Risk Factors of Stunting

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Proportion of children who were stunted . . . 110

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Point prevalence of stunting . . . 171
Proportion of children who were stunted . . . 199

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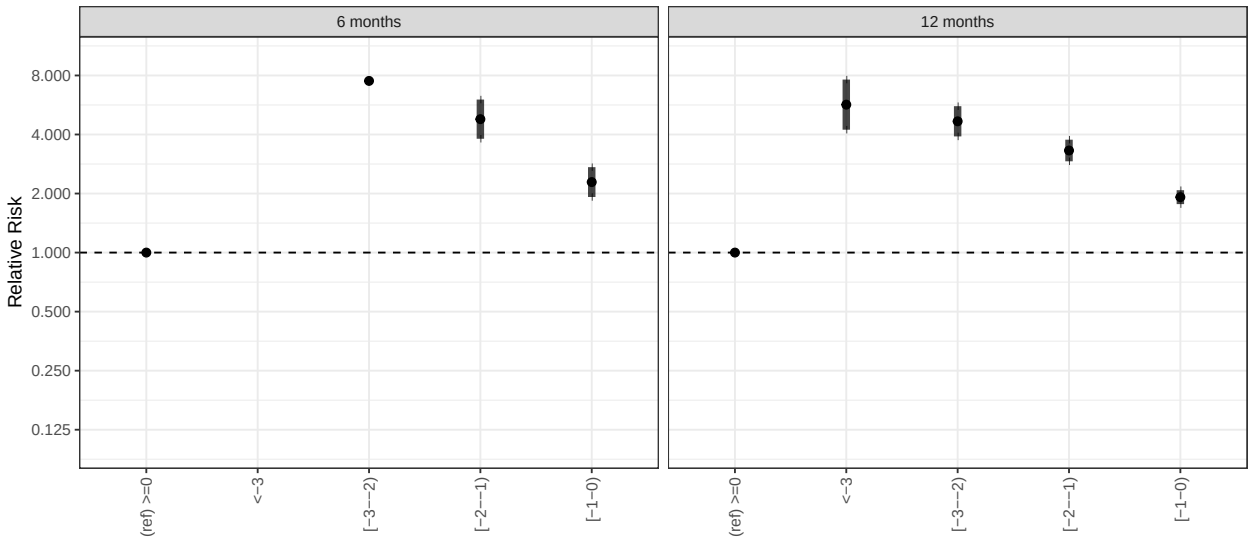
Point prevalence of stunting . . . 260
Proportion of children who were stunted . . . 288

Pooled Results

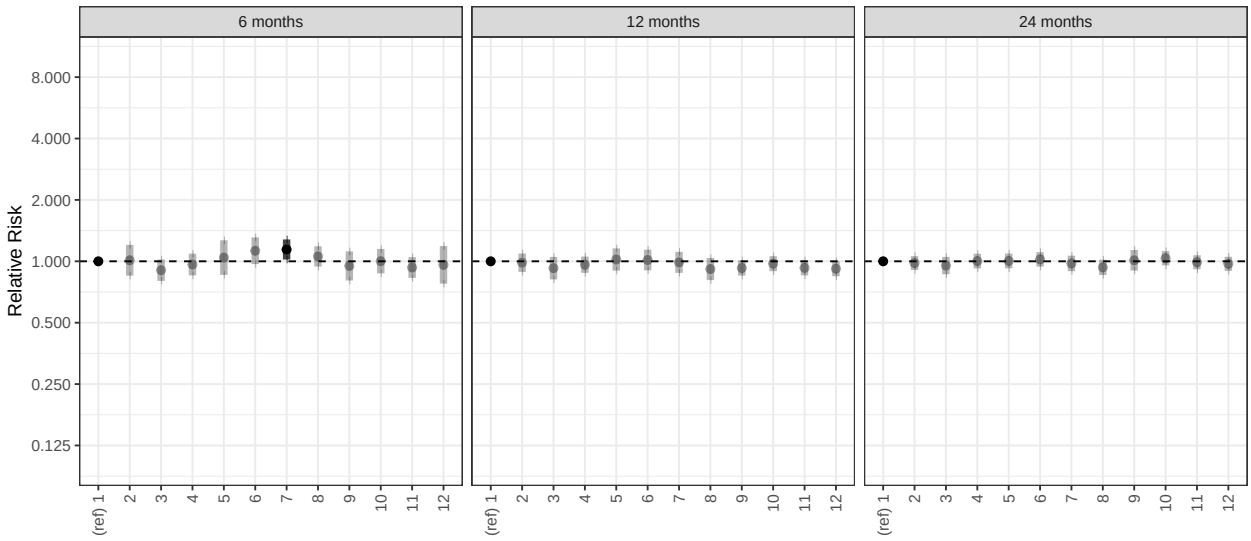
Cumulative incidence of stunting

Child characteristics

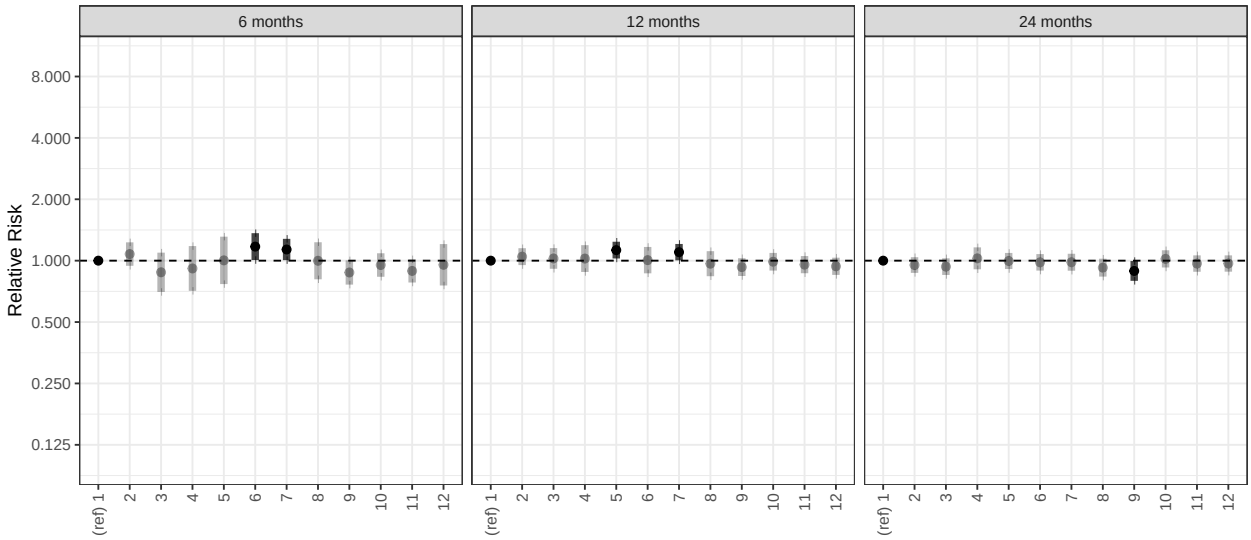
Birthweight
Estimates from 4 cohorts in Asia, Africa



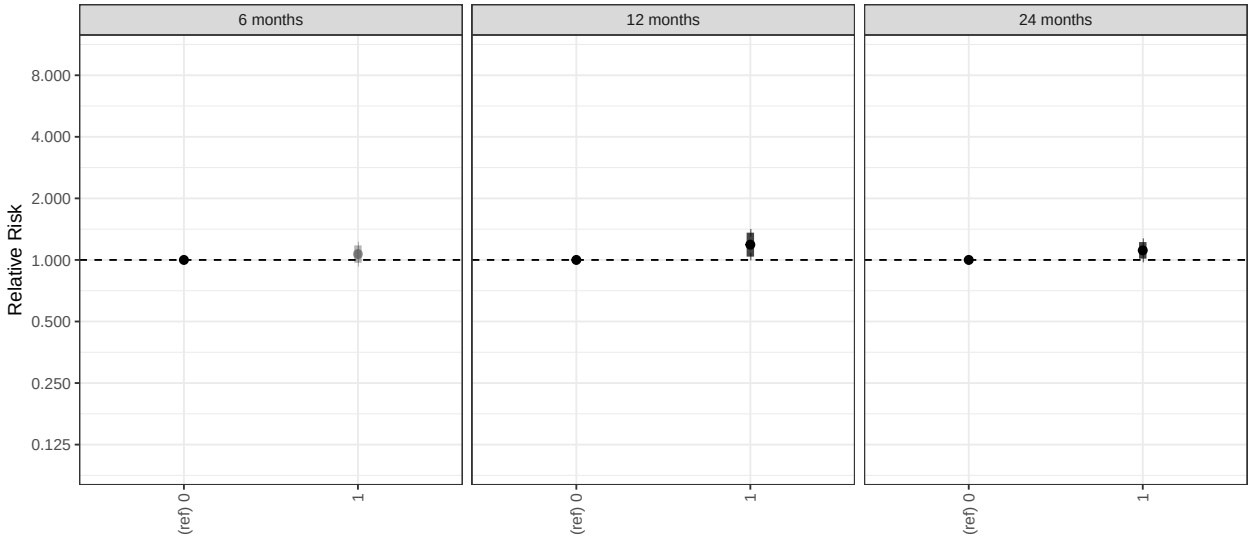
Calendar month of birth
Estimates from 8 cohorts in Asia, Africa, Europe



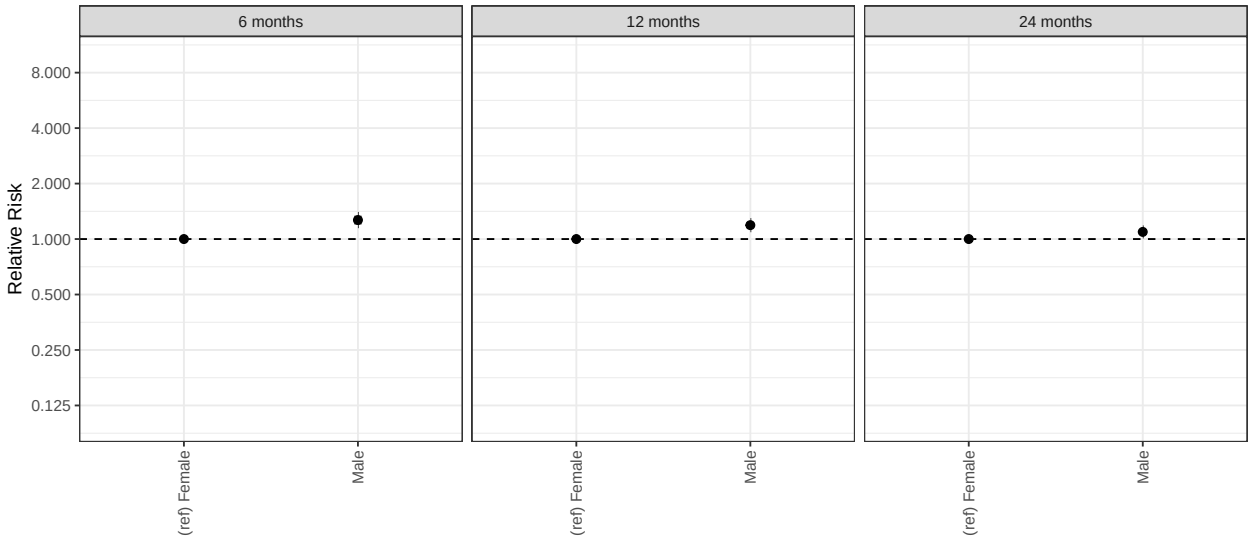
Calendar month of measurement
Estimates from 7 cohorts in Asia, Europe, Africa



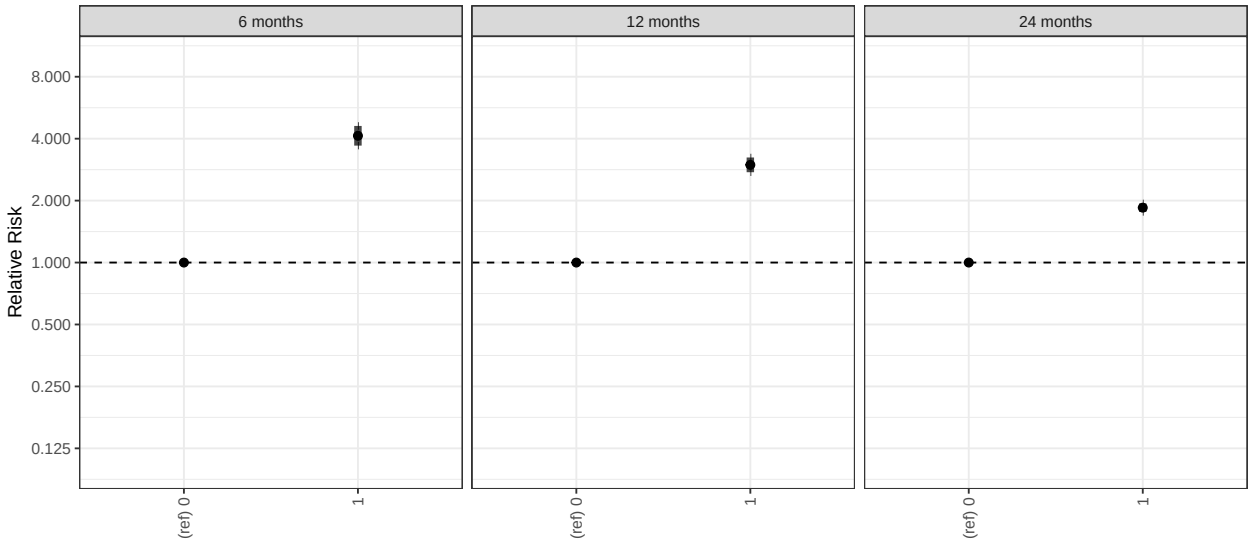
Child delivered at home
Estimates from 8 cohorts in Asia, Africa

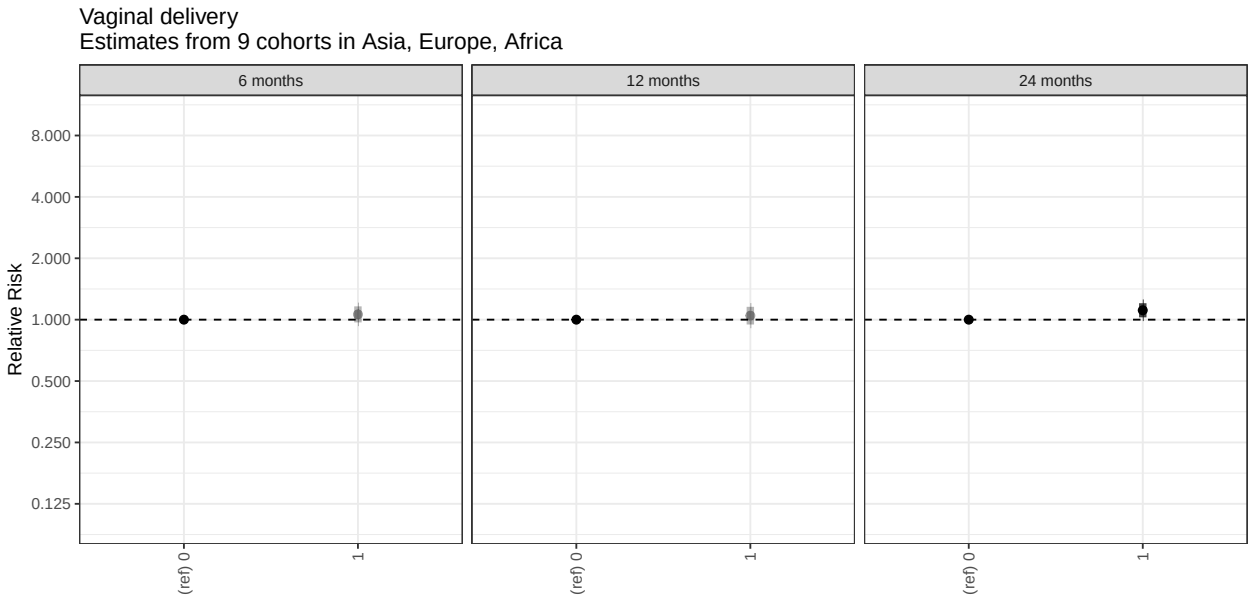


Child's sex
Estimates from 32 cohorts in Asia, Latin America, Africa, Europe

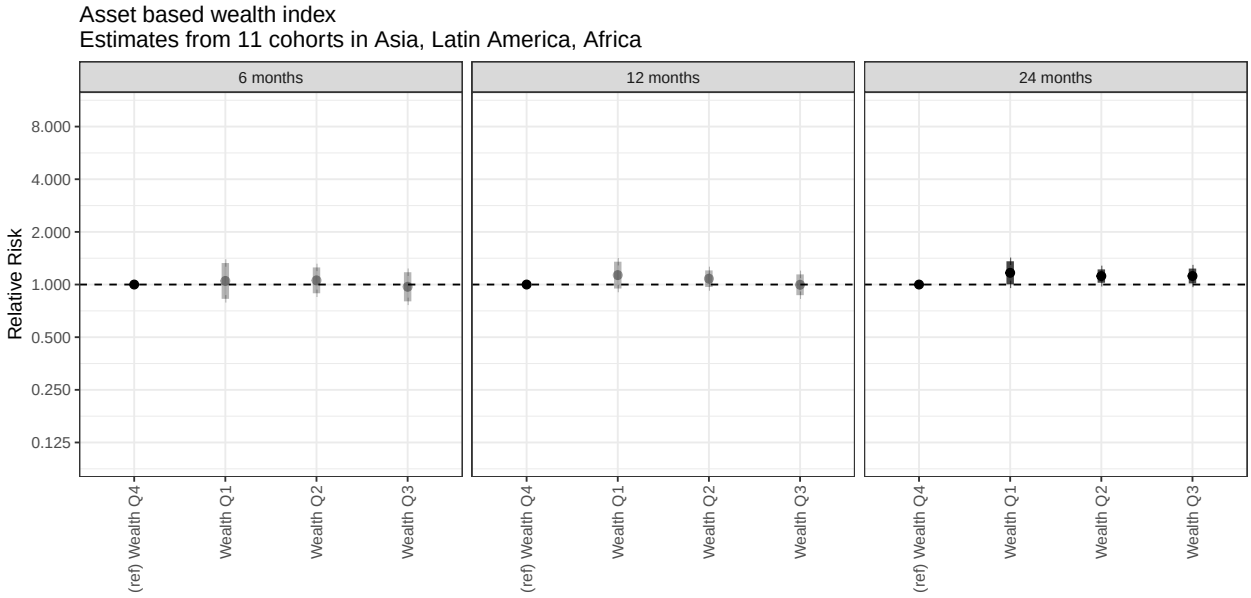


Stunted at enrollment
Estimates from 2 cohorts in Africa

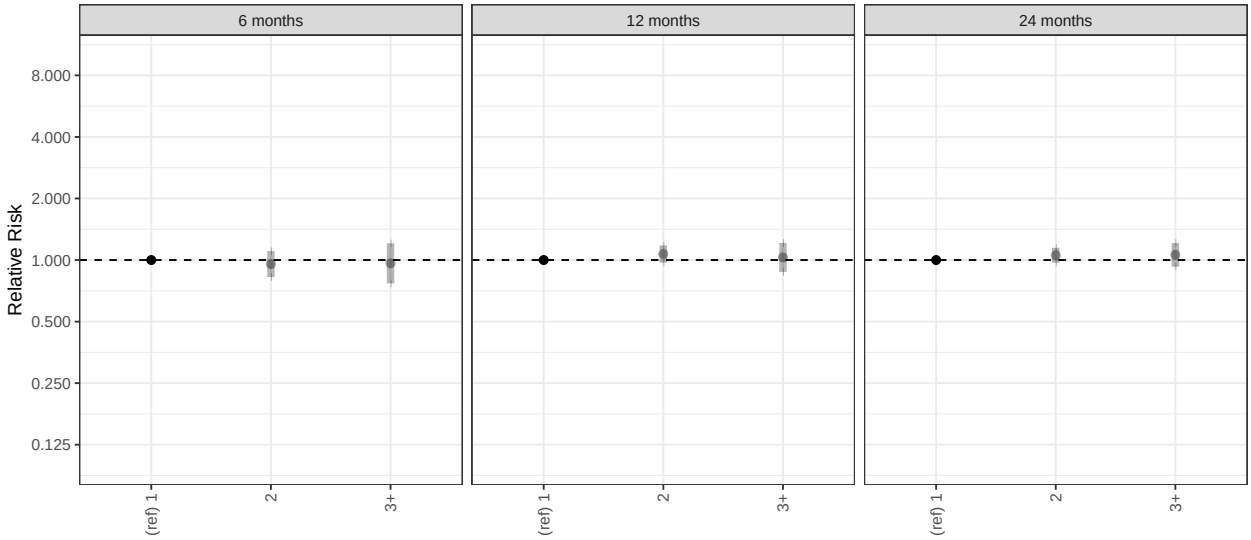




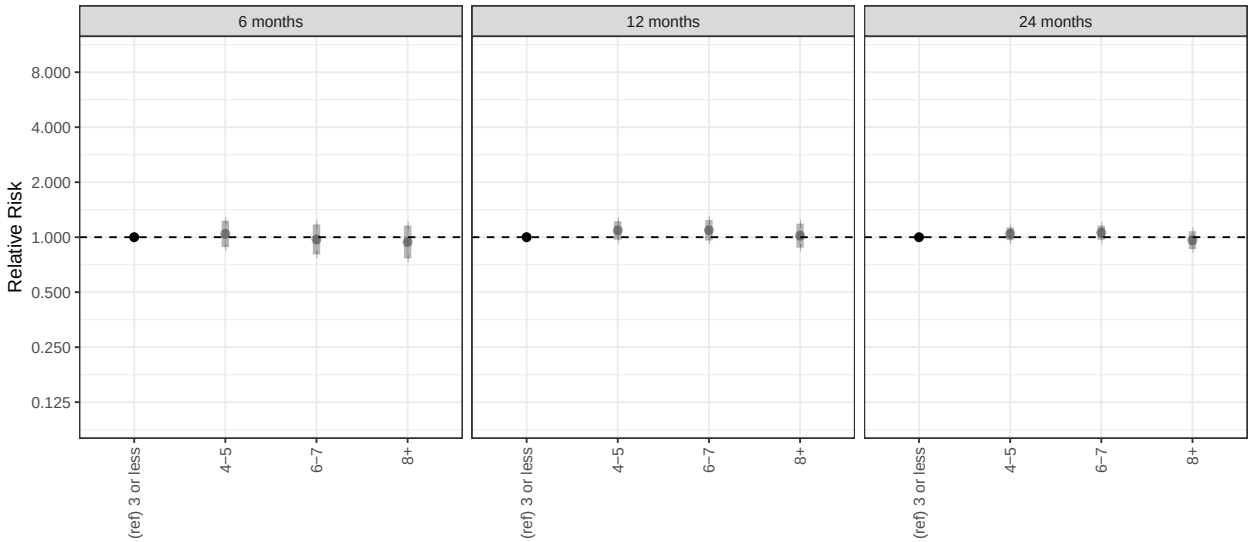
Household characteristics



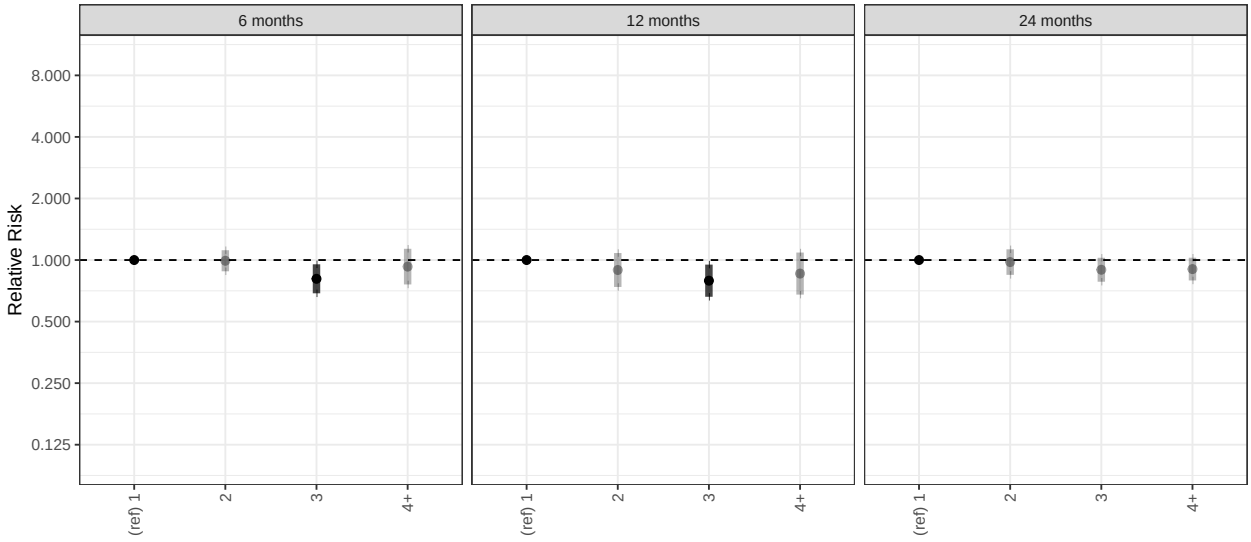
Number of children in the household under 5 years
Estimates from 4 cohorts in Asia, Africa



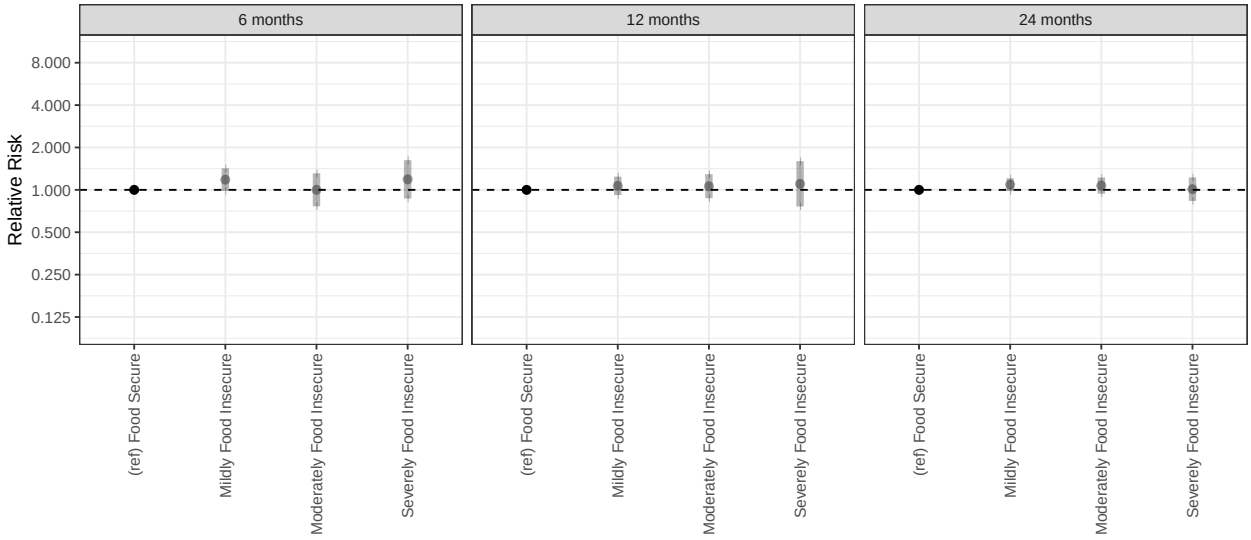
Number of people in the household
Estimates from 4 cohorts in Asia



Number of rooms in household
Estimates from 11 cohorts in Asia, Latin America, Africa

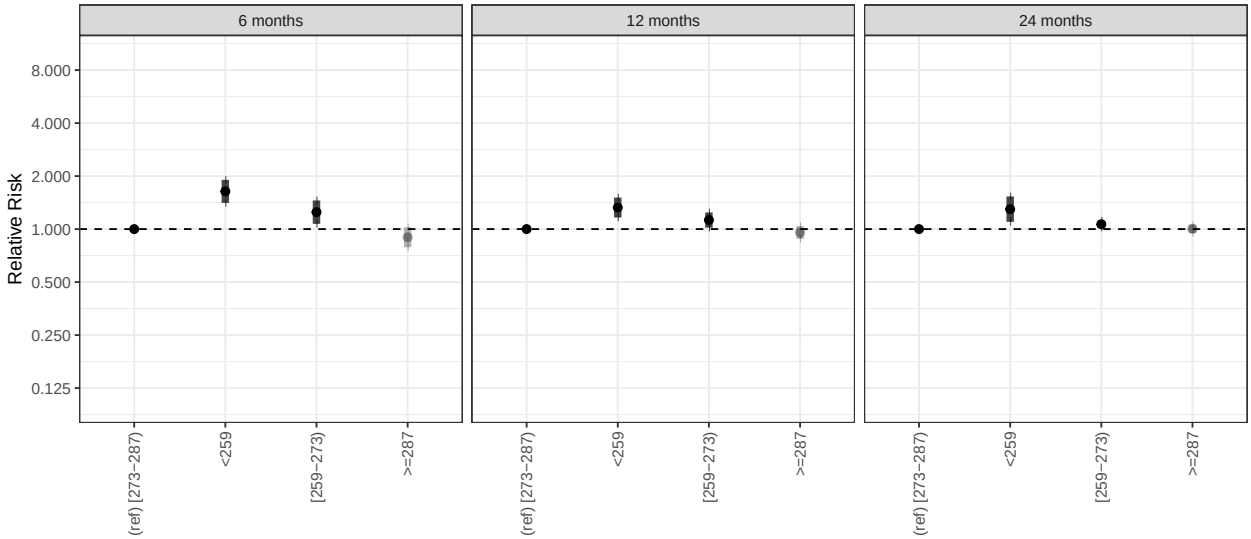


USAID Household Food Insecurity Access Scale (HFIAS) category
Estimates from 3 cohorts in Asia, Latin America

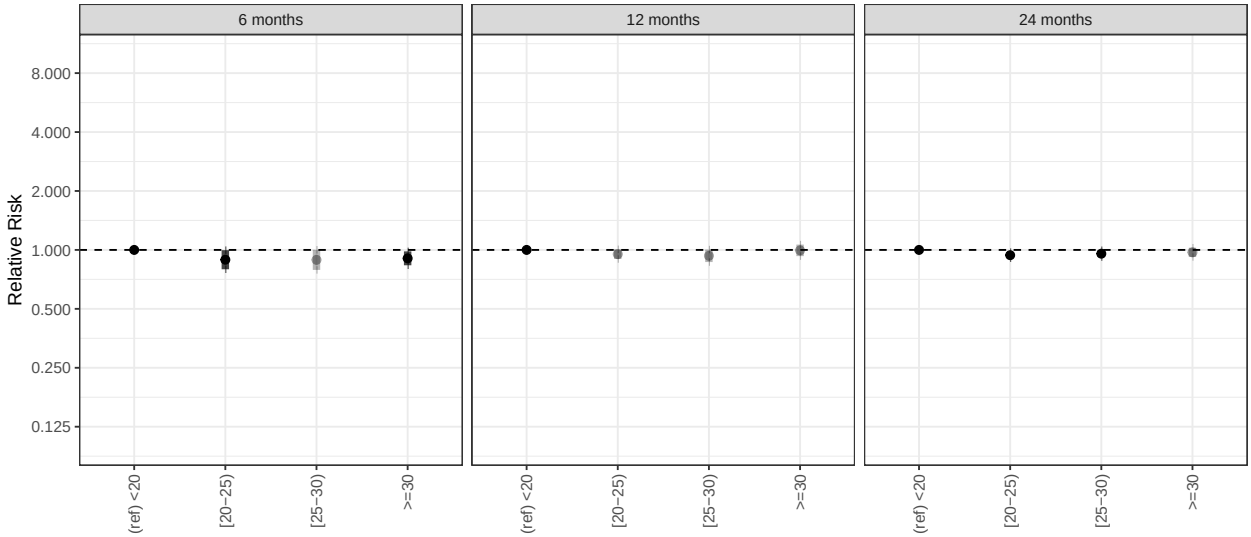


Maternal characteristics

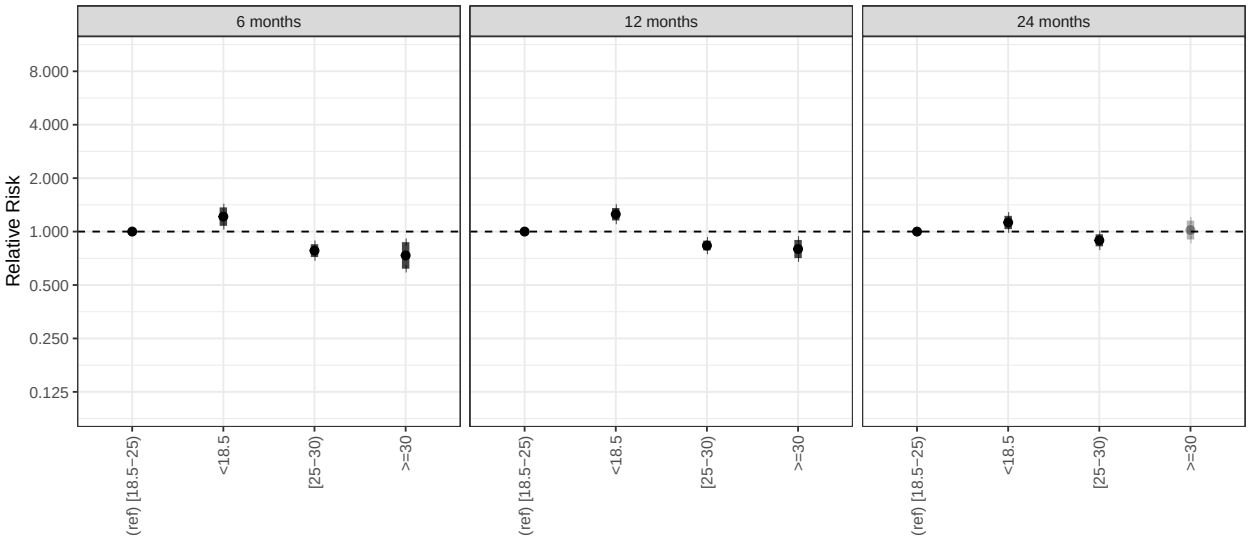
Gestational age at birth
Estimates from 6 cohorts in Asia, Africa



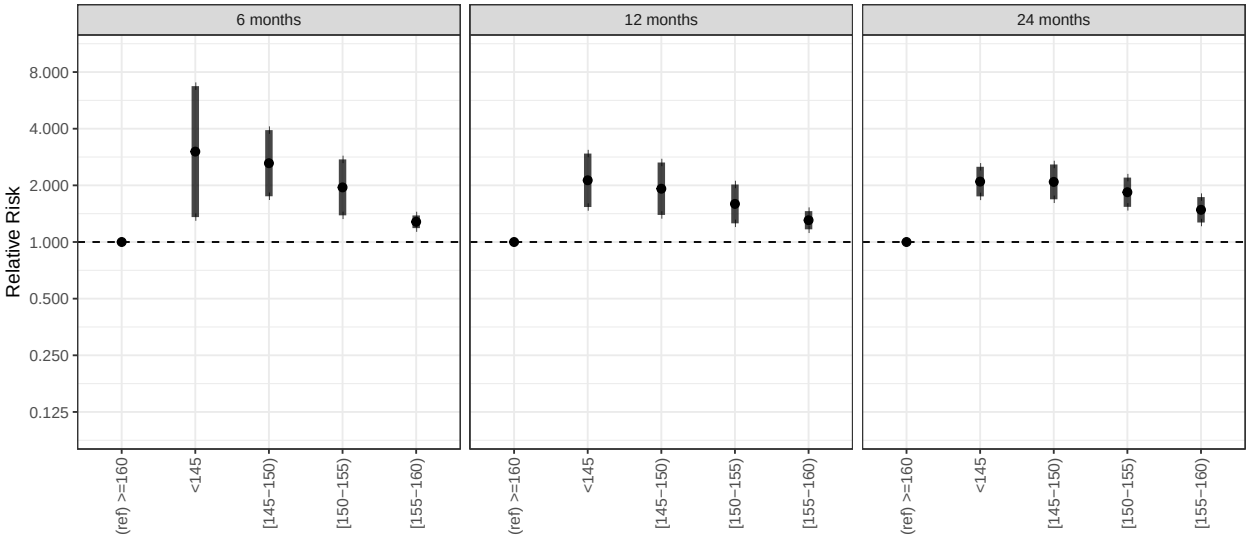
Maternal age
Estimates from 20 cohorts in Asia, Latin America, Africa, Europe



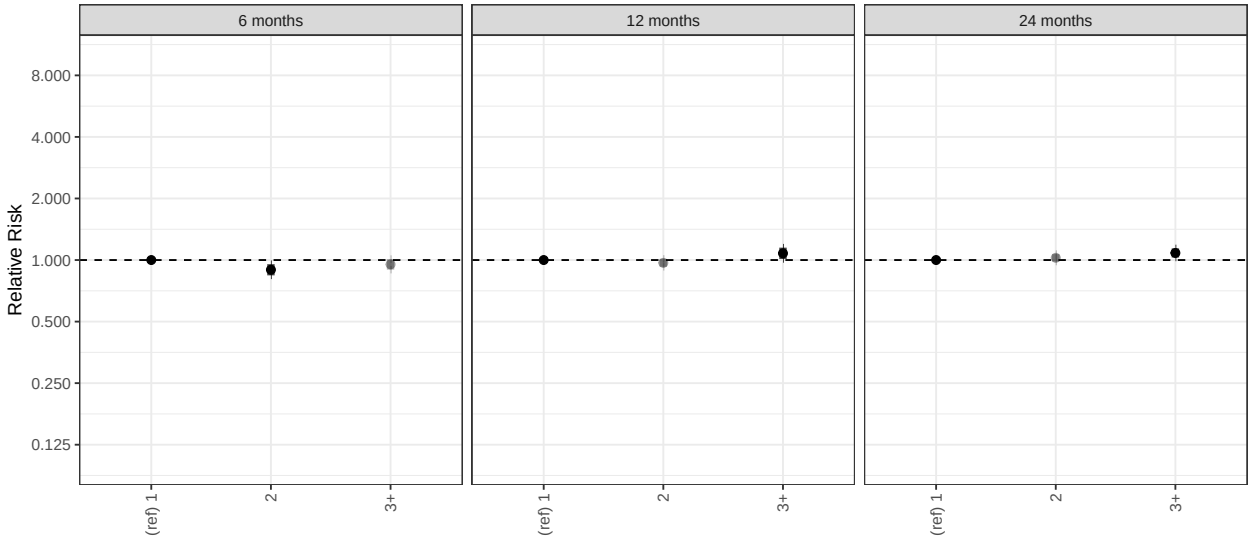
Maternal BMI
Estimates from 5 cohorts in Asia, Europe, Africa



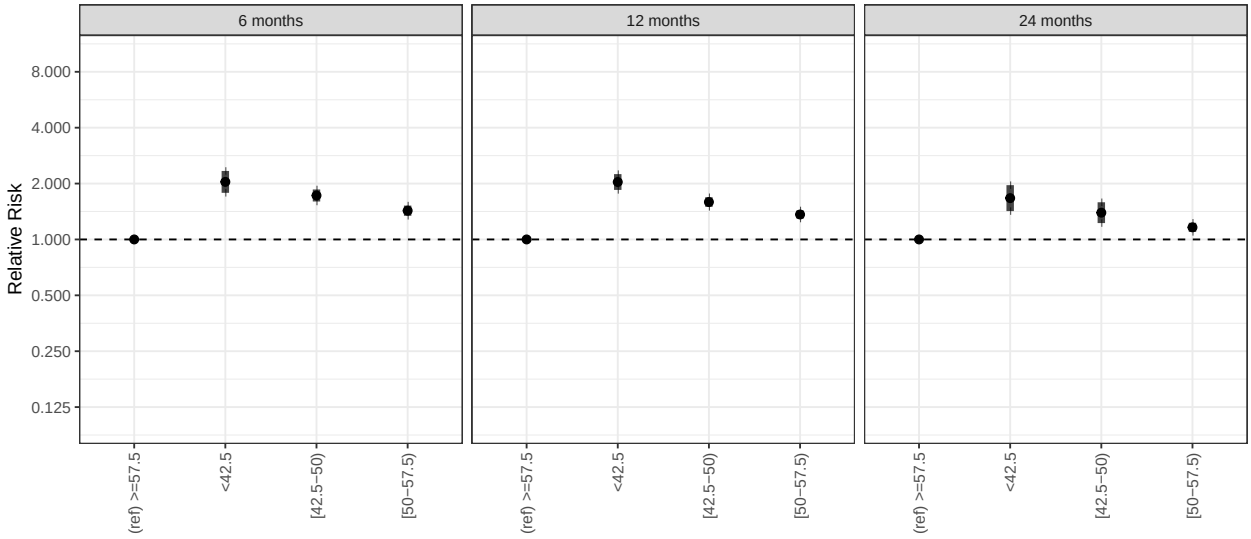
Maternal height
Estimates from 8 cohorts in Asia, Latin America, Africa



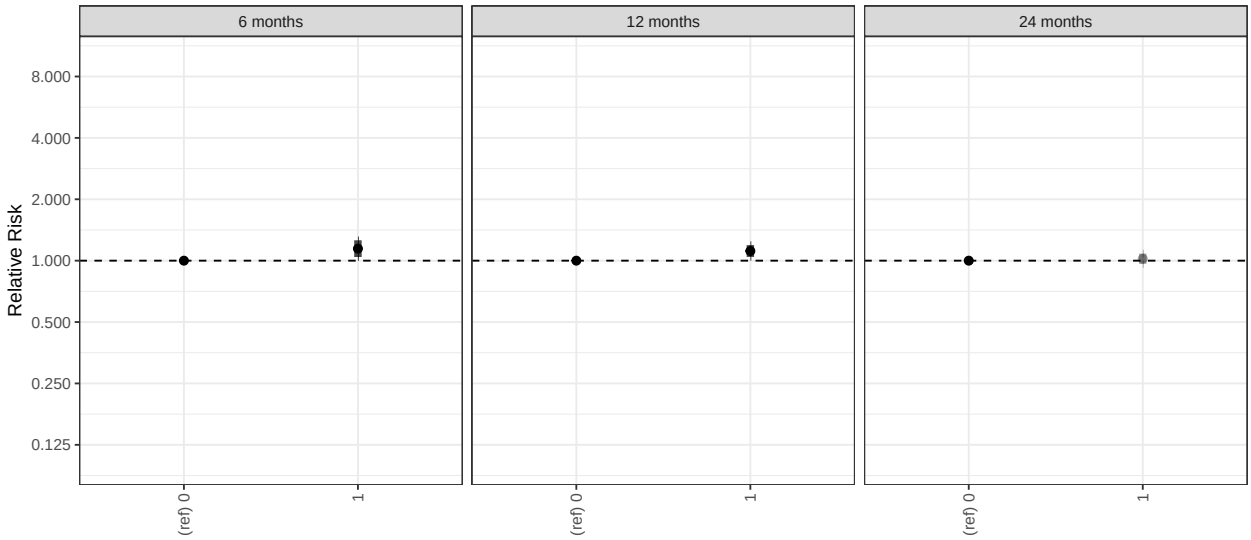
Maternal parity
Estimates from 10 cohorts in Asia, Latin America, Africa



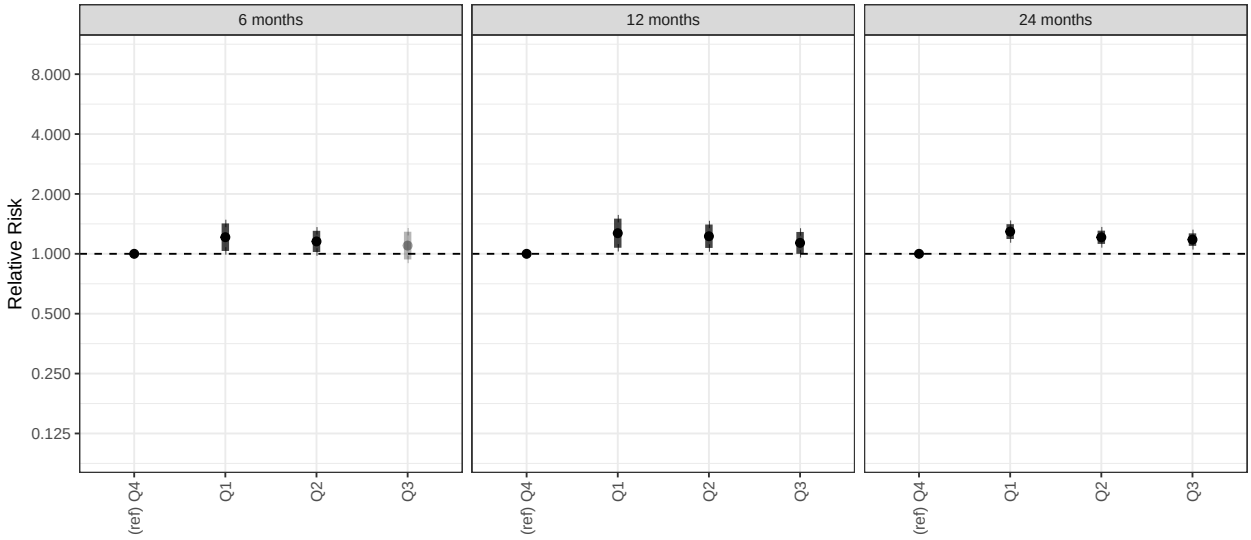
Maternal weight
Estimates from 11 cohorts in Africa, Asia, Latin America, Europe



Mother is unmarried
Estimates from 9 cohorts in Latin America, Asia, Africa, Europe

