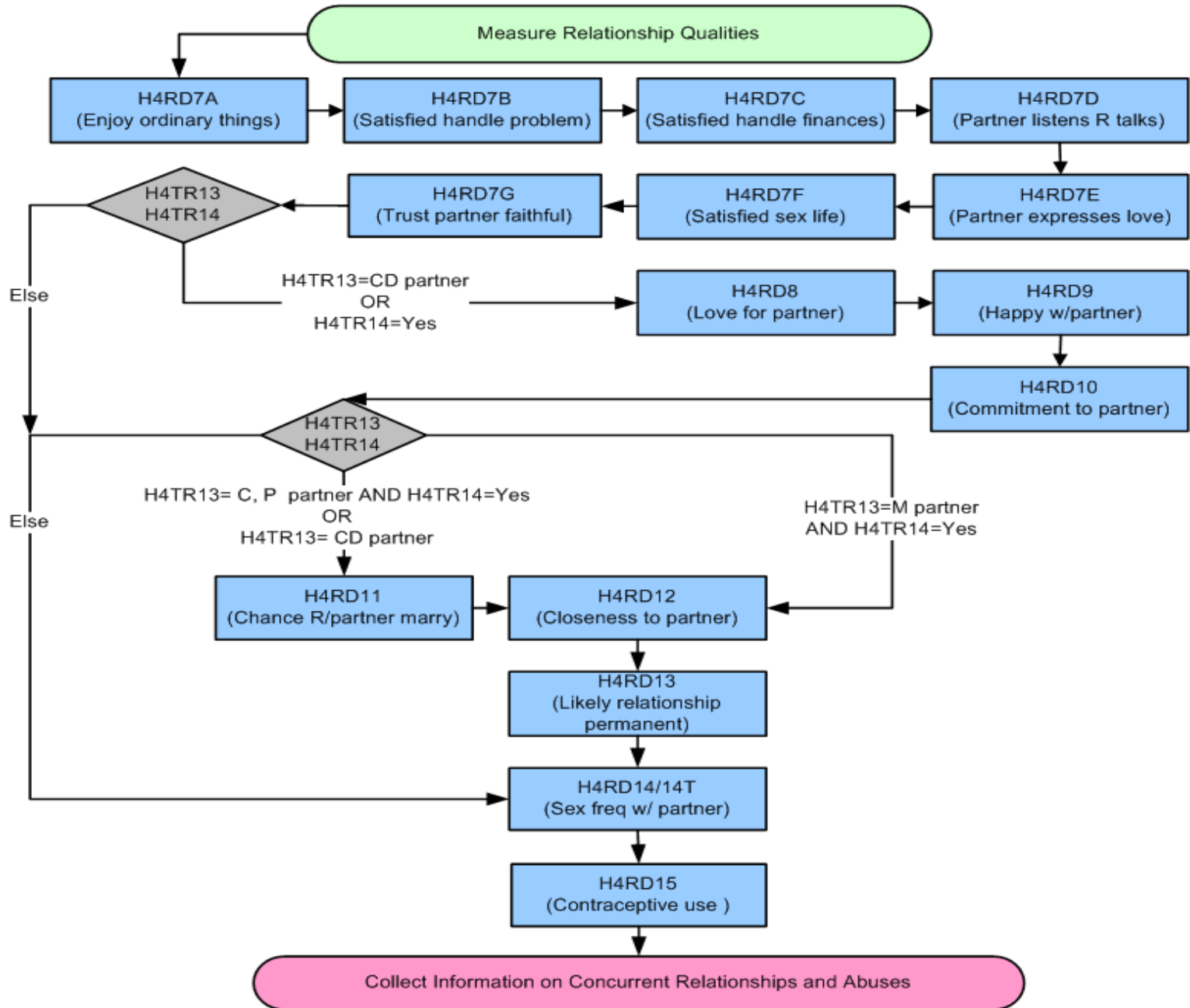
S17: Relationship in Detail

- **Contents: (Cont.)**
 - Chance marrying partner
 - Closeness to partner
 - Likelihood relationship permanent
 - Frequency of sexual activities
 - Contraceptives use
 - On both R's and Partner's side:
 - Concurrent partner?
 - Any violence?
 - Slap/hit/kick ?
 - Injured?
 - Forced sex?

