

SHIMS3

2021

Eswatini
Population-based
HIV Impact Assessment



FLOW DIAGRAMS FOR ANALYTIC VARIABLES



The mark "CDC" is owned by the US Dept. of Health and Human Services and is used with permission.
Use of this logo is not an endorsement by HHS or CDC of any particular product, service or enterprise.

Eswatini Population-based HIV Impact Assessment 2021

SHIMS3 2021

This project is supported by the US President's Emergency Plan for AIDS Relief (PEPFAR) through CDC under the terms of cooperative agreement U2GGH002173. The findings and conclusions are those of the authors and do not necessarily represent the official position of the funding agencies.



The mark "CDC" is owned by the US Dept. of Health and Human Services and is used with permission.
Use of this logo is not an endorsement by HHS or CDC of any particular product, service or enterprise.

Flow diagrams for analytic variables

This section contains flow diagrams for analytic variables provided in the SHIMS3 2021 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. See the flow diagram key on page SA3-1 for a visual guide to these diagrams.

List of flow diagrams

Variable name (example)	Description	Page
	<i>Flow diagram example key (based on initiatedartselselfreported)</i>	SA3-1
hhstatus/indstatus/bt_status	Indicator of household, interview, and blood test eligibility and response status	SA3-2
hivstatusfinal/vls	Final HIV-1 and viral load status, for survey analysis	SA3-4
cd4cat	CD4 category	SA3-6
knownhivstatus	Summary of self-reported HIV test results received	SA3-8
awareselfreported	Indicator of whether individual self-reported as aware of their HIV seropositive status	SA3-10
aware	Indicator of whether individual is aware of their HIV seropositive status, combining self-report and ARV testing	SA3-12
artselfreported	Indicator of whether individual self-reported as on ART	SA3-14
art	Indicator of whether individual is on ART, combining self-report and ARV testing	SA3-16
awareartselfreported	Indicator combining individual self-reporting of previous diagnosis and ART status	SA3-18
awareart	Indicator combining previously diagnosed and ART status, using self-report and ARV testing	SA3-20
arvstatus	Indicator of whether individual has detectable ARVs according to PHIA blood test	SA3-22
artinitiated12months	Indicator of whether individual initiated ART in past 12 months, among those ever reported to be on ART	SA3-24
tri90	Flag for inclusion in 90-90-90 analysis, combining self-reported information and lab ARV data	SA3-26
tri90aware	Indicator of whether individual is aware of their HIV seropositive status, for 90-90-90 analysis, combining self-reported information and lab ARV data	SA3-28
tri90art	Indicator of whether individual is on ART, for 90-90-90 analysis, combining self-reported information and lab ARV data	SA3-30
tri90vls	Indicator of whether individual has suppressed viral load, for 90-90-90 analysis, combining self-reported information and lab ARV data	SA3-32
tri90sr	Flag for inclusion in 90-90-90 analysis using only self-reported awareness and ART data	SA3-34
tri90sraware	Indicator of whether individual self-reported aware of their HIV seropositive status, for 90-90-90 analysis using only self-reported awareness and ART data	SA3-36
tri90srart	Indicator of whether individual self-reported on ART, for 90-90-90 analysis using only self-reported awareness and ART data	SA3-38

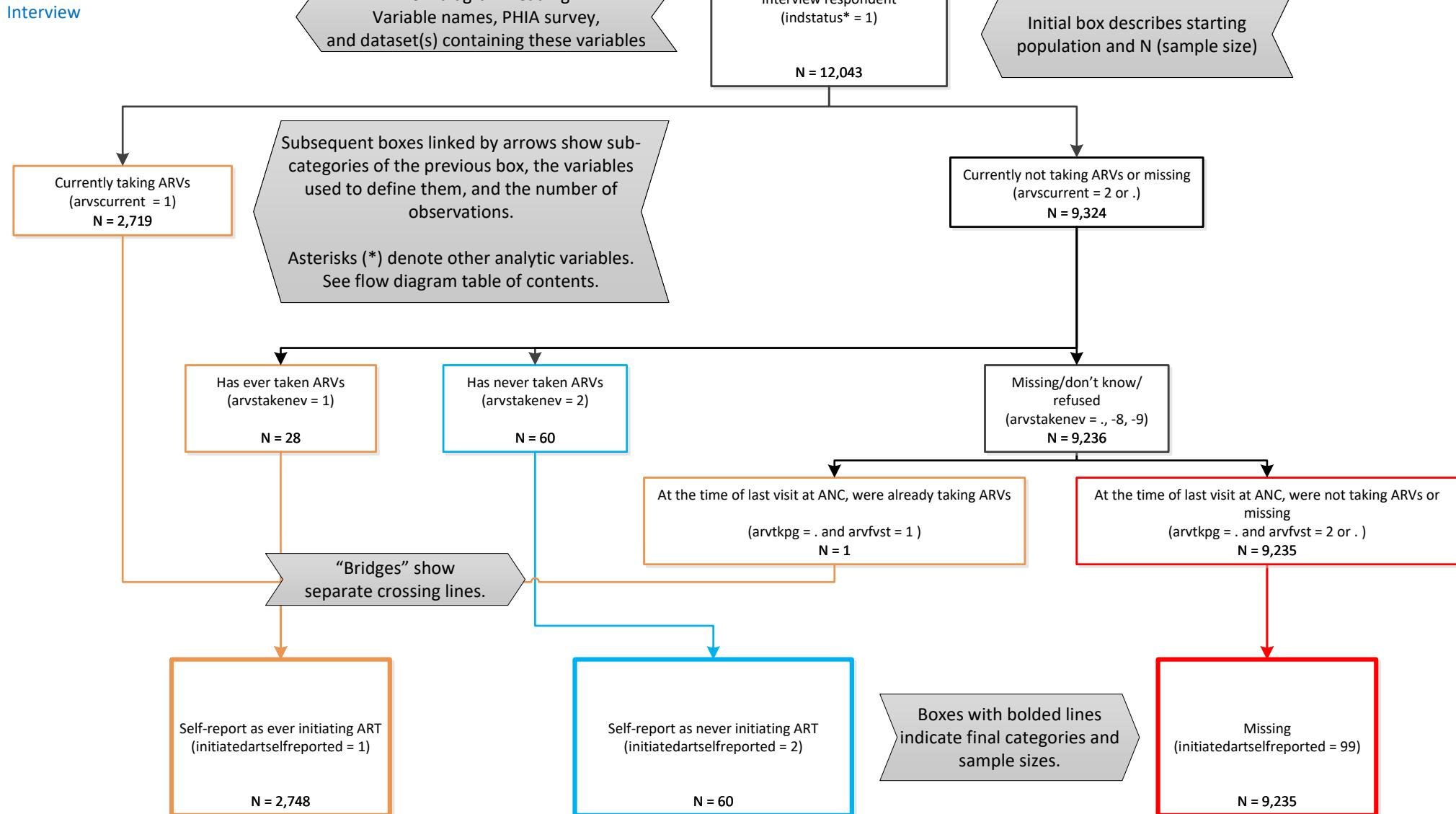
tri90srvls	Indicator of whether individual has suppressed viral load, for 90-90-90 analysis using only self-reported awareness and ART data	SA3-40
tri90vl	Flag for inclusion in 90-90-90 analysis using self-reported awareness and a viral load threshold of 200 copies/mL	SA3-42
tri90vlaware	Indicator of whether individual self-reported aware of their HIV seropositive status, for 90-90-90 analysis using self-reported awareness and a viral load threshold of 200 copies/mL	SA3-44
tri90vlart	Indicator of whether individual self-reported on ART, for 90-90-90 analysis using self-reported awareness and a viral load threshold of 200 copies/mL	SA3-46
tri90vlvlvs	Indicator of whether individual has suppressed viral load, for 90-90-90 analysis using self-reported awareness and a viral load threshold of 200 copies/mL	SA3-48
tested12months	Indicator of whether individual was last tested for HIV during the last 12 months	SA3-50
uniontype	Marital/live-in partner union type	SA3-52
education	Highest level of school ever attended	SA3-54
pregnancystatus	Current pregnancy status	SA3-56
testedpregawaredetail	Indicator of HIV testing during pregnancy and HIV test outcome	SA3-58
delivered12months	Indicator of whether mother has given birth during the past 12 months	SA3-60
delivered3years	Indicator of whether mother has given birth during the past 3 years	SA3-62
anclastchild	Receipt of antenatal care during last pregnancy, among mothers who delivered in past 3 years	SA3-64
arvspregnancydetail	Self-reported ARV treatment status of mothers before/during pregnancy and labor	SA3-66
hivstatuslastpregnancy	Self-reported HIV status of mothers during last pregnancy	SA3-68
lastbornhivstatus	HIV status of last born child, reported by mother/guardian	SA3-70
lastborntestedbirthdetail	Timing of HIV testing for last born child, reported by mother/guardian	SA3-72
breastfedlastchild	Breastfeeding status for last born child	SA3-74
sexever	Indicator for whether individual has ever had sex	SA3-76
sex12months	Indicator for whether individual had sexual intercourse in past 12 months	SA3-78
condomlastsex12months	Indicator of whether individual used a condom at last sexual encounter in past 12 months	SA3-80
allpartspouselivein12mo	Indicator of whether all partners in the past 12 months were spouses or live-in partners	SA3-82
condomlastnonmarital12mo	Indicator of whether individual used a condom at last sexual intercourse with their last non-marital non-cohabitating partner in past 12 months	SA3-84
recentlagvl/recentlagvlarv	Indicators for recent HIV infection	SA3-86
evertested	Indicator of whether individual has ever been tested for HIV	SA3-88
initiatedartselfreported	Individual's self-report of whether they ever initiated ART	SA3-90
arvinterralt	Indicator of having an interruption to individual ARV treatment due to living away from home in the past 12 months	SA3-92
arvswitchalt	Indicator of individual having switched ARV regimen	SA3-94
Arvlocalt_sz	Usual location of pickup of ART, for individuals self-reported on ART	SA3-96
mcdetail	Male circumcision category	SA3-98

Variable: initiatedartselfreported

SA3-1

Found in SHIMS3 2021 dataset:

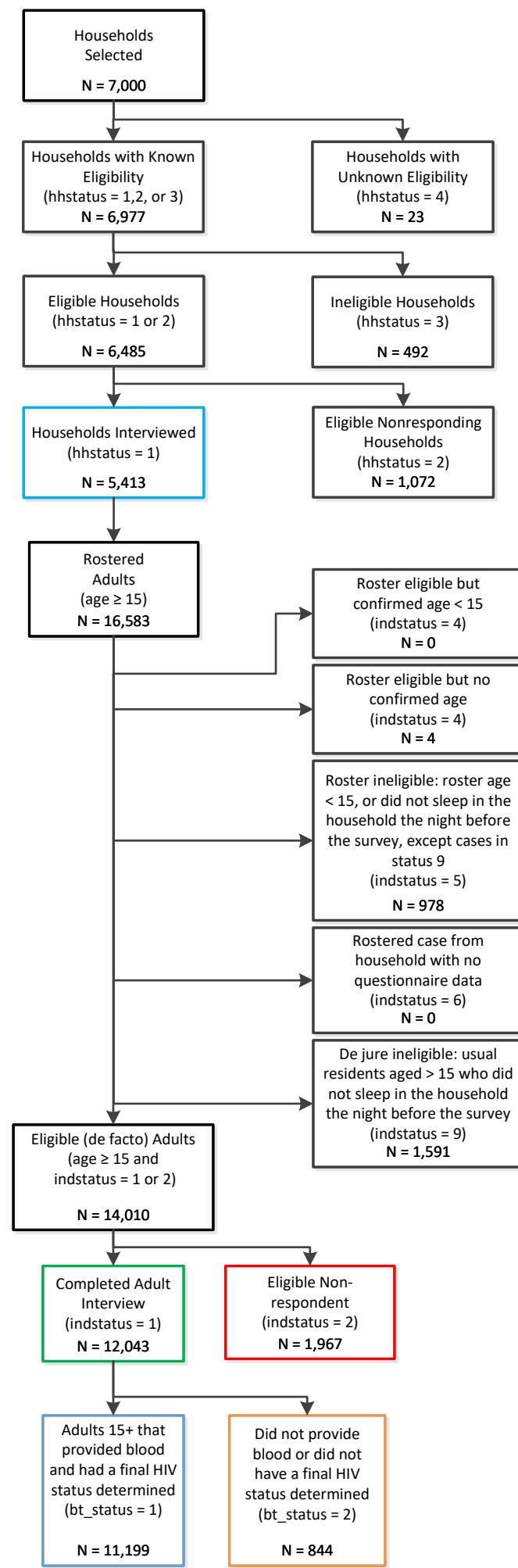
Interview



Variables: hhstatus, indstatus, bt_status

Found in SHIMS3 2021 datasets:

Household
Interview
Biomarker



Variables: hhstatus, indstatus, bt_status

Use the following SHIMS3 2021 variables:

Household dataset

hhstatus

Interview dataset

age

indstatus

Biomarker dataset

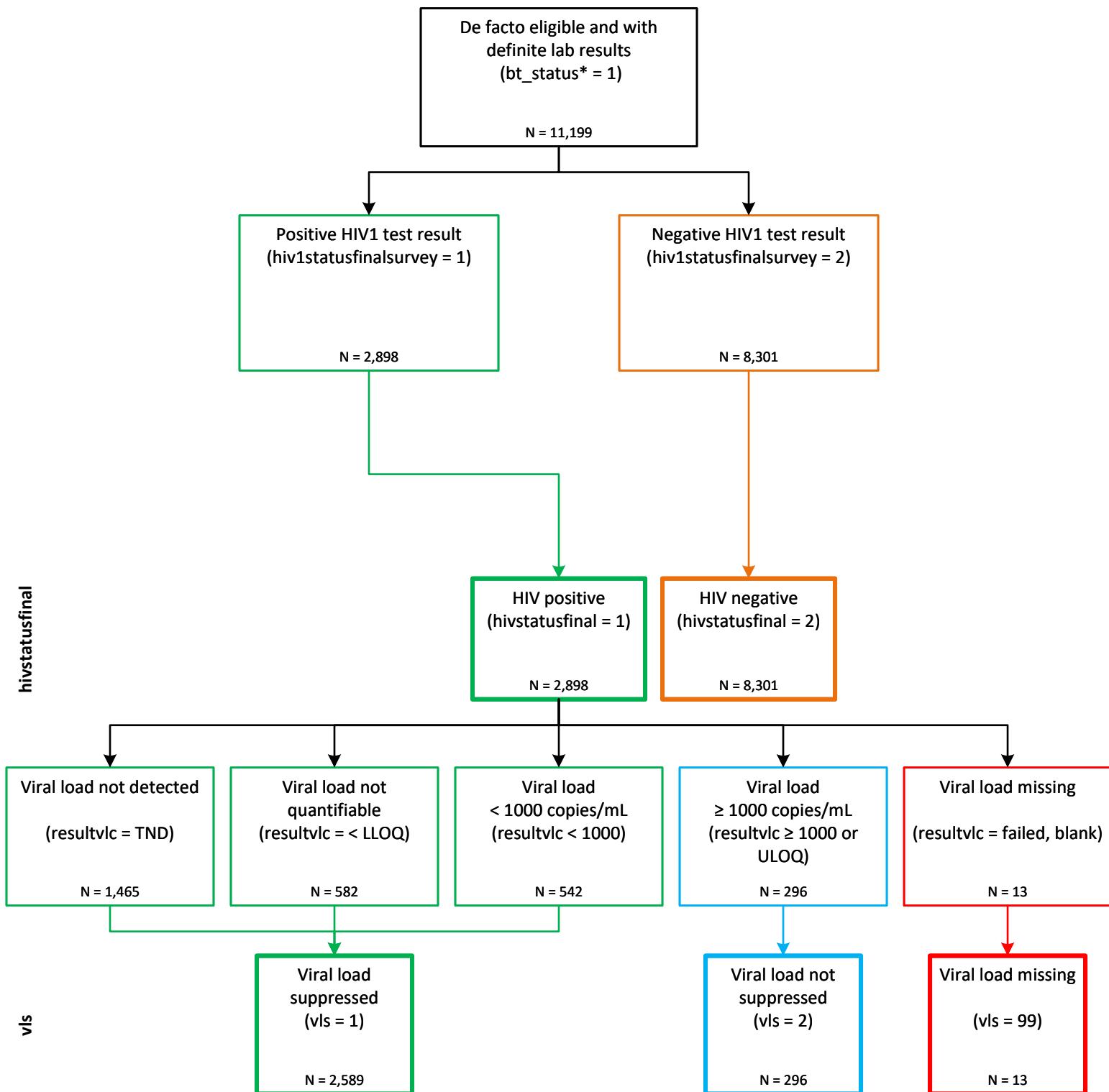
bt_status

Variables: hivstatusfinal, vls

SA3-4

Found in SHIMS3 2021 datasets:

Biomarker



Variables: hivstatusfinal, vls

SA3-5

Uses variables from SHIMS3 2021 datasets:

Biomarker

bt_status

hiv1statusfinalsurvey

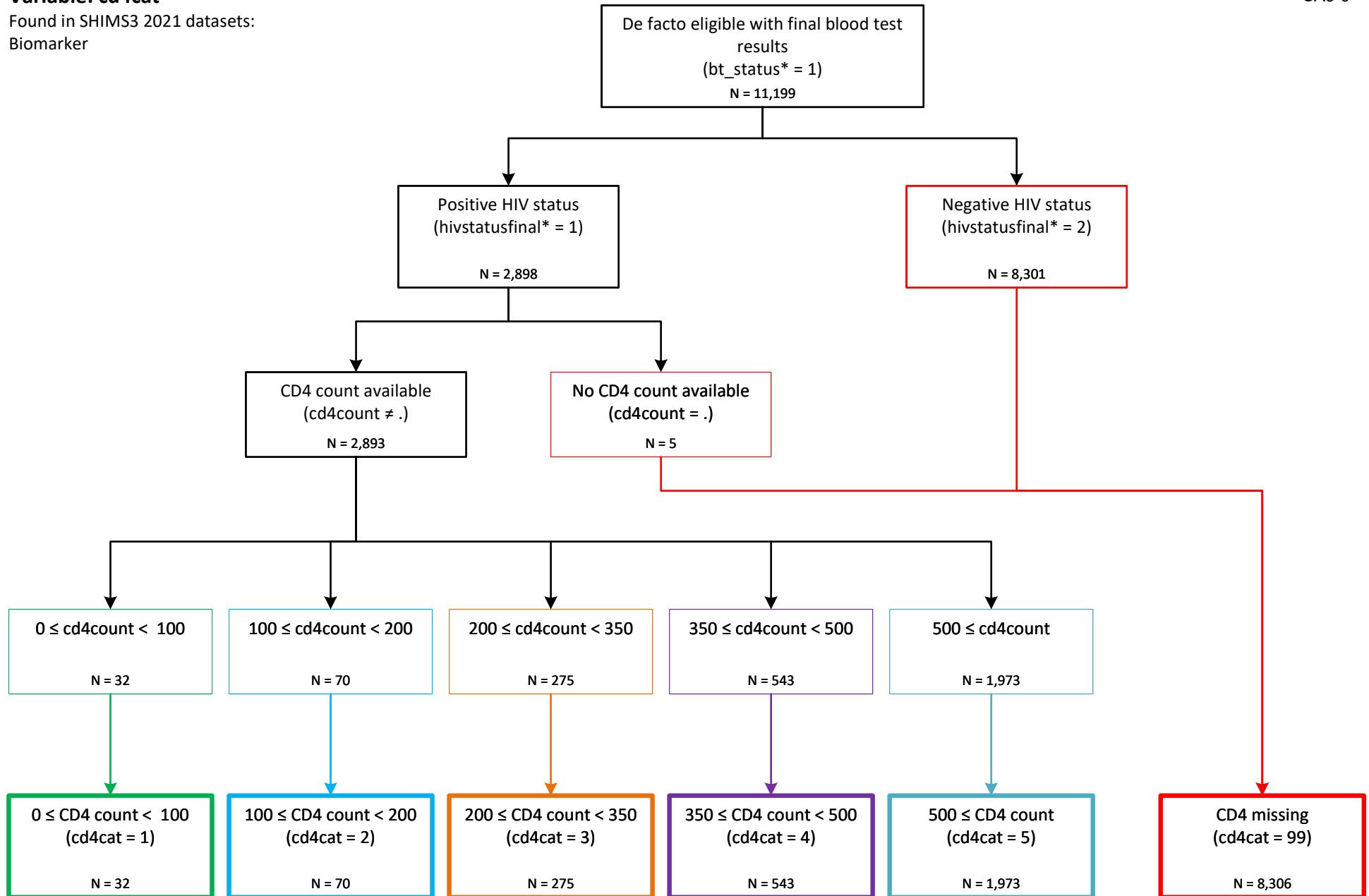
hivstatusfinal

resultvlc

vls

Variable: cd4cat

Found in SHIMS3 2021 datasets:
Biomarker



Variable: cd4cat

Uses the following SHIMS3 2021 variables:

Biomarker dataset

bt_status

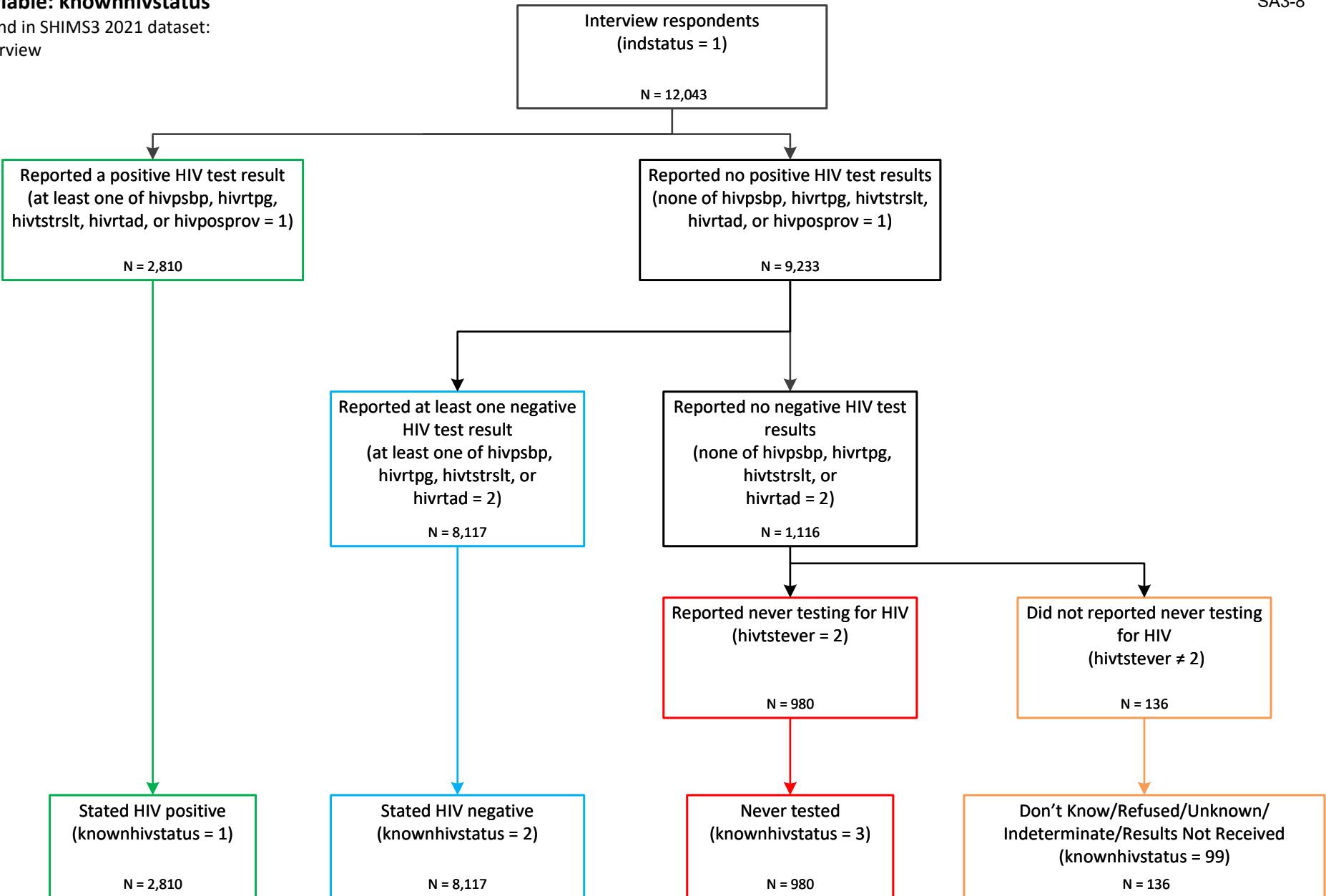
hivstatusfinal

cd4count

Variable: knownhivstatus

Found in SHIMS3 2021 dataset:

Interview



Variable: knownhivstatus

Uses the following SHIMS3 2021 variables:

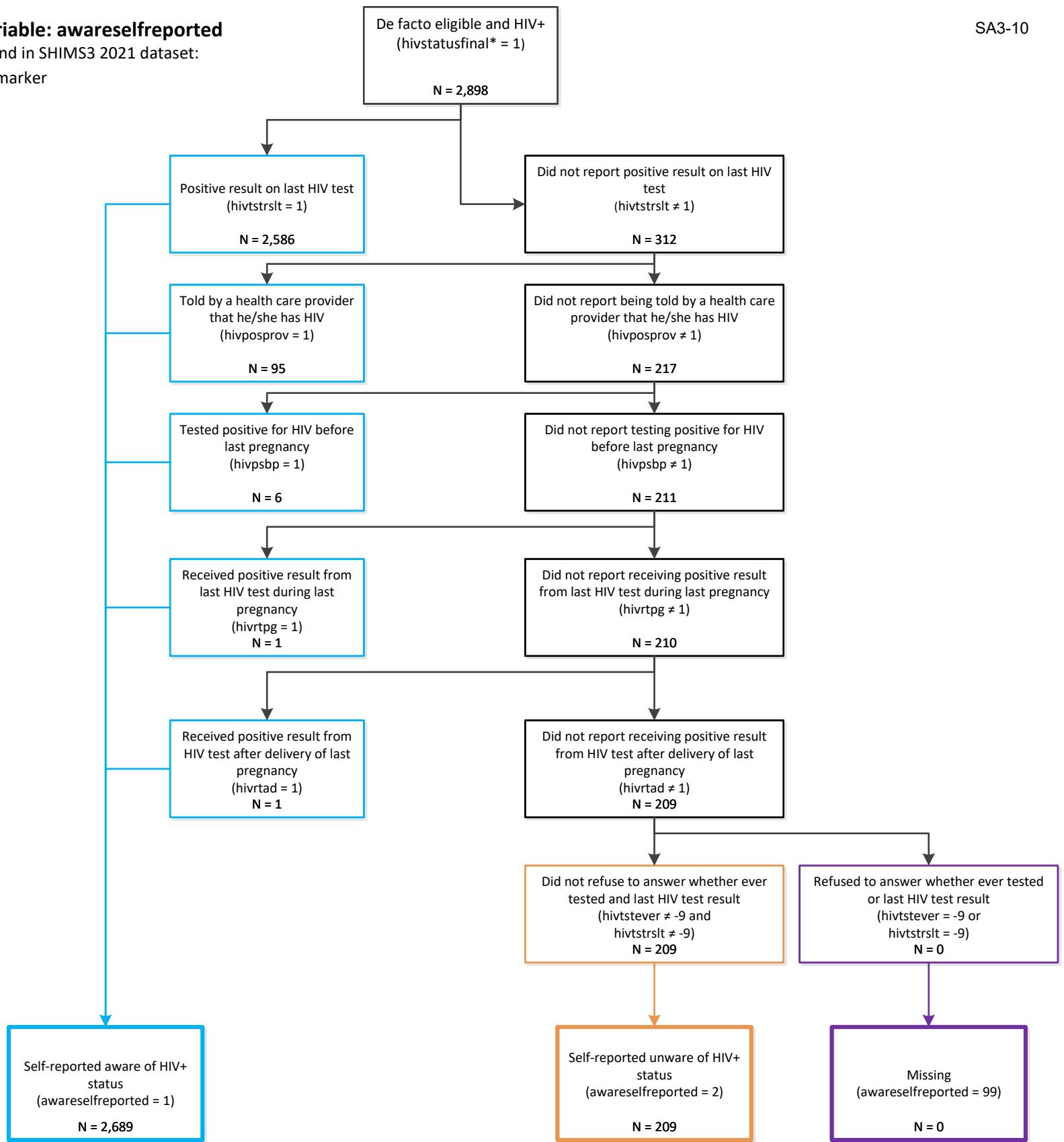
Interview dataset

age
indstatus
hivtsteve
hivposprov
hivstrslt
hivrtad
hivpsbp
hivrtpg

Variable: awareselfreported

Found in SHIMS3 2021 dataset:

Biomarker



Variable: awareselfreported

SA3-11

Uses the following SHIMS3 2021 variables:

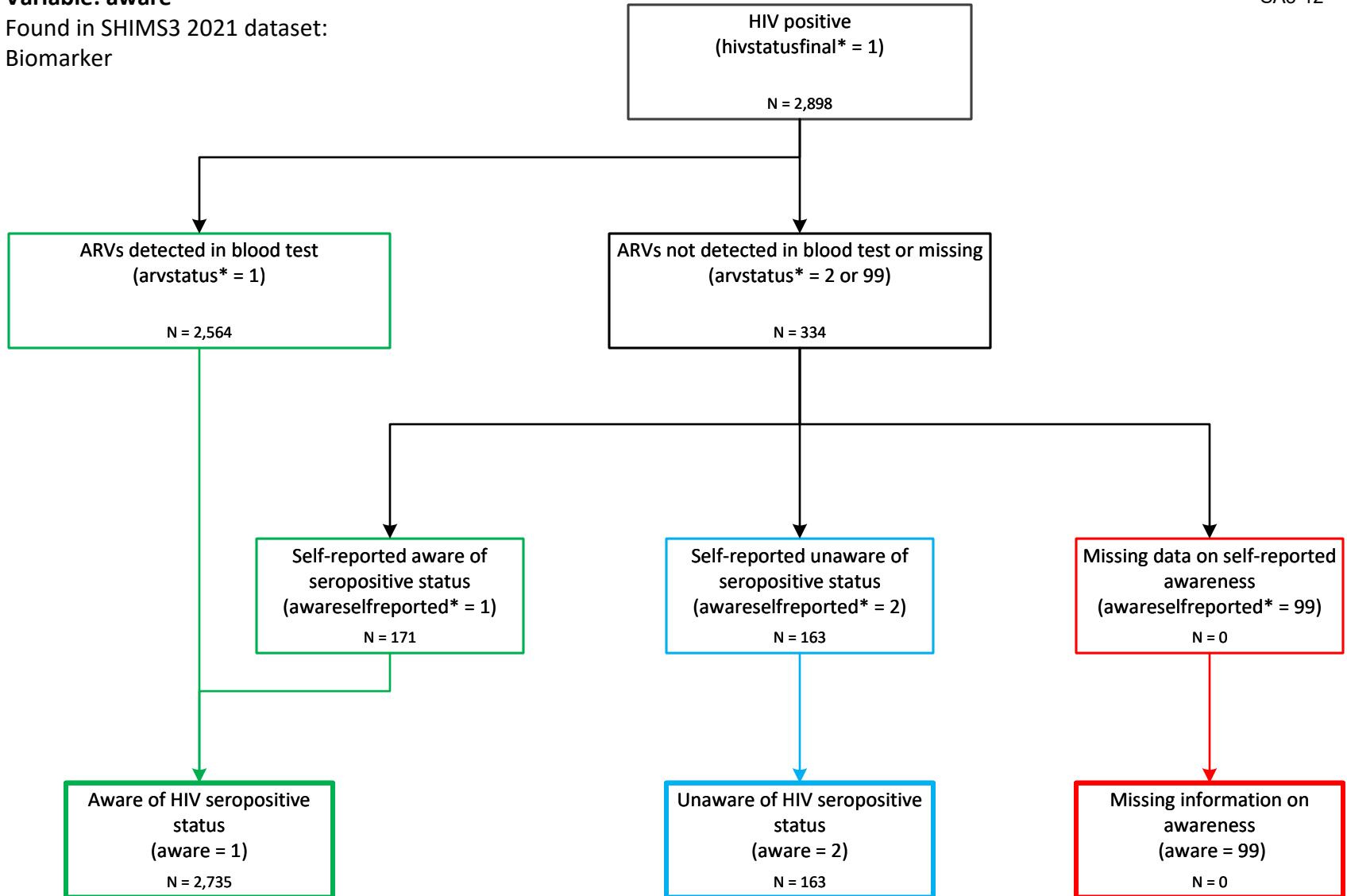
Interview dataset

- indstatus
- hivstatusfinal
- hivtstrslt
- hivposprov
- hivpsbp
- hivrtpg
- hivrtad
- hivtstever

Variable: aware

Found in SHIMS3 2021 dataset:
Biomarker

SA3-12



Variable: aware

SA3-13

Uses the following SHIMS3 2021 variables:

Biomarker dataset

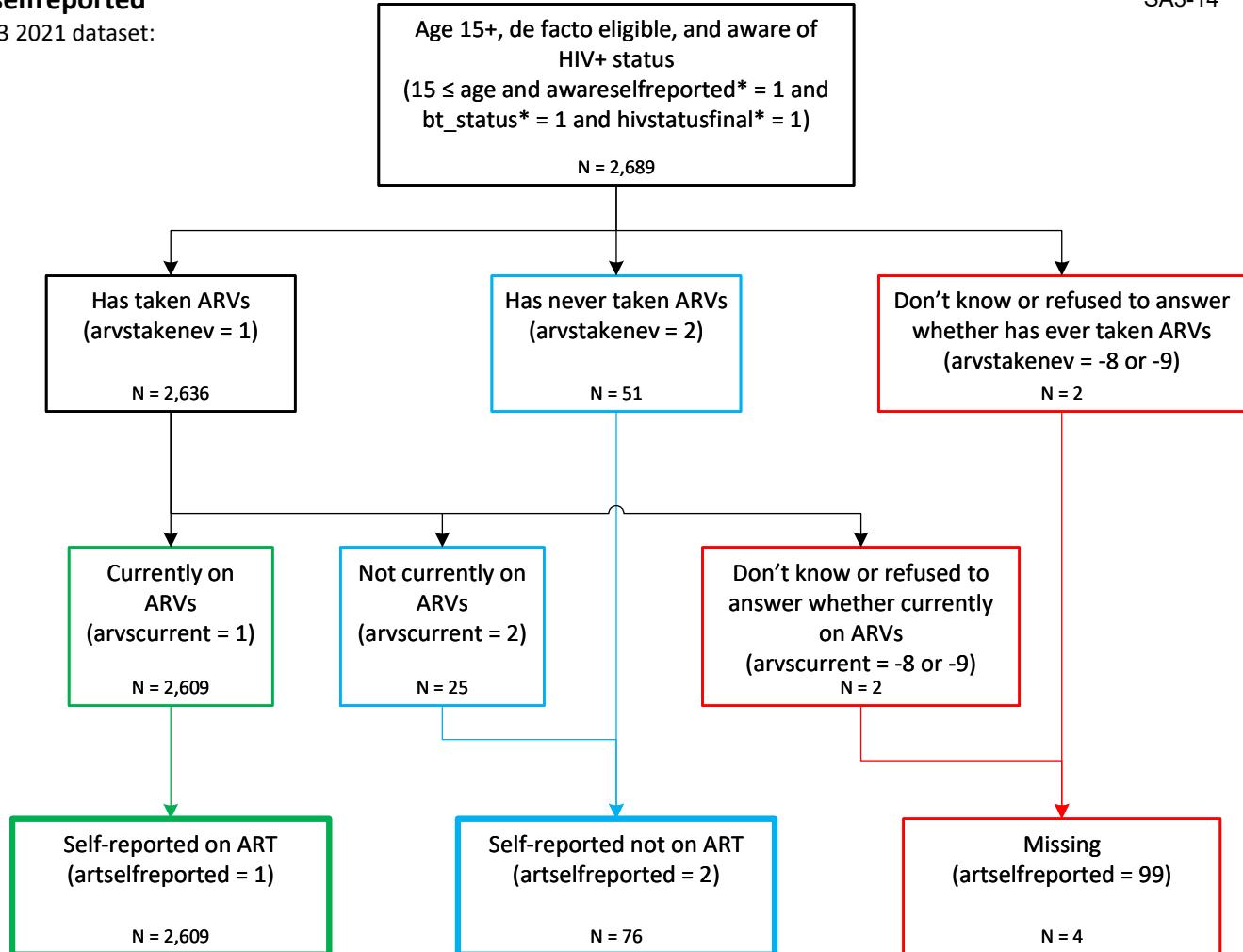
hivstatusfinal

arvstatus

awareselfreported

Variable: artselfreported

Found in SHIMS3 2021 dataset:
Biomarker



Variable: artselfreported

SA3-15

Uses the following SHIMS3 2021 variables:

Interview dataset

age

arvstakenev

arvscurrent

Biomarker dataset

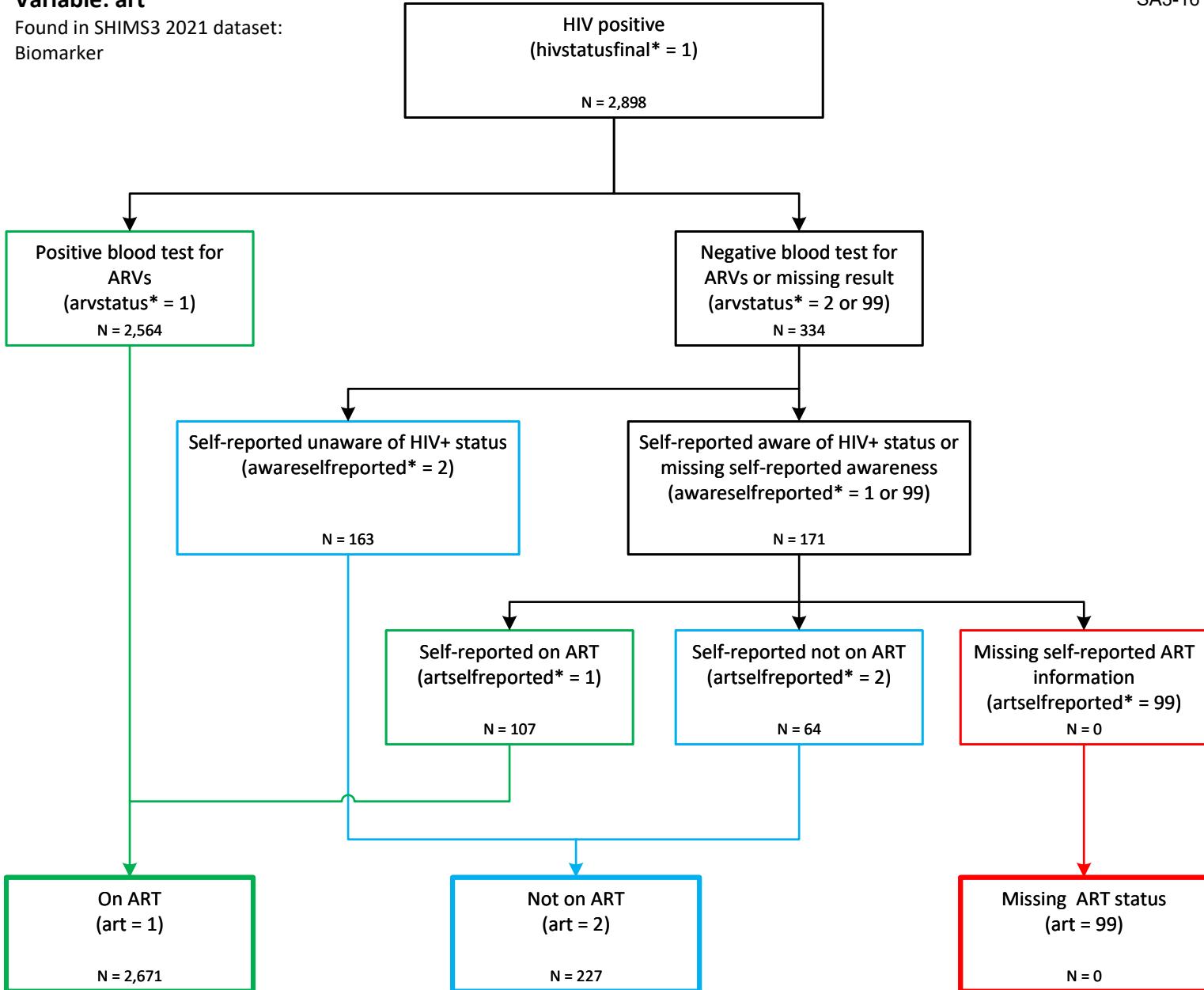
bt_status

hivstatusfinal

awareselfreported

Variable: art

Found in SHIMS3 2021 dataset:
Biomarker



Variable: art

SA3-17

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

arvstatus

awareselfreported

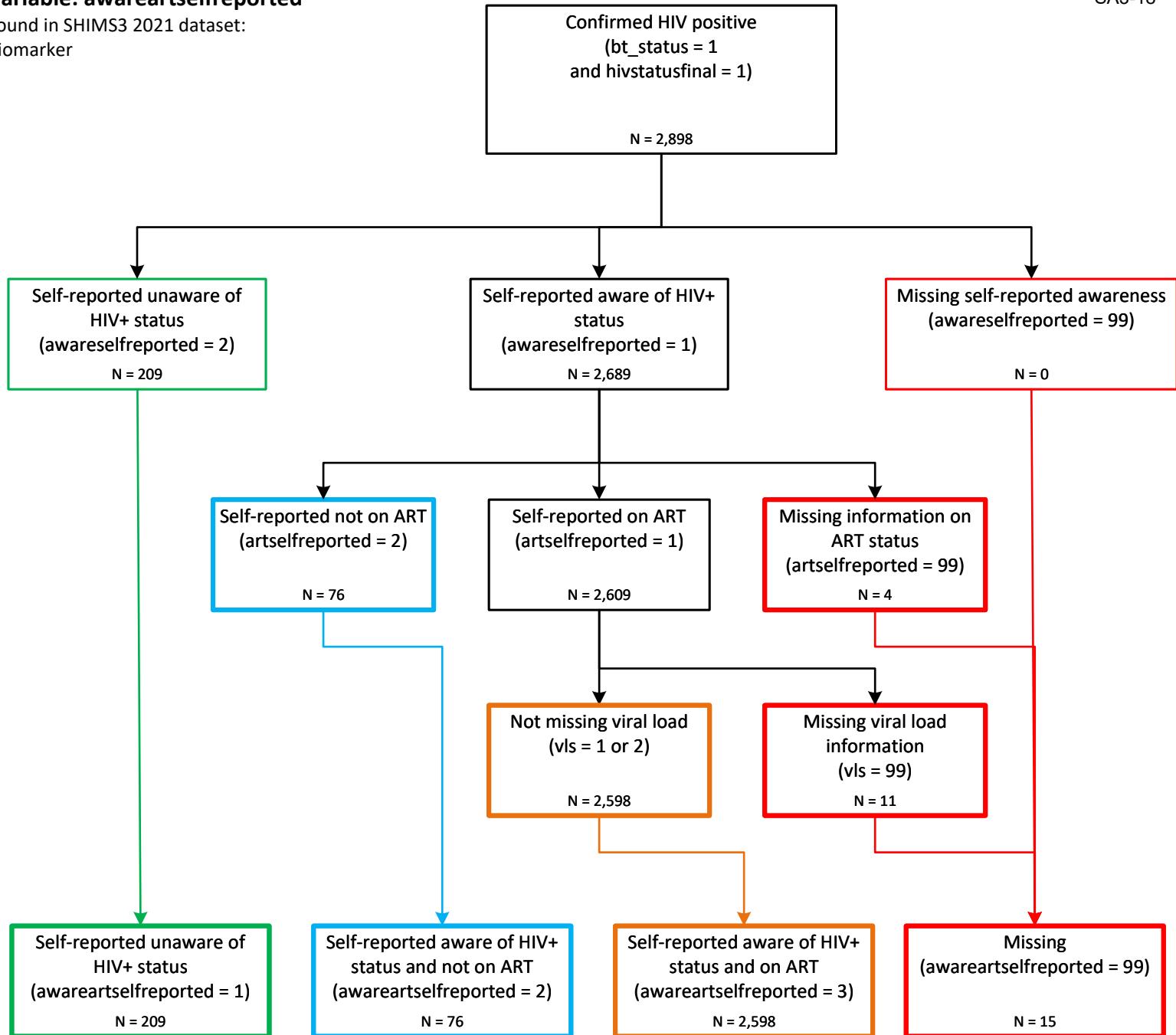
artsselfreported

Variable: awareartsselfreported

SA3-18

Found in SHIMS3 2021 dataset:

Biomarker



Variable: awareartsselfreported

Uses the following SHIMS3 2021 variables:

Biomarker dataset

bt_status

hivstatusfinal

awareselfreported

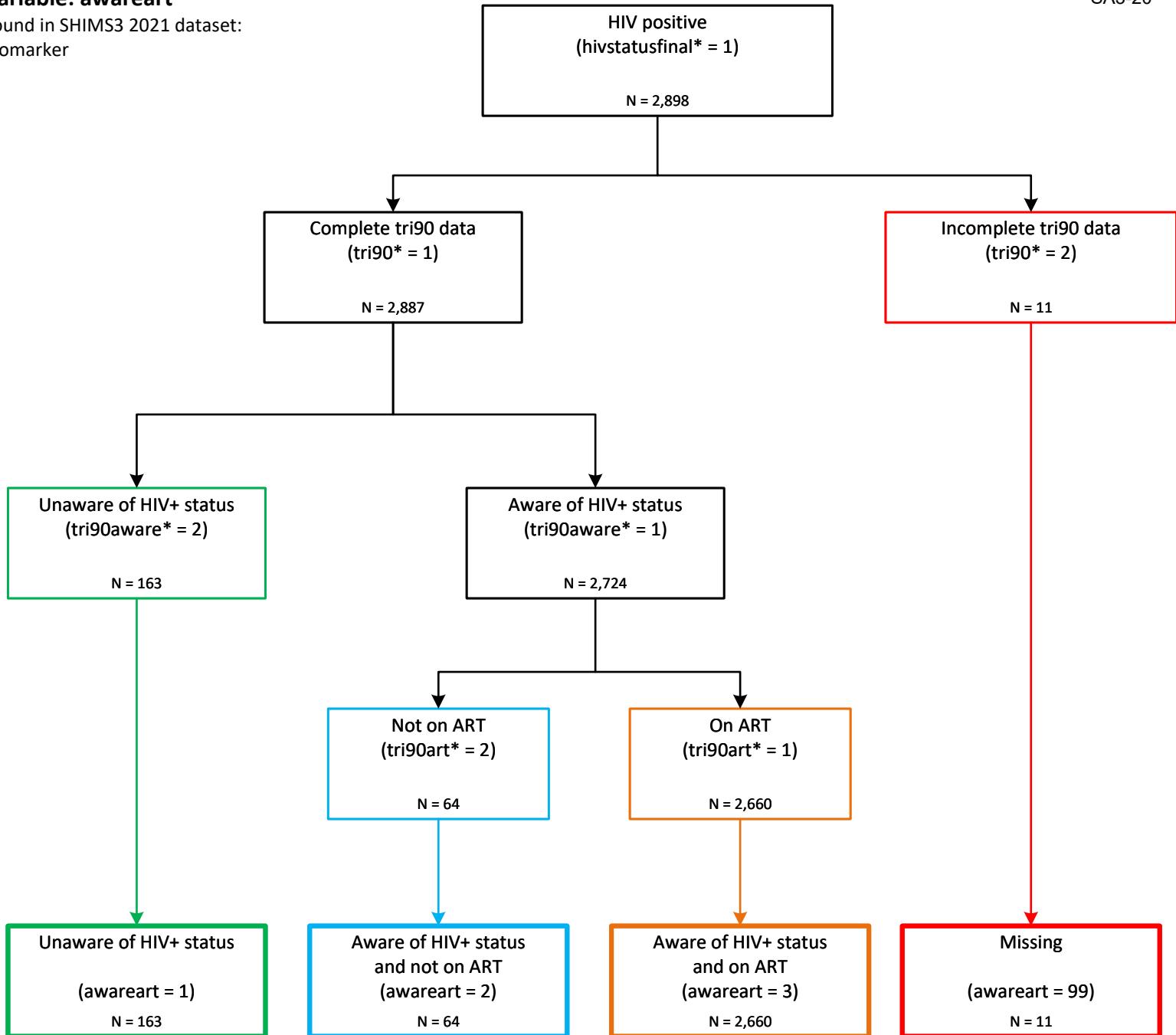
artsselfreported

vls

Variable: awareart

SA3-20

Found in SHIMS3 2021 dataset:
Biomarker



Variable: awareart

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90

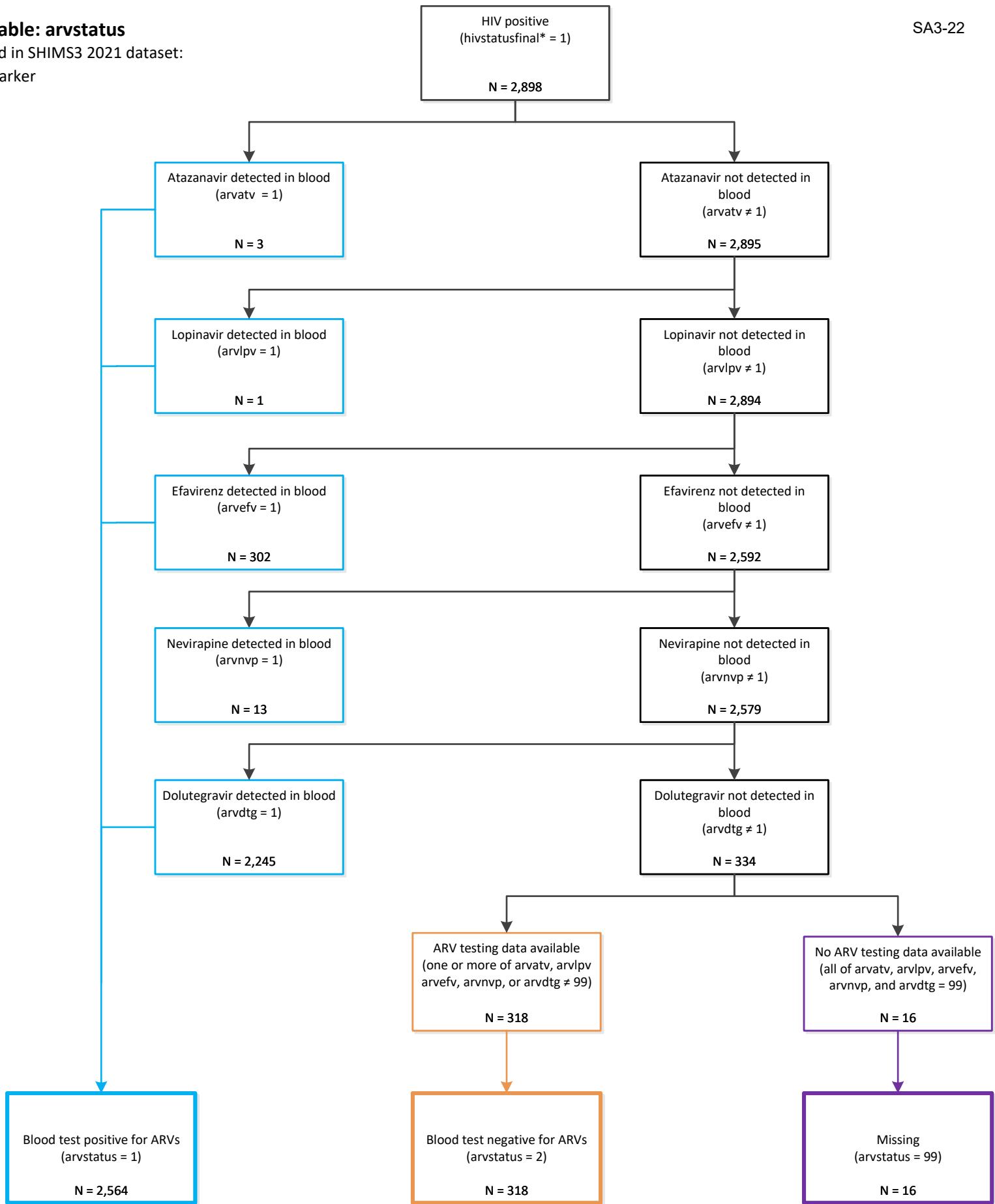
tri90aware

tri90art

Variable: arvstatus

Found in SHIMS3 2021 dataset:

Biomarker



Variable: arvstatus

SA3-23

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

arvatv

arvlpv

arvefv

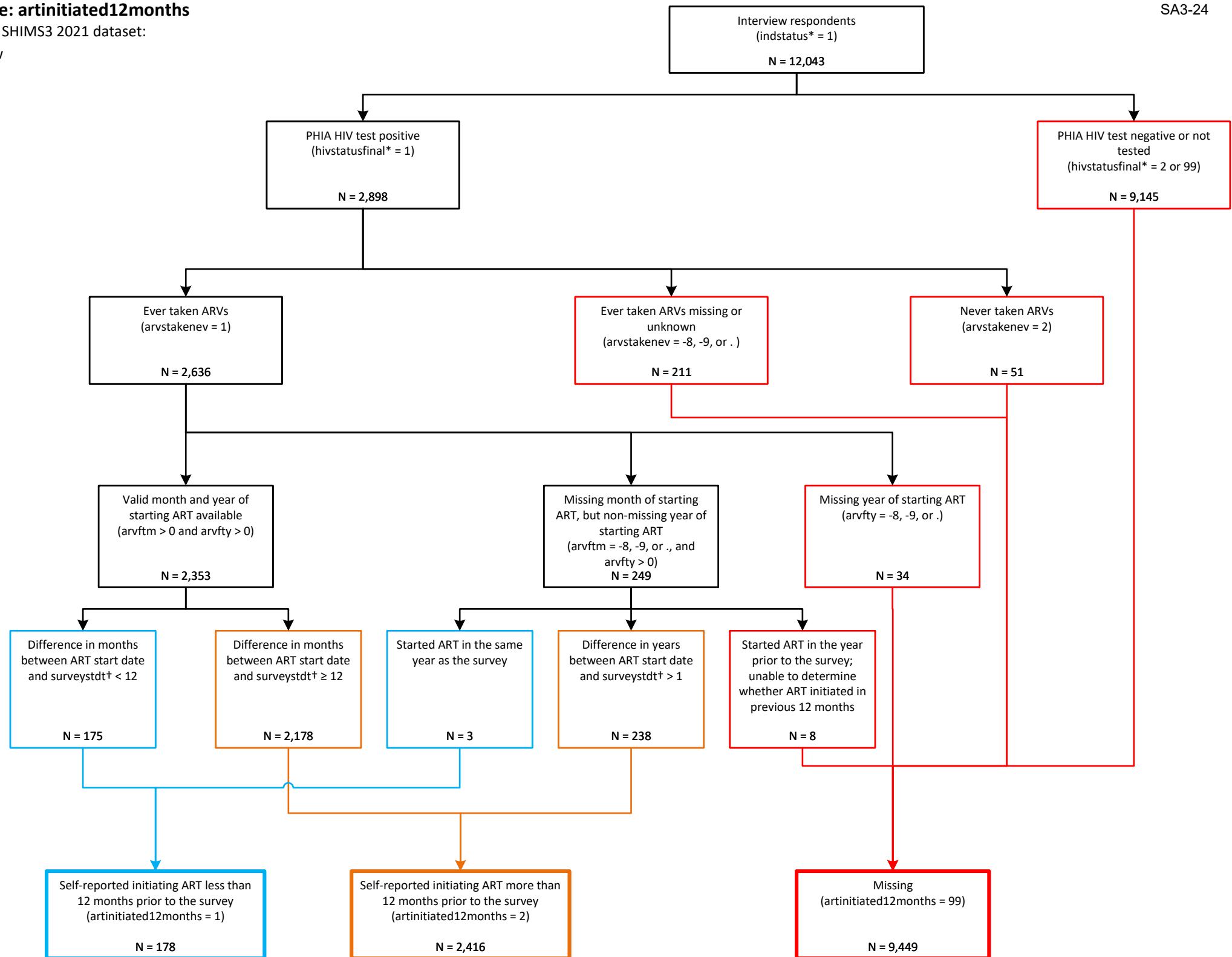
arvnvp

arvdtg

Variable: artinitiated12months

Found in SHIMS3 2021 dataset:

Interview



Variable: artinitiated12months

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal
artinitiated12months

Interview dataset

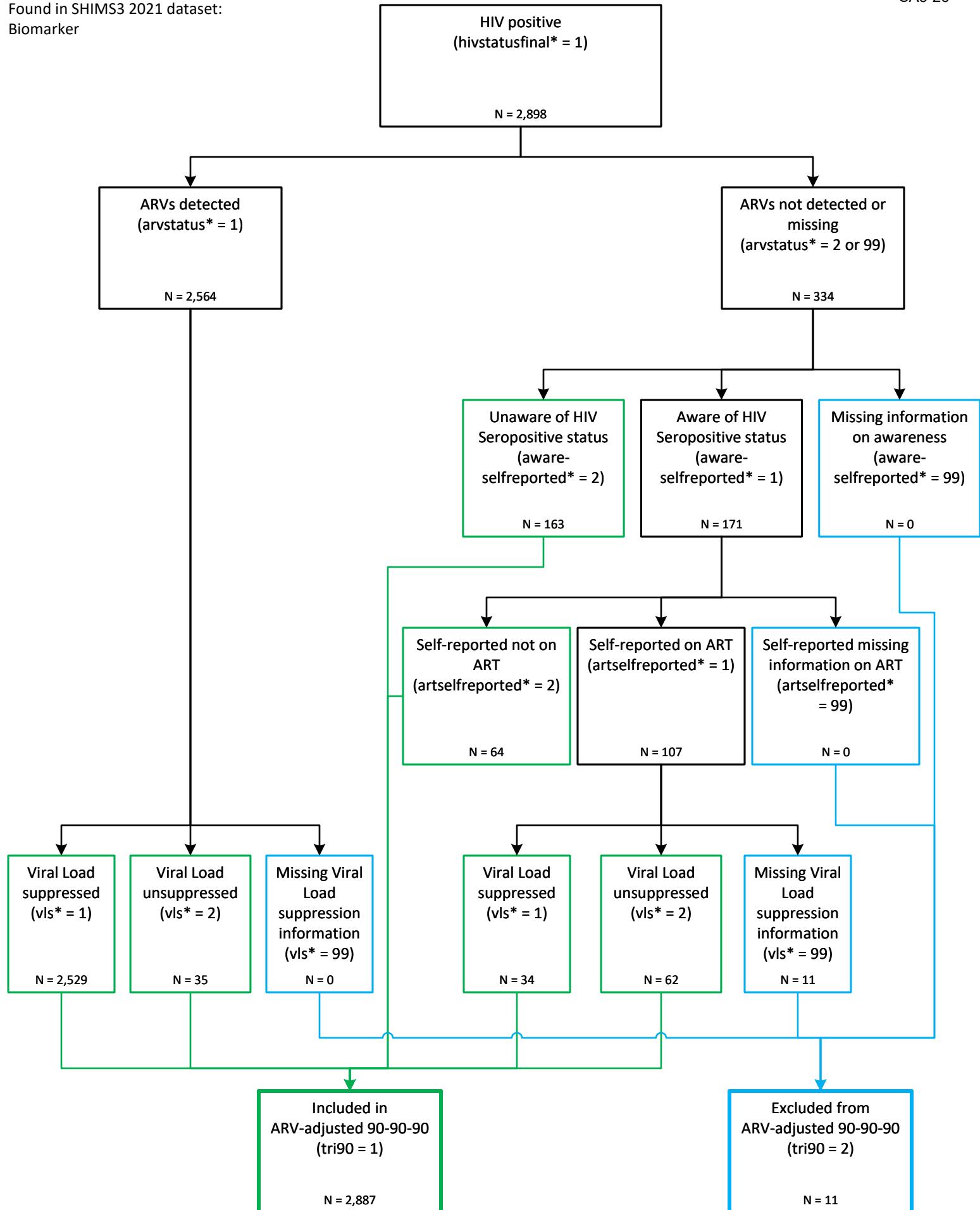
indstatus
arvstakenev
arvftm
arvfty
surveystday†
surveystmonth
surveystyear

† Variable redacted from final dataset due to small counts and disclosure risk.

Variable: tri90

Found in SHIMS3 2021 dataset:
Biomarker

SA3-26



Variable: tri90

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

arvstatus

awareselfreported

artselfreported

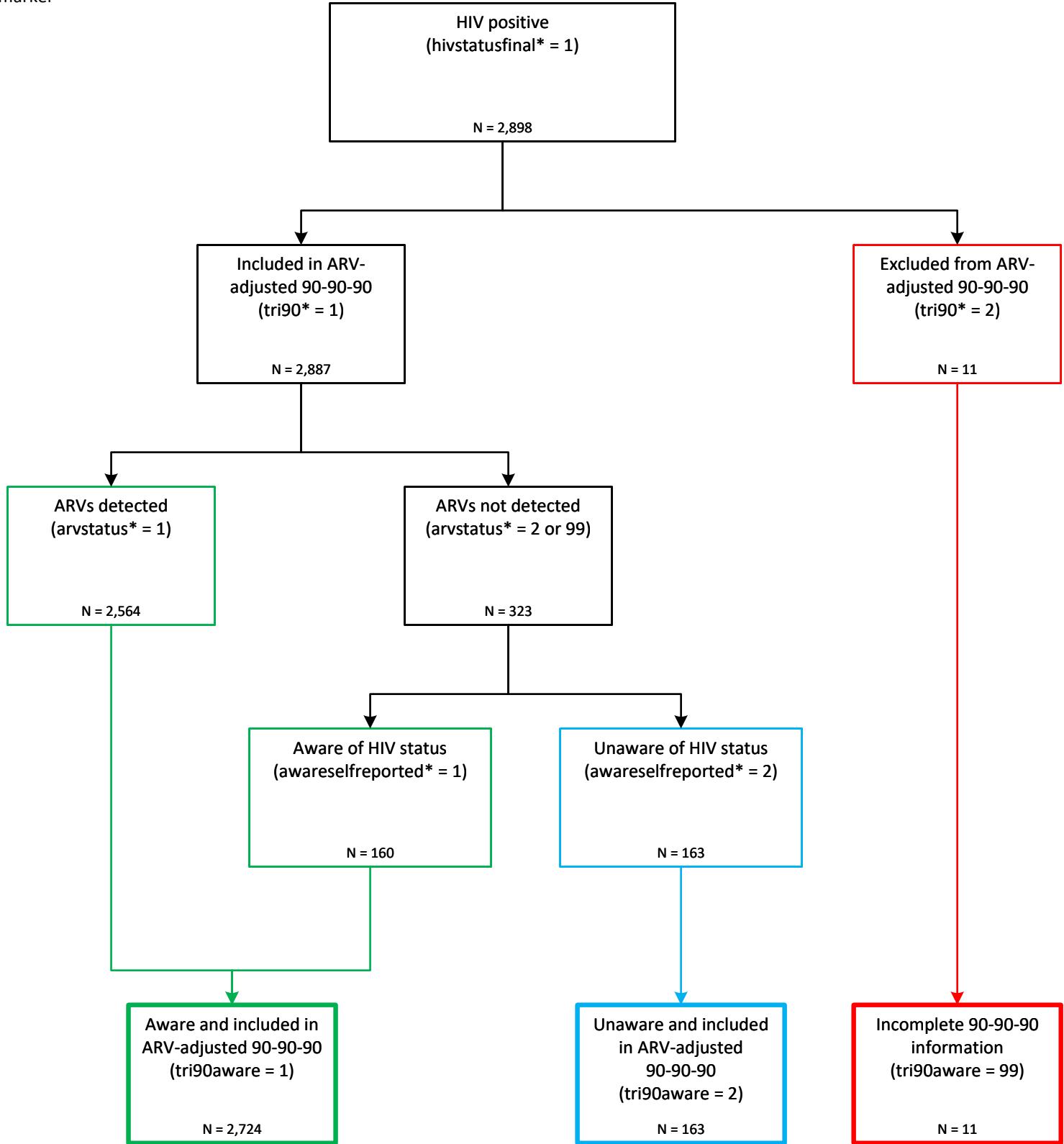
vls

Variable: tri90aware

SA3-28

Found in SHIMS3 2021 dataset:

Biomarker



Variable: tri90aware

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90

arvstatus

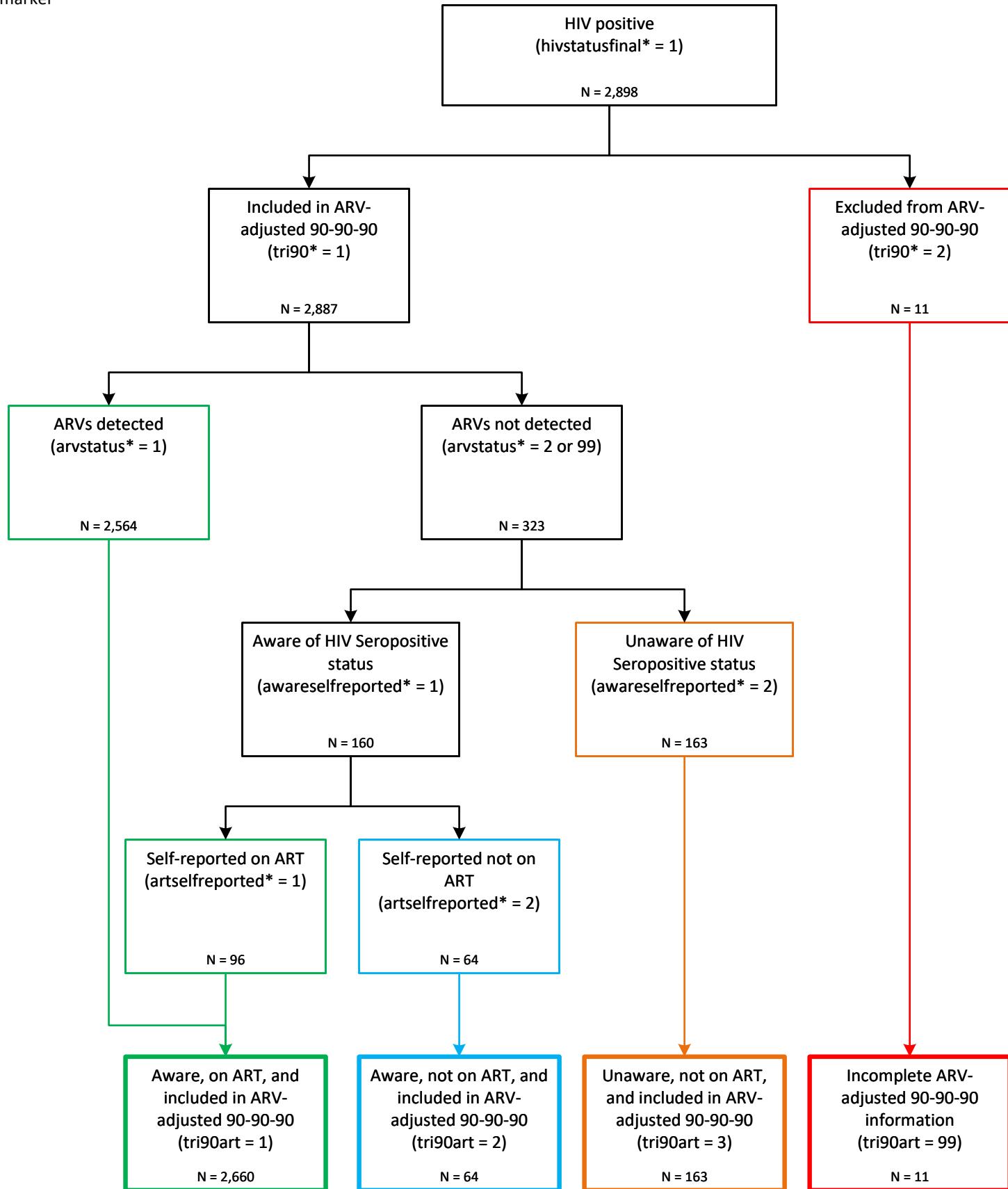
awareselfreported

Variable: tri90art

SA3-30

Found in SHIMS3 2021 dataset:

Biomarker



Variable: tri90art

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90

arvstatus

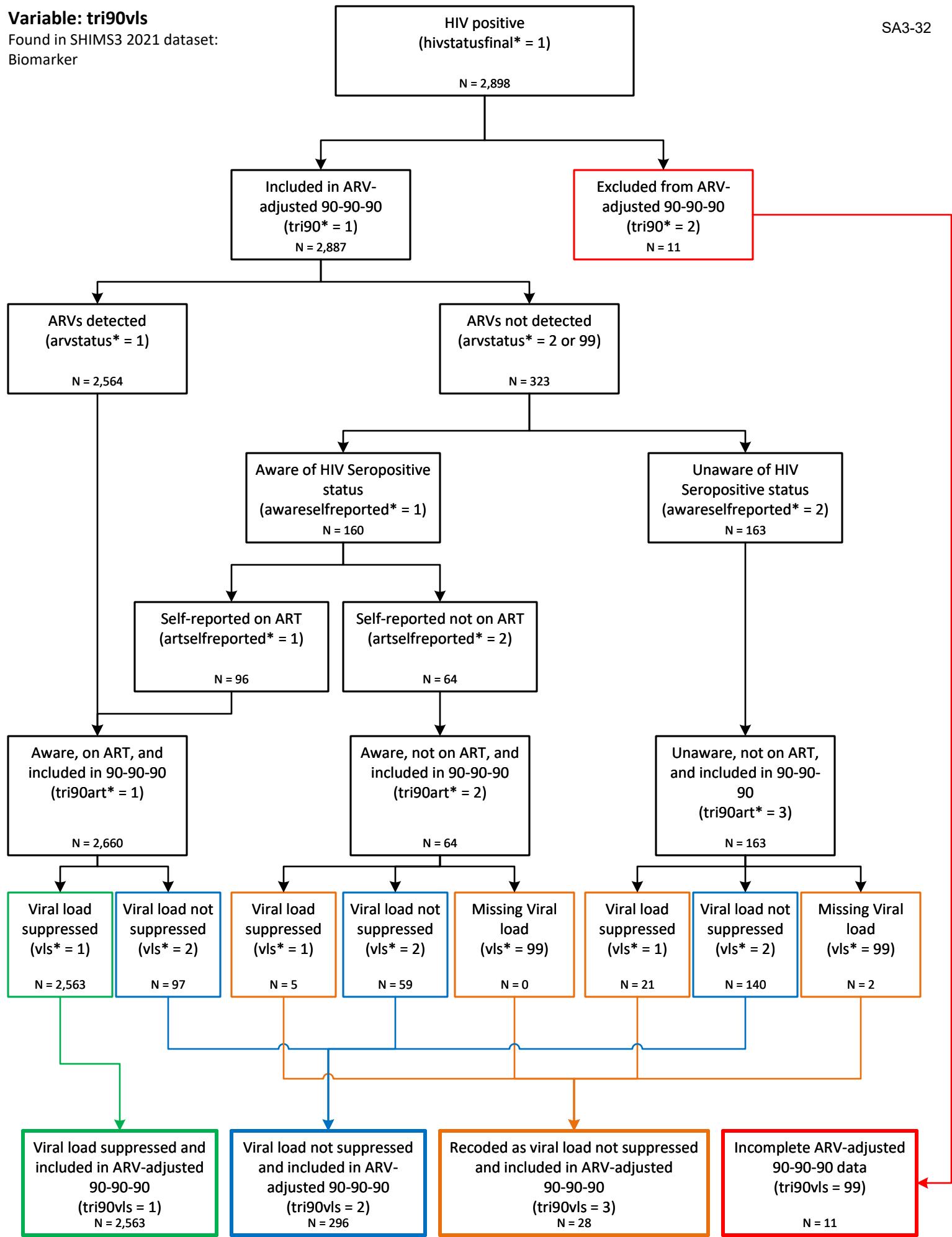
awareselfreported

artsselfreported

Variable: tri90vls

Found in SHIMS3 2021 dataset:
Biomarker

SA3-32



Variable: tri90vls

SA3-33

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90

arvstatus

awareselfreported

artsselfreported

tri90art

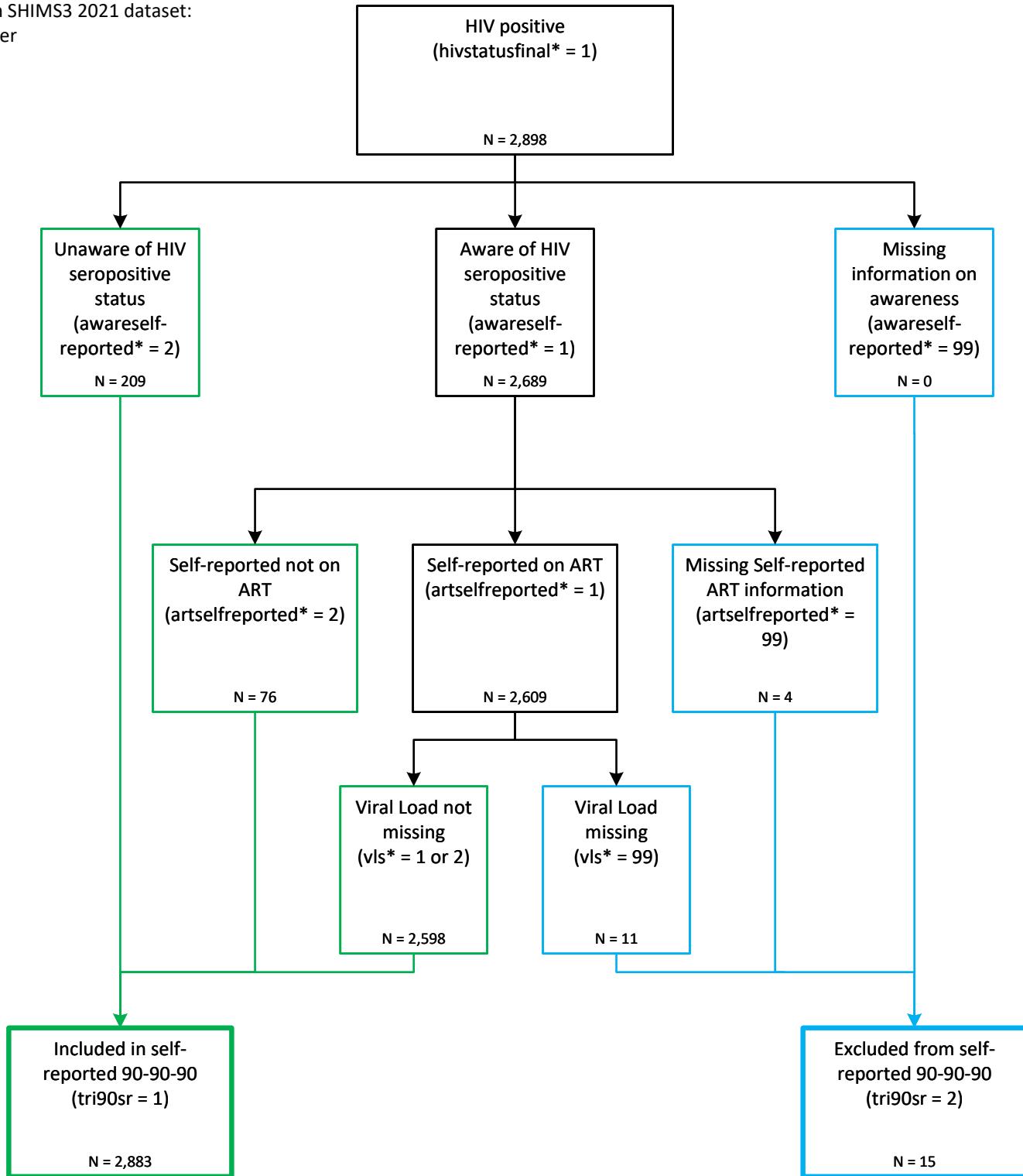
vls

Variable: tri90sr

SA3-34

Found in SHIMS3 2021 dataset:

Biomarker



Variable: tri90sr

SA3-35

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

awareselfreported

artselfreported

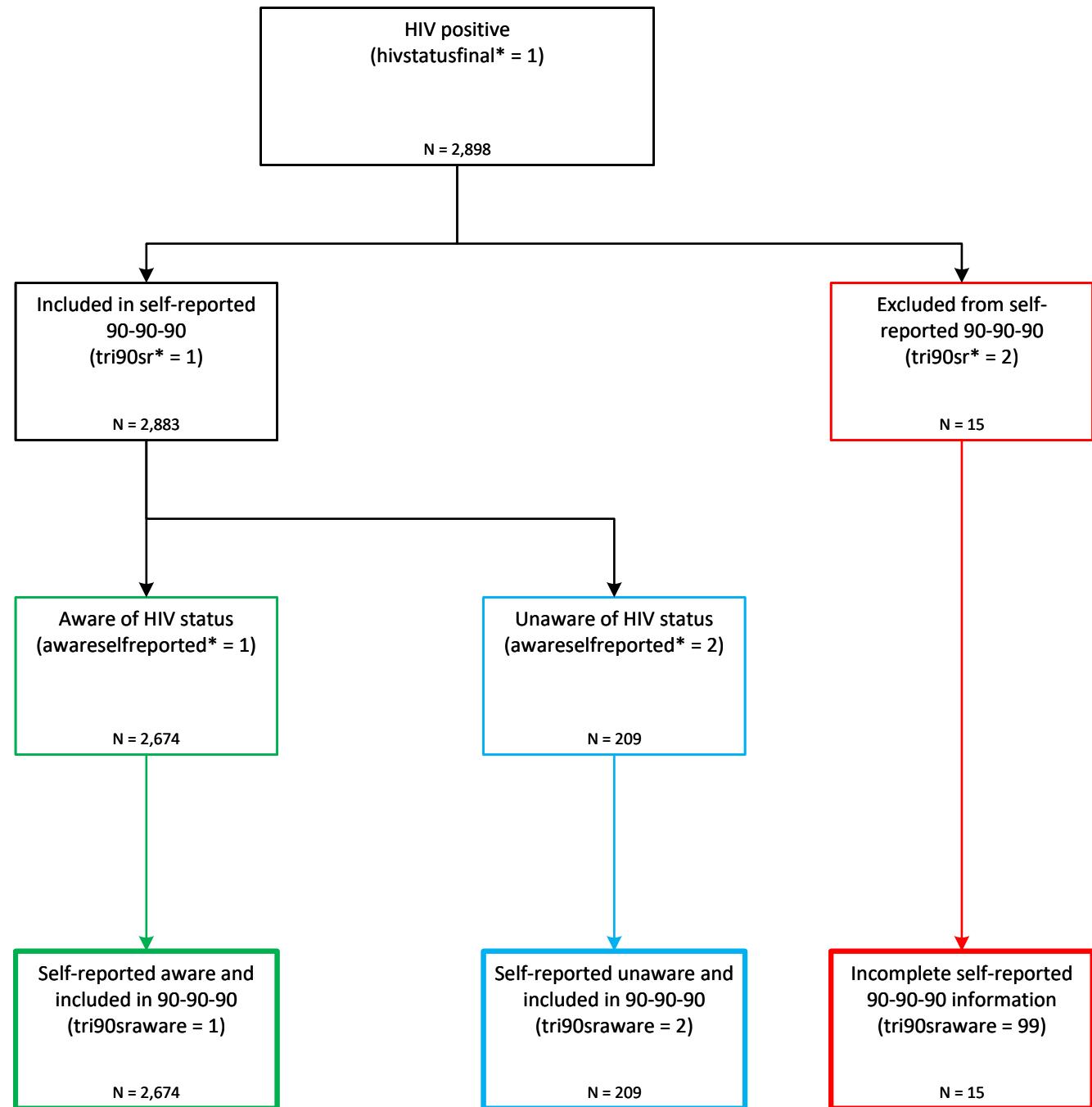
vls

Variable: tri90sraware

SA3-36

Found in SHIMS3 2021 dataset:

Biomarker



Variable: tri90sraware

SA3-37

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90sr

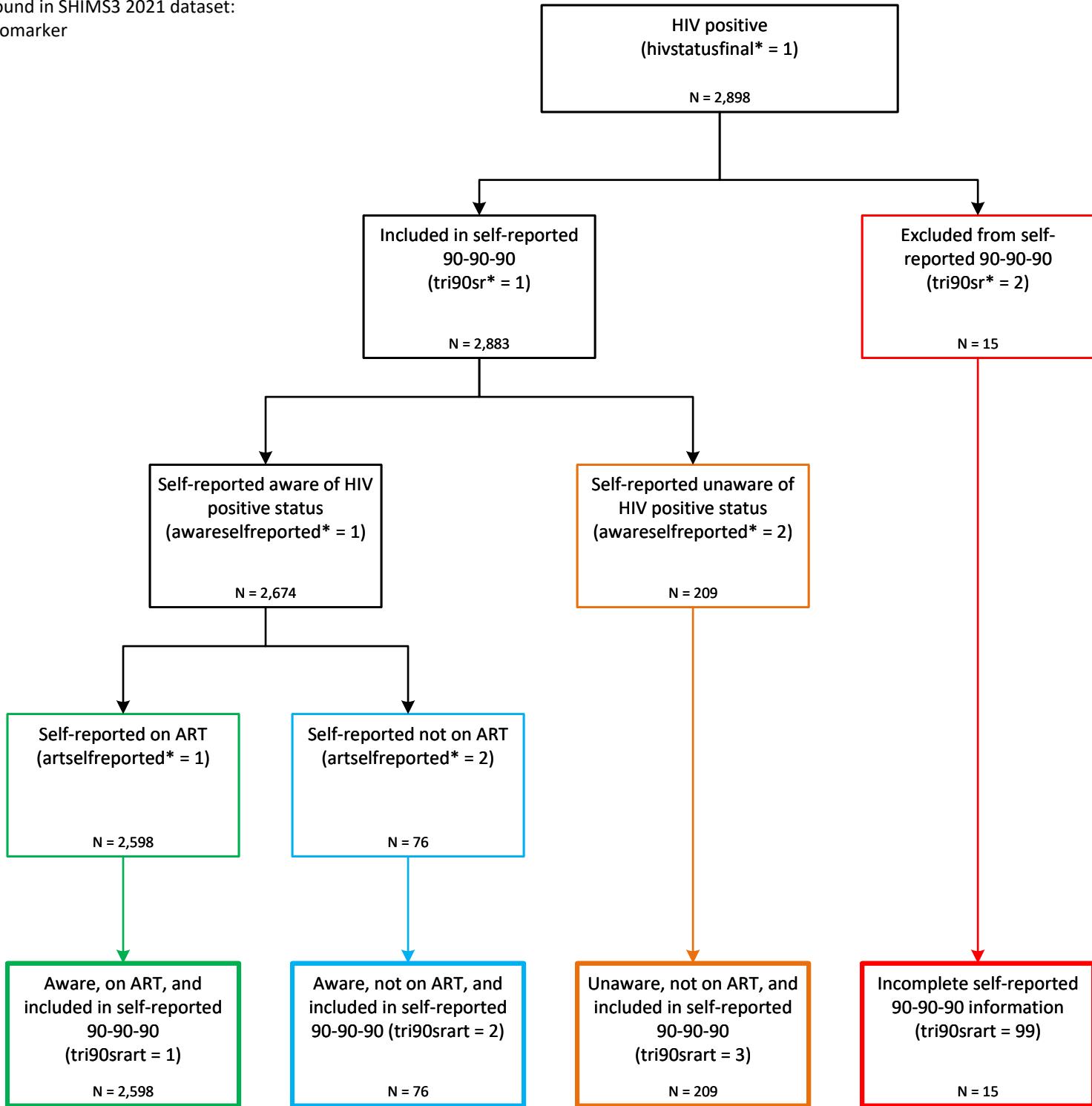
awareselfreported

Variable: tri90srart

SA3-38

Found in SHIMS3 2021 dataset:

Biomarker



Variable: tri90srart

SA3-39

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

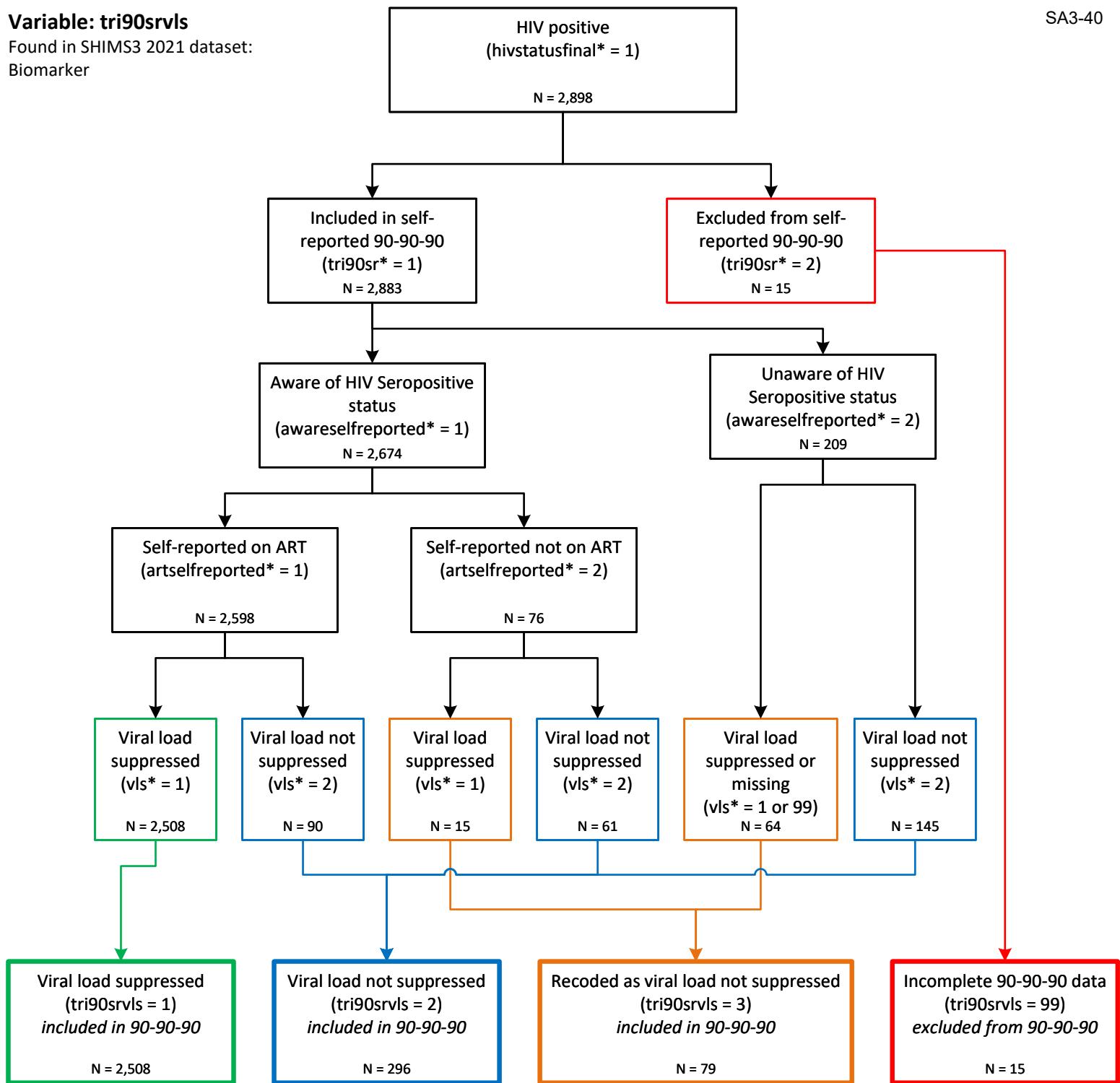
tri90sr

awareselfreported

artselfreported

Variable: tri90srvis

Found in SHIMS3 2021 dataset:
Biomarker



Variable: tri90srvl5

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90sr

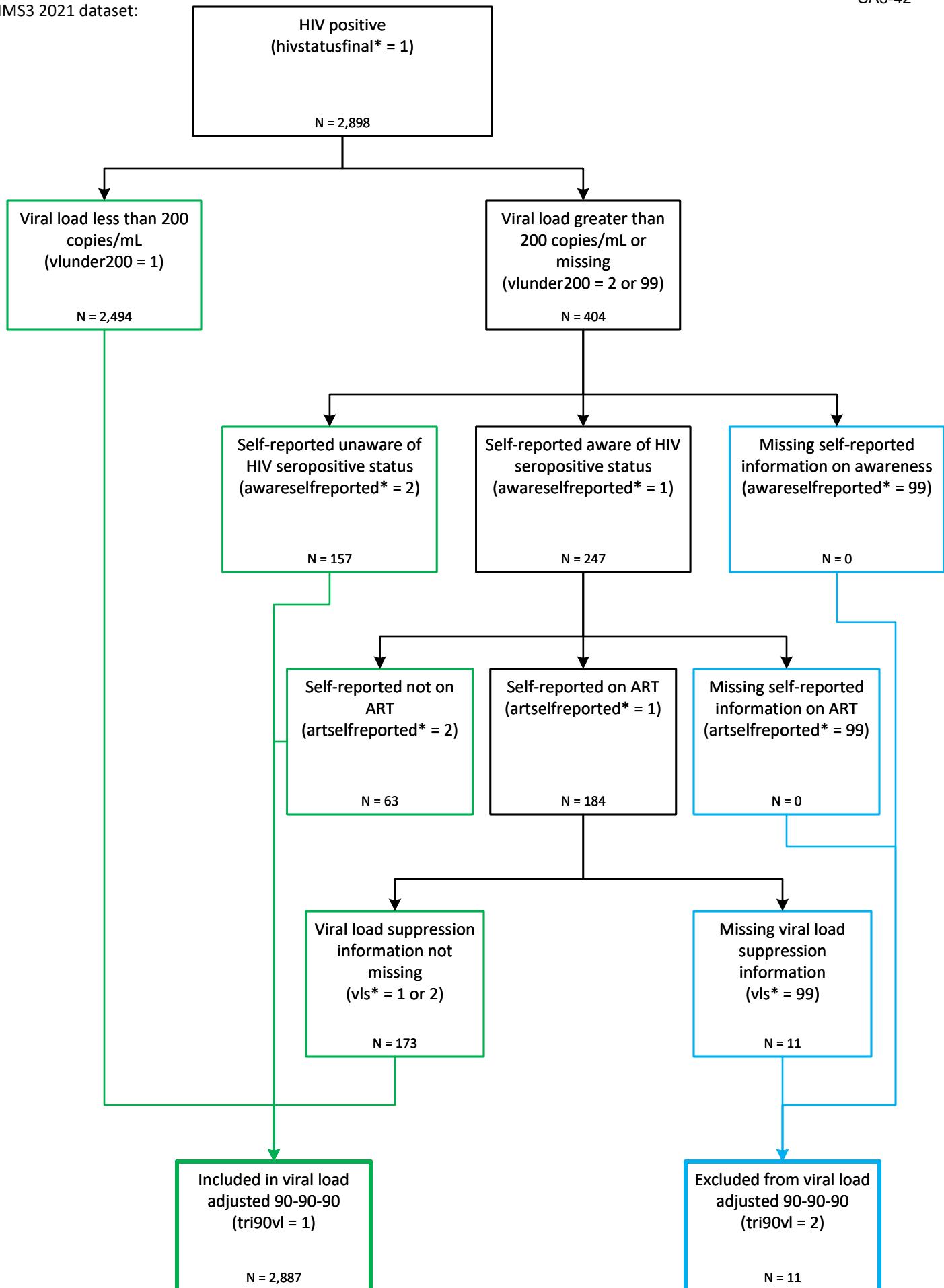
awareselfreported

artselfreported

vls

Variable: tri90vlFound in SHIMS3 2021 dataset:
Biomarker

SA3-42



Variable: tri90vl

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

vlunder200

awareselfreported

artselfreported

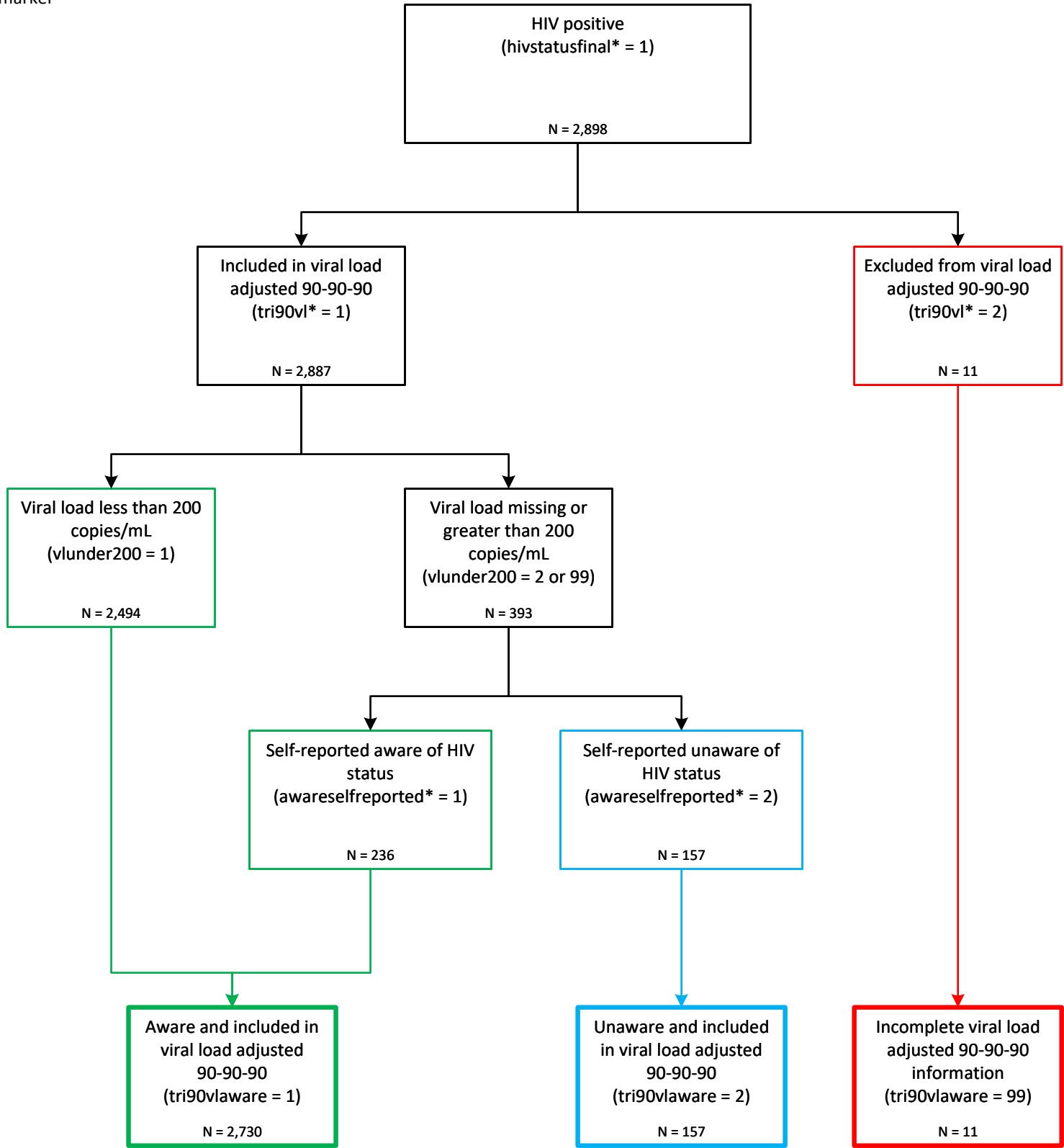
vls

Variable: tri90vlaware

SA3-44

Found in SHIMS3 2021 dataset:

Biomarker



Variable: tri90vlaware

SA3-45

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90vl

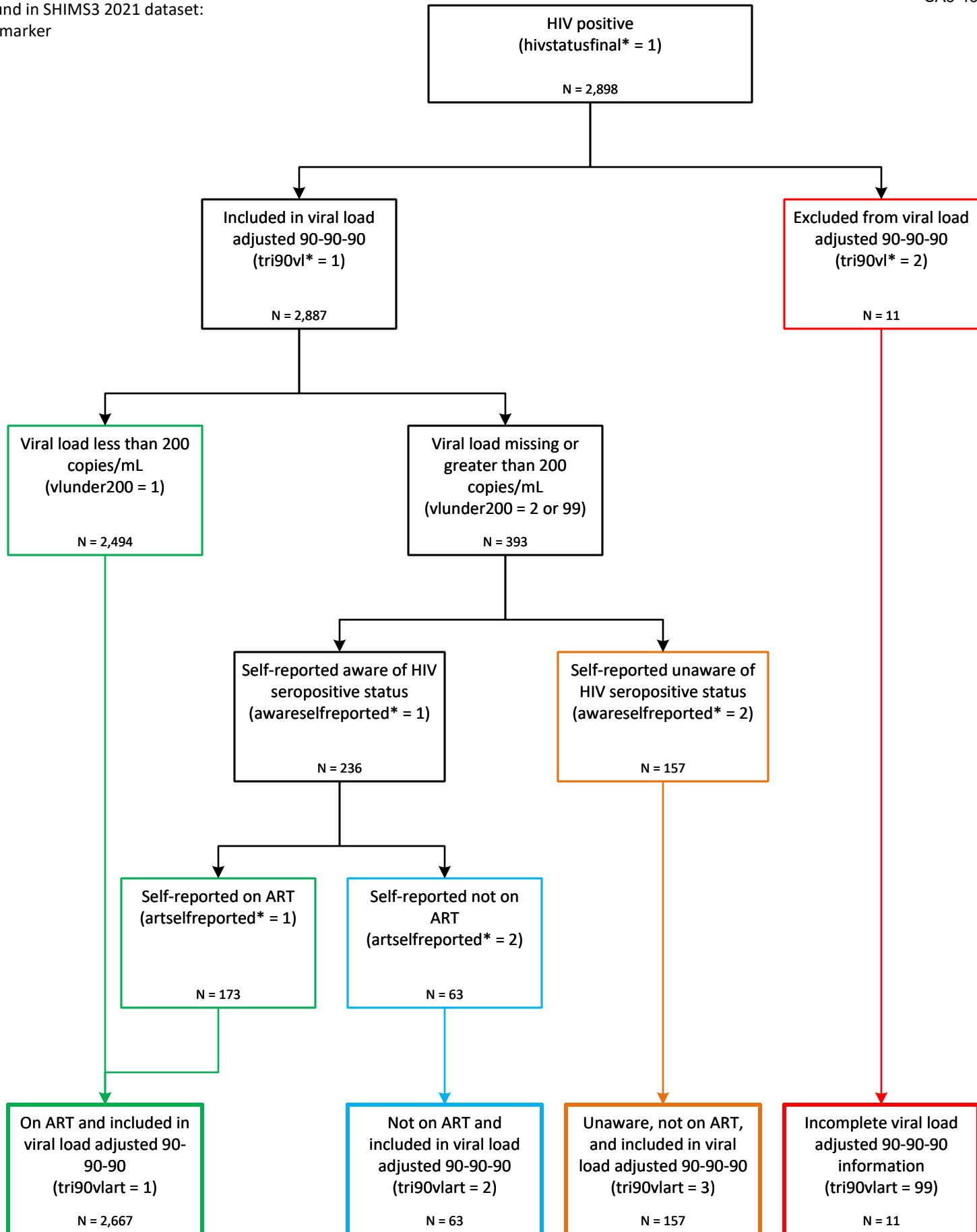
vlunder200

awareselfreported

Variable: tri90vlart

Found in SHIMS3 2021 dataset:
Biomarker

SA3-46



Variable: tri90vlart

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90vl

vlunder200

awareselfreported

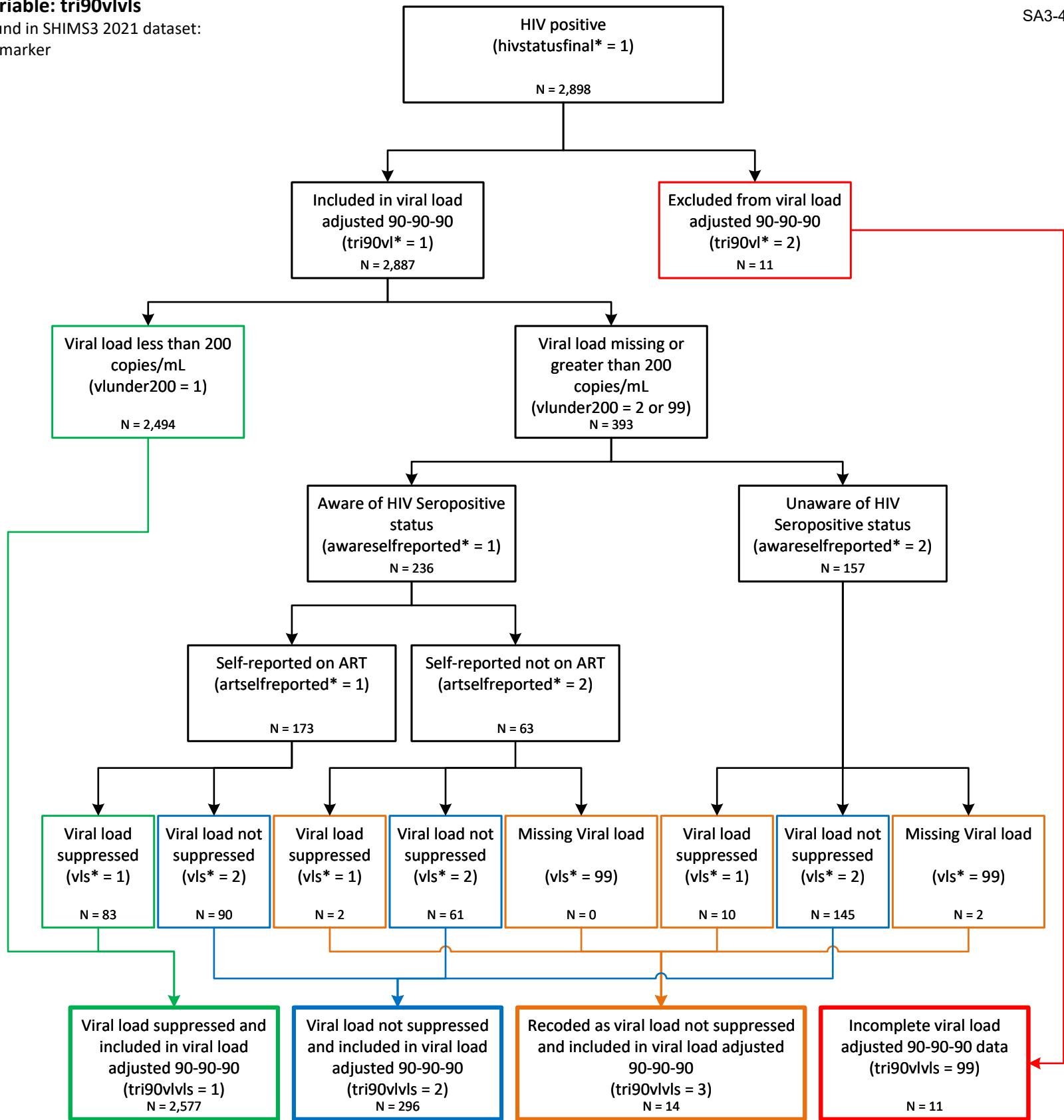
artsselfreported

Variable: tri90vlvls

Found in SHIMS3 2021 dataset:

Biomarker

SA3-48



Variable: tri90vlvl

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

tri90vl

vlunder200

awareselfreported

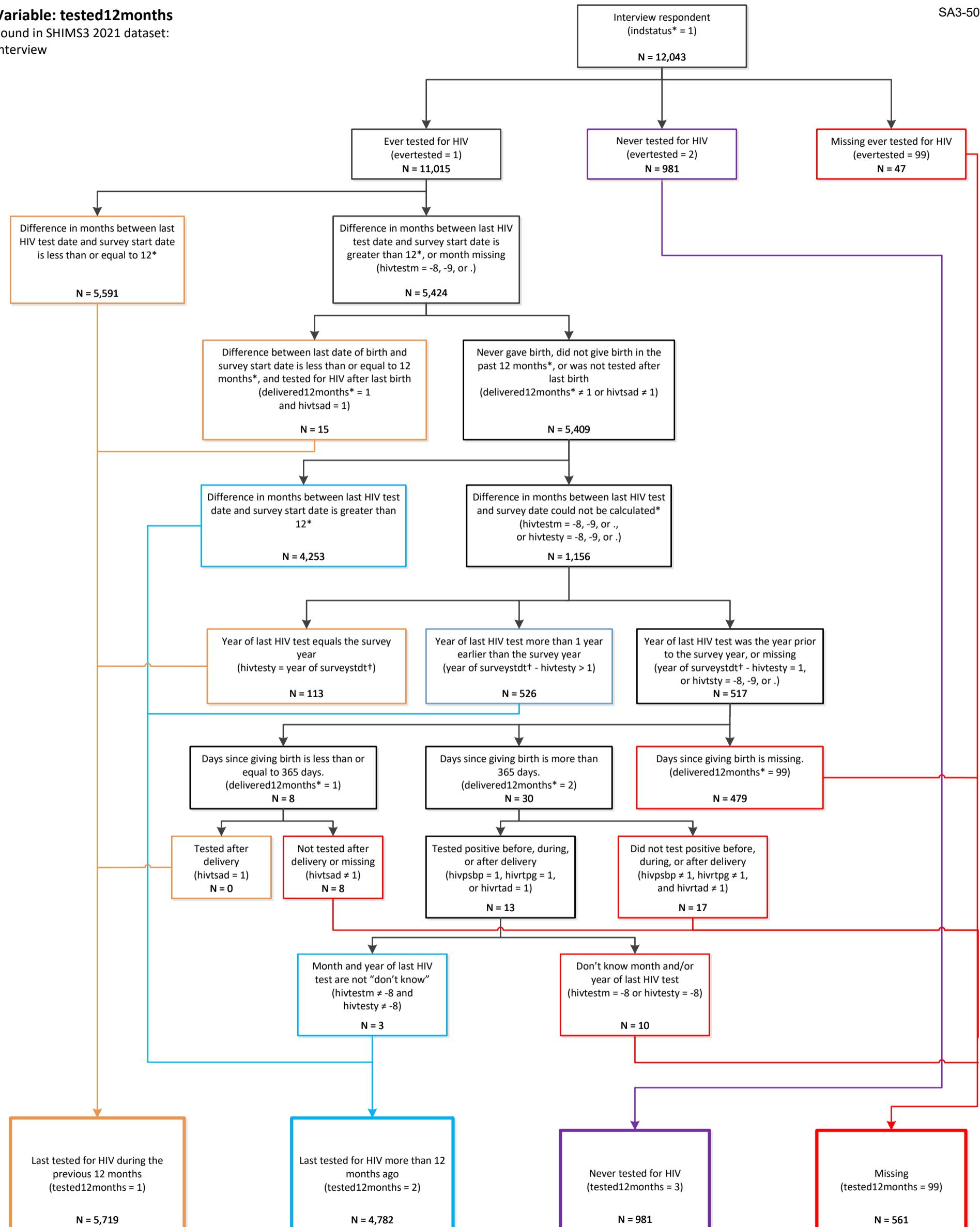
artsselfreported

vls

Variable: tested12months

Found in SHIMS3 2021 dataset:

Interview

*** Notes on date difference calculation and cleaning**

The difference between HIV test date and survey date is calculated from the variables hivtestm, hivtesy, and surveystdt†, which is derived from surveystday†/month/year. Birth date is derived from birthday†, birthmonth†, and birthyr.

Impossible or implausible date values are set to missing. This includes all dates later than the date of the interview (surveystdt†), and HIV testing dates prior to 1985.

Variable: tested12months

Uses the following SHIMS3 2021 variables:

Interview dataset

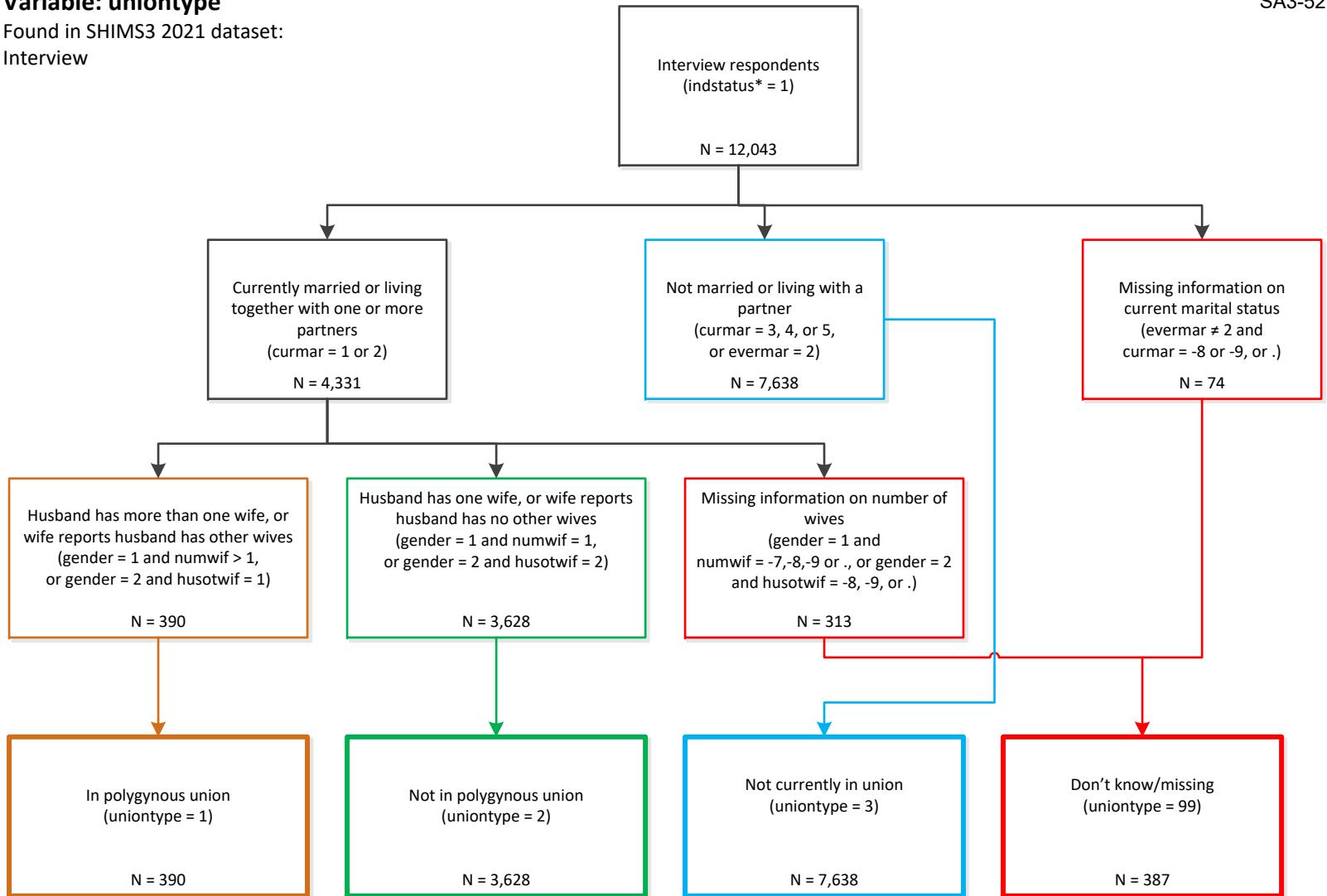
indstatus
evertested
hivtestm
hivtesty
surveystday†
surveystmonth
surveystyear
hivtsad
hivpsbp
hivrtpg
hivrtad
birthday†
birthmont†
birthyr
delivered12months

† Variable redacted from final dataset due to small counts and disclosure risk.

Variable: uniontype

Found in SHIMS3 2021 dataset:

Interview



Variable: uniontype

Uses the following SHIMS3 2021 variables:

Interview dataset

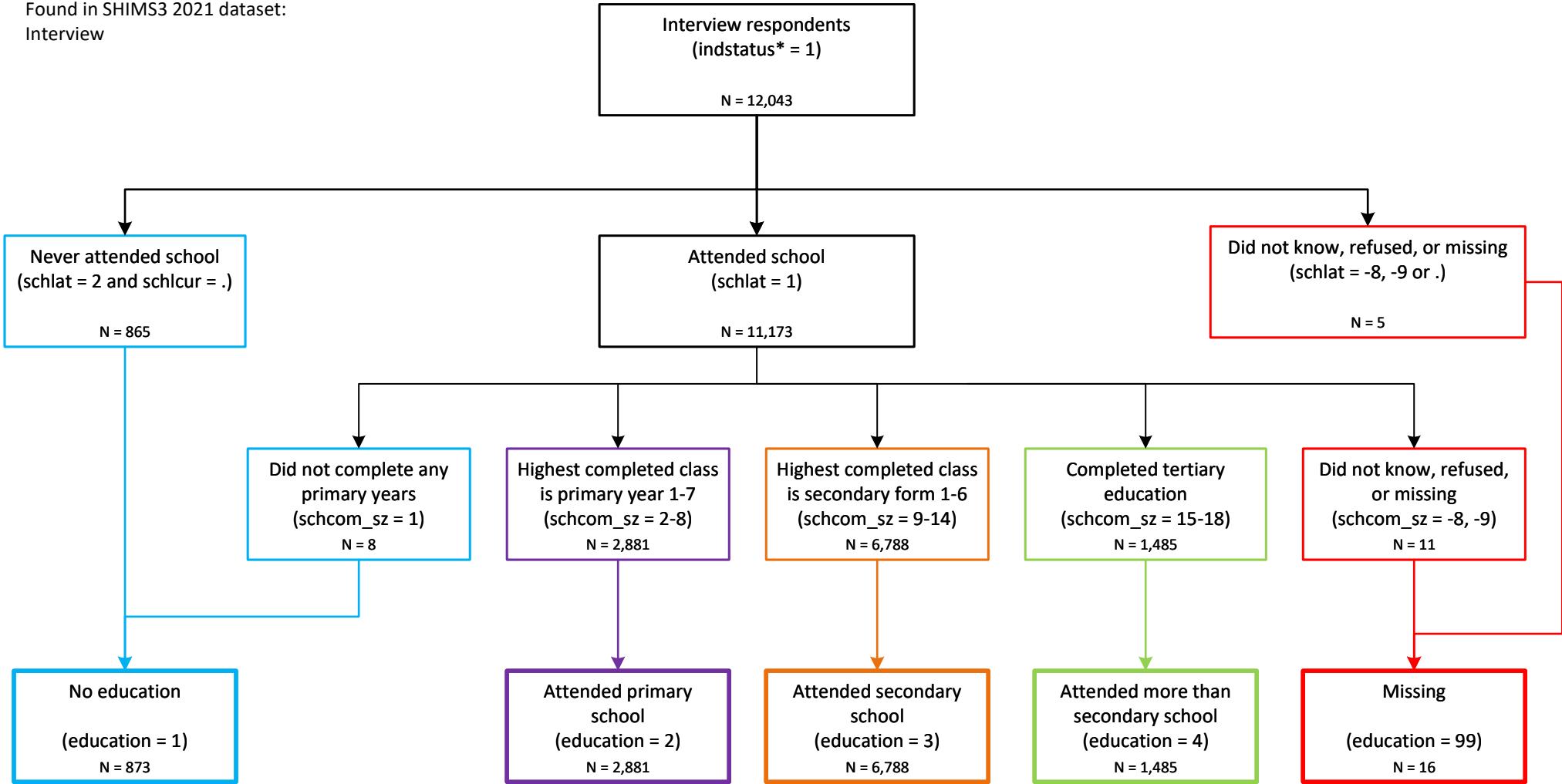
indstatus
curmar
evermar
numwif
husotwif

Variable: education

SA3-54

Found in SHIMS3 2021 dataset:

Interview



Variable: education

SA3-55

Uses the following SHIMS3 2021 variables :

Interview dataset

indstatus

schlat

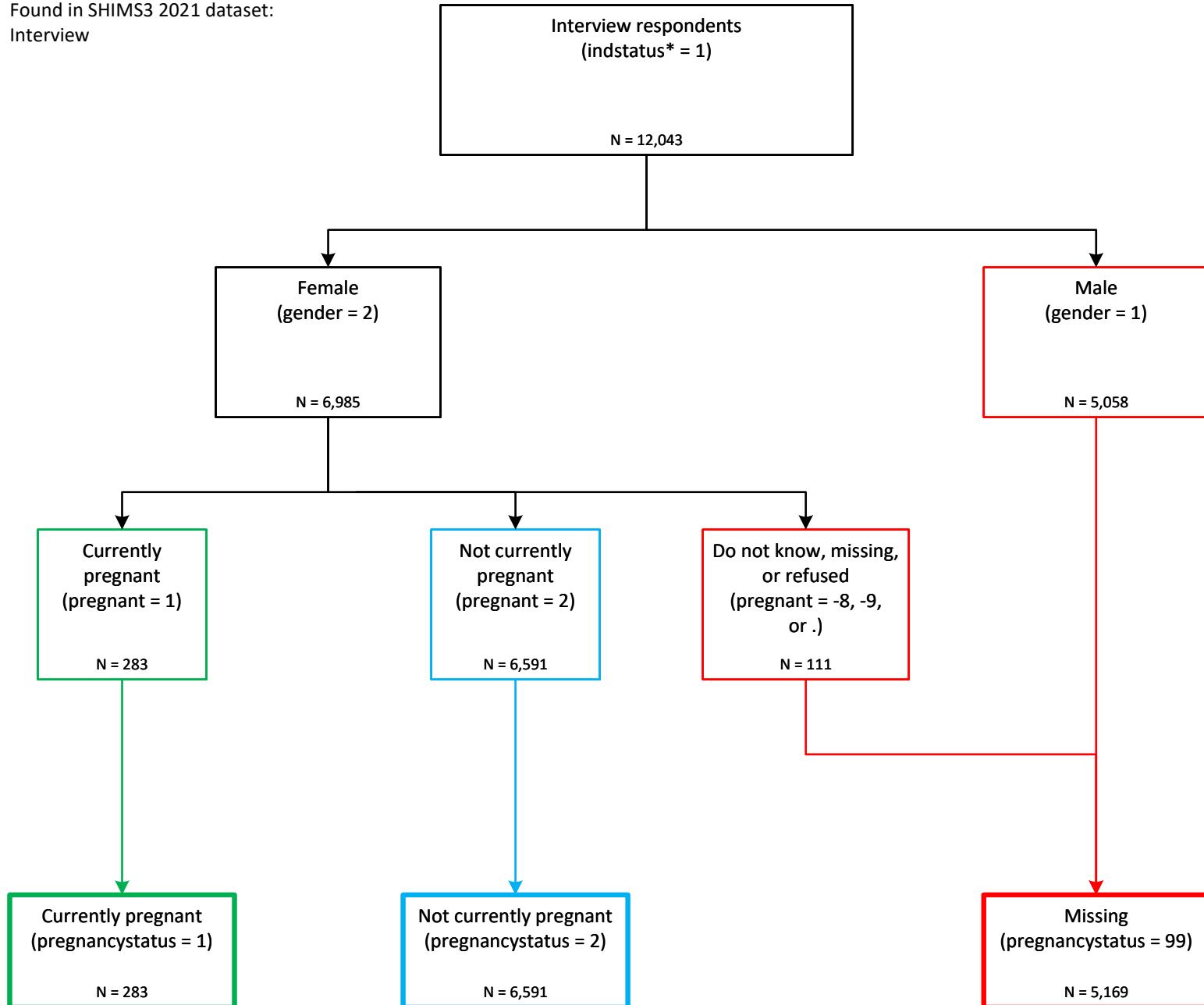
schlcur

schcom_sz

Variable: pregnancystatus

SA3-56

Found in SHIMS3 2021 dataset:
Interview



Variable: pregnancystatus

SA3-57

Uses the following SHIMS3 2021 variables:

Interview dataset

indstatus

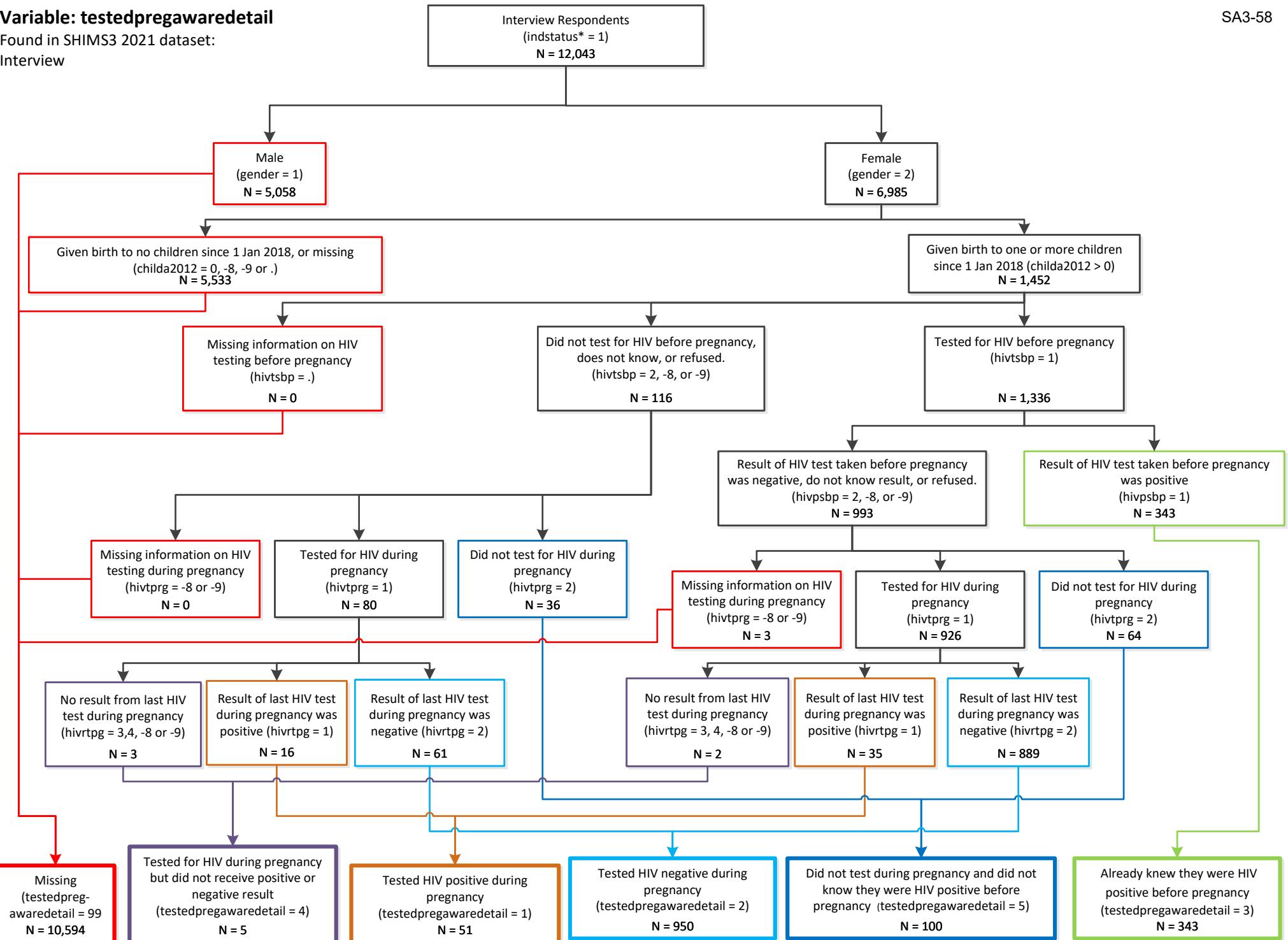
gender

pregnant

Variable: testedpregawaredetail

Found in SHIMS3 2021 dataset:

Interview



Variable: testedpregawaredetail

SA3-59

Uses the following SHIMS3 2021 variables:

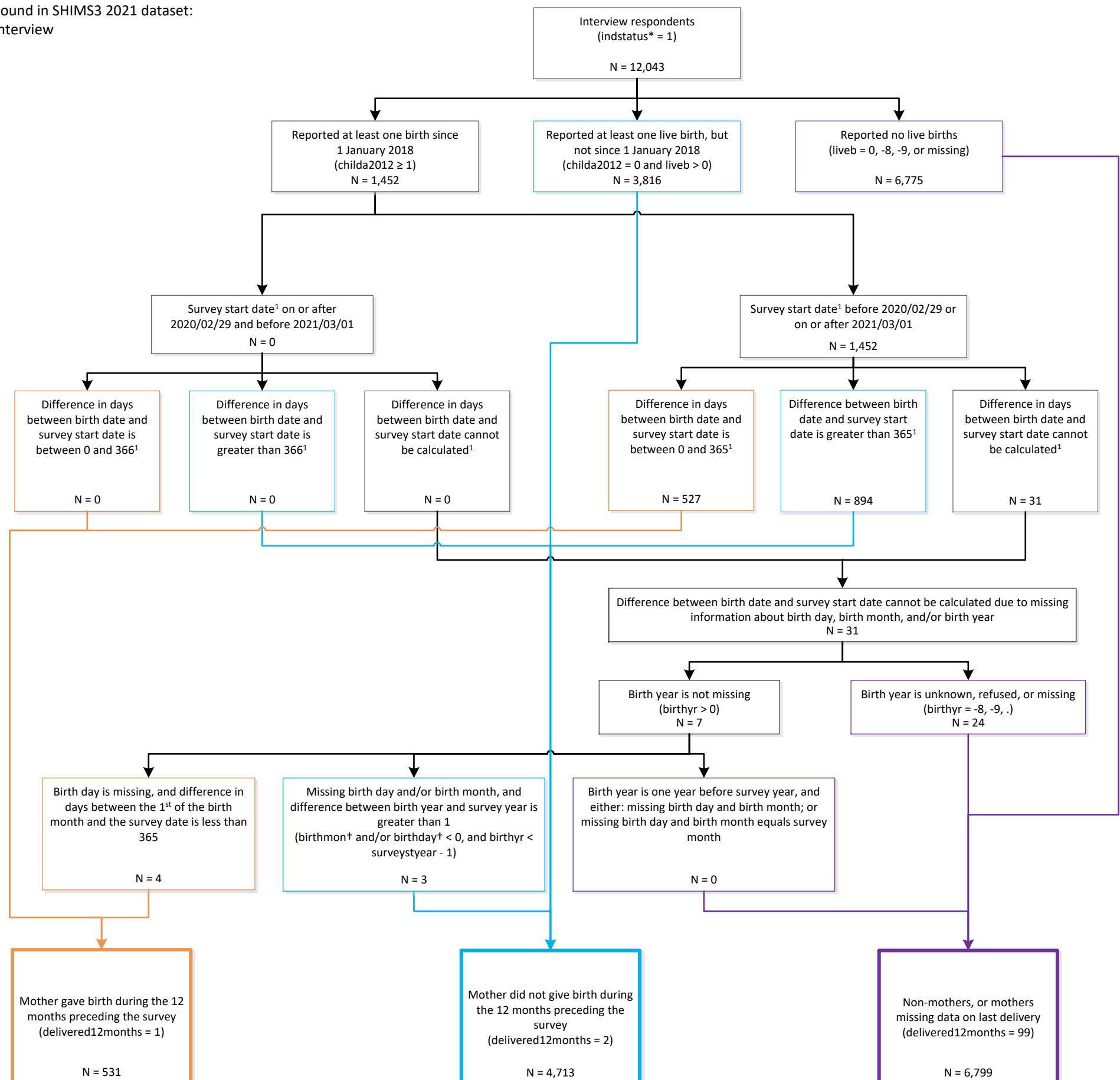
Interview dataset

indstatus
gender
childa2012
hivtsbp
hivpsbp
hivtprg
hivrtpg
delivered12months

Variable: delivered12months

Found in SHIMS3 2021 dataset:

Interview

¹ Survey start date, the start date for the PHIA interview, is computed using surveystday†, surveystmonth, and surveystyear.Birth date, the date of the mother's most recent birth, is computed using birth month (birthmont†), birth day (birthday†), and birth year (birthyr). Invalid dates, such as dates after the survey start date, or invalid days (eg. 31st of September) are cleaned before calculating date differences.