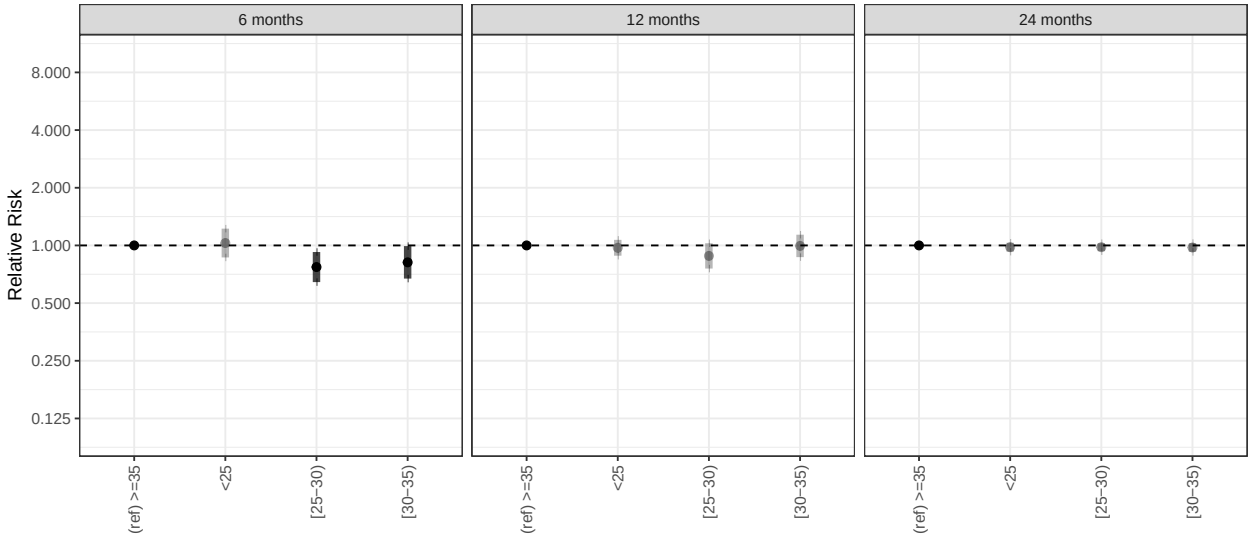


Mother's education
Estimates from 15 cohorts in Asia, Latin America, Africa

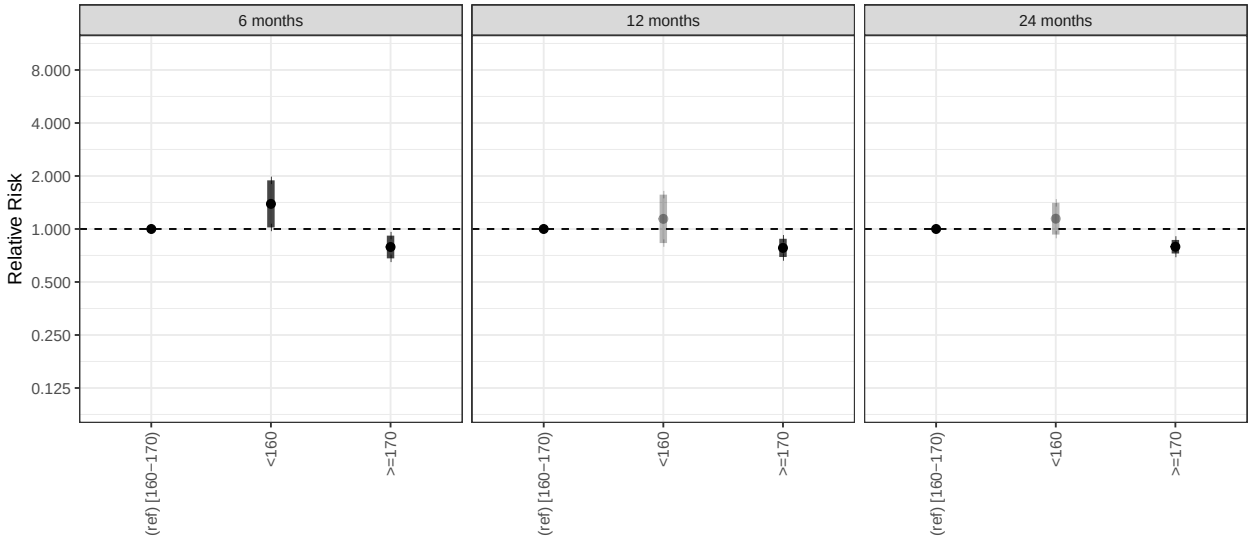


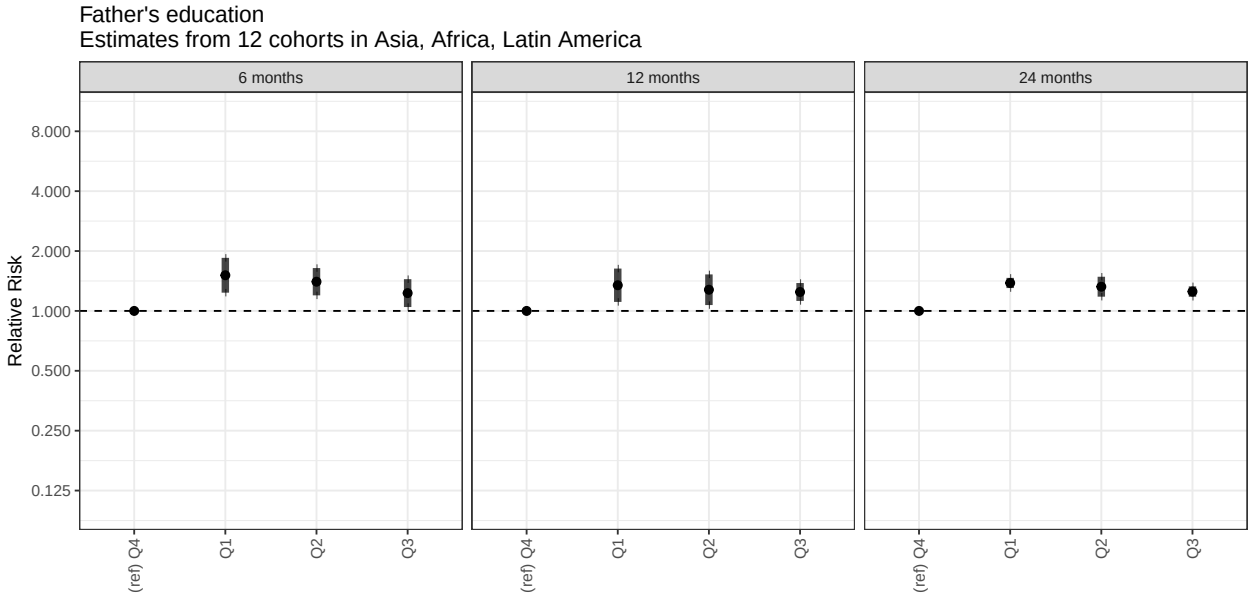
Paternal characteristics

Father age
Estimates from 5 cohorts in Latin America, Asia, Africa, Europe



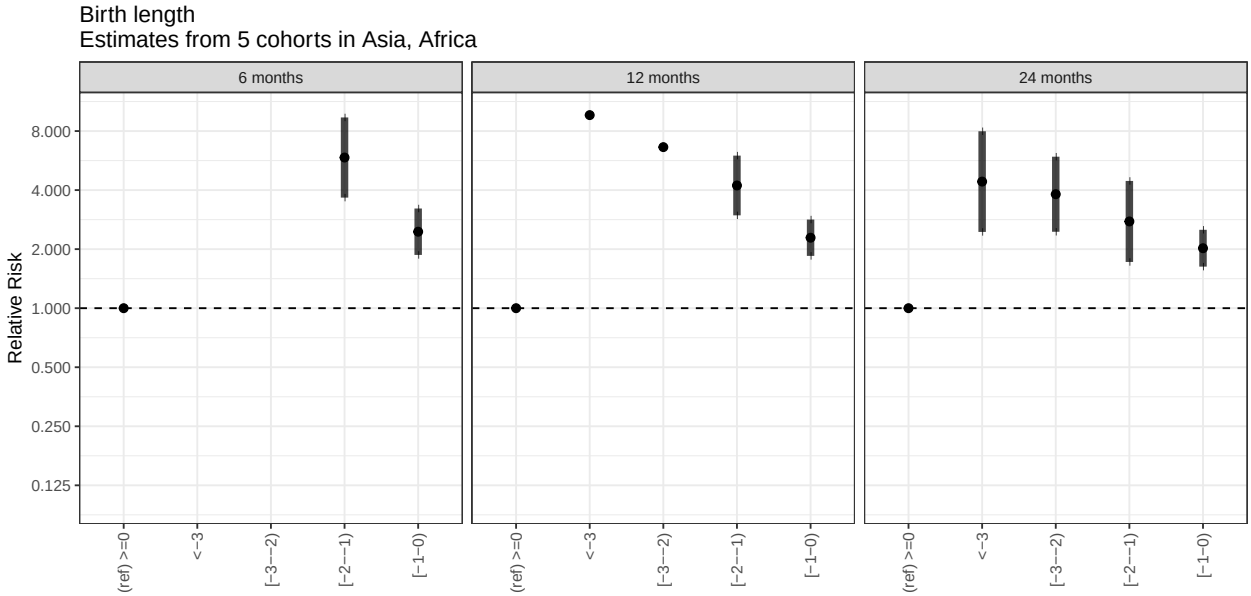
Father height
Estimates from 3 cohorts in Africa, Asia



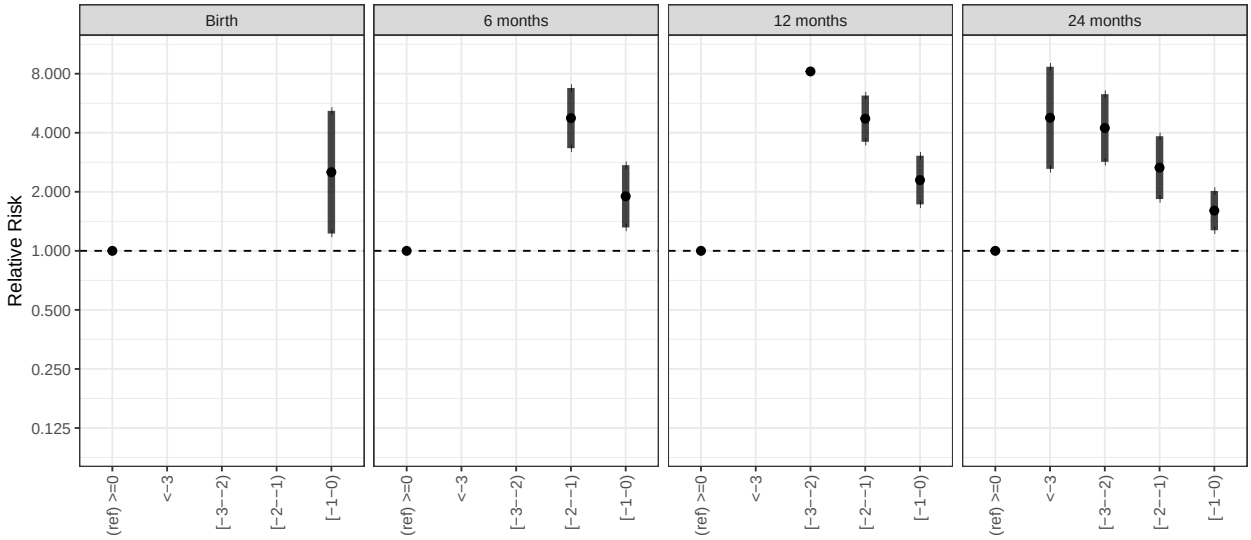


Point prevalence of severe stunting

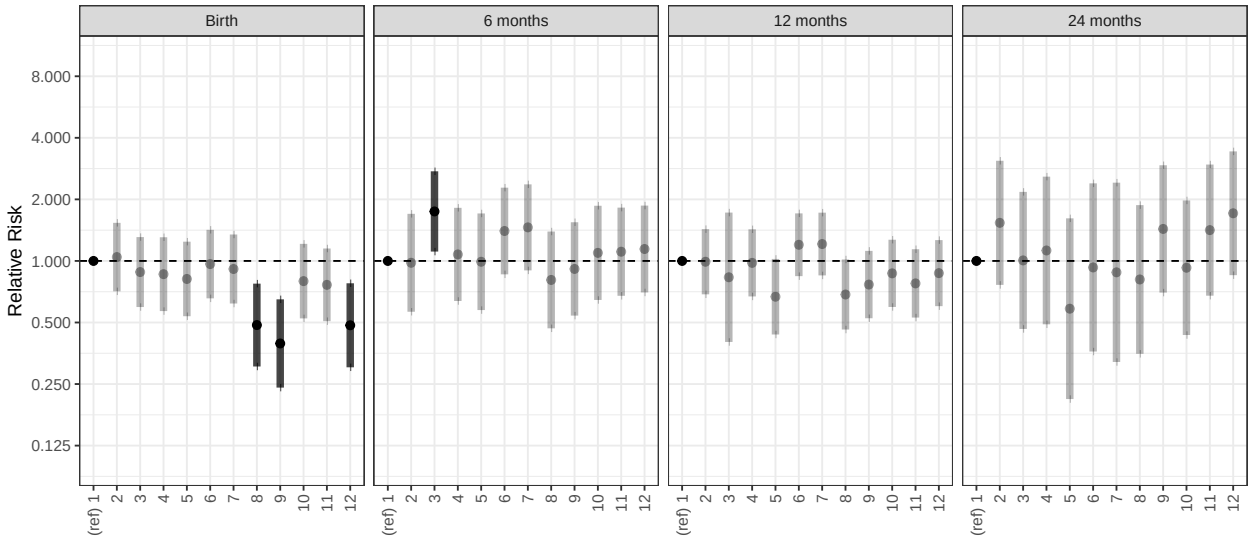
Child characteristics



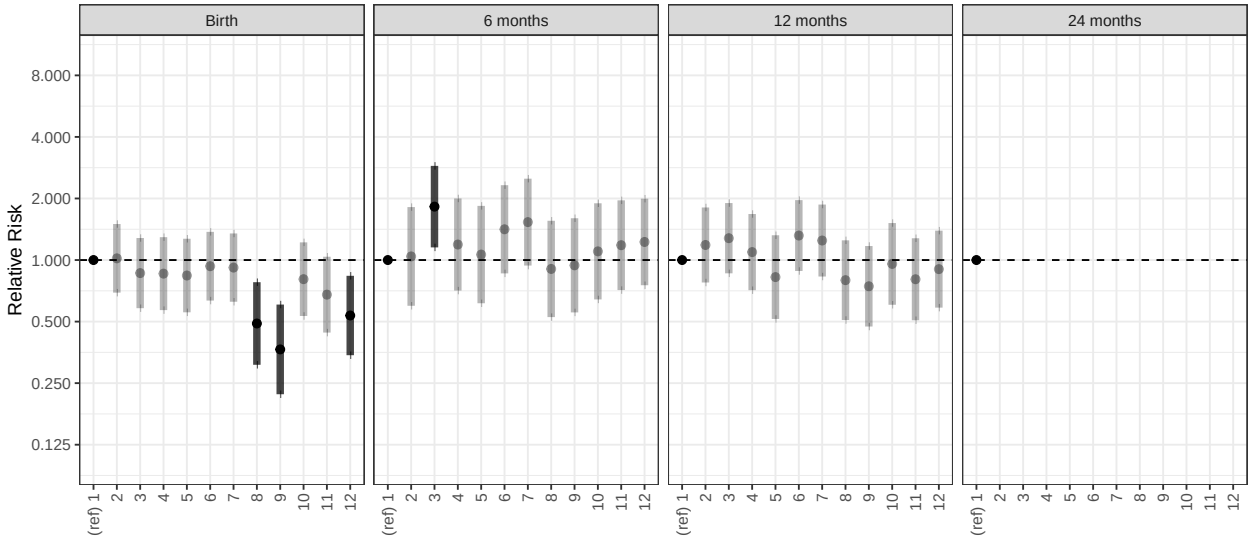
Birthweight
Estimates from 7 cohorts in Asia, Africa



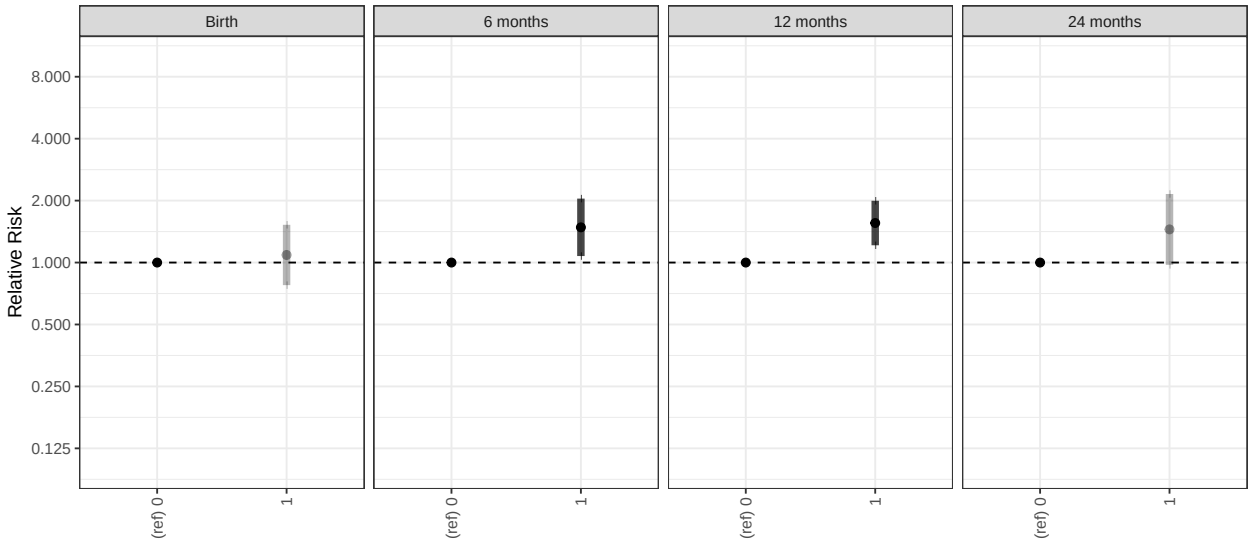
Calendar month of birth
Estimates from 2 cohorts in Asia, Africa



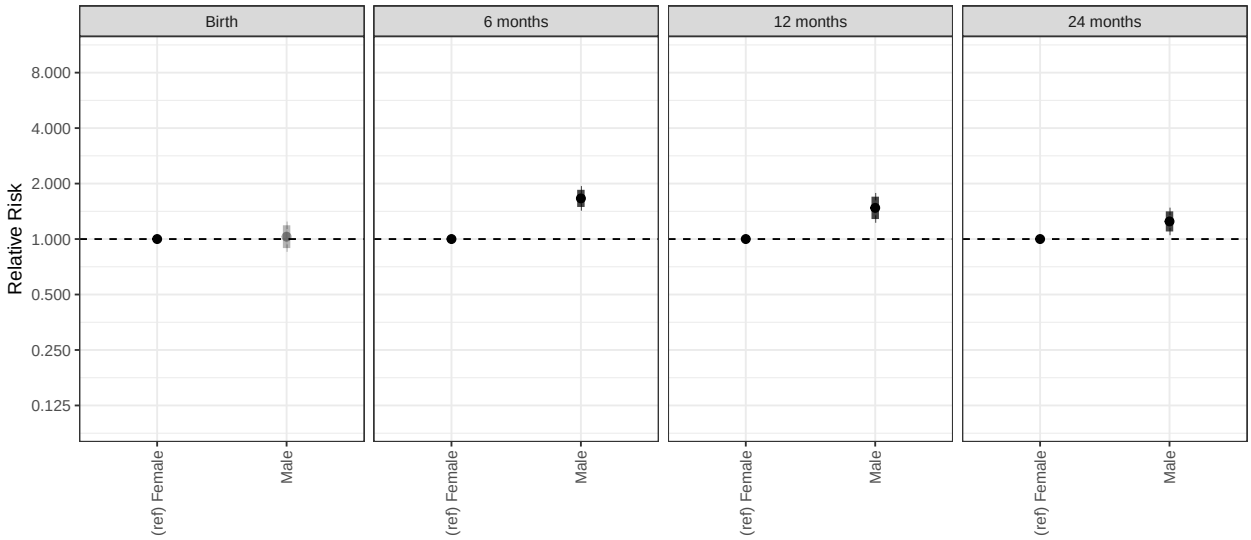
Calendar month of measurement
Estimates from 2 cohorts in Asia, Africa



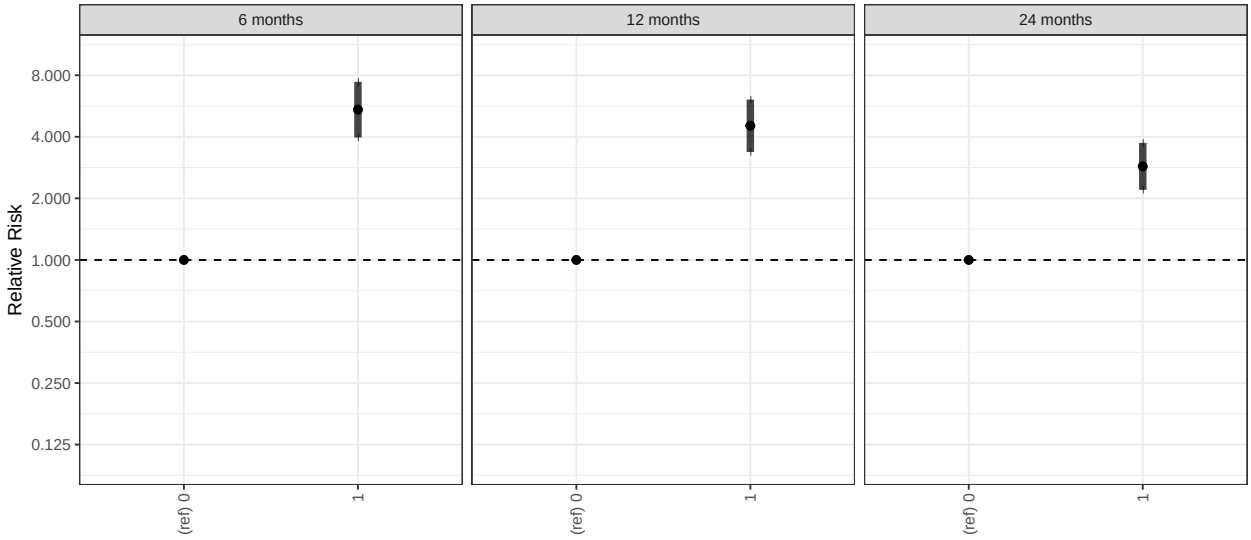
Child delivered at home
Estimates from 1 cohorts in Asia

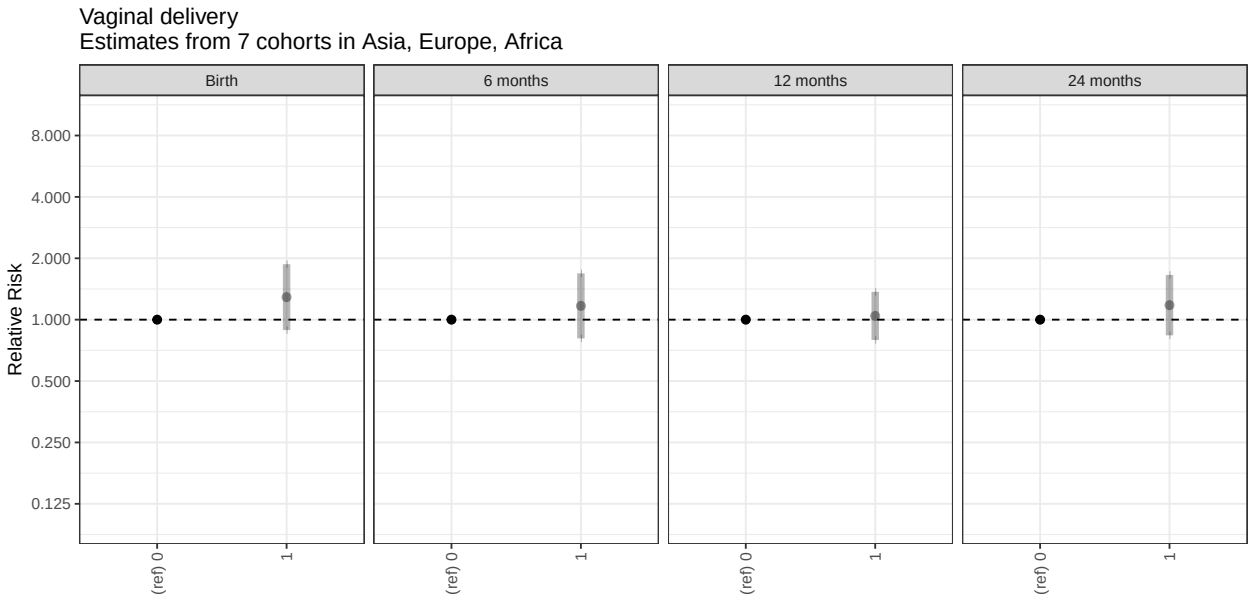


Child's sex
Estimates from 20 cohorts in Asia, Latin America, Africa, Europe

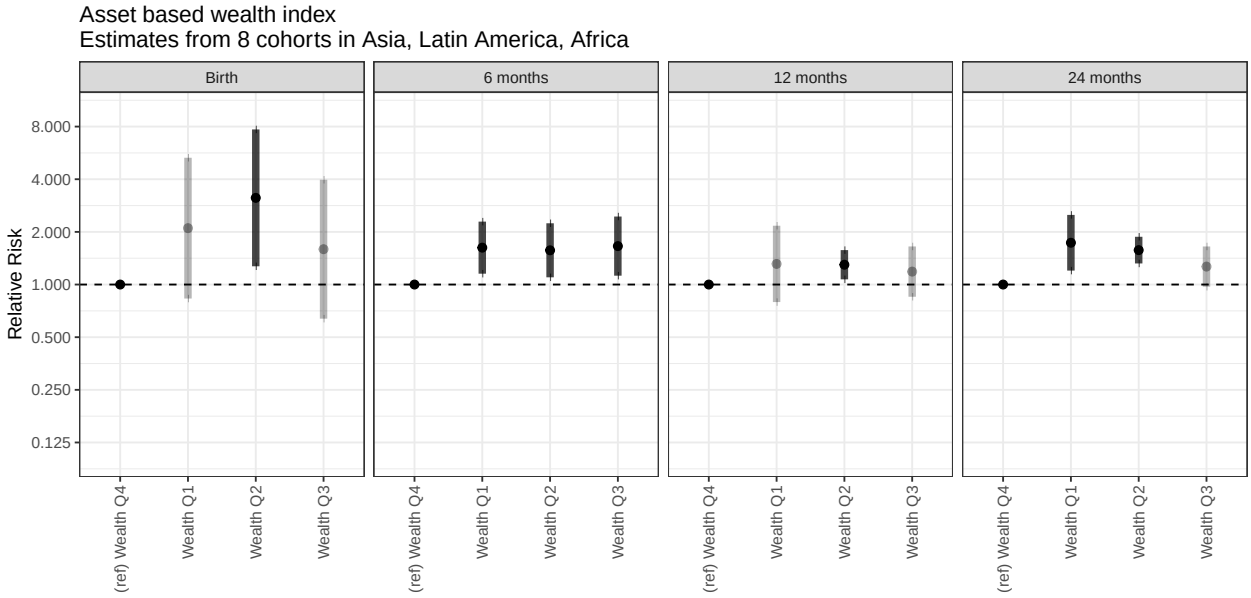


Stunted at enrollment
Estimates from 11 cohorts in Asia, Latin America, Africa

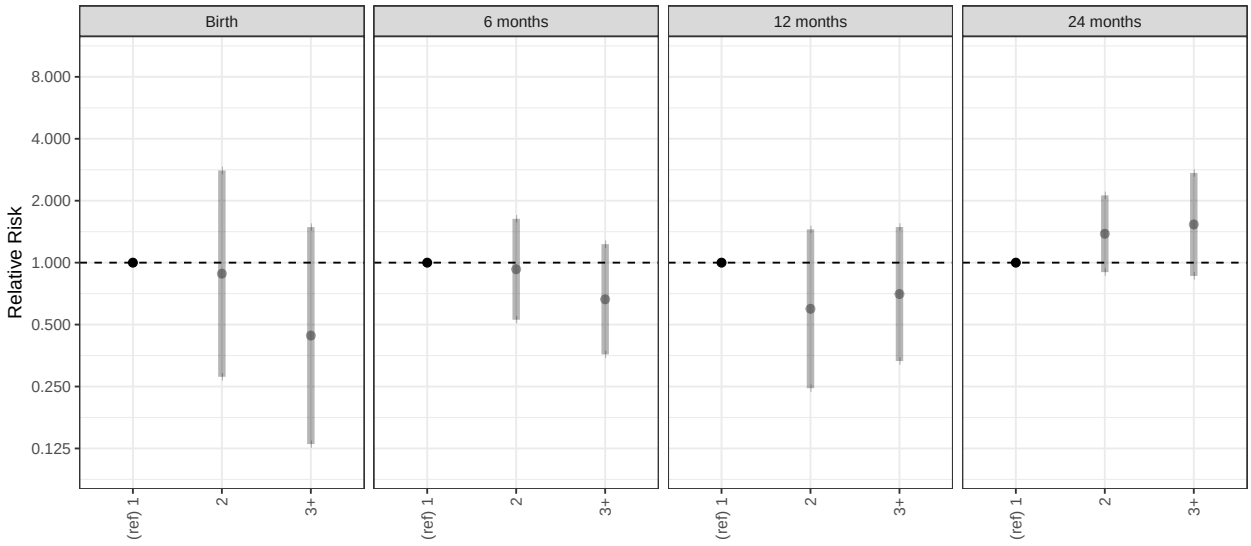




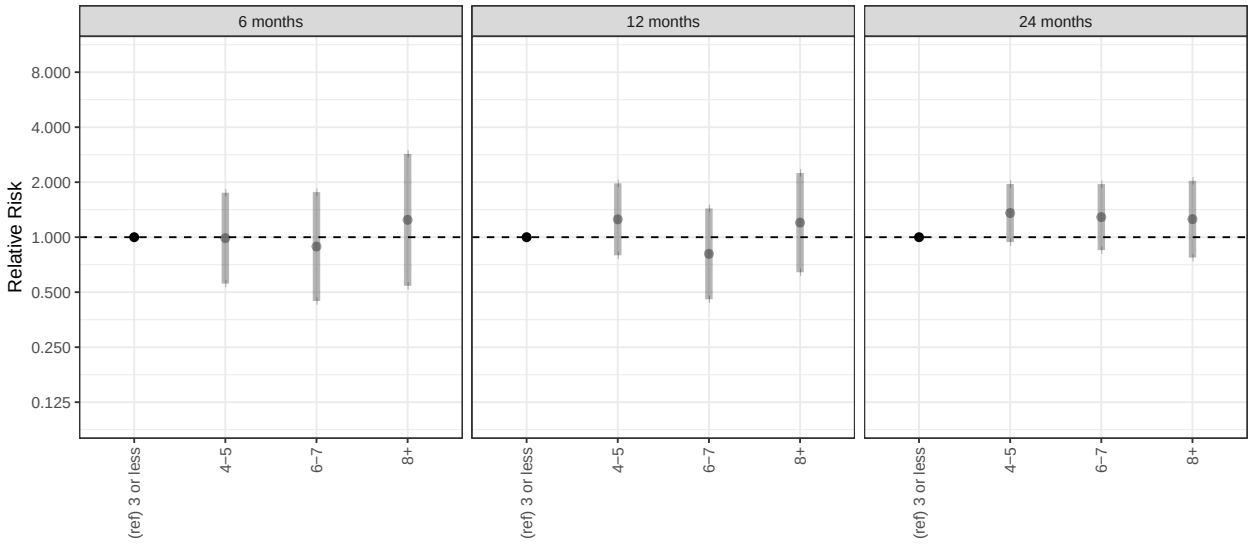
Household characteristics

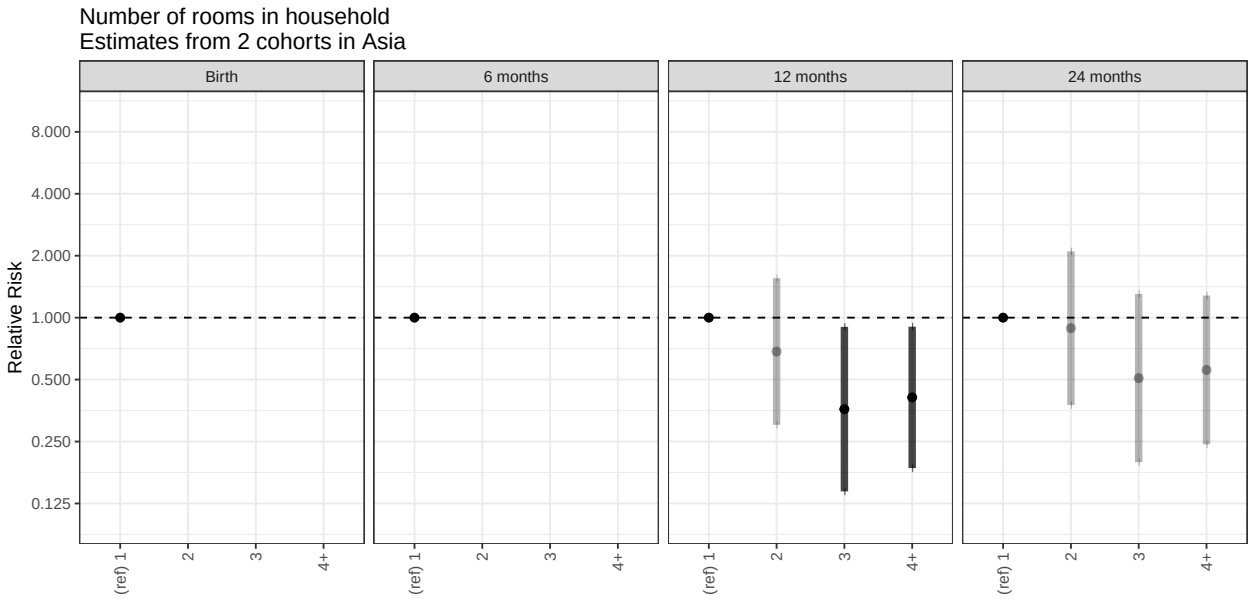


Number of children in the household under 5 years
Estimates from 2 cohorts in Asia

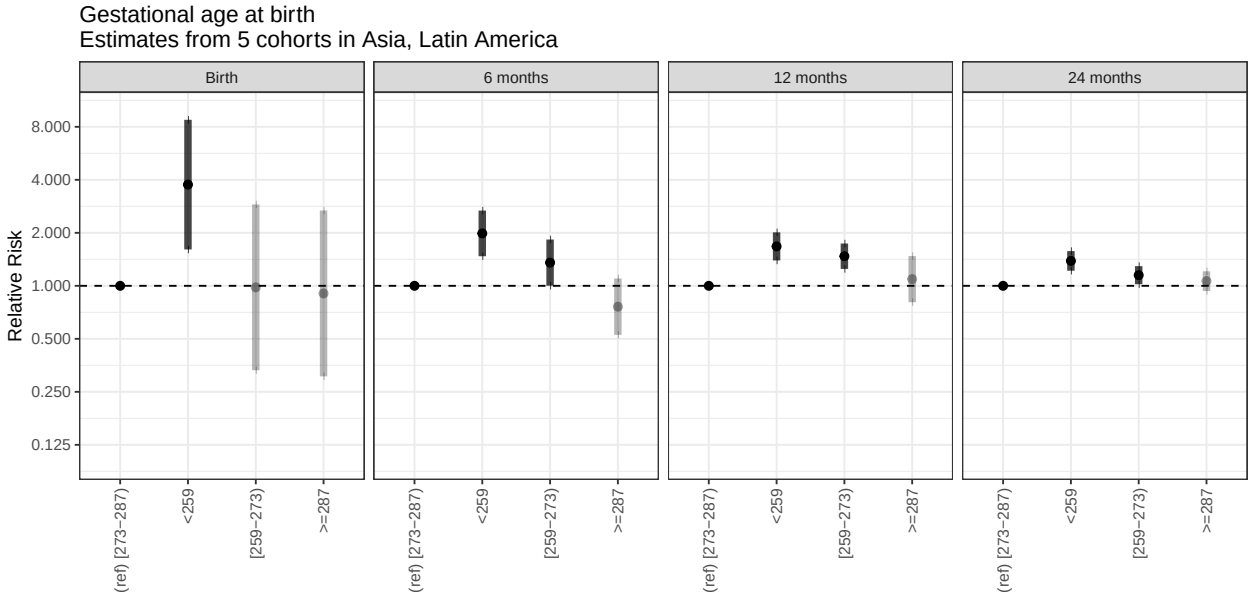


Number of people in the household
Estimates from 1 cohorts in Africa

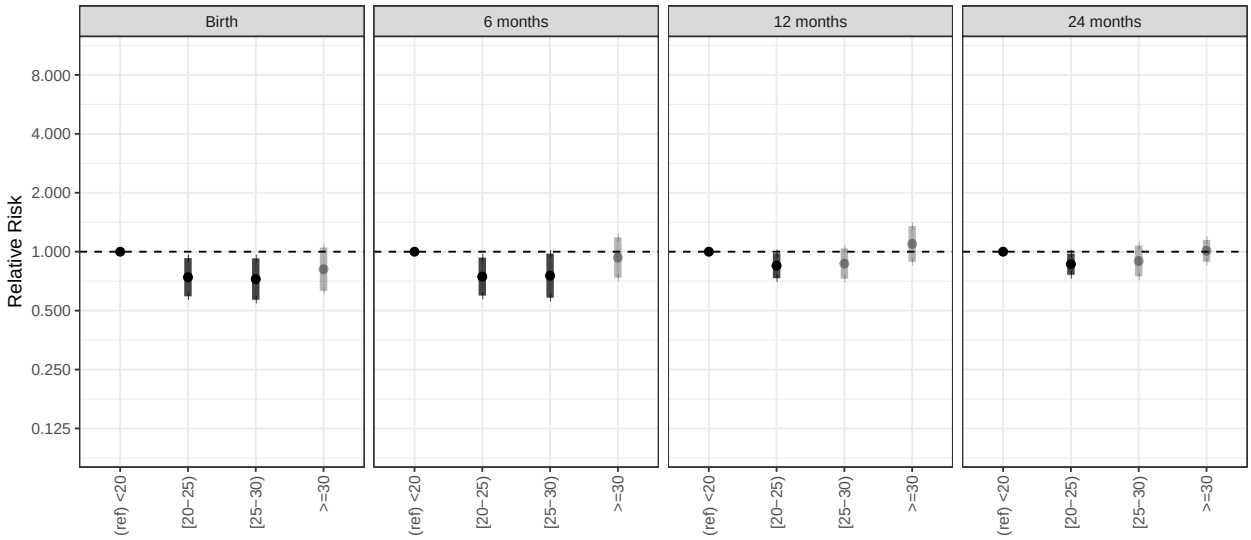




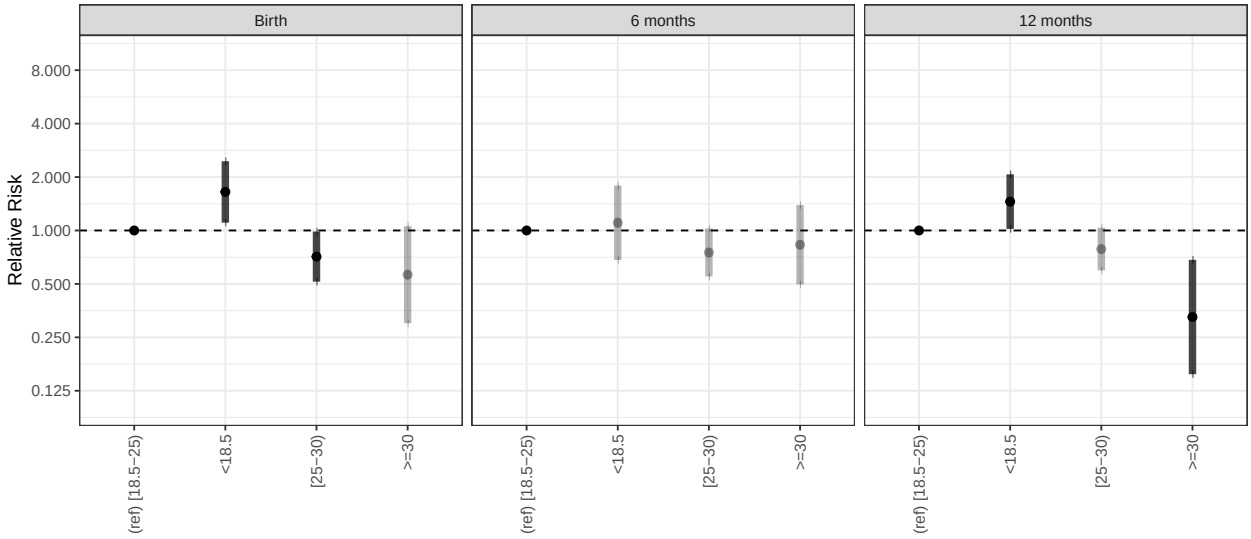
Maternal characteristics



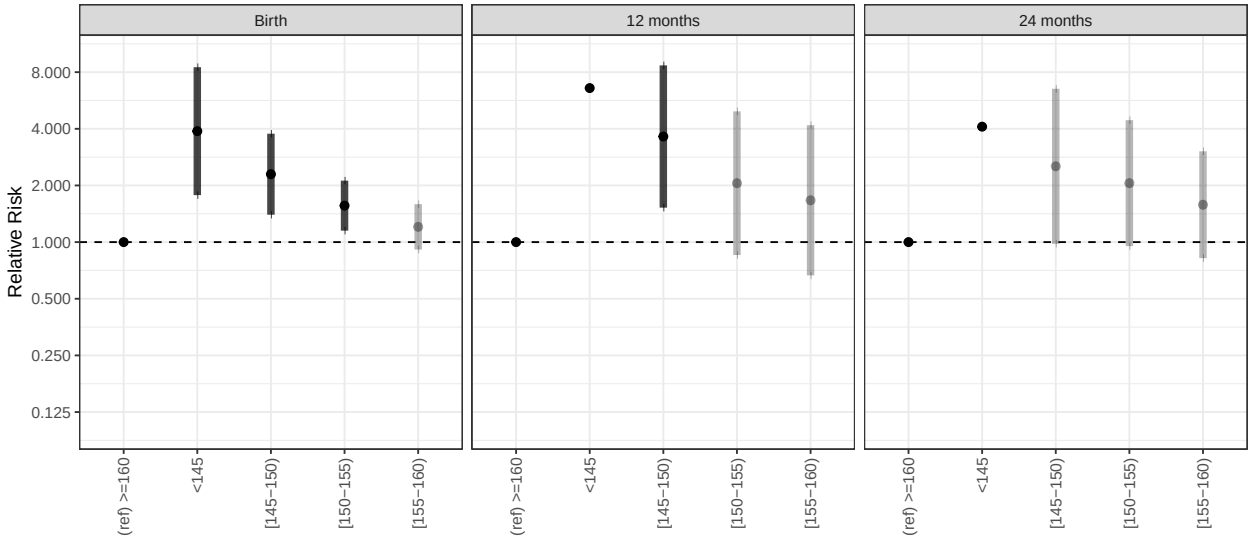
Maternal age
Estimates from 12 cohorts in Asia, Latin America, Africa, Europe



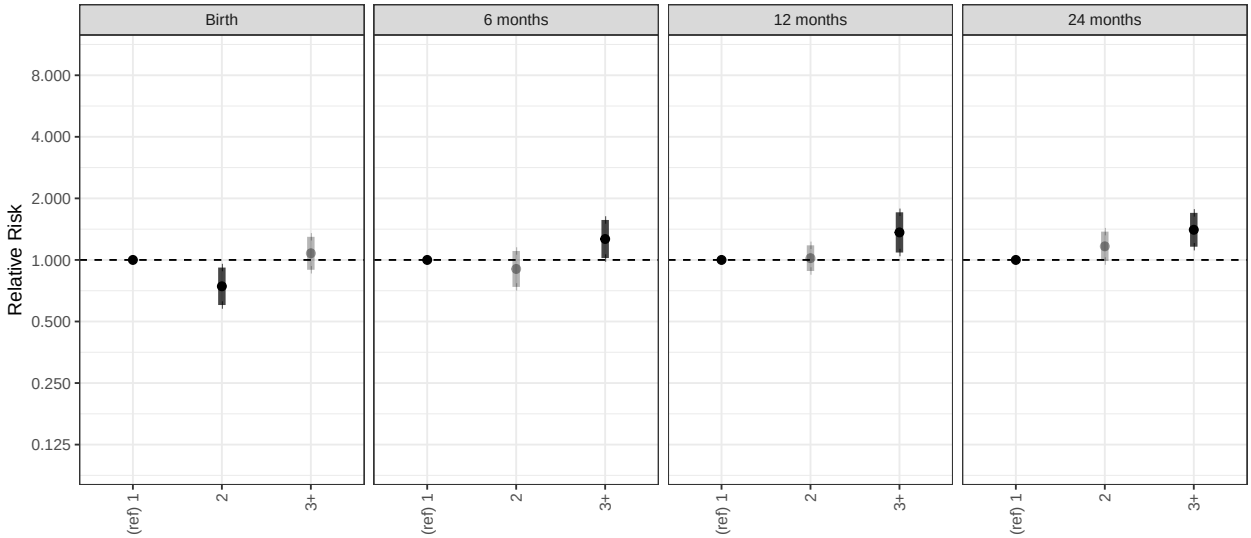
Maternal BMI
Estimates from 2 cohorts in Europe, Africa



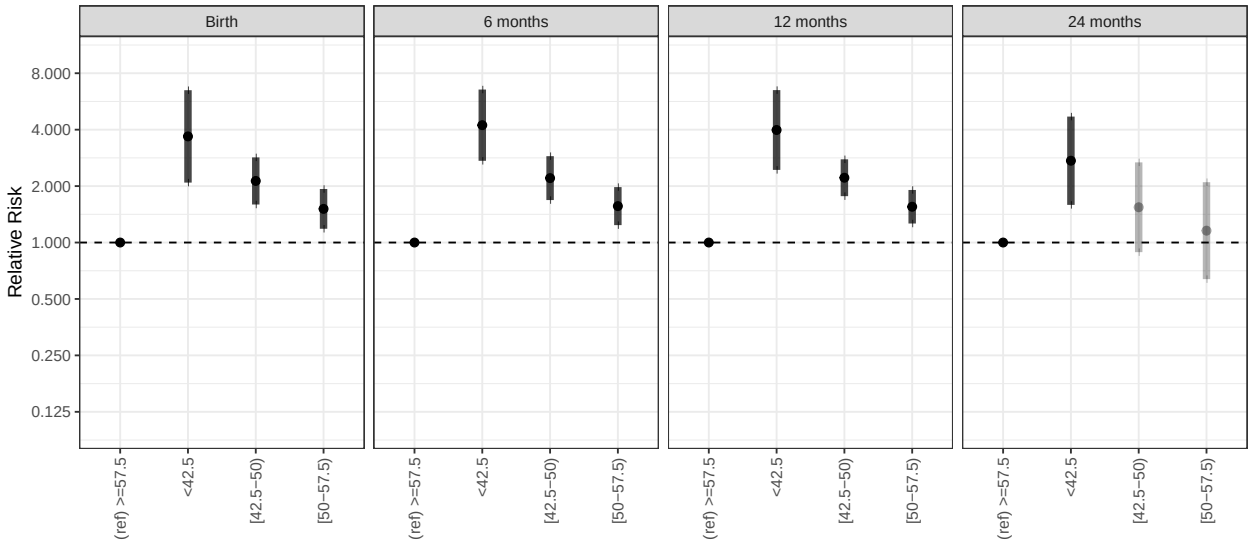
Maternal height
Estimates from 3 cohorts in Asia, Latin America



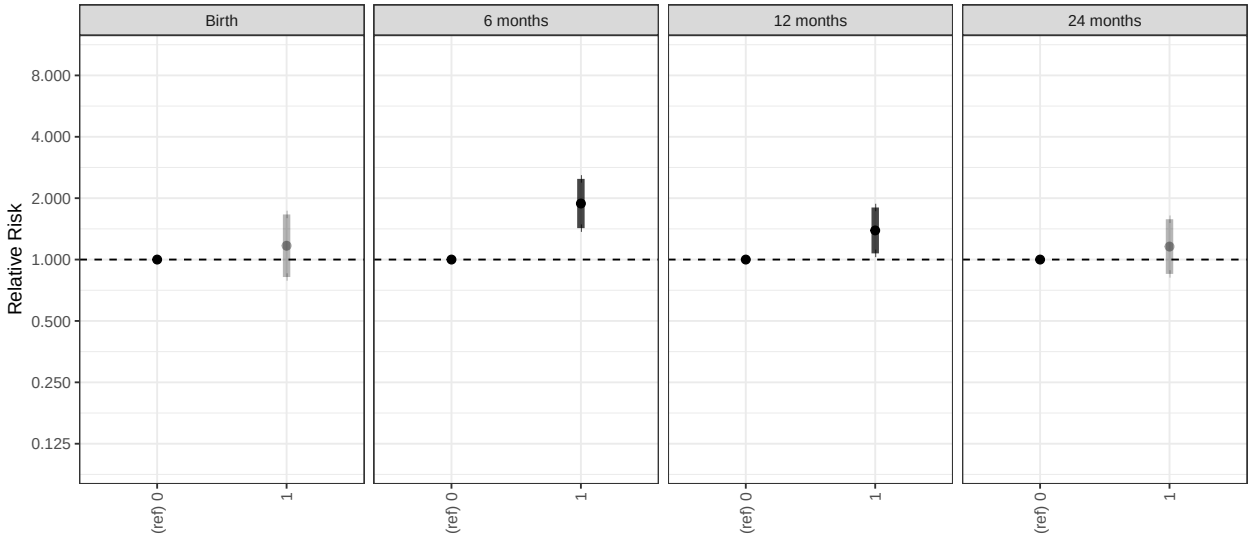
Maternal parity
Estimates from 4 cohorts in Asia, Africa

