



NIGERIA HIV/AIDS INDICATOR AND IMPACT SURVEY

DATA USE SUPPLEMENT MANUAL



NOVEMBER 2020

PARTNERS



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NIGERIA HIV/AIDS INDICATOR AND IMPACT SURVEY (NAIIS) 2018

DATA USE SUPPLEMENT MANUAL

NAIIS 2018 COLLABORATING INSTITUTIONS

Federal Ministry of Health, Nigeria (FMoH)
National Agency for the Control of AIDS, Nigeria (NACA)
National Population Commission, Nigeria (NPopC)
National Bureau of Statistics, Nigeria (NBS)
The United States Centers for Disease Control and Prevention (CDC)
The Global Fund to Fight AIDS, Tuberculosis and Malaria (GF)
Center for International Health, Education, and Biosecurity (Ciheb) at the University of Maryland, Baltimore (UMB)
ICF International
African Field Epidemiology Network (AFENET)
University of Washington (UW)
The Joint United Nations Programme on HIV and AIDS (UNAIDS)
World Health Organization (WHO)
United Nations Children's Fund (UNICEF)

DONOR SUPPORT AND DISCLAIMER

This project is supported by the President's Emergency Plan for AIDS Relief (PEPFAR) through the Centers for Disease Control and Prevention (CDC) under the cooperative agreement #U2GGH002108 to the University of Maryland, Baltimore (UMB) and by the Global Fund to Fight AIDS, Tuberculosis and Malaria through the National Agency for the Control of AIDS (NACA), Nigeria, under the contract #NGA-H-NACA to UMB. The findings and conclusions of this report are those of the authors and do not necessarily represent the official position of the funding agencies.

SUGGESTED CITATION

Federal Ministry of Health, Nigeria. Nigeria HIV/AIDS Indicator and Impact Survey (NAIIS) 2018: Data Use Supplement Manual. Abuja, Nigeria. November 2020.

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I. BACKGROUND

1. What is NAIIS 2018?

The Nigeria 2018 Population-based HIV Indicator and Impact Assessment (NAIIS 2018) is a cross-sectional household-based survey in Nigeria. Led by the Government of Nigeria, the survey was implemented in the Federal Republic of Nigeria (Nigeria) by the NAIIS Consortium, led by the University of Maryland, Baltimore (UMB) under the supervision of the NAIIS Technical Committee and was conducted from July through December 2018.

2. Purpose of the NAIIS 2018 Data Use Manual Supplement

The purpose of the NAIIS **2018 Data Use Manual Supplement** (hereafter, “Manual Supplement”) is to accompany the **Data Use Manual**, which contains information on the data generally applicable to all surveys, including an overview of the Project, survey design and sampling, measures, and a guide for users on how to access and use the data. This **Manual Supplement** contains NAIIS 2018 survey specifications, including survey-specific eligibility criteria, sampling approaches and measures. A summary of NAIIS 2018 findings can be found in the **NAIIS 2018 Summary Sheet**.

3. Other Documentation and Resources

In addition to this **Manual Supplement**, users should refer to the **NAIIS Data Use Manual** for general information on the data, as well as other survey-specific documentation including:

- **Survey Questionnaires:** Three questionnaires are provided, the NAIIS 2018 household, adult and adolescent questionnaires. These questionnaires illustrate the questionnaire’s structure, including the order that the questions were asked, each question’s wording, variable names and labels, value coding and labels, and skip patterns.
- **Codebooks:** Codebooks are provided for each dataset, indicating all variables contained within. These codebooks document each variable’s name, category (i.e., the questionnaire module or source data of the variable), label (i.e., question wording or other label), type (e.g., integer, select one, select multiple, free text, and date/time) and coding values and labels.
- **Variable Frequencies:** Variable frequencies are provided, which contain frequencies of all categorical variables in each dataset.
- **CONSORT Diagrams:** CONSORT (CONsolidated Standard Of Reporting Trial) style diagrams define key analytic variables that combine sets of source variables. A list of CONSORT Diagrams is provided at the end of this **Manual Supplement**.
- **NAIIS 2018 Technical Report:** Technical details of NAIIS 2018 sampling and weighting procedures are provided in deeper detail.

II. NAIIS 2018 SURVEY SPECIFICATIONS

4. Survey Design and Data Collection

Survey Design Characteristics	Description
Survey design	
Data source for survey weighting ¹	2006 Nigeria Census
Sampling stratum	State
Primary sampling unit	Census Enumeration Areas (EA)
Urban/rural categorization	Urban/rural
Survey administration	
Data collection dates	July 2018 – Dec 2018
Languages	English, Hausa, Igbo and Yoruba
Sample size ²	
Number of selected EAs	4,035
Household respondents	83,909
Individual interviews	
Adults (15-64 years)	186,405
Adolescents (10-14 years)	10,665
Children (0-9 years)	26,623
Biomarker test participants	
Adults (15-64 years)	173,719
Adolescents (10-14 years)	9,789
Children (0-9 years)	22,706

¹ See **NAIIS 2018 Technical Report** for more details on the survey weighting approach.

² See **NAIIS 2018 Final Report** for response rates.

5. Survey Questionnaires

In participating households, a household questionnaire is administered to the household head. Then, individual questionnaires are administered to eligible and consenting individuals in the household. Adults (15+ years) complete an adult questionnaire, and adolescents (10-14 years) complete an adolescent questionnaire. Adults also provide data on their children (0-14 years) as part of the “children” module of the adult questionnaire. Modules included in each questionnaire and their associated eligibility criteria are listed in the table below. The content and order of each module may differ between NAHS and other PHIA surveys. Users can refer to each PHIA survey’s **Survey Questionnaires, Codebooks, and Manual Supplements**.

Questionnaire Module	Eligibility Criteria
<i>Household questionnaire</i>	Sample of households within selected EAs
Household roster Household characteristics	
<i>Individual questionnaire – adults (15 - 64 years)</i>	All rostered and consenting adults
Respondent background Marriage Reproduction Children	Parents or guardians of children or adolescents (0-14 years) in the household provide information pertaining to the child
Male circumcision Sexual activity HIV testing history HIV status, care and treatment Tuberculosis and other health issues Gender norms	All men All self-reporting HIV-positive adults
<i>Individual questionnaire – adolescents (10- 14 years)</i>	All rostered ¹ and consenting adolescents in every other household (25%)
Sociodemographic characteristics Parental support Alcohol and drugs Condoms Sexual behavior HIV knowledge HIV risk perception HIV testing HIV stigma Social norms, intention to abstain, self-efficacy and assertiveness	All adolescents

¹ Household members are eligible to be rostered if they were confirmed to have slept in the household the night before the interview.

6. Biomarker Testing

In NAIIS 2018, biomarker testing is offered to all rostered and consenting adults (15-64 years). It is also offered to all rostered adolescents (10-14 years) who provided written assent and children (0-9 years) whose guardians provided consent. Eligibility criteria for receiving tests for specific biomarkers are provided in the table below.

Biomarker Test	Eligibility Criteria
HIV serostatus ¹	All participants
Recency of HIV infection ²	All HIV+ participants > 18 months old
CD4+ cell count	All HIV+ and 2% of HIV- participants
Antiretroviral (ARV) drug presence	All HIV+ participants
ARV drug resistance	All HIV+ participants
Hepatitis B surface antigen	Adults aged 18-64 years and emancipated minors aged 15-17 years: all HIV+ and 5,303 HIV-participants
Hepatitis C antibody	Adults aged 18-64 years and emancipated minors aged 15-17 years: all HIV+ and 5,303 HIV-participants

¹ HIV serostatus was determined using the Nigerian National Serial HIV Rapid Testing Algorithm that combined results from household-based rapid and confirmatory tests. Appendix B, Figure B.1 and accompanying text in the NAIIS Technical Report provide a detailed description of the algorithm.

² HIV-1 LAg avidity plus viral load and HIV-1 LAg avidity plus viral load and ARV detection were used to distinguish recent from long-term infection.

NAIIS 2018 HIV Testing Algorithm

HIV prevalence testing was conducted in each household using a serological rapid diagnostic testing algorithm based on Nigeria's National HIV Testing Guidelines, with laboratory confirmation of seropositive specimens using a supplemental assay.

HBTC services, including HIV rapid testing and counseling, HBsAg and HCV rapid testing, point-of-care (POC) CD4 testing and return of results, were carried out in accordance with Nigeria's National HIV Testing Guidelines. HIV rapid testing was conducted in the field (Figure B.1) using a serial rapid-testing algorithm. Determine™ HIV ½ (Abbott Molecular Inc., Des Plaines, Illinois, United States) was used as a screening test. Uni-Gold™ (Trinity Biotech, plc., Wicklow, Ireland) was used as a confirmatory test. STAT PAK® HIV ½ Assay (Chembio Diagnostic Systems Inc., Medford, New York, United States) was used as a tie-breaker test for discordant screening and confirmatory tests. NAIIS participants with nonreactive results on the screening test were reported as HIV negative; those with a reactive screening test underwent confirmatory testing. Participants with reactive results on both the screening and confirmatory tests were classified as HIV-positive. Participants with a reactive screening test result, followed by a non-reactive confirmatory test result, had the tie-breaker test performed to determine HIV status. Participants with reactive tie-breaker tests were classified as HIV-positive while those with non-reactive tests were classified as HIV-negative.

All HIV-positive specimens were retested at the satellite laboratory using Geenius™ HIV 1/2 Supplemental Assay (Bio-Rad, Hercules, California, United States) as the confirmatory test. Participants who had reactive results on both rapid and Geenius™ HIV 1/2 tests were classified as HIV-positive. Participant specimens with a reactive rapid test result followed by a non-reactive confirmatory test result

at the satellite laboratory were subjected to further QA discrepancy resolution at the central laboratory. Specimens from participants who self-reported being HIV positive with an HIV negative test result at HBT received further testing, including additional HIV serial rapid testing and Geenius™ HIV 1/2 testing in the satellite and central laboratories as well as deoxyribonucleic acid (DNA) polymerase chain reaction (PCR) to resolve discrepancies.

For participants aged 18 months-64 years, the algorithm for classification of final HIV status included results from rapid HIV testing and Geenius™ HIV 1/2 confirmatory testing on all positives. In addition, Western Blot, TNA PCR and VL RNA PCR were done on discrepant results. For participants less than 18 months, the algorithm for classification of final HIV status included results from rapid HIV testing and HIV TNA PCR. Classification of final HIV status was used to determine estimates for HIV prevalence and to inform estimates for HIV incidence.

All infants <18 months were tested for HIV using the Determine™ HIV 1/2 Rapid Test. Infants who were reactive on Determine received IVT/EID testing using prepared DBS. In addition, infants born to mothers of unknown HIV status or HIV-positive mothers were screened using the Determine™ HIV ½ HIV Test and received IVT/EID testing using prepared DBS. HIV TNA PCR using COBAS® TaqMan® HIV-1 Qualitative Test (Roche Molecular Systems, Branchburg, NJ, USA) United States) analyzer was conducted at the central laboratory. Specimens with HIV-negative results were categorized as HIV negative while specimens with HIV-positive results were reported as HIV-positive. Results were returned to the infant's parent or guardian at the household within two weeks of specimen collection.

7. Data Confidentiality

As noted in the *NAIIS Data Use Manual*, various risk mitigation actions were used to protect the privacy and confidentiality of respondents in the public use data. Some of these actions apply to all PHIA surveys, while other actions are data-driven decisions motivated by various risk disclosure concerns. These concerns include small counts as a result of certain combinations of variables and values which may introduce individual disclosure risk concerns. This section outlines the variables that have been identified for disclosure risk remediation and the specific data action taken to address the risk concern.

The following date variables were redacted for all PHIA surveys prior to public release:

Date variables redacted for all PHIA surveys

Dataset(s)	Variable
Household	dieddated_01- dieddated_05
Household	dieddatem1-dieddatem3
Adult individual	surveystday
Adult individual	birthday
Adult individual	birthmon
Child individual	surveystday
Child individual	ch_birthday
Child individual	ch_birthmon

Top-coding is the process of re-coding values above an upper bound to the value of the upper bound. Age for all respondents was top coded at 80. There was also top-coding to collapse small counts with nearby values, in which the data were re-coded so that the highest category contains at least 25 cases. Variables that underwent top-coding are listed below:

Variables that underwent top-coding, NAIIS 2018

Dataset	Variable	Top-coding upper bound
Adult individual	age	80
Adult individual	agemar	45
Adult individual	childa2015	5
Adult individual	husnwif	5
Adult individual	numwif	5
Adult individual	partage1-partage3	75
Adult individual	pregnum	15
Adult individual	prgtwina	3
Adult individual	wifliveew	5
Child Biomarker	momage	55
Child individual	adcurgrd	6
Child individual	adhigrade	6
Child individual	adlstyrgrd	7
Child individual	adlvlsch	3
Child individual	ch_education_ng	3

Variables that underwent top-coding, NAIIS 2018 (continued)

Dataset	Variable	Top-coding upper bound
Child individual	momage	55
Child individual	mompregnm	5
Child individual	mompregnum	15
Household	ah0_5_ng	6
Household	ah10_14_ng	5
Household	ah6_14_ng	7
Household	bloodtestcount	15
Household	childcount	15
Household	childcountdefacto	15
Household	hhrespondent	5
Household	menrostercount_ng	10
Household	owncamel_ng	8
Household	ownchikn	95
Household	owncow	50
Household	owndog_ng	10
Household	owngoat	60
Household	ownhorsedm	10
Household	ownlandnum_ng	95
Household	ownlvest	30
Household	ownothercattle_ng	50
Household	ownpig	30
Household	ownsheep	60
Household	roomsleep	10
Household	rostercount	20
Household	rostercountdefacto	20
Household	womenrostercount_ng	10

Bottom-coding is the process of re-coding values below a lower bound to the value of the lower bound. Bottom-coding was used collapse small counts with nearby values, in which the data were re- coded so that the bottom coded value contains at least 25 cases. Variables that underwent bottom- coding are listed below:

Variables that underwent bottom-coding, NAIIS 2018

Dataset	Variable	Bottom-coding lower bound
Adult individual	arvfty	2004
Adult individual	partage1-partage3	12
Household	ownlandnum_ng	0.8

The following variables and values were combined with the code for “other” due to small counts or percentages:

Variables and values collapsed in to the “other” classification, NAIIS 2018

Dataset(s)	Variable	Small Cells
Household	staffidhh	761
Household	cookingfuel	10
Household	matexwalls	25
Household	matfloor	31
Household	owncamel_ng	3,4,5,6,7
Household	ownchikn	46 small cells
Household	owncow	29 small cells
Household	owndog_ng	8,9
Household	owngoat	27 small cells
Household	ownhorsedm	4,6,7,9
Household	ownlandnum_ng	65 small cells
Household	ownlivest	9,11-14,16-19,22-25,27,28
Household	ownothercattle_ng	28 small cells
Household	ownpig	11,12,13,14,15,16,17,18,20,21,22,23,24,25,27
Household	ownsheep	27 small cells

8. Dataset Specifications

Dataset (filename)	Number of Observations	Number of Variables
Household (NAIIS2018hh)	101,267	102
Adult individual (NAIIS2018adultind)	229,762	296
Adult biomarker (NAIIS2018adultbio)	177,026	51
Child individual (NAIIS2018childind)	158,491	255
Child biomarker (NAIIS2018childbio)	35,171	41
Other details	Description	
Two-letter country code prefix for ID variables	NG	
Survey weighting variables		
Survey weights provided (variable prefix)	Household Weight (hhwt0)	
	Interview Weight (Adolescent and Adult) (intwt0)	
	Blood Test Final Weight (btwt0)	
	Child Weight (chmodfwt0)	
	Hepatitis Weight (hepwgt)	
Selected variable parameters		
Household characteristics used for wealth index construction	<i>See next section</i>	
Mean duration recent infection used for HIV incidence estimation	130 days (95% CI 118-142 days)	

9. Wealth Index

The NAIIS 2018 Wealth Index was constructed following the latest Demographic and Health Survey (DHS) approach^{1,2,3,4}. Household characteristics, asset ownership variables, services and amenities that are present in both urban and rural surveyed areas are selected. These variables are assumed to be good indicators of economic status.

Categorical items (such as type of water supply) are recoded into indicator variables (has, does not have), and along with continuous variables (such as number of persons per sleeping room) are then fit in a one-factor principal components analysis (PCA). The resulted single PCA factor is considered as underlying index of wealth and then used to score each household using the PCA weights.

For the NAIIS 2018 Wealth Index computation, three indexes were constructed: a common index, an urban-specific index, and a rural-specific index. Then using regression, mappings were made between urban index and the national index, and then between the rural index and the national index.

Summary Results:

The first principal component accounts for as much of the variability in the data as possible and is used to represent the Wealth Index for all three models.

Figures 1, 2 and 3 show scores of the most influential variables for each model.

Variable	Component
	1
havefan Fan	.084
havetele Television	.080
havelectiron_ng Electric iron	.077
haveelect Electricity	.076
havecongrid_ng Connected to the national grid	.074
ownbankacc Bank account	.071
cookingfuel Type of cooking fuel: Firewood	-.070
haverefrig Refrigerator	.069
matfloor Main floor material: Earth/sand	-.067
havegen_ng Generator	.058
matexwalls Main wall material: Mud	-.057
havetable Table	.056

Variable	Component
	1
havefan Fan	.090
havetele Television	.086
havelectiron_ng Electric iron	.084
haverefrig Refrigerator	.077
ownbankacc Bank account	.076
haveelect Electricity	.075
havecongrid_ng Connected to the national grid	.071
havegen_ng Generator	.066
havetable Table	.062
ownwatch Watch	.061
toiletttype Type of toilet facility: Flush to septic tank	.052
cookingfuel Type of cooking fuel: Liquid propane gas	.051

Variable	Component
	1
havefan Fan	.092
havetele Television	.087
haveelect Electricity	.078
havecongrid_ng Connected to the national grid	.077
matfloor Main floor material: Earth/sand	-.077
havelectiron_ng Electric iron	.076
ownbankacc Bank account	.071
havegen_ng Generator	.071
haverefrig Refrigerator	.069
havetable Table	.068
matexwalls Main wall material: Mud	-.062
cookingfuel Type of cooking fuel: Firewood	-.057

As expected, Electricity and major appliances along with furniture are the highest-scored variables in the model for all three models.

The Wealth Index calculated for the entire national survey as well as the Common Model are given in Table 4 below.

Table 4. NAIIS 2018 National Wealth Index Distribution

		combscor Combined national wealth score	comscore Common wealth score
N	Valid	40126	40126
	Missing	0	0
Mean		.0376565	.0426321
Std. Deviation		1.01513442	1.01541500
Minimum		-2.26759	-1.97441
Maximum		2.31011	2.41407
Percentiles	20	-1.0175941	-1.0062824
	40	-.3373665	-.3453848
	60	.4097625	.4005045
	80	1.0592796	1.0559611

Note that statistics in the above table are based on the household population of the survey rather than the households themselves; which explains why the mean value of the Index is slightly different from exactly zero, and the standard deviation from exactly one.

Figure 1 below shows a histogram distribution of the national **NAIIS 2018** Wealth Index. We can clearly observe the bi-modality shape of the distribution (i.e. has two major peaks) due to the combination of the two unimodal distributions of the rural and urban areas.

III. REFERENCES

1. Rutstein, Shea, and Sarah Staveteig. 2014. *Making the Demographic and Health Surveys Wealth Index Comparable*. DHS Methodological Reports No. 9. Rockville, Maryland, USA: ICF International
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3. Vyas S, Kumaranayake L. Constructing socio-economic status indices: how to use principal components analysis. *Health Policy Plan*. 2006;21(6):459-468. Epub 2006 Oct 2009.
4. Filmer D, Pritchett LH. Estimating wealth effects without expenditure data - or tears: An application to educational enrollments in states of India. *Demography*. 2001;38(1):115-132.

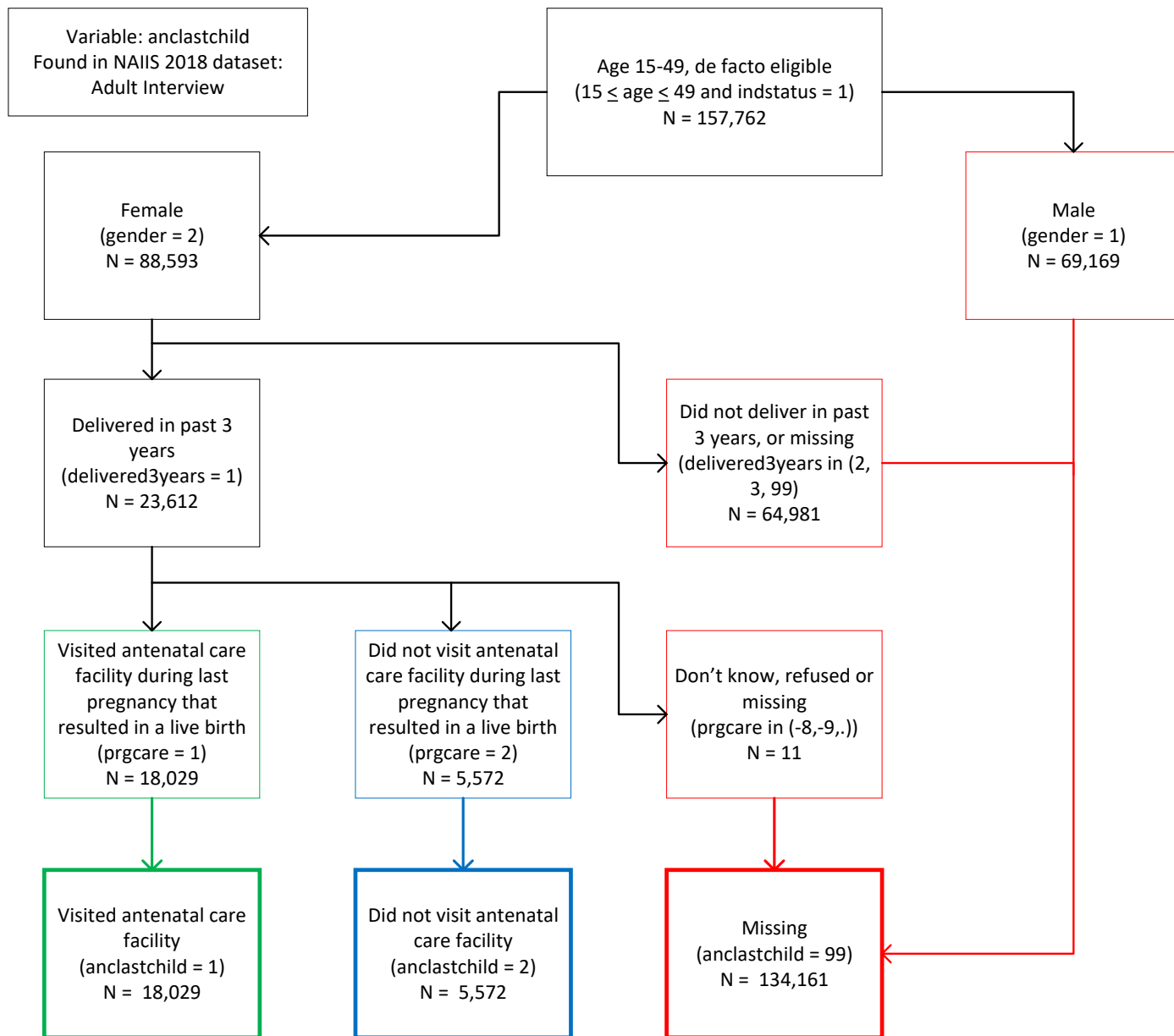
IV. CONSORT DIAGRAMS FOR ANALYTIC VARIABLES

This section contains CONSORT diagrams for analytic variables provided in NAHS 2018 datasets. These diagrams are designed to facilitate use of analytic variables by illustrating which source variables are incorporated into each analytic variable and how participants are categorized based on data from these variables.