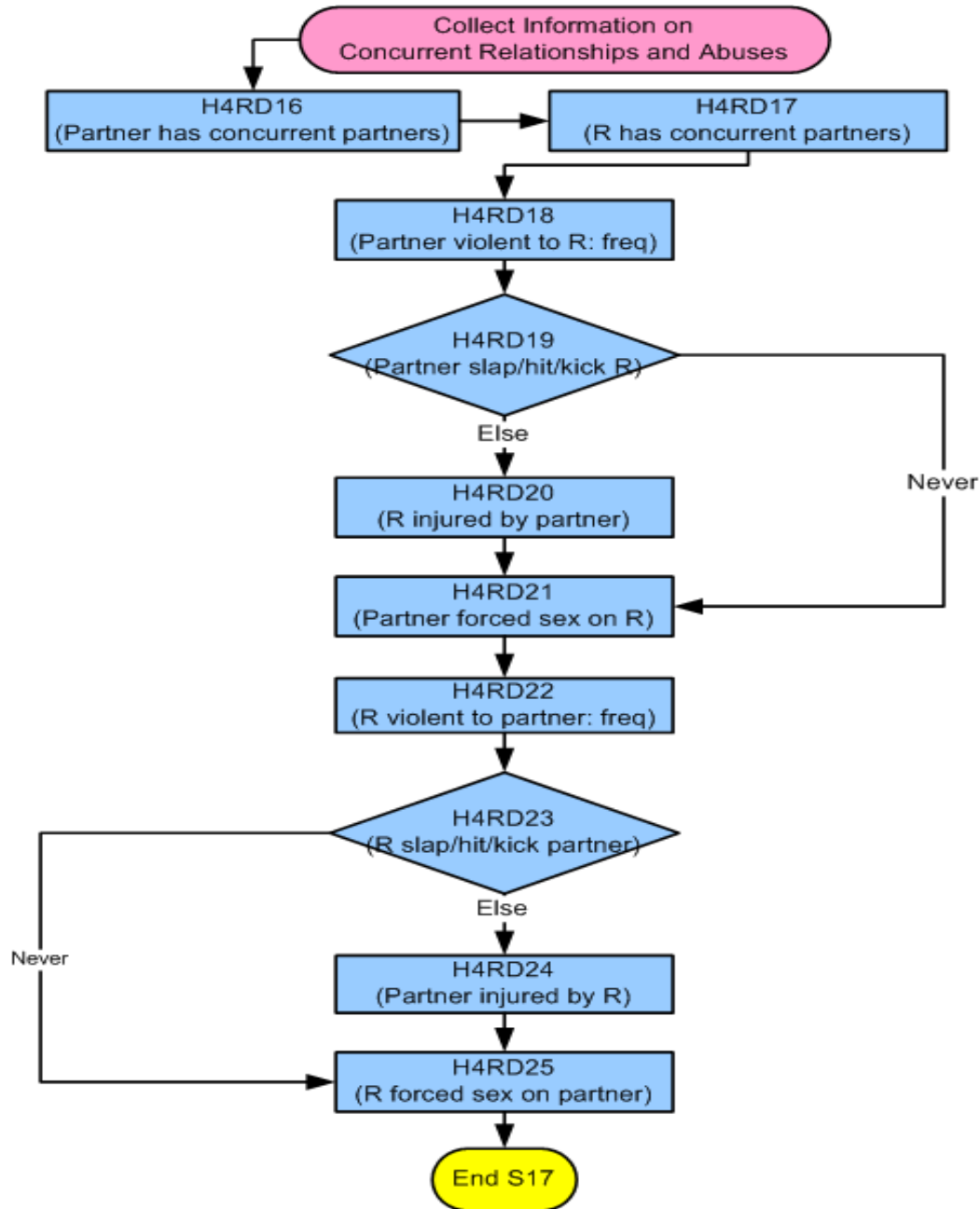
Section 17: Relationship in Detail



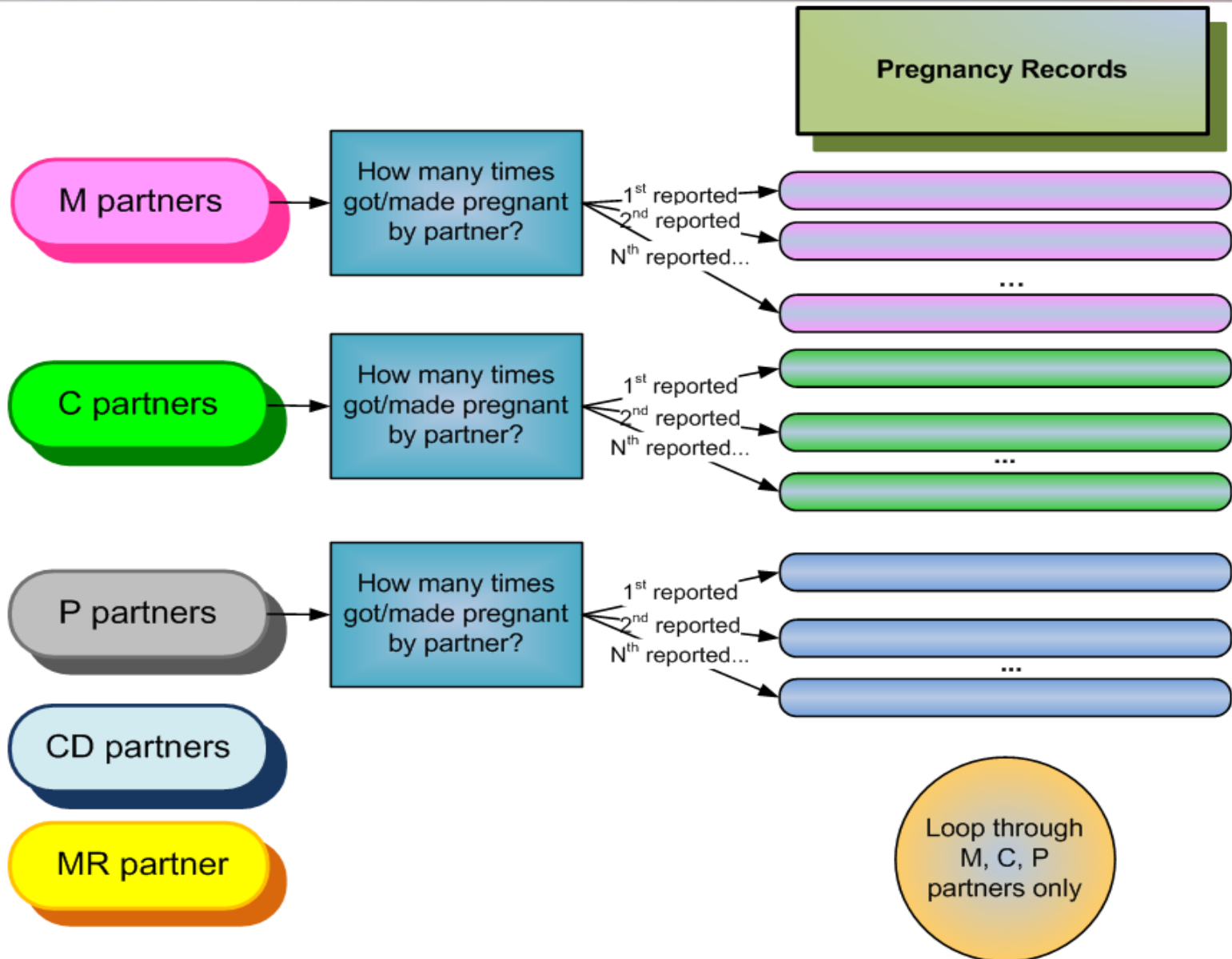
Section 17: Relationship in Detail (Cont.)



Section 17: Relationship in Detail (Cont.)



Wave IV Hierarchical Data Structure: Relationship and Pregnancy Records



Wave IV Fertility History

S18 Pregnancy Table

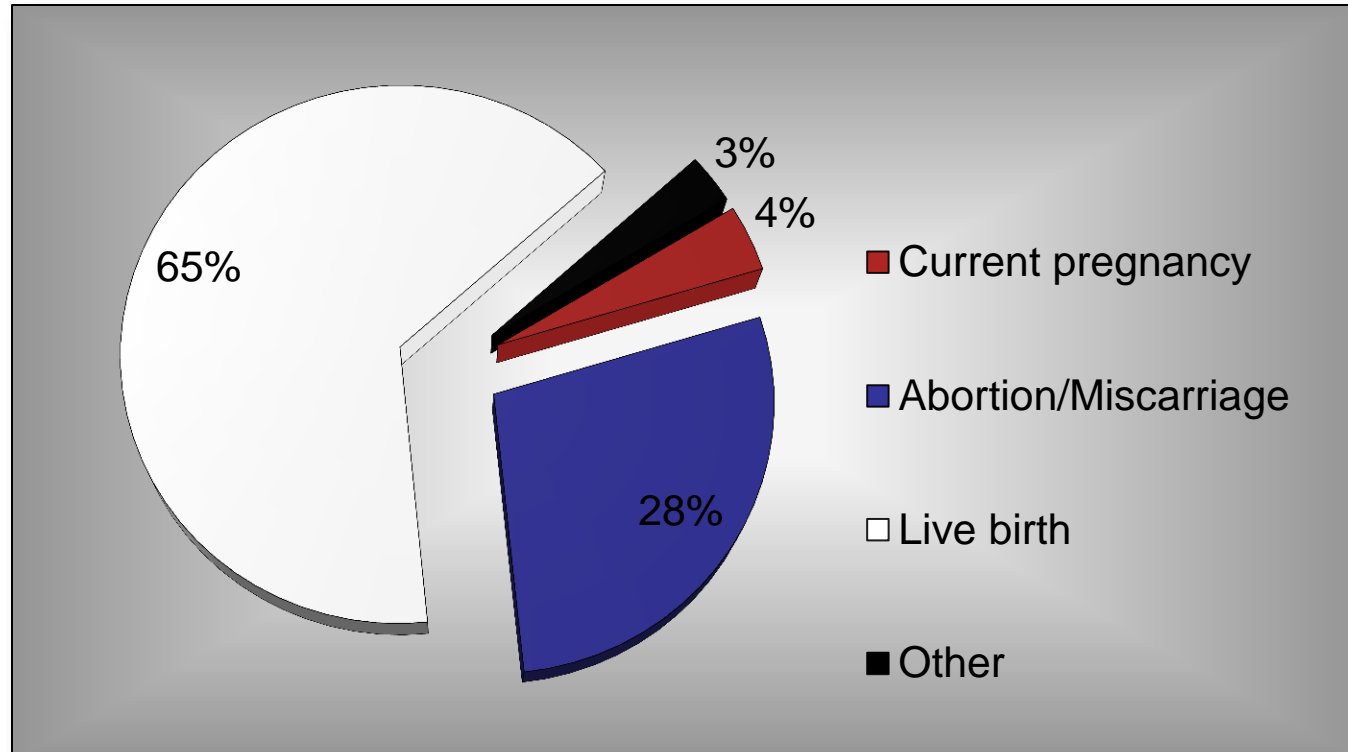
- **Unit of Analysis** – Pregnancy (N=21,966)
- **Record ID:** AID + PTNR_ID + PRGNO
- **Contents:** Pregnancy outcomes
 - Abortion
 - Ectopic/tubal pregnancy
 - Miscarriage
 - Still birth
 - Live birth (C-section)
 - Live birth (vaginal delivery)
 - Pregnancy not ended.

Wave IV Fertility History

S18 Pregnancy Table

Contents: Pregnancy outcomes

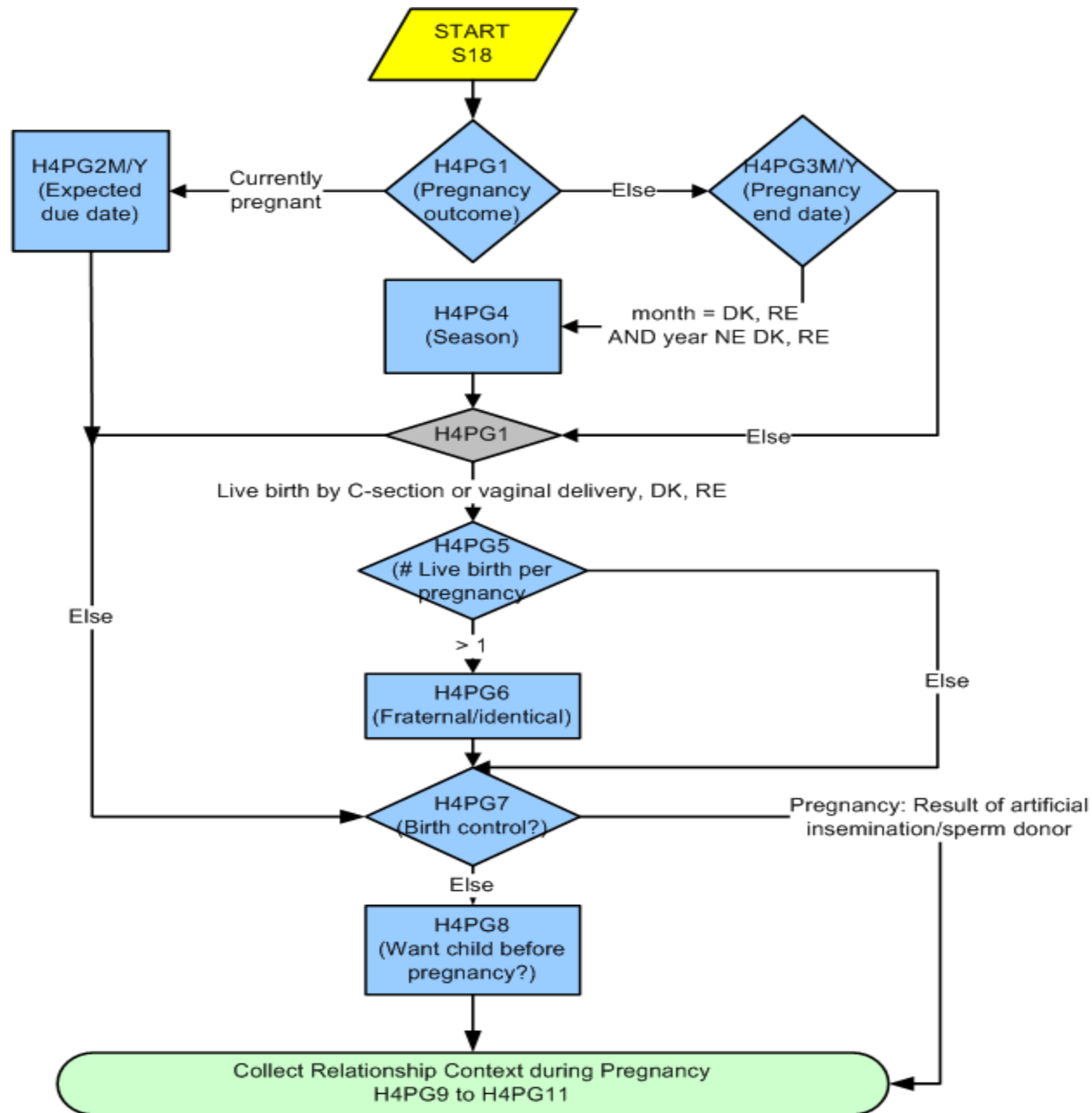
- 4% current pregnancy; 28% abortion/miscarriage; 65% live birth; 3% other