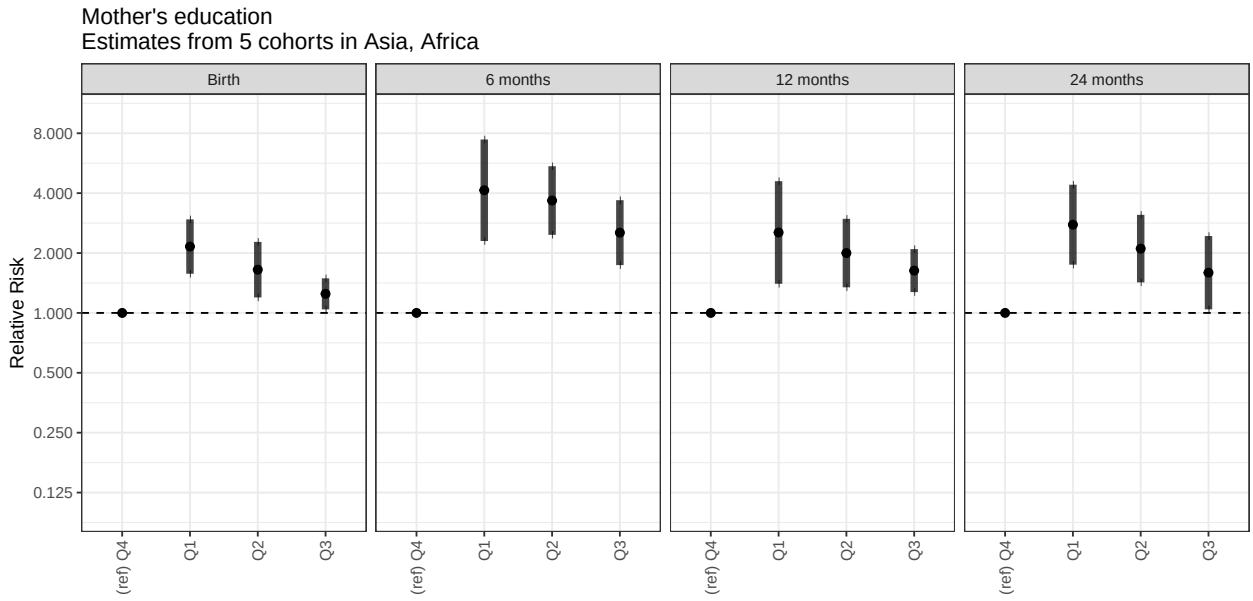


Maternal weight
Estimates from 2 cohorts in Africa

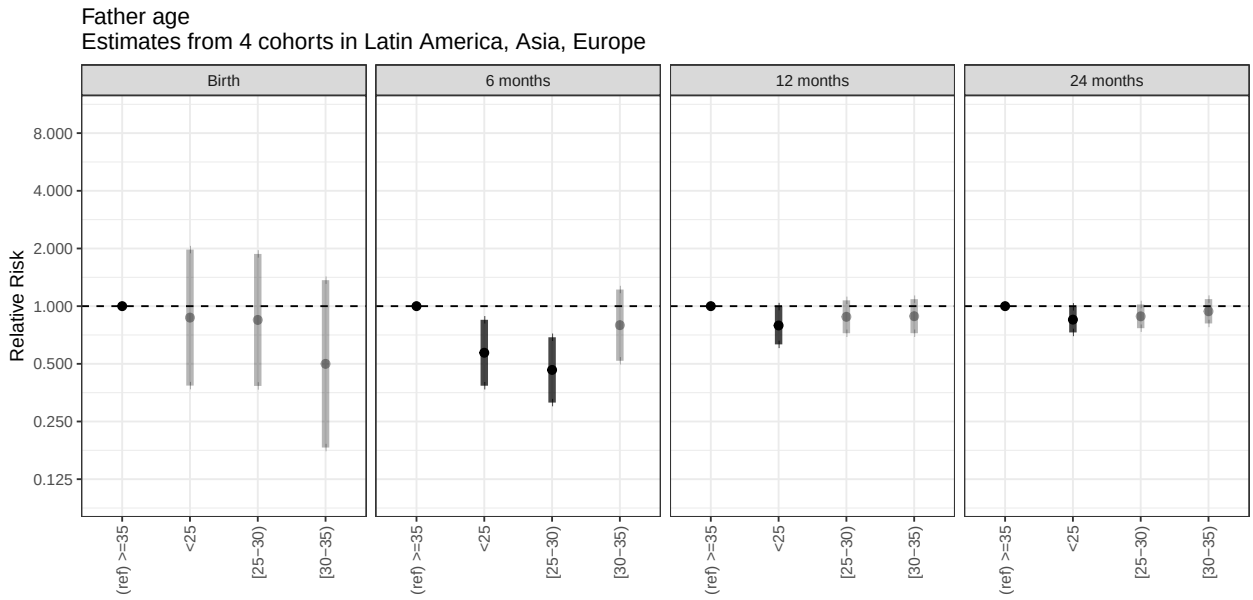


Mother is unmarried
Estimates from 4 cohorts in Latin America, Europe, Africa

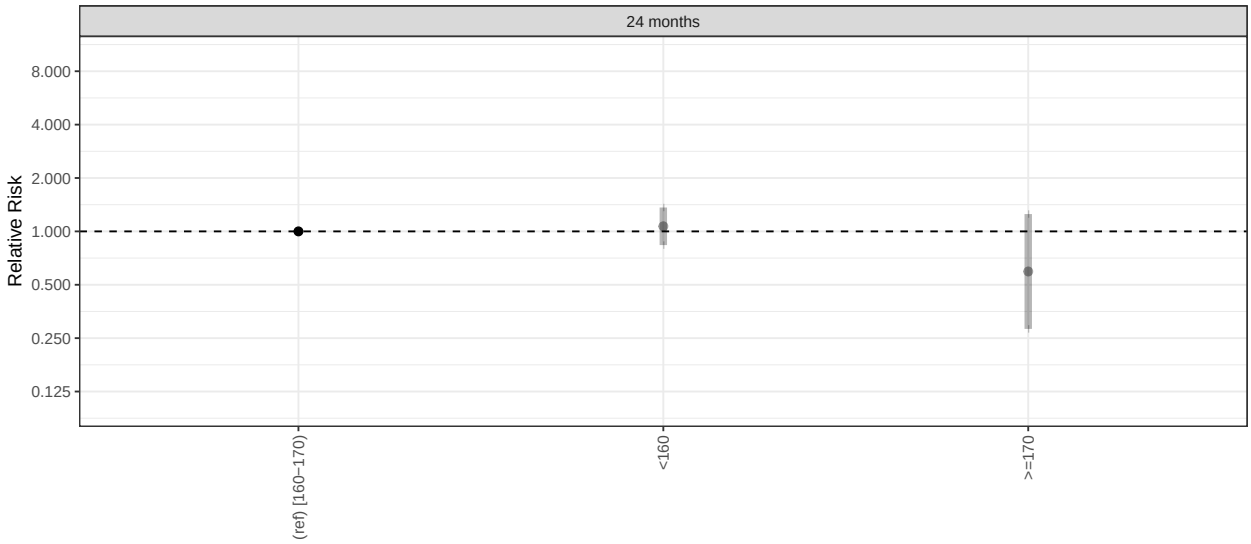




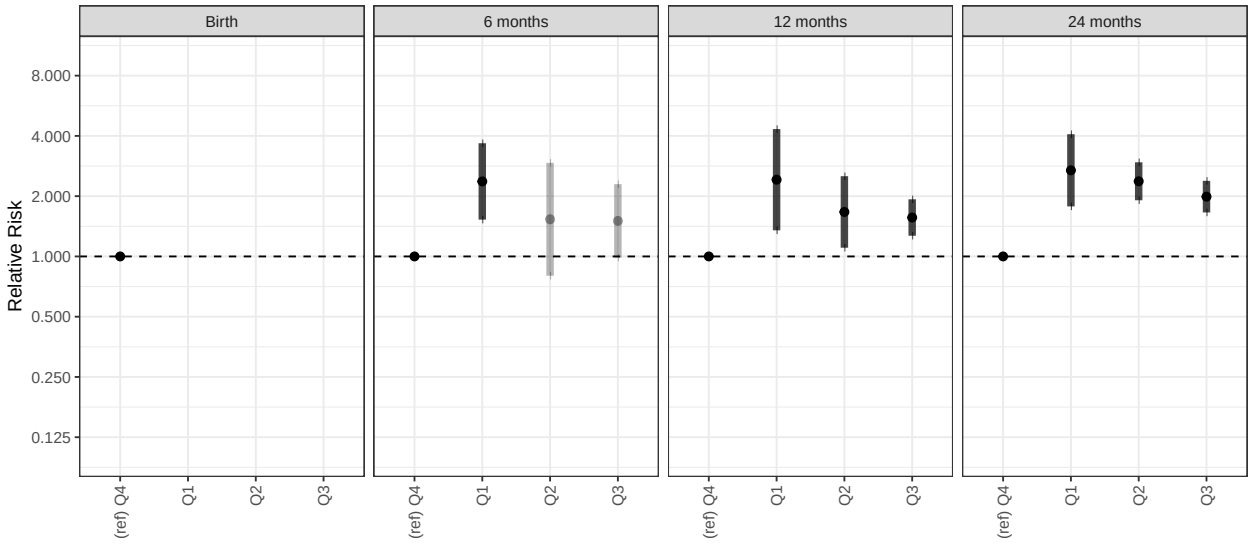
Paternal characteristics



Father height
Estimates from 1 cohorts in Latin America

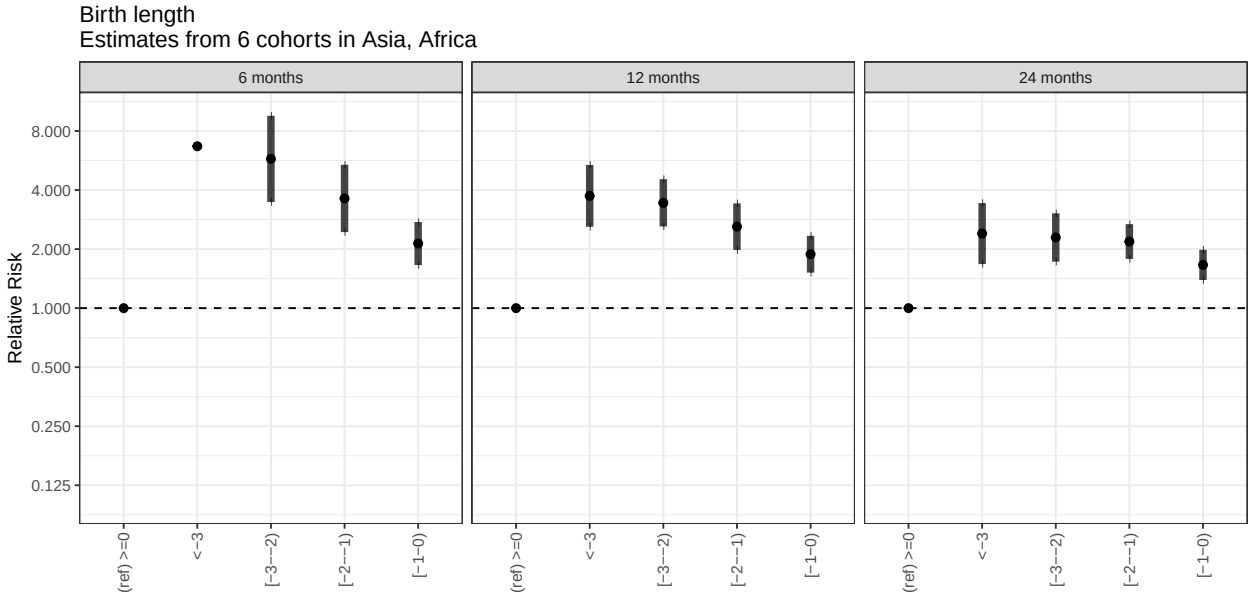


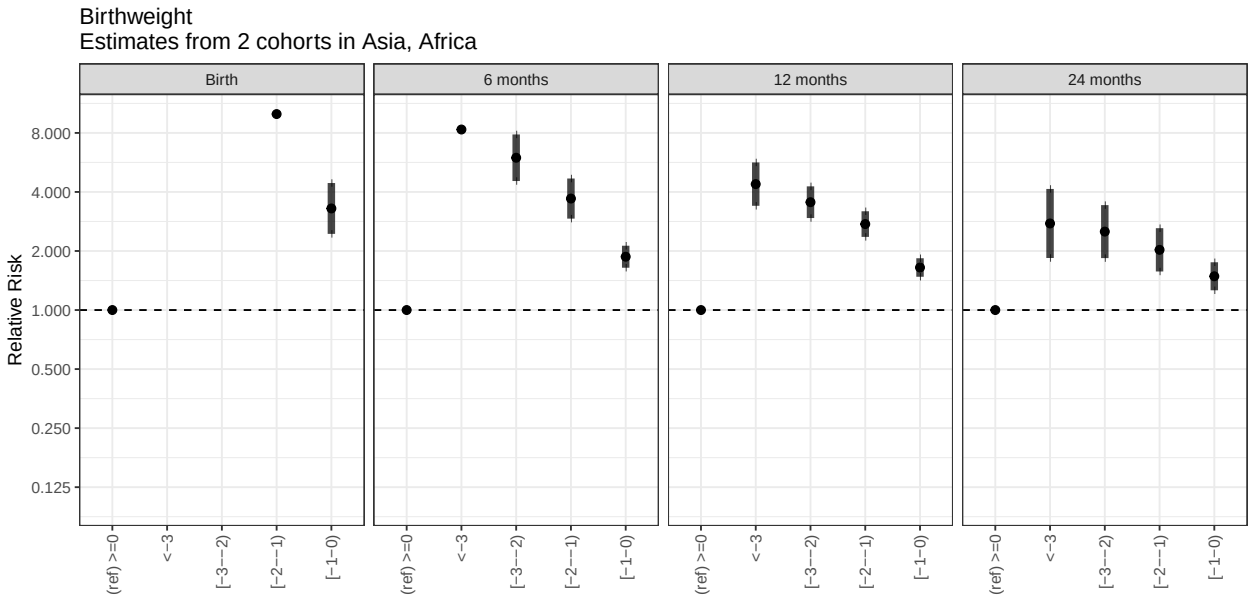
Father's education
Estimates from 4 cohorts in Asia



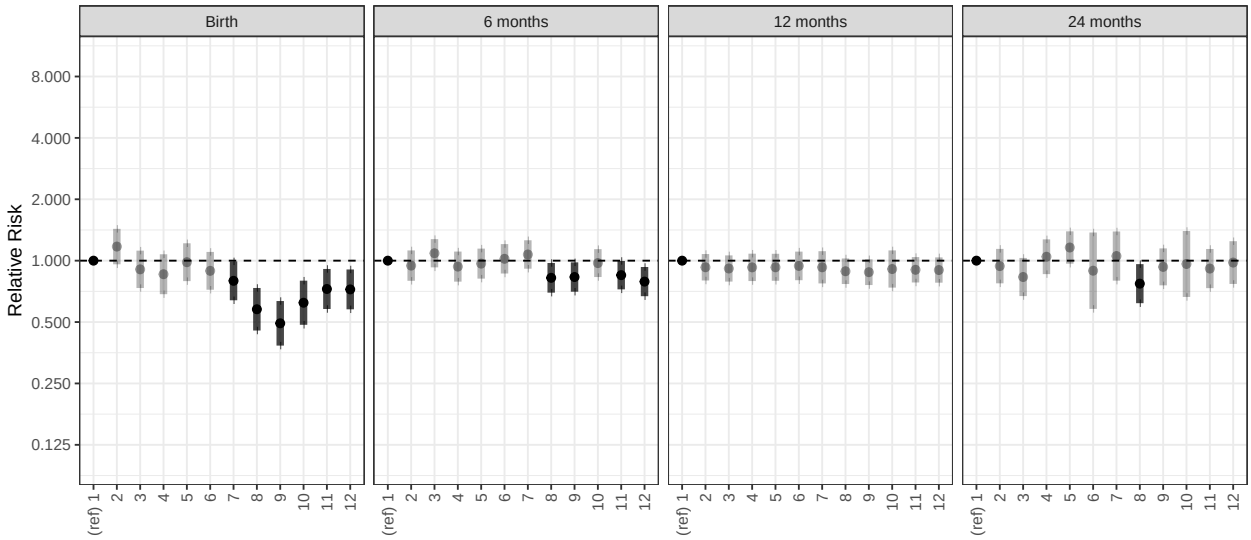
Point prevalence of stunting

Child characteristics

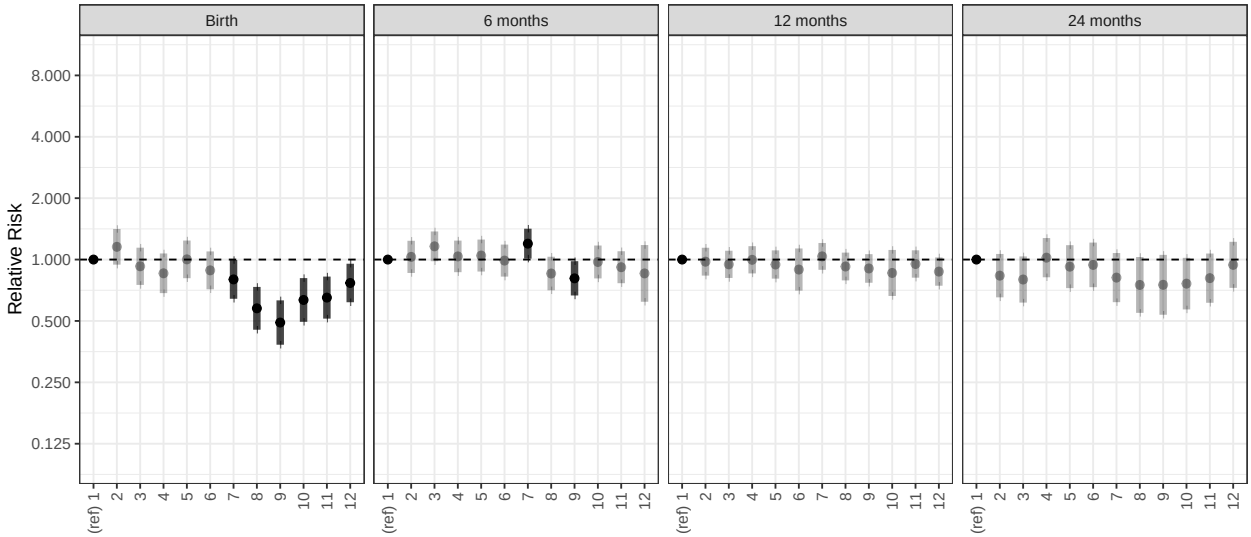




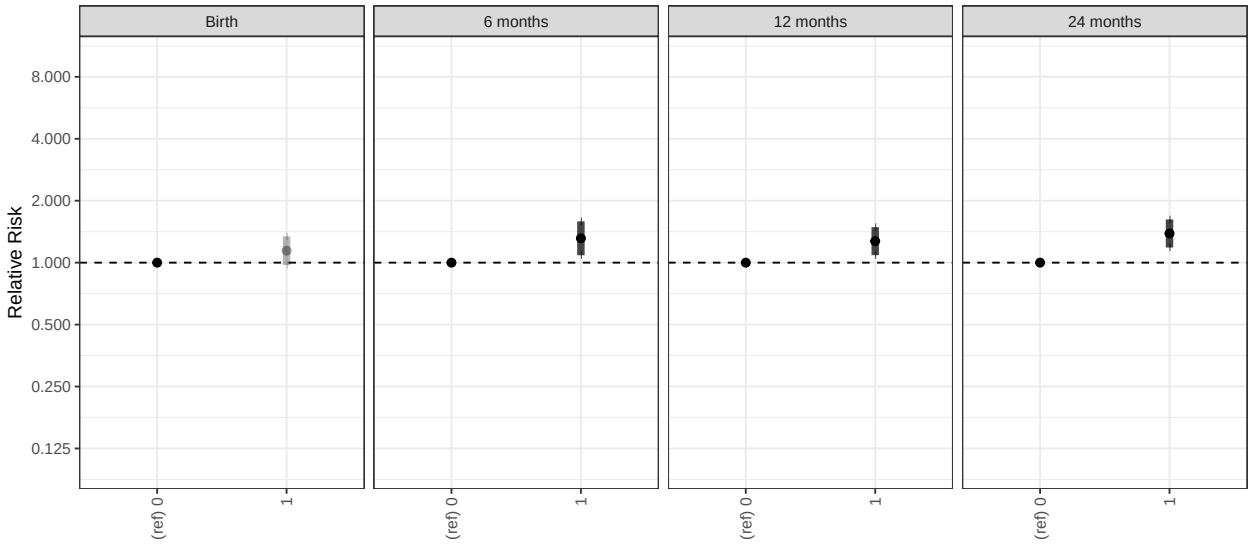
Calendar month of birth
Estimates from 9 cohorts in Asia, Africa, Europe



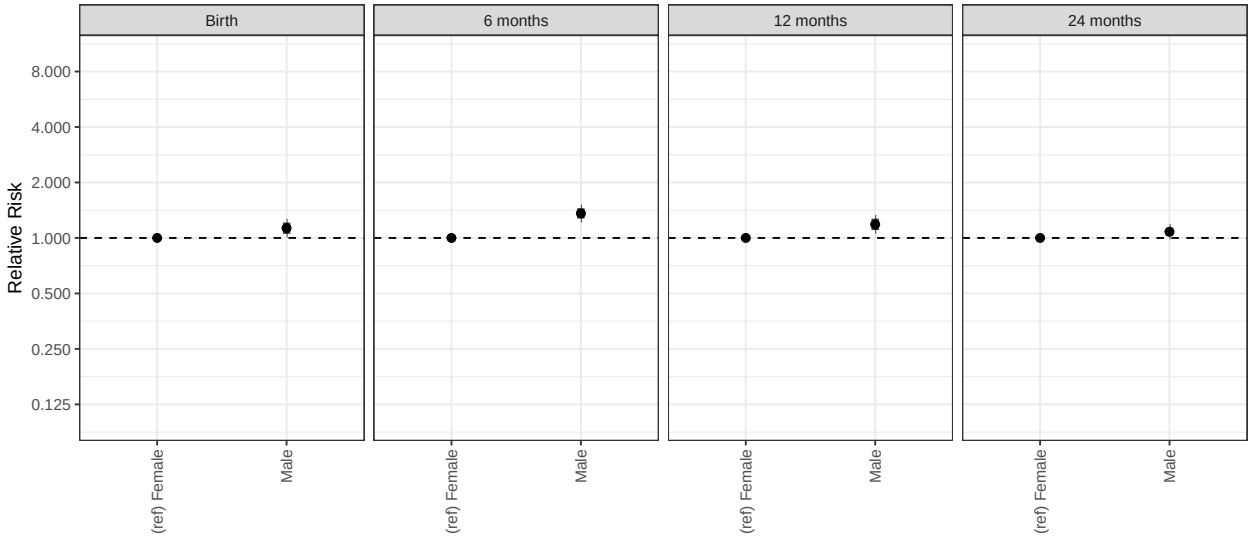
Calendar month of measurement
Estimates from 8 cohorts in Asia, Africa, Europe



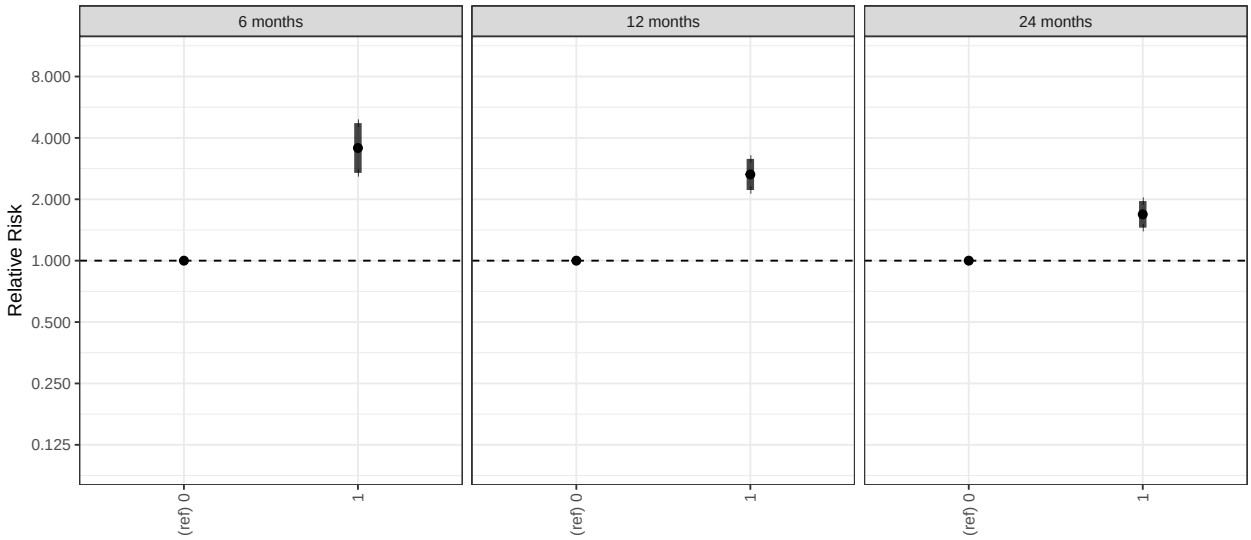
Child delivered at home
Estimates from 1 cohorts in Asia



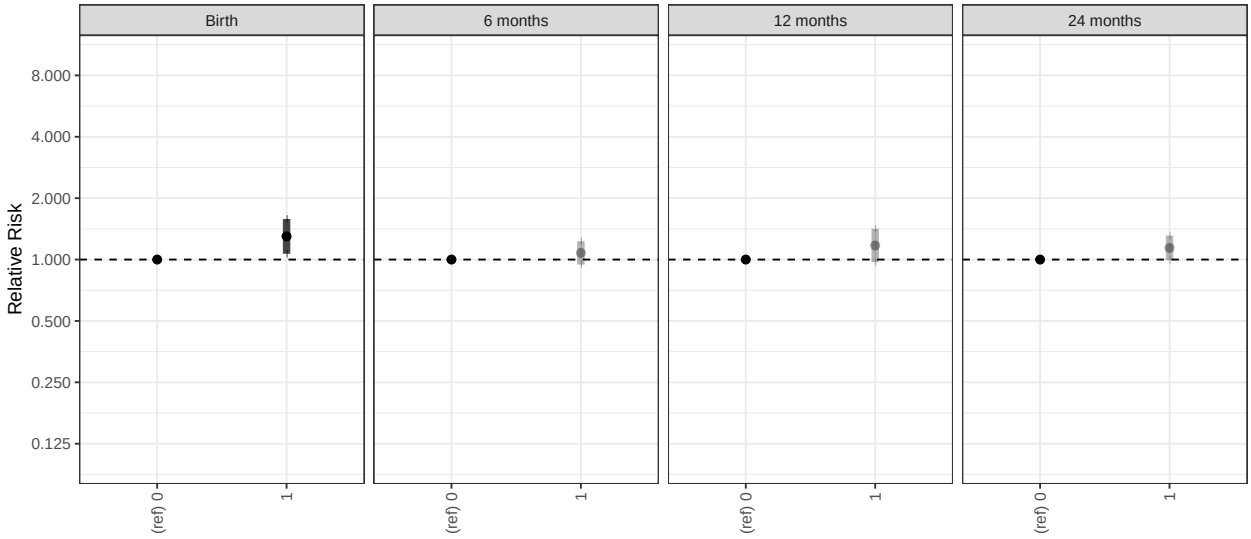
Child's sex
Estimates from 18 cohorts in Asia, Latin America, Africa, Europe



Stunted at enrollment
Estimates from 18 cohorts in Asia, Africa, Latin America, Europe

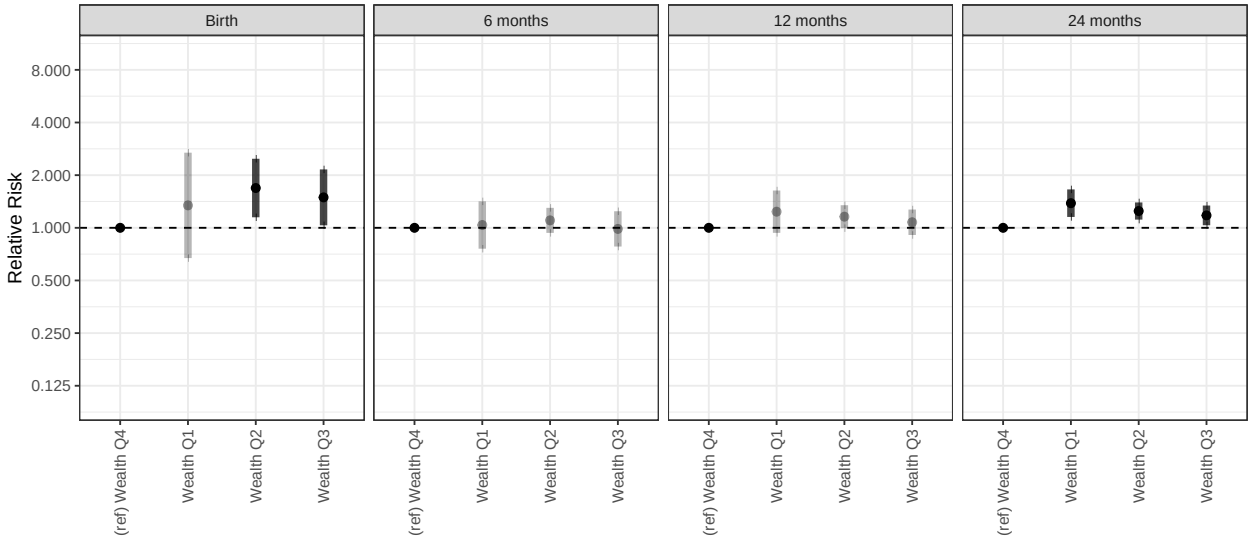


Vaginal delivery
Estimates from 9 cohorts in Asia, Europe, Africa

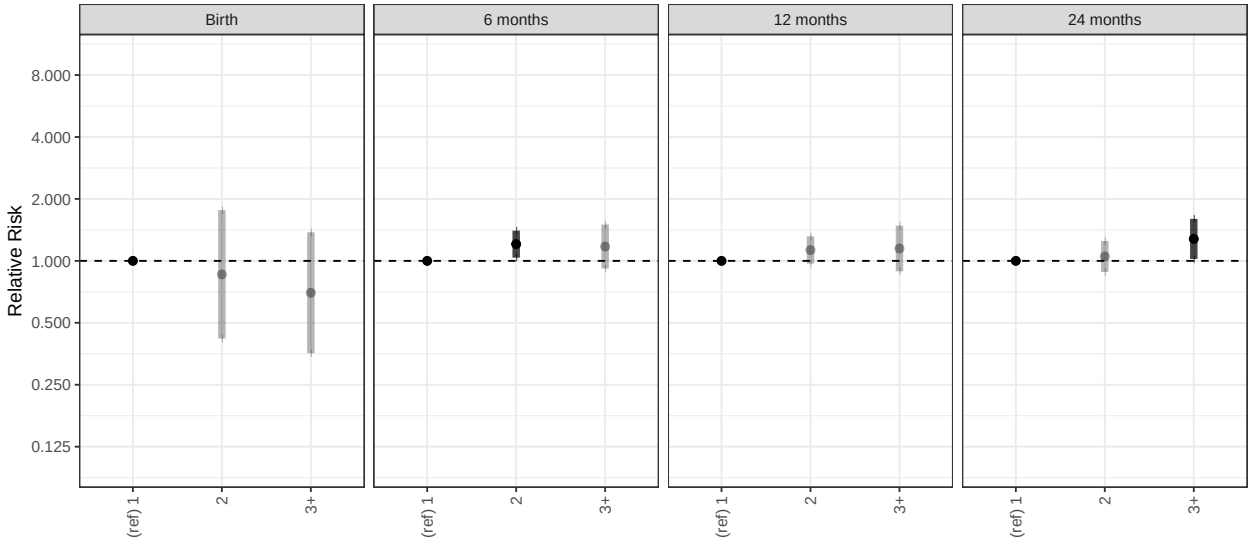


Household characteristics

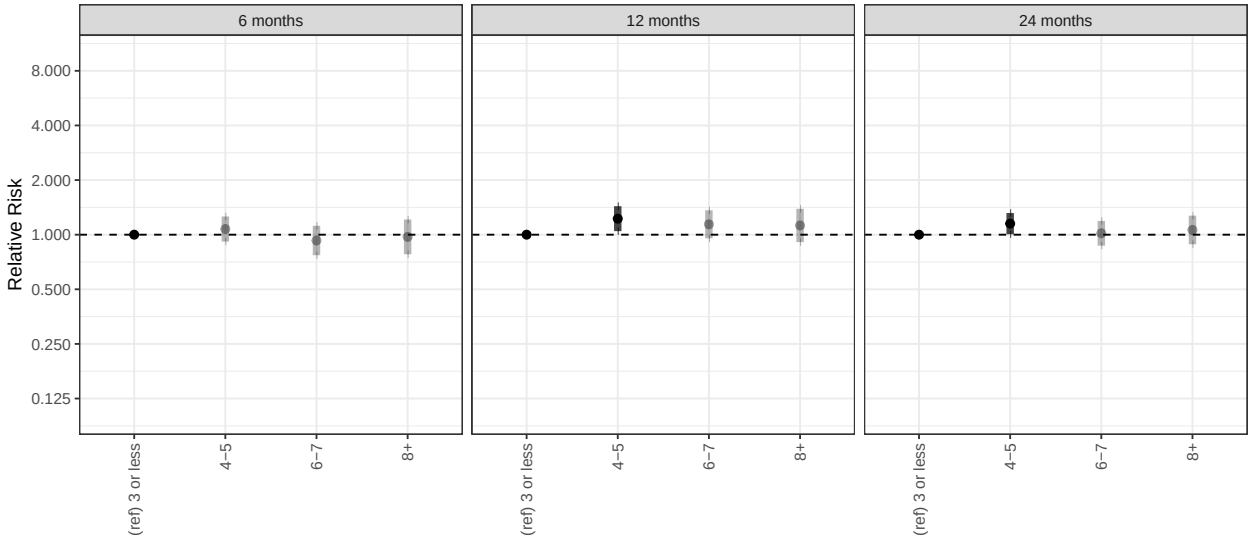
Asset based wealth index
Estimates from 10 cohorts in Asia, Latin America, Africa



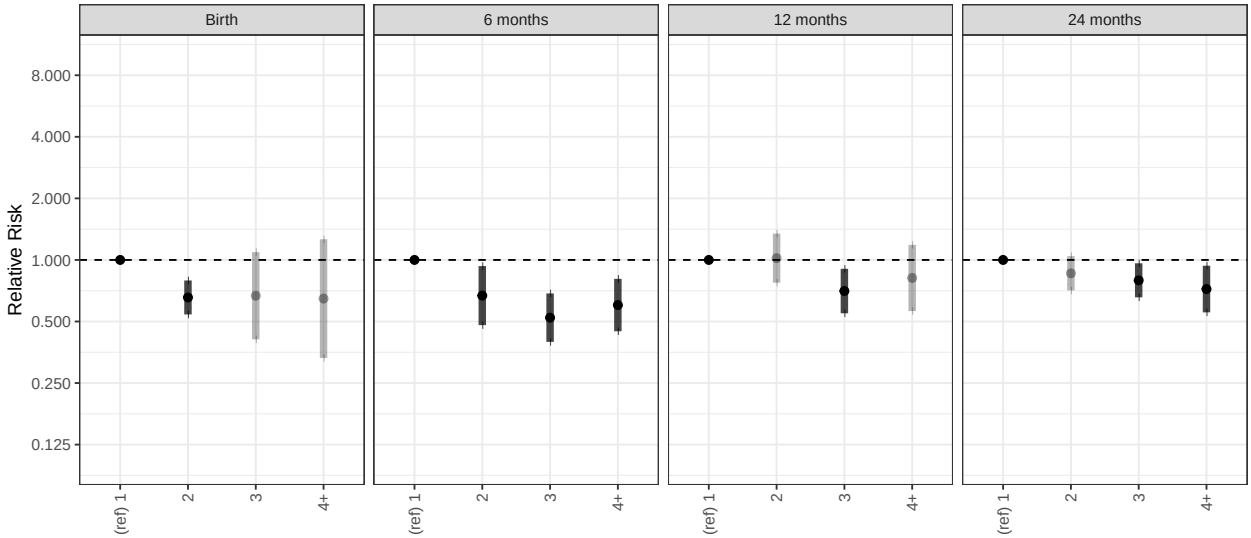
Number of children in the household under 5 years
Estimates from 2 cohorts in Asia

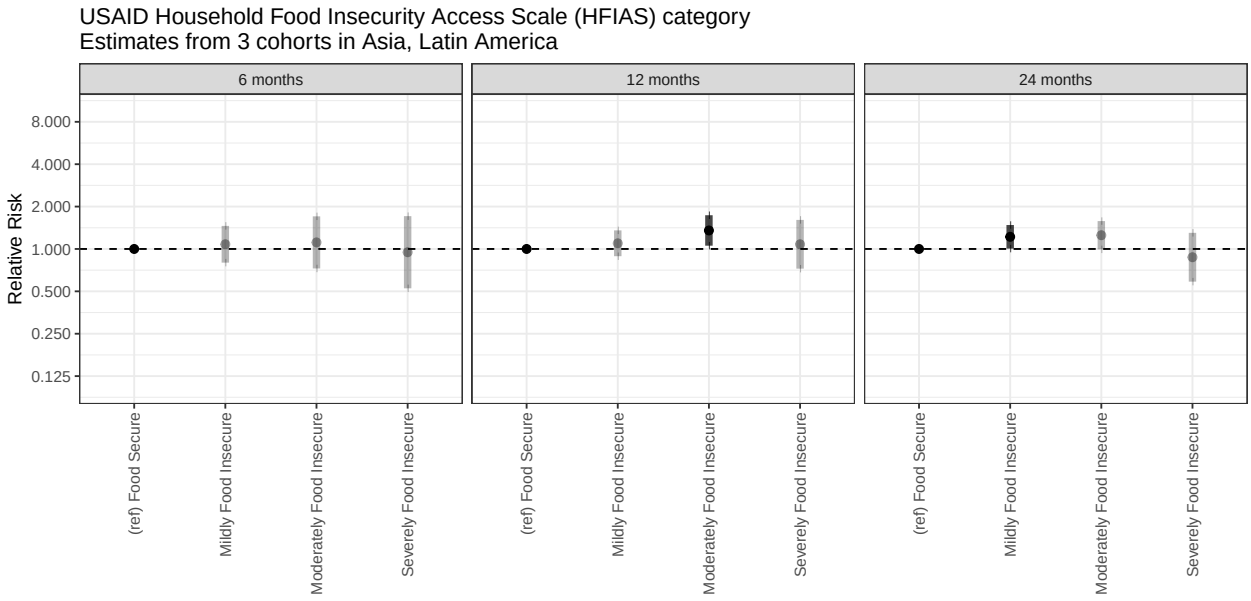


Number of people in the household
Estimates from 5 cohorts in Asia, Africa

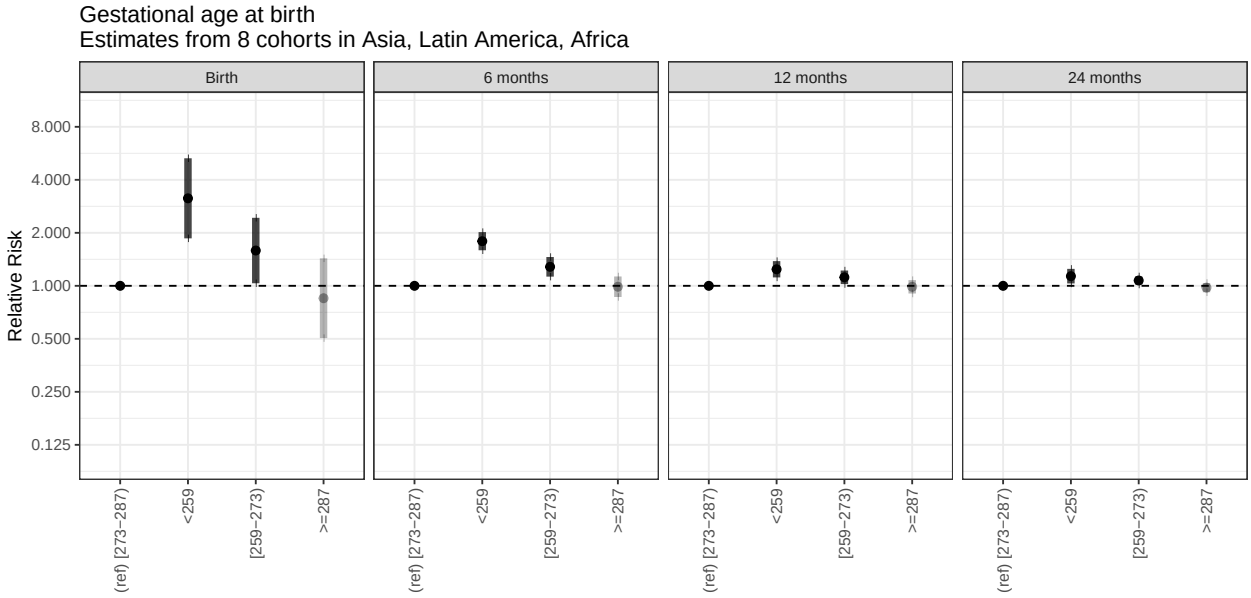


Number of rooms in household
Estimates from 10 cohorts in Asia, Latin America, Africa

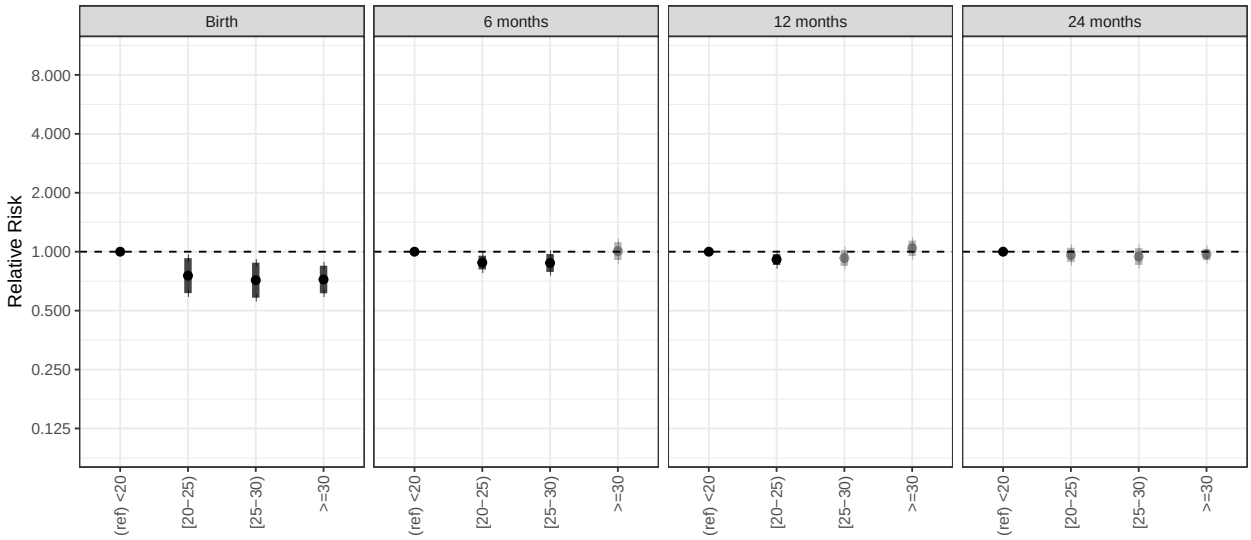




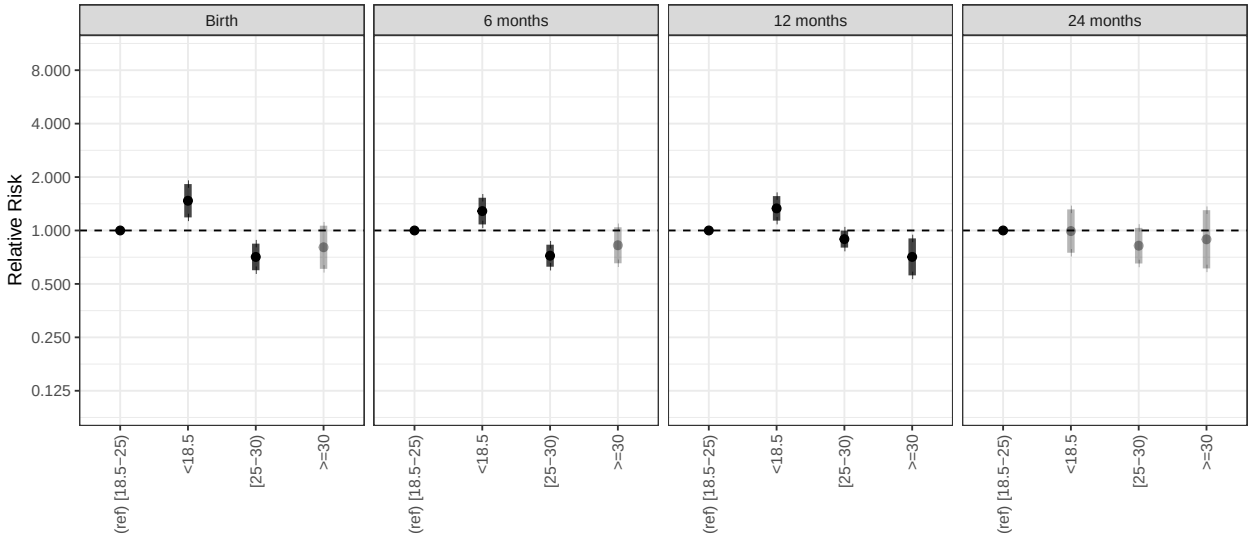
Maternal characteristics



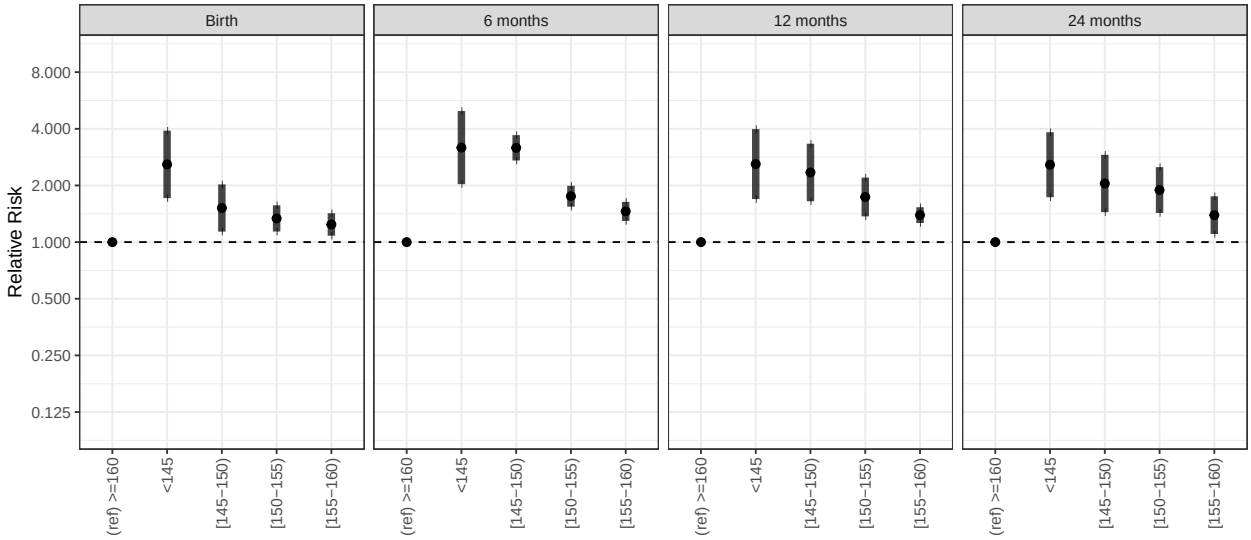
Maternal age
Estimates from 20 cohorts in Asia, Latin America, Africa, Europe