List of CONSORT diagrams		
Variable name	Description	Page
anclastchild	Attended antenatal care visit at last pregnancy	19
art	Indicator of whether on art combining self-report and ARV testing	20
artduration	Duration of time on art	21
artinitiated12months	Art initiated in last 12 months	22
artselfreported	Indicator whether individual is on art among adults age 15-64	23
arvcurrent_ng	Currently on ARVs (self-report)	24
arvcurrent12months_ng	Currently on ARVs combined with ART initiated in past 12 months	25
arvspregnancydetail	ARV status last pregnancy	26
arvstatus	Indicator of whether ARVs were detected	27
aware	Awareness combining self-report and ARV testing among adults 15-64	28
awareselfreported	Indicator of whether individual is self-reported as aware of their HIV seropositive status	29
breastfedlastchild	Breastfeeding outcome of last birth	30
brthwhr_ng	Location of last birth	31
bt_status	Did lab blood test have definitive result?	32

cd4cat	CD4 categories	33
ch_education_ng	Child education level	34
condomlastsex12months	Condom used at last sex in past 12 months	35
delivered3years	Delivered in the last 3 years	36
delivered12months	Delivered in last 12 months	37
diagnosedtb_ng	Diagnosed with TB	38
education	Education level	39
evertested	Ever Tested for HIV	40
firstsxage	How old were you when you had vaginal sex for the very first time?	41
hhstatus	Household Response Status	42
hivstatuslastpregnancy	HIV status last pregnancy	43
indstatus	Indicator of individual eligibility and response status	44
maritalstatus	Marital Status	46
mcwho_ng	Male circumcision	47
mother	Individual is a mother	48
motherawarehiv_ng	Knew HIV+ prior to giving birth	49
noofpregnancies_ng	Number of pregnancies	50
part12monumcat_ng	Number of sexual partners in past 12 months (categorized)	51
pedart	Indicator of whether child is on art combining parent-report and ARV testing	52
pedartparentreported	Indicator of whether parent reports the child age 0-14 is on ART	53
pedaware	Pediatric awareness combining parent-report and ARV testing	54

pedawareparentreported	Indicator of whether parent is aware of child's HIV seropositive status, among children age 0-14	55
pedtri90	Analysis flag for age 0-14 90-90-90 with ARV data	56
pedtri90art	ART recode for age 0-14 90-90-90 with ARV data	57
pedtri90aware	Aware recode for age 0-14 90-90-90 with ARV data	58
pedtri90vls	VLS recode for age 0-14 90-90-90 with ARV data	59
pregnancystatus	Pregnancy Status	60
receivedresult_ng	Ever received HIV test result	61
receivedresult12months_ng	Received HIV test result in past 12 months	62
sexcohabpart_ng	Sex with non-marital, non-cohabiting partner in past 12 months	63
testedpregnancy_ng	Tested for HIV at ANC visit	64
Treatedfortb_ng	Treated for TB	65
tri90	Flag for inclusion in 90-90-90 analysis	66
tri90art	Indicator of whether individual is on ART, for 90-90-90 analysis	67
tri90aware	Indicator of whether individual is aware of their HIV seropositive status for 90-90-90 analysis	68
tri90vls	Indicator of whether individual has suppressed viral load, for 90-90-90 analysis	69
uniontype	Union type	70
Visitedtbclinic_ng	Ever Visited TB Clinic	71



Variable: art
 Found in NAIS 2018 dataset:
 Adult Biomarker

Age 15-64, de facto eligible, HIV +
 (age >= 15 and hivstatusfinal* = 1 and bt_status* = 1)
 N = 2,739

Positive blood test for ARVs
 (arvstatus* = 1)
 N = 1,287

Negative blood test for ARVs or missing result
 (arvstatus* = 2 or 99)
 N = 1,452

Self reported unaware of HIV+ status
 (awareselfreported* = 2)
 N = 1,339

Self reported aware of HIV+ status or missing self-reported awareness
 (awareselfreported* = 1 or 99)
 N = 113

Self reported on ART
 (artselfreported* = 1)
 N = 35

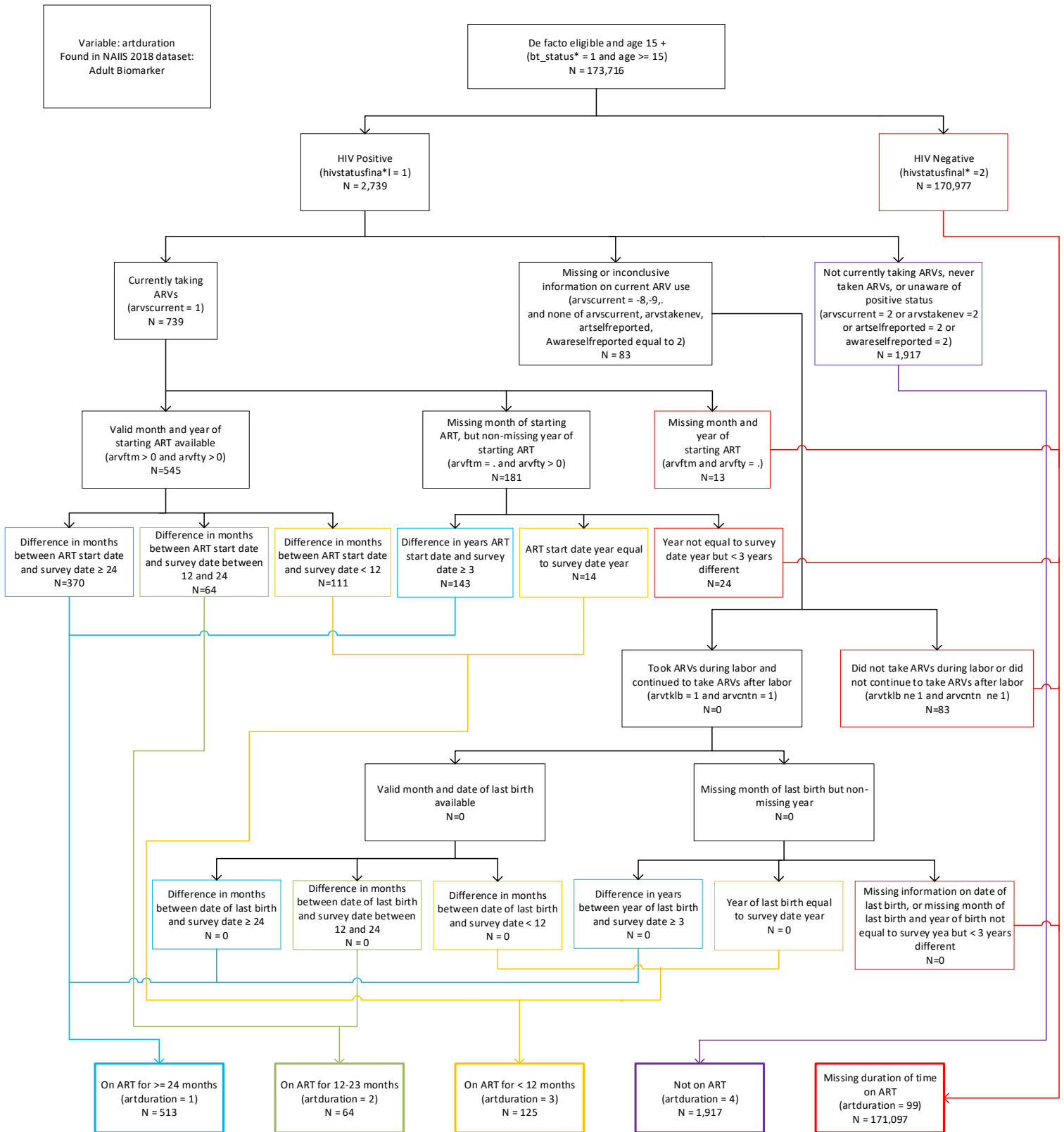
Self reported not on ART
 (artselfreported* = 2)
 N = 44

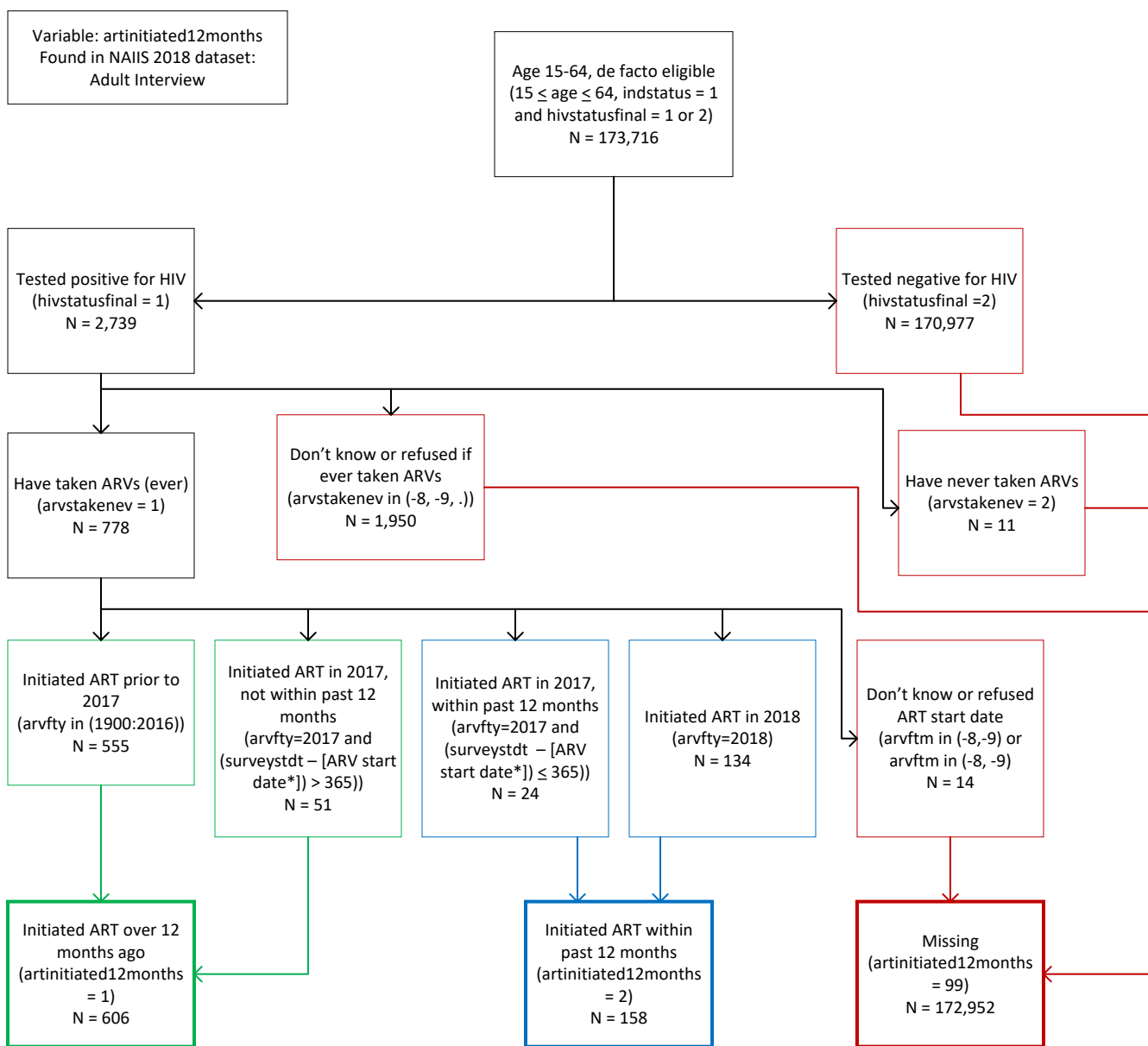
Missing self reported ART information
 (artselfreported* = 99)
 N = 34

On ART
 (art = 1)
 N = 1,322

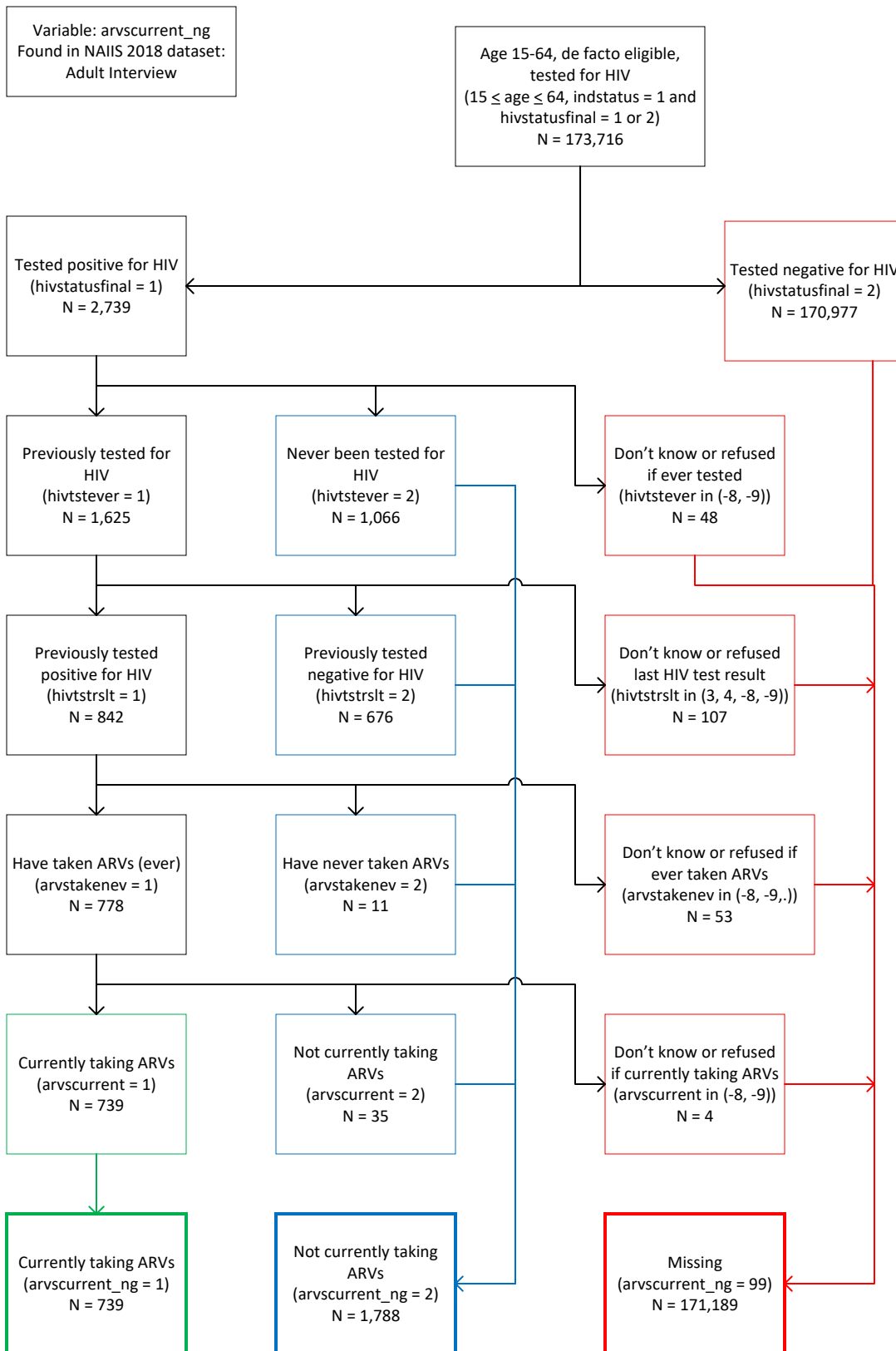
Not on ART
 (art = 2)
 N = 1,383

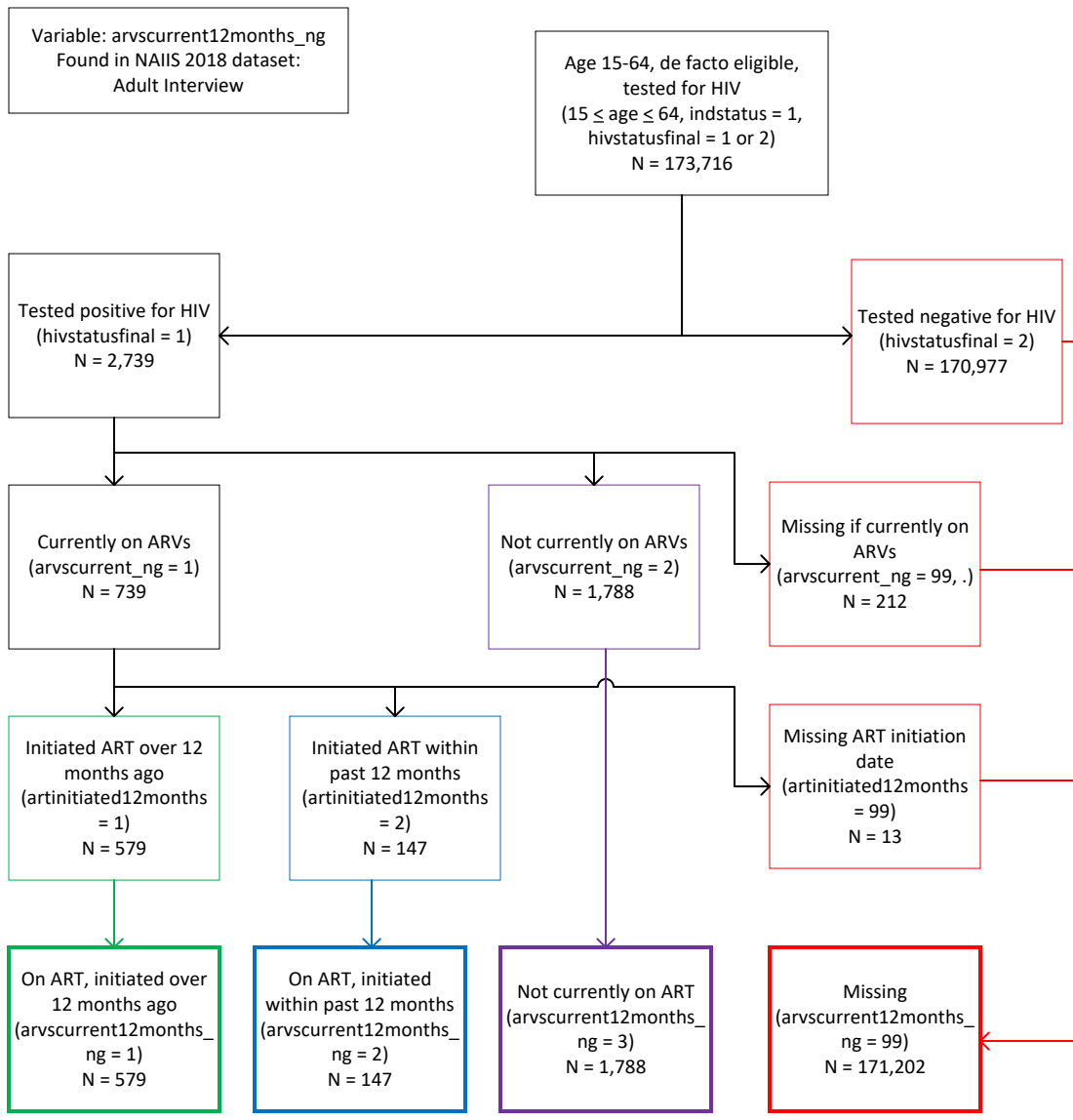
Missing ART Status
 (art = 99)
 N = 34





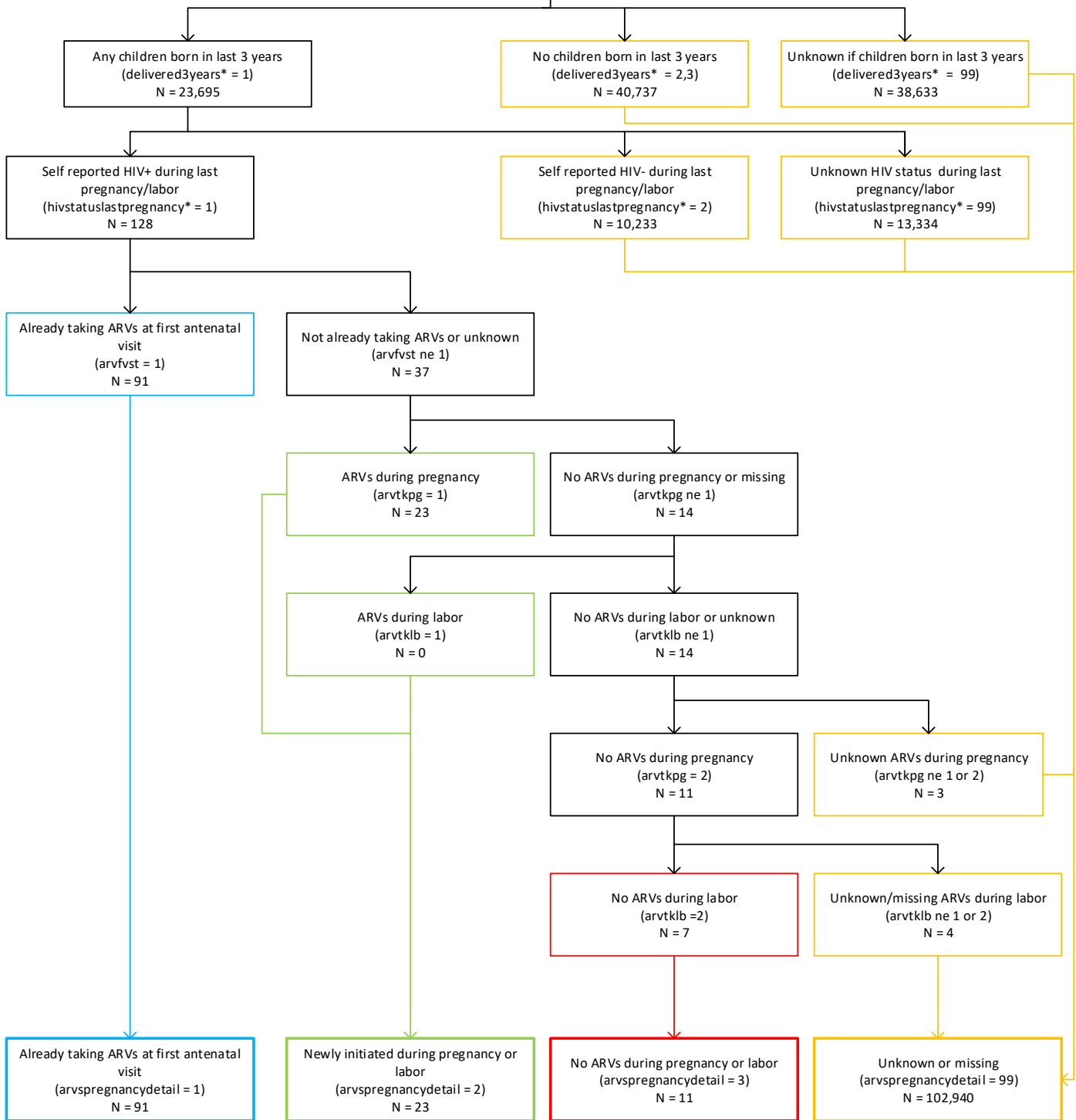
*ARV start date derived from arvftm (month when ARV treatment began) and arvfty (year when ART treatment began). A value of 15 was imputed for day when ART treatment began, as this information was not captured.