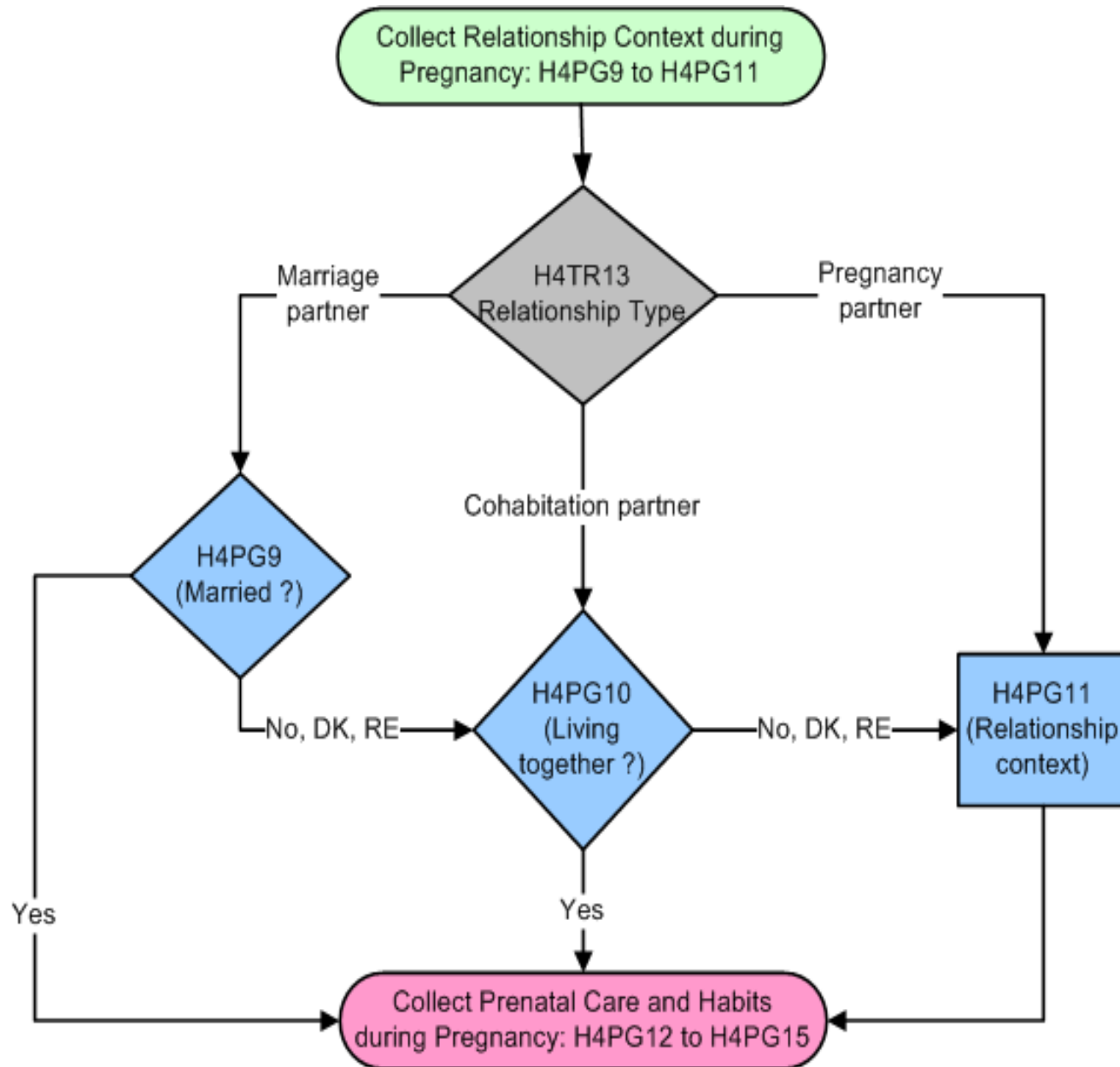
S18 Pregnancy Table (Cont.)

- **Contents:**
 - Pregnancy end/due dates
 - # live birth(s) per pregnancy
 - Babies fraternal/identical?
 - Birth control use prior to pregnancy
 - Want child then?
 - Relationship context at pregnancy/birth
 - R/partner went to prenatal care together; # weeks pregnant at 1st visit
 - Drinking and smoking habits during pregnancy

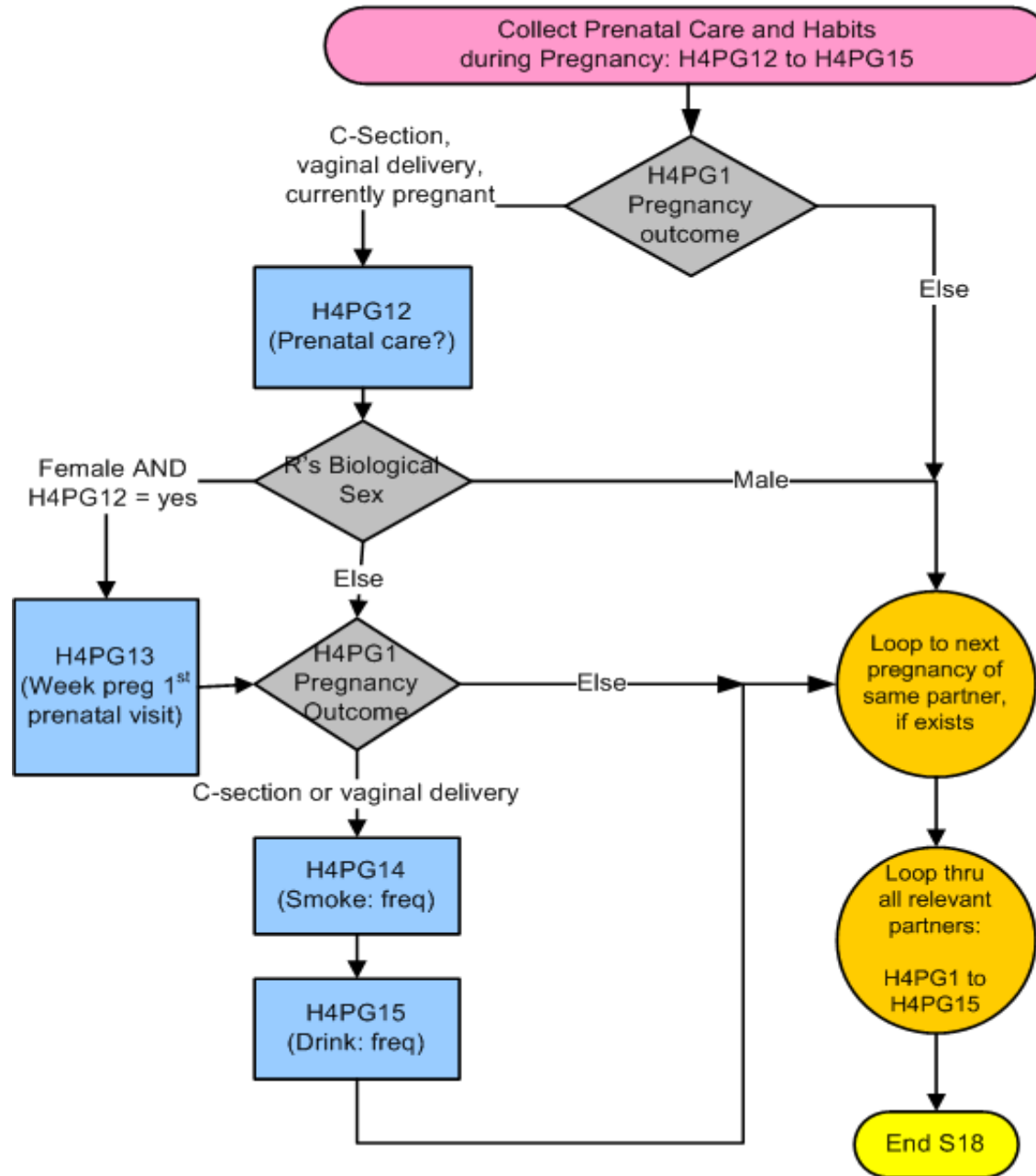
Section 18: Pregnancy Table



Section 18: Pregnancy Table (Cont.)