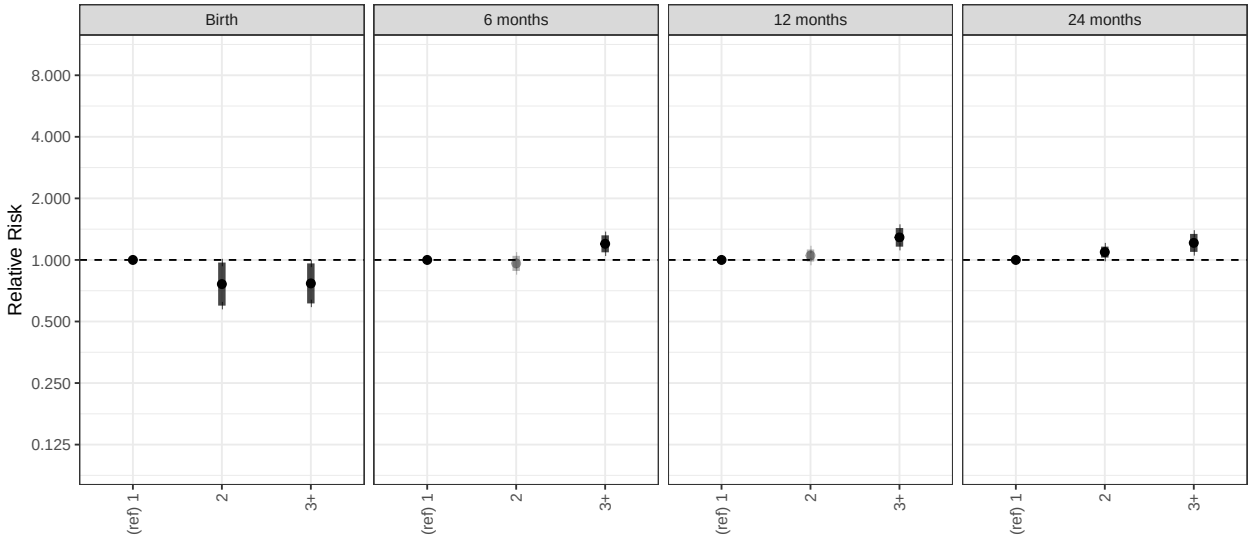
Maternal BMI
Estimates from 3 cohorts in Asia, Europe, Africa



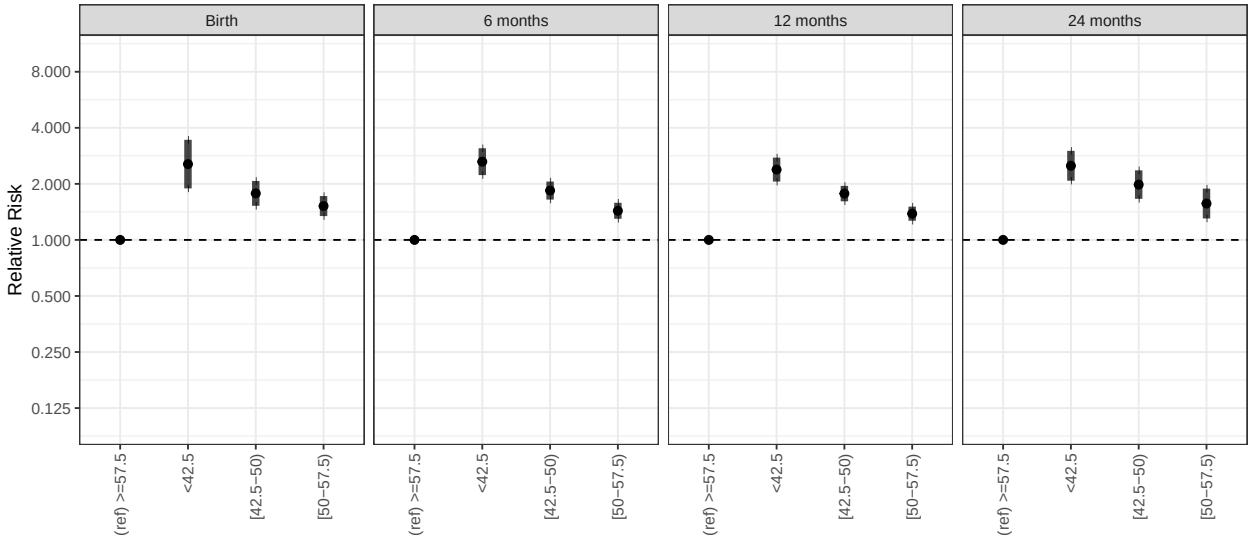
Maternal height
Estimates from 3 cohorts in Asia, Africa



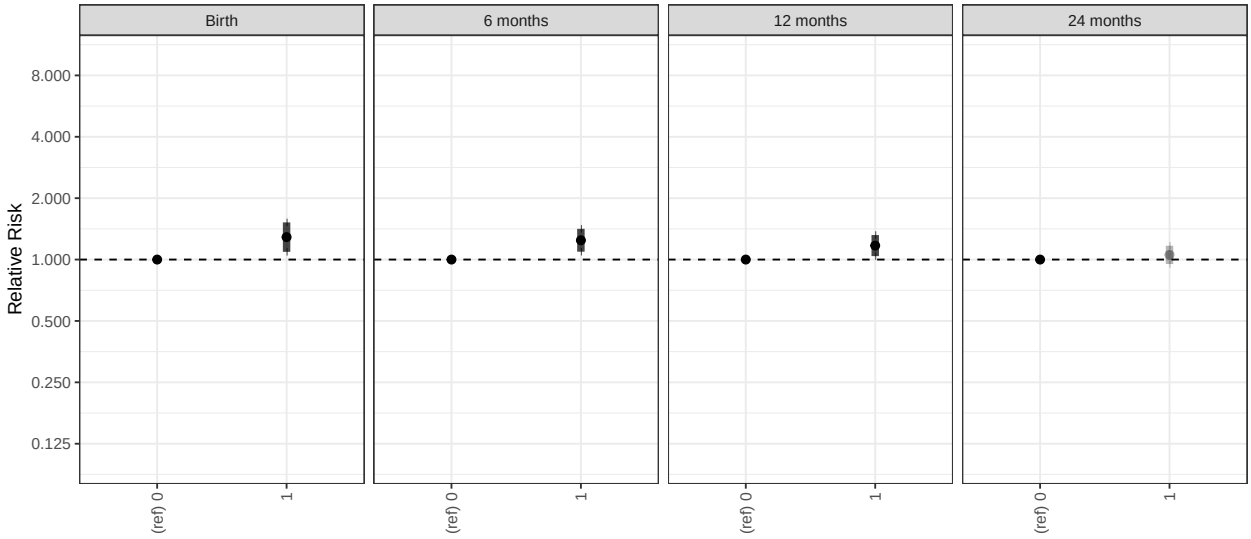
Maternal parity
Estimates from 5 cohorts in Asia, Africa

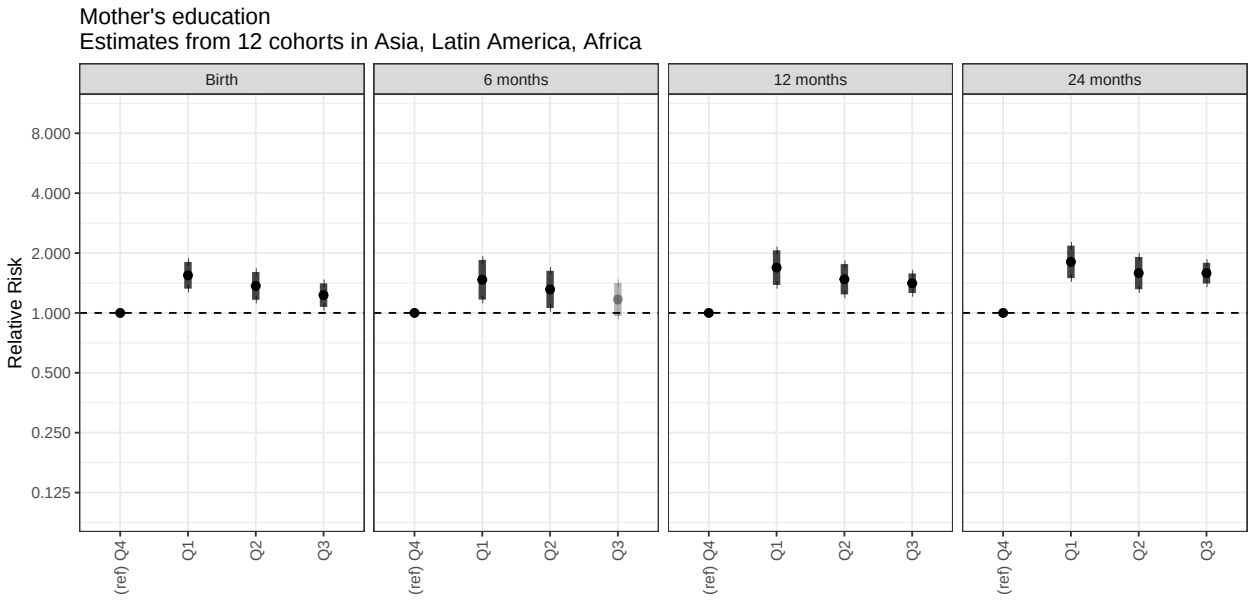


Maternal weight
Estimates from 7 cohorts in Africa, Asia, Latin America

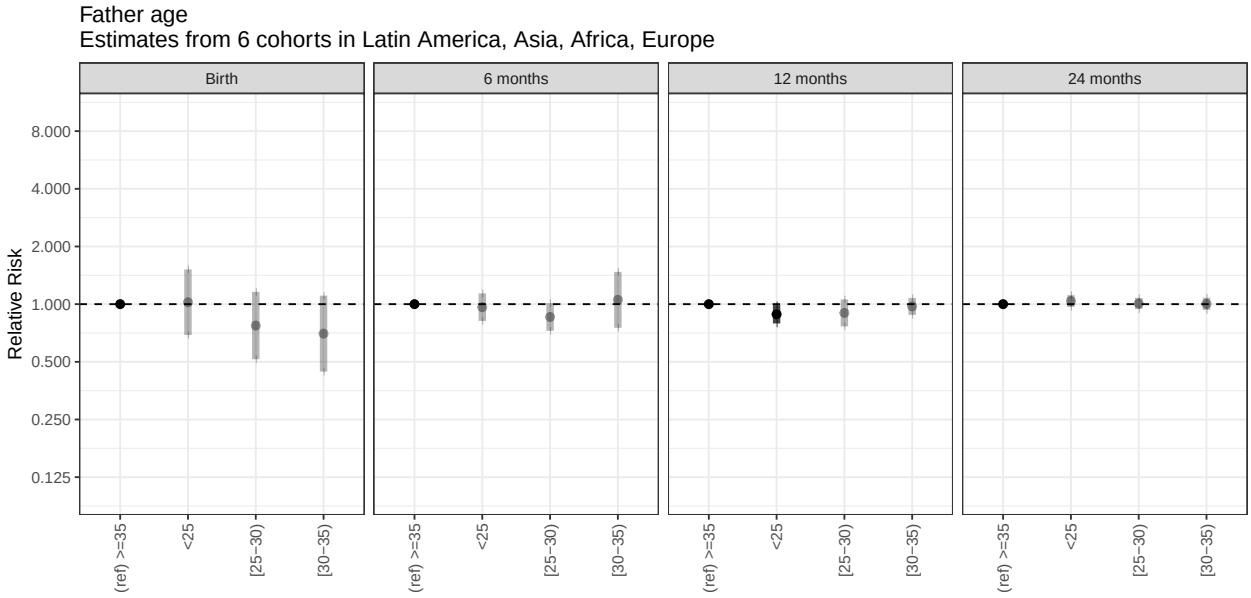


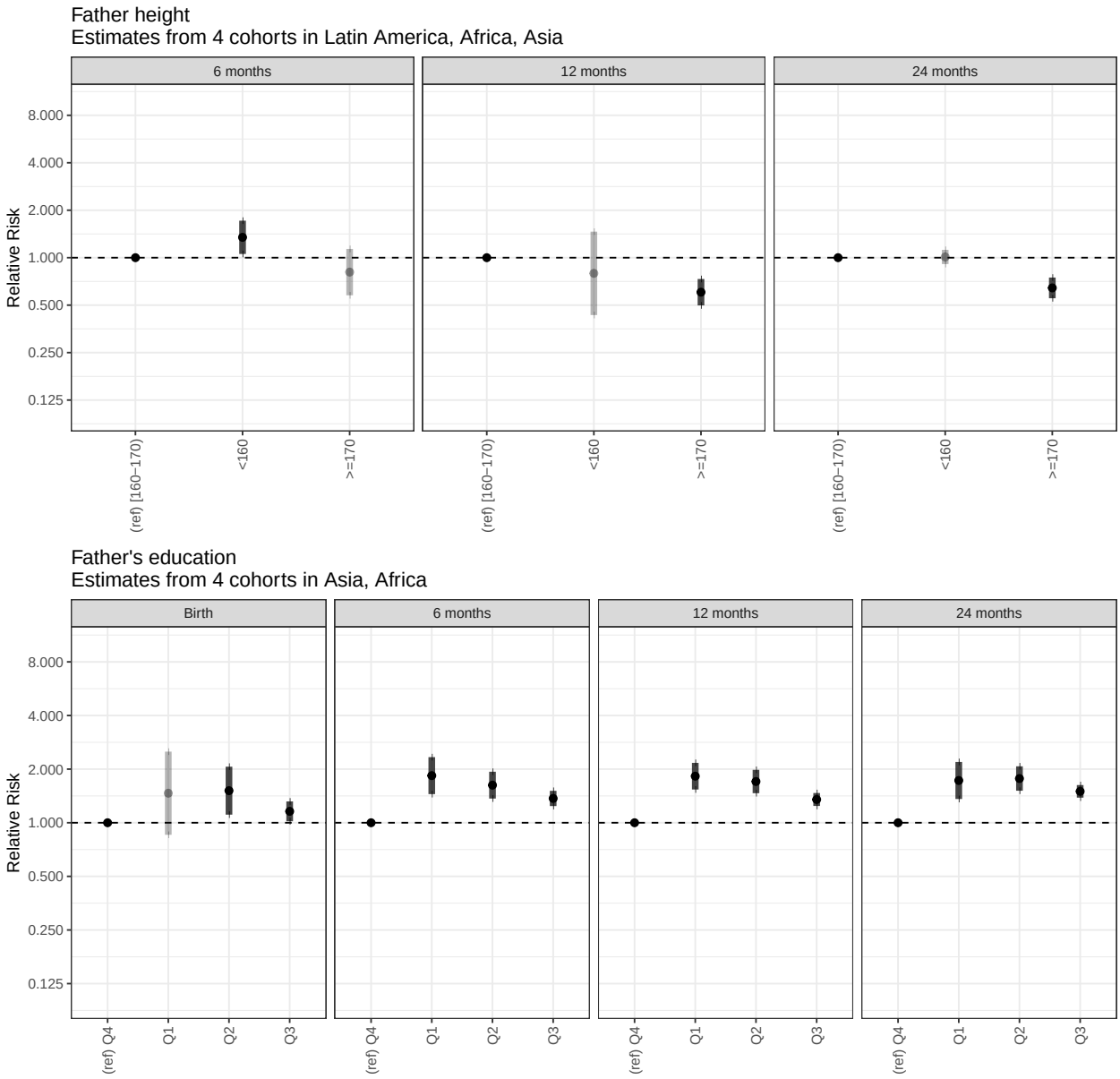
Mother is unmarried
Estimates from 8 cohorts in Latin America, Asia, Africa, Europe





Paternal characteristics



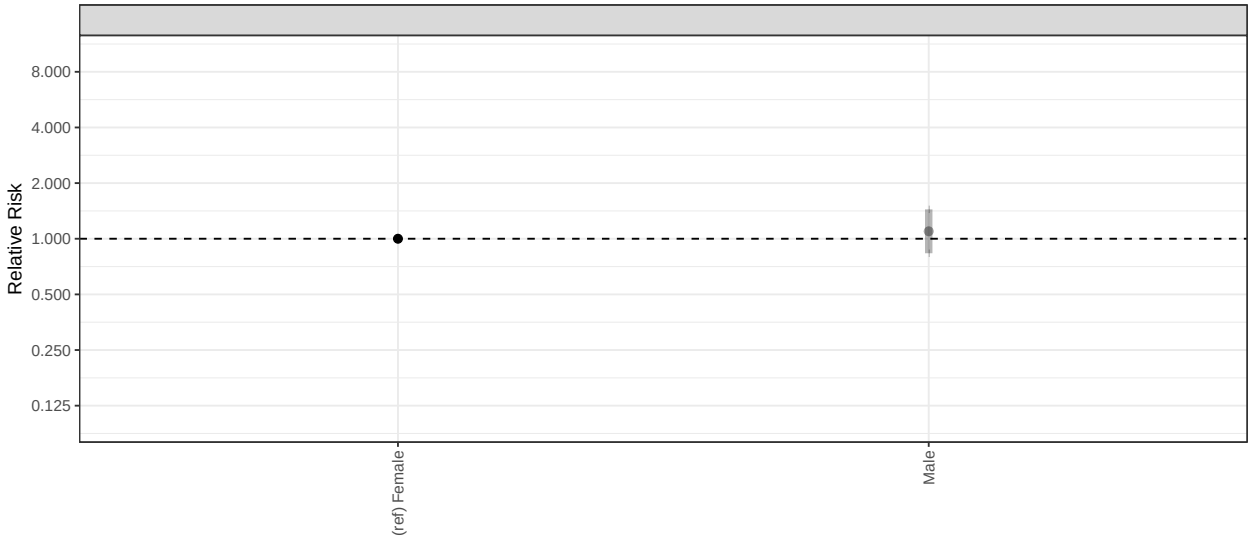


Proportion of children who were stunted

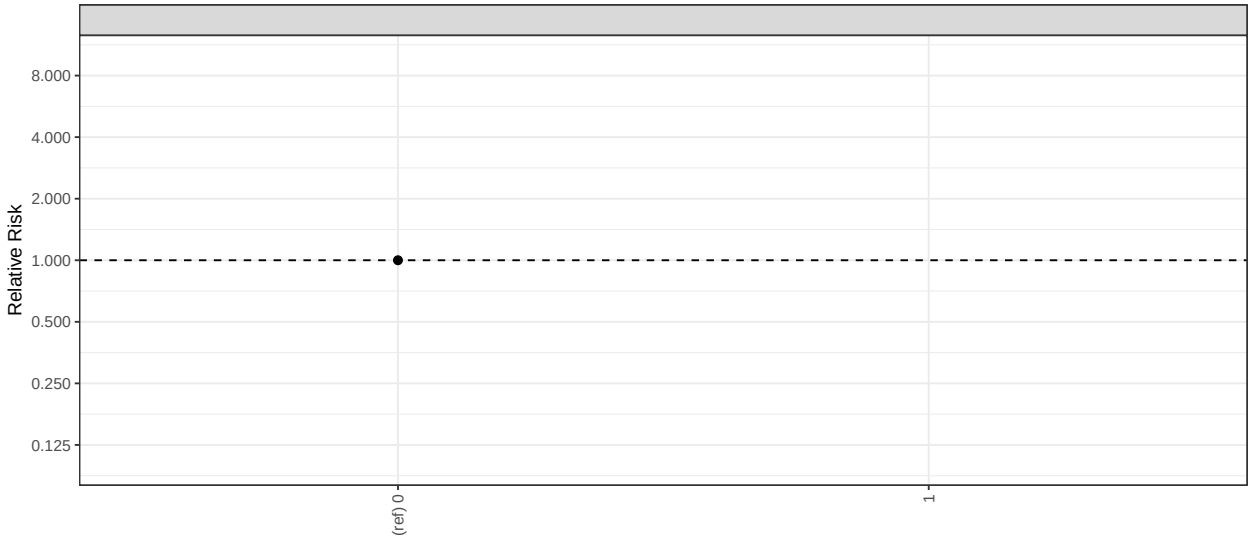
between birth and 3 months who recovered by 24 months

Child characteristics

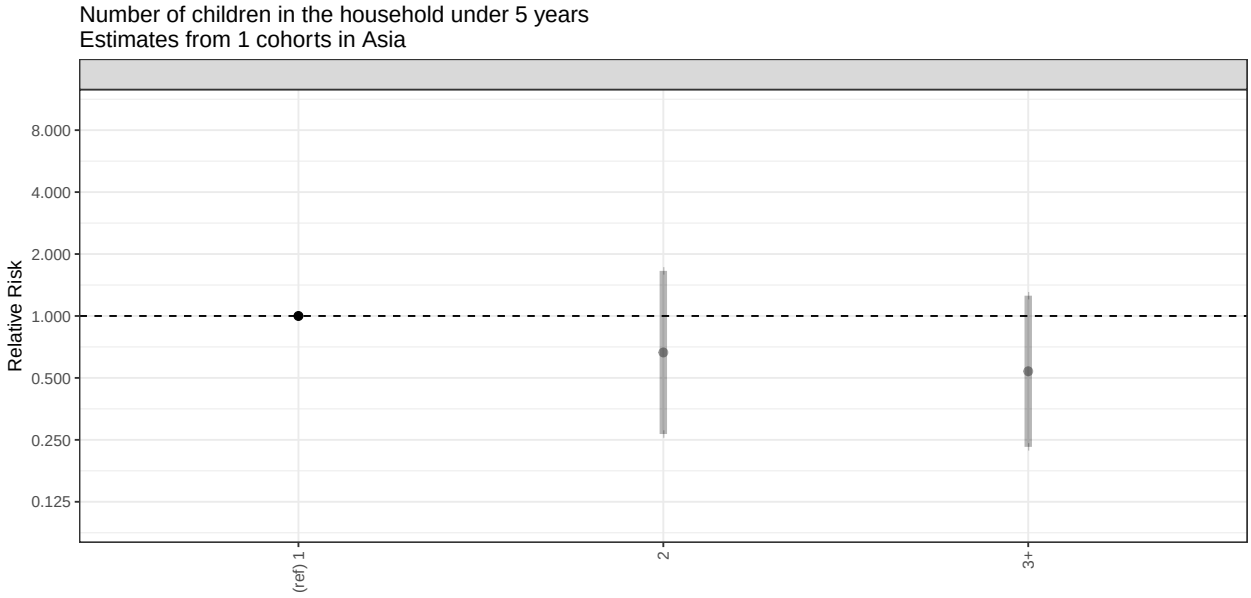
Child's sex
Estimates from 9 cohorts in Asia, Africa, Latin America



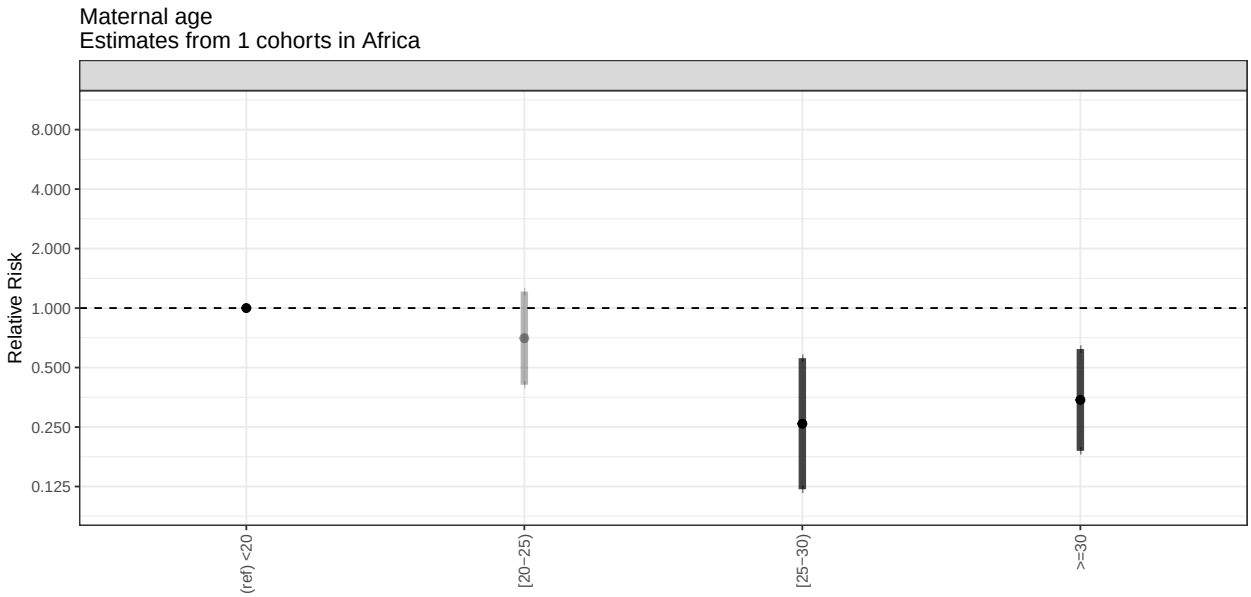
Stunted at enrollment
Estimates from 4 cohorts in Asia, Africa, Latin America



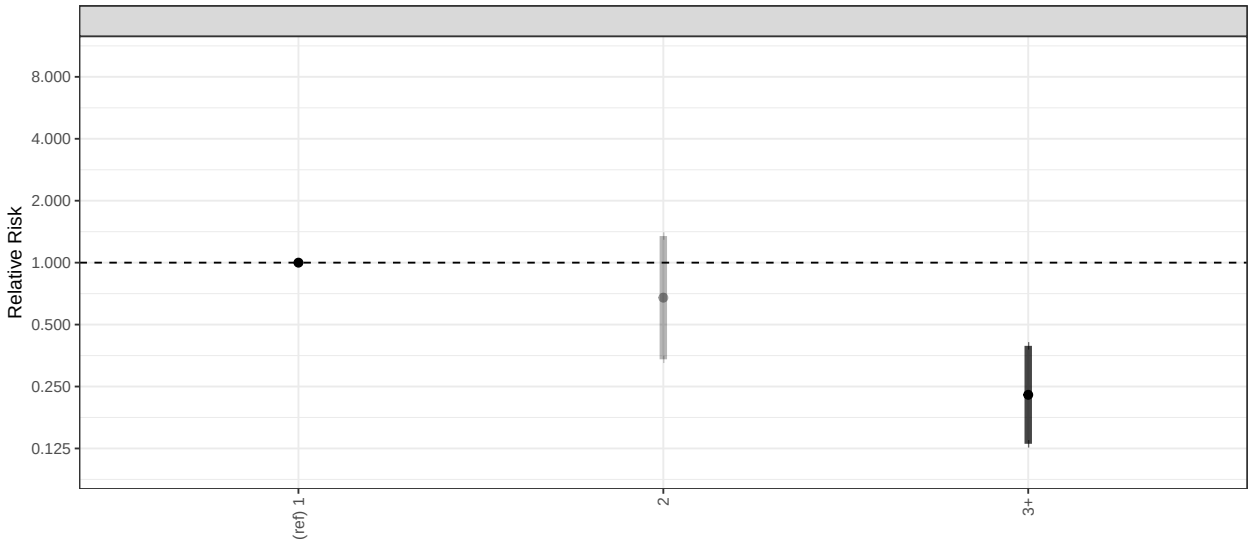
Household characteristics



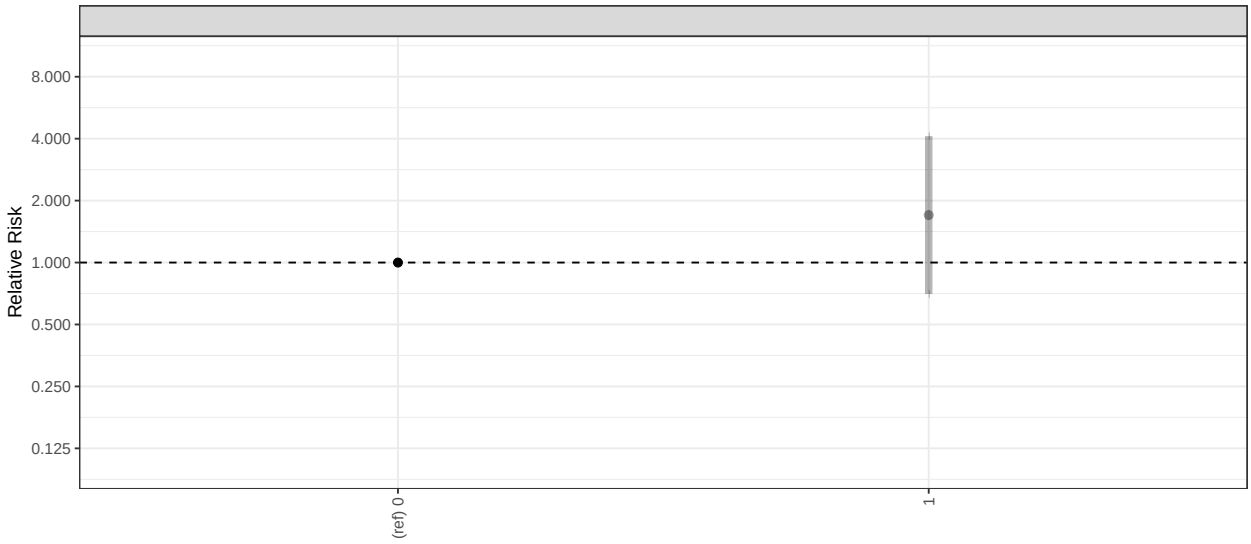
Maternal characteristics



Maternal parity
Estimates from 1 cohorts in Africa



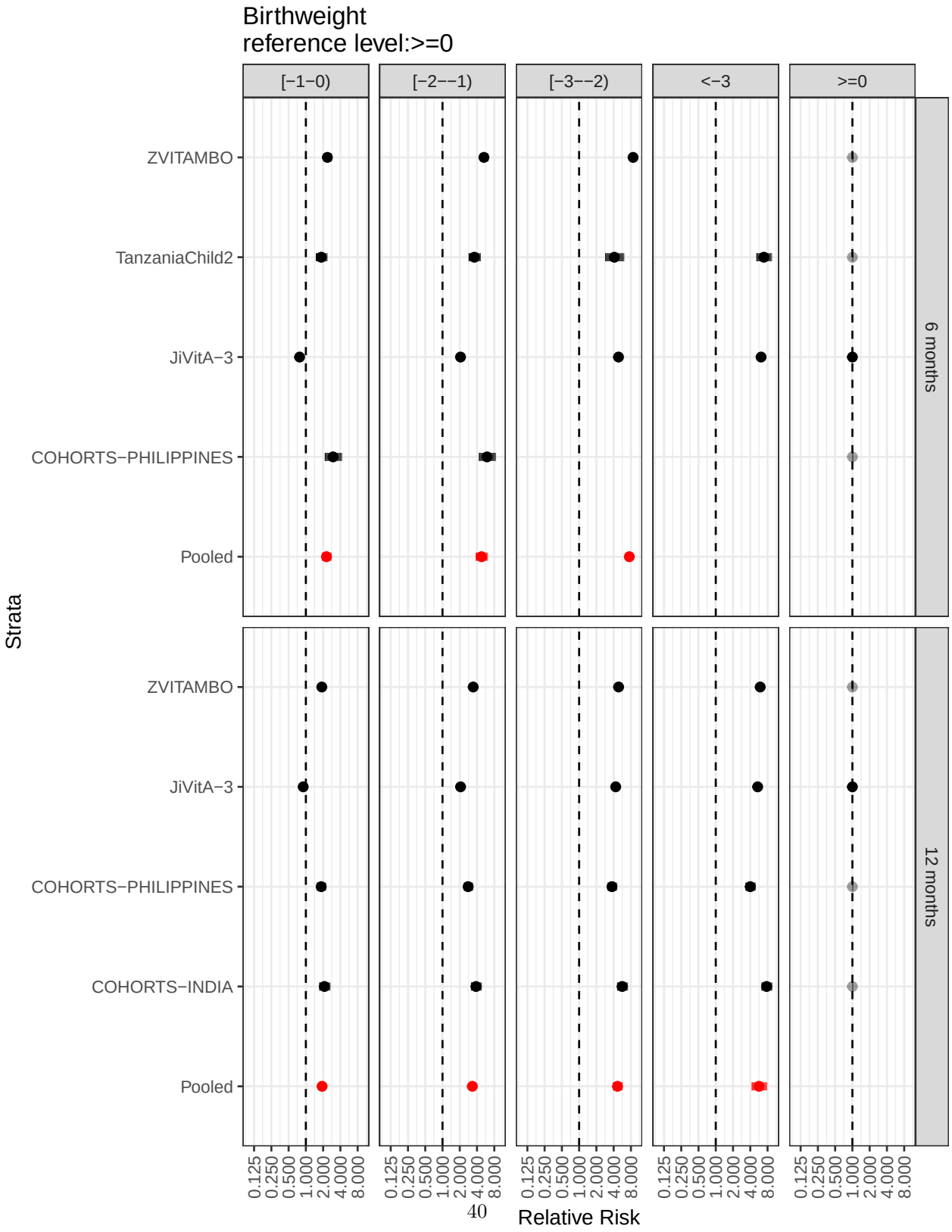
Mother is unmarried
Estimates from 1 cohorts in Africa