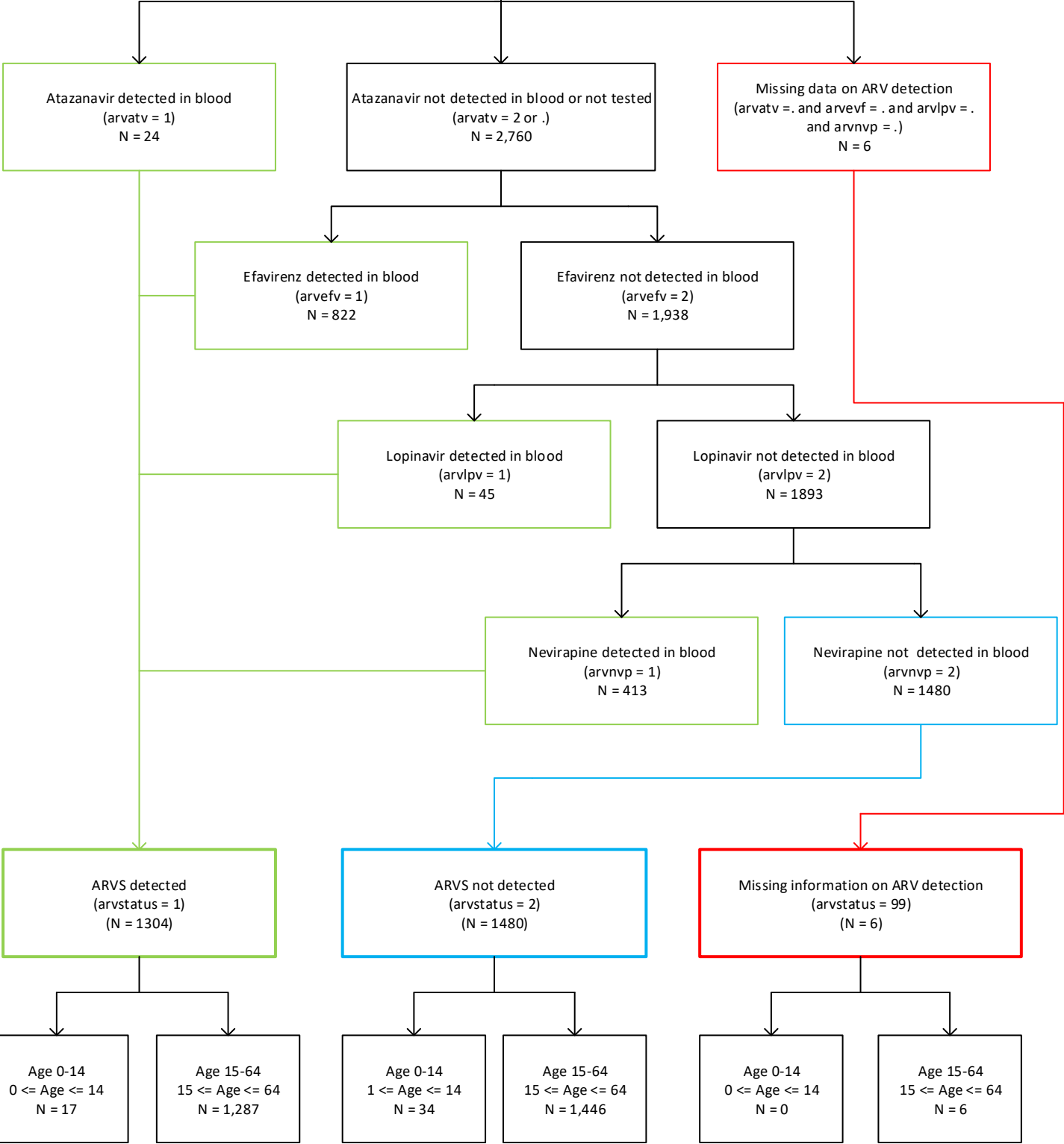
Variable: arvspregnancydetail
 Found in NAIS 2018 dataset:
 Adult Interview

Female respondents age 15-64
 (indstatus* = 1 and gender = 2 and 15 <= age <= 64)
 N = 103,065

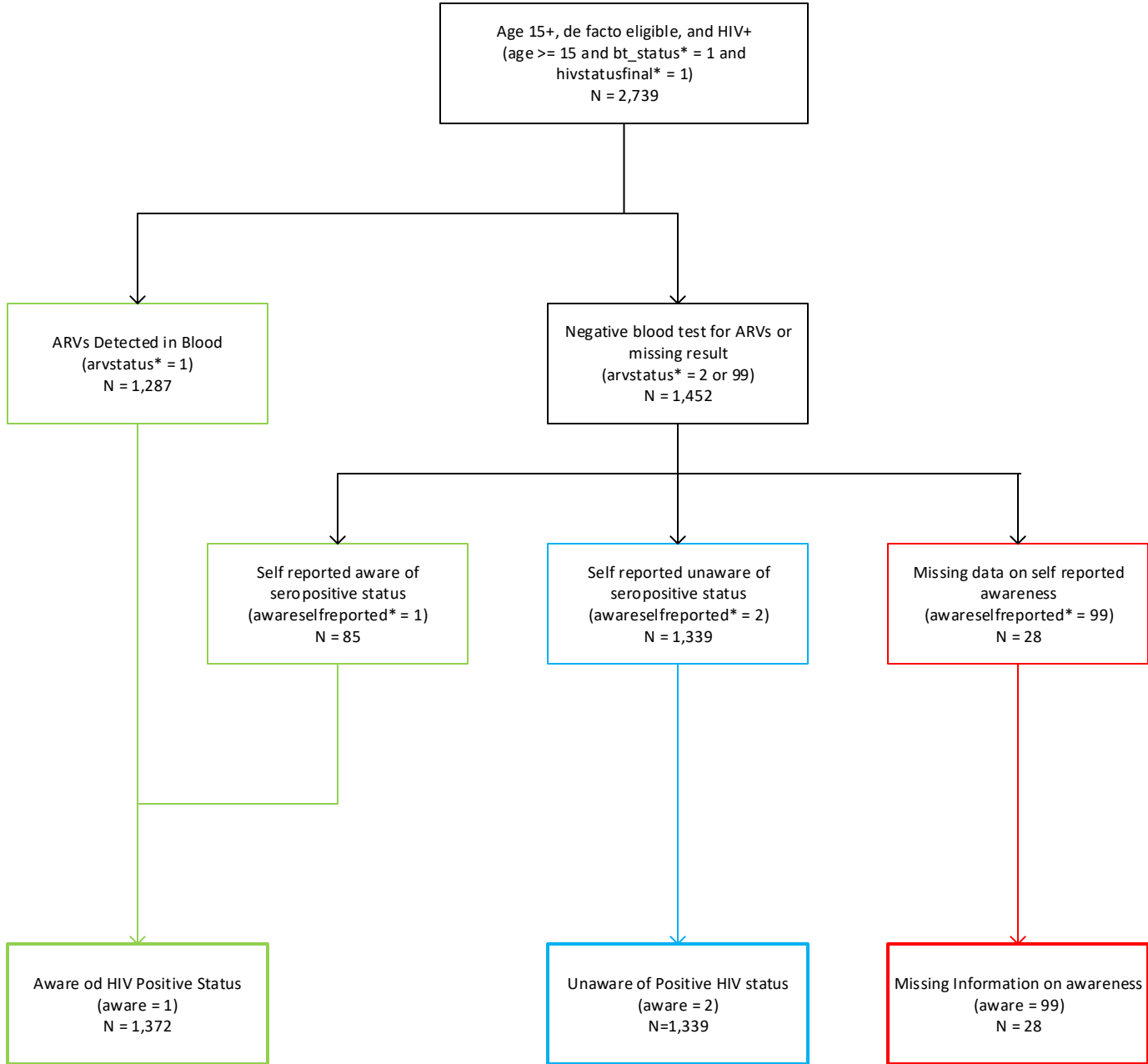


Variable: arvstatus
 Found in NAIS 2018 datasets:
 Adult Biomarker
 Child Biomarker

All ages, de facto eligible, and HIV+
 (0 <= age <= 64 and bt_status* = 1 and hivstatusfinal* = 1)
 N = 2,790

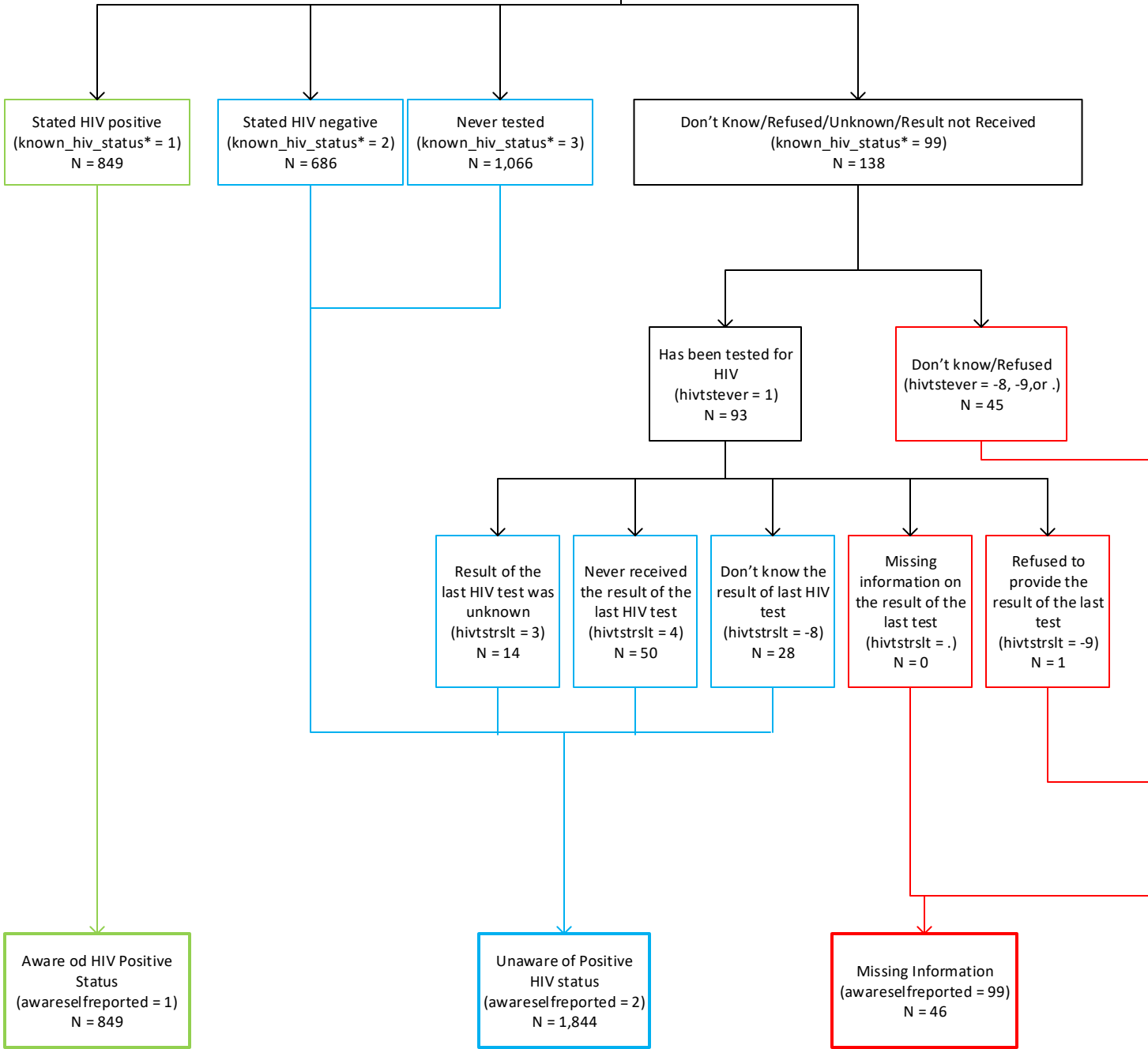


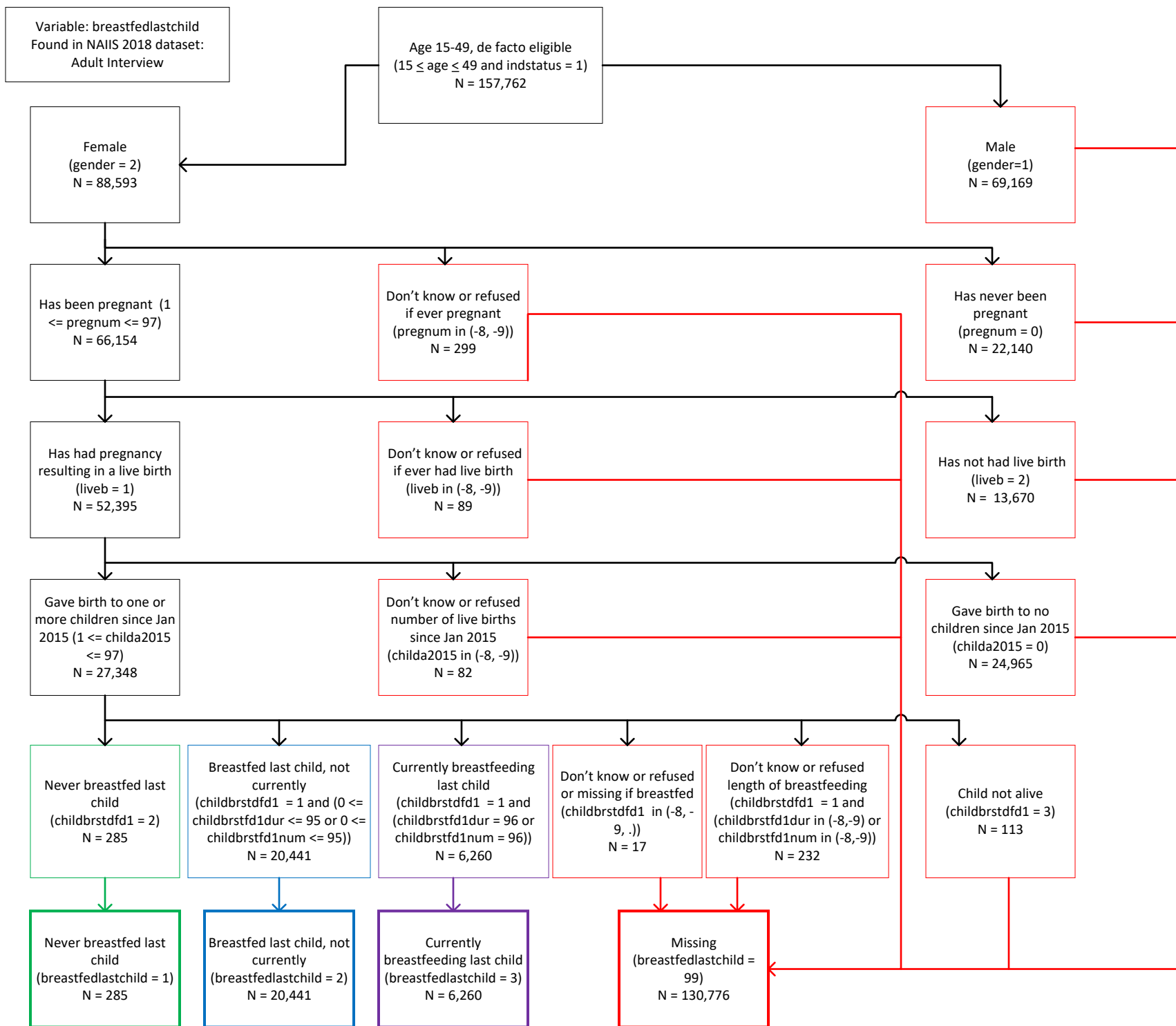
Variable: aware
Found in NAIS 2018 dataset:
Adult Biomarker

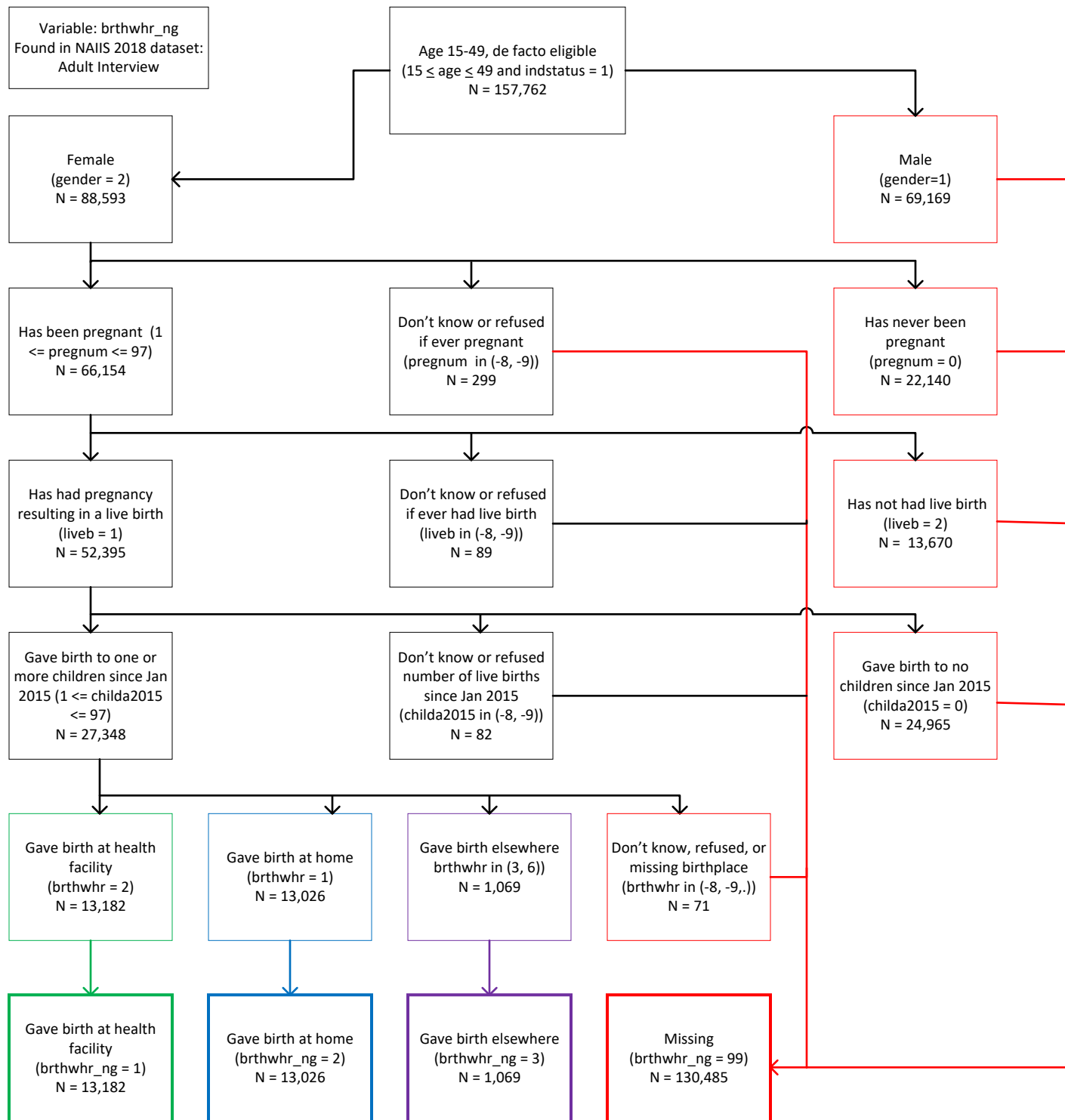


Variable: awareselfreported
 Found in NAHS 2018 dataset:
 Adult Biomarker

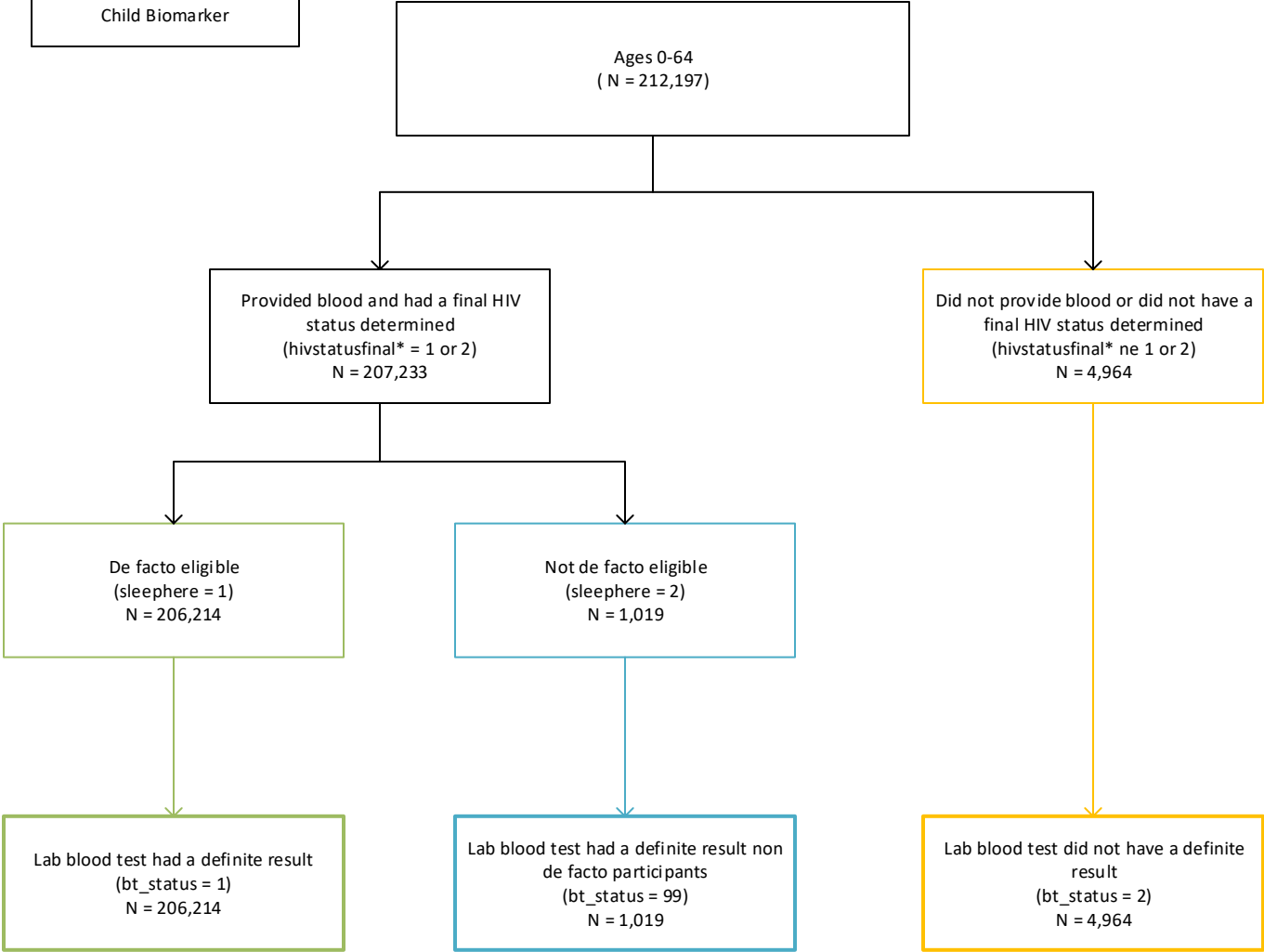
Age 15-64, de facto eligible, and HIV+
 (15 ≤ age ≤ 64 and indstatus* = 1 and hivstatusfinal* = 1)
 N = 2,739