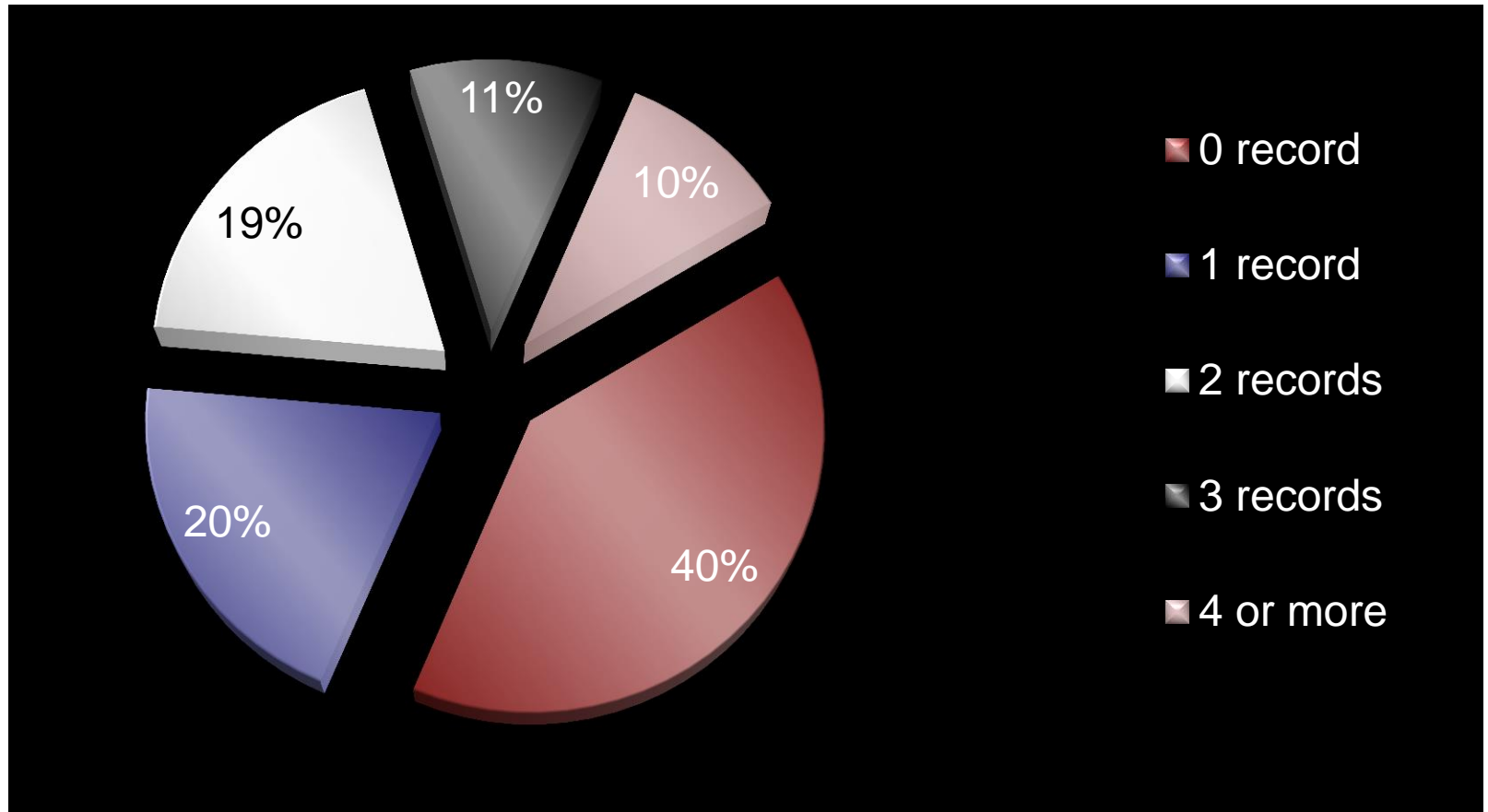


Section 18: Pregnancy Table (Cont.)



Wave IV Fertility History

Among 15,701 respondents, 40% reported no pregnancy record in S18; 20% reported 1 pregnancy record; 19% reported 2 records; 11% reported 3 records, and less than 10% reported 4 or more.



Wave IV Hierarchical Data Structure: Pregnancy and Live Birth Records

Pregnancy Records:
Collected for Rs who have had
at least 1 pregnancy (including current)
ID components: R's ID + Partner's ID + Pregnancy no.

For Each Pregnancy, ask:
Pregnancy Outcome, Pregnancy End/Due Date
No. Live Birth per Pregnancy, Relationship context with partner
Prenatal Care, Health Risk Habit (smoke, alcohol)

**Generate
Live Birth Records**
Check and correct
baby's birthday
(i.e., Pregnancy End Date)
Gather baby's initial/name

If sum of live births (for all
pregnancies) per R = 0,
then skip
Live Birth Section

If NO step/adopted/foster
child reported in Household
Roster, then skip
**Child and Parenting
Section**

Live Birth Records:
Collected for Rs who have had at least 1 live birth
ID components: R's ID + Partner's ID + Pregnancy no + LB no

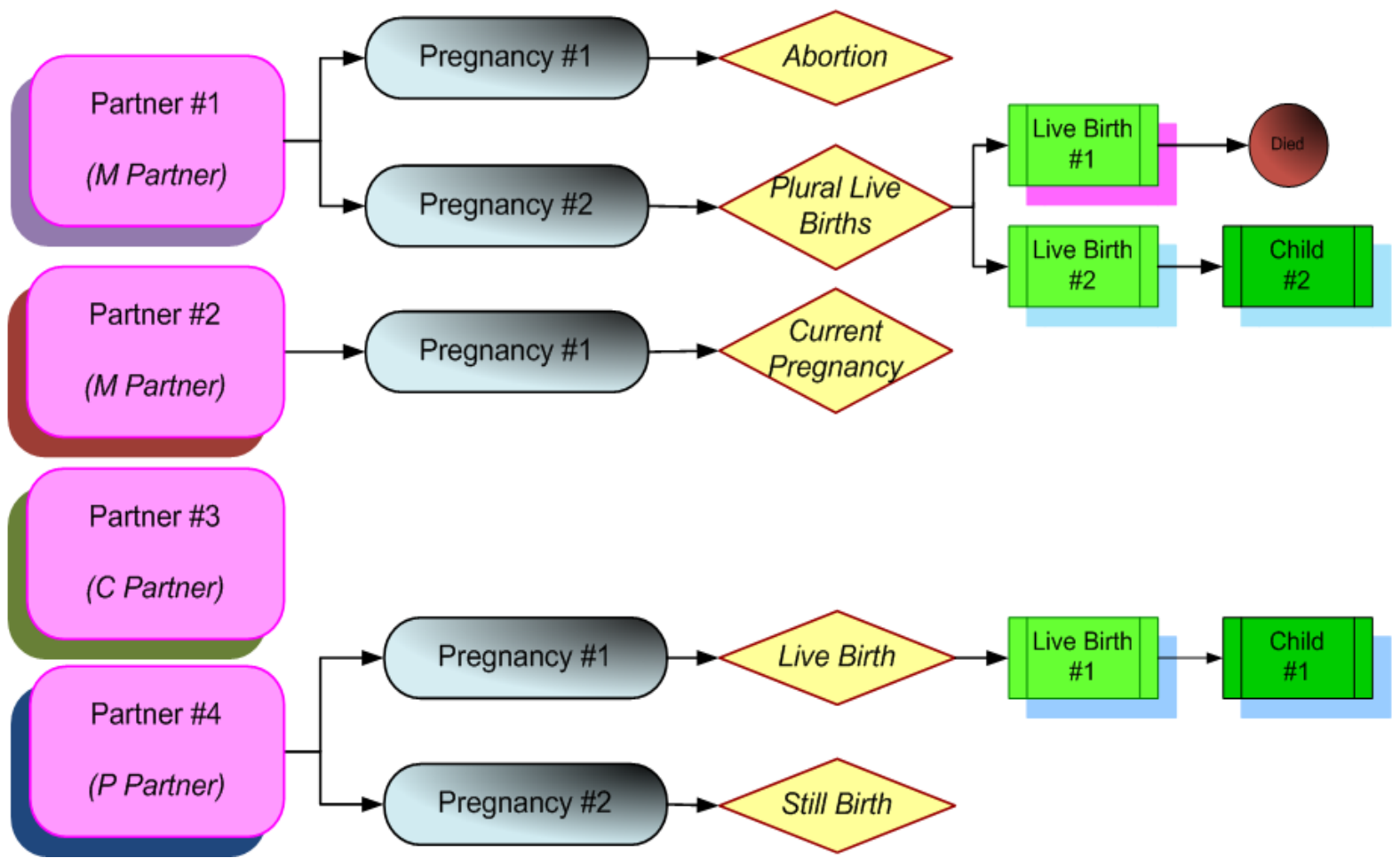
Wave IV Hierarchical Data Structure: Pregnancy, Live Birth, and Child Records