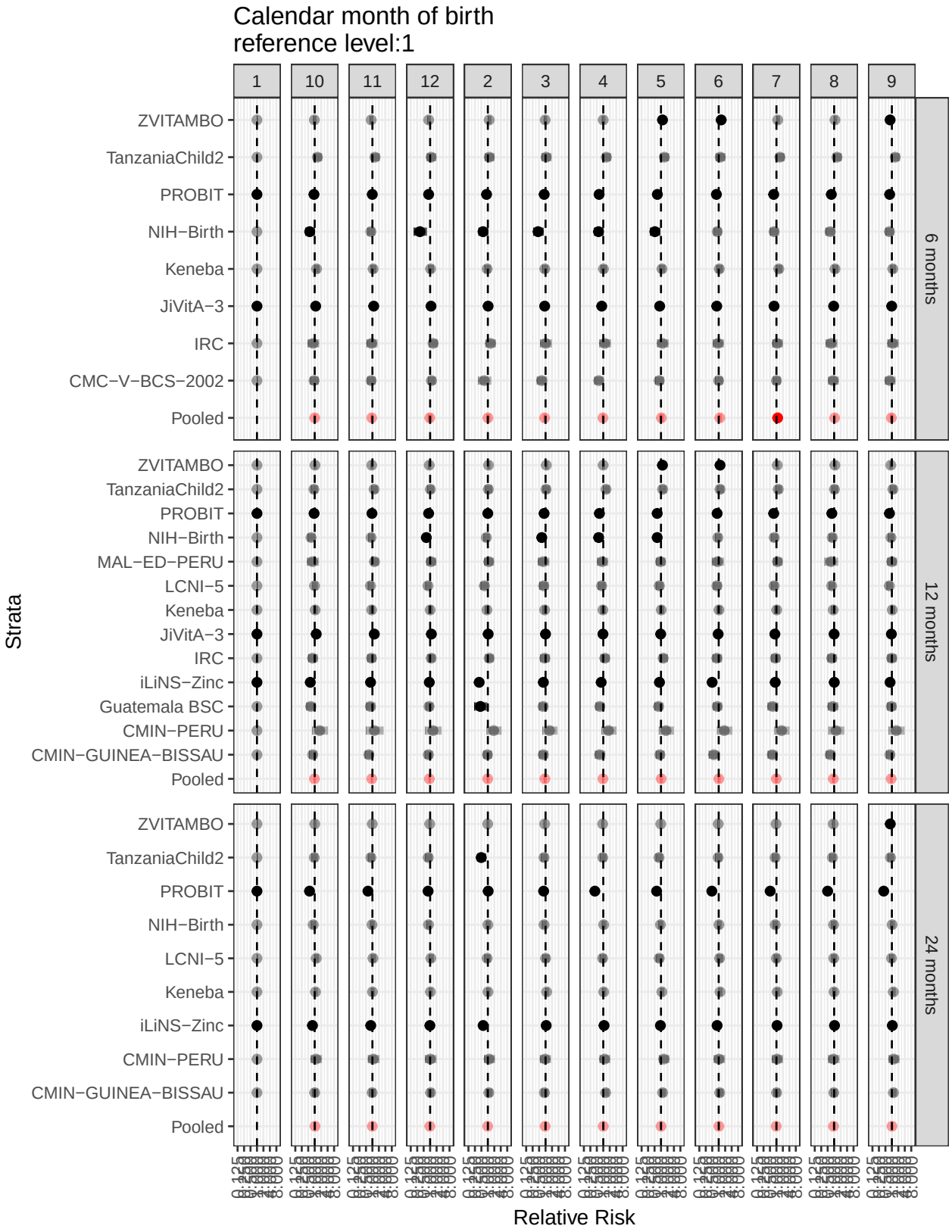


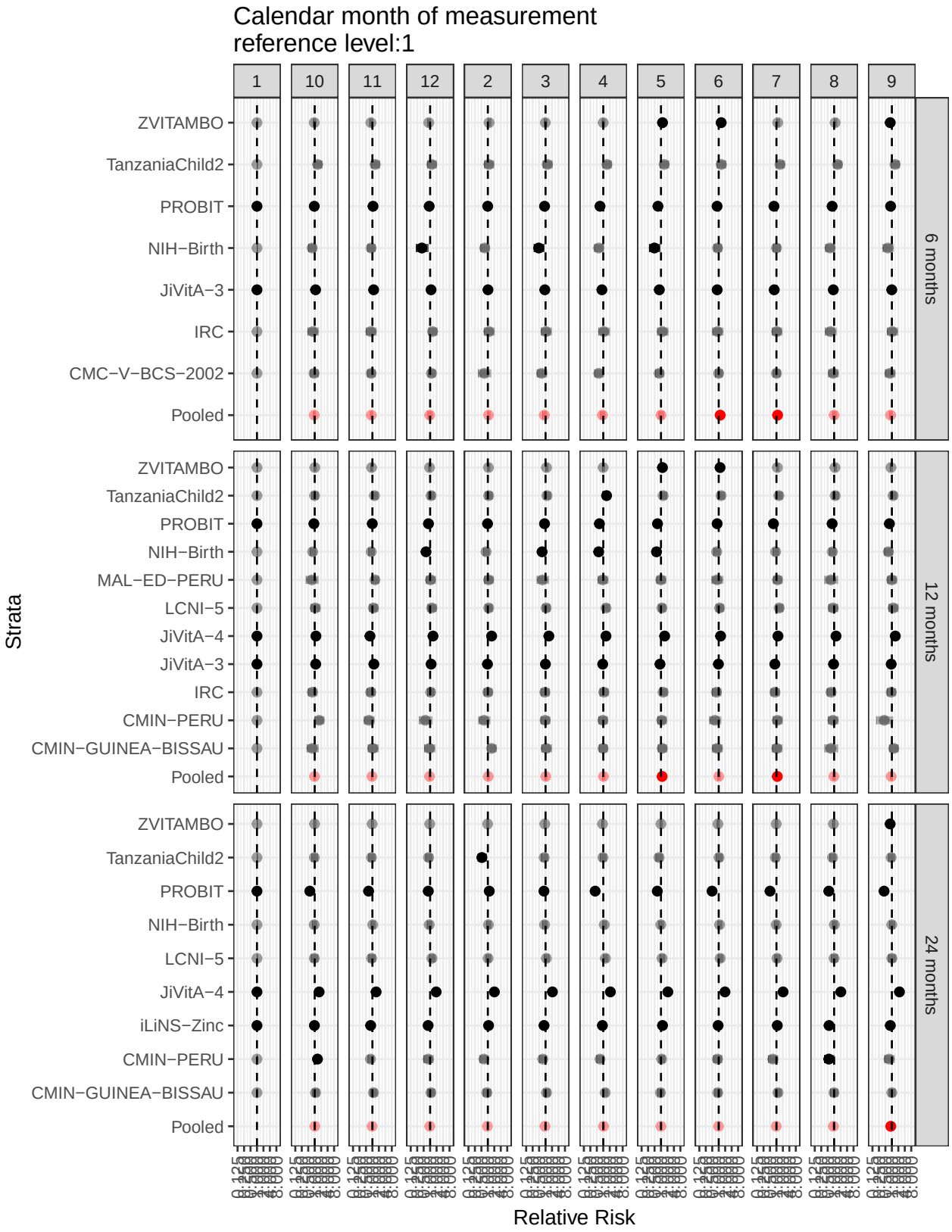
Appendix 1 - Relative Risk Forest Plots

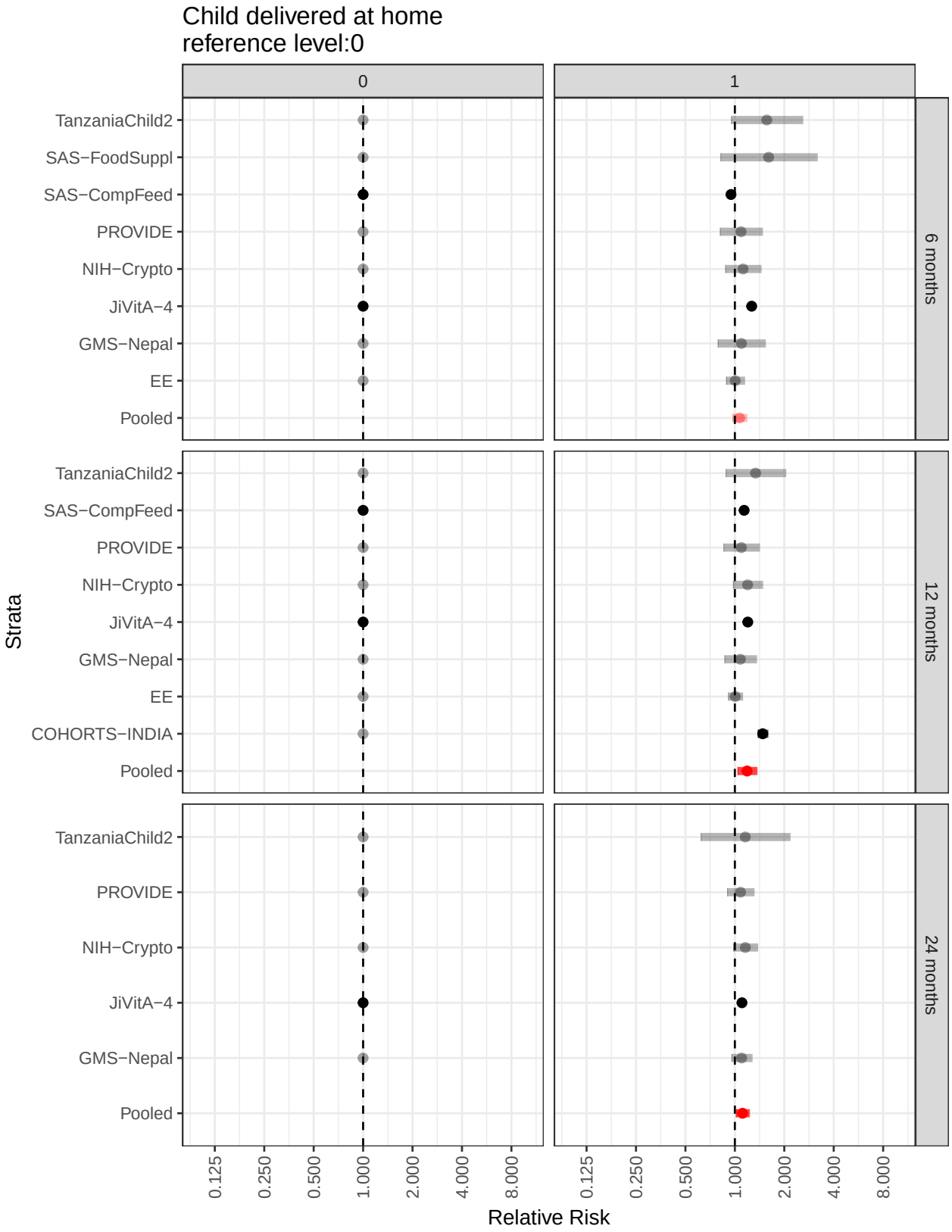
Cumulative incidence of stunting

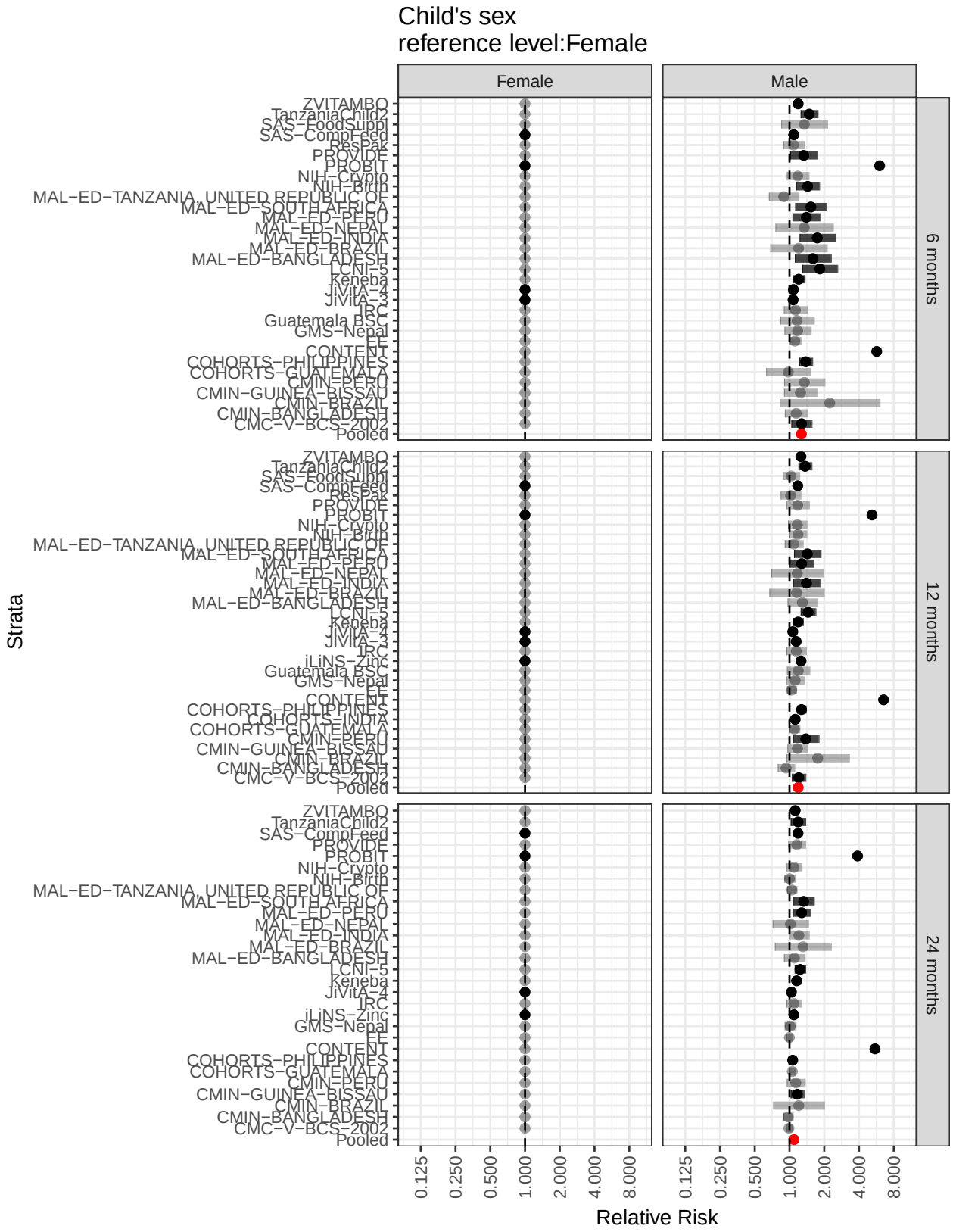
Child characteristics

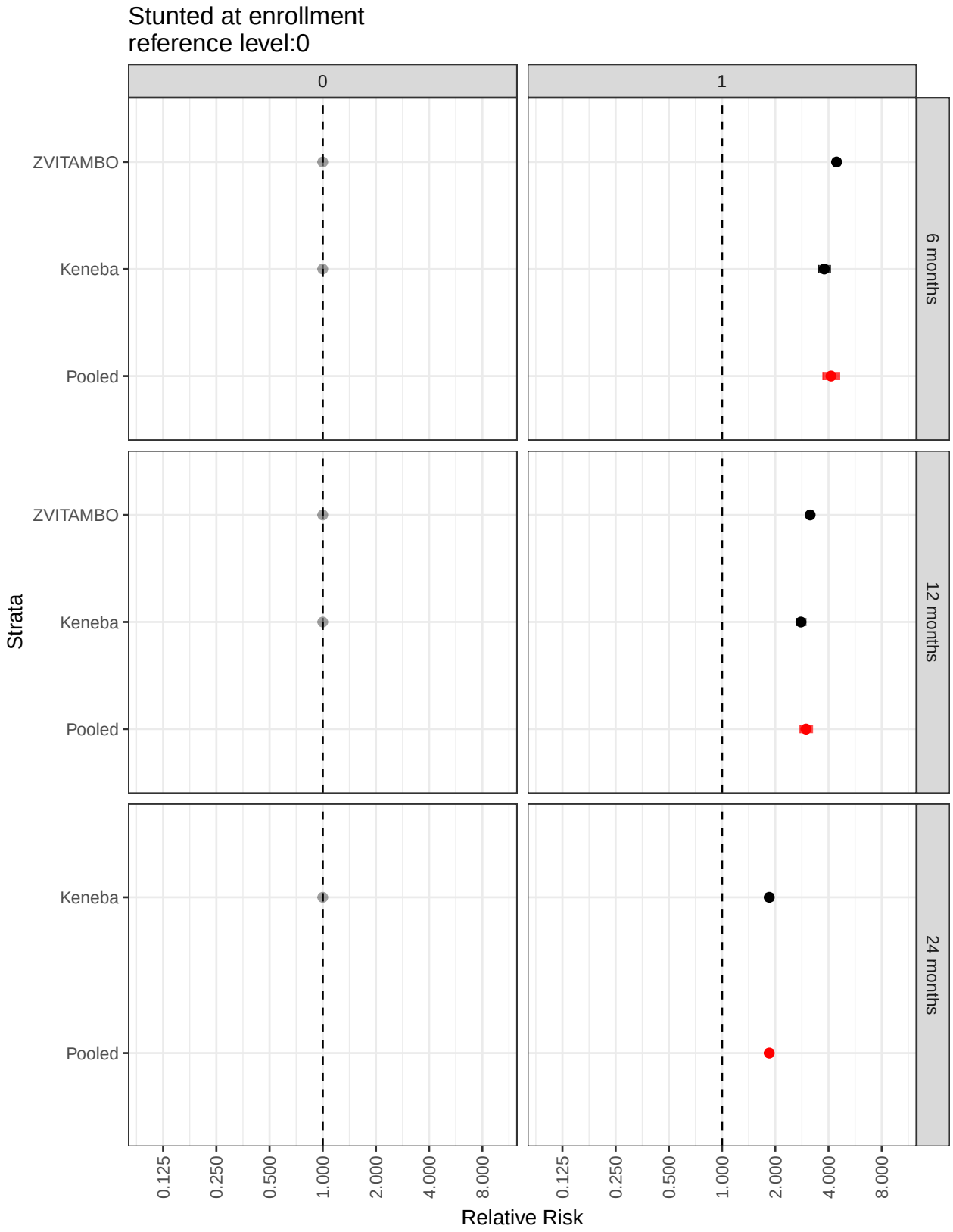


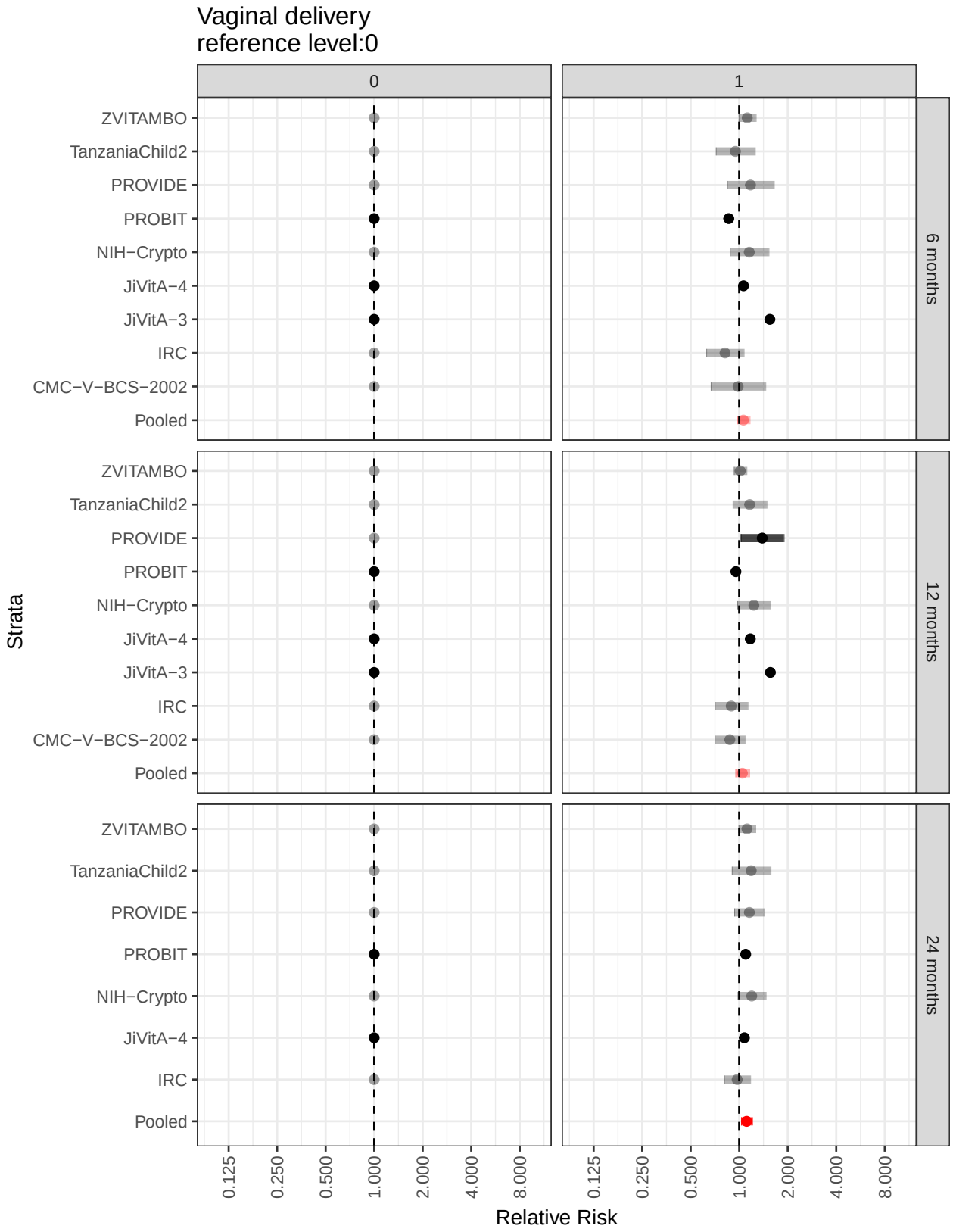

Calendar month of birth
reference level:1
1
10
11
12
2
3
4
5
6
7
8
9
6 months
12 months
24 months
Strata
ZVITAMBO
TanzaniaChild2
PROBIT
NIH−Birth
Keneba
JiVitA−3
IRC
CMC−V−BCS−2002
Pooled
MAL−ED−PERU
LCNI−5
iLiNS−Zinc
Guatemala BSC
CMIN−PERU
CMIN−GUINEA−BISSAU
Relative Risk


Calendar month of measurement
reference level:1
1
10
11
12
2
3
4
5
6
7
8
9
6 months
12 months
24 months
ZVITAMBO
TanzaniaChild2
PROBIT
NIH−Birth
JiVitA−3
IRC
CMC−V−BCS−2002
Pooled
MAL−ED−PERU
LCNI−5
JiVitA−4
CMIN−PERU
CMIN−GUINEA−BISSAU
iLiNS−Zinc
Strata
Relative Risk

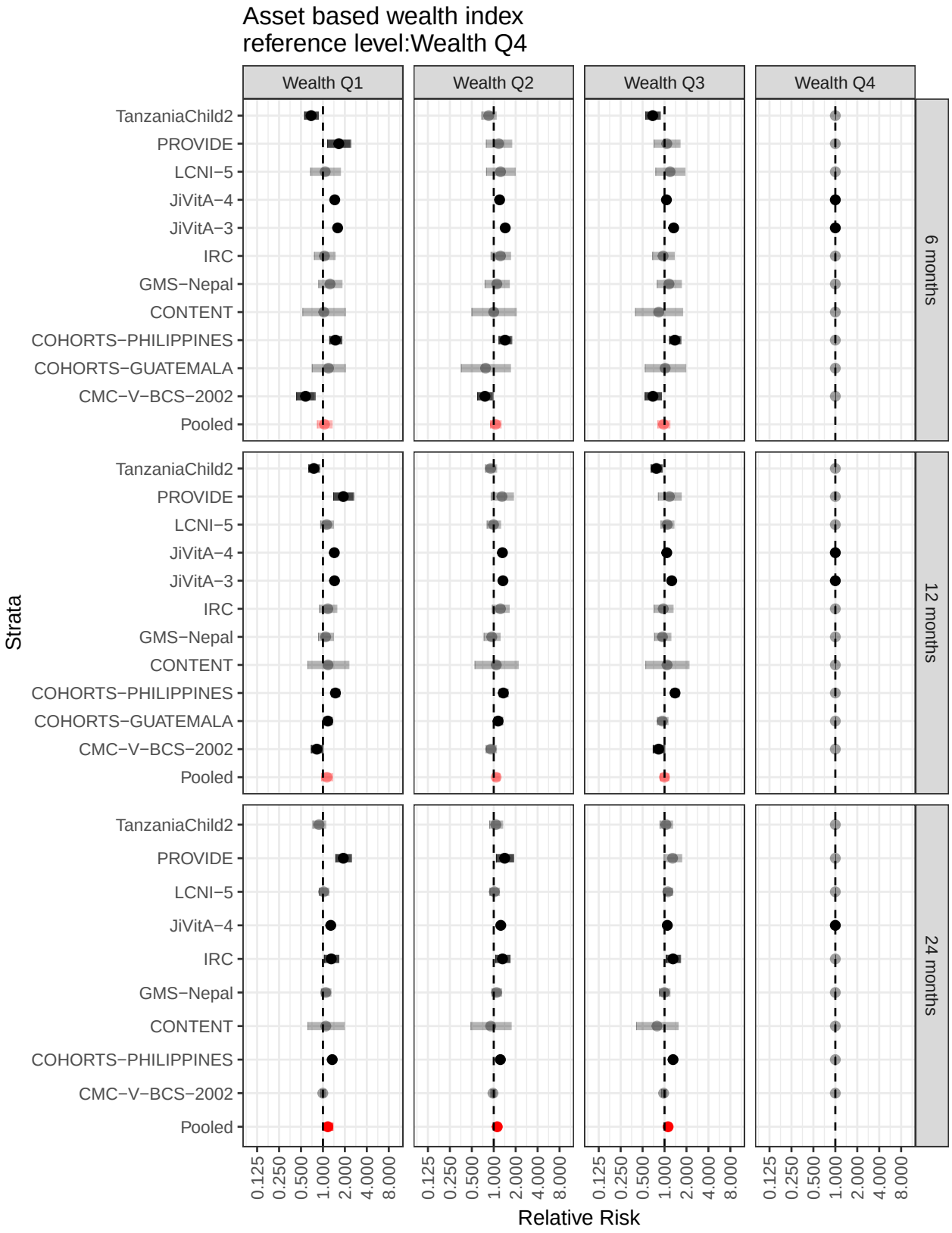

Child delivered at home
reference level:0
0
1
6 months
12 months
24 months
Strata
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
NIH−Crypto
JiVitA−4
GMS−Nepal
EE
Pooled
COHORTS−INDIA
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

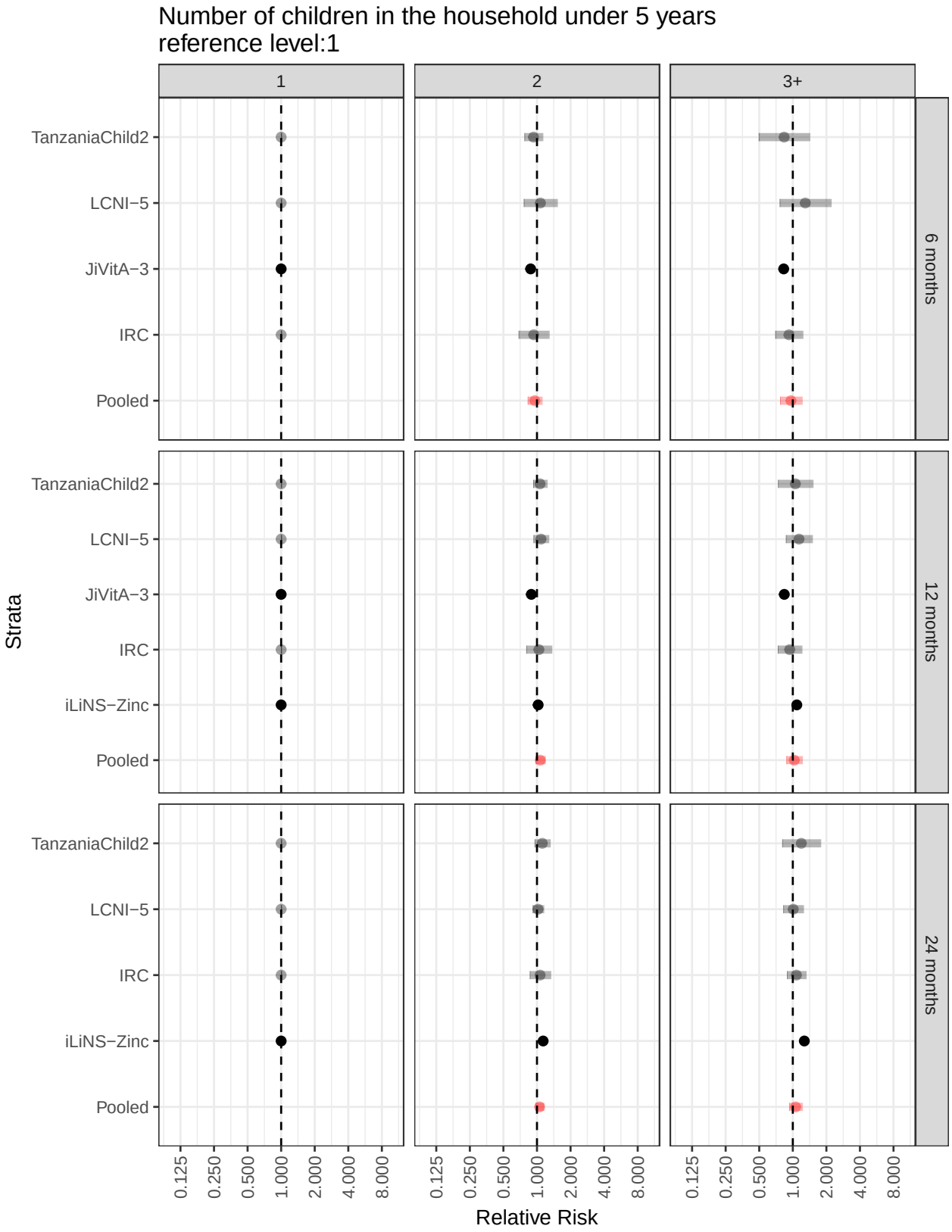

Child's sex
reference level:Female
Female
Male
6 months
12 months
24 months
Strata
ZVITAMBO
TanzaniaChild2
SAS-FoodSuppl
SAS-CompFeed
PROVIDE
PROBIT
NIH-Crypto
NIH-Birth
MAL-ED-TANZANIA, UNITED REPUBLIC OF
MAL-ED-SOUTH AFRICA
MAL-ED-PERU
MAL-ED-NEPAL
MAL-ED-INDIA
MAL-ED-BRAZIL
MAL-ED-BANGLADESH
LCNI-5
Keneba
JiVitA-4
JiVitA-3
IRC
iLiNS-Zinc
Guatemala BSC
GMS-Nepal
EE
CONTENT
COHORTS-PHILIPPINES
COHORTS-INDIA
COHORTS-GUATEMALA
CMIN-PERU
CMIN-GUINEA-BISSAU
CMIN-BRAZIL
CMIN-BANGLADESH
CMC-V-BCS-2002
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

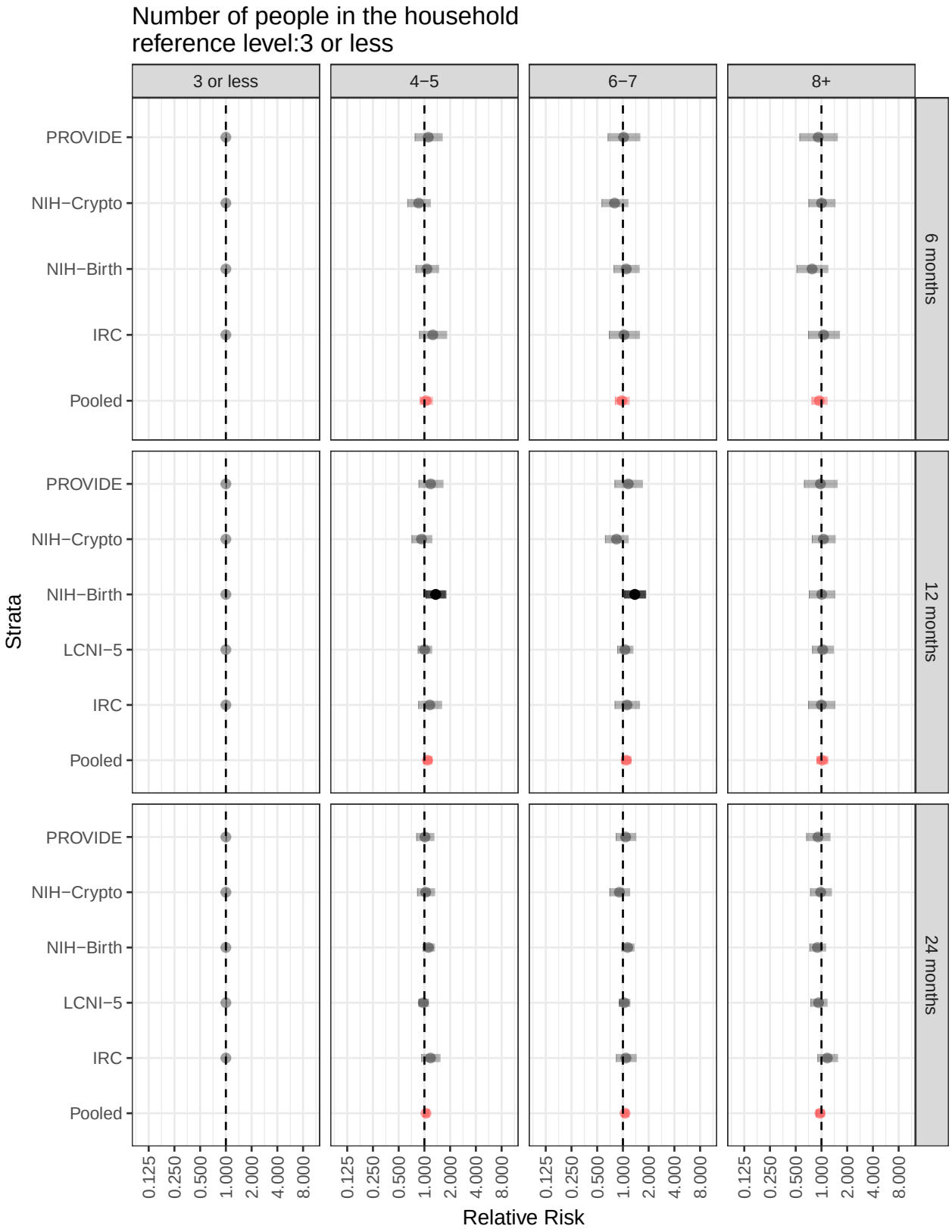

Stunted at enrollment
reference level:0
0
1
ZVITAMBO
Keneba
Pooled
6 months
12 months
24 months
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

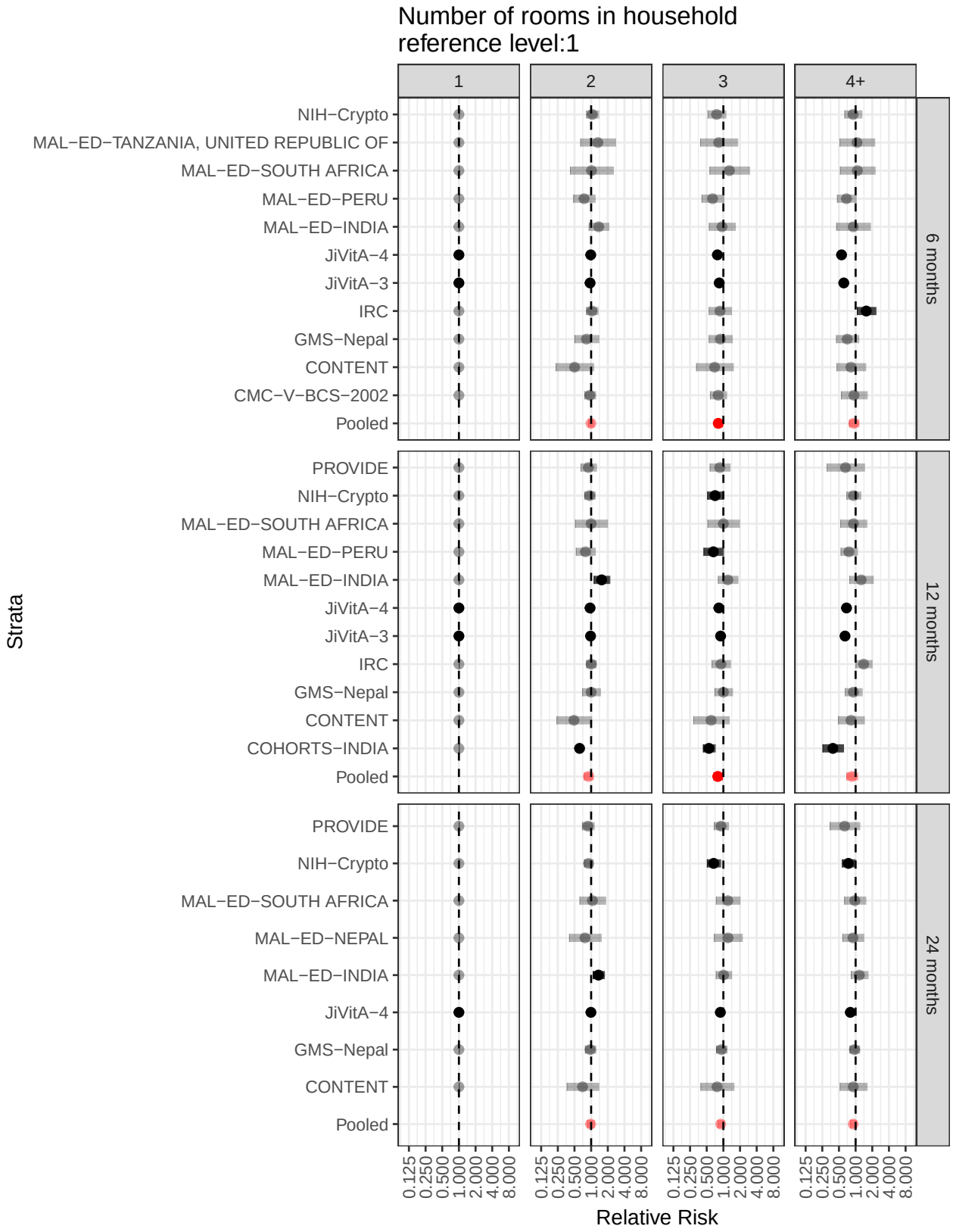

Vaginal delivery
reference level:0
0
1
6 months
12 months
24 months
ZVITAMBO
TanzaniaChild2
PROVIDE
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
IRC
CMC−V−BCS−2002
Pooled
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

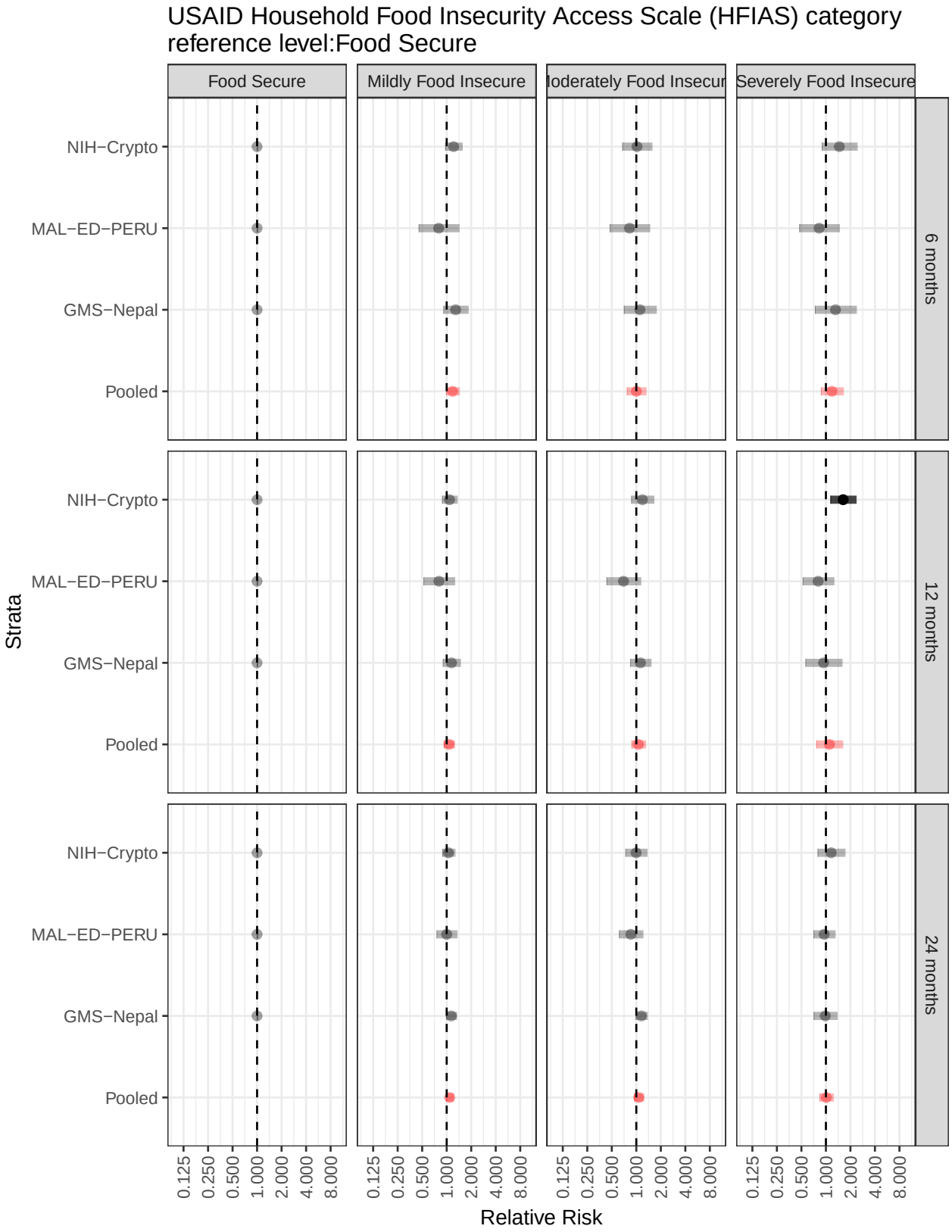
Household characteristics



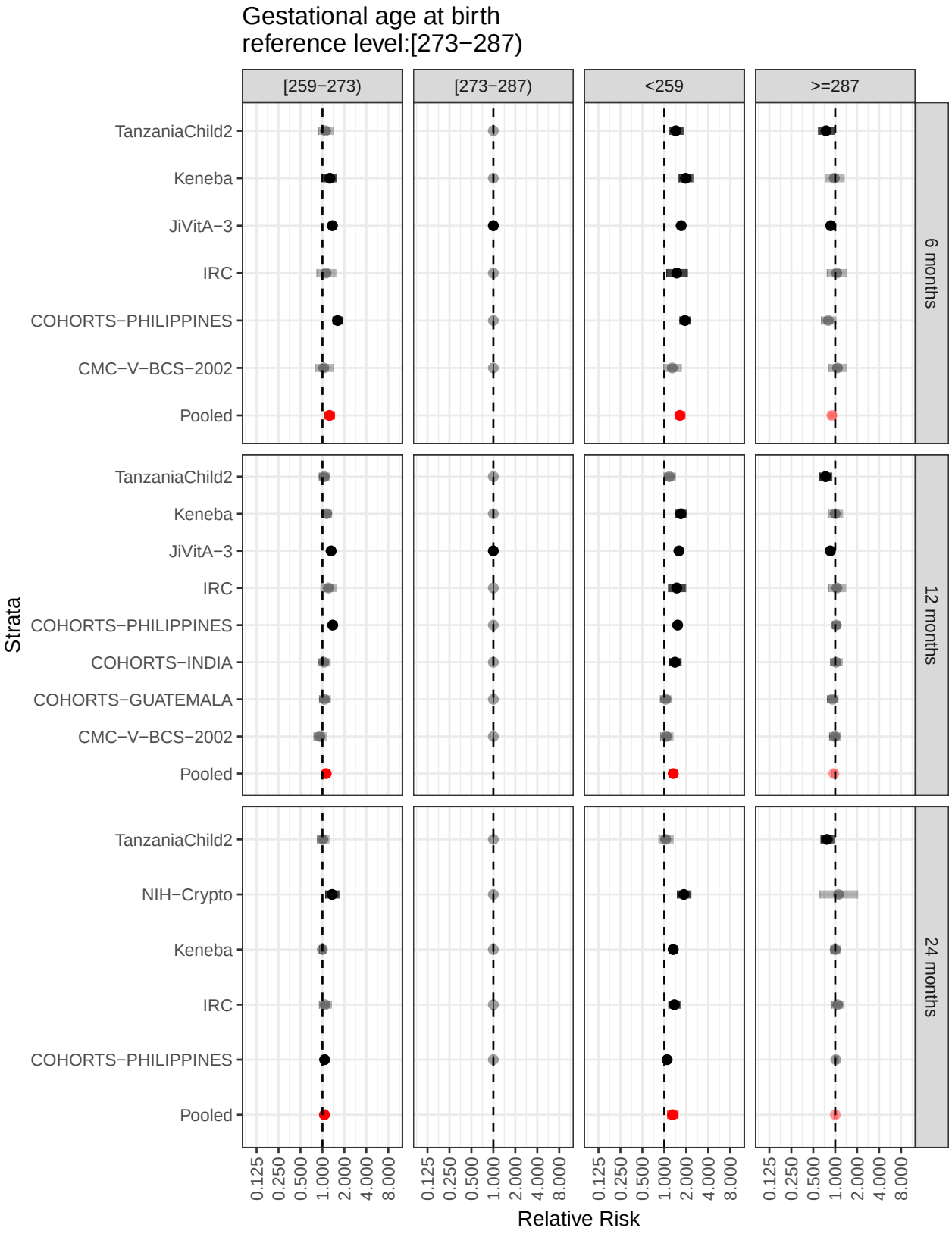

Number of children in the household under 5 years
reference level:1
1
2
3+
6 months
12 months
24 months
Strata
TanzaniaChild2
LCNI−5
JiVitA−3
IRC
iLiNS−Zinc
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

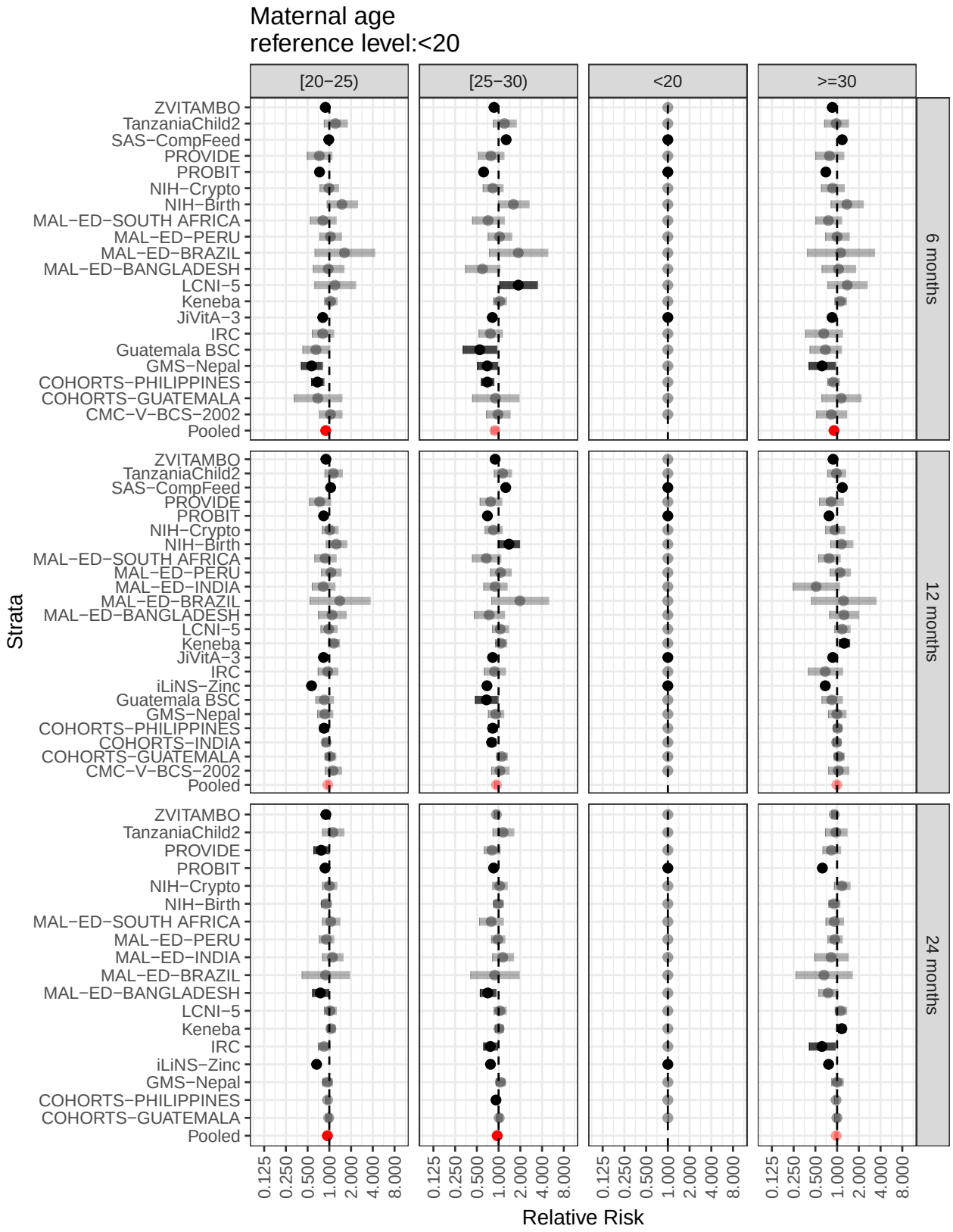

Number of people in the household
reference level:3 or less
3 or less
4−5
6−7
8+
6 months
12 months
24 months
Strata
PROVIDE
NIH−Crypto
NIH−Birth
LCNI−5
IRC
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

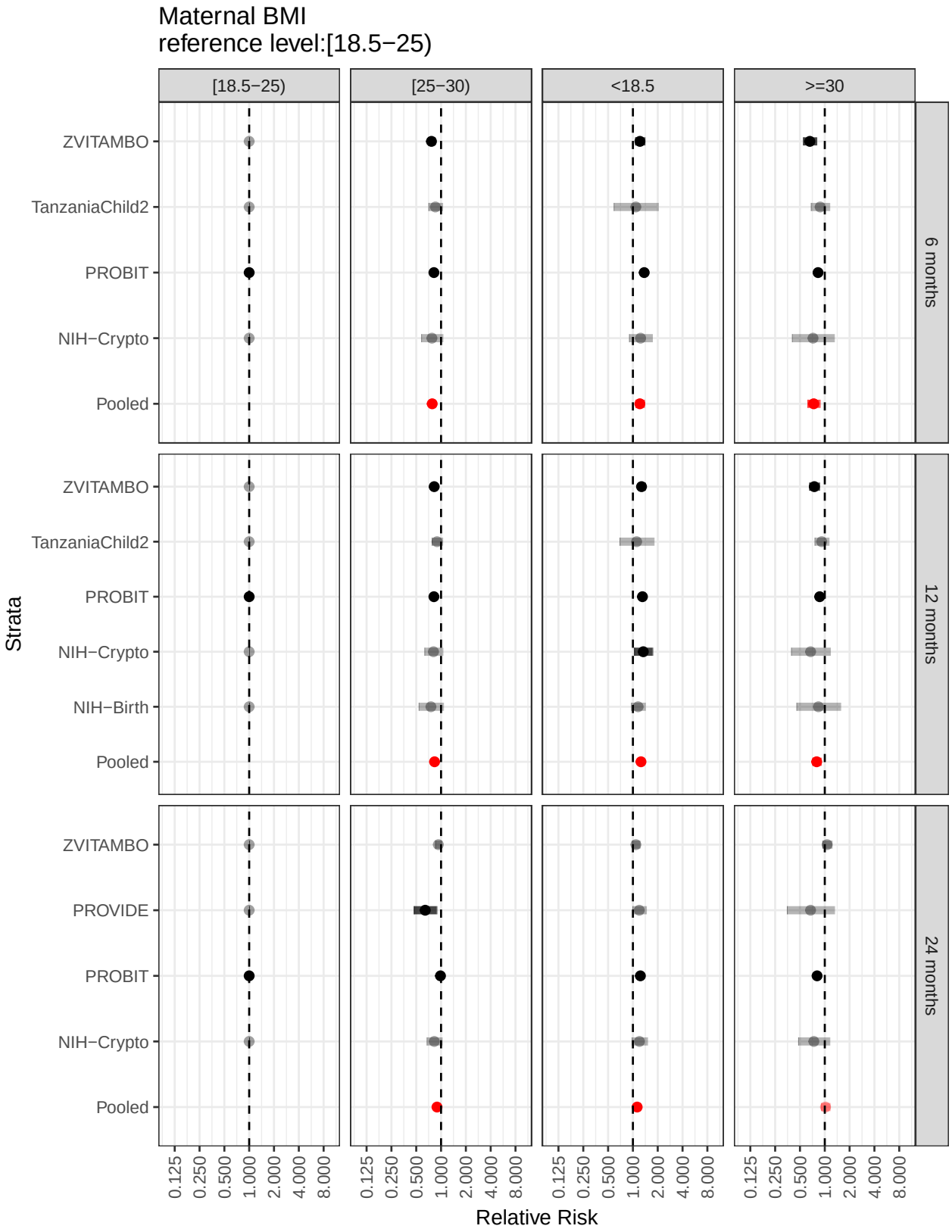

Number of rooms in household
reference level:1
1
2
3
4+
6 months
12 months
24 months
NIH−Crypto
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
CONTENT
CMC−V−BCS−2002
Pooled
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
CONTENT
COHORTS−INDIA
Pooled
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−NEPAL
MAL−ED−INDIA
JiVitA−4
GMS−Nepal
CONTENT
Pooled
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

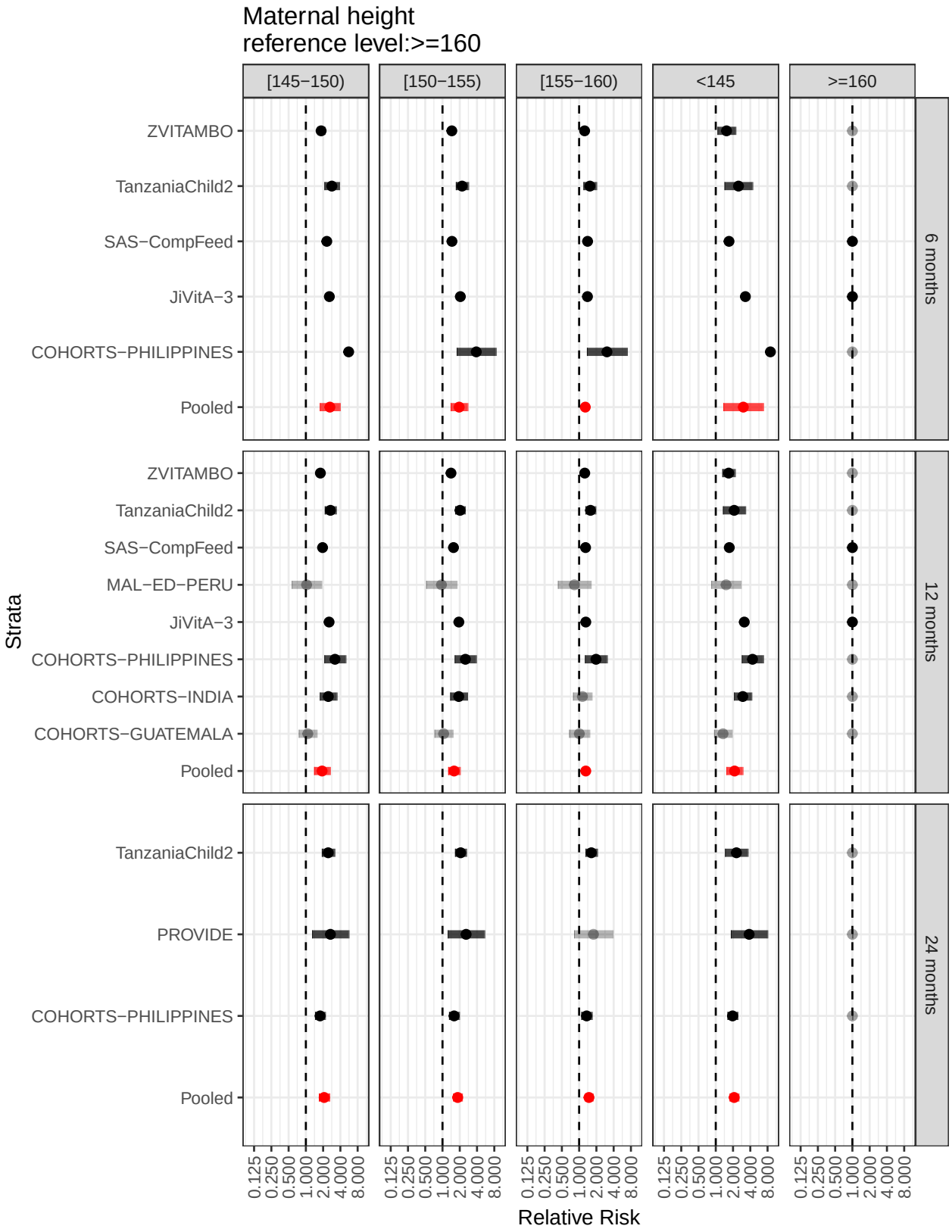

USAID Household Food Insecurity Access Scale (HFIAS) category
reference level:Food Secure
Food Secure
Mildly Food Insecure
loderately Food Insecur
Severely Food Insecure
6 months
12 months
24 months
Strata
NIH−Crypto
MAL−ED−PERU
GMS−Nepal
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