Variable: bt_status
Found in NAIS 2018 datasets:
Adult Biomarker
Child Biomarker

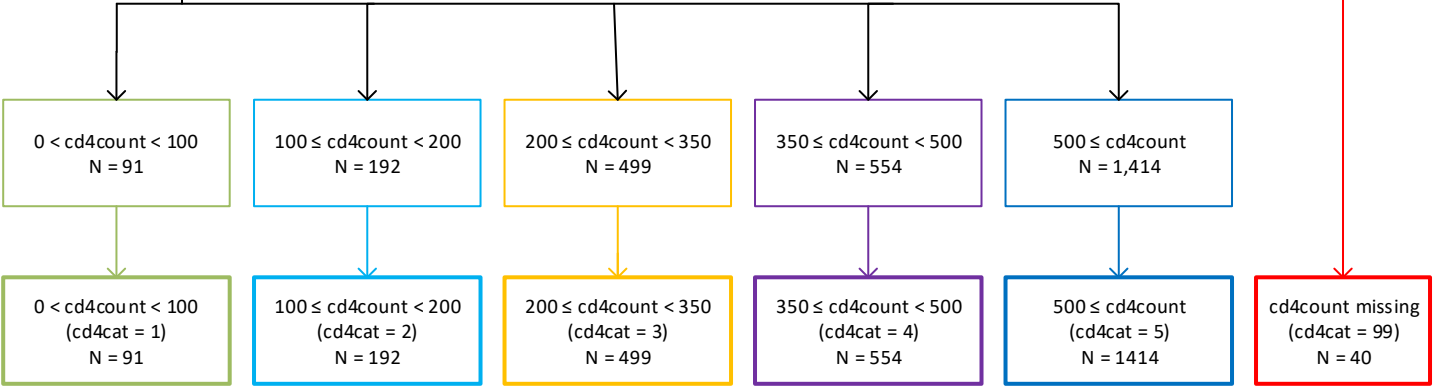


Variable: cd4cat
 Found in NAIS 2018 datasets:
 Adult Biomarker
 Child Biomarker

De facto eligible, Age 0-64, HIV+
 (0 <= age <= 64 and bt_status* = 1 and
 hivstatusfinal* = 1)
 N = 2,790

CD4 Count available
 (cd4count ≠ .)
 N = 2,750

No CD4 Count
 available
 (cd4count = .)
 N = 40

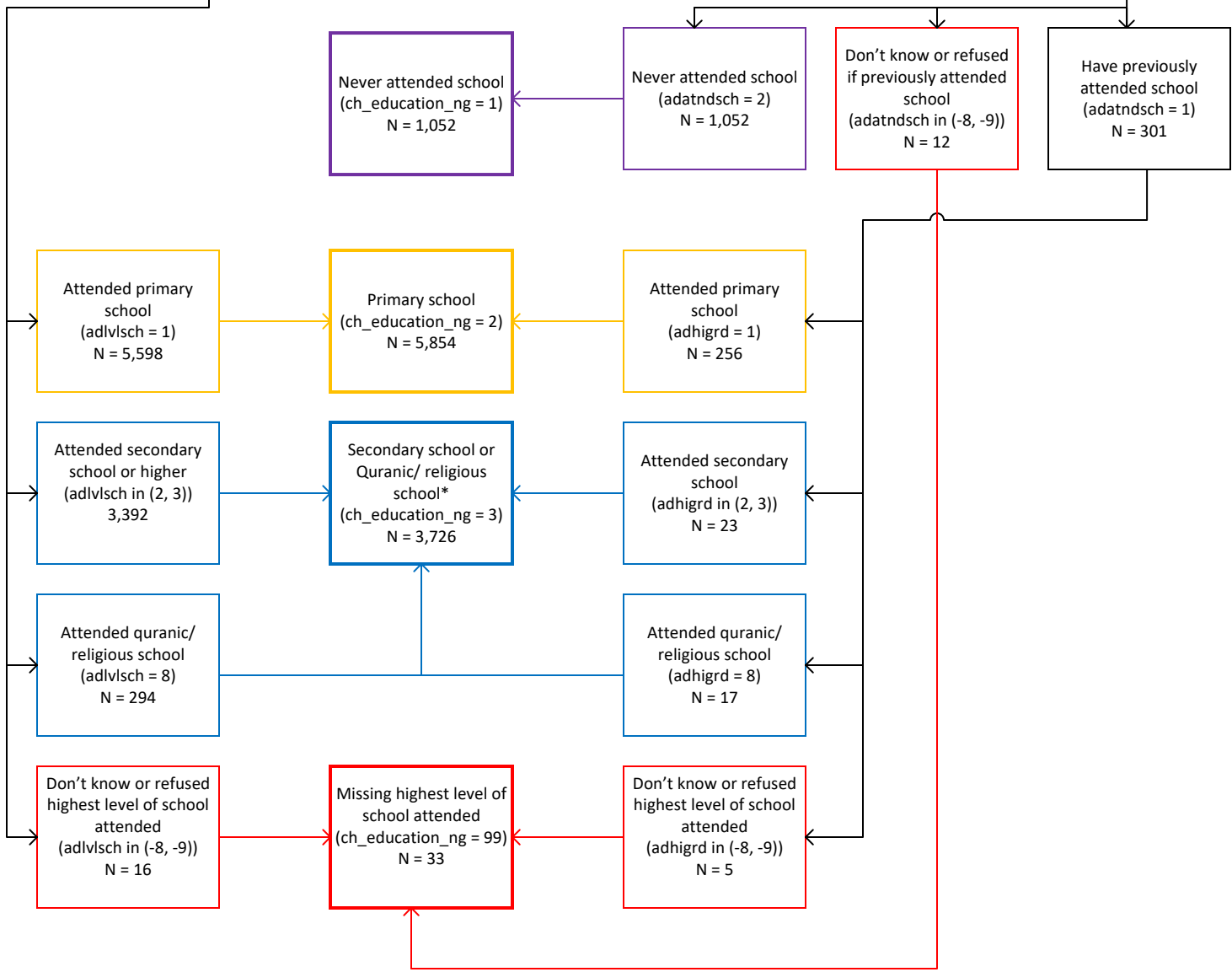


Variable: ch_education_ng
 Found in NAIS 2018 dataset:
 Child Interview

Age 10-14, de facto eligible
 (10 ≤ age ≤ 14, indstatus = 1)
 N = 10,665

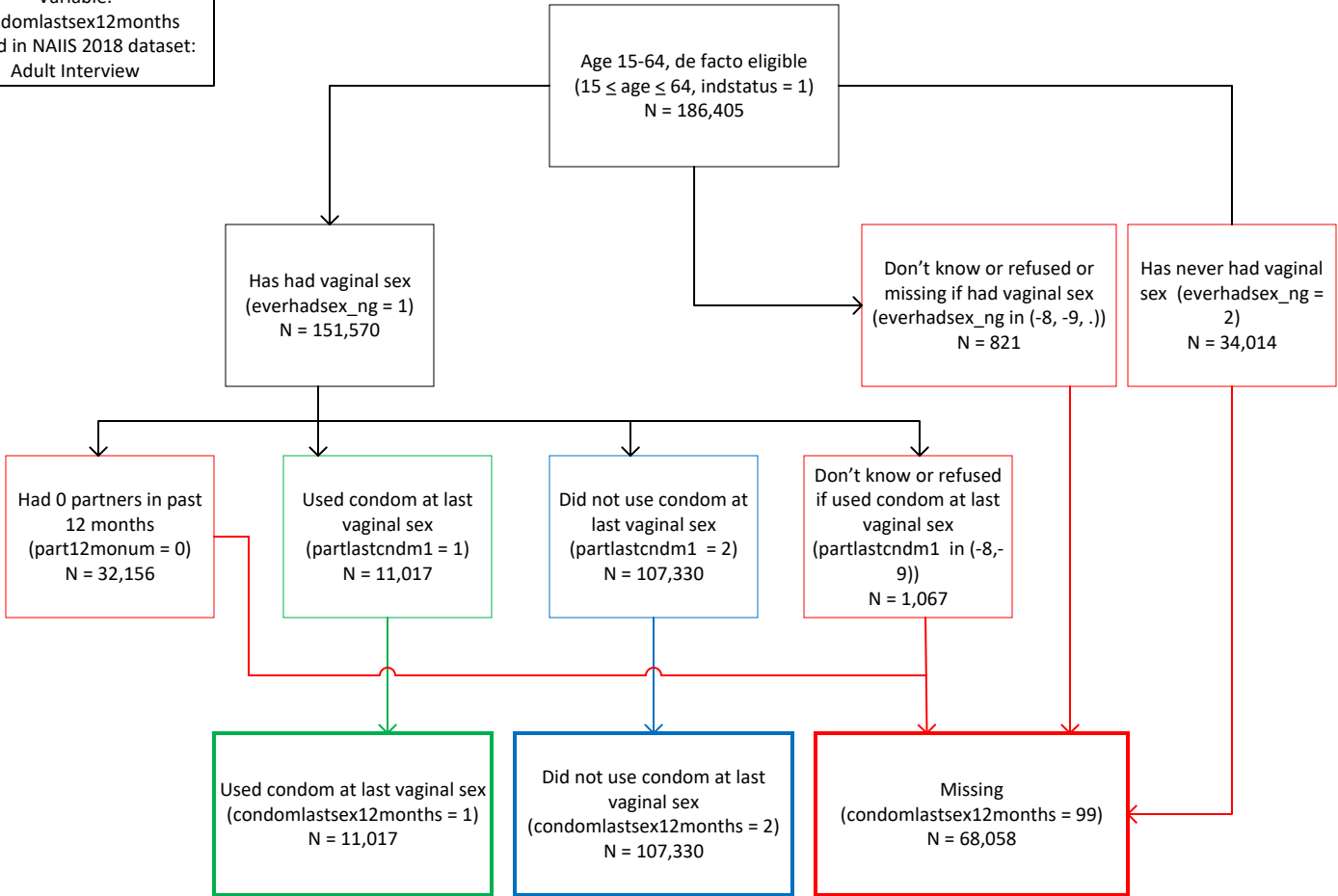
Currently enrolled in school
 (adensch=1)
 N = 9,300

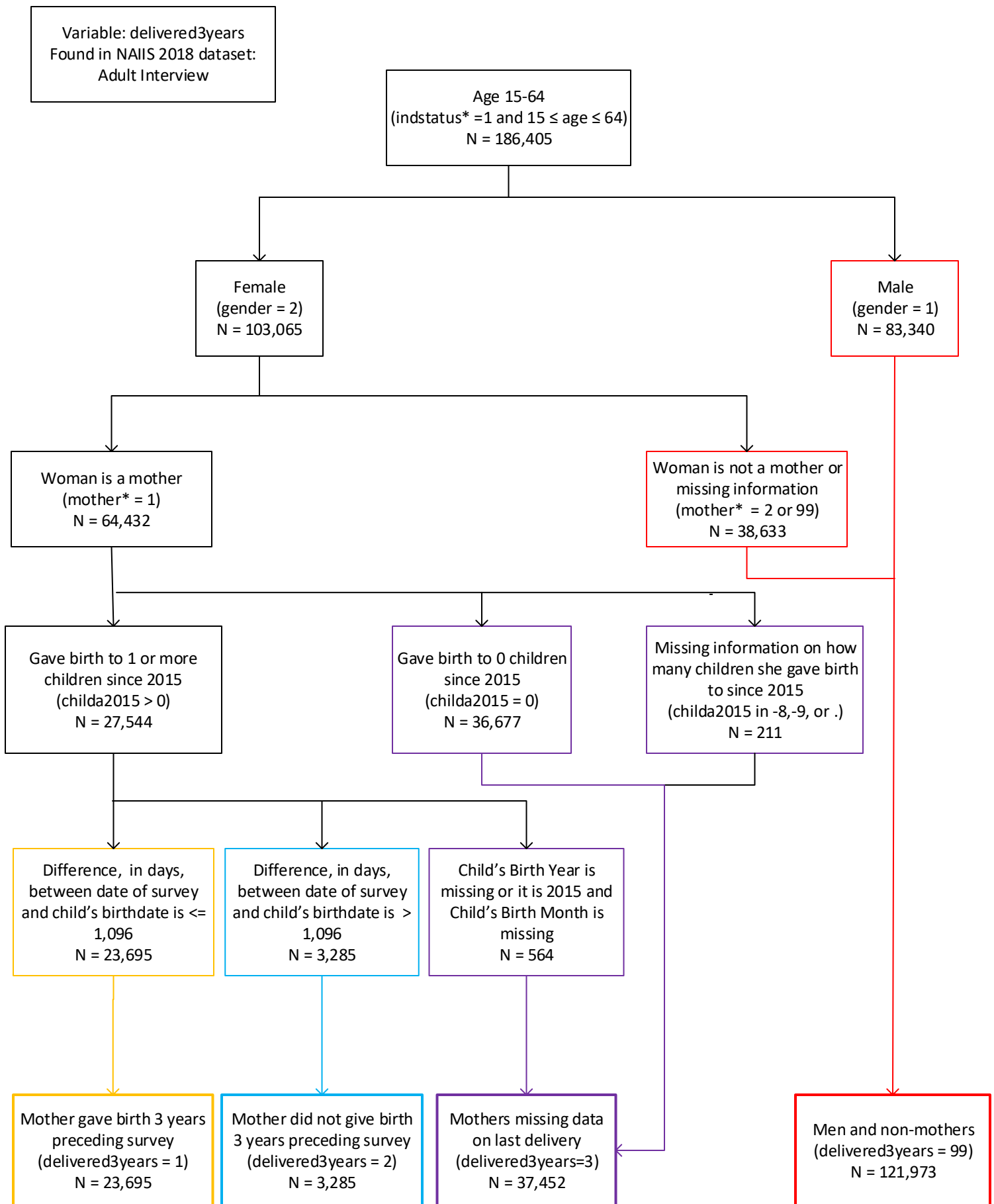
Not currently enrolled in school, don't know, or refused
 (adensch in (2, -8, -9))
 N = 1,365

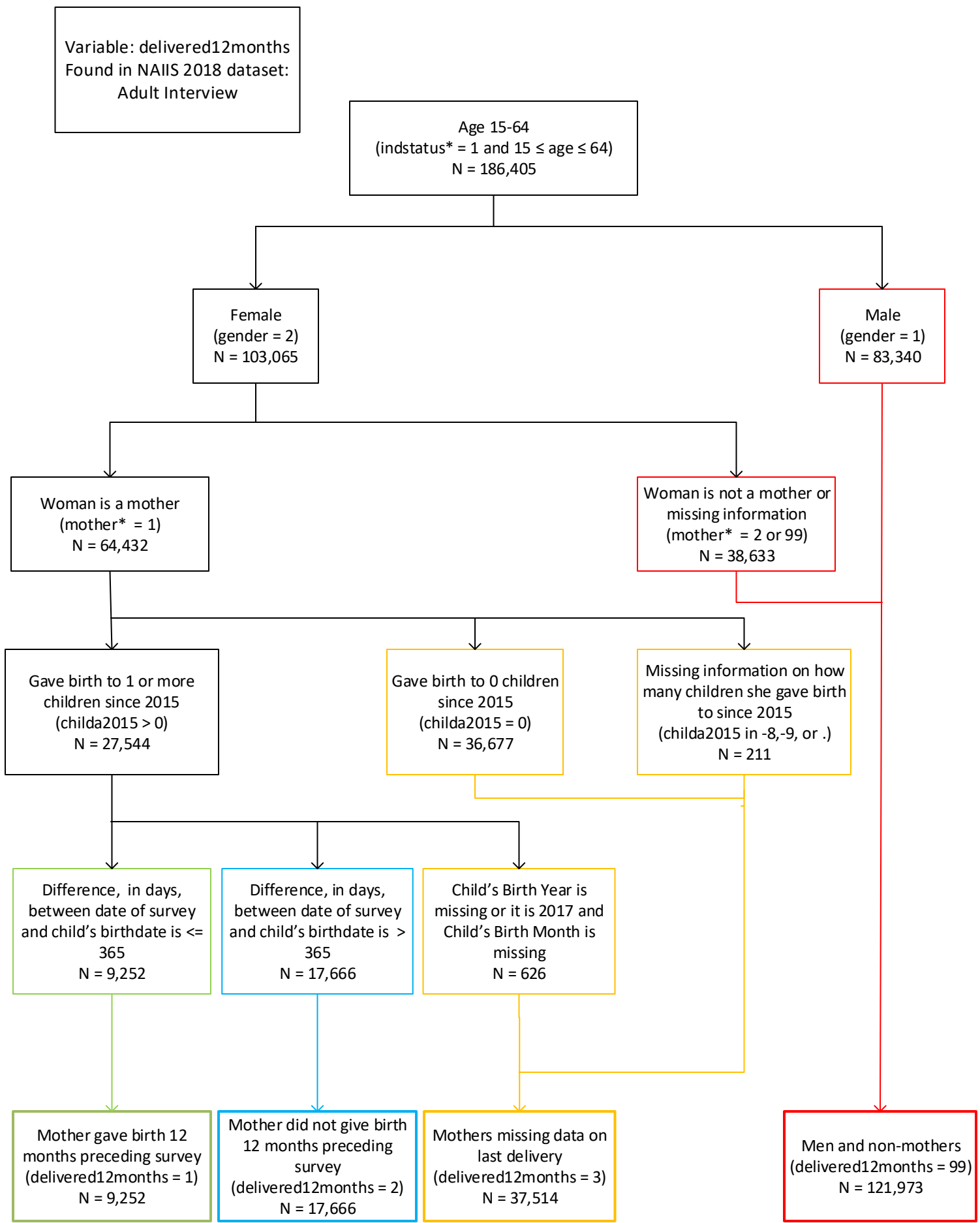


*Quranic/religious school and secondary school categories were combined to protect participant confidentiality

Variable:
condomlastsex12months
Found in NAHS 2018 dataset:
Adult Interview







Variable: diagnosedtb
Found in NAHS 2018 dataset:
Adult Interview

Age 15-64
(indstatus = 1 and
15 <= age <= 64 and visitedtbclinic* = 1)
N = 3,407

Has been diagnosed with tuberculosis
(tbdiagn = 1)
N = 918

Has not been diagnosed with
tuberculosis
(tbdiagn = 2)
N = 2,435

Missing information about having been
diagnosed with tuberculosis
(tbdiagn = -8 or -9 or .)
N = 54

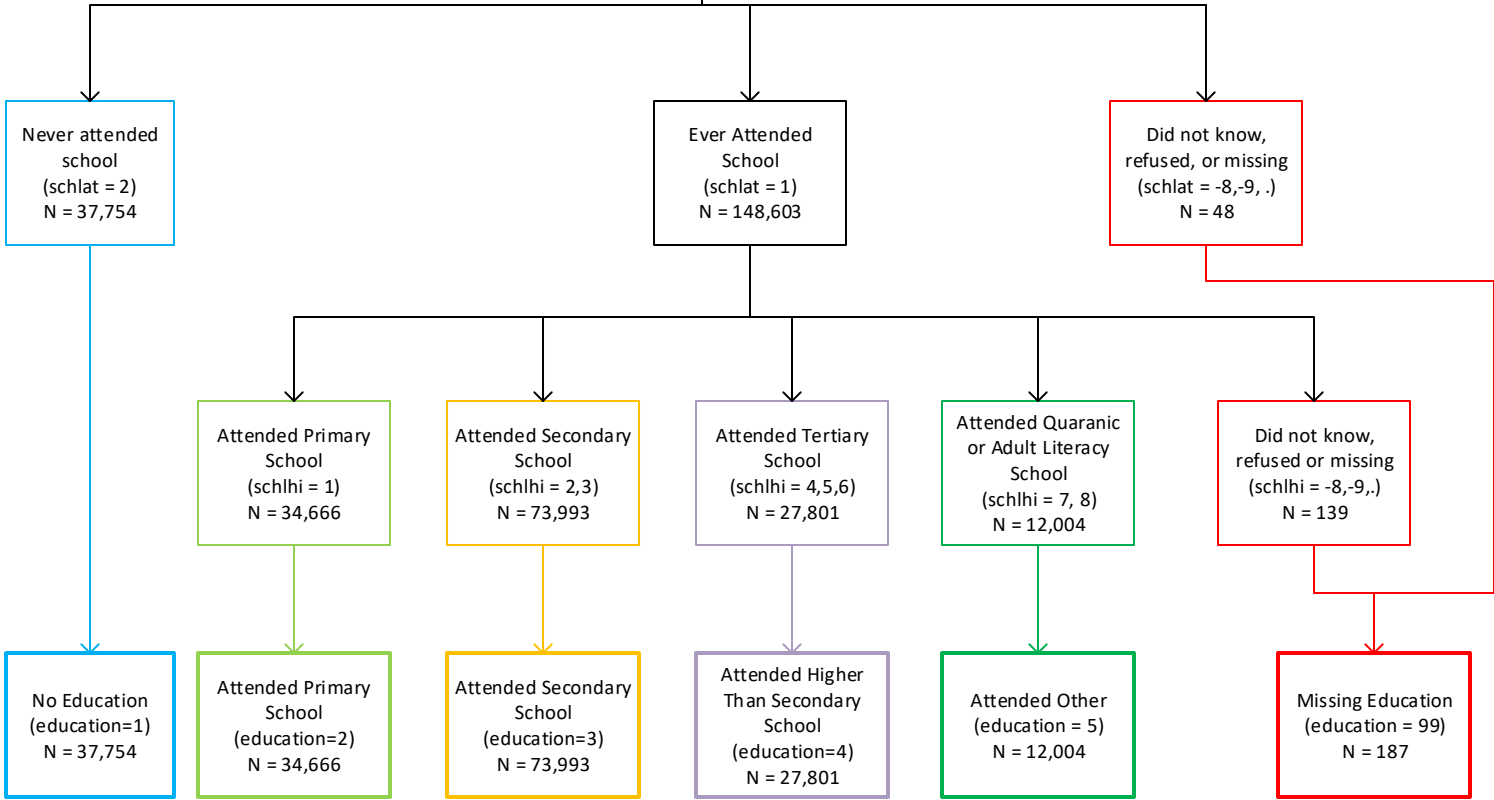
Has been diagnosed with tuberculosis
(diagnosedtb = 1)
N = 918

Has not been diagnosed with
tuberculosis
(diagnosedtb = 2)
N = 2,435

Missing information about having been
diagnosed with tuberculosis
(diagnosedtb = 99)
N = 54

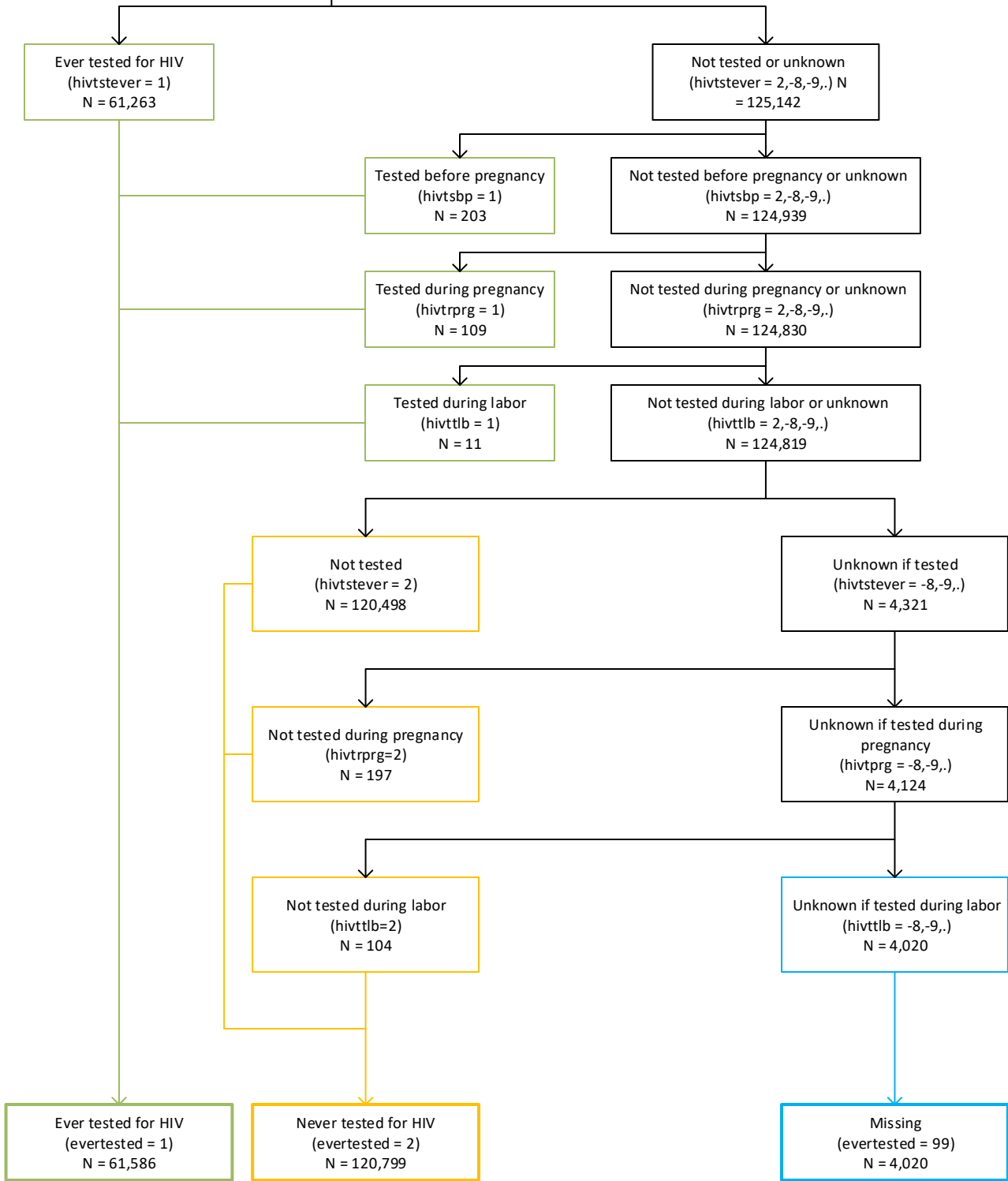
Variable: education
 Found in NAHS 2018 dataset:
 Adult Interview