Partner Level

Pregnancy Level

Live Birth Level

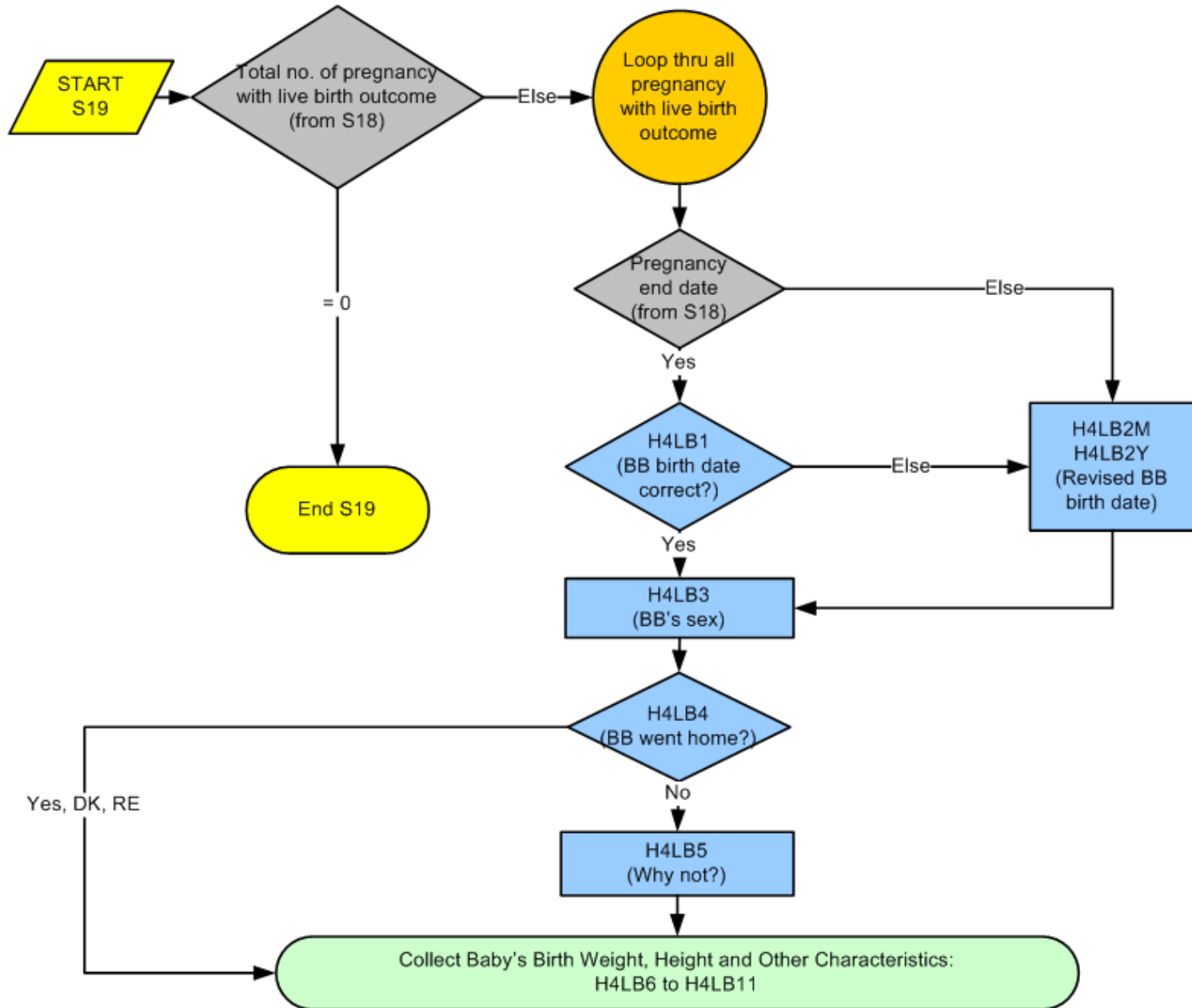
Child Level



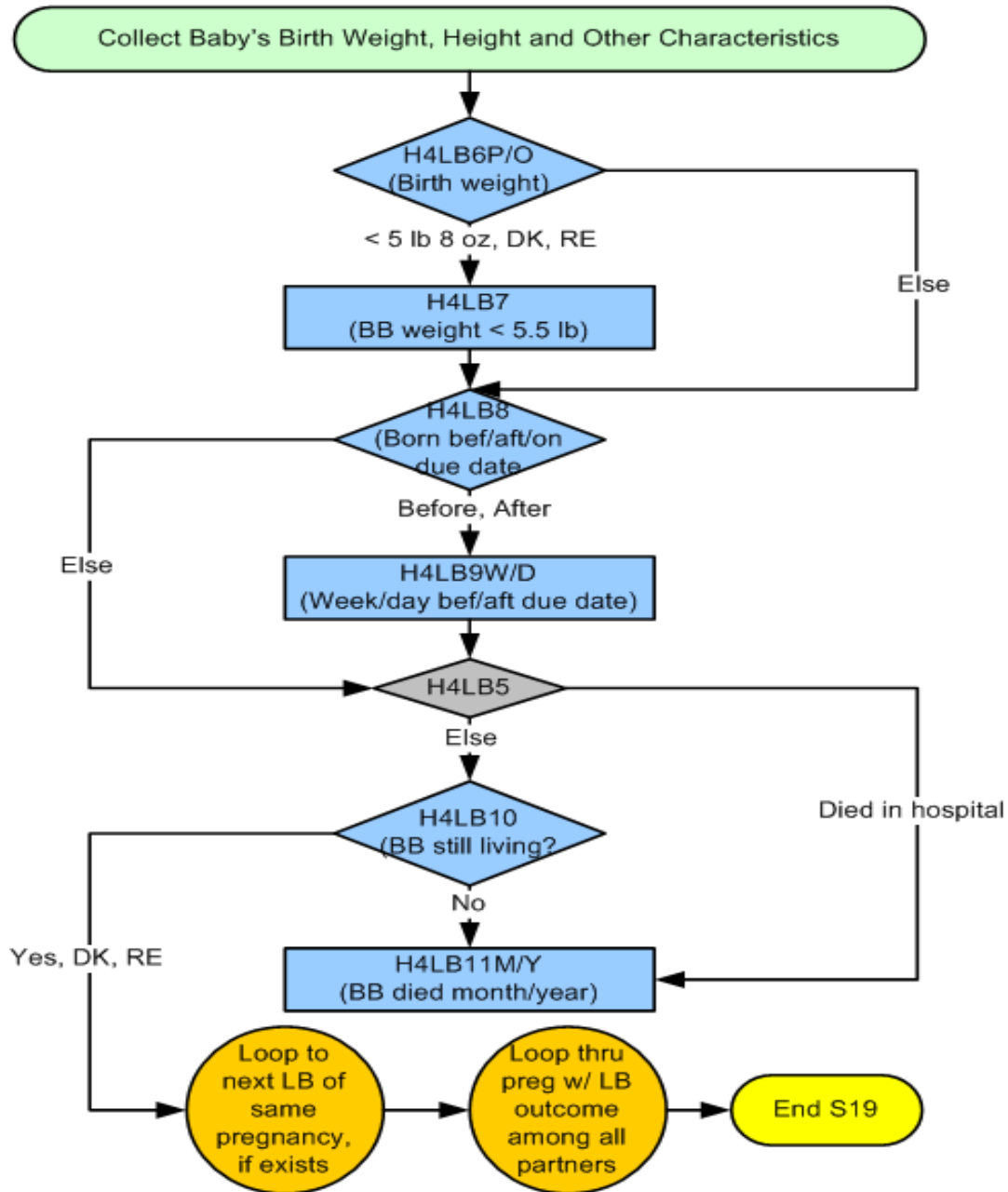
S19 Live Births

- **Unit of Analysis** – Live birth (N=14,749)
- **Record ID:** AID + PTNR_ID + PRGNO + LBNO
- **Contents:**
 - Confirm baby's birth date; corrected birth date
 - Baby's biological sex
 - Baby went home; Why not?
 - Birth weight
 - Born before/on/after due date? # weeks/days before/after
 - Still living; When died?

Section 19: Live Births

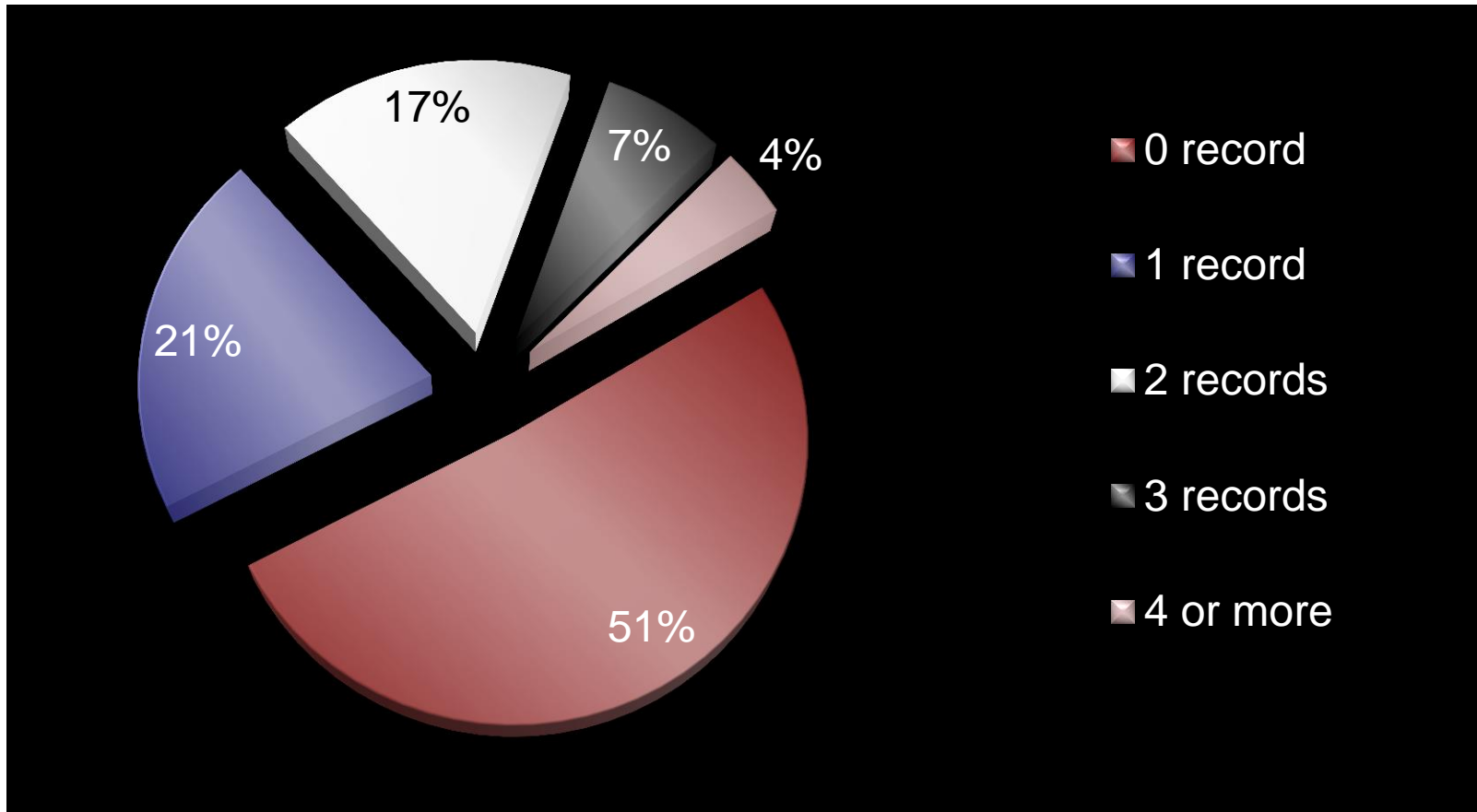


Section 19: Live Births (Cont.)