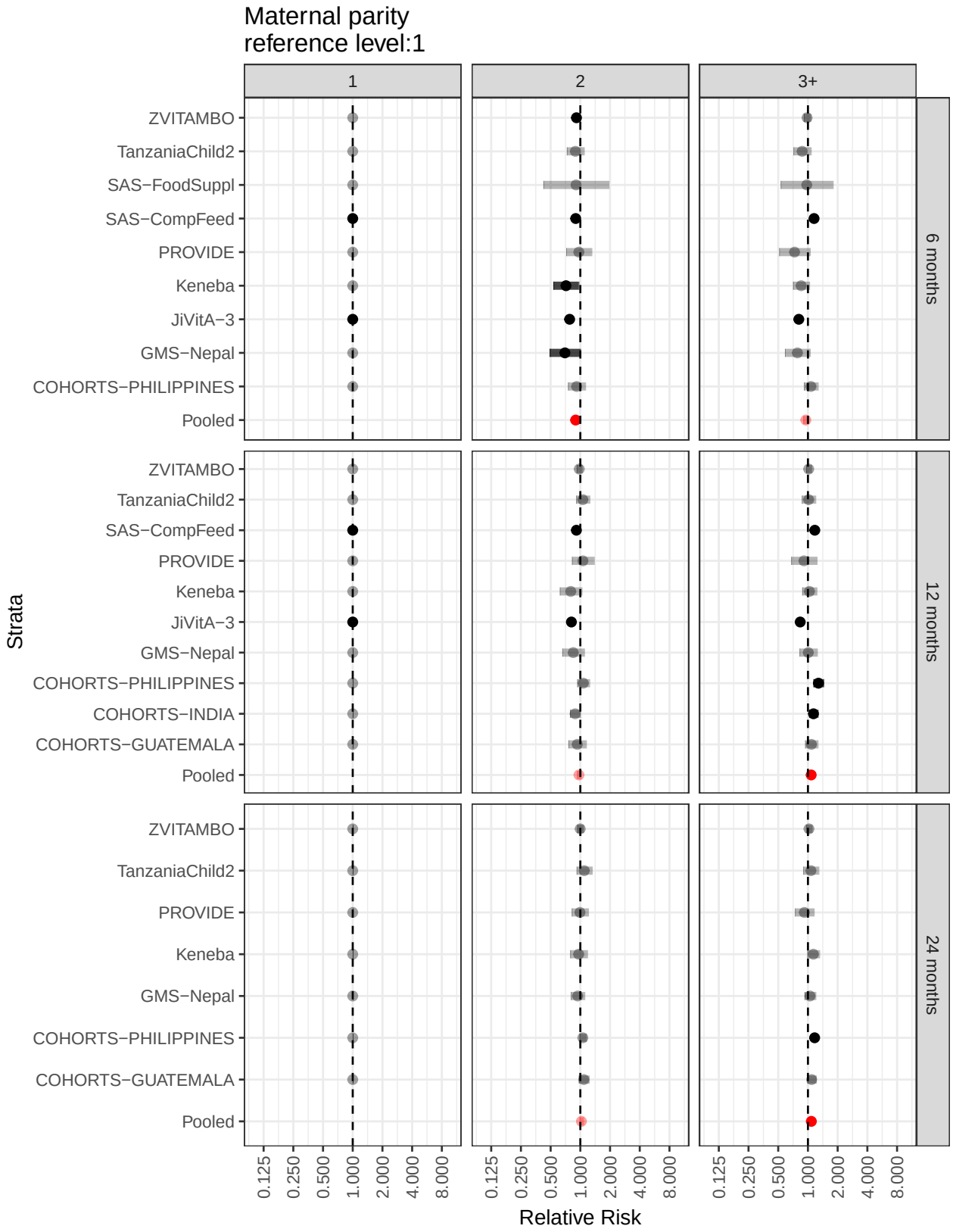
Maternal characteristics

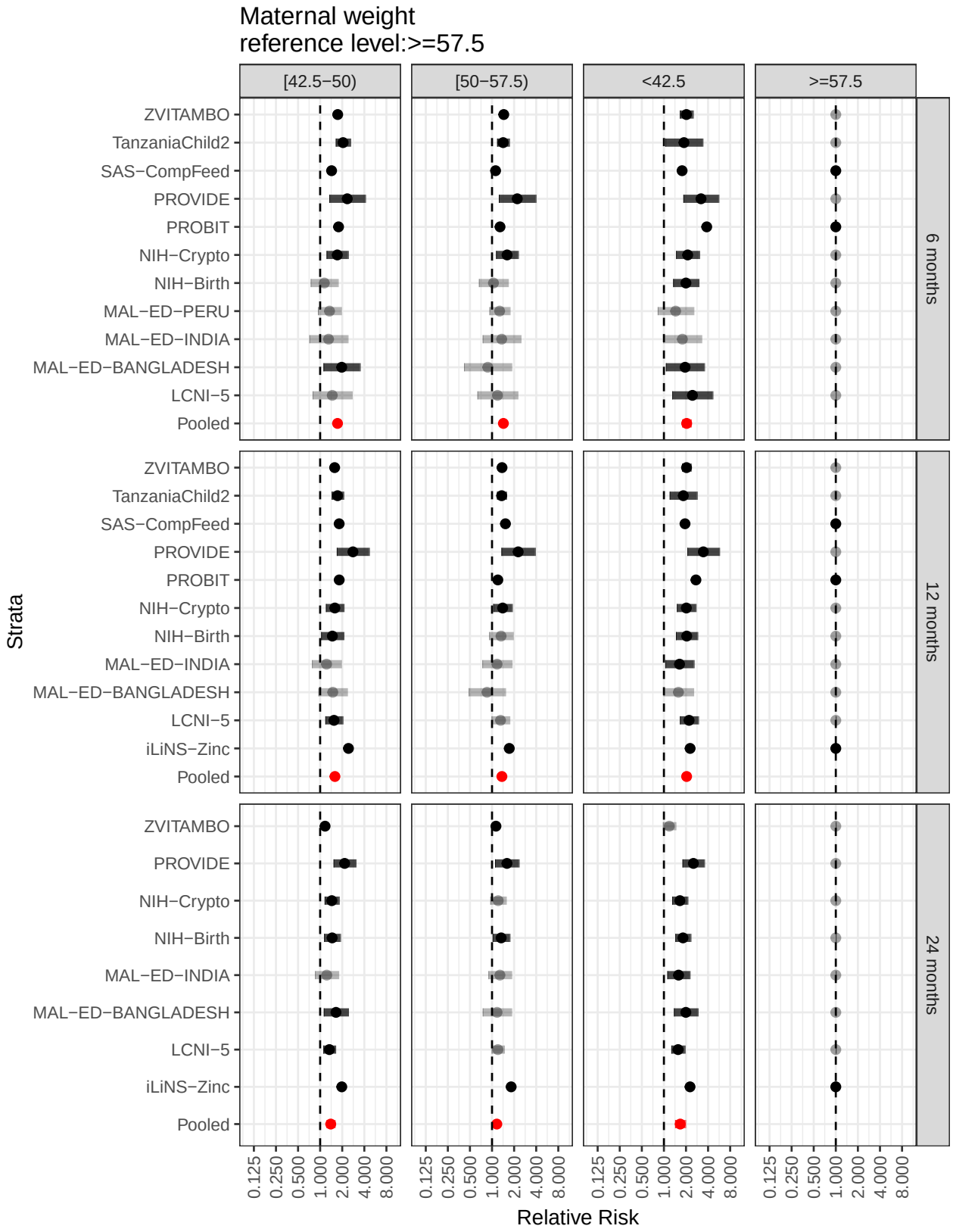


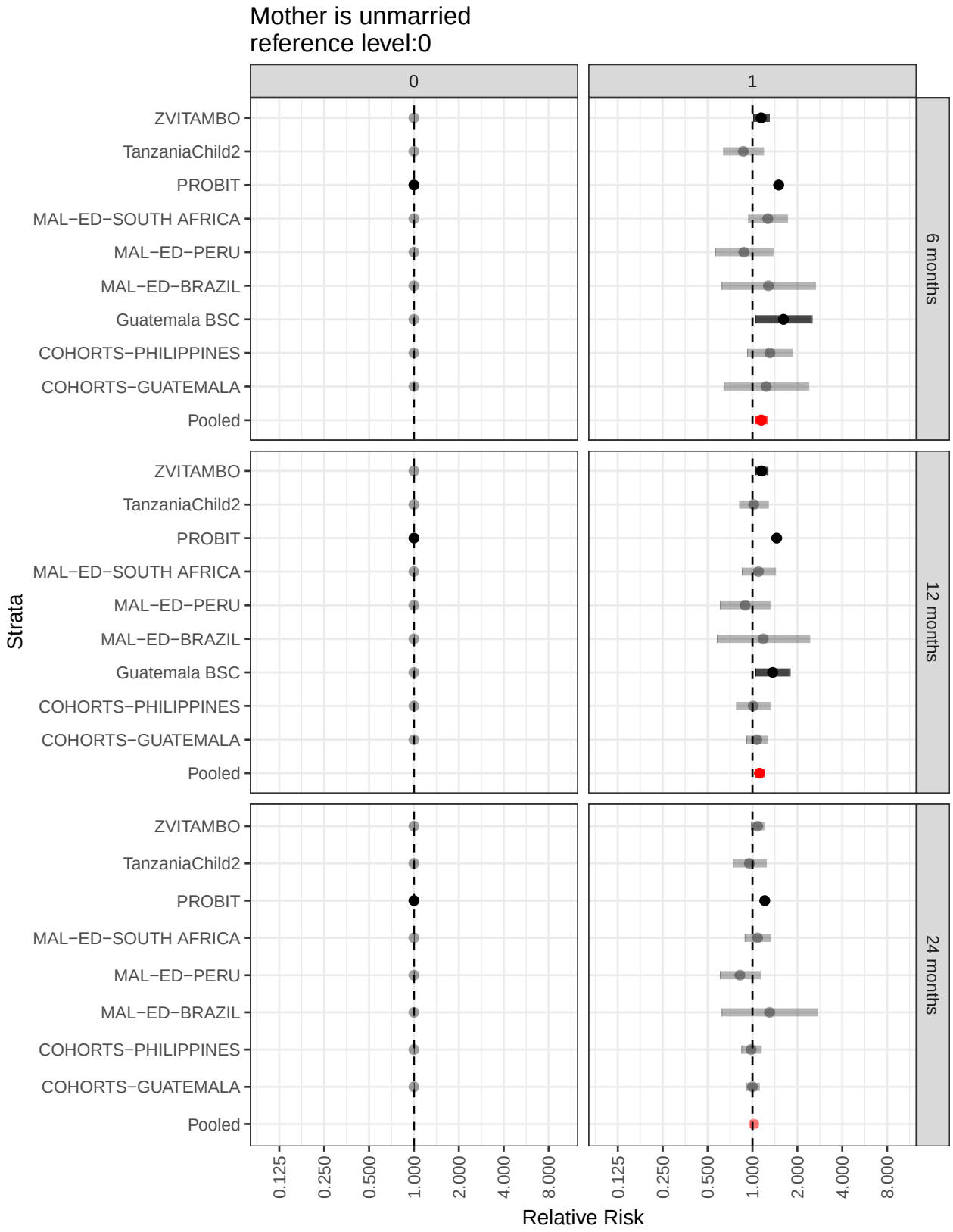

Maternal age
reference level:<20
[20−25)
[25−30)
<20
>=30
6 months
12 months
24 months
Strata
ZVITAMBO
TanzaniaChild2
SAS−CompFeed
PROVIDE
PROBIT
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BRAZIL
MAL−ED−BANGLADESH
LCNI−5
Keneba
JiVitA−3
IRC
iLiNS−Zinc
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
CMC−V−BCS−2002
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

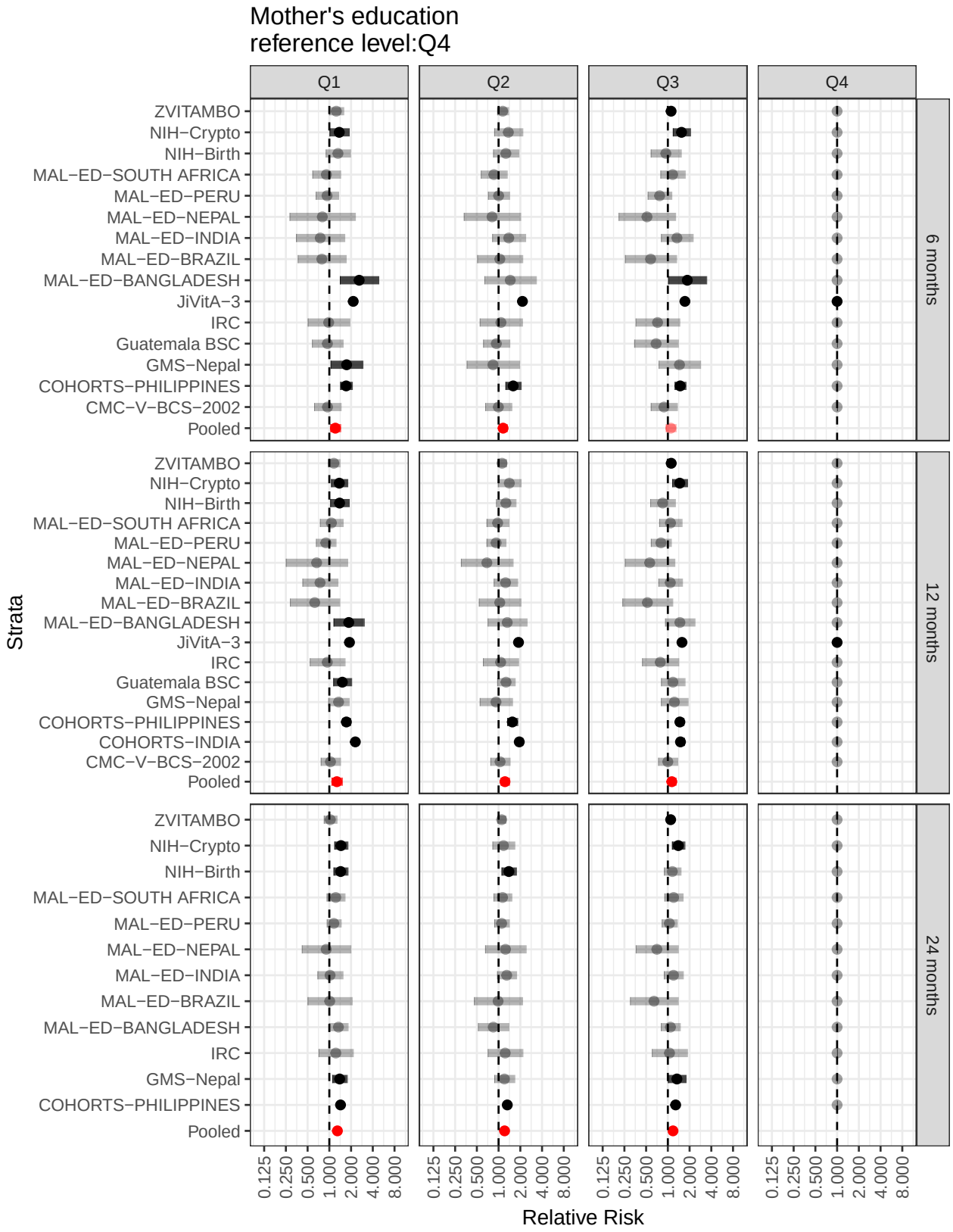

Maternal BMI
reference level:[18.5−25)
[18.5−25)
[25−30)
<18.5
>=30
6 months
12 months
24 months
ZVITAMBO
TanzaniaChild2
PROBIT
NIH−Crypto
Pooled
NIH−Birth
PROVIDE
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk


Maternal height
reference level:>=160
[145−150)
[150−155)
[155−160)
<145
>=160
ZVITAMBO
TanzaniaChild2
SAS−CompFeed
JiVitA−3
COHORTS−PHILIPPINES
Pooled
6 months
ZVITAMBO
TanzaniaChild2
SAS−CompFeed
MAL−ED−PERU
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
Pooled
12 months
TanzaniaChild2
PROVIDE
COHORTS−PHILIPPINES
Pooled
24 months
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

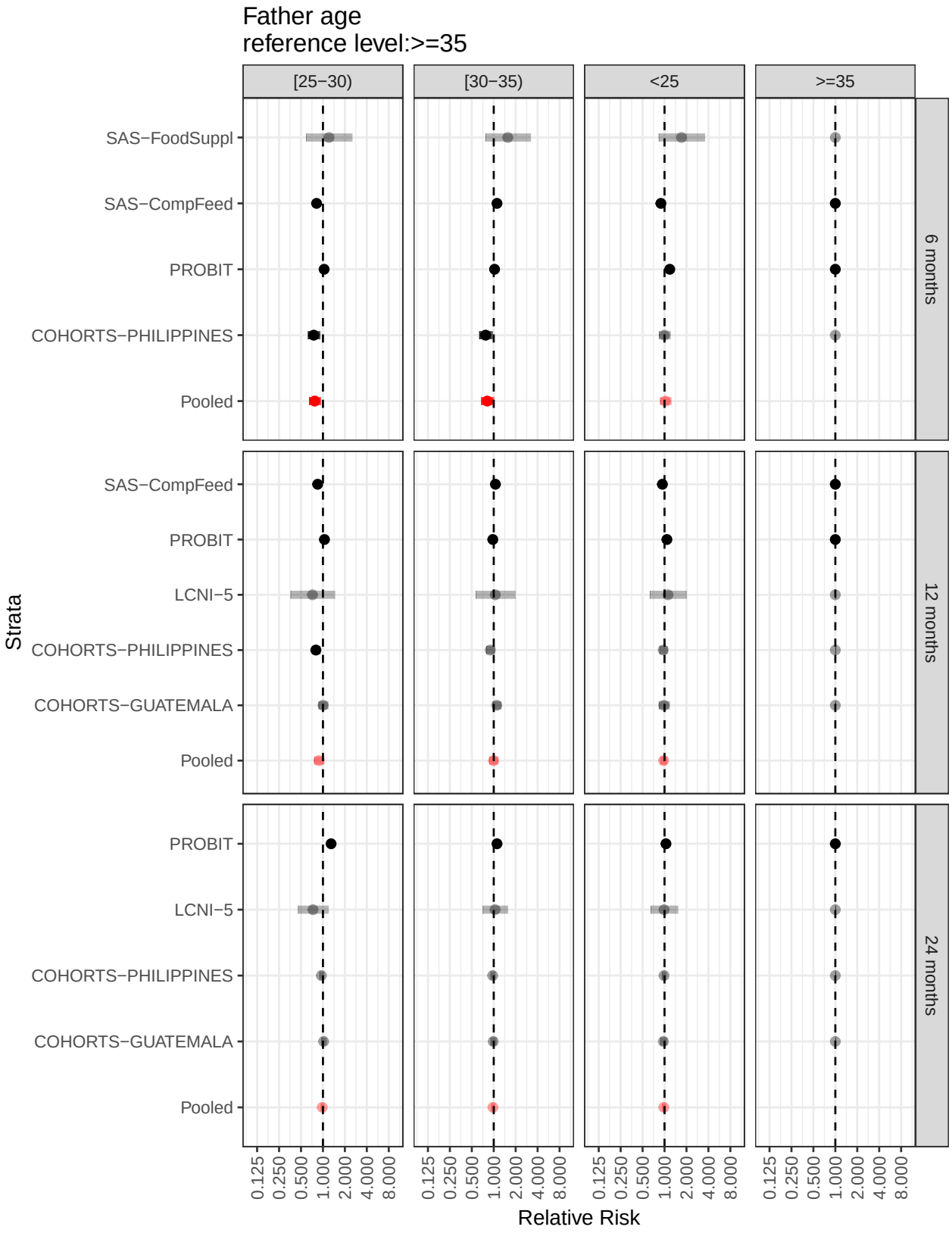

Maternal parity
reference level:1
1
2
3+
6 months
12 months
24 months
Strata
ZVITAMBO
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
Keneba
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

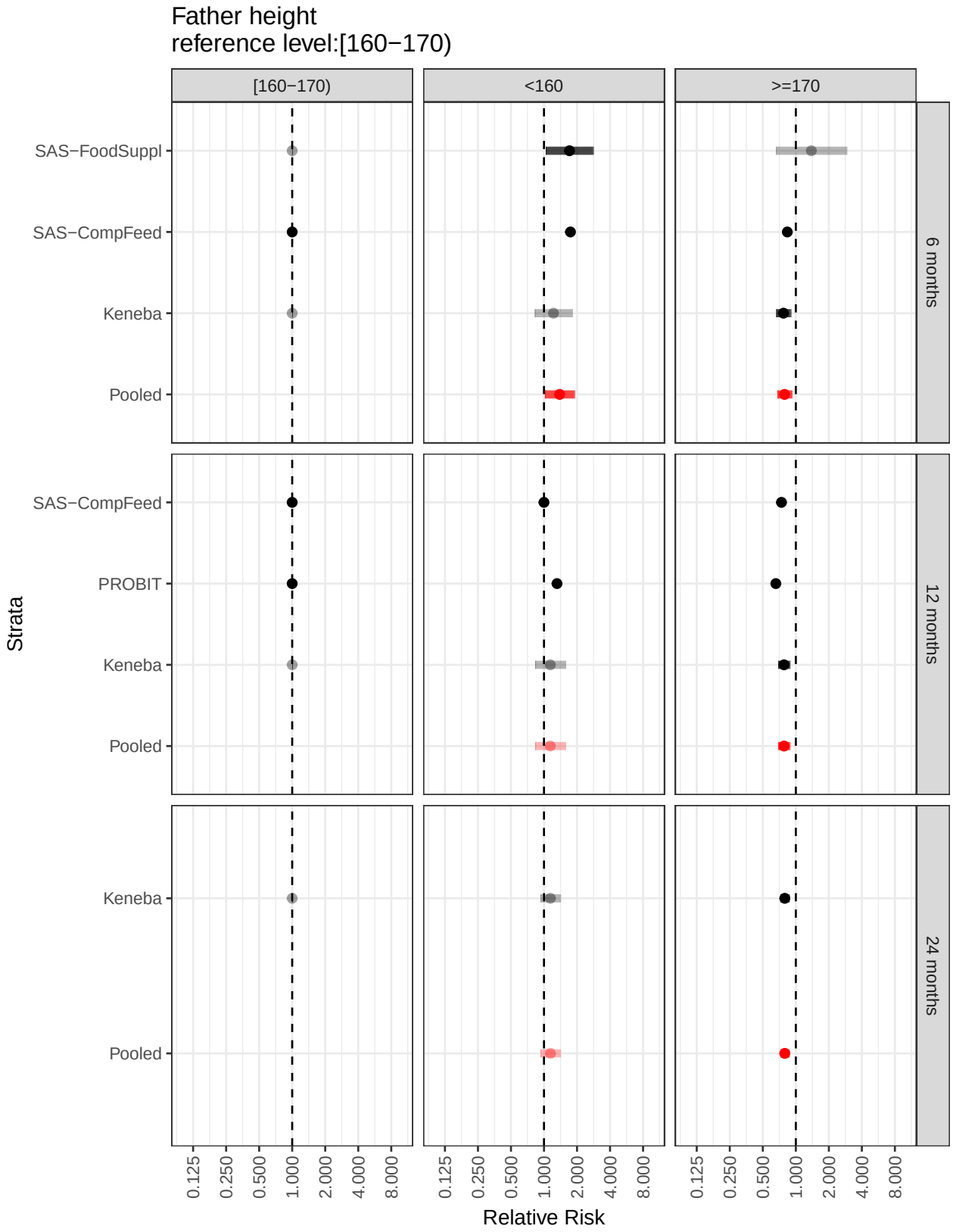

Maternal weight
reference level:>=57.5
[42.5−50)
[50−57.5)
<42.5
>=57.5
6 months
12 months
24 months
Strata
ZVITAMBO
TanzaniaChild2
SAS−CompFeed
PROVIDE
PROBIT
NIH−Crypto
NIH−Birth
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BANGLADESH
LCNI−5
iLiNS−Zinc
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

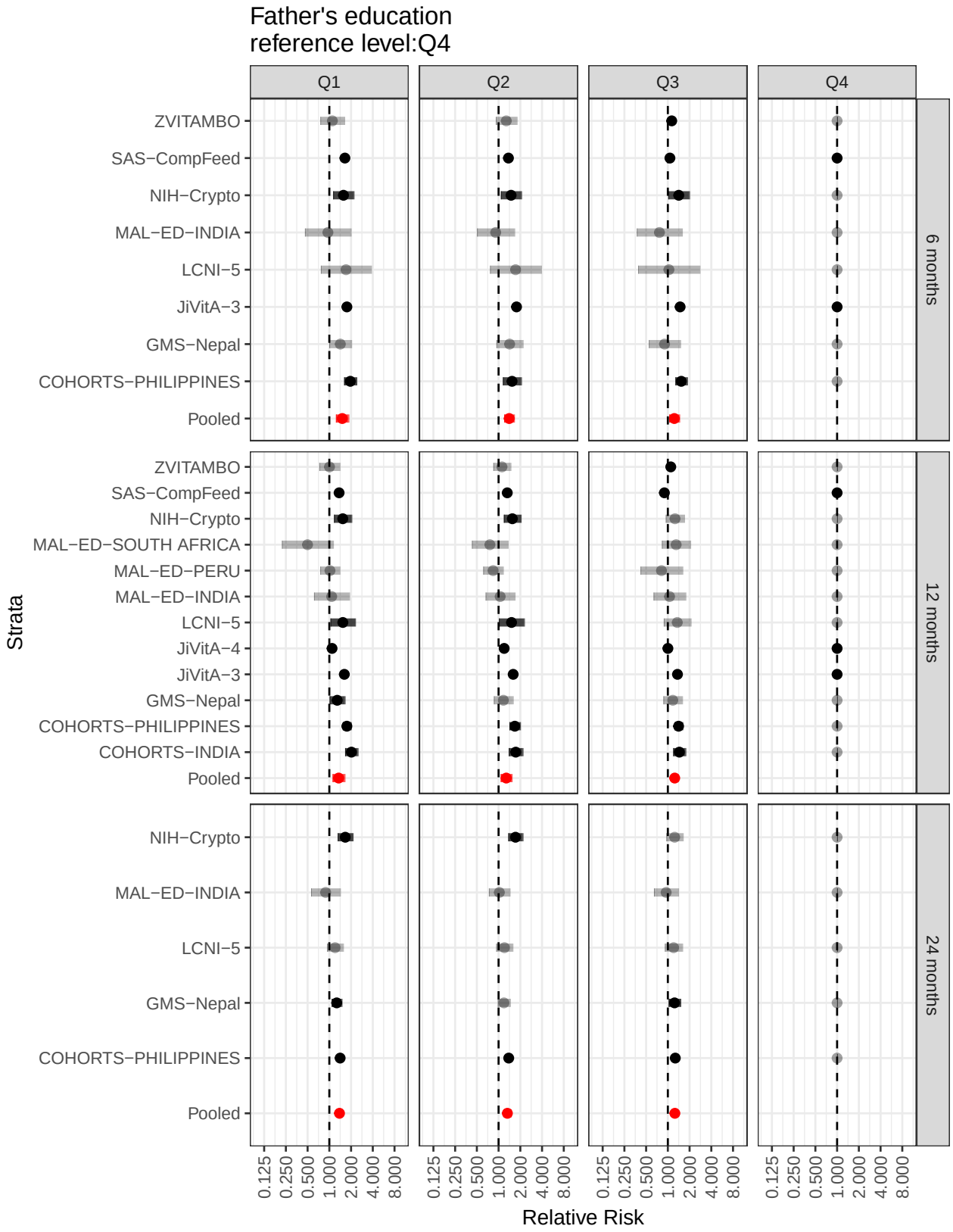

Mother is unmarried
reference level:0
0
1
6 months
12 months
24 months
Strata
ZVITAMBO
TanzaniaChild2
PROBIT
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−BRAZIL
Guatemala BSC
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk


Mother's education
reference level:Q4
Q1
Q2
Q3
Q4
6 months
12 months
24 months
Strata
ZVITAMBO
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
MAL−ED−BRAZIL
MAL−ED−BANGLADESH
JiVitA−3
IRC
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

Paternal characteristics

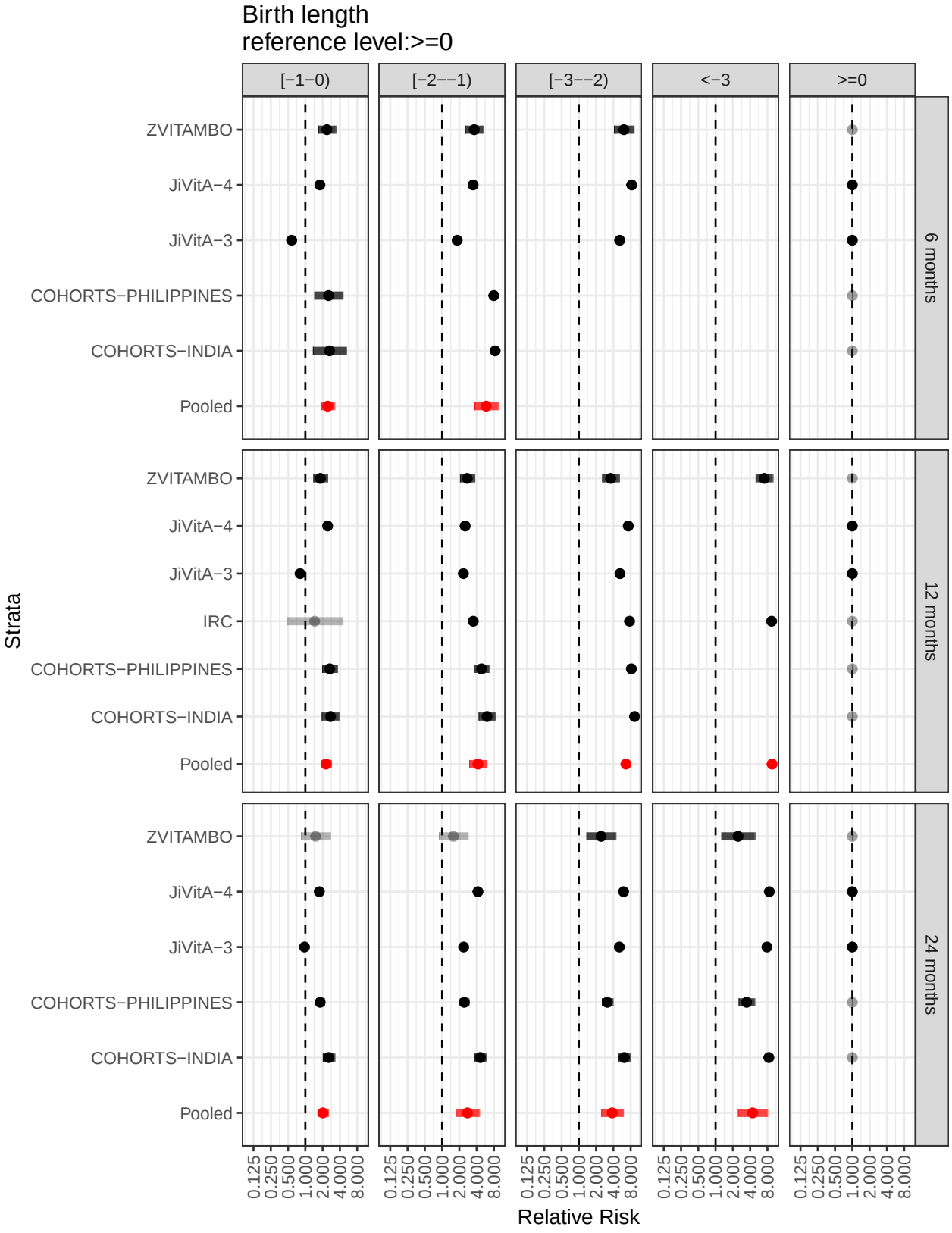


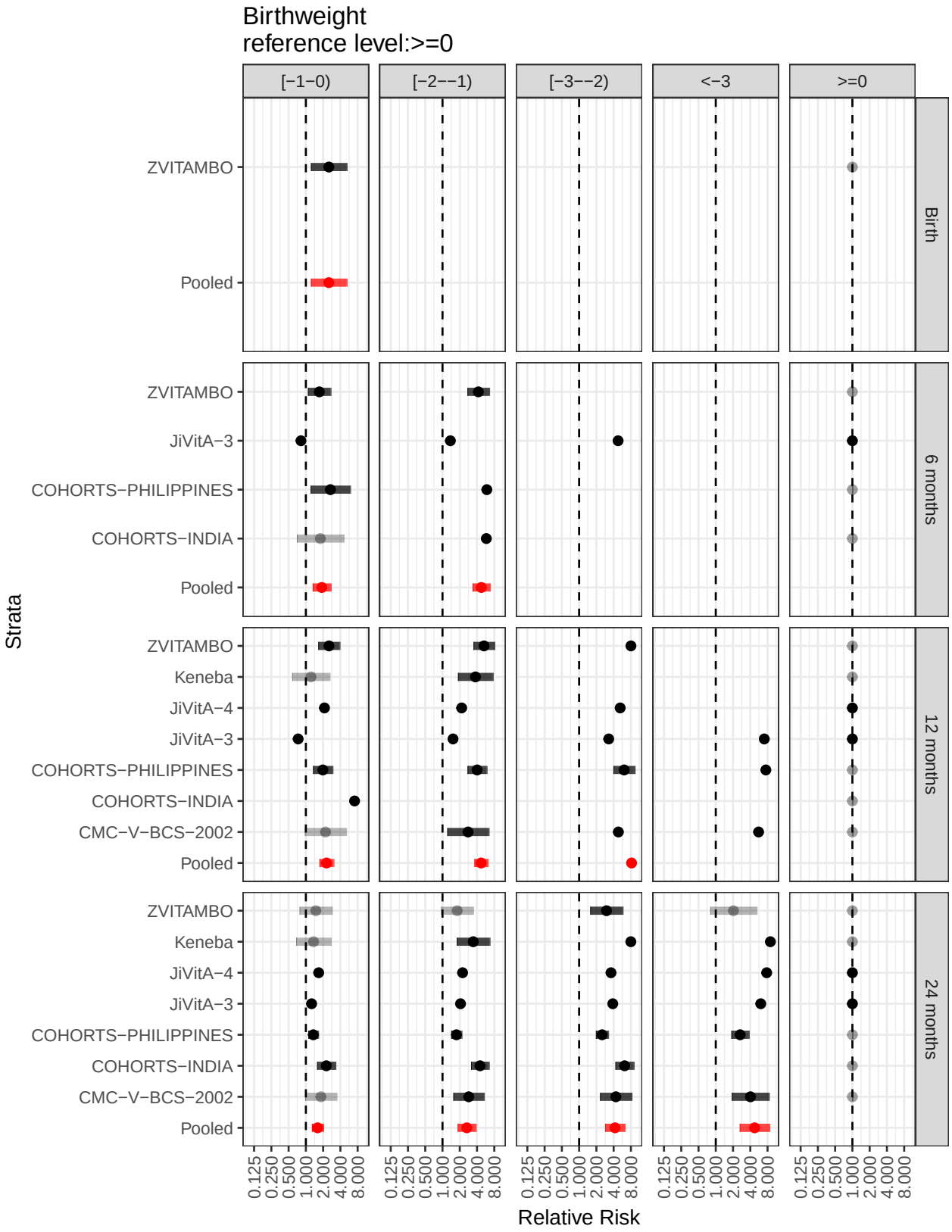

Father height
reference level:[160−170)
[160−170)
<160
>=170
6 months
12 months
24 months
SAS−FoodSuppl
SAS−CompFeed
Keneba
Pooled
PROBIT
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

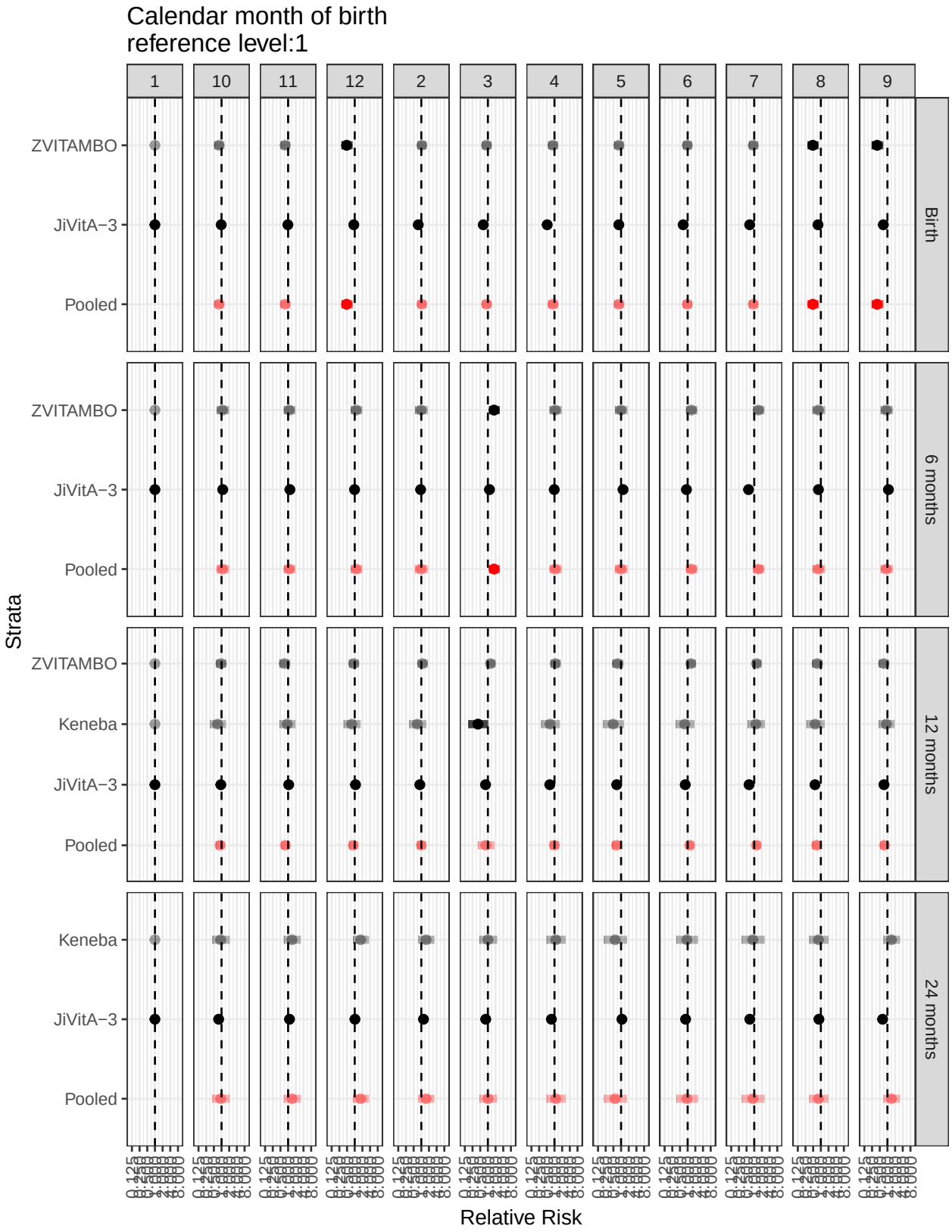

Father's education
reference level:Q4
Q1
Q2
Q3
Q4
6 months
12 months
24 months
Strata
ZVITAMBO
SAS−CompFeed
NIH−Crypto
MAL−ED−INDIA
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
Pooled
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
JiVitA−4
COHORTS−INDIA
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

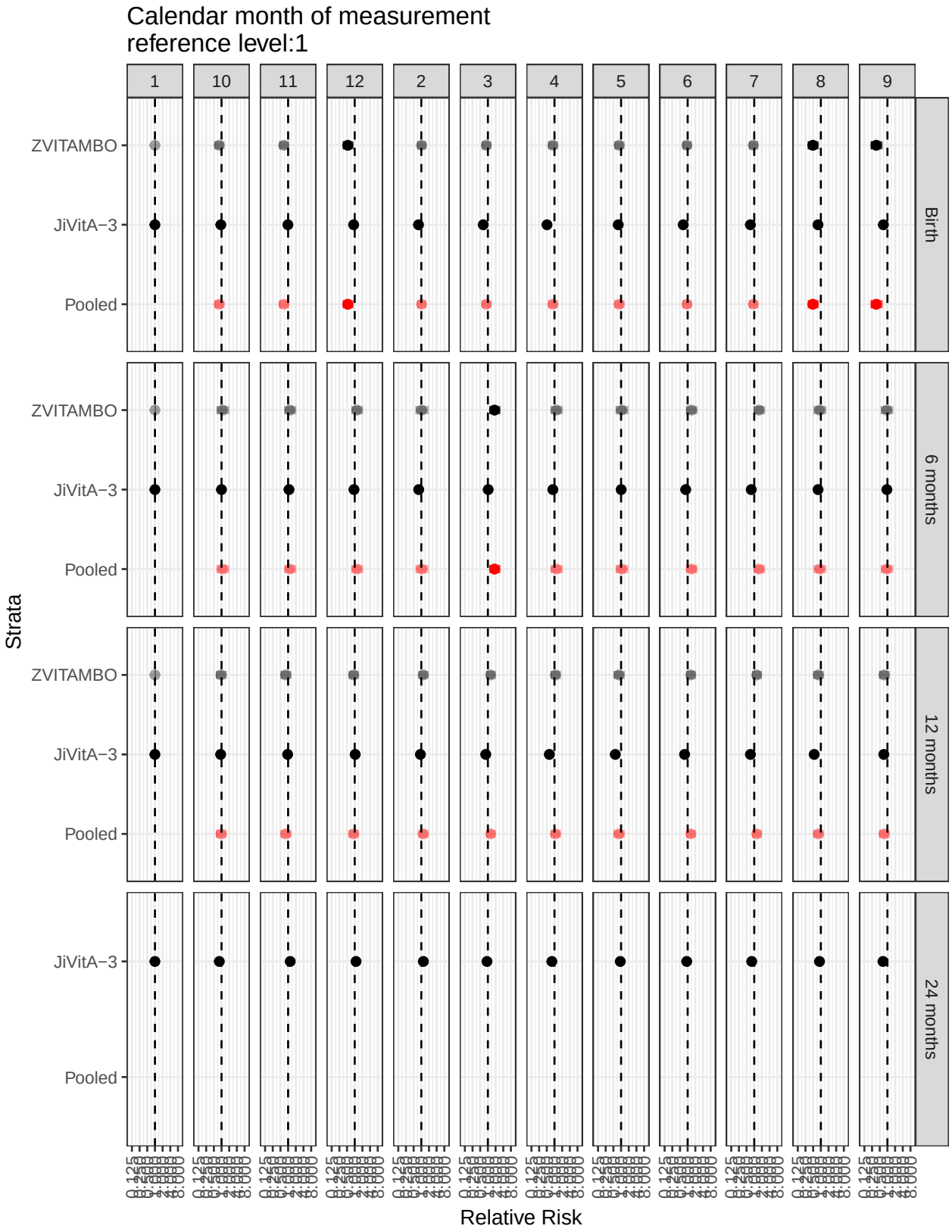
Point prevalence of severe stunting

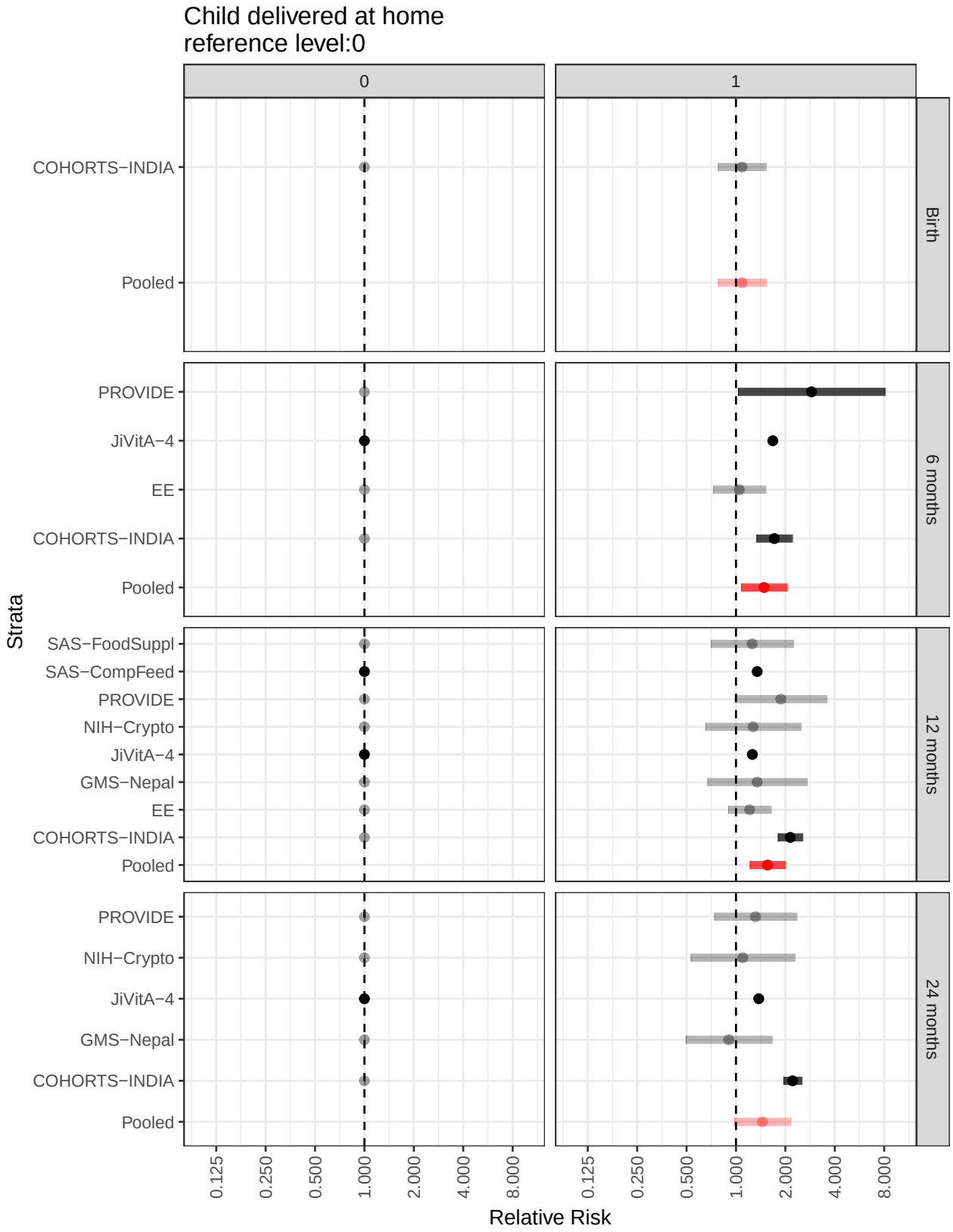
Child characteristics

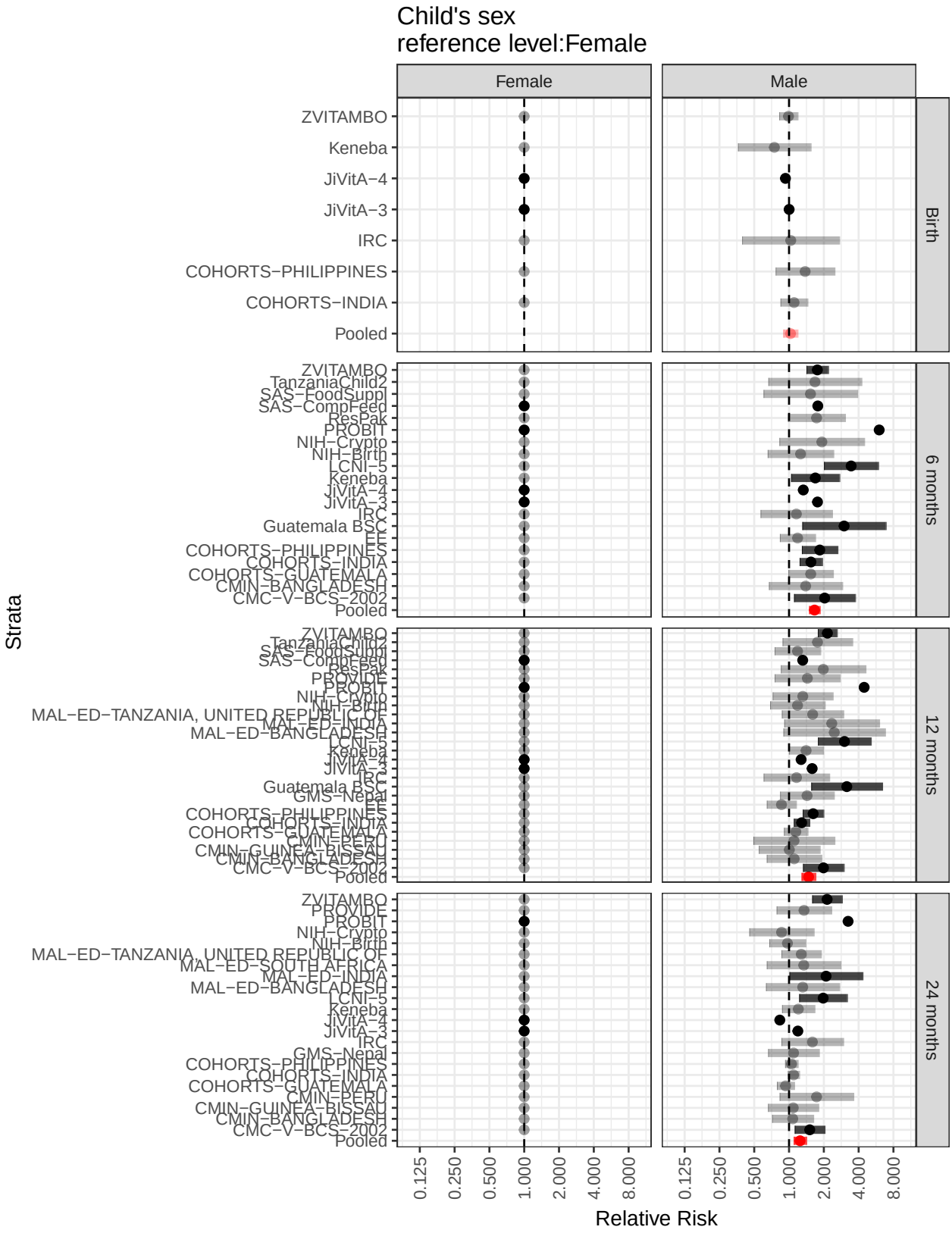


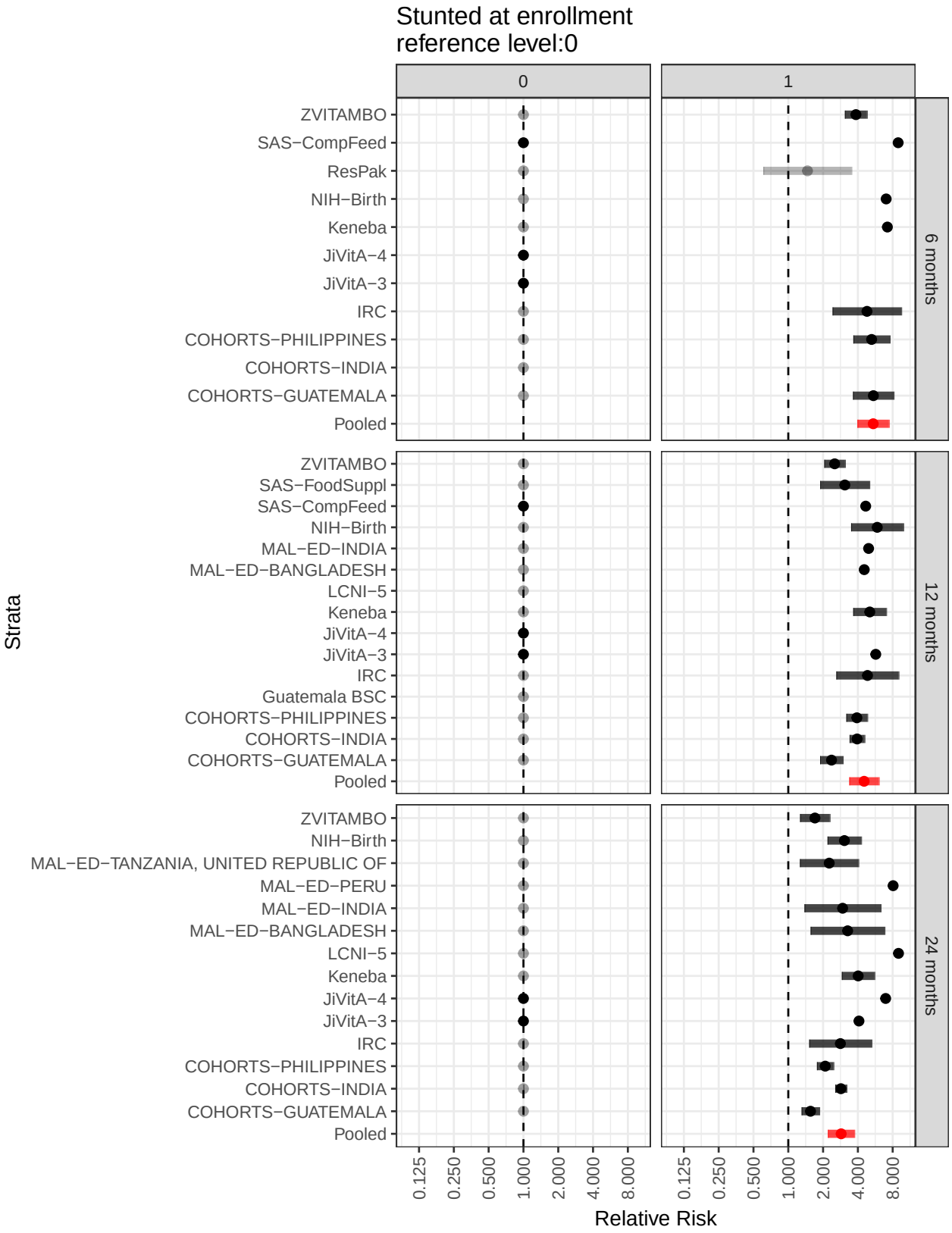

Birthweight
reference level:>=0
[−1−0)
[−2−−1)
[−3−−2)
<−3
>=0
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
Pooled
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Keneba
JiVitA−4
CMC−V−BCS−2002
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