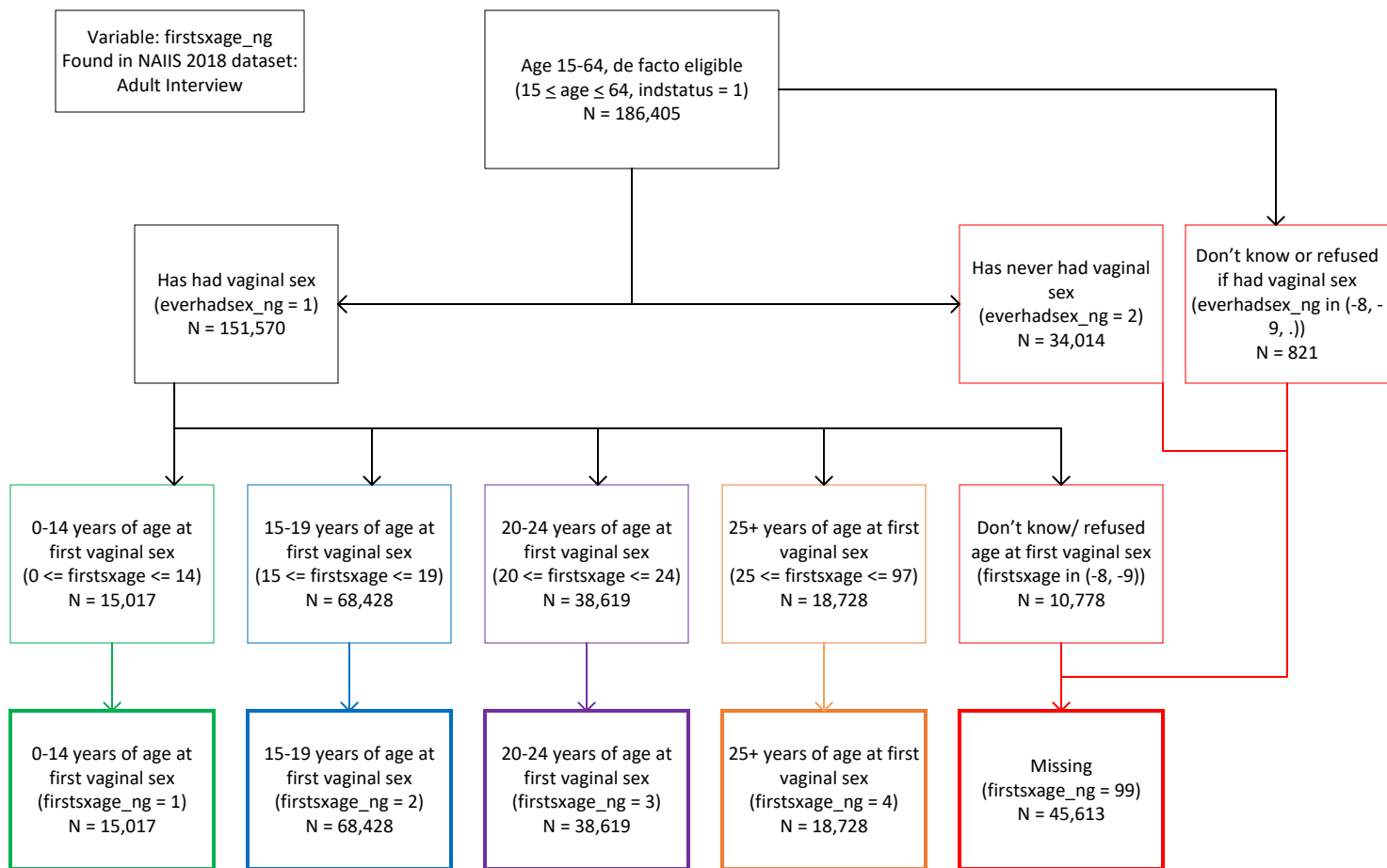
Age 15-64
 (indstatus* = 1 and 15 <= age <= 64)
 N = 186,405



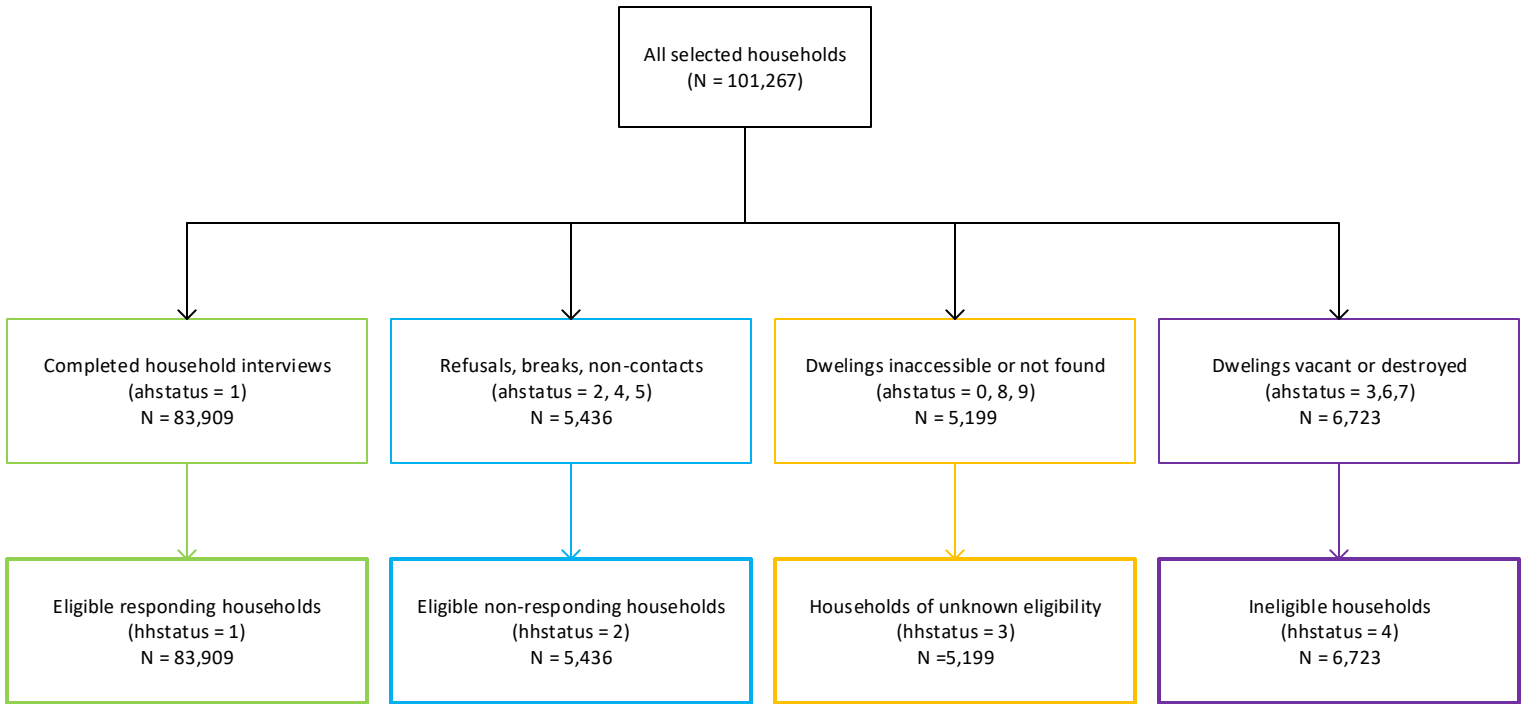
Variable: evertested
 Found in NAHS 2018 dataset:
 Adult Interview

Age 15-64
 (indstatus* = 1 and 15 <= age <= 64)
 N = 186,405



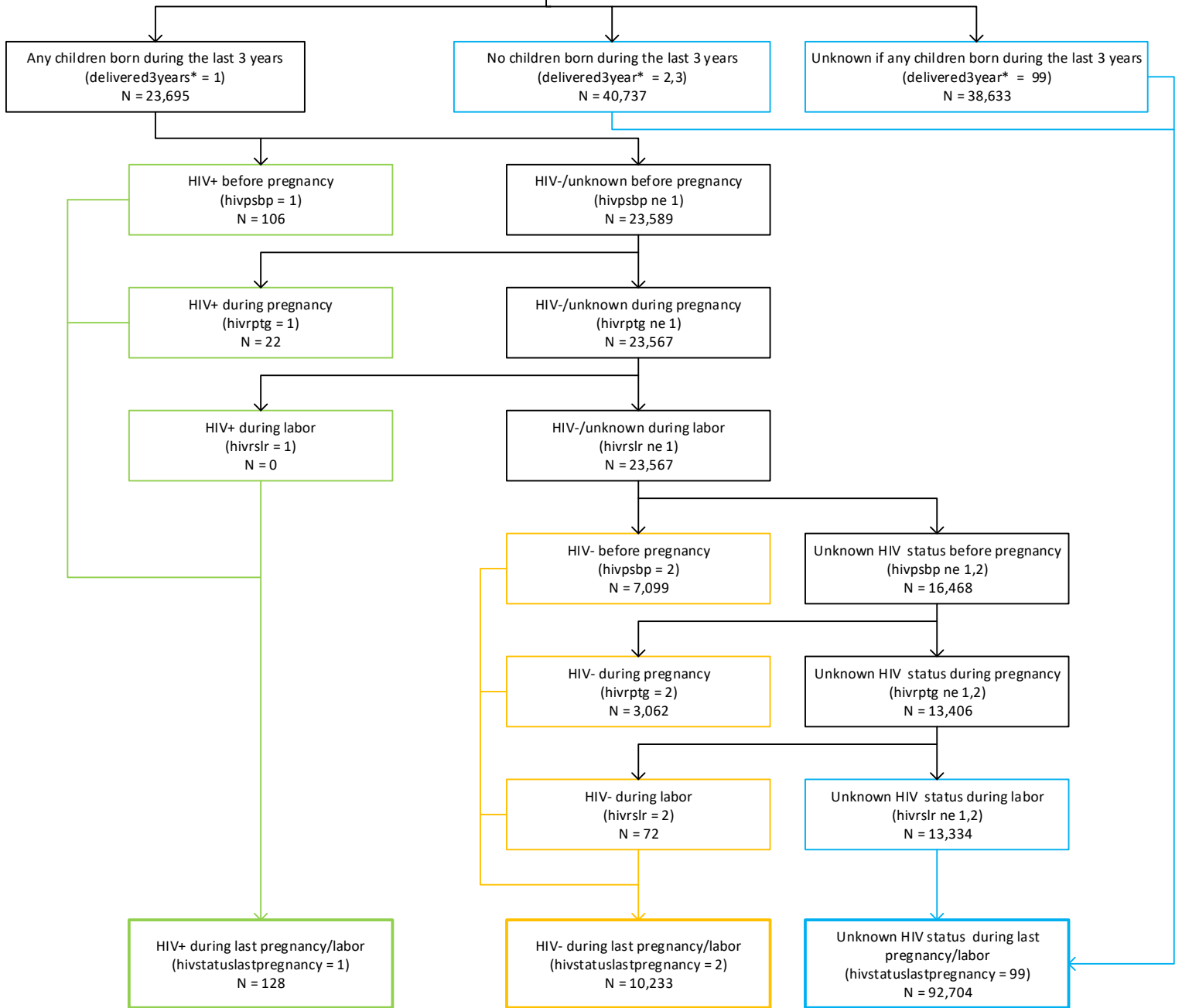


Variable: hhstatus
Found in NAIS 2018 dataset:
NAIS Households

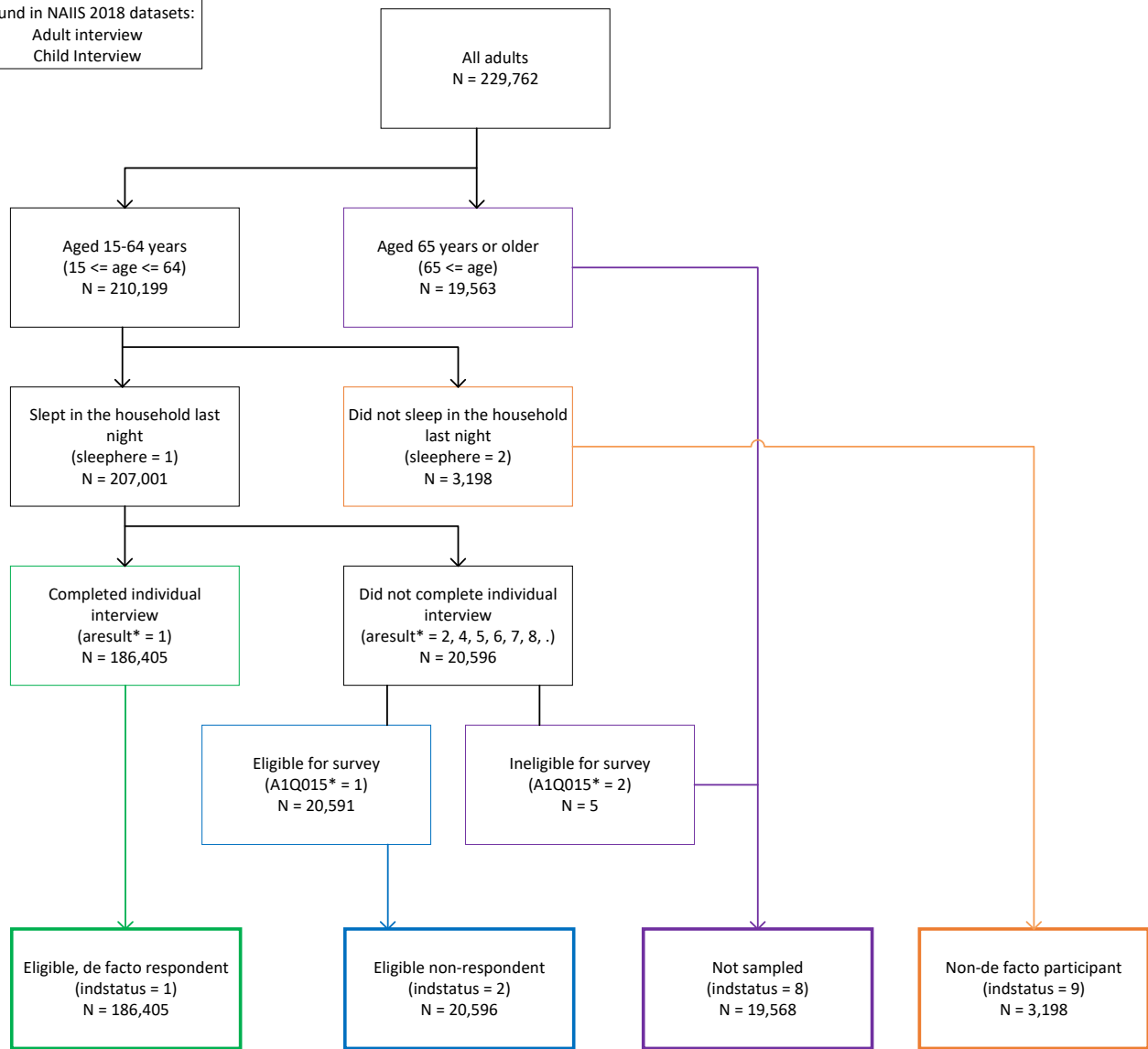


Variable: hivstatuslastpregnancy
 Found in NAHS 2018 dataset:
 Adult Interview

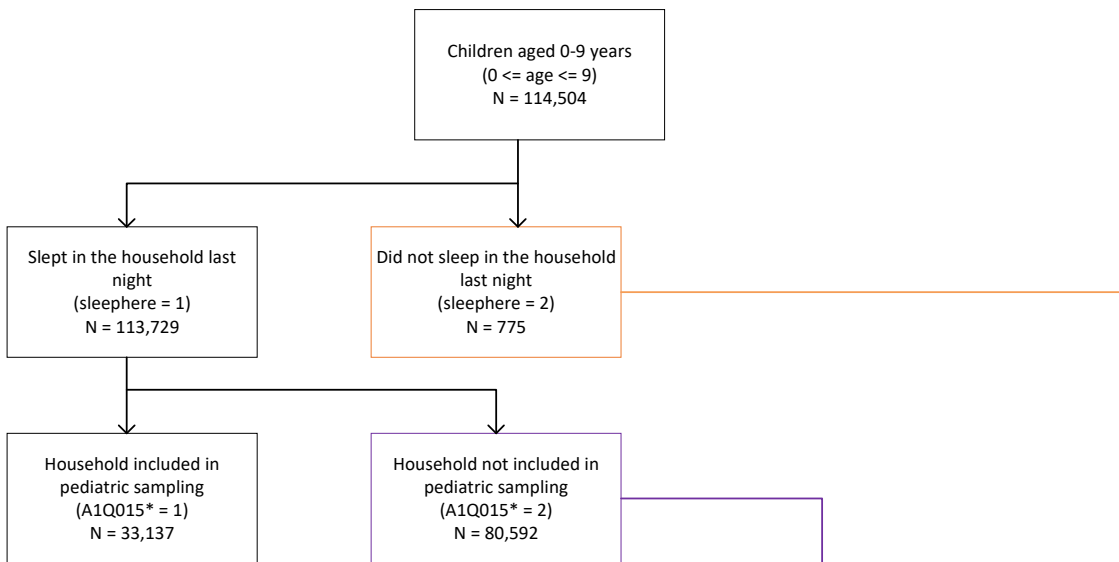
Female respondents age 15-64
 (indstatus* = 1 and gender = 2 and 15 <= age <= 64)
 N = 103,065

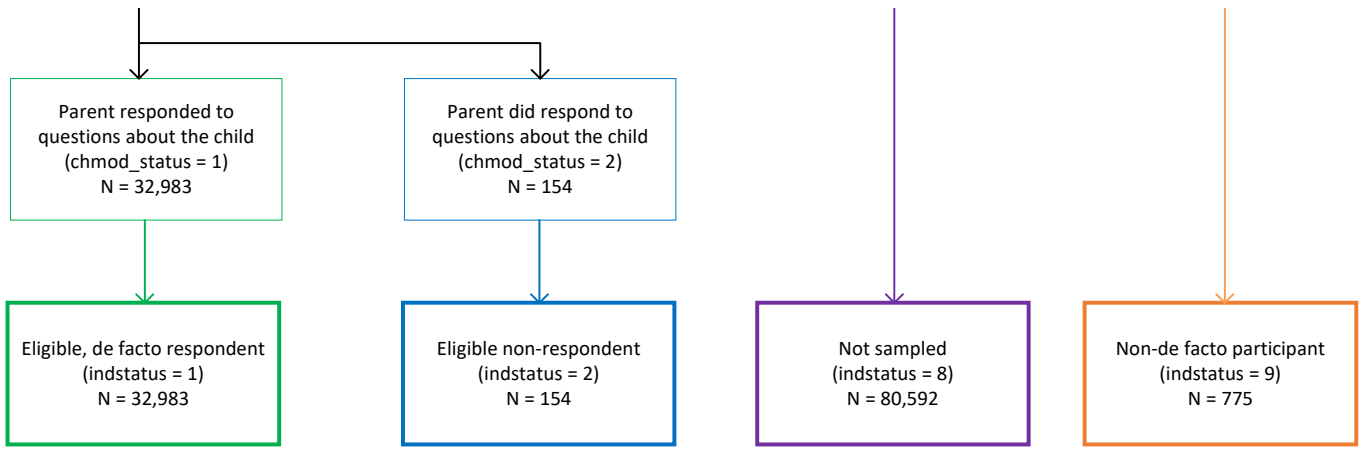


Variable: indstatus
 Found in NAHS 2018 datasets:
 Adult interview
 Child Interview