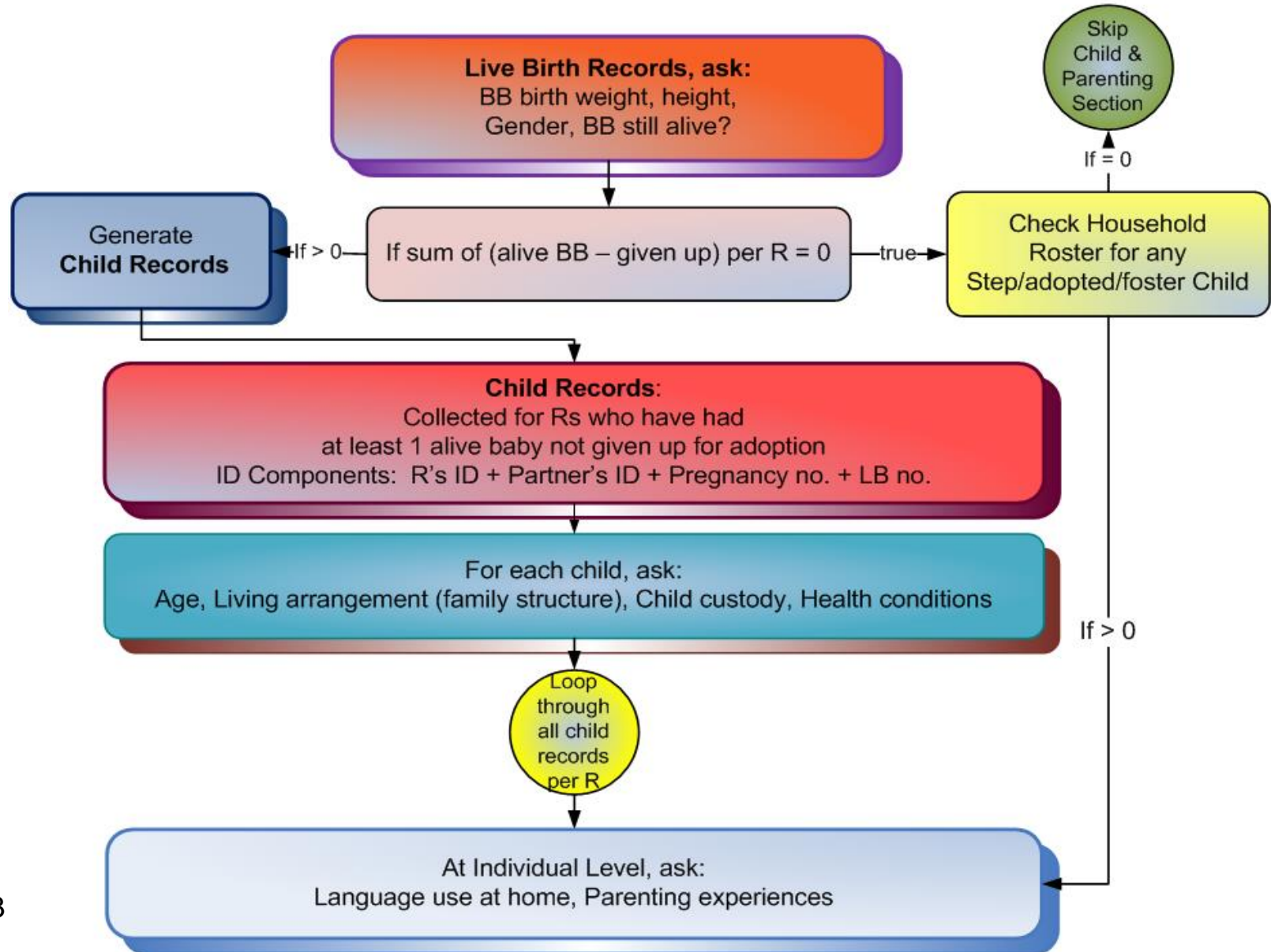


Wave IV Fertility History

Among 15,701 respondents, 51% reported no live birth record; 21% reported 1 record; 17% reported 2; 7% reported 3; less than 4% reported 4 or more.



Wave IV Hierarchical Data Structure: Live Birth and Child Records



Wave IV Fertility History

S20 Children and Parenting: Part A

- **Unit of Analysis** – Child (N=14,553)
- **Record ID:** AID + PTNR_ID + PRGNO + LBNO
- **Contents:**
 - How old?
 - Child lives with R; Ever?
 - ❑ Last date living together
 - ❑ With whom child lives with
 - ❑ Distance
 - ❑ How often R see child?
 - R lives with partner?
 - ❑ If not, distance

S20 Children and Parenting: Part A (Cont.)

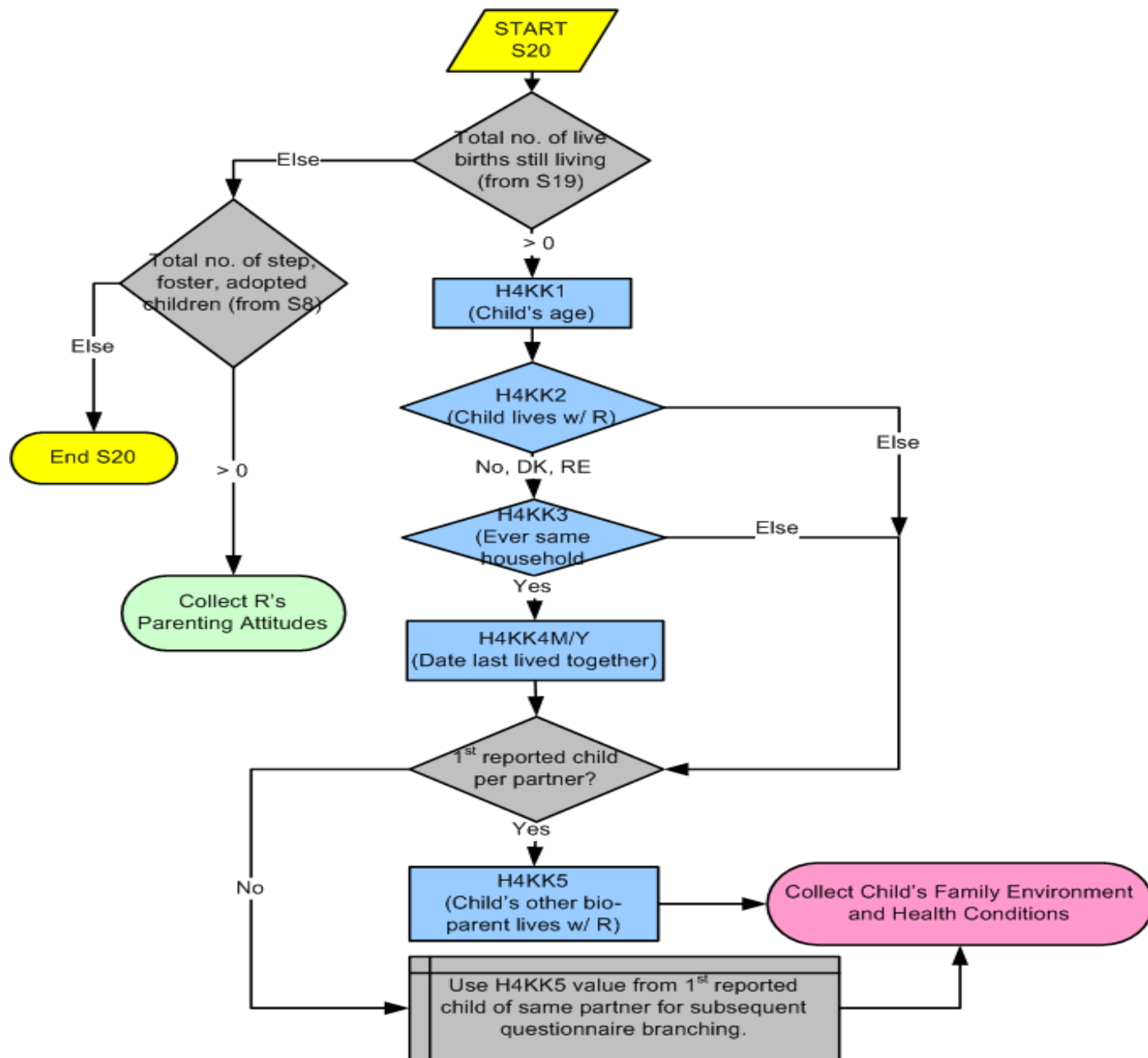
- **Contents: (Cont.)**
 - Any custody agreement?
 - How often partner see child?
 - Child's general health
 - Child's specific health problems?