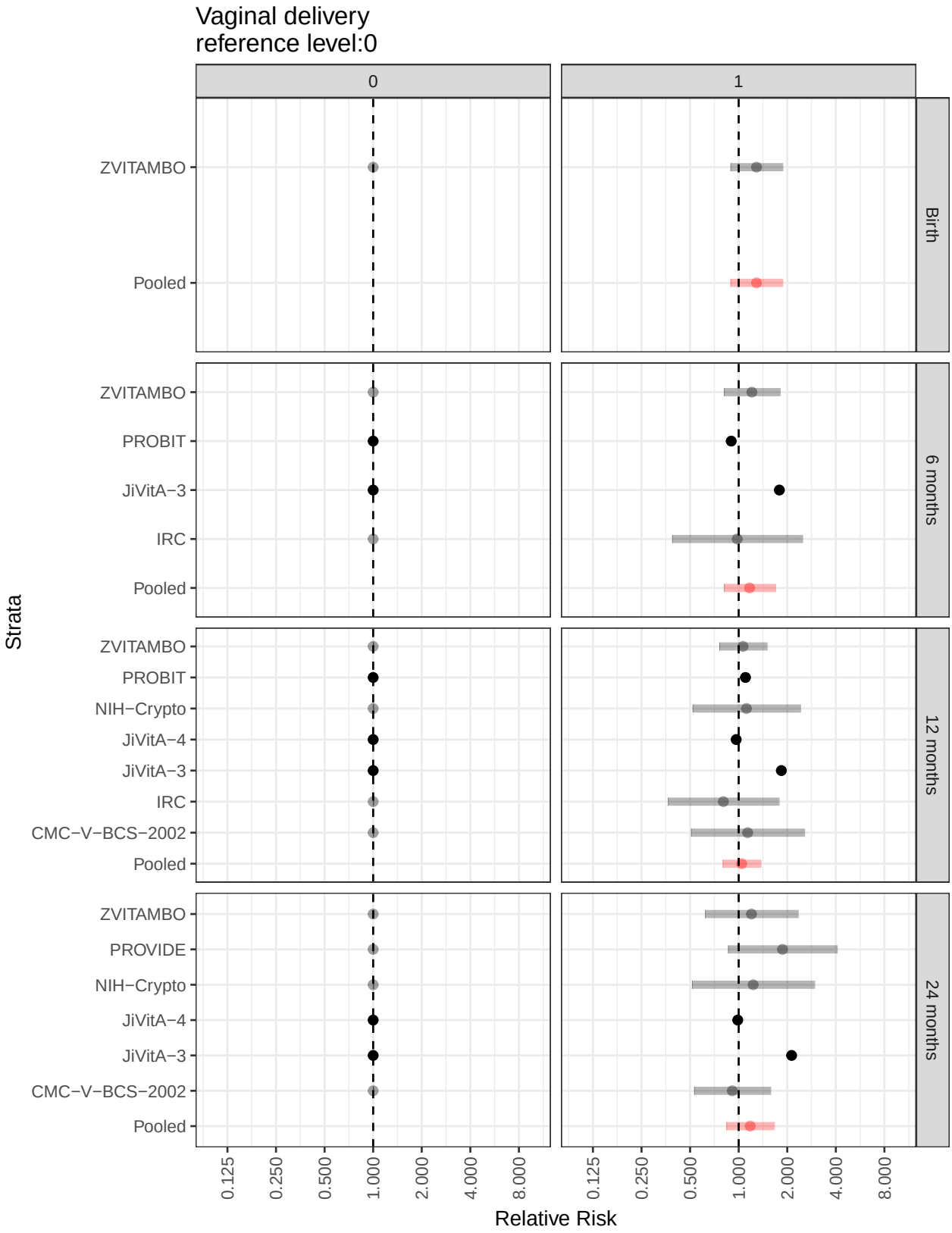

Calendar month of birth
reference level:1
1
10
11
12
2
3
4
5
6
7
8
9
Birth
6 months
12 months
24 months
ZVITAMBO
Keneba
JiVitA−3
Pooled
Strata
Relative Risk


Calendar month of measurement
reference level:1
1
10
11
12
2
3
4
5
6
7
8
9
Birth
6 months
12 months
24 months
ZVITAMBO
JiVitA−3
Pooled
Strata
Relative Risk

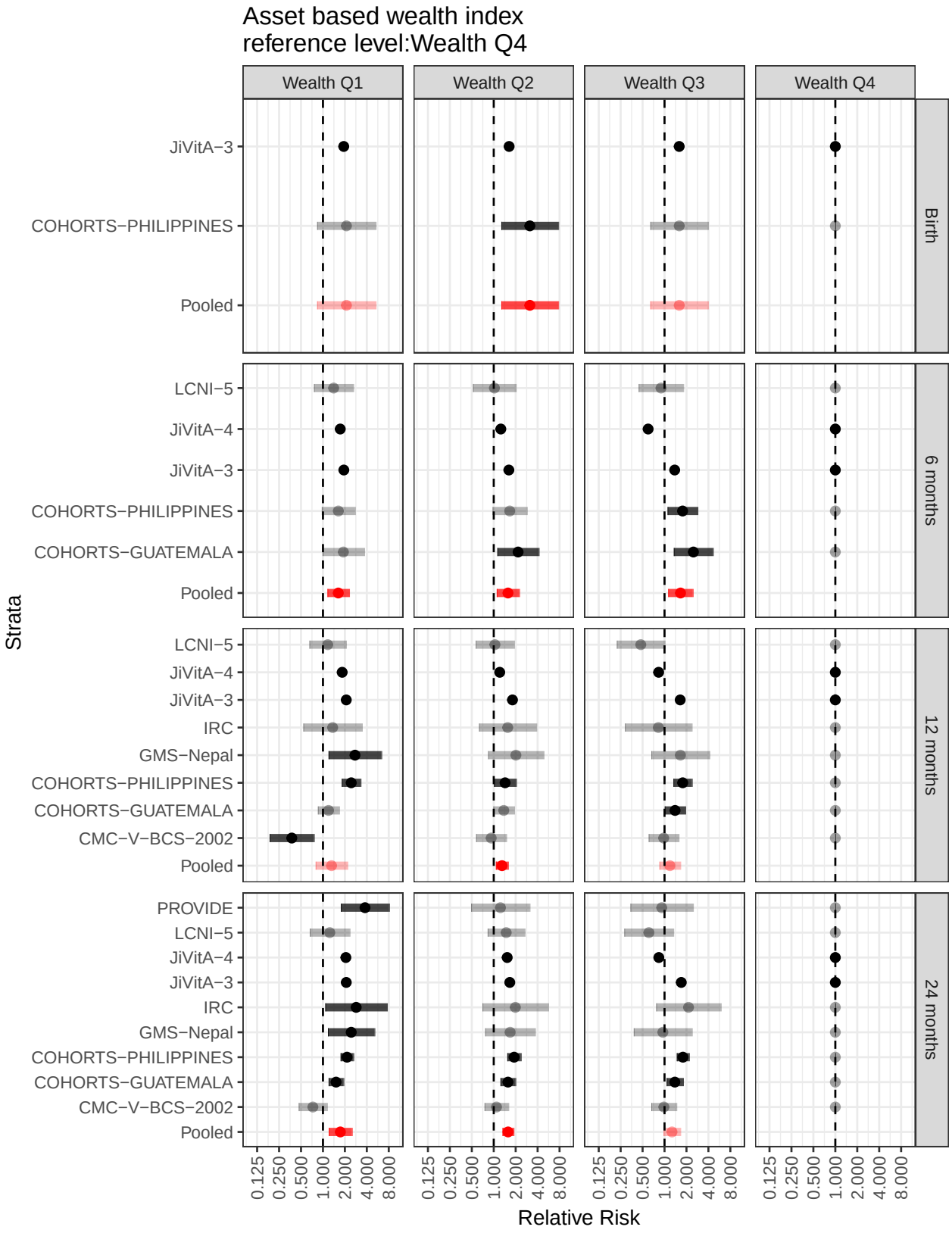

Child delivered at home
reference level:0
0
1
Birth
6 months
12 months
24 months
COHORTS−INDIA
Pooled
PROVIDE
JiVitA−4
EE
SAS−FoodSuppl
SAS−CompFeed
NIH−Crypto
GMS−Nepal
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

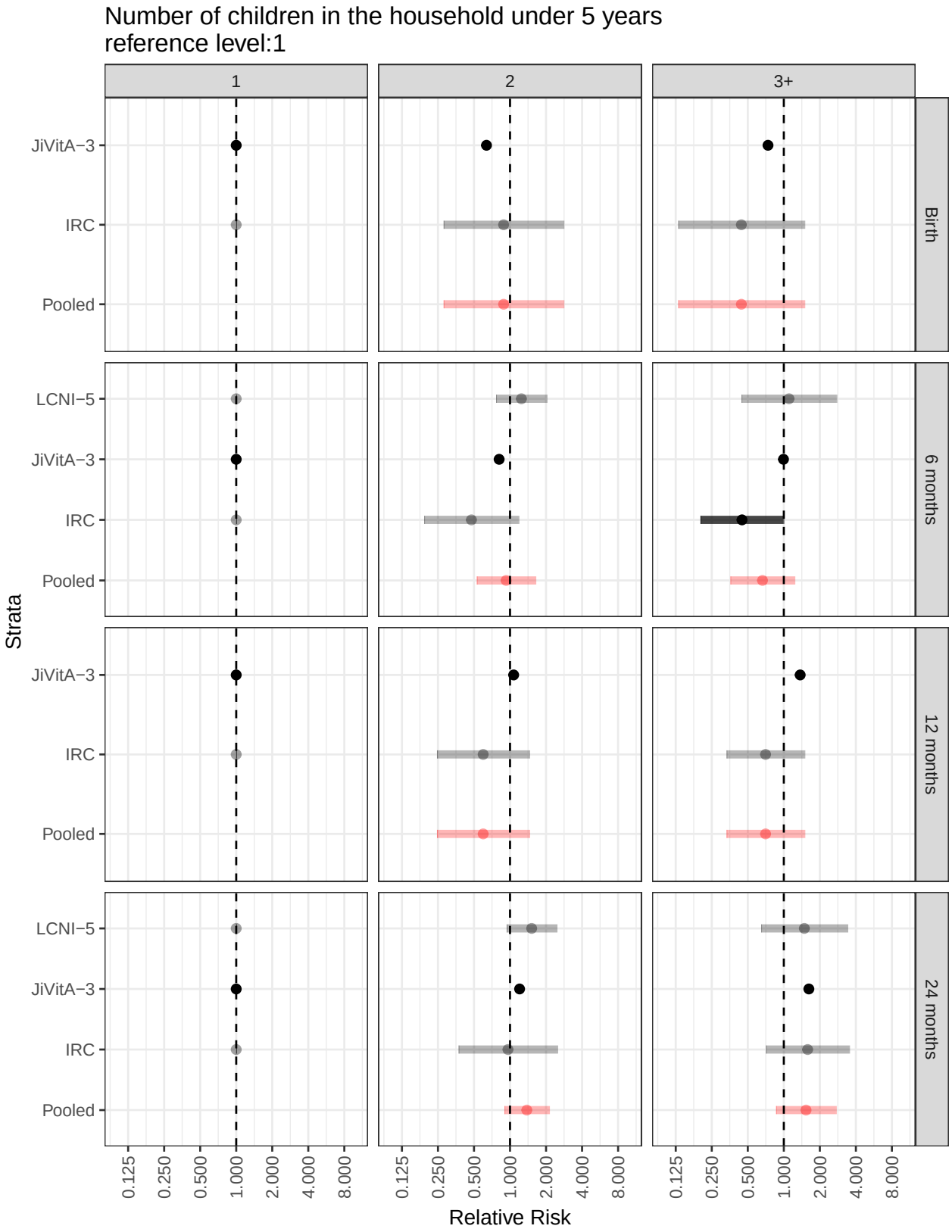

Child's sex
reference level:Female
Female
Male
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
Keneba
JiVitA−4
JiVitA−3
IRC
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
ResPak
PROBIT
NIH−Crypto
NIH−Birth
LCNI−5
Guatemala BSC
EE
COHORTS−GUATEMALA
CMIN−BANGLADESH
CMC−V−BCS−2002
PROVIDE
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−INDIA
MAL−ED−BANGLADESH
GMS−Nepal
CMIN−PERU
CMIN−GUINEA−BISSAU
MAL−ED−SOUTH AFRICA
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

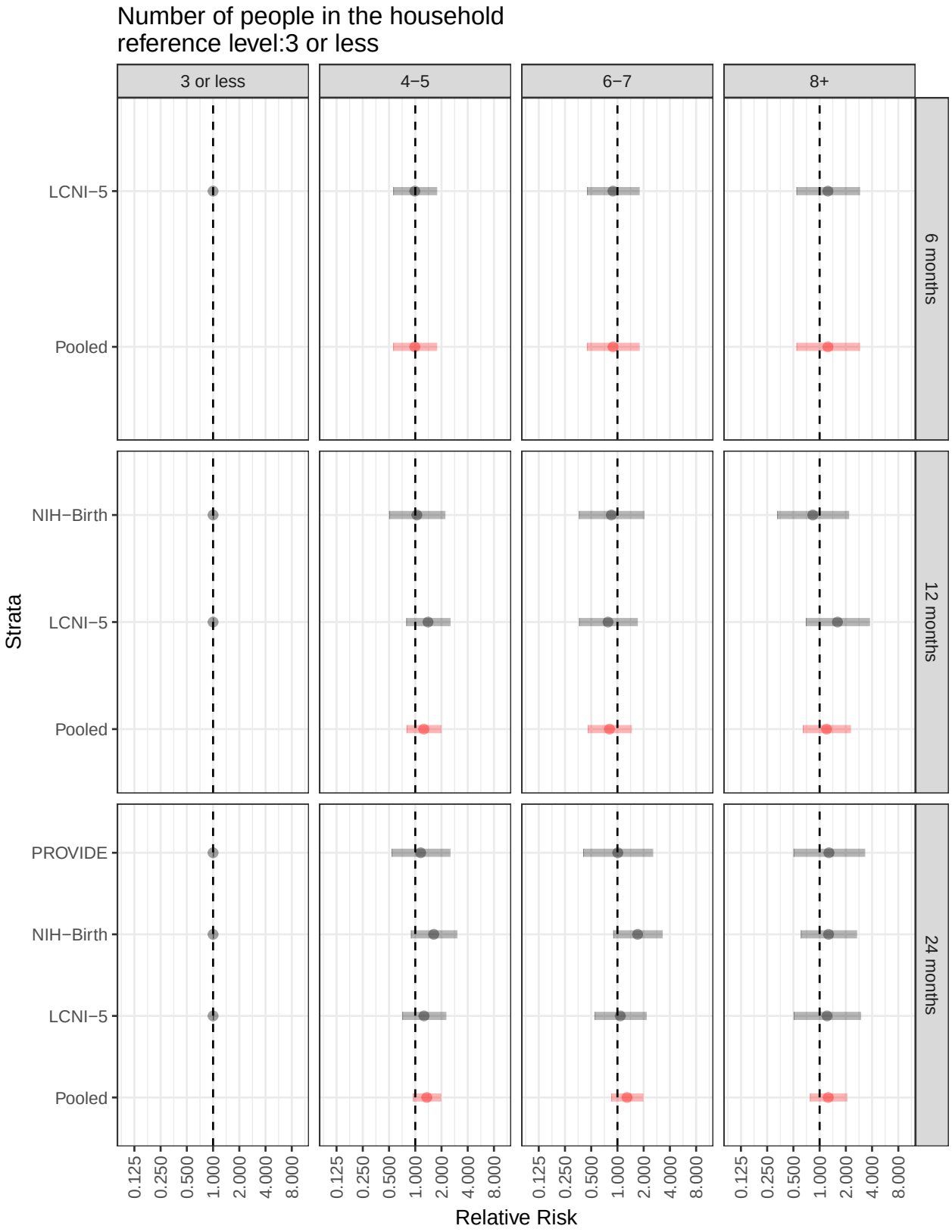

Stunted at enrollment
reference level:0
0
1
6 months
12 months
24 months
Strata
ZVITAMBO
SAS−CompFeed
ResPak
NIH−Birth
Keneba
JiVitA−4
JiVitA−3
IRC
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
Pooled
ZVITAMBO
SAS−FoodSuppl
SAS−CompFeed
NIH−Birth
MAL−ED−INDIA
MAL−ED−BANGLADESH
LCNI−5
Keneba
JiVitA−4
JiVitA−3
IRC
Guatemala BSC
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
Pooled
ZVITAMBO
NIH−Birth
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BANGLADESH
LCNI−5
Keneba
JiVitA−4
JiVitA−3
IRC
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

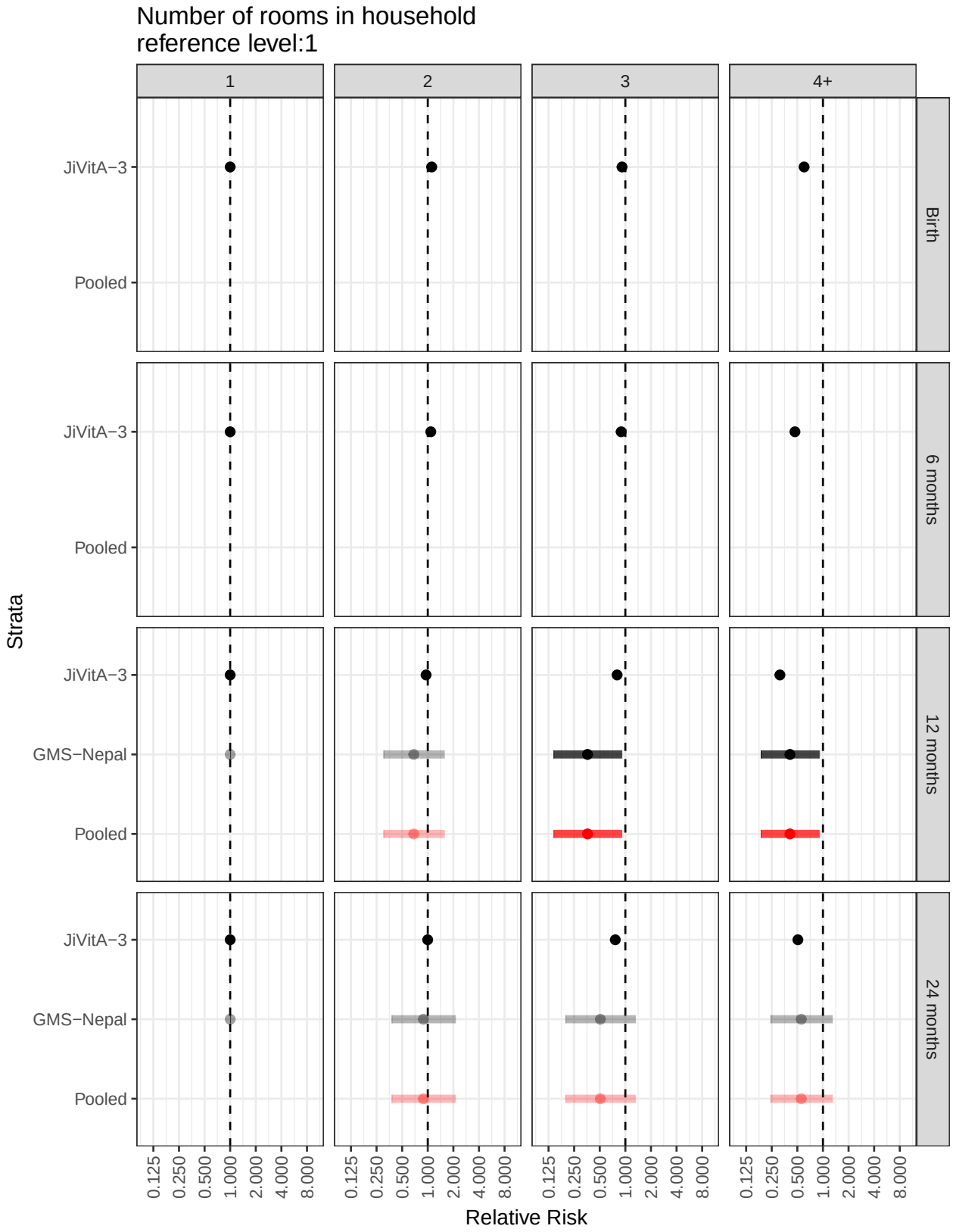

Vaginal delivery
reference level:0
0
1
Birth
6 months
12 months
24 months
ZVITAMBO
Pooled
PROBIT
JiVitA−3
IRC
NIH−Crypto
JiVitA−4
CMC−V−BCS−2002
PROVIDE
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

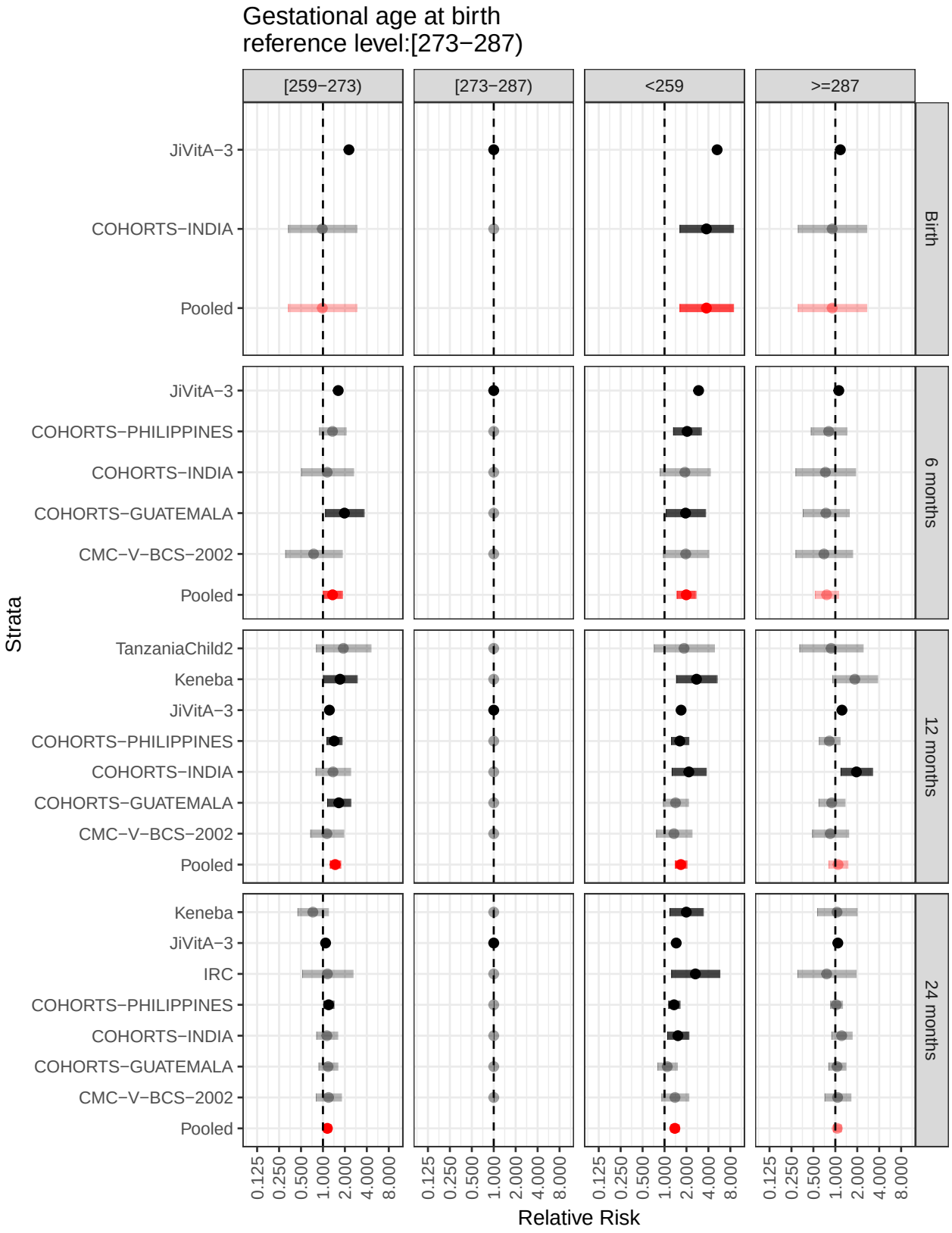
Household characteristics

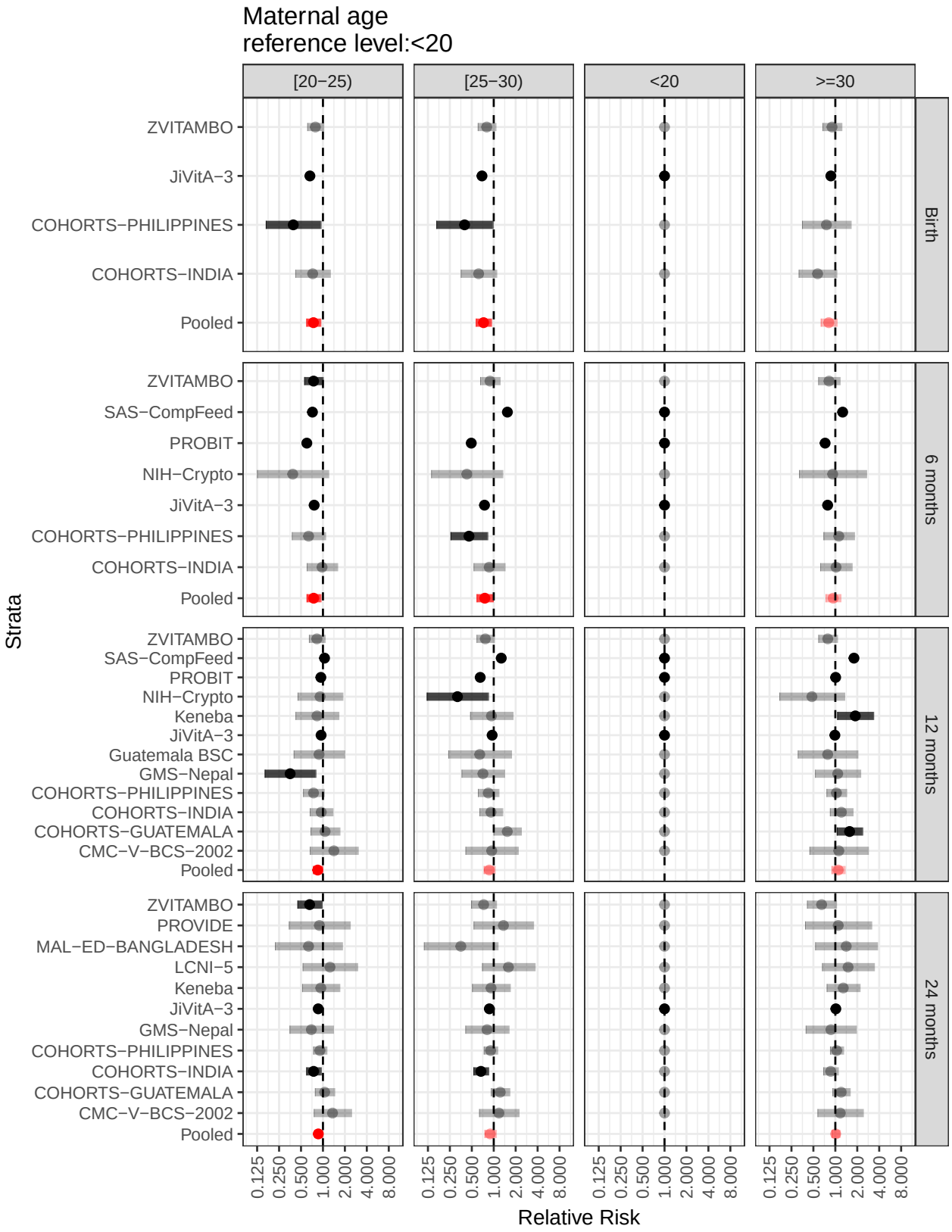


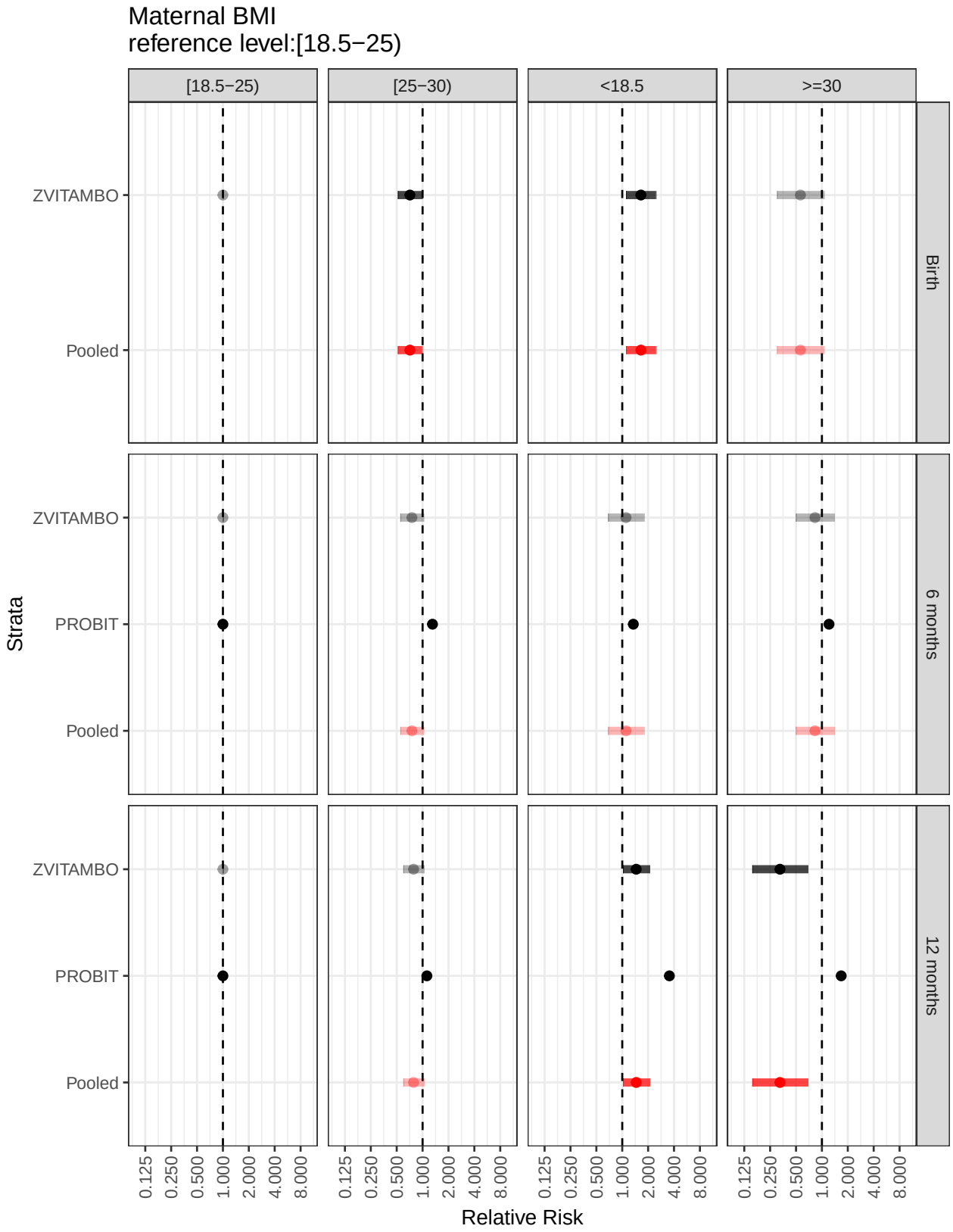

Number of children in the household under 5 years
reference level:1
1
2
3+
Birth
6 months
12 months
24 months
Strata
JiVitA−3
IRC
Pooled
LCNI−5
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

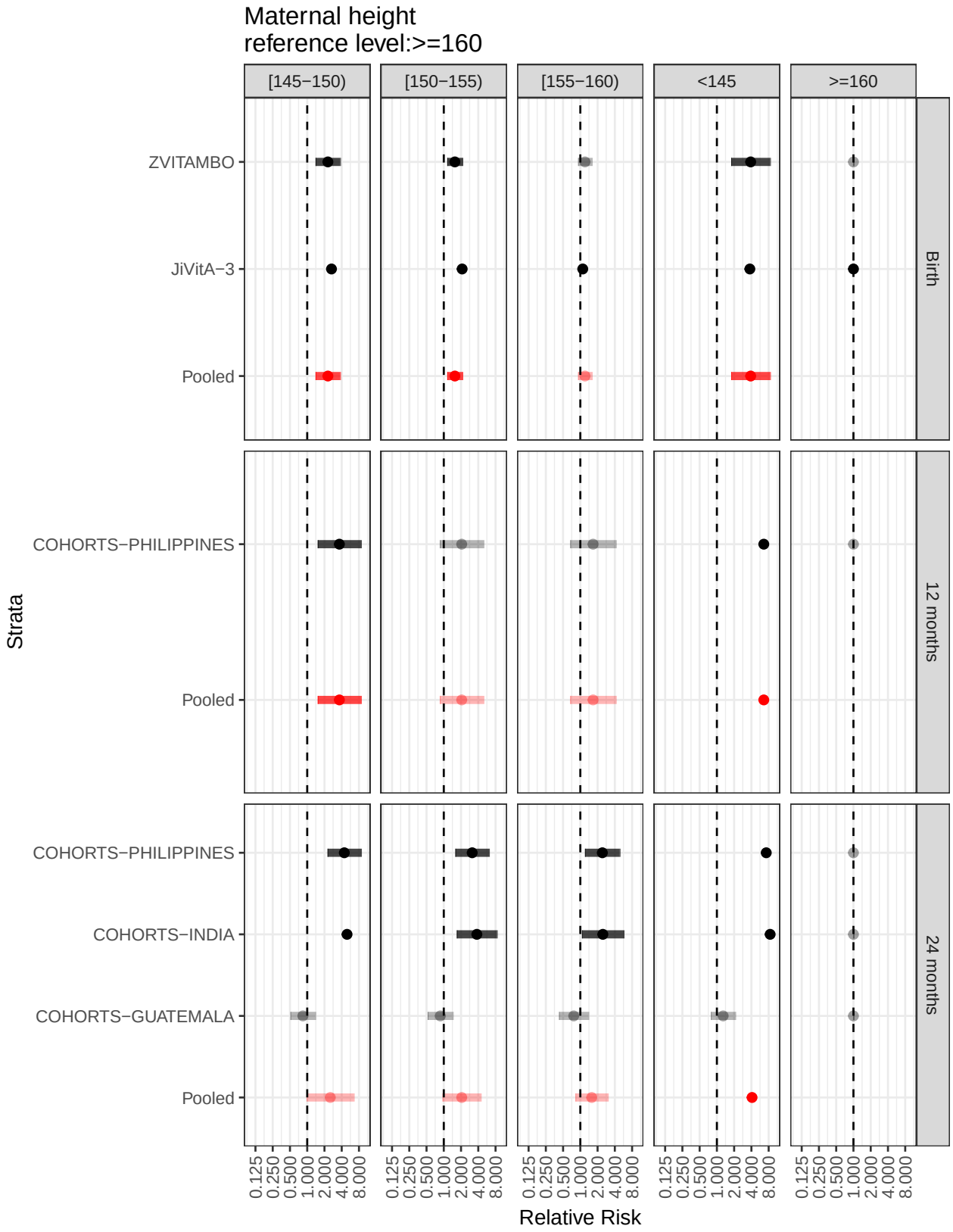

Number of people in the household
reference level:3 or less
3 or less
4−5
6−7
8+
6 months
12 months
24 months
Strata
LCNI−5
Pooled
NIH−Birth
PROVIDE
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

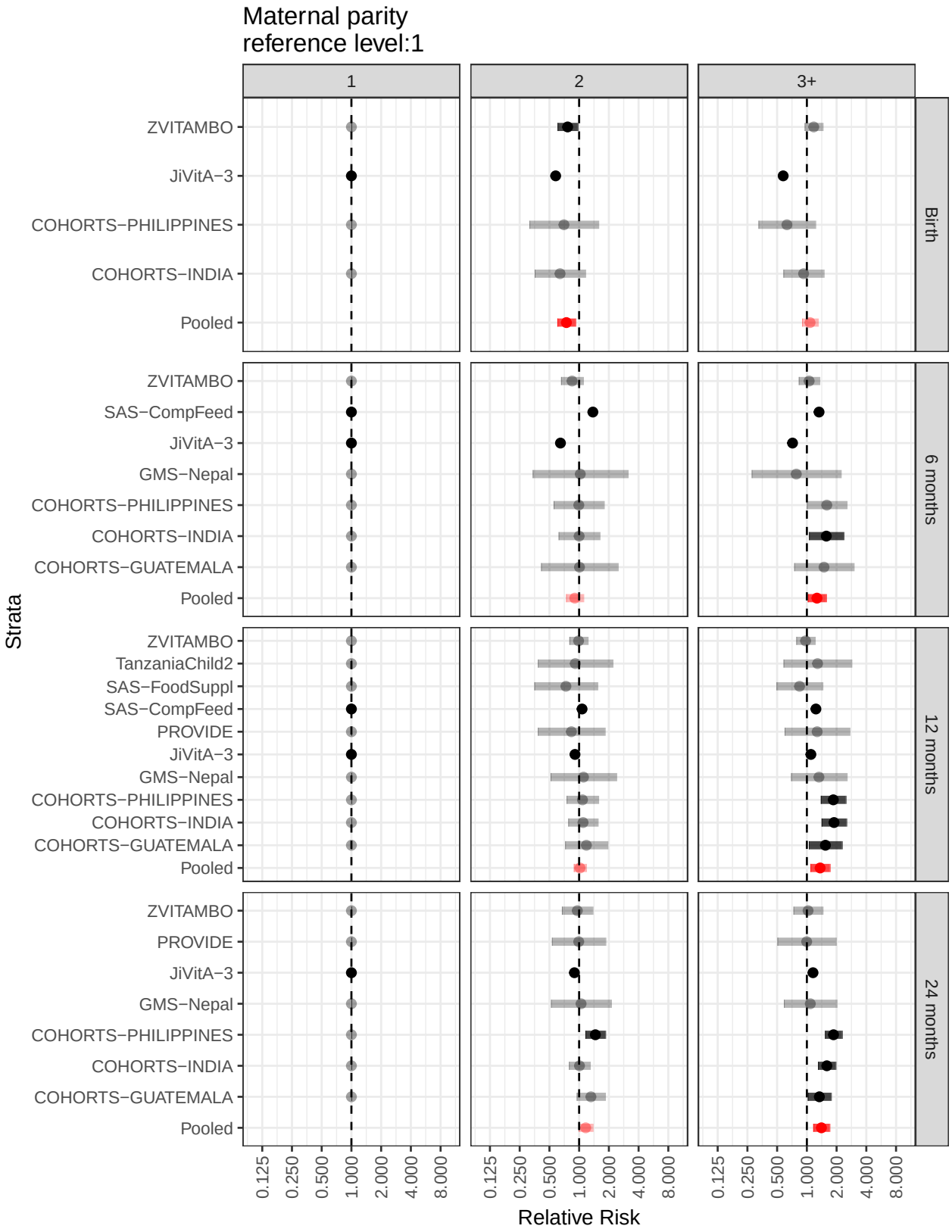

Number of rooms in household
reference level:1
1
2
3
4+
Birth
6 months
12 months
24 months
Strata
JiVitA−3
GMS−Nepal
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

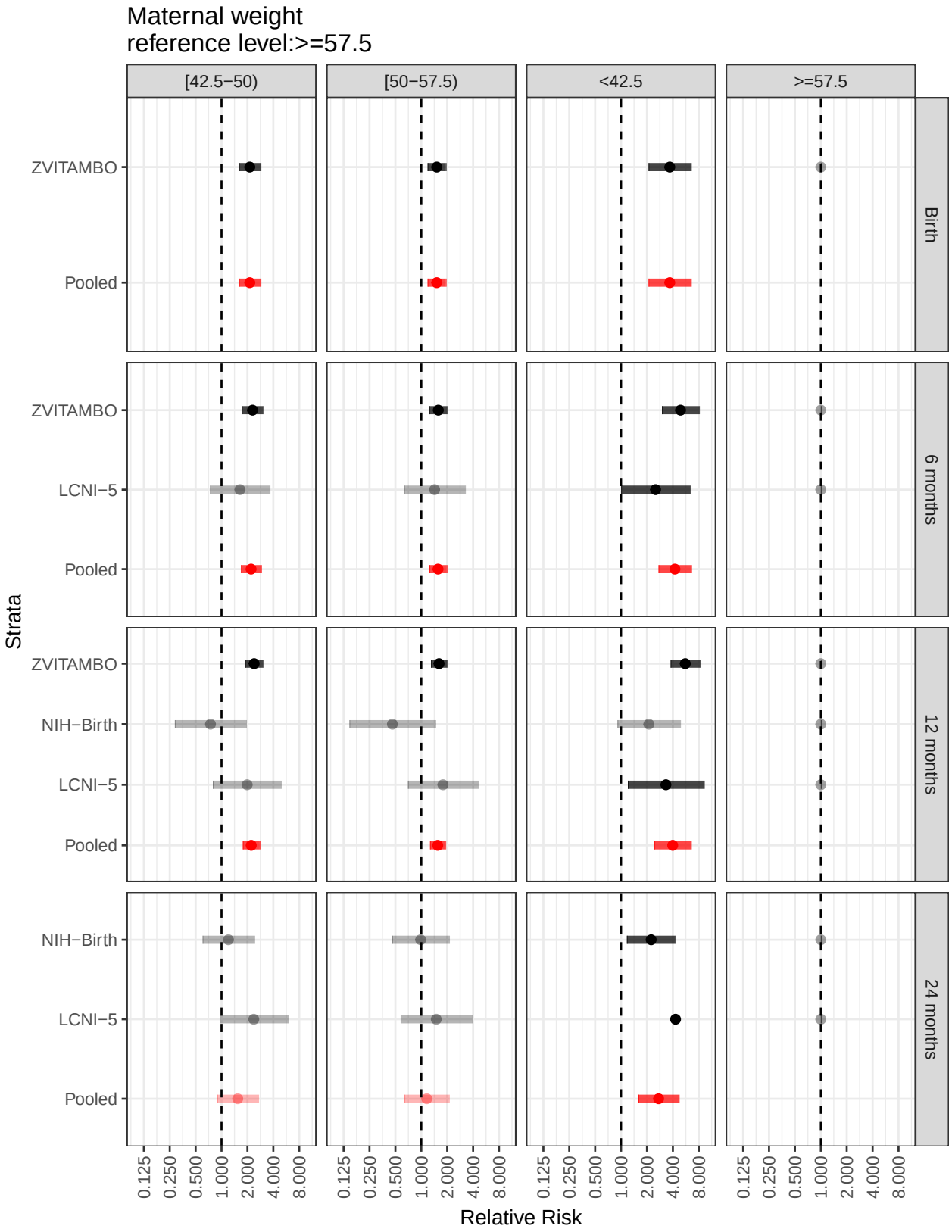

Gestational age at birth
reference level:[273−287)
[259−273)
[273−287)
<259
>=287
Birth
6 months
12 months
24 months
Strata
JiVitA−3
COHORTS−INDIA
Pooled
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
CMC−V−BCS−2002
TanzaniaChild2
Keneba
IRC
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

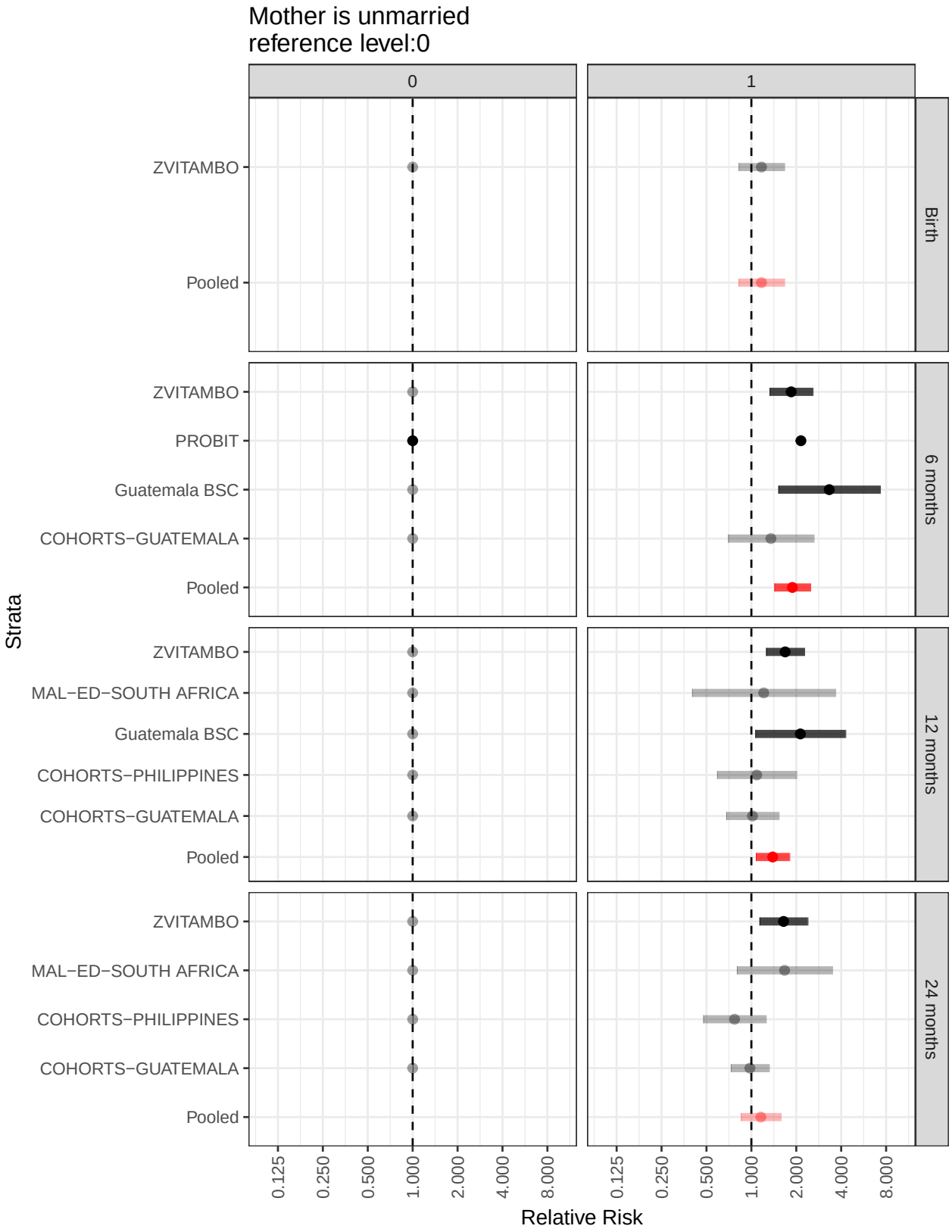

Maternal age
reference level:<20
[20−25)
[25−30)
<20
>=30
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
SAS−CompFeed
PROBIT
NIH−Crypto
Keneba
Guatemala BSC
GMS−Nepal
COHORTS−GUATEMALA
CMC−V−BCS−2002
PROVIDE
MAL−ED−BANGLADESH
LCNI−5
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