Variable: delivered12months

Uses the following SHIMS3 2021 variables:

Interview

indstatus

liveb

childa2012

surveystday†

surveystmonth

surveystyear

birthyr

birthmont

birthday†

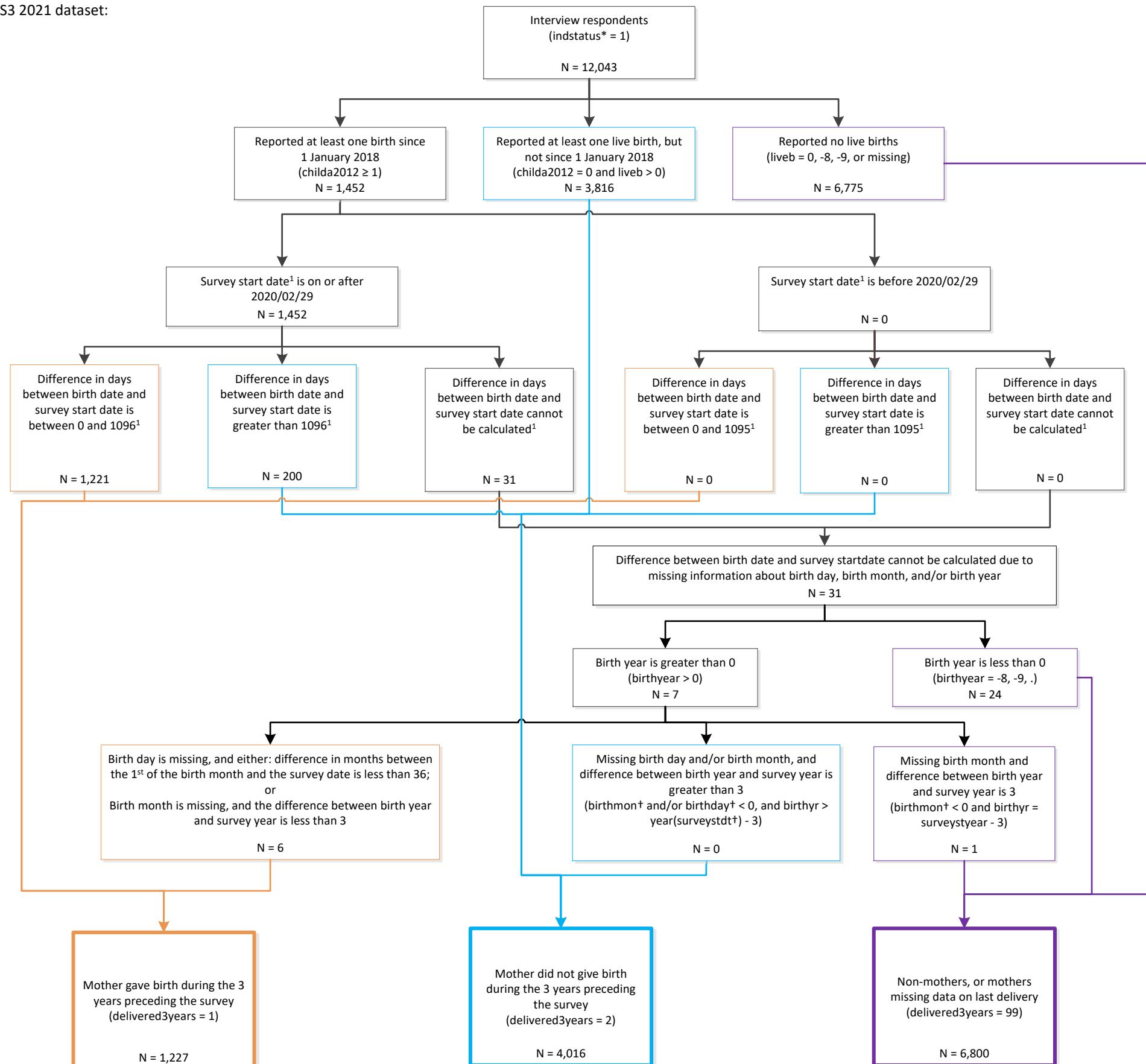
† Variable redacted from final dataset due to small counts and disclosure risk.

Variable: delivered3years

Found in SHIMS3 2021 dataset:

Interview

SA3-62



Variable: delivered3years

Uses the following SHIMS3 2021 variables:

Interview

indstatus

liveb

childa2012

surveystyear

surveystmonth

surveystday[†]

birthyr

birthmont

birthday[†]

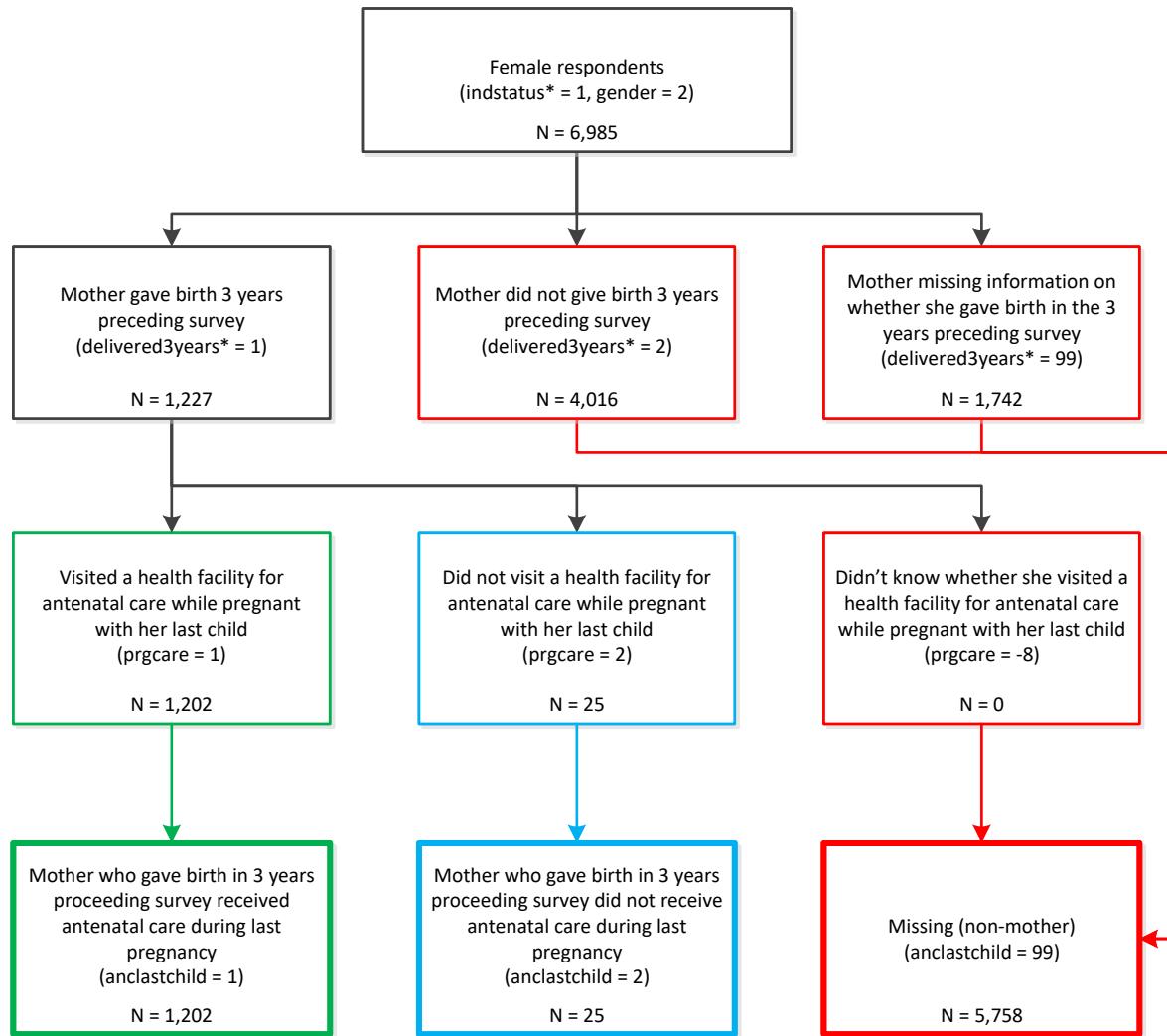
[†] Variable redacted from final dataset due to small counts and disclosure risk.

Variable: anclastchild

SA3-64

Found in SHIMS3 2021 dataset:

Interview



Variable: anclastchild

Uses the following SHIMS3 2021 variables:

Interview dataset

indstatus

gender

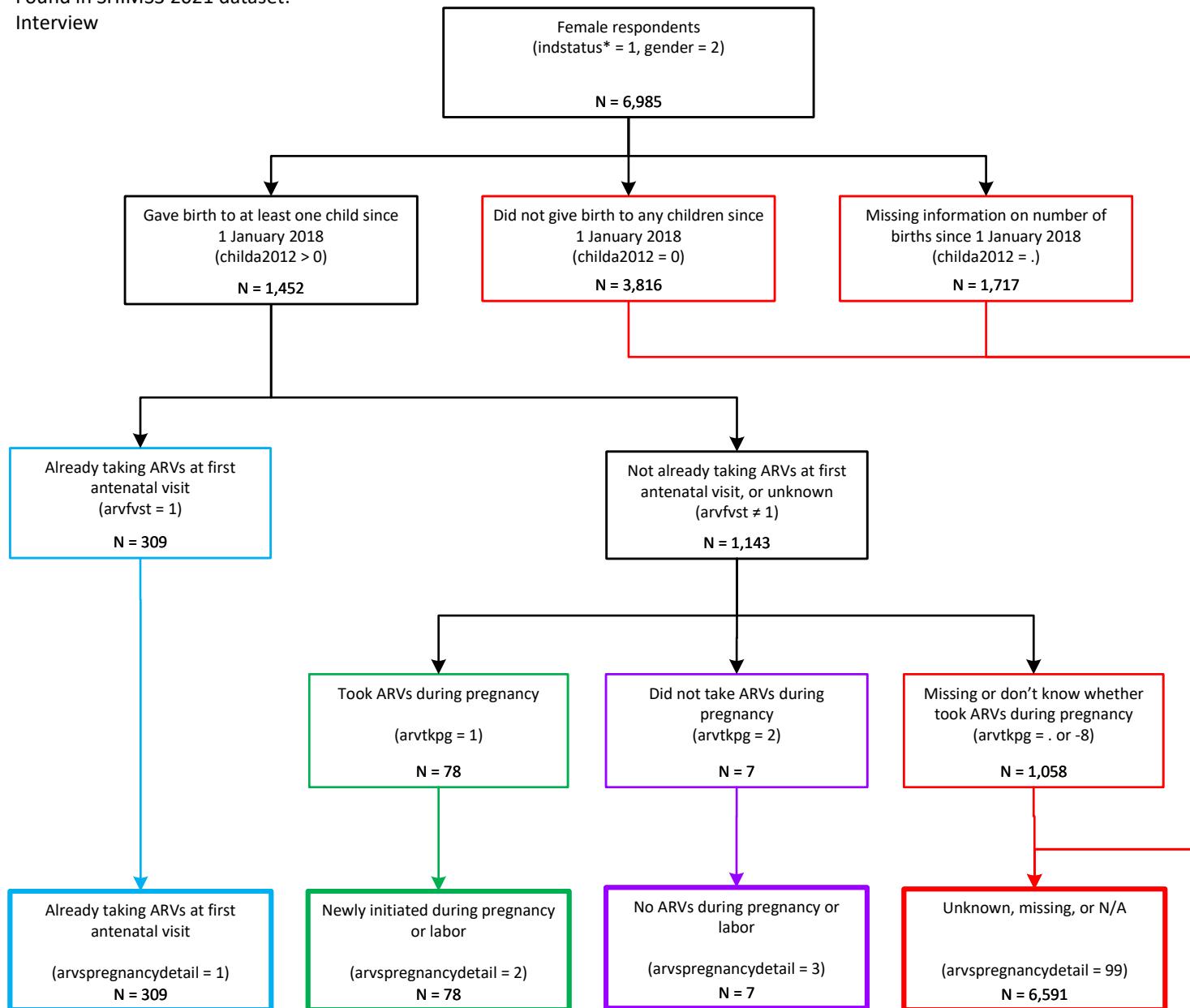
delivered3years

prgcare

Variable: arvspregnancydetail

Found in SHIMS3 2021 dataset:

Interview



Variable: arvspregnancydetail

Uses the following SHIMS3 2021 variables:

Interview

indstatus

gender

childa2012

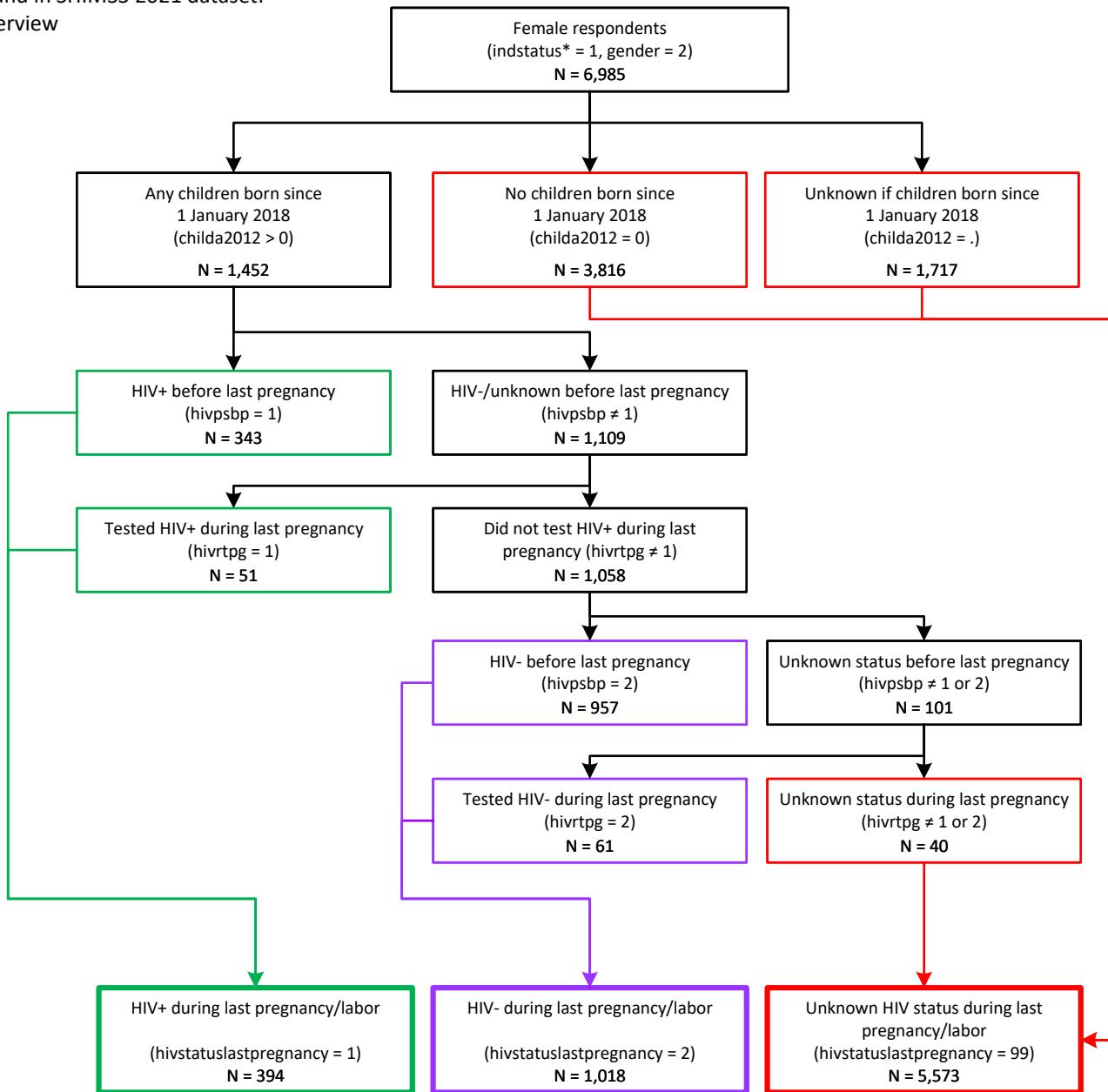
arfvst

arvtpg

Variable: hivstatuslastpregnancy

Found in SHIMS3 2021 dataset:

Interview



Variable: hivstatuslastpregnancy

Uses the following SHIMS3 2021 variables:

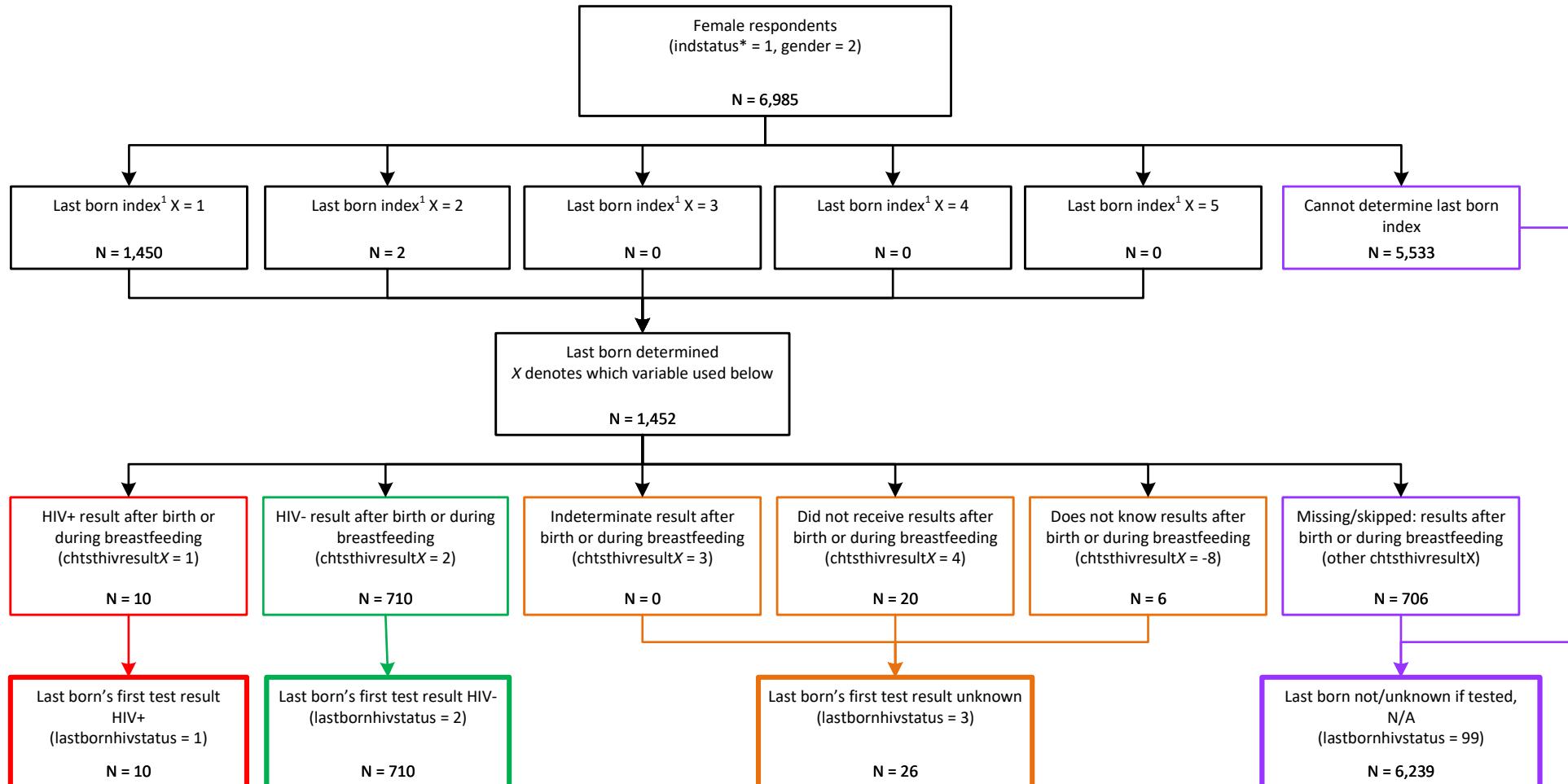
Interview

indstatus
gender
childa2012
hivpsbp
hivrtpg

Variable: lastbornhivstatus

Found in SHIMS3 2021 dataset:

Interview



¹ Last born child is defined as the highest number X for which the variable childaliveX is not missing.

Variable: lastbornhivstatus

SA3-71

Uses the following SHIMS3 2021 variables:

Interview dataset

- indstatus
- gender
- childalive1
- childalive2†
- chtsthivresult1

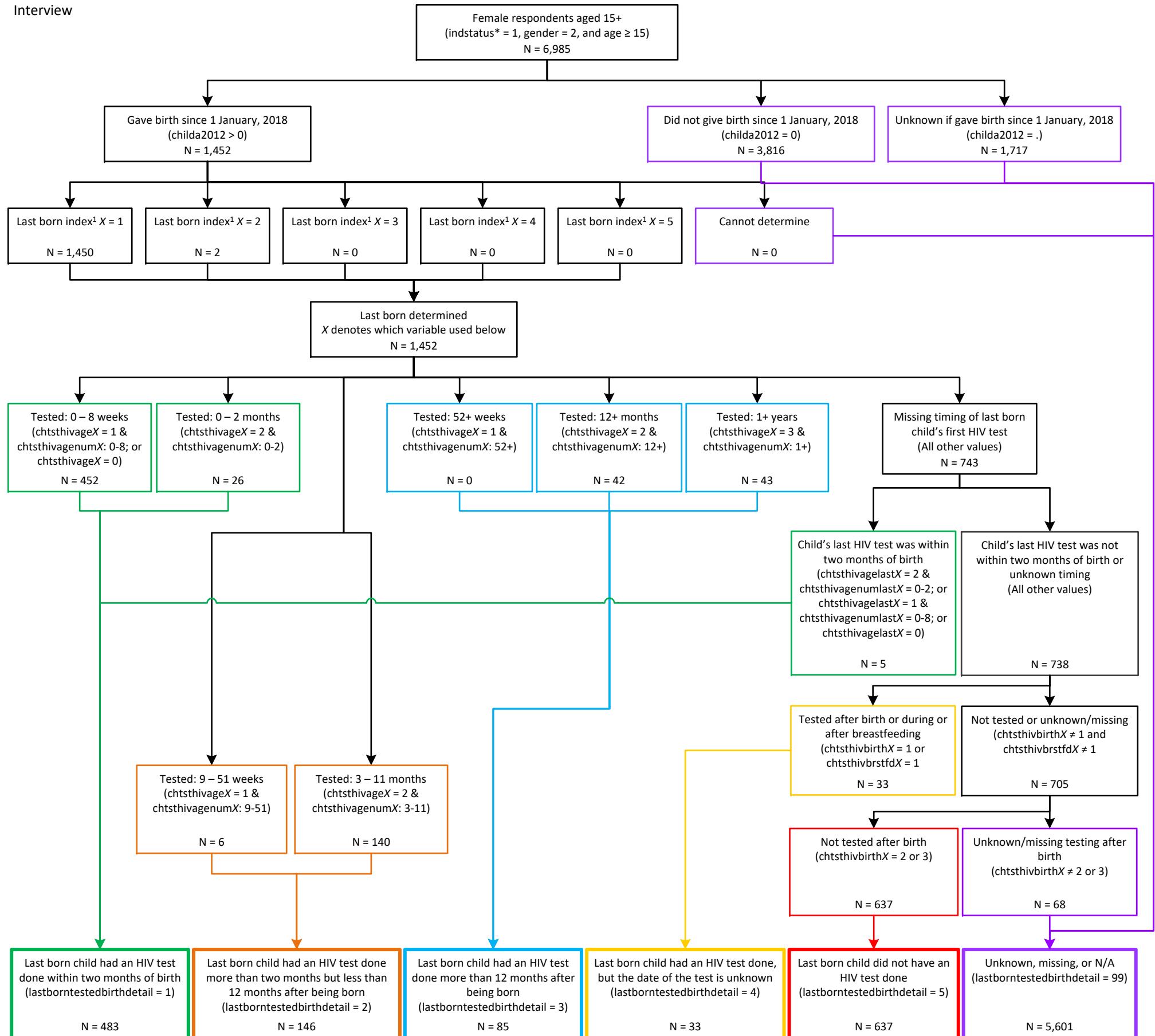
† Variable redacted from final dataset due to small counts and disclosure risk.

Variable: lastborntestedbirthdetail

SA3-72

Found in SHIMS3 2021 datasets:

Interview



¹ Last born child is defined as the highest number X for which the variable chldaliveX is not missing.