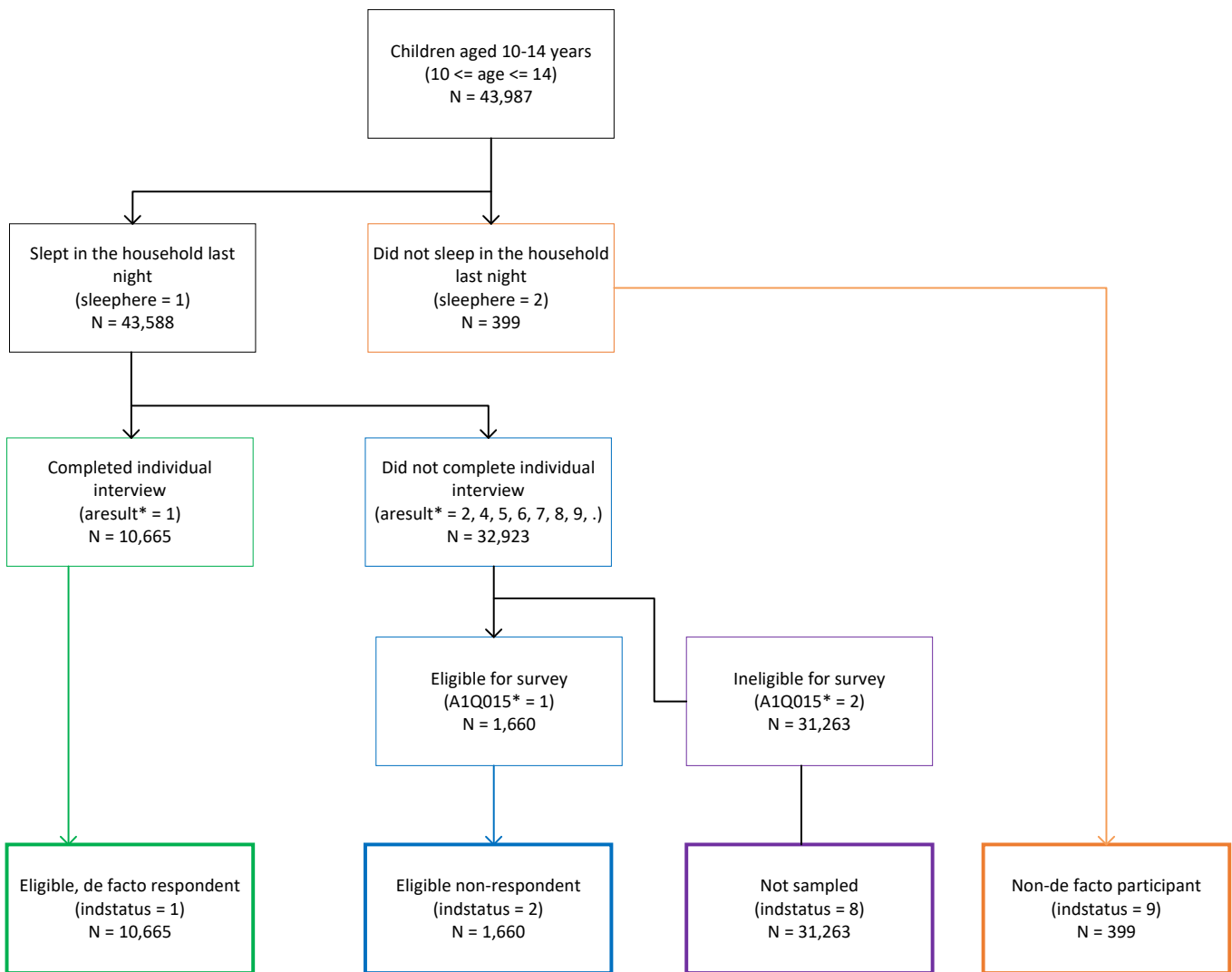


*areult, A1Q015 variables not included in public use datasets





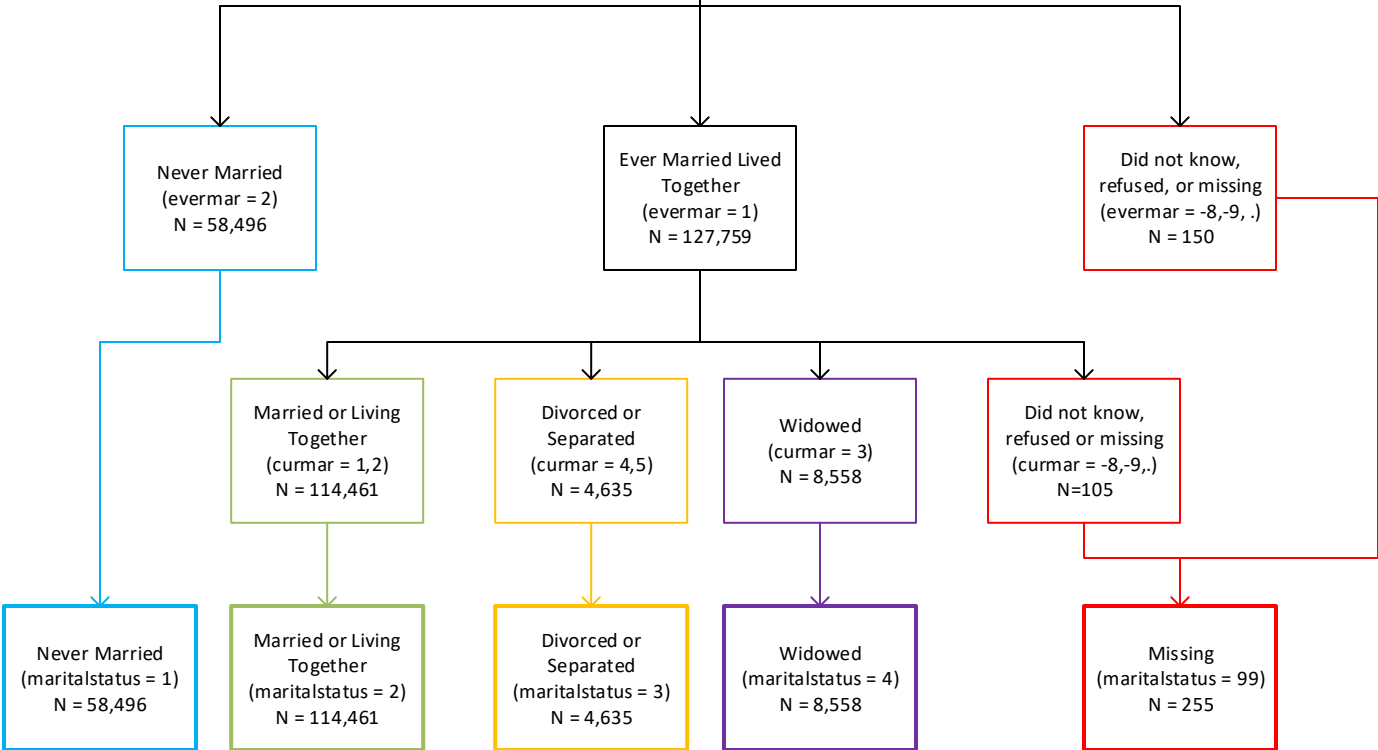
*A1Q015 variable not included in public use datasets



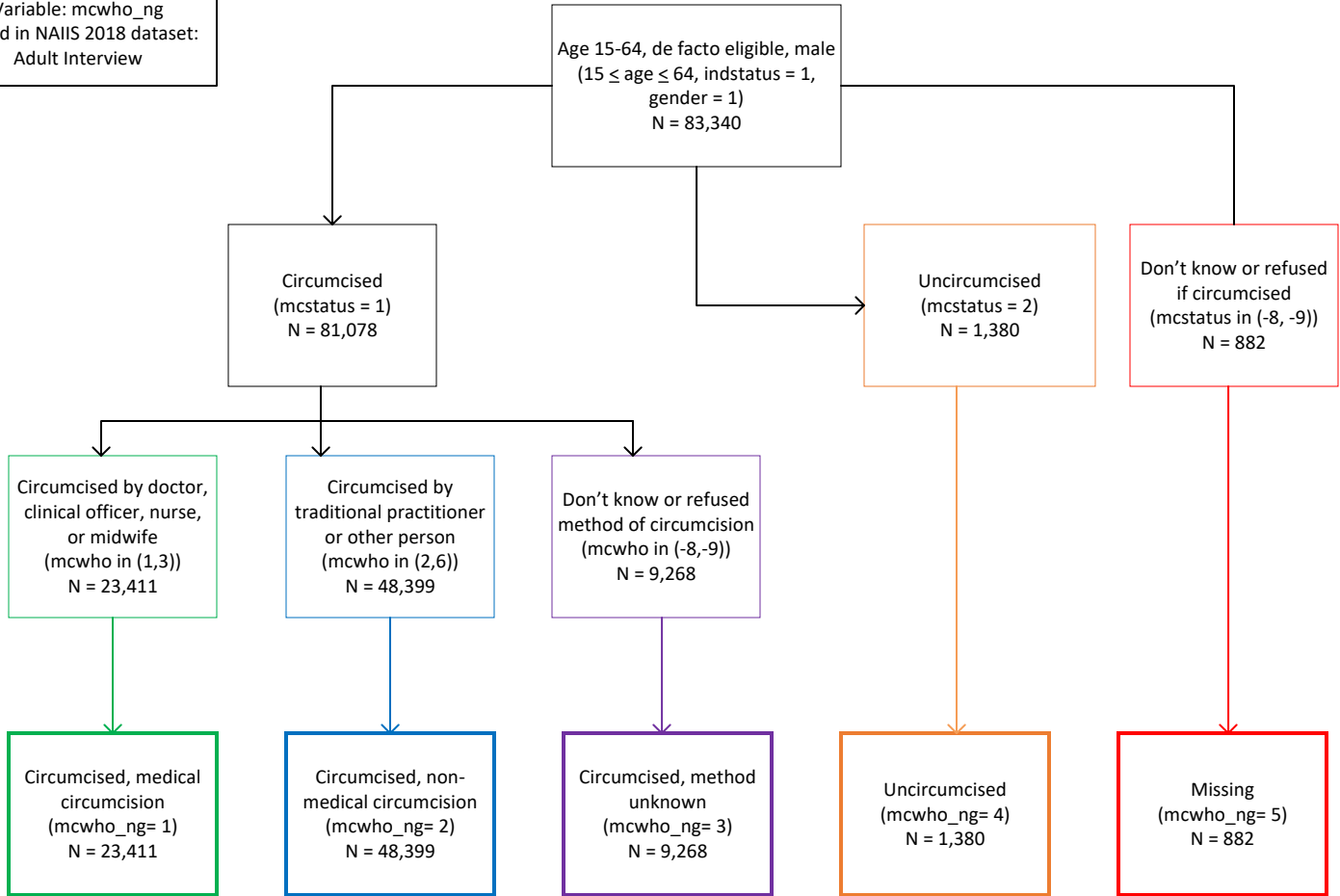
*aresult, A1Q015 variables not included in public use datasets

Variable: maritalstatus
 Found in NAHS 2018 dataset:
 Adult Interview

Age 15-64
 (indstatus* = 1 and 15 <= age <= 64)
 N = 186,405



Variable: mcwho_ng
Found in NAIS 2018 dataset:
Adult Interview



Variable: mother
Found in NAHS 2018 dataset:
Adult Interview

Age 15-64
(indstatus* = 1 and 15 <= age <= 64)
N = 186,405

Female
(gender = 2)
N = 103,065

Male
(gender = 1)
N = 83,340

Woman has been pregnant
more than 0 times
(pregnum = 1-97)
N = 80,157

Woman has never been
pregnant
(pregnum = 0)
N = 22,532

Does not know, refused
to respond, or response
missing
(pregnum = -8, -9, or .)
N = 376

Pregnancy resulted in
a livebirth
(liveb = 1)
N = 64,316

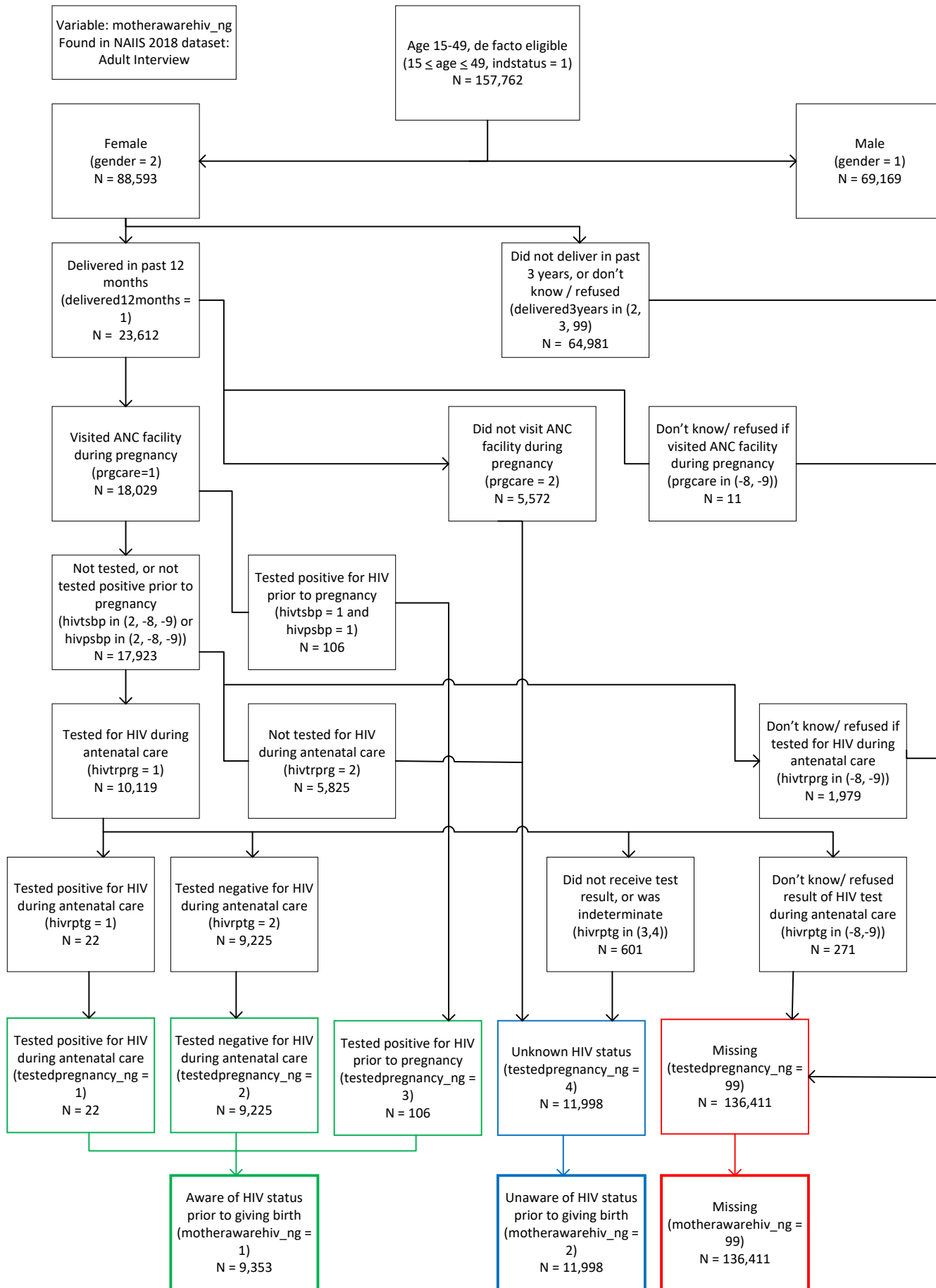
Does not know,
refused to respond,
Or response missing
(liveb = -8, -9, or .)
N = 116

Pregnancy did not
result in a livebirth
(liveb = 2)
N = 15,725

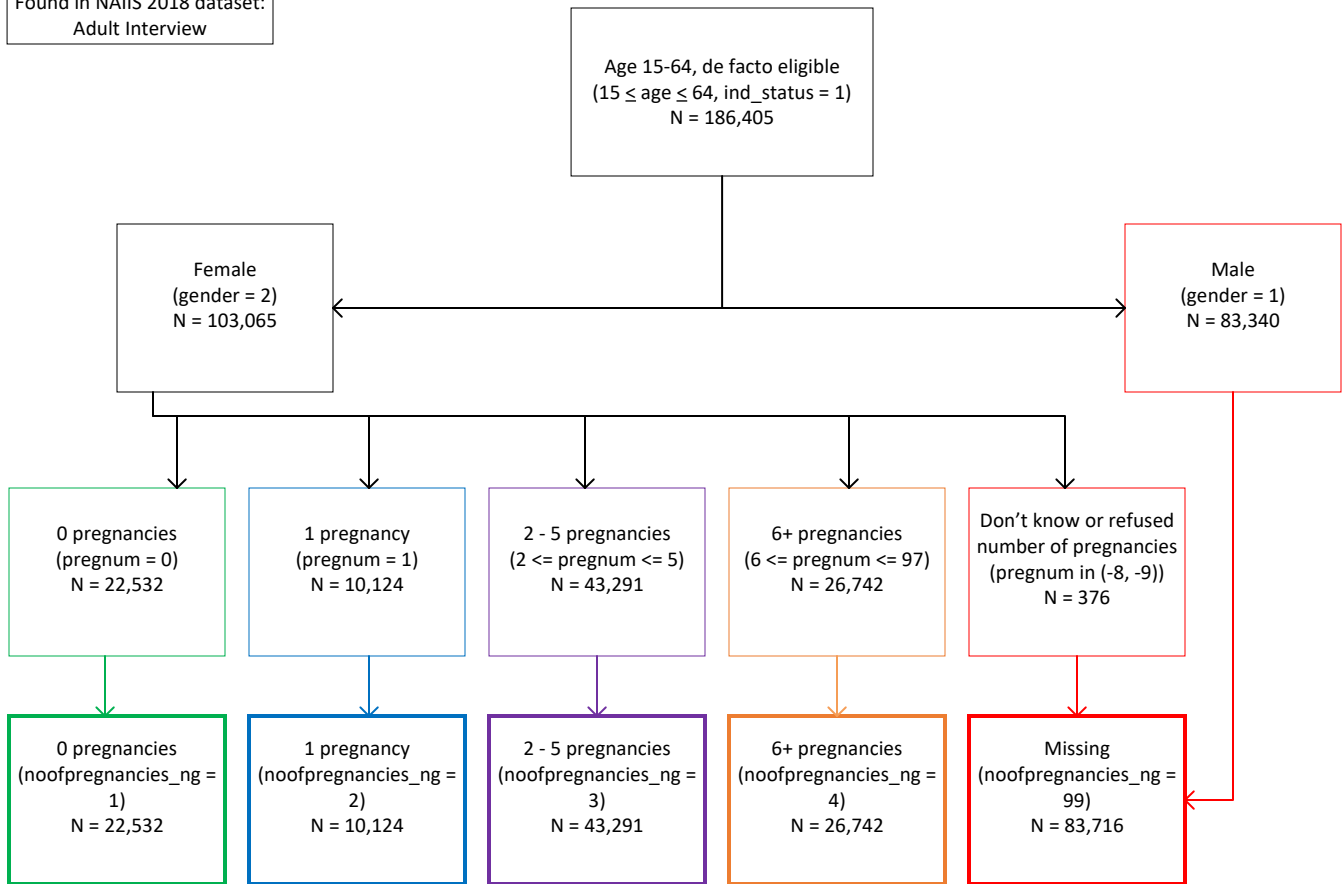
Mother
(mother = 1)
N=64,432

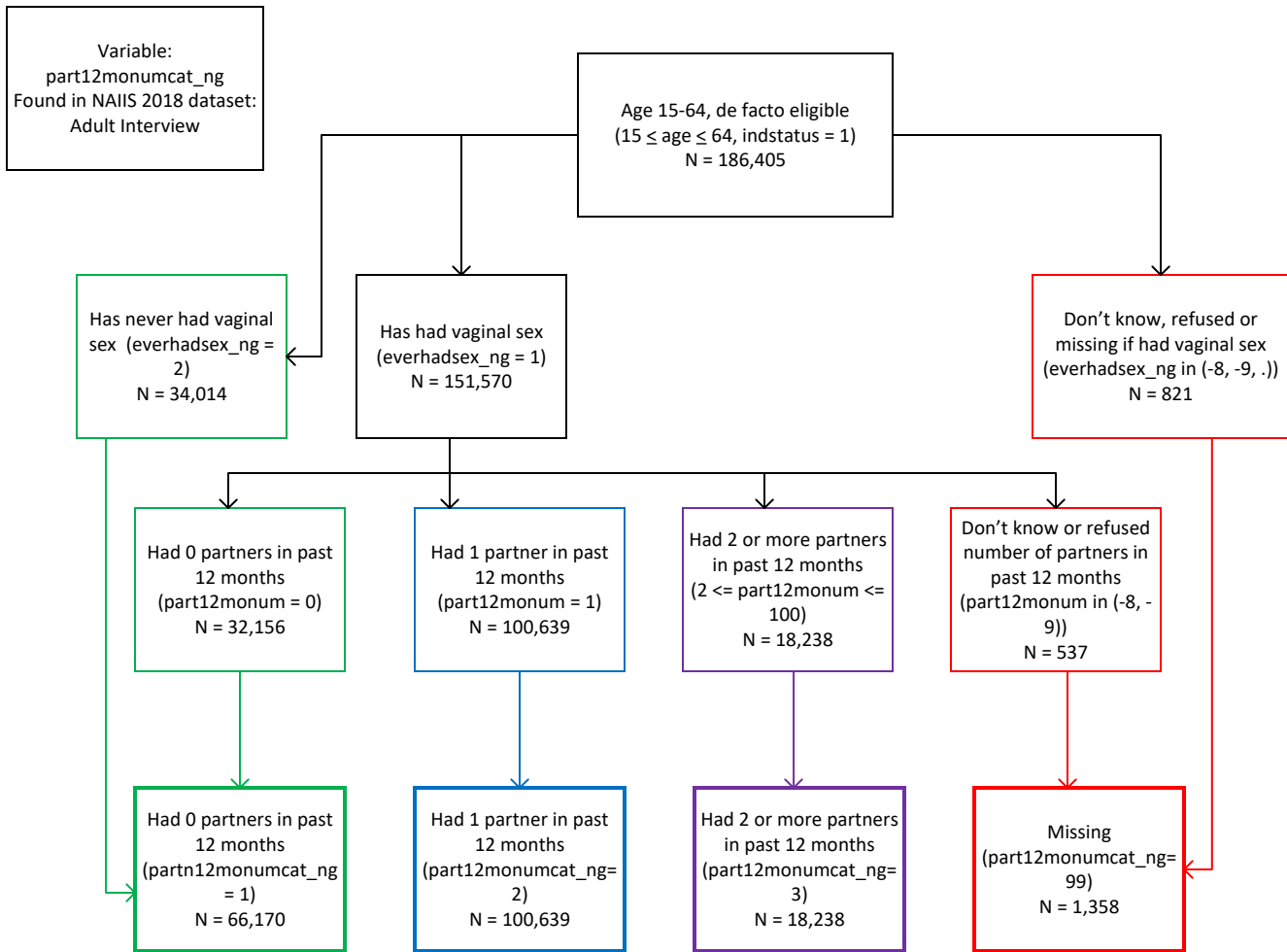
Not a mother
(mother = 2)
N = 38,257

Missing
(mother = 99)
N = 83,716



Variable:
noofpregnancies_ng
Found in NAHS 2018 dataset:
Adult Interview





Variable: pedart
Found in NAIS 2018 dataset:
Child Biomarker

Age 0-14, de facto eligible and HIV+
(0 <= age <= 14 and hivstatusfinal* = 1 and
bt_status* = 1)
N = 51

ARVs detected in blood
(arvstatus* = 1)
N = 17

Negative blood test for
ARVs or missing result
(arvstatus* = 2 or 99)
N = 34

Parent reported unaware of
child's seropositive status
(pedawareparentreported* = 2)
N = 33

Parent reported aware of
child's seropositive status
(pedawareparentreported* = 1)
N = 1

Parent reported child on
ART
(pedartparentreported* = 1)
N = 0

Parent reported child not
on art
(pedartparentreported* = 2)
N = 1

Missing parent ART
information
(pedartparentreported* = 99)
N = 0

On ART
(pedart = 1)
N=17

Not on ART
(pedart = 2)
N = 34

Missing ART status
(pedart = 99)
N = 0

Variable:
pedartparentreported
Found in NAHS 2018 dataset:
Child Biomarker

Age 0-14, de facto eligible and HIV+
(0 <= age <= 14 and hivstatusfinal* = 1 and
indstatus* = 1)
N = 51

Parent reported aware of child's
seropositive status
(pedawareparentreported* = 1)
N = 6

Parent reported unaware of
child's seropositive status
(pedawareparentreported* = 2)
N = 45

Missing data on parent's
awareness
(pedawareparentreported* = 99)
N = 0

Parent reported child
ever taken ARVs
(ch_kidarvs = 1)
N = 6

Parent reported child
has never taken ARVs
(ch_kidarvs = 2)
N = 0

Missing information on
ARVs
(ch_kidarvs = .)
N = 0

Parent reported child
currently taking ARVs
(ch_kidarvsnow = 1)
N = 5

Parent reported child
not currently taking
ARVs
(ch_kidarvsnow = 2)
N = 1

Parent reports child on ARVs
(pedartparentreported = 1)
N = 5

Parent reported child is not
on ARVs
(pedartparentreported = 2)
N = 1

Missing information
(pedartparentreported = 99)
N = 45

Variable: pedaware
Found in NAHS 2018 dataset:
Child Biomarker

Age 0-14, de facto eligible and HIV+
(0 <= age <= 14 and hivstatusfinal * = 1 and
bt_status* = 1)
N = 51

ARVs detected in blood
(arvstatus* = 1)
N = 17

Negative blood test for
ARVs or missing result
(arvstatus* = 2 or 99)
N = 34

Parent reported aware of child's
seropositive status
(pedawareparentreported * = 1)
N = 1

Parent reported unaware of
child's seropositive status
(pedawareparentreported* = 2)
N = 33