Wave IV Fertility History

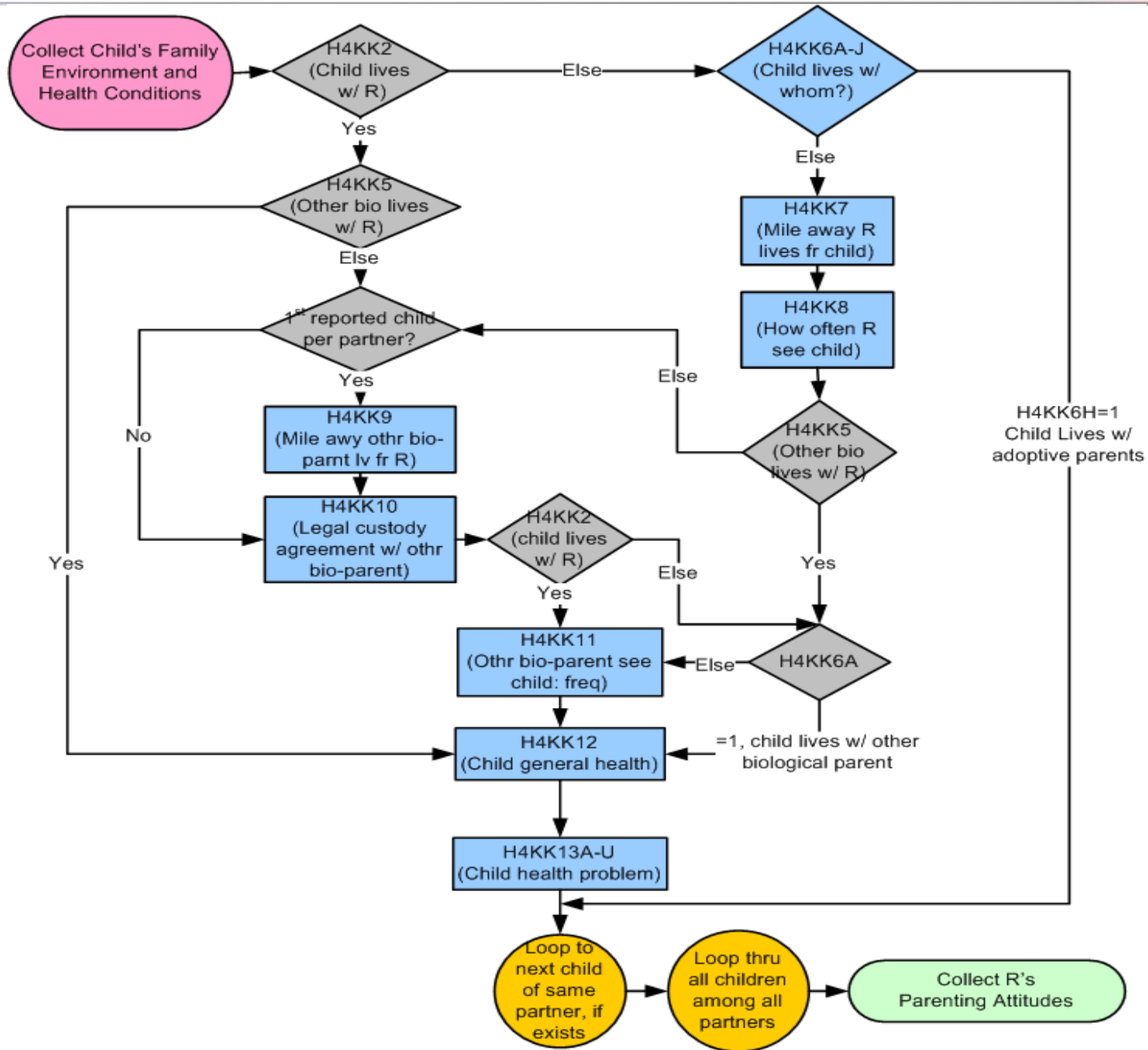
S20 Children and Parenting: Part B

- **Unit of Analysis** – Respondent (N=7,877)
- **Record ID:** AID
- **Contents:**
 - Language speak to child(ren) at home
 - Happy in role as parent
 - R feels close to his/her child(ren)
 - Child(ren): major source of stress
 - R feels overwhelmed by responsibility of being a parent.

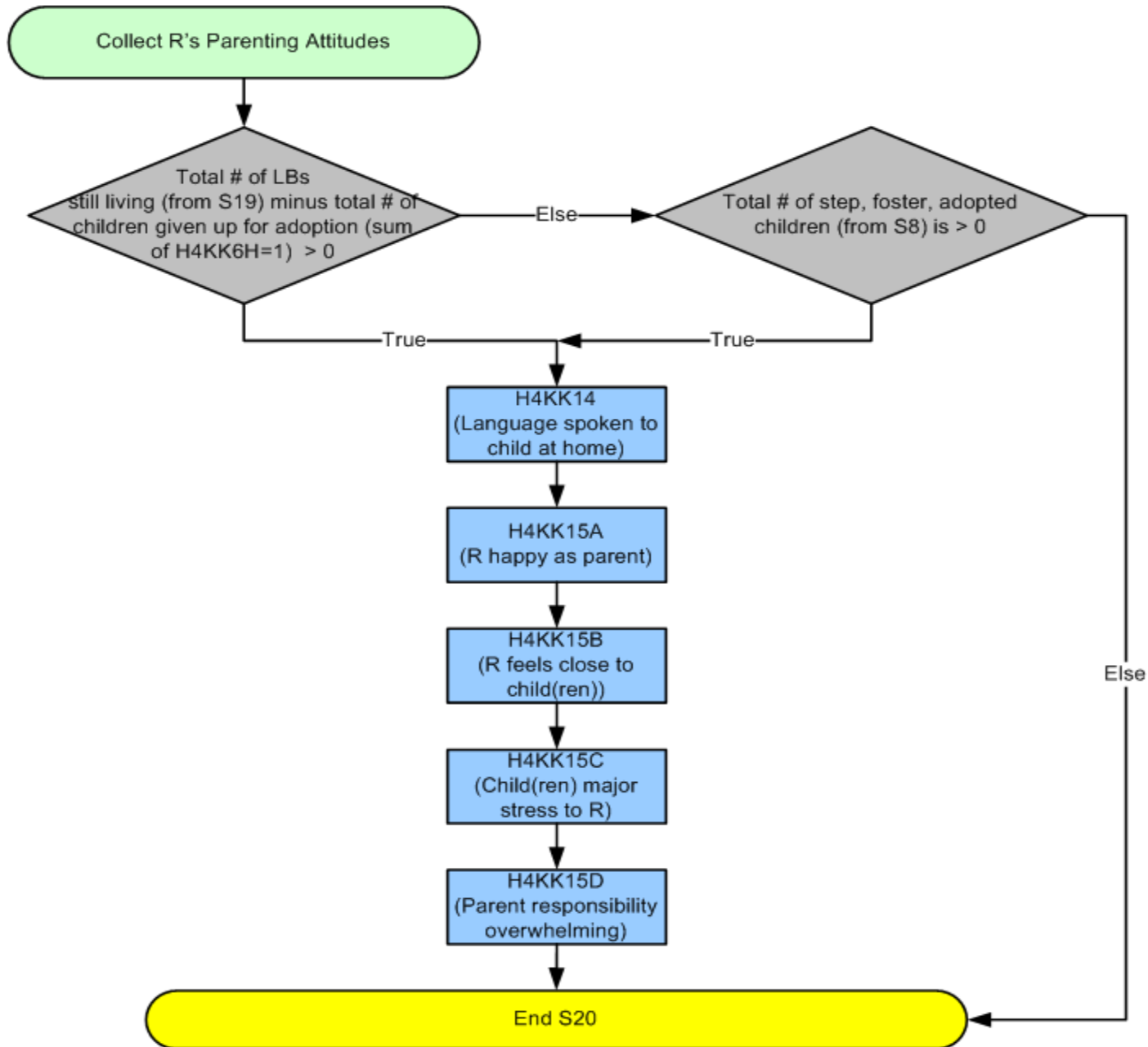
Section 20 Part A: Child Records



Section 20 Part A: Child Records (Cont.)

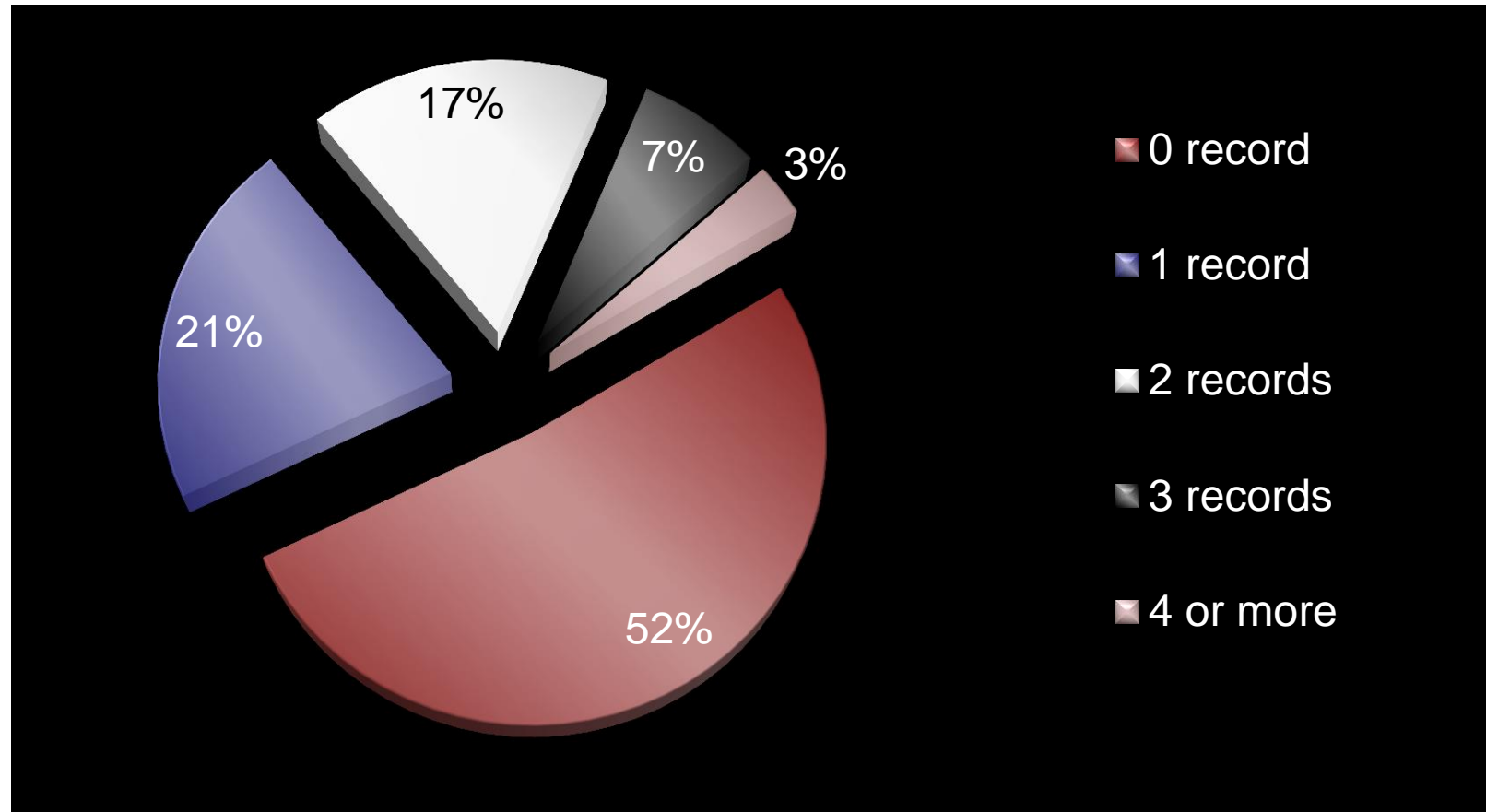


Section 20 Part B: Individual level -- Parenting



Wave IV Fertility History

Among 15,701 respondents, 51% reported no child record in S20A; 21% reported 1 child record; 17% reported 2 records; 7% reported 3. Only about 3% reported 4 or more.