Variable: lastborntestedbirthdetail

Uses the following SHIMS3 2021 variables:

Adult Interview dataset

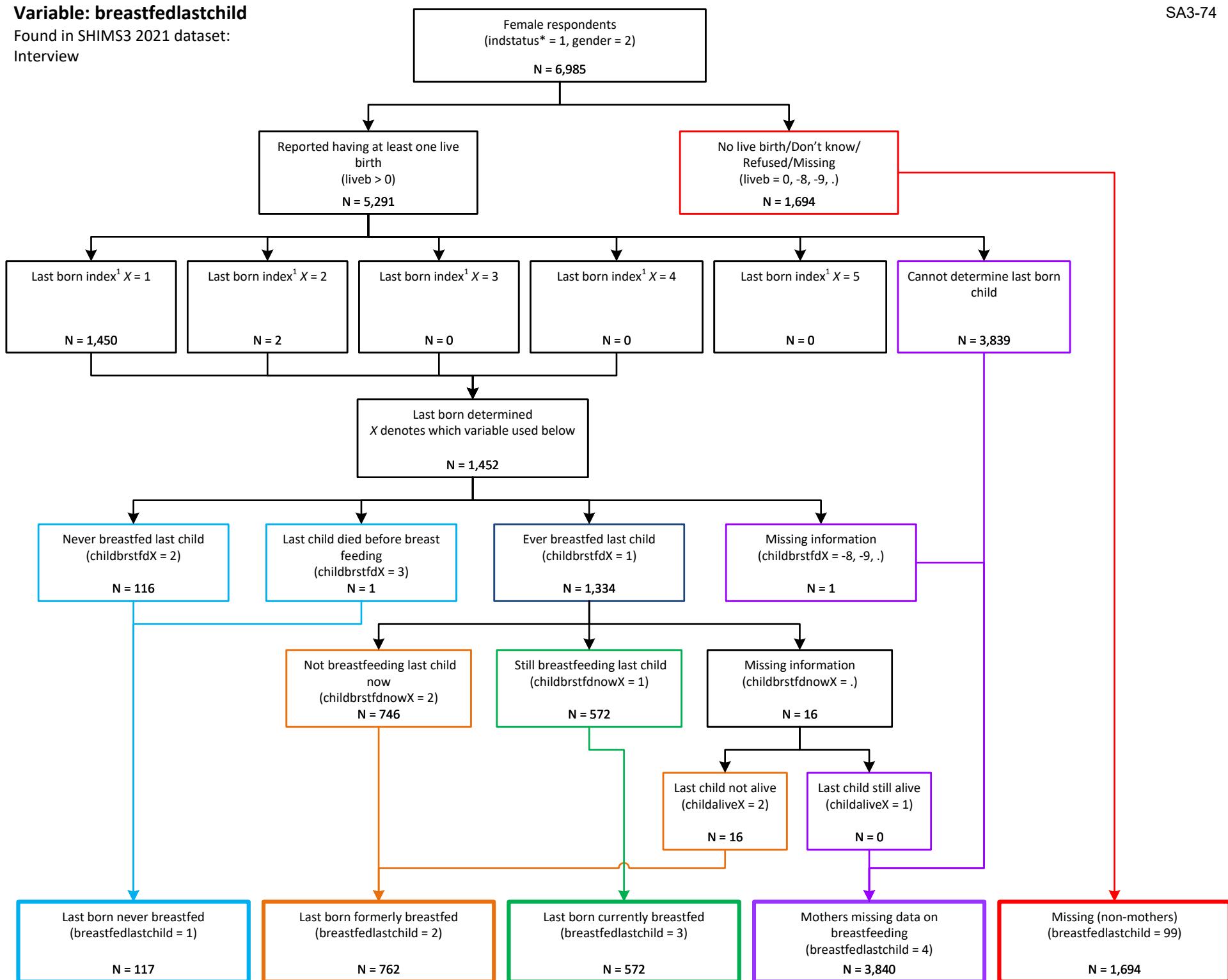
gender
indstatus
childa2012
childalive1
childalive2†
chtsthivbirth1
chtsthivbirth2†
chtsthivbrstfd1
chtsthivagelast1
chtsthivagelastnum1

† Variable redacted from final dataset due to small counts and disclosure risk. The variable chtsthivagelastm1 provides the age of the last born child in months.

Variable: breastfedlastchild

Found in SHIMS3 2021 dataset:

Interview

¹ Last born child is defined as the highest number X for which the variable childaliveX is not missing.

Variable: breastfedlastchild

Uses the following SHIMS3 2021 variables:

Interview dataset

indstatus
gender
liveb
childalive1
childalive2†
childbrstfd1
childbrstfd2†
childbrstfdnow1
childbrstfdnow2†

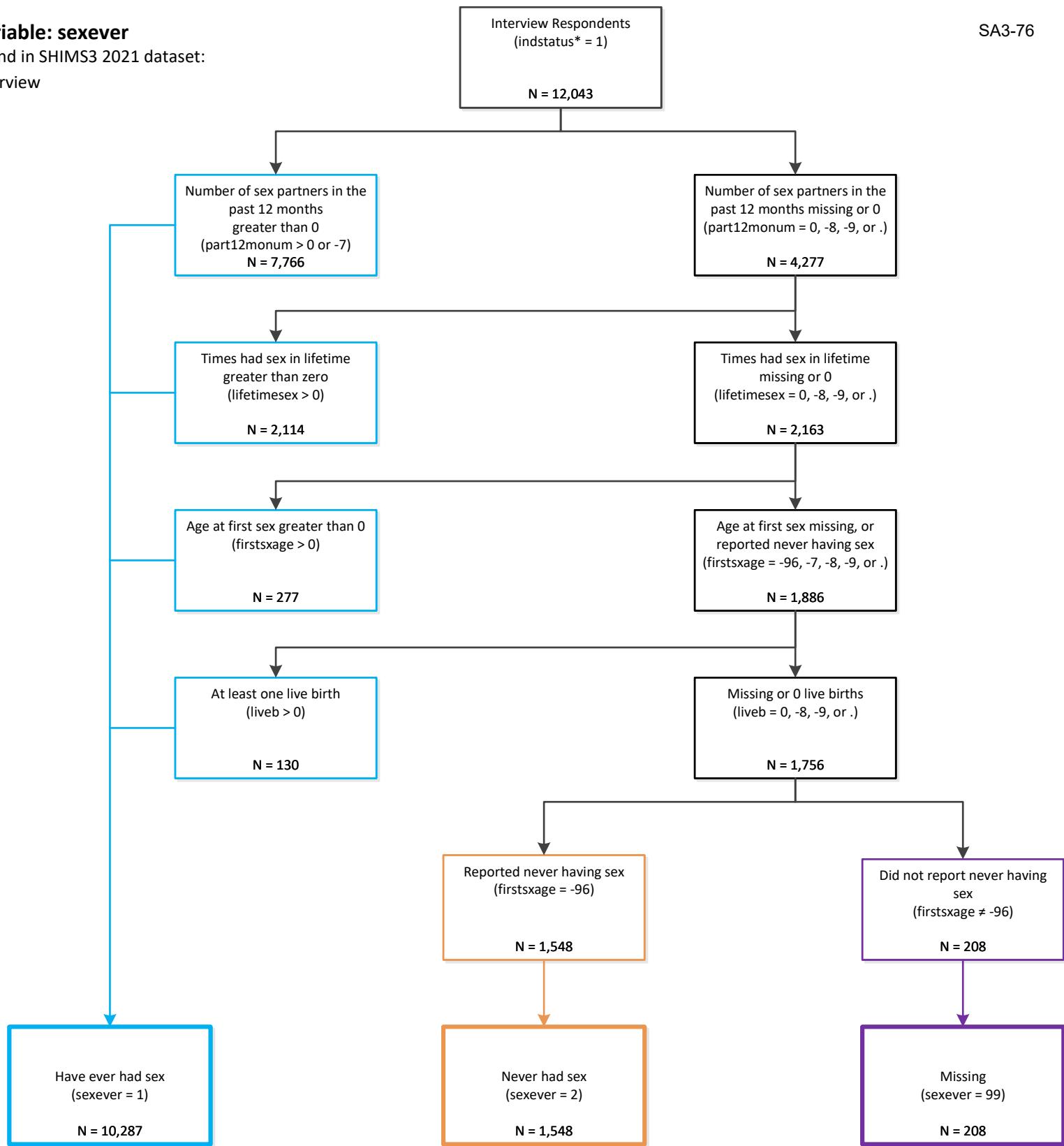
† Variable redacted from final dataset due to small counts and disclosure risk.

Variable: sexever

Found in SHIMS3 2021 dataset:

Interview

SA3-76



Variable: sexever

SA3-77

Uses the following SHIMS3 2021 variables:

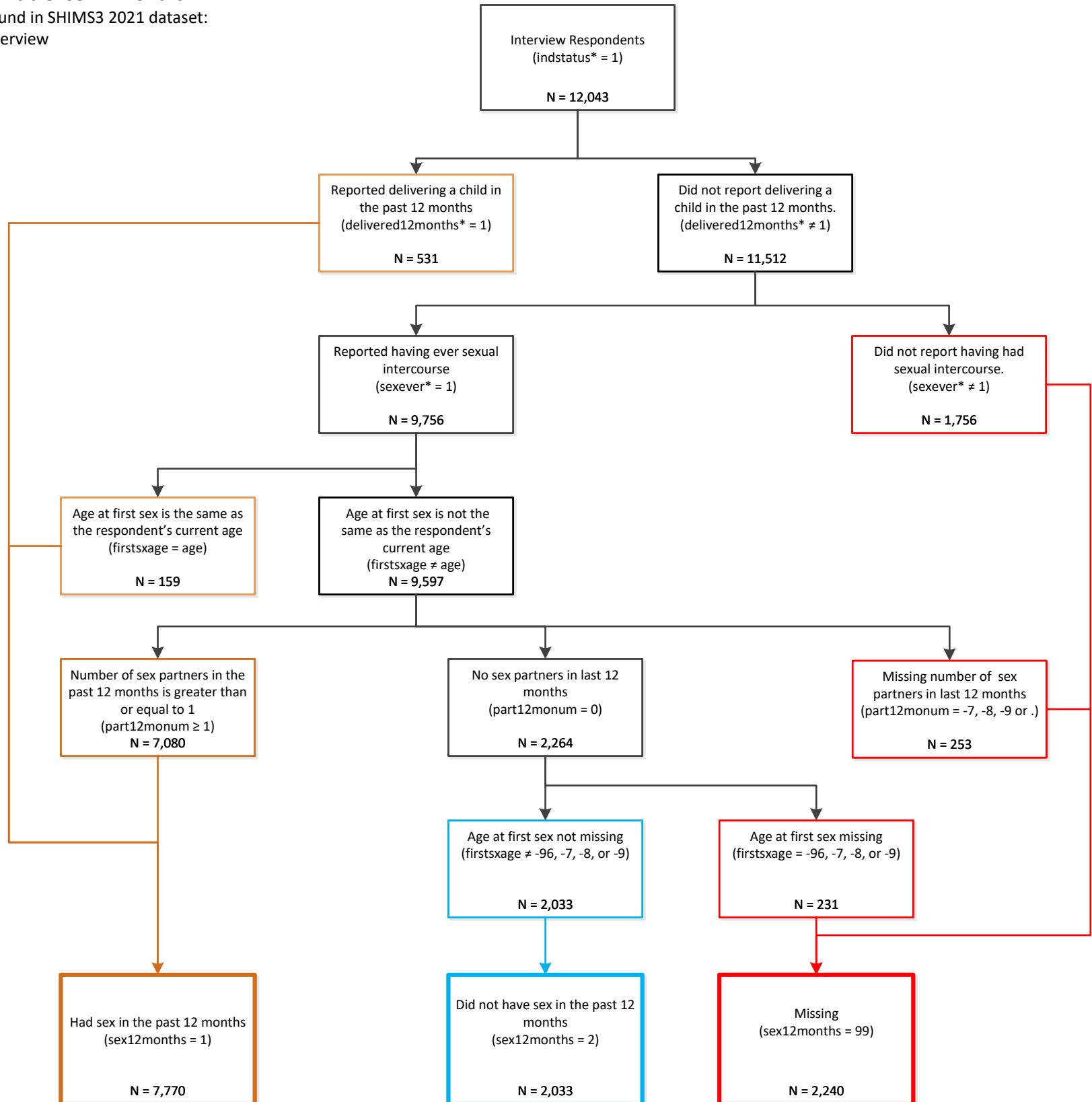
Interview dataset

- indstatus
- part12monum
- lifetimesex
- liveb
- firstsxage

Variable: sex12months

Found in SHIMS3 2021 dataset:

Interview



1. Number of sex partners in the past 12 months is out of range for women who had a child in the past 12 weeks.

Variable: sex12months

SA3-79

Uses the following SHIMS3 2021 variables:

Interview dataset

indstatus

delivered12months

sexever

part12monum

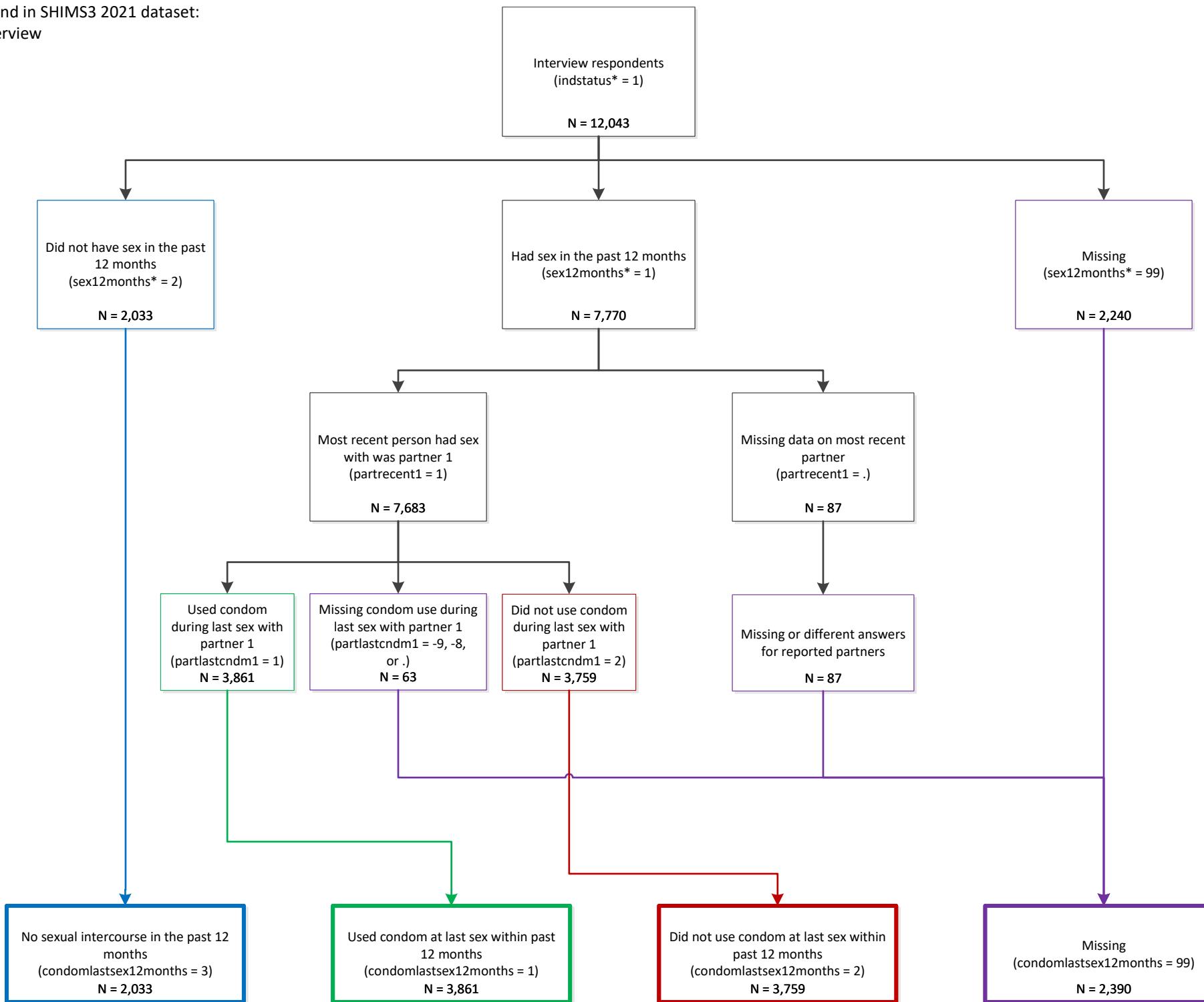
firstsxage

Variable: condomlastsex12months

SA3-80

Found in SHIMS3 2021 dataset:

Interview



Variable: condomlastsex12months

Uses the following SHIMS3 2021 variables:

Interview dataset

indstatus

sex12months

partrecent1

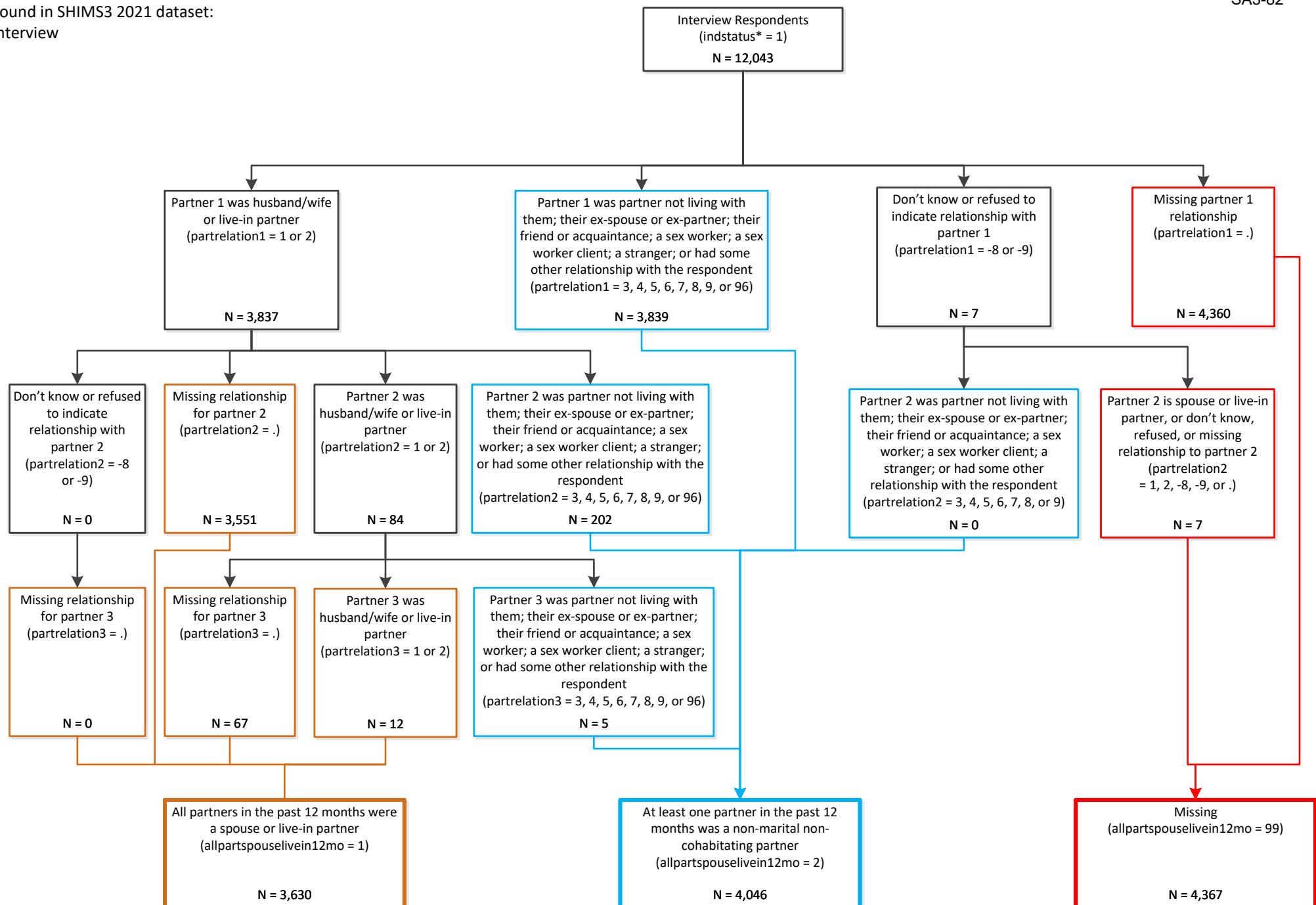
partlastcndm1-3

Variable: allpartspouselivein12mo

SA3-82

Found in SHIMS3 2021 dataset:

Interview



Variable: allpartspouselivein12months

SA3-83

Uses the following SHIMS3 2021 variables:

Interview dataset

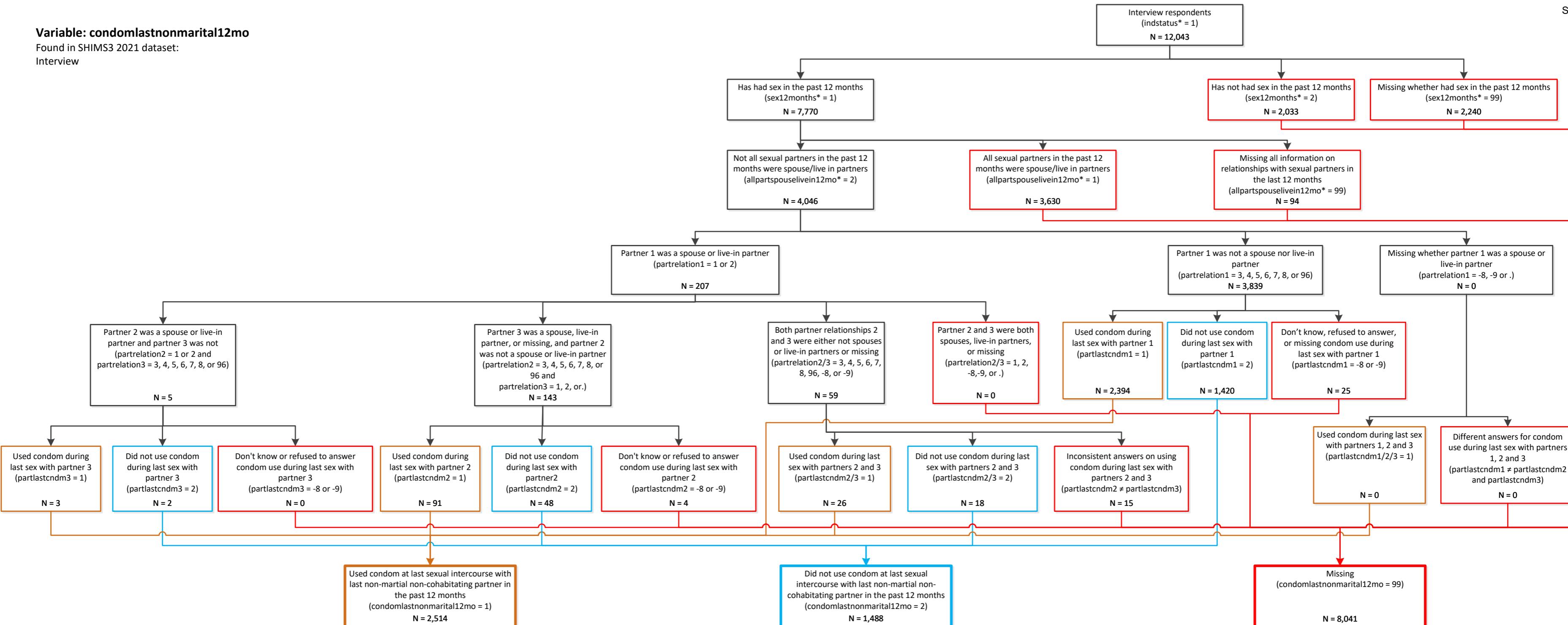
indstatus

partrelation1-3

Variable: condomlastnonmarital12mo

Found in SHIMS3 2021 dataset:

Interview



Variable: condomlastnonmarital12mo

SA3-85

Uses the following SHIMS3 2021 variables:

Adult Interview dataset

indstatus

sex12months

allpartspouselivein12mo

partrelation1-3

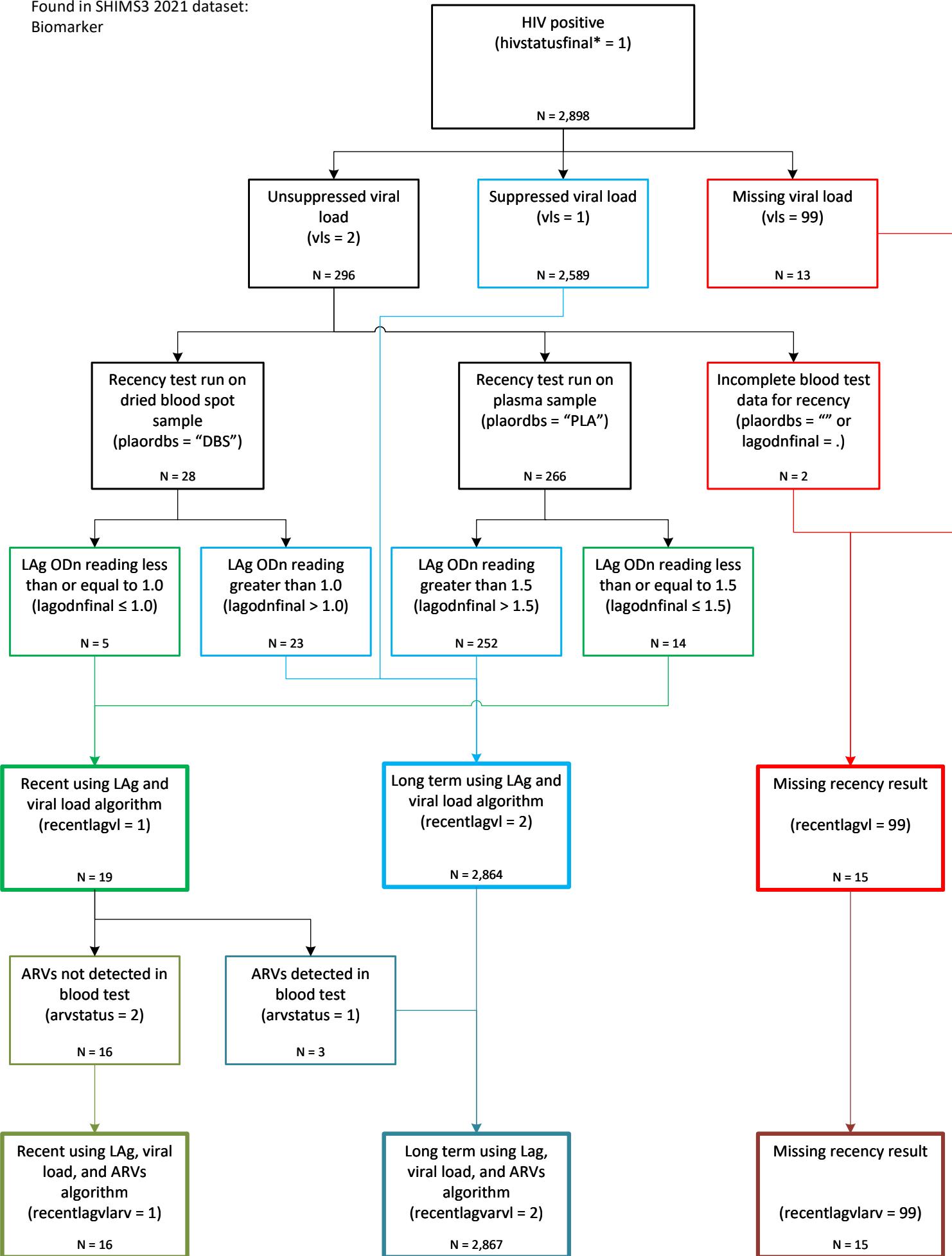
partlastcndm1-3

Variable: recentlagvl/recentlagvlrv

SA3-86

Found in SHIMS3 2021 dataset:

Biomarker



Variable: recentlagvl/recentlagvlarv

SA3-87

Uses the following SHIMS3 2021 variables:

Biomarker dataset

hivstatusfinal

vls

plaordbs

lagodnfinal

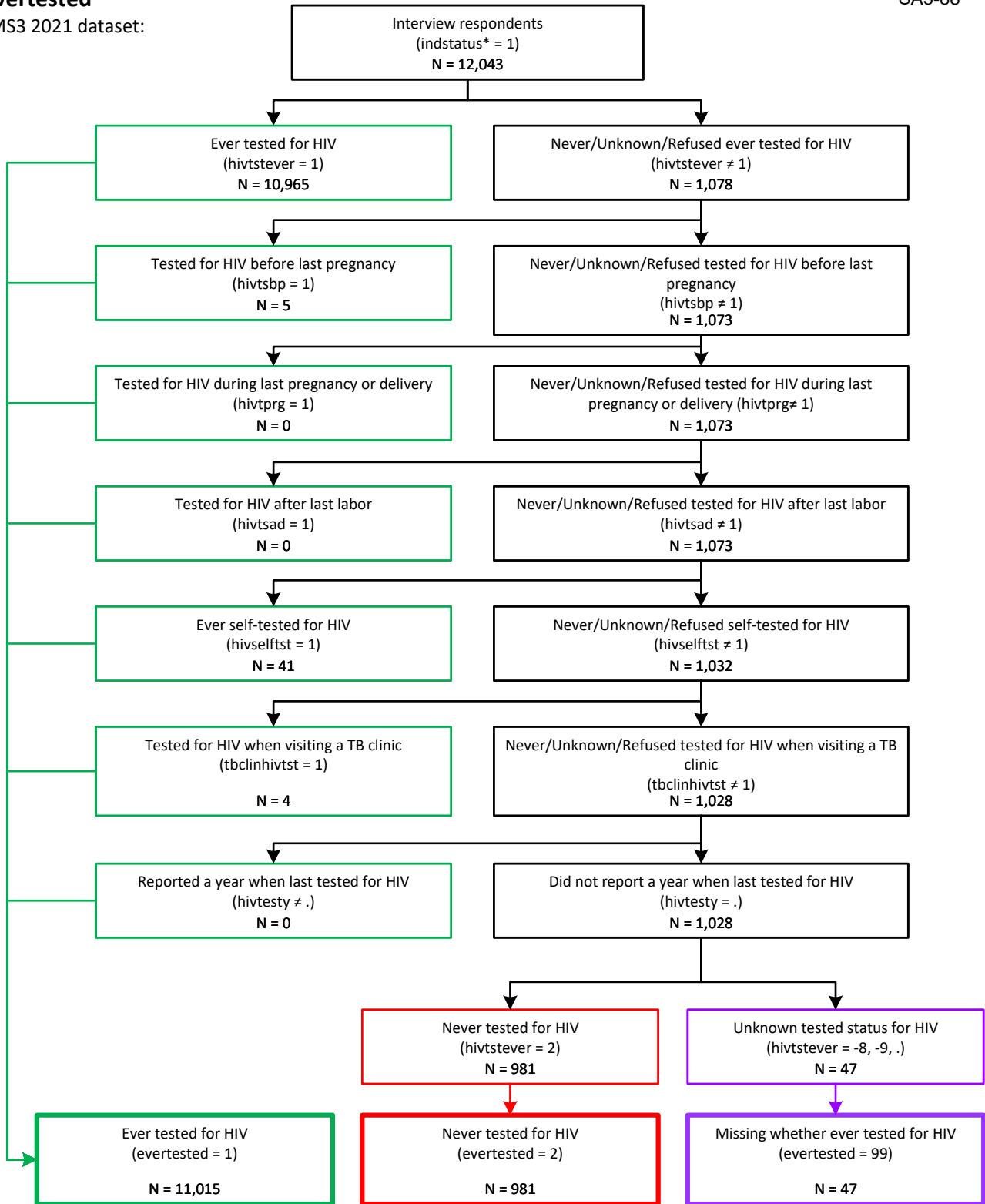
arvstatus

Variable: evertested

SA3-88

Found in SHIMS3 2021 dataset:

Interview



Variable: evertested

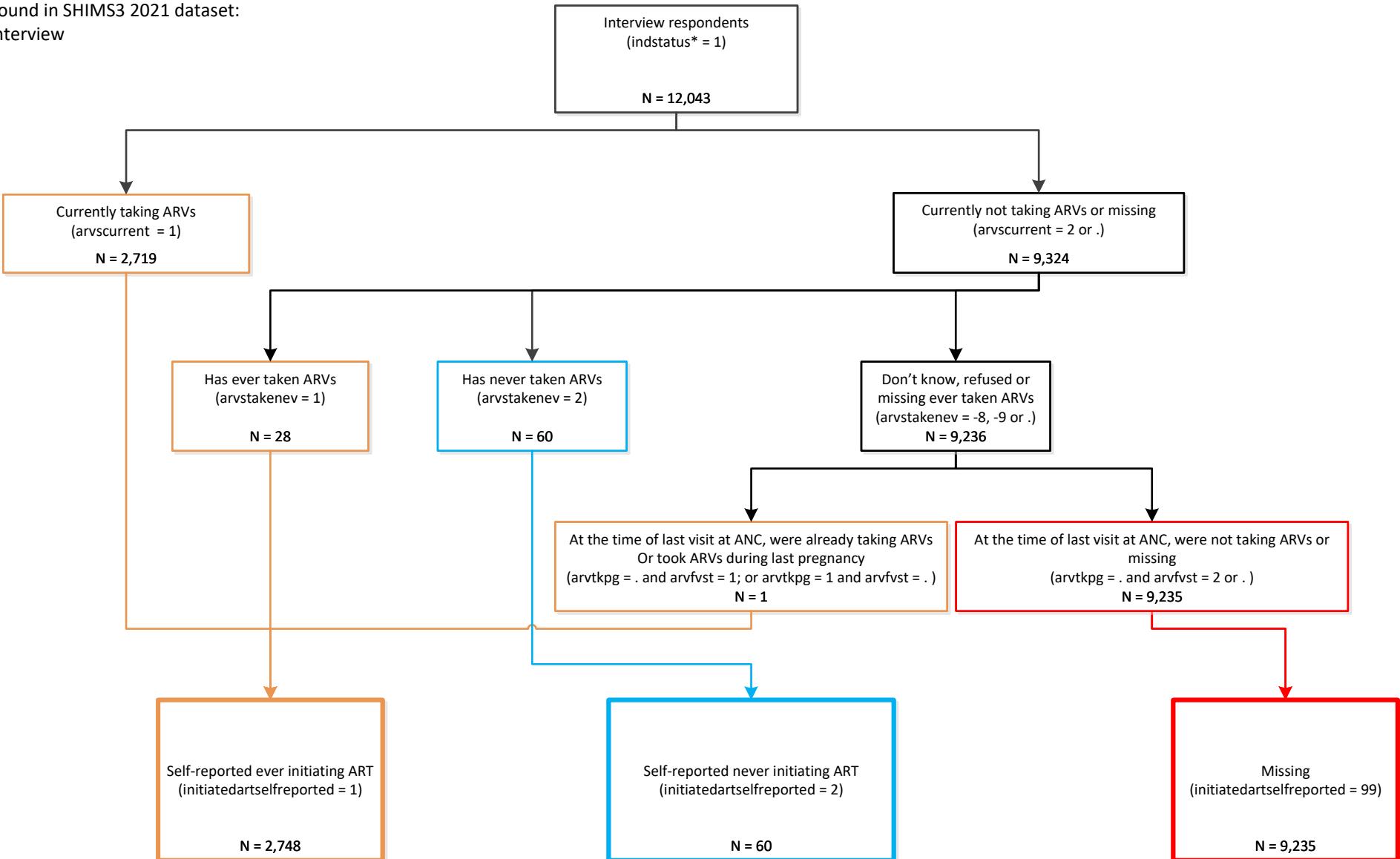
Uses the following SHIMS3 2021 variables:

Interview

indstatus
hivtstever
hivtsbp
hivprg
hivtsad
hivselftst
tbclinhivtst
hivtesty
evertested

Variable: initiatedartselfreported

Found in SHIMS3 2021 dataset:
Interview



Variable: initiatedartselfreported

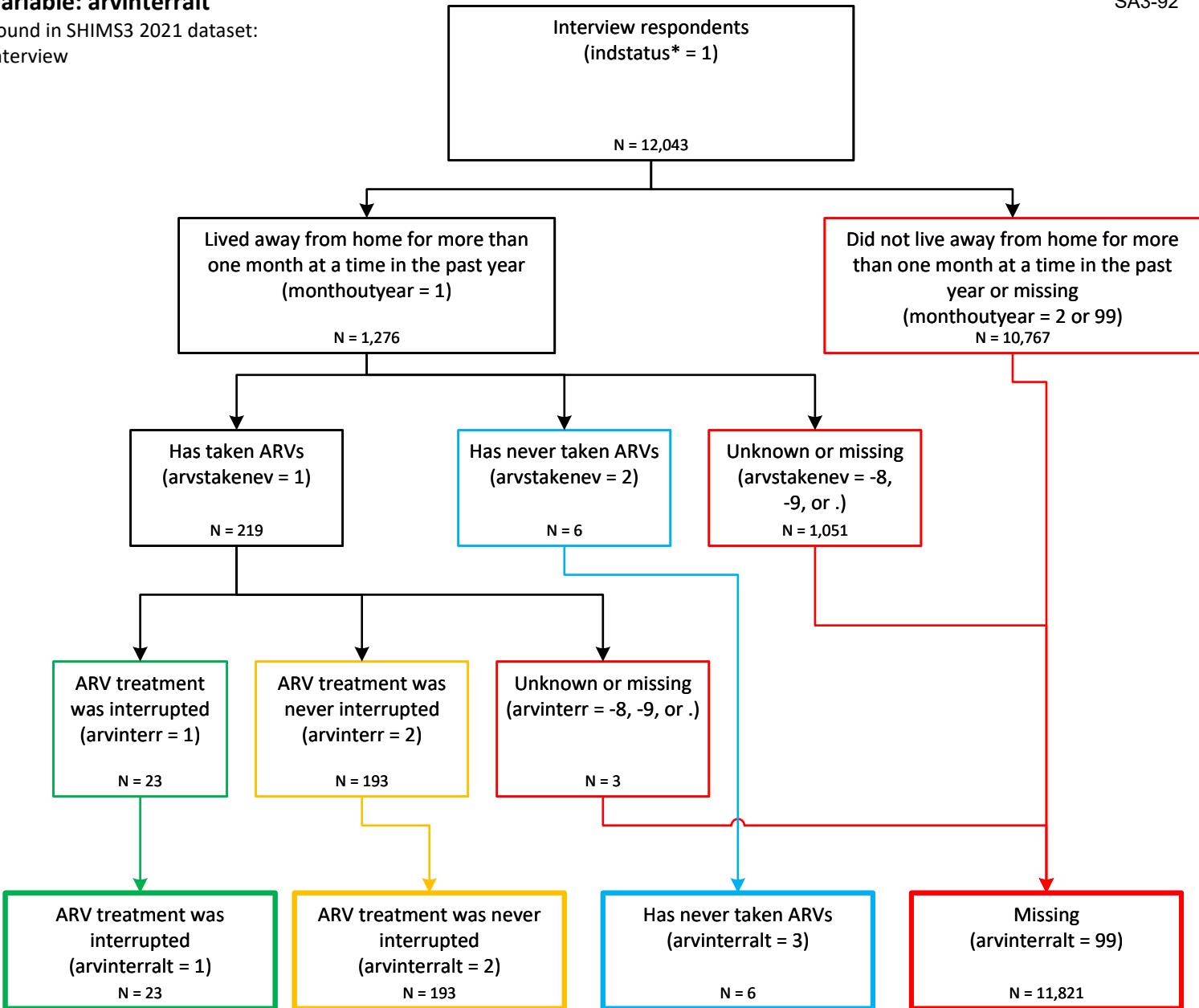
Uses the following SHIMS3 2021 variables:

Interview dataset

- indstatus
- arvscurrent
- arvtakenev
- arfvst
- arvtkpg

Variable: arvinterralt

Found in SHIMS3 2021 dataset:
Interview



Variable: arvinterralt

SA3-93

Uses the following SHIMS3 2021 variables:

Interview dataset

arvstakenev

arvinterr

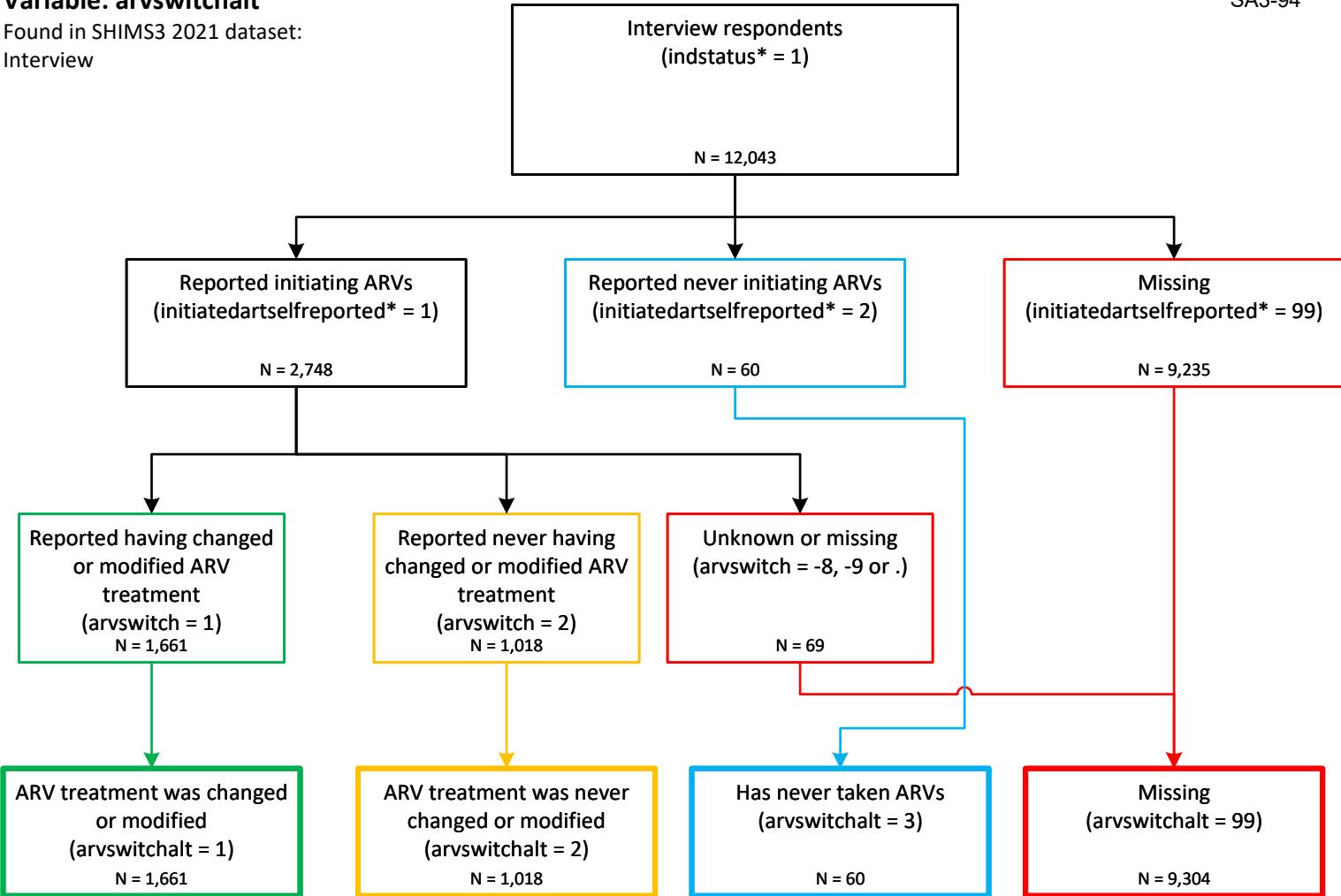
indstatus

monthoutyear

Variable: arvswitchalt

Found in SHIMS3 2021 dataset:

Interview



Variable: arvswitchalt

SA3-95

Uses the following SHIMS3 2021 variables:

Interview dataset

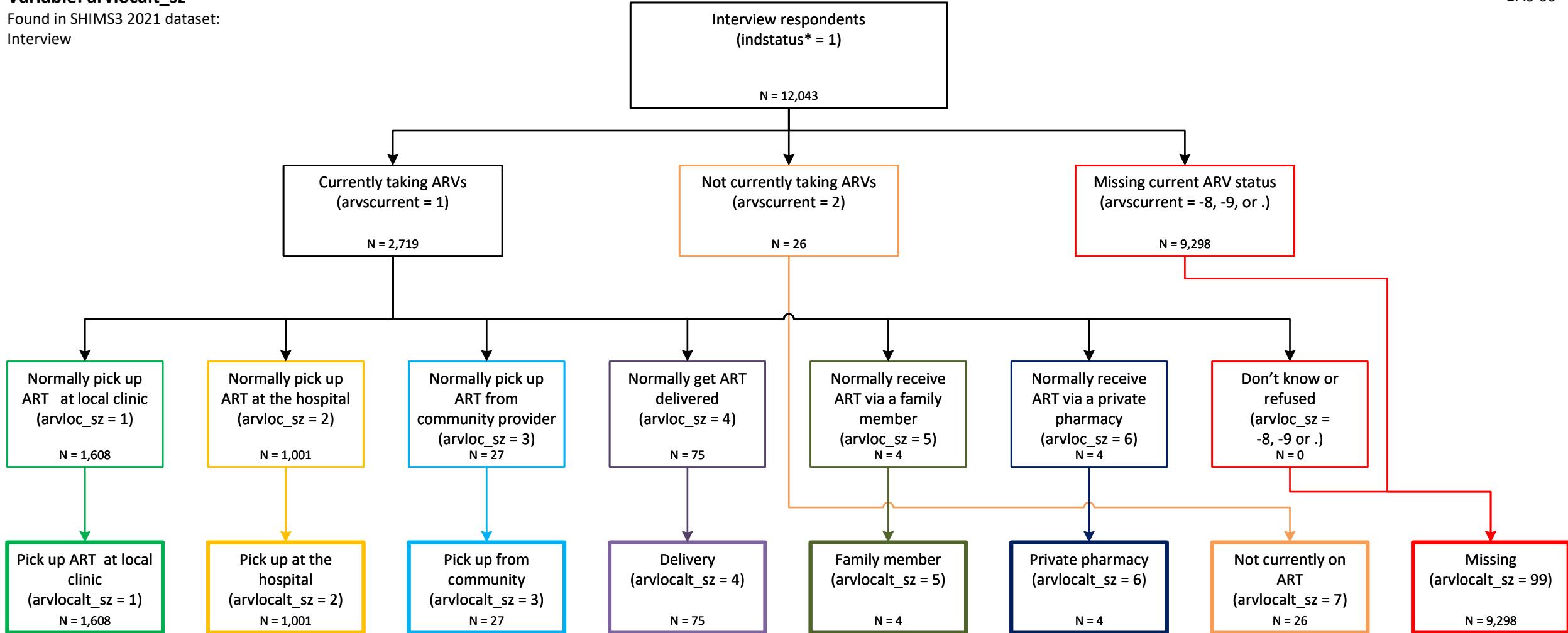
indstatus

initiatedartselfreported

arvswitch

Variable: arvlocalt_sz

Found in SHIMS3 2021 dataset:
Interview



Variable: arvlocalt_sz

SA3-97

Uses the following SHIMS3 2021 variables:

Interview dataset

indstatus

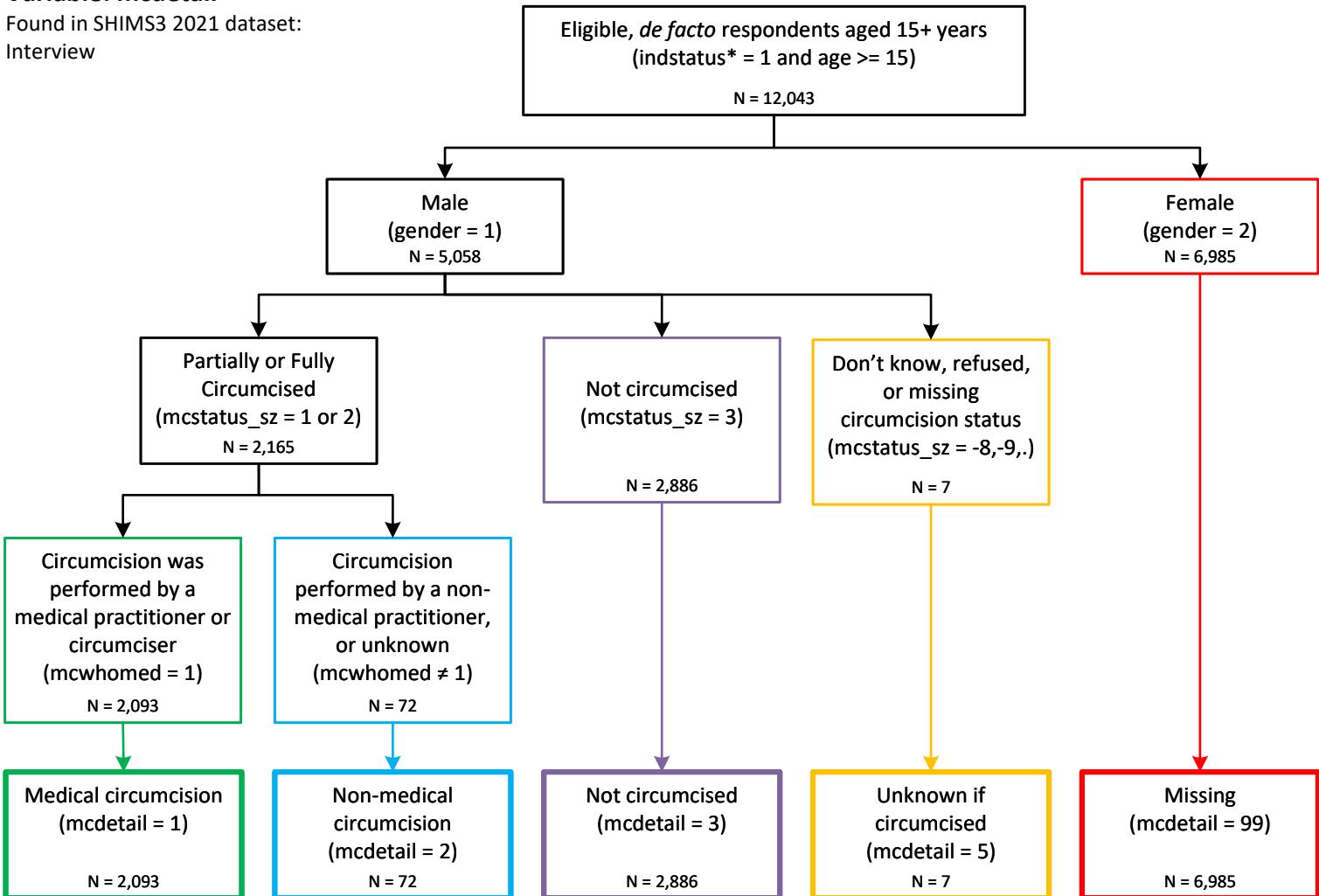
arvcurrent

arvloc_sz

Variable: mcdetail

SA3-98

Found in SHIMS3 2021 dataset:
Interview



Variable: mcdetail

SA3-99

Uses the following SHIMS3 2021 variables:

Interview dataset

indstatus

age

gender

mcstatus_sz

mcwhomed