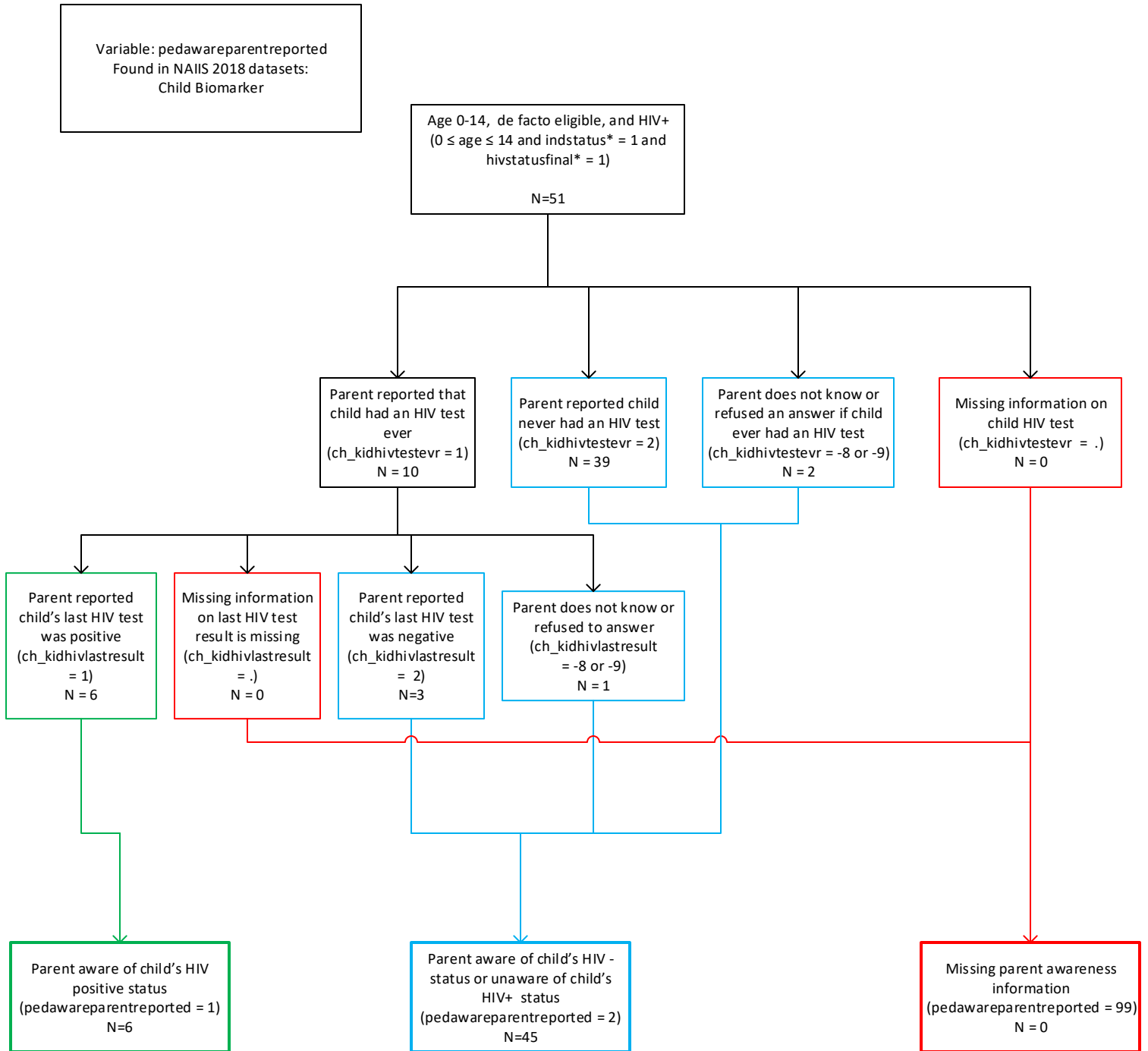
Missing data on parent's
awareness
(pedawareparentreported* =99)
N = 0

Parent aware of child's HIV
seropositive status
(pedaware = 1)
N=18

Parent unaware of child's HIV
seropositive status
(pedaware = 2)
N = 33

Missing information on
parent's awareness
(pedaware = 99)
N = 0

Variable: pedawareparentreported
 Found in NAIS 2018 datasets:
 Child Biomarker



Variable: pedtri90
 Found in NAIS 2018 dataset:
 Child Biomarker

Age 0-14, de facto eligible and HIV+
 (0 <= age <= 14 and hivstatusfinal* = 1 and
 bt_status* = 1)
 N = 51

ARVs detected in blood
 (arvstatus* = 1)
 N = 17

Negative blood test for
 ARVs or missing result
 (arvstatus* = 2 or 99)
 N = 34

Parent reported unaware of
 child's seropositive status
 (pedawareparentreported* = 2)
 N = 33

Parent reported aware of
 child's seropositive status
 (pedawareparentreported* = 1)
 N = 1

Parent awareness of child's HIV+
 status is missing
 (pedawareparentreported* = 99)
 N = 0

Parent reported child not on
 ART
 (pedartparentreported* = 2)
 N = 1

Parent reported child on
 ART
 (pedartparentreported* = 1)
 N = 0

Missing parent ART
 information
 (pedartparentreported* = 99)
 N = 0

Viral Load
 Suppressed
 (vls* = 1)
 N = 6

Viral Load not
 suppressed
 (vls* = 2)
 N = 11

Missing Viral
 Load
 (vls* = 99)
 N = 0

Viral Load
 Suppressed
 (vls* = 1)
 N = 0

Viral Load not
 Suppressed
 (vls* = 2)
 N = 0

Missing Viral
 Load
 (vls* = 99)
 N = 0

Included in 90-90-90
 (pedtri90 = 1)
 N = 51

Excluded from 90-90-90
 (pedtri90 = 2)
 N = 0

Variable: pedtri90art
 Found in NAIS 2018 dataset:
 Child Biomarker

Age 0-14, de facto eligible and HIV+
 (0 <= age <= 14 and hivstatusfinal* = 1 and
 bt_status* = 1)
 N = 51

Included in 90-90-90
 (pedtri90* = 1)
 N = 51

Excluded from 90-90-90
 (pedtri90* = 2)
 N = 0

ARVs detected in blood
 (arvstatus* = 1)
 N = 17

Negative blood test for
 ARVs or missing result
 (arvstatus* = 2 or 99)
 N = 34

Parent reported aware of child's
 seropositive status
 (pedawareparentreported* = 1)
 N = 1

Parent reported unaware of child's
 seropositive status
 (pedawareparentreported* = 2)
 N = 33

Parent self-reported child on
 ART
 (pedartparentreported* = 1)
 N = 0

Parent self-reported child not
 on ART
 (pedartparentreported* = 2)
 N = 1

On ART
 (pedtrtri90art = 1)
 Included in 90-90-90
 N = 17

Not on ART
 (pedtri90art = 2)
 Included in 90-90-90
 N = 1

Implied not on ART
 (pedtri90art = 3)
 Included in 90-90-90
 N = 33

Incomplete data
 (pedtri90art = 99)
 Excluded from
 90-90-90
 N = 0

Variable: pedtri90aware
Found in NAIS 2018 dataset:
Child Biomarker

Age 0-14, de facto eligible and HIV+
(0 <= age <= 14 and hivstatusfinal* = 1 and
bt_status* = 1)
N = 51

Included in 90-90-90
(pedtri90* = 1)
N = 51

Excluded from 90-90-90
(pedtri90* = 2)
N = 0

ARVs detected in blood
(arvstatus* = 1)
N = 17

Negative blood test for
ARVs or missing result
(arvstatus* = 2 or 99)
N = 34

Parent reported aware of
child's seropositive status
(pedawareparentreported* = 1)
N = 1

Parent reported unaware of
child's seropositive status
(pedawareparentreported* = 2)
N = 33

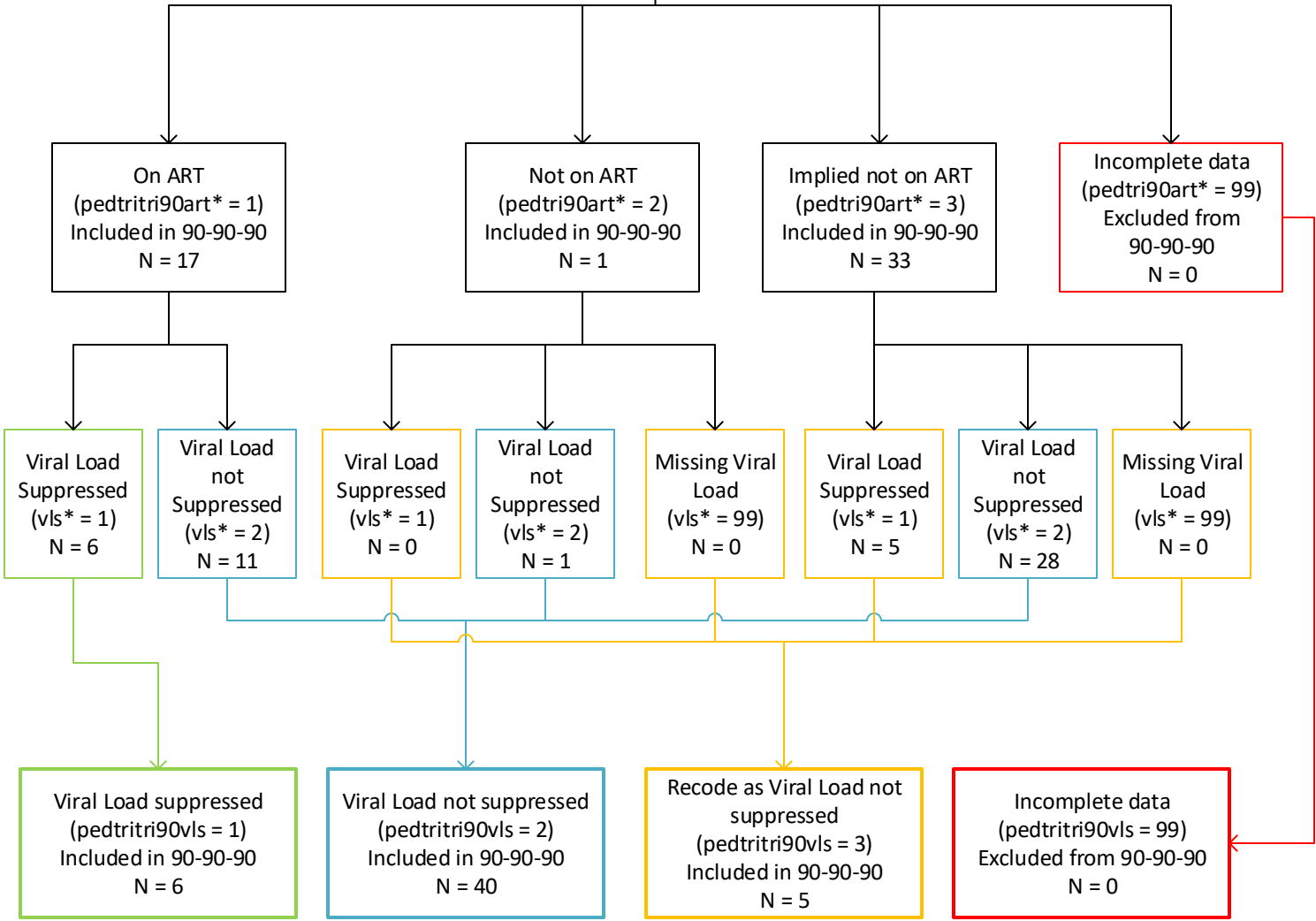
Parent aware
(pedtritri90aware = 1)
Included in 90-90-90
N = 18

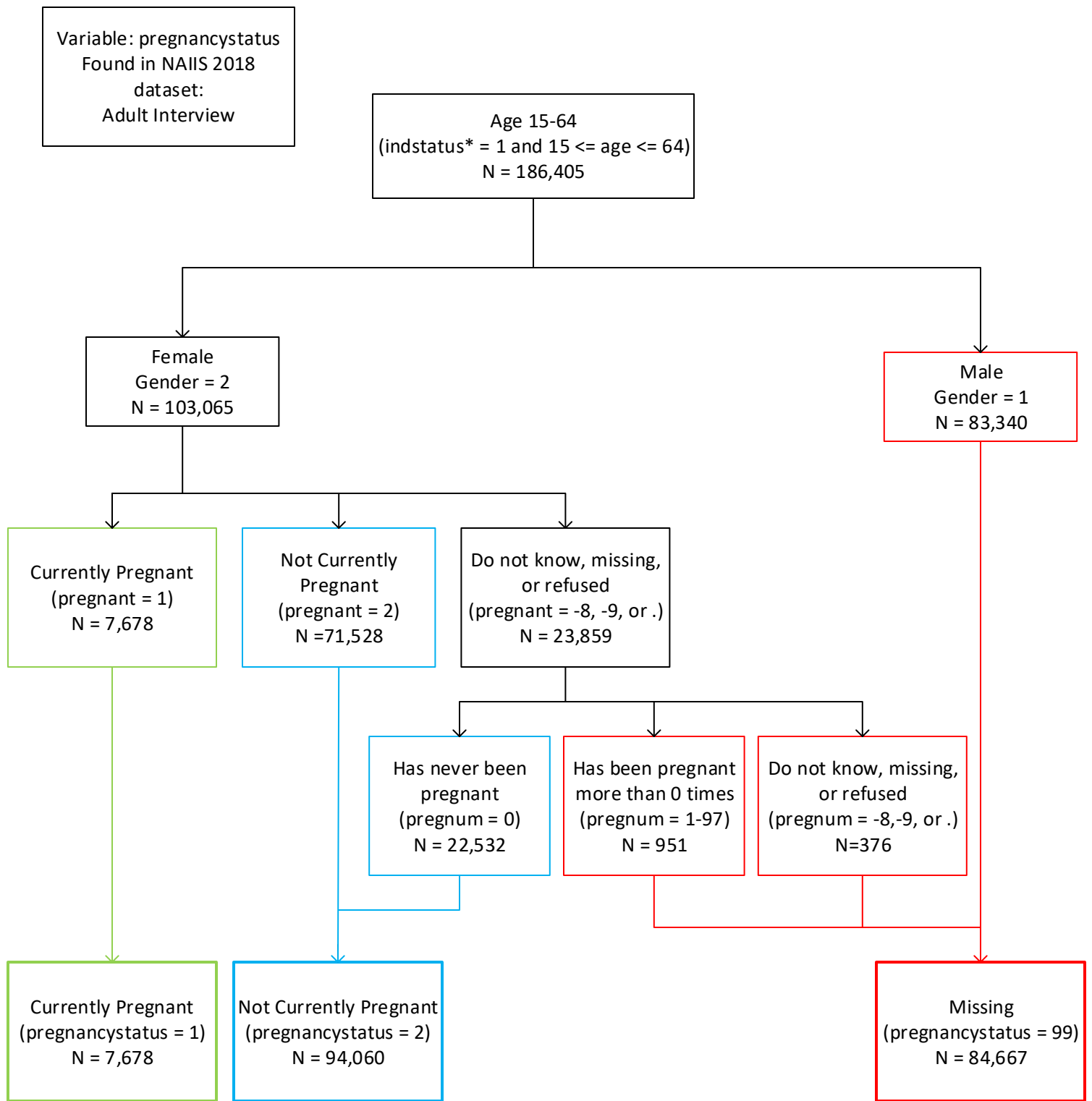
Parent unaware
(pedtri90aware = 2)
Included in 90-90-90
N = 33

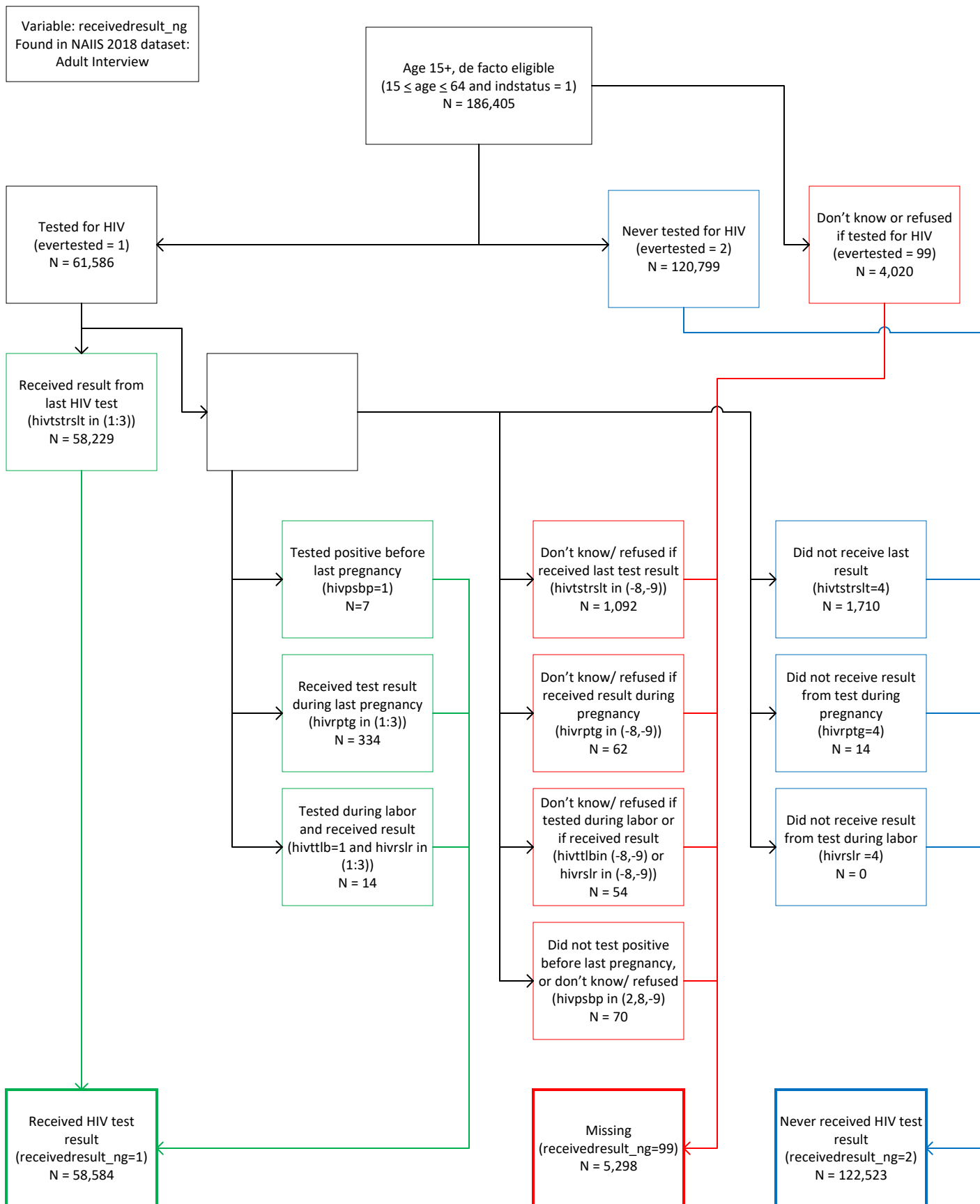
Incomplete data
(pedtri90aware = 99)
Excluded from 90-90-90
N = 0

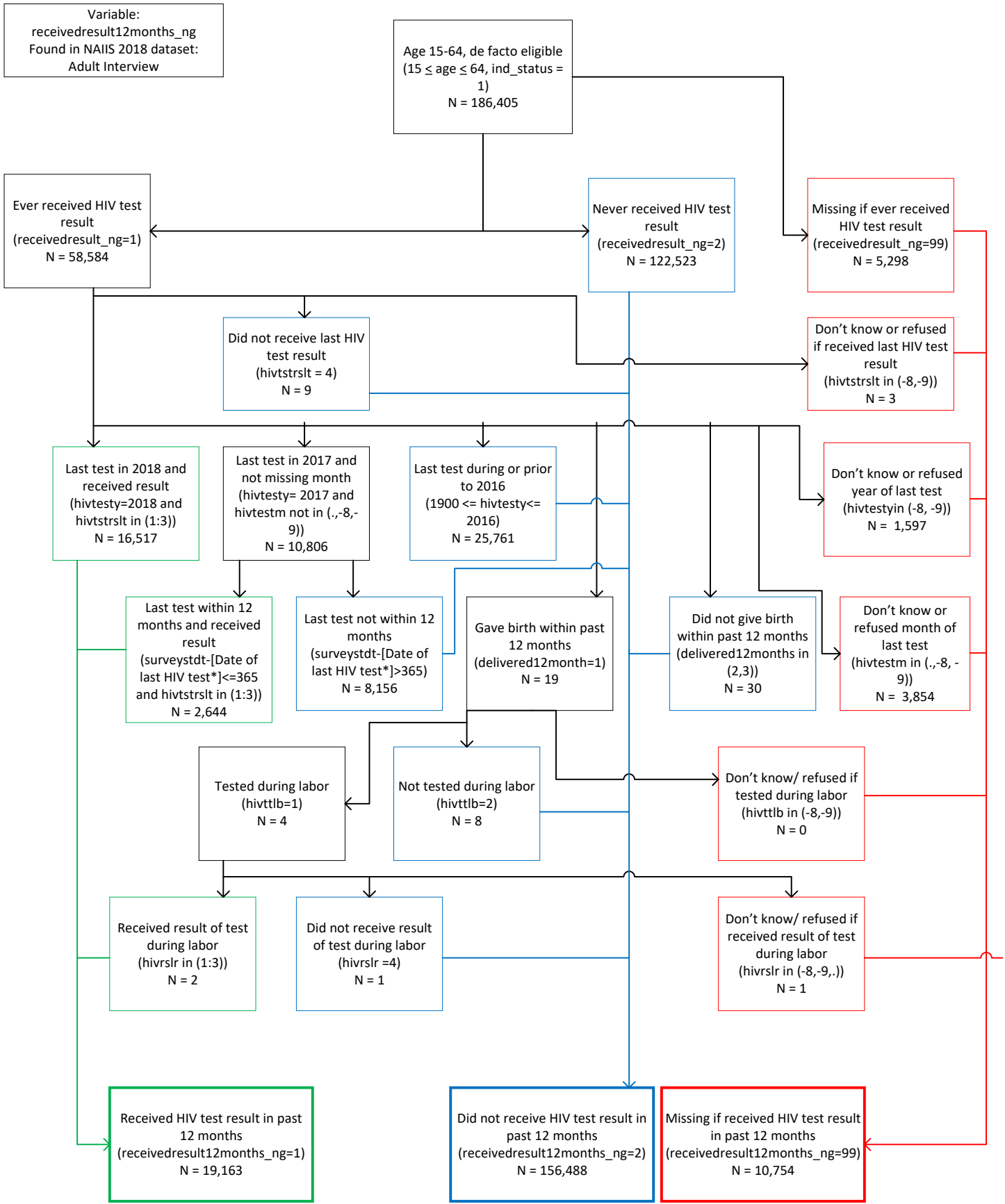
Variable: pedtri90vls
 Found in NAIS 2018 dataset:
 Child Biomarker

Age 0-14, de facto eligible and HIV+
 (0 <= age <= 14 and hivstatusfinal* = 1 and
 bt_status* = 1)
 N = 51