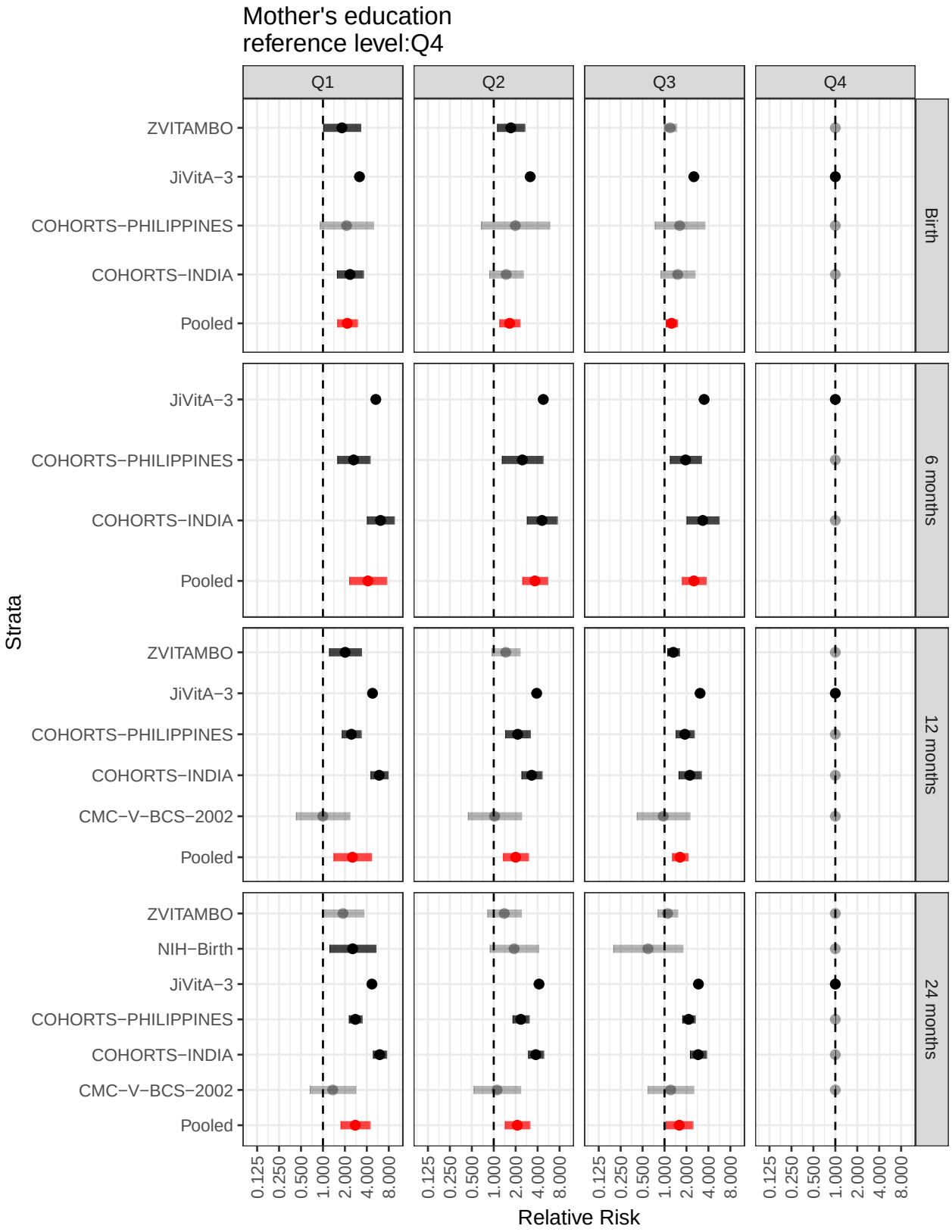

Maternal BMI
reference level:[18.5−25)
[18.5−25)
[25−30)
<18.5
>=30
Birth
6 months
12 months
Strata
ZVITAMBO
PROBIT
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk


Maternal height
reference level:>=160
[145−150)
[150−155)
[155−160)
<145
>=160
ZVITAMBO
JiVitA−3
Pooled
Birth
COHORTS−PHILIPPINES
Pooled
12 months
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
Pooled
24 months
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

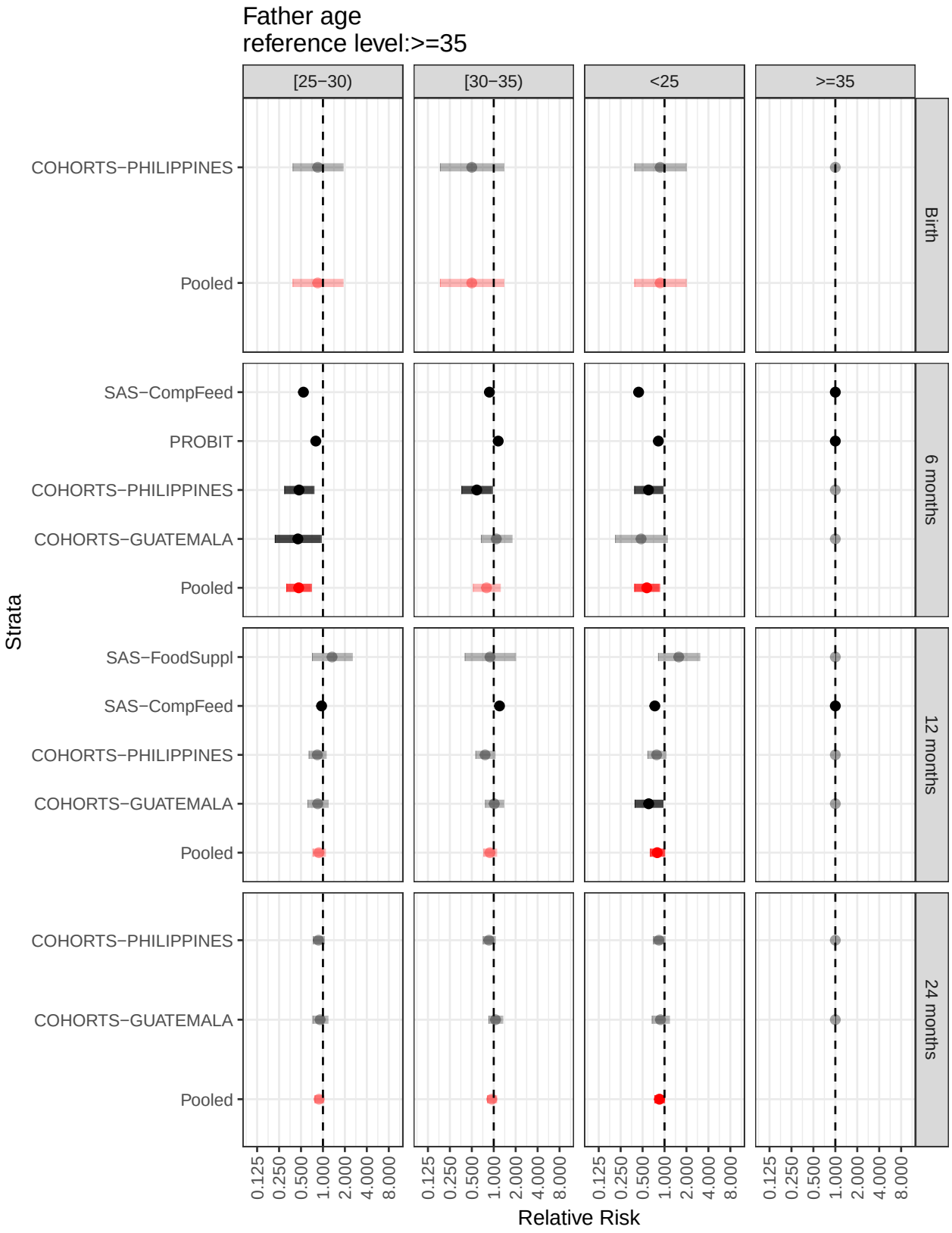

Maternal parity
reference level:1
1
2
3+
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
SAS−CompFeed
GMS−Nepal
COHORTS−GUATEMALA
TanzaniaChild2
SAS−FoodSuppl
PROVIDE
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

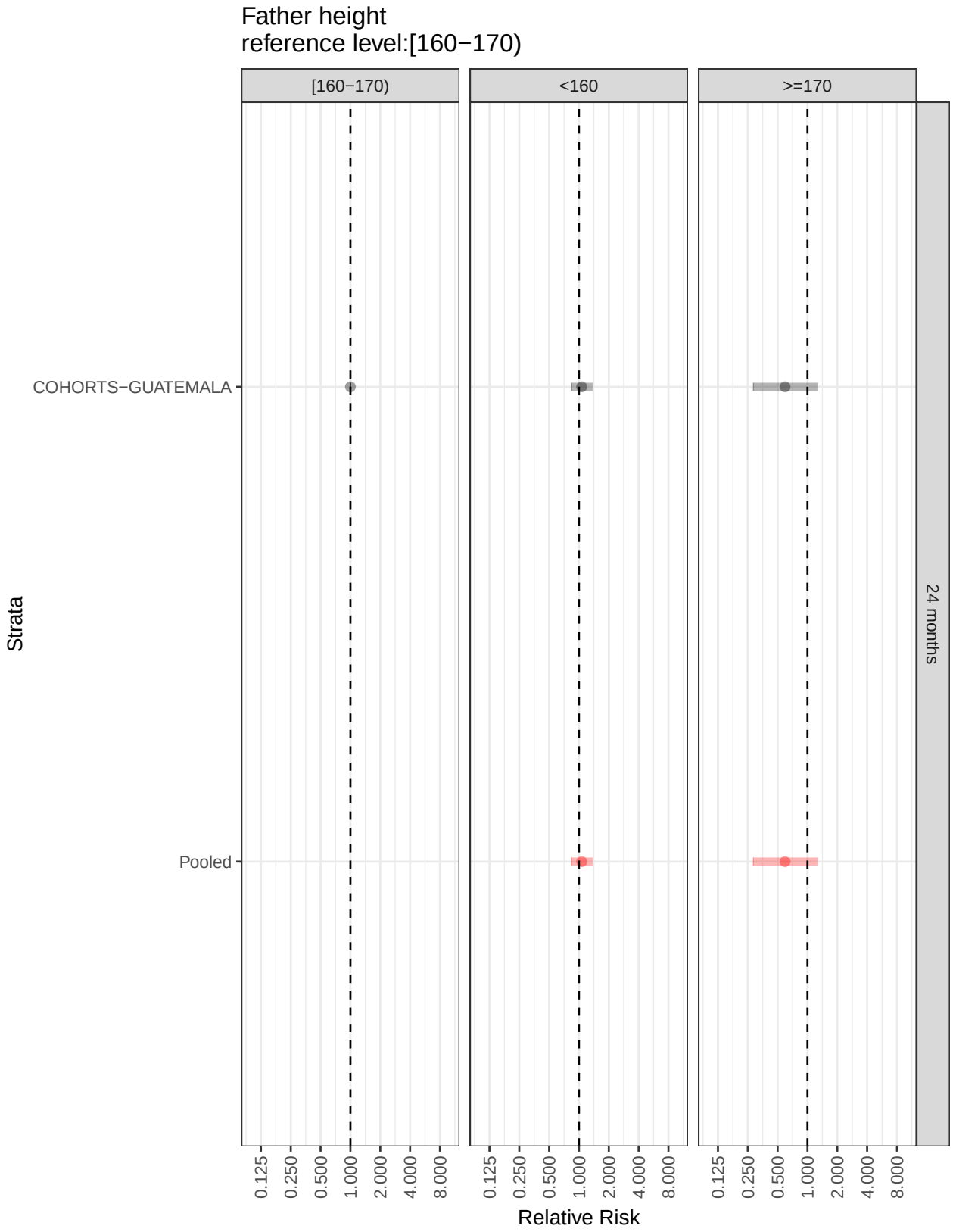

Maternal weight
reference level:>=57.5
[42.5−50)
[50−57.5)
<42.5
>=57.5
Birth
6 months
12 months
24 months
ZVITAMBO
Pooled
LCNI−5
NIH−Birth
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

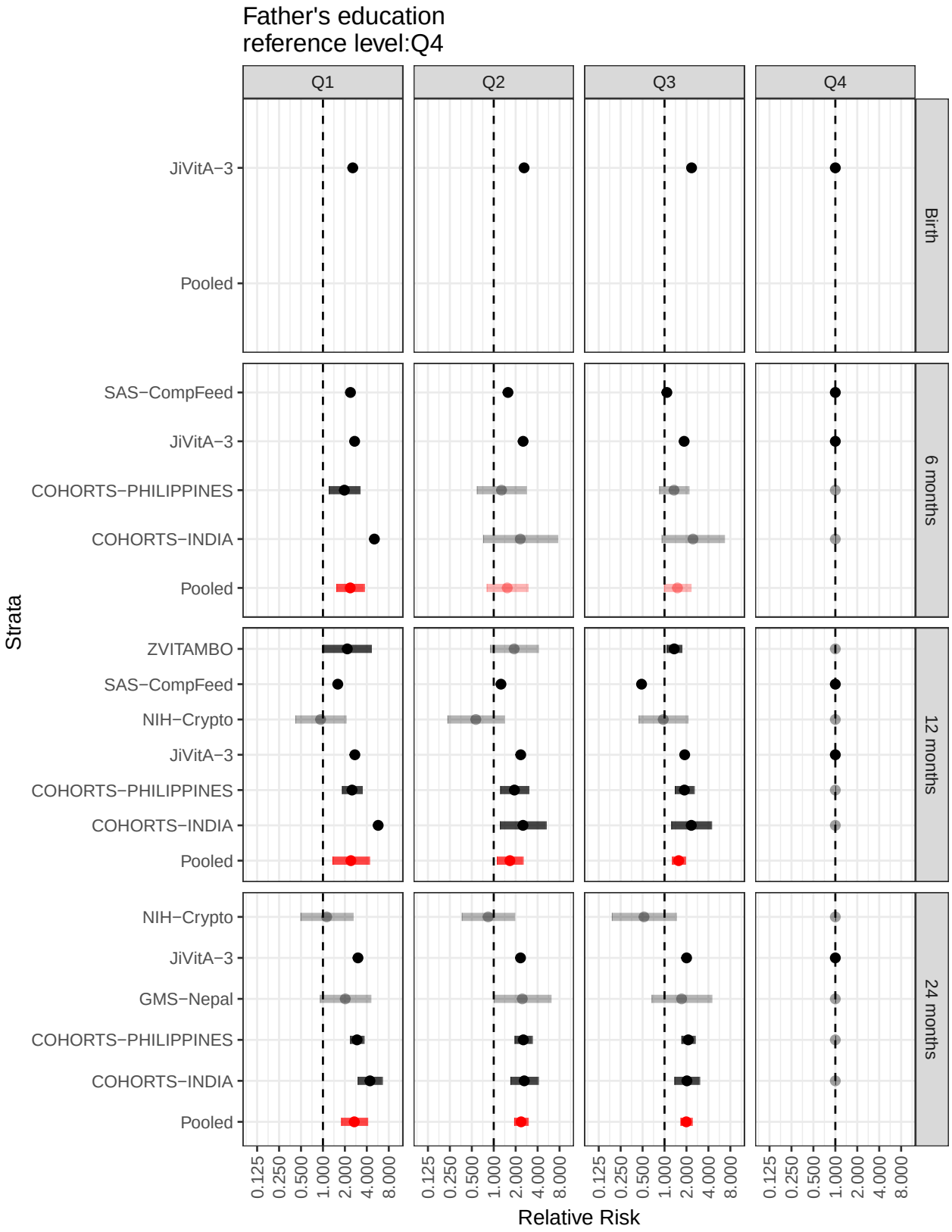

Mother is unmarried
reference level:0
0
1
Birth
6 months
12 months
24 months
ZVITAMBO
Pooled
PROBIT
Guatemala BSC
COHORTS−GUATEMALA
MAL−ED−SOUTH AFRICA
COHORTS−PHILIPPINES
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk


Mother's education
reference level:Q4
Q1
Q2
Q3
Q4
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
NIH−Birth
CMC−V−BCS−2002
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

Paternal characteristics

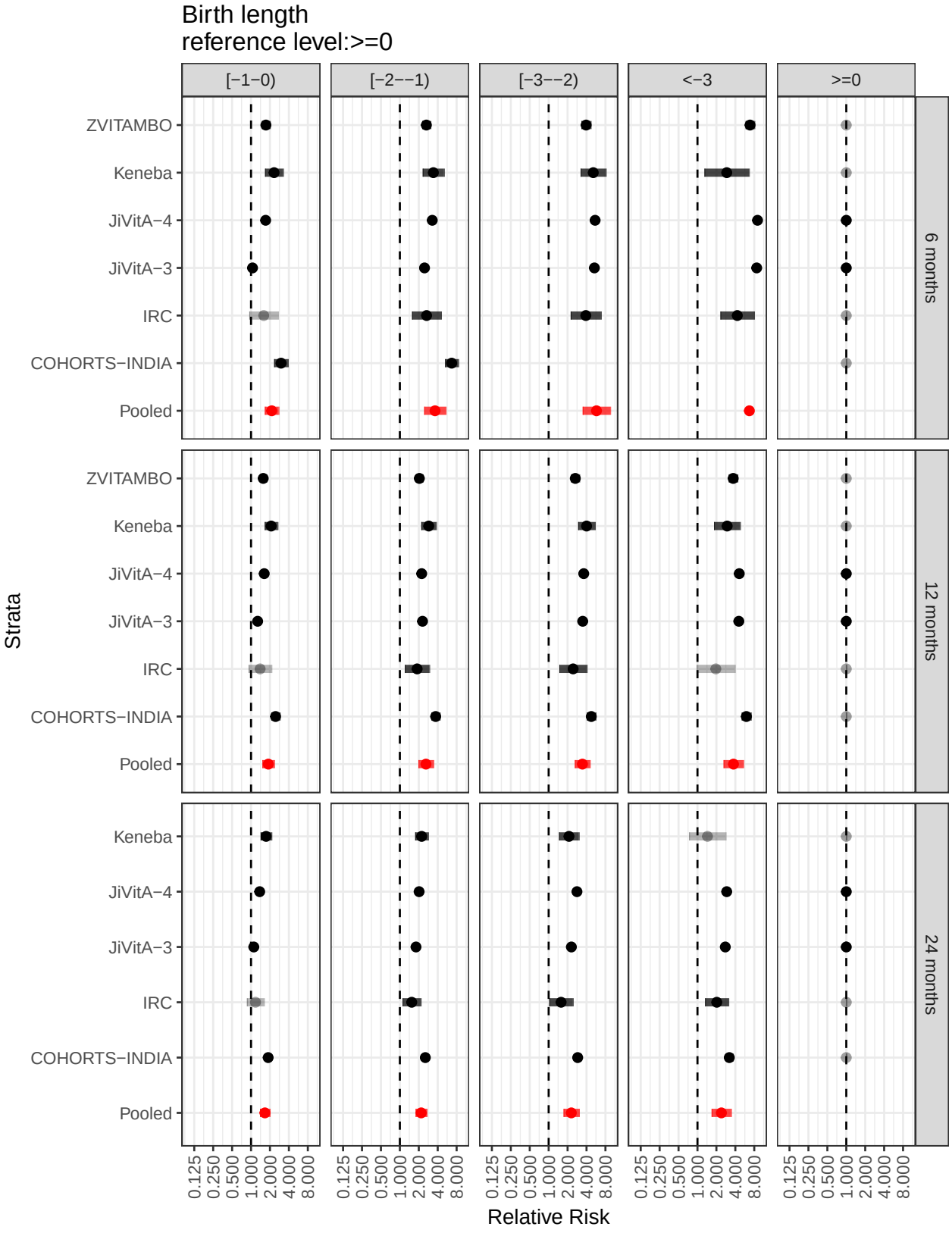


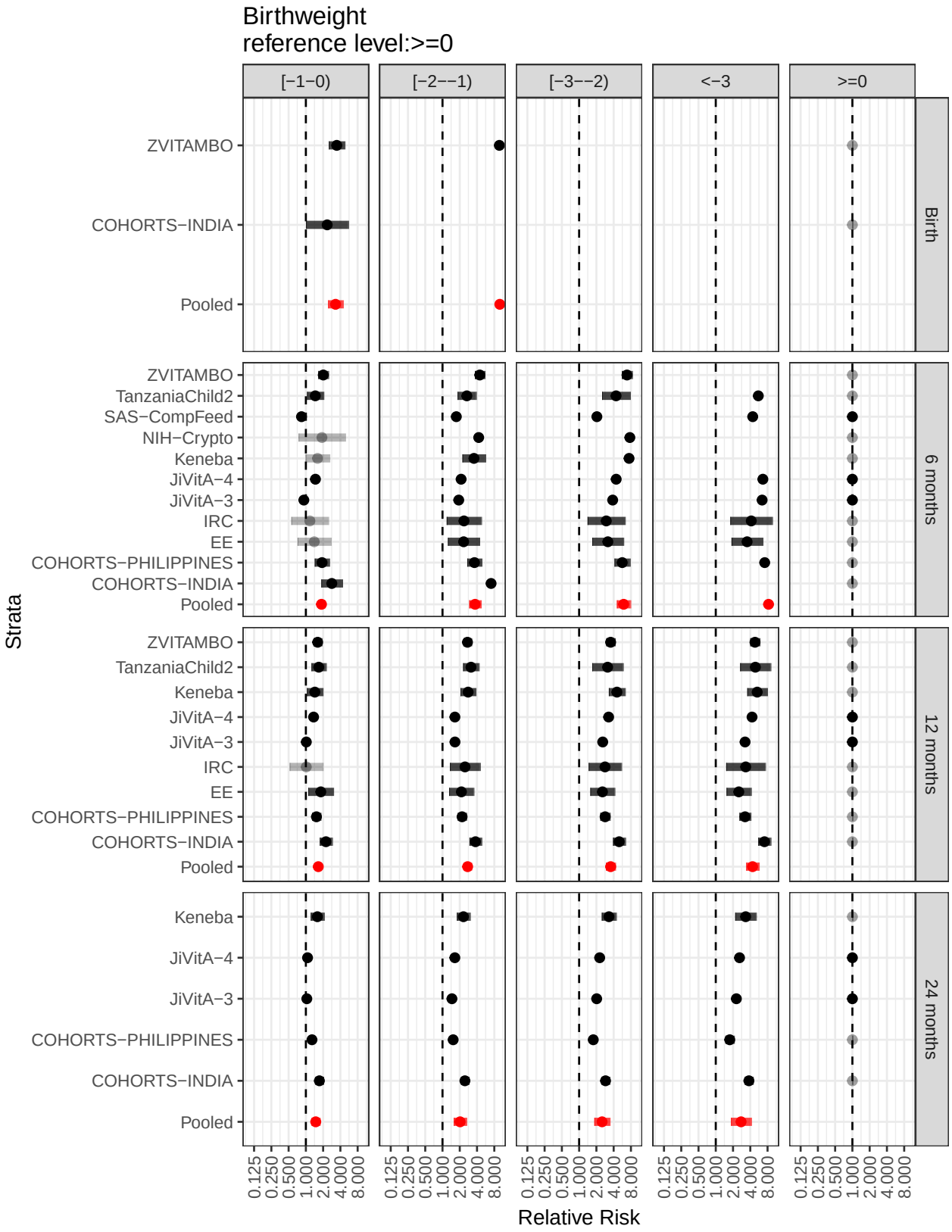

Father height
reference level:[160−170)
[160−170)
<160
>=170
24 months
Strata
COHORTS−GUATEMALA
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

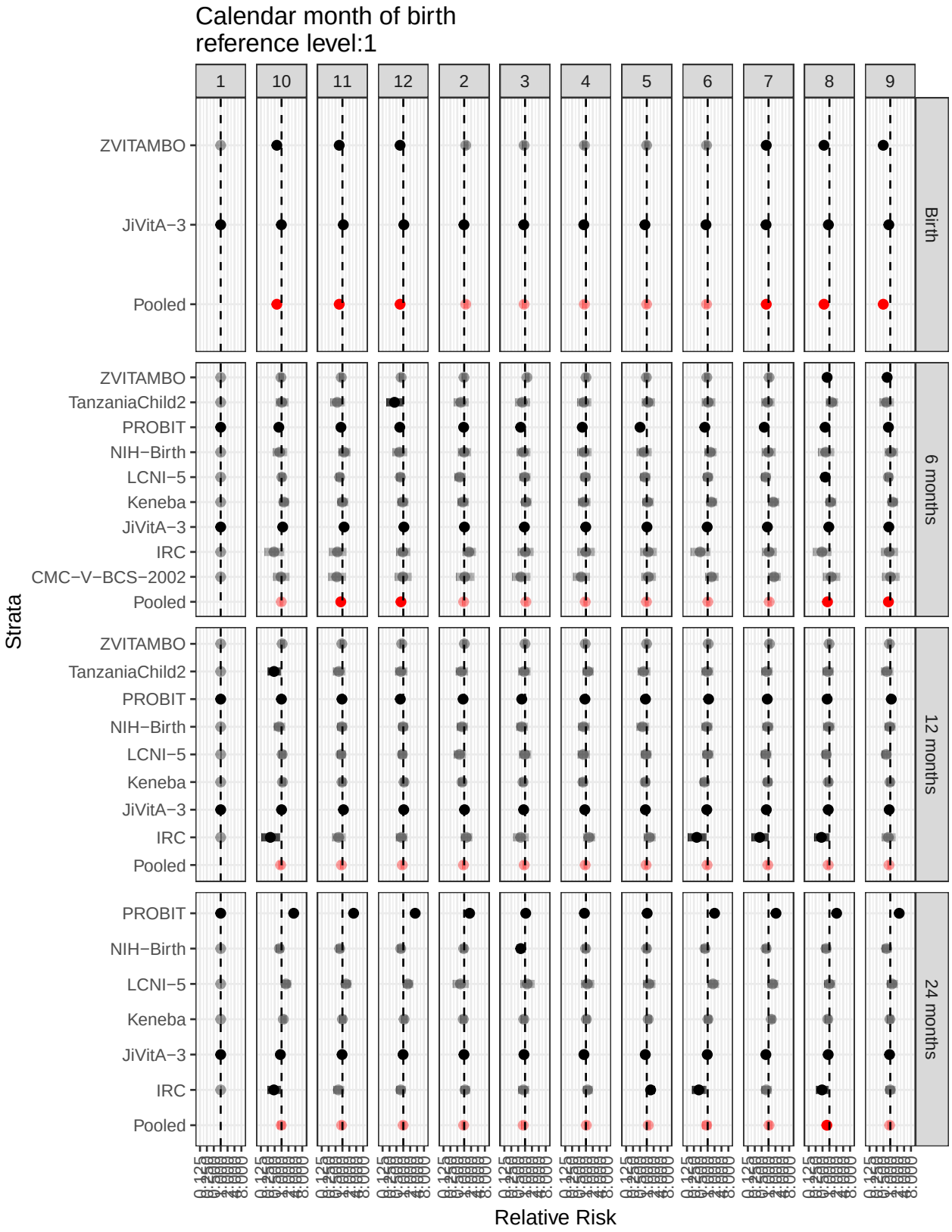

Father's education
reference level:Q4
Q1
Q2
Q3
Q4
Birth
6 months
12 months
24 months
Strata
JiVitA−3
Pooled
SAS−CompFeed
COHORTS−PHILIPPINES
COHORTS−INDIA
ZVITAMBO
NIH−Crypto
GMS−Nepal
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

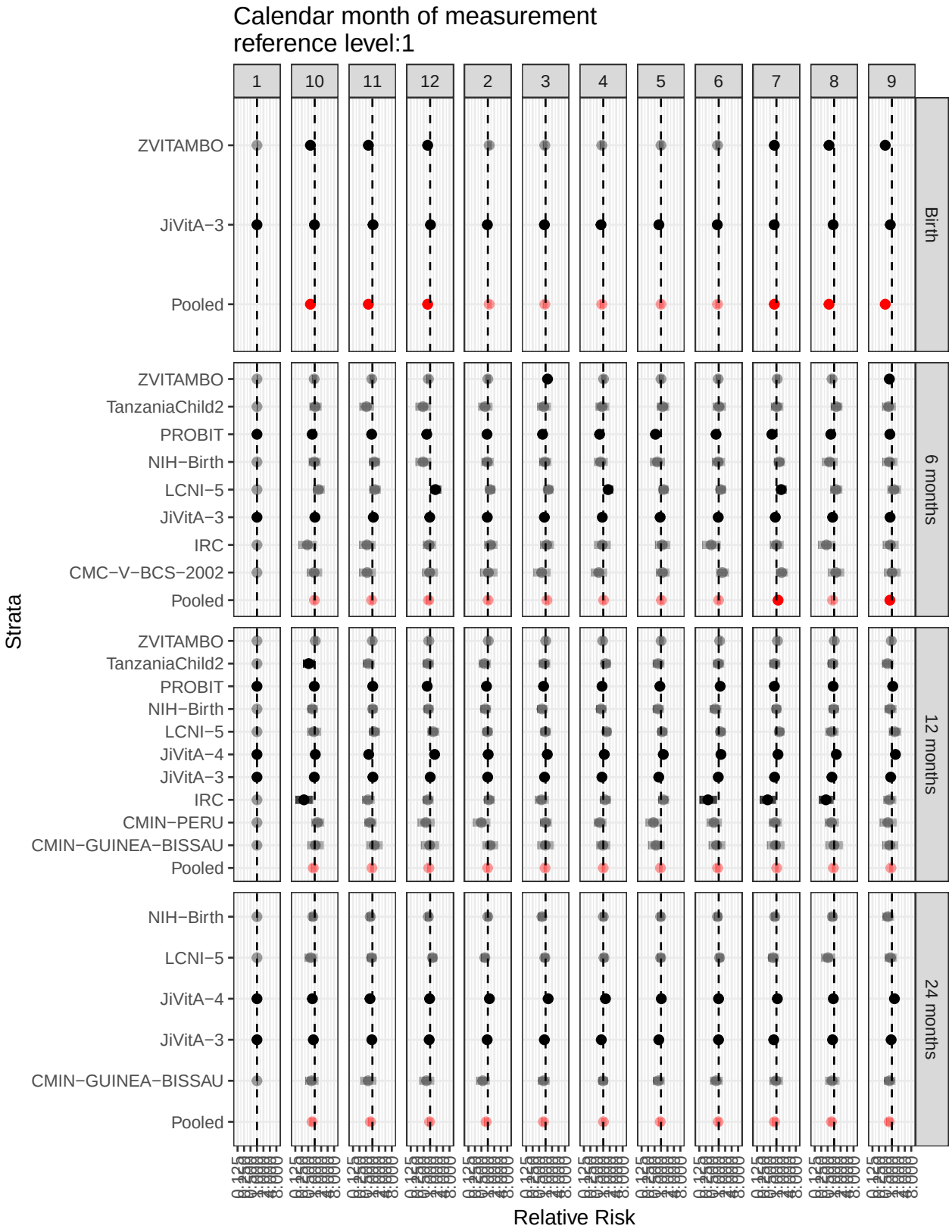
Point prevalence of stunting

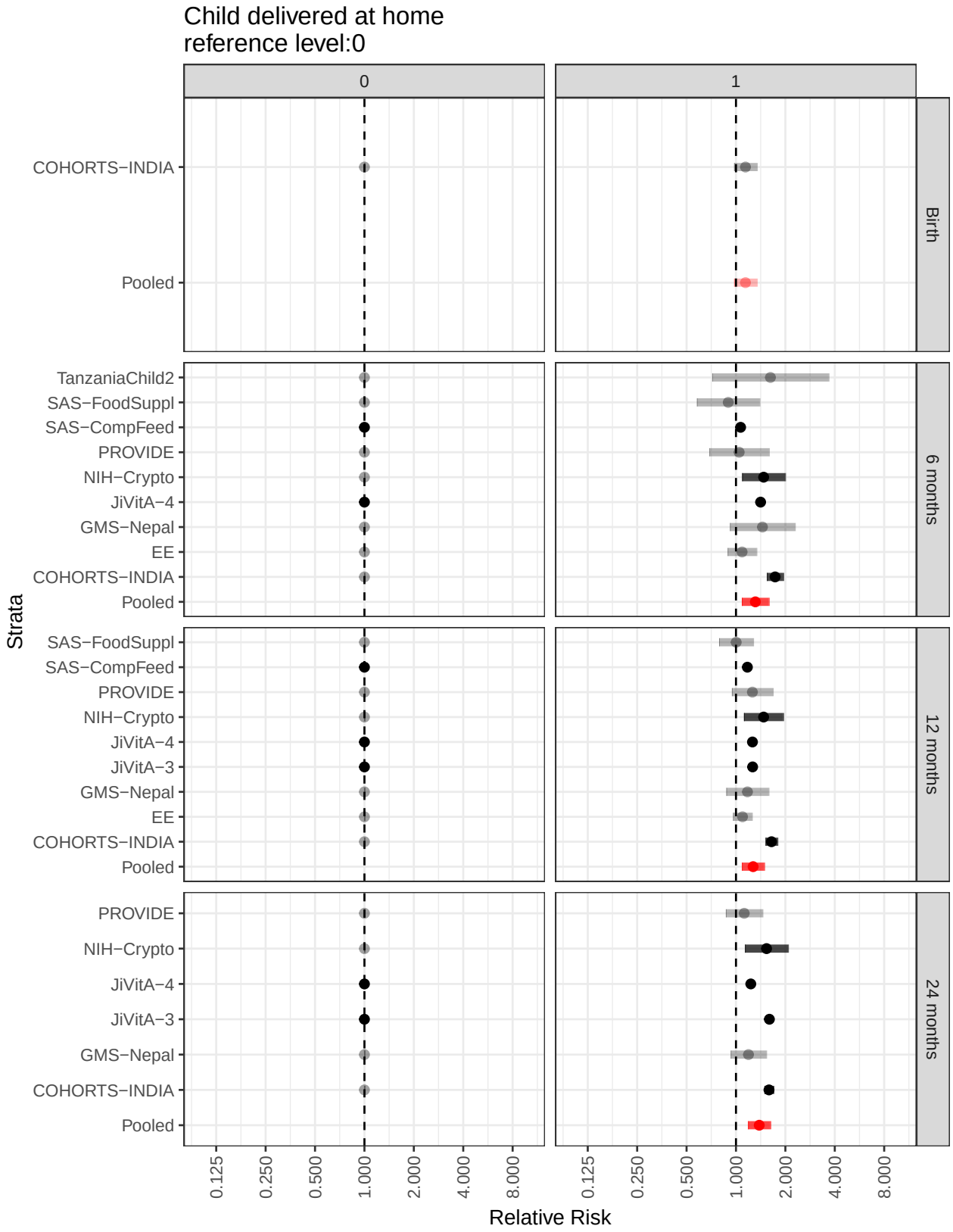
Child characteristics

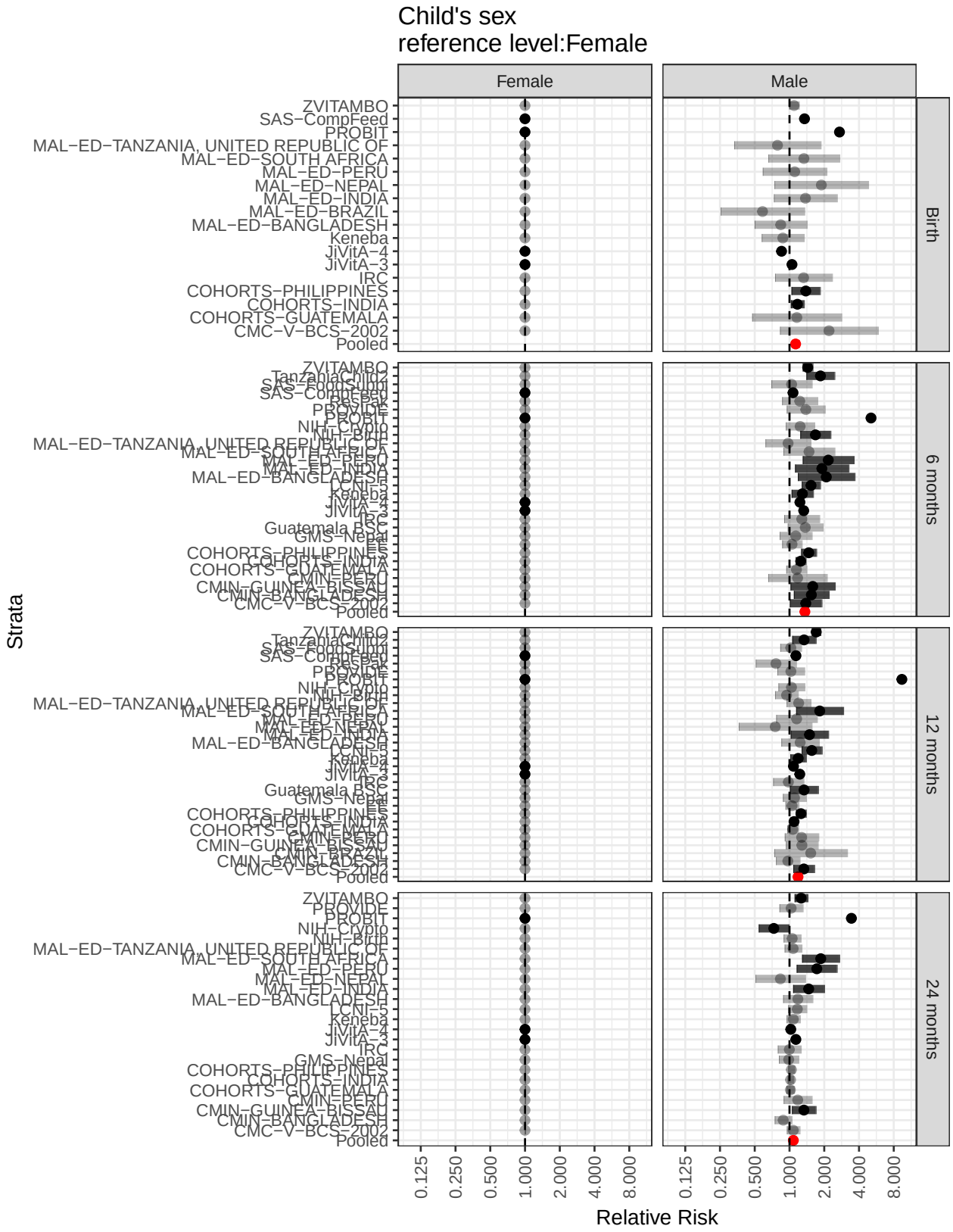


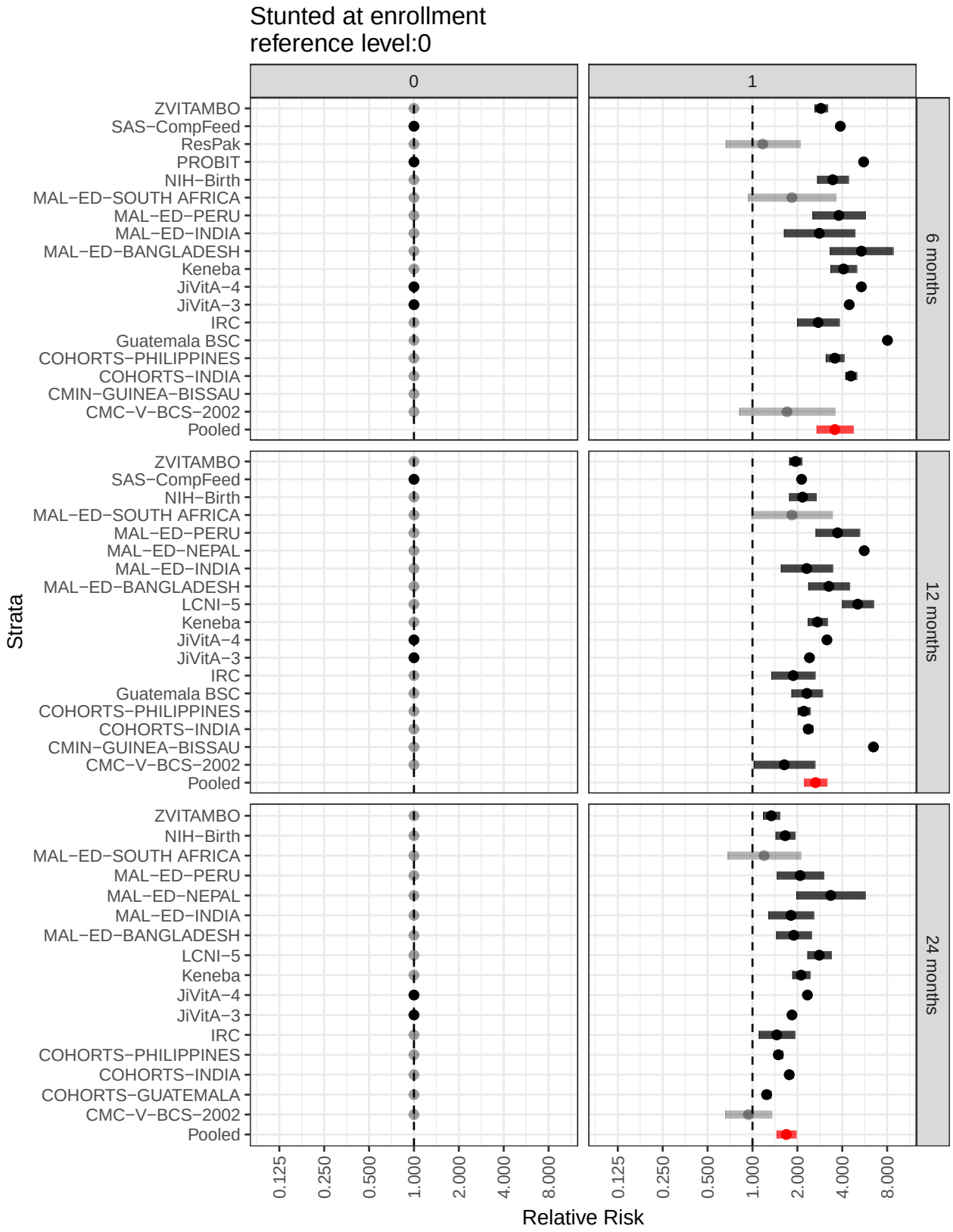

Birthweight
reference level:>=0
[−1−0)
[−2−−1)
[−3−−2)
<−3
>=0
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
COHORTS−INDIA
Pooled
TanzaniaChild2
SAS−CompFeed
NIH−Crypto
Keneba
JiVitA−4
JiVitA−3
IRC
EE
COHORTS−PHILIPPINES
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

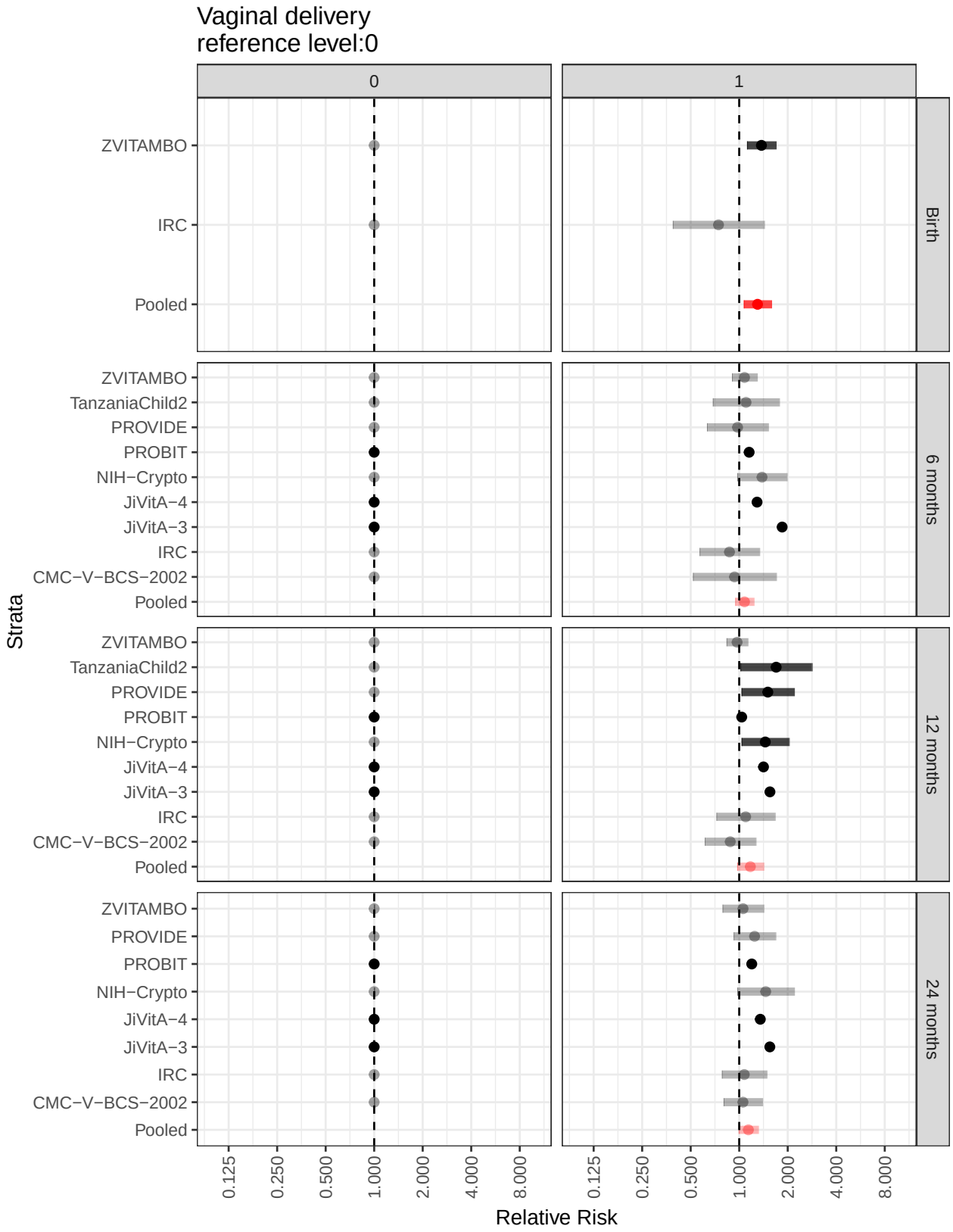

Calendar month of birth
reference level:1
1
10
11
12
2
3
4
5
6
7
8
9
Birth
6 months
12 months
24 months
ZVITAMBO
TanzaniaChild2
PROBIT
NIH−Birth
LCNI−5
Keneba
JiVitA−3
IRC
CMC−V−BCS−2002
Pooled
Strata
Relative Risk


Calendar month of measurement
reference level:1
1
10
11
12
2
3
4
5
6
7
8
9
Birth
6 months
12 months
24 months
ZVITAMBO
JiVitA−3
Pooled
TanzaniaChild2
PROBIT
NIH−Birth
LCNI−5
IRC
CMC−V−BCS−2002
JiVitA−4
CMIN−PERU
CMIN−GUINEA−BISSAU
Strata
Relative Risk