Data Structure Transformation for Hierarchical Files

1. Construct unique record IDs for each file

Individual ID	<i>AID</i>
Relationship ID	<i>AID</i> + <i>PTNR_ID</i>
Time-segment ID	<i>AID</i> + <i>PTNR_ID</i> + <i>H4TR25</i> + <i>H4TR26</i>
Pregnancy ID	<i>AID</i> + <i>PTNR_ID</i> + <i>PRGNO</i>
Live birth ID	<i>AID</i> + <i>PTNR_ID</i> + <i>PRGNO</i> + <i>LBNO</i>
Child ID	<i>AID</i> + <i>PTNR_ID</i> + <i>PRGNO</i> + <i>LBNO</i>

Data Structure Transformation for Hierarchical Files (Cont.)

2. Lower level file contains IDs of all higher level files

For example:

Pregnancy records contain record IDs of the corresponding individual, relationship, besides its own unique pregnancy record ID.

Computational and Technical Tips

```
*-----*
| Construct partner record ID and                               |
| pregnancy record ID (Character vars)                         |
*-----*
data pregrcds (drop=nreln npreg);
  length partner_ID $ 10  preg_ID $ 12  nreln npreg $ 2;

  set pregtable (keep=AID PTNR_ID PRGNO ...);
  if PTNR_ID <=9 then nreln="0" ||put(PTNR_ID,1.);
  else nreln= PTNR_ID;
  if PRGNO <=9 then npreg="0" ||put(PRGNO,1.);
  else npreg= PRGNO;
  preg_ID      =AID||nreln||npreg;
  partner_ID   =AID||nreln;

label preg_ID="Preg Record ID (AID+PTNR_ID+PRGNO)"
      partner_ID="Partner Record ID (AID+PTNR_ID)"
;
run;
```

Compute Summary Counts

1. Describe R by his/her reporting on total numbers of 'event': e.g.,
 - a. Total no. of partners reported by R
 - b. Total no. of pregnancies reported by R

2. Describe R by his/her average reporting on a certain 'event': e.g.,
 - a. Average no. of pregnancy per partner by R

Computational and Technical Tips

```
*-----*
| Total no. of partner records reported by R. |
*-----*
proc sort data=partnr cds; by AID; run;
proc summary data=partnr cds;
  var partnercd;
  by AID;
  output out=sumreltn sum(partnercd)=tot_partnr;
run;
```

```
*-----*
| Total no. of pregnancy records reported by R. |
*-----*
proc sort data=pregr cds; by AID; run;
proc summary data=pregr cds;
  var pregrcd;
  by AID;
  output out=sumpreg sum(pregrcd)=tot_preg;
run;
```

Computational and Technical Tips

```
*-----*
| Average no. of pregnancy per partner reported by R. |
*-----*
proc sort data=individ; by AID; run;
data individ2;
  merge individ (in=one)
           sumreltn(in=two keep=AID tot_partnr)
           sumpreg (in=three keep=AID tot_preg);
by AID;

  if one then W4main=1;      else W4main=0;
  if two then rpt_partnr=1; else rpt_partnr=0;
  if three then rpt_preg=1; else rpt_preg=0;

label tot_partnr="Total no. of partner rcrds reported by R"
      tot_preg  ="Total no. of preg rcrds reported by R"
      rpt_partnr="Rs who reprted at least 1 partner record"
      rpt_preg  ="Rs who reprted at least 1 preg record"
      W4main    ="Rs who are in W4 Main file"
;
```

Computational and Technical Tips

```
*-----*
| Assign '0' to missing values in total no. of partner      |
| records and in total no. of pregnancy records reported by R. |
*-----*
array ms1[*] tot_partnr tot_preg;
      do i=1 to dim(ms1);
          if ms1[i]=. then ms1[i]=0;
      end;
*-----*
| Compute average no. of pregnancy per partner reported by R. |
*-----*
if tot_partnr ne 0 then do;
    ave_preg_partnr = tot_preg/tot_partnr;
end;
label ave_preg_partnr="R's average no. of pregnancy per partner"
;
run;
```

Computational and Technical Tips

Examples for Different Levels and Units of Analysis, and Hierarchical Files Merging

Level of analysis	Purpose	Input files		Data sorted by for computation or merging	Summary statistics/descriptive per unit of analysis	Files merged by	Output file
		Unit of analysis	Unique ID per unit of analysis				Unit of analysis
Respondent	Describe respondent by a summary of partner characteristics. e.g., Total no. of partners reported by respondent	Respondent	AID	AID	Per respondent e.g., Count of partners	AID	Respondent
		Partner	AID, PTNR_ID	AID			
Respondent	Describe respondent by a summary of pregnancy history. e.g., Total no. of pregnancies with abortion as outcome	Respondent	AID	AID	Per respondent e.g., Count of pregnancies ended in abortion	AID	Respondent
		Pregnancy	AID, PTNR_ID, PRGNO	AID			

Computational and Technical Tips

Examples for Different Levels and Units of Analysis, and Hierarchical Files Merging (Cont.)

Level of analysis	Purpose	Input files		Data sorted by for computation or merging	Summary statistics/descriptive per unit of analysis	Files merged by	Output file
		Unit of analysis	Unique ID per unit of analysis				Unit of analysis
Respondent	Describe respondent by a summary of live birth history. e.g., Total no. of live births born outside marriage	Respondent	AID	AID	Per respondent e.g., Flag live births born while R and partner not married and count up total	AID	Respondent
		Live birth	AID, PTNR_ID, PRGN0, LBNO	AID			
Partner	Associate respondent's characteristics to partners. e.g., Identify hetero/homosexual relationship	Partner	AID, PTNR_ID	AID	Spread R's information onto each partner record	AID	Partner
		Respondent	AID	AID	e.g., spread R's biological sex onto partner record and compare		

Computational and Technical Tips

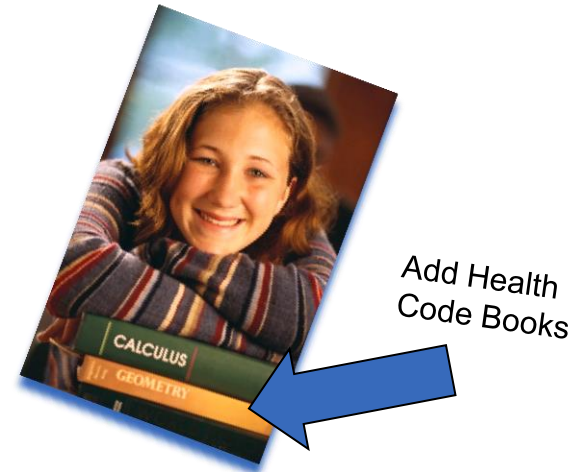
Examples for Different Levels and Units of Analysis, and Hierarchical Files Merging (Cont.)

Level of analysis	Purpose	Input files		Data sorted by for computation or merging	Summary statistics/descriptive per unit of analysis	Files merged by	Output file
		Unit of analysis	Unique ID per unit of analysis				Unit of analysis
Partner	Associate pregnancy characteristics to partners. e.g., No. of non-birth pregnancies associated with each partner	Partner	AID, PTNR_ID	AID, PTNR_ID	Per partner e.g., Flag pregnancies with non-birth outcomes and count up total.	AID, PTNR_ID	Partner
		Pregnancy	AID, PTNR_ID, PRGNO	AID, PTNR_ID			
Partner	Associate partner demographics w/ partner detailed information in S17.	Partner	AID, PTNR_ID	AID, PTNR_ID	By partner	AID, PTNR_ID	Partner
		Partner	AID, PTNR_ID	AID, PTNR_ID			

Some General Advice

- Do not assume:

Read as much as you can



- Add Health documentation on website information, documents, codebooks
- Subscribe to [Add Health list server](#)
- Check out publications using Add Health data

Some General Advice

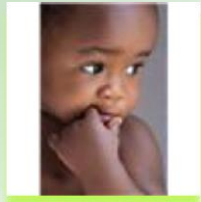
- Spend time: To know your data
 - Examine question branching; Test skipped patterns; Check value ranges; Further clean your data for odd/extreme cases. Know your variables!
 - Check your programs: When in doubt, list your cases and examine.
 - Do logical checks and analytical checks on your results. You can never be too careful!



Some General Advice

- Take small steps: Think through your results
 - Do thorough preliminary analysis before going into sophisticated multivariate advanced statistics.
 - Take pains to document your data and programming decisions.
 - Organize your programs and results, perhaps using an electronically searchable research management database.





Questions and Answers



THE END