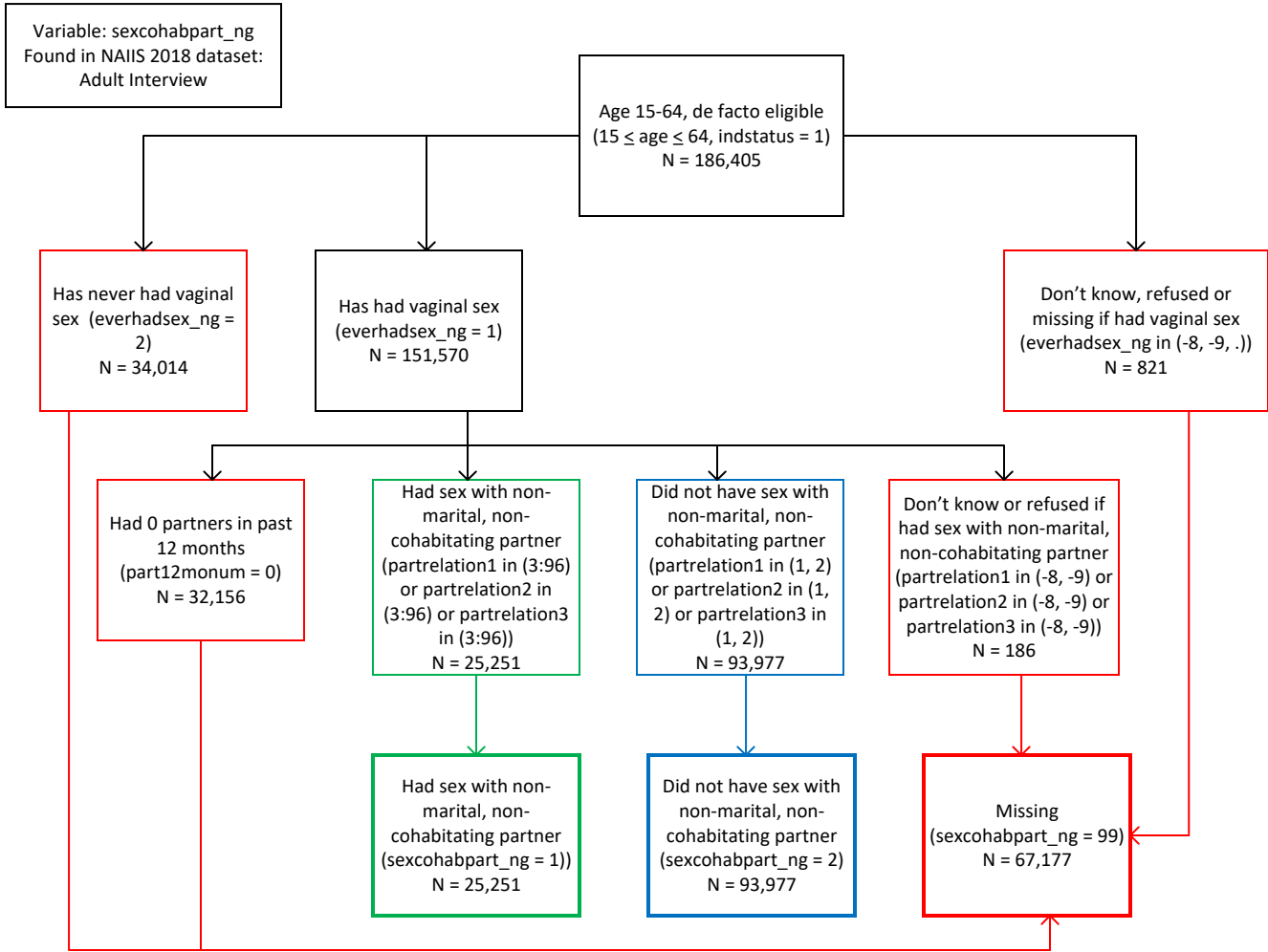


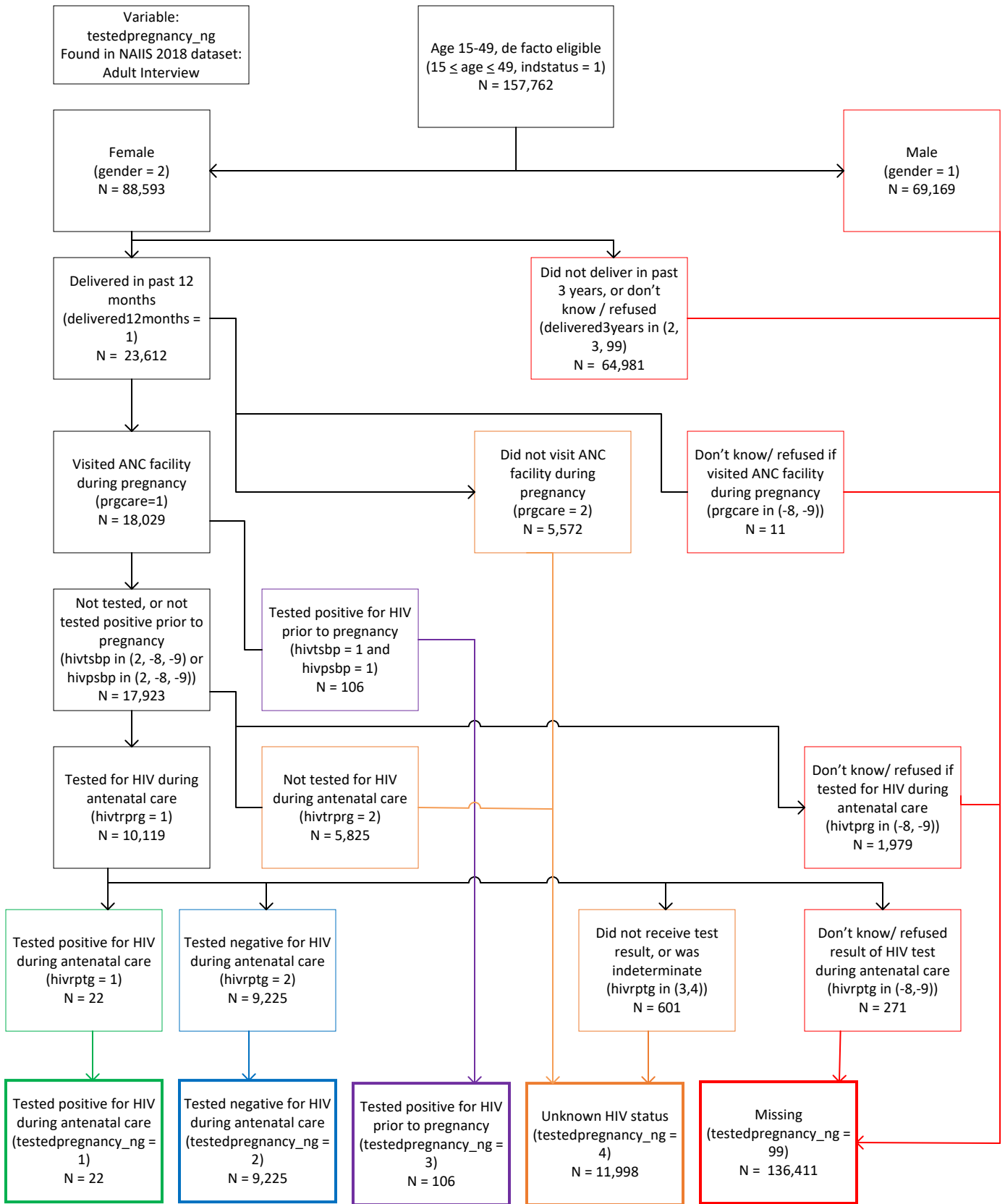






*Date of last HIV test derived from hivtestm (month of last HIV test) and hivtesty (year of last HIV test). A value of 15 was imputed for day of last HIV test, as this information was not captured.





Variable: treatedfortb
Found in NAHS 2018 dataset:
Adult Interview

Age 15-64
(indstatus* = 1 and
15 <= age <= 64 and diagnosedtb* = 1)
N = 918

Has been treated for tuberculosis
(tbtreated = 1)
N = 840

Has not been treated for tuberculosis
(tbtreated = 2)
N = 78

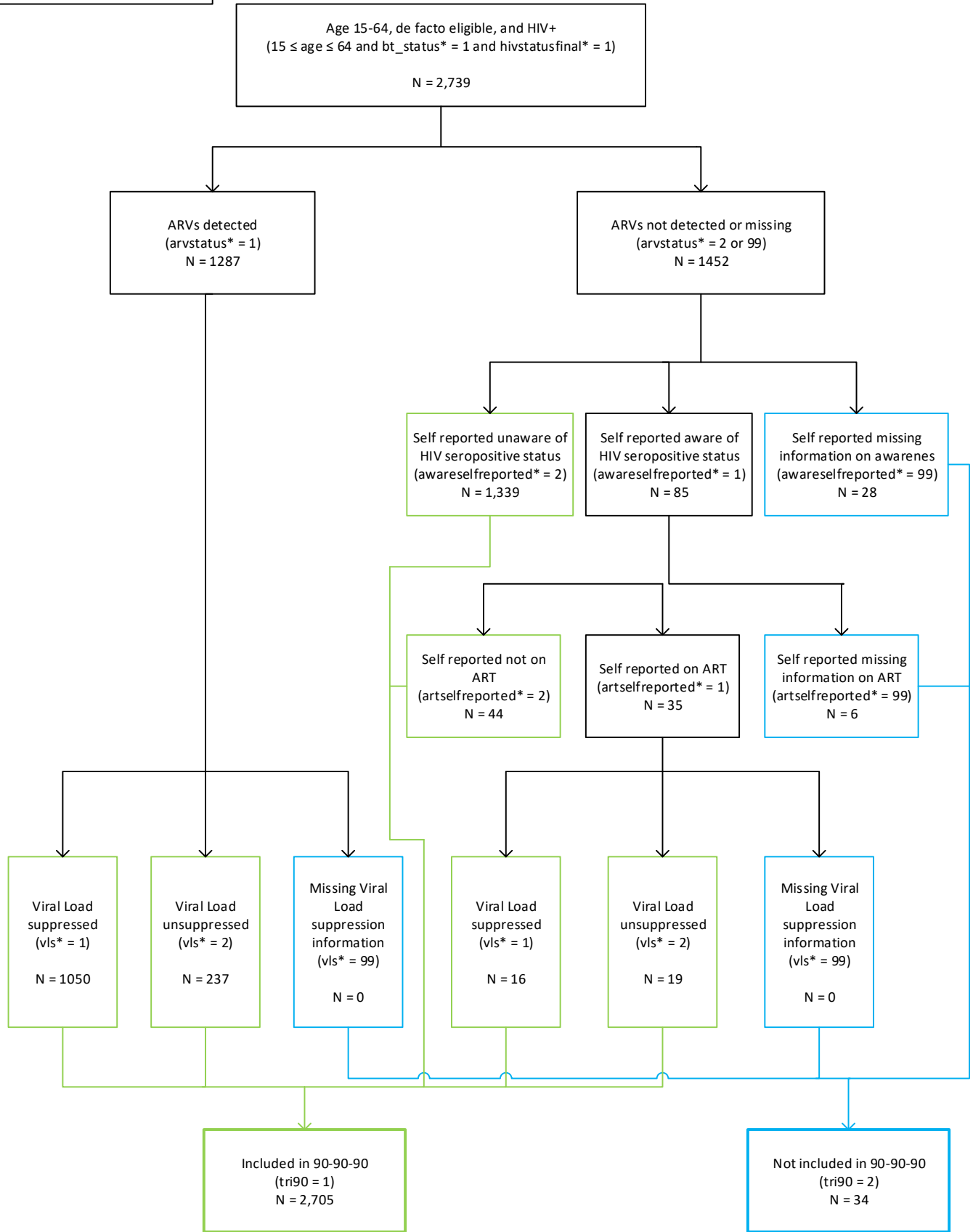
Missing information about having been
treated for tuberculosis
(tbtreated = -8 or -9 or .)
N = 0

Has been treated for tuberculosis
(treatedfortb = 1)
N = 840

Has not been treated for tuberculosis
(treatedfortb = 2)
N = 78

Missing information about having been
treated for tuberculosis
(treatedfortb = 99)
N = 0

Variable: tri90
 Found in NAHS dataset:
 Adult Biomarker



Variable: tri90art
 Found in NAIS dataset:
 Adult Biomarker

Age 15-64, de facto eligible, and HIV+
 ($15 \leq \text{age} \leq 64$ and $\text{bt_status}^* = 1$ and
 $\text{hivstatusfinal}^* = 1$)
 N = 2,739

Included in 90-90-90
 ($\text{tri90}^* = 1$)
 N = 2,705

Excluded from 90-90-90
 ($\text{tri90}^* = 2$)
 N = 34

ARVs detected
 ($\text{arvstatus}^* = 1$)
 N = 1,287

ARVs not detected
 ($\text{arvstatus}^* = 2$ or 99)
 N = 1,418

Self-reported Aware of HIV
 status
 ($\text{awareselfreported}^* = 1$)
 N = 79

Self-reported Unaware of
 HIV Status
 ($\text{awareselfreported}^* = 2$)
 N = 1,339

Self reported on ART
 ($\text{artselfreported}^* = 1$)
 N = 35

Self reported not on ART
 ($\text{artselfreported}^* = 2$)
 N = 44

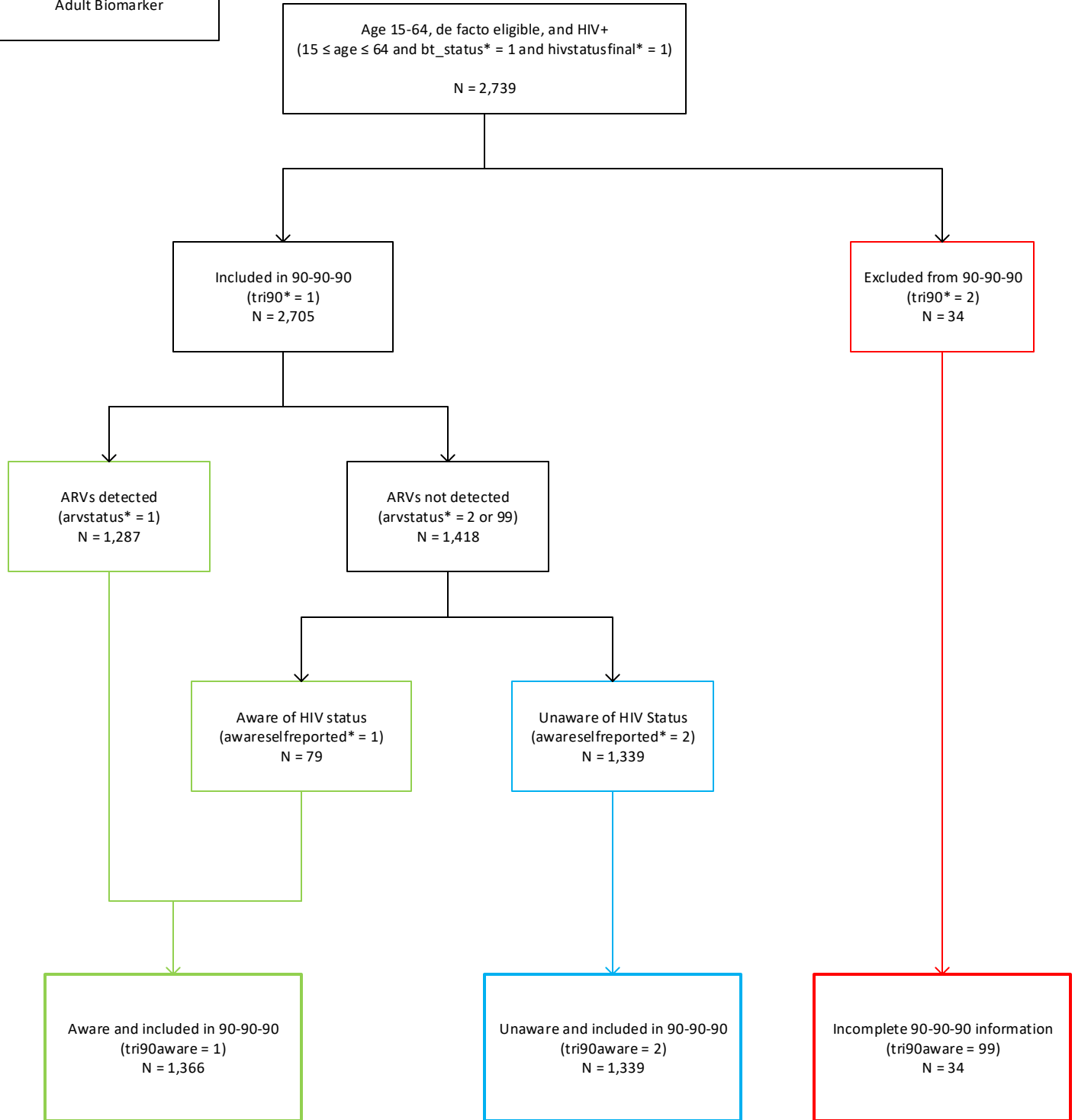
On ART and included in
 90-90-90
 ($\text{tri90art} = 1$)
 N = 1,322

Not on ART and included in
 90-90-90
 ($\text{tri90art} = 2$)
 N = 44

Unaware, not on ART,
 And included in 90-90-90
 ($\text{tri90art} = 3$)
 N = 1,339

Incomplete 90-90-90
 information
 ($\text{tri90art} = 99$)
 N = 34

Variable: tri90aware
Found in NAIS dataset:
Adult Biomarker



Variable: tri90vls
 Found in NAIS 2018 dataset:
 Adult Biomarker

Age 15-64, de facto eligible, and HIV+
 (15 ≤ age ≤ 64 and bt_status* = 1 and hivstatusfinal* = 1)
 N = 2,739

Included in 90-90-90
 (tri90* = 1)
 N = 2,705

Excluded from 90-90-90
 (tri90* = 2)
 N = 34

ARVs detected
 (arvstatus* = 1)
 N = 1,287

ARVs not detected
 (arvstatus* = 2 or 99)
 N = 1,418

Self-reported Aware of HIV status
 (awareselfreported* = 1)
 N = 79

Self-reported Unaware of HIV Status
 (awareselfreported* = 2)
 N = 1,339

Self reported on ART
 (artselfreported* = 1)
 N = 35

Self reported not on ART
 (artselfreported* = 2)
 N = 44

On ART and included in 90-90-90
 (tri90art* = 1)
 N = 1,322

Not on ART and included in 90-90-90
 (tri90art* = 2)
 N = 44

Unaware, not on ART, And included in 90-90-90
 (tri90art* = 3)
 N = 1,339

Viral load suppressed
 (vls* = 1)
 N = 1066

Viral load not suppressed
 (vls* = 2)
 N = 256

Viral load suppressed
 (vls* = 1)
 N = 7

Viral load not suppressed
 (vls* = 2)
 N = 37

Missing Viral load
 (vls* = 99)
 N = 0

Viral load suppressed
 (vls* = 1)
 N = 164

Viral load not suppressed
 (vls* = 2)
 N = 1175

Missing Viral load
 (vls* = 99)
 N = 0

Viral load suppressed
 (tri90vls = 1)
 Included in 90-90-90
 N = 1,066

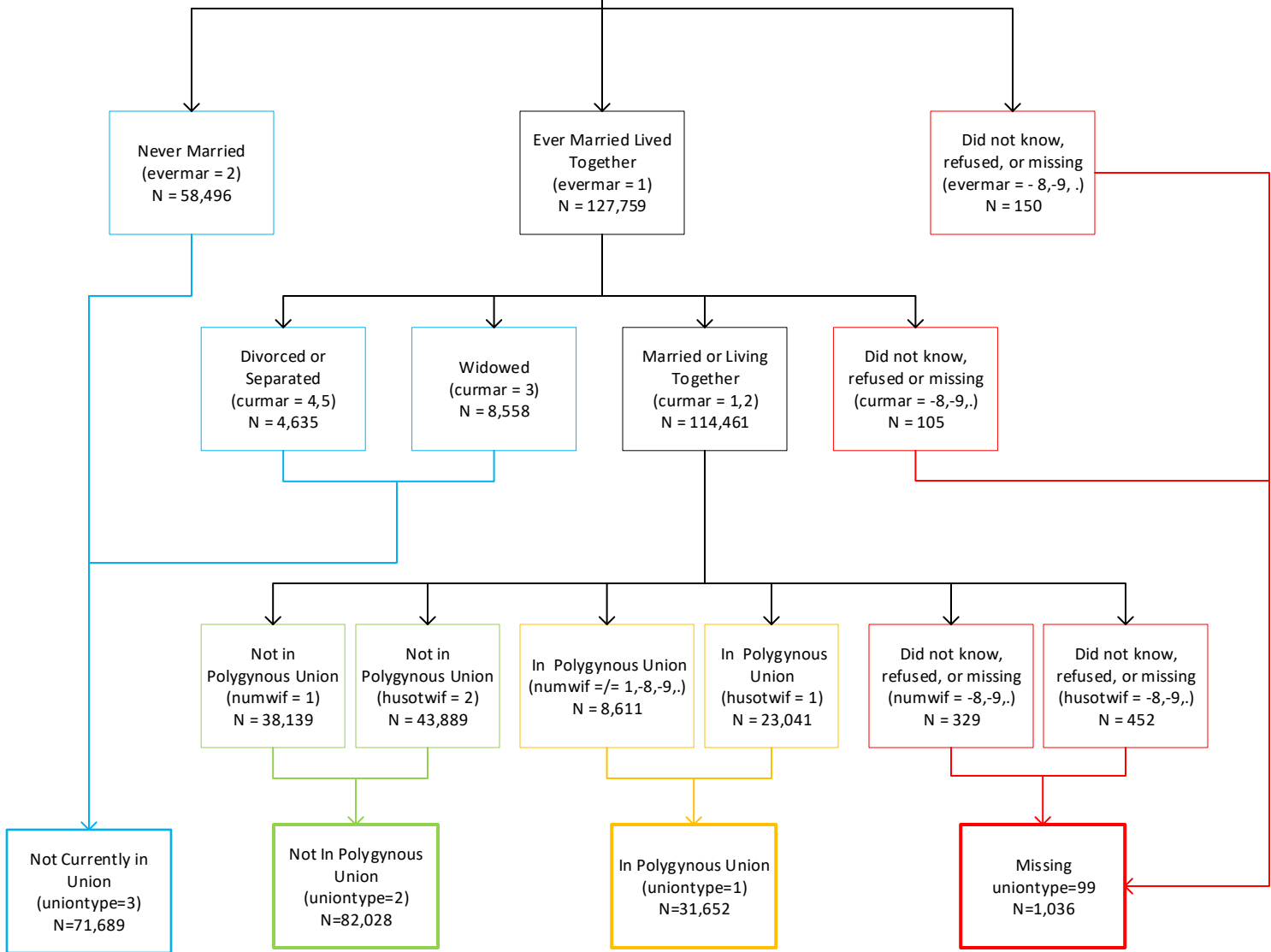
Viral load not suppressed
 (tri90vls = 2)
 Included in 90-90-90
 N = 1,468

Recoded as viral load not suppressed
 (tri90vls = 3)
 Included in 90-90-90
 N = 171

Incomplete 90-90-90 information
 (tri90art = 99)
 Excluded from 90-90-90
 N = 34

Variable: uniontype
 Found in NAIS 2018 dataset:
 Adult Interview

Age 15-64
 (indstatus* = 1 and 15 <= age <= 64)
 N = 186,405



Variable: visitedtbclinic
Found in NAHS 2018 dataset:
Adult Interview

Age 15-64
(indstatus* = 1 and 15 <= age <=64)
N = 186,405

Ever visited a clinic for tuberculosis
evaluation
(tbclinvisit = 1)
N = 3,407

Never visited a clinic for tuberculosis
evaluation
(tbclinvisit = 2)
N = 181,005

Missing information on visiting a clinic
for tuberculosis evaluation
(tbclinvisit = -8 or -9 or .)
N = 1,993

Ever visited a clinic for tuberculosis
evaluation
(visitedtbclinic = 1)
N = 3,407

Never visited a clinic for tuberculosis
evaluation
(visitedtbclinic = 2)
N = 181,005

Missing information on visiting a clinic
for tuberculosis evaluation
(visitedtbclinic = 99)
N = 1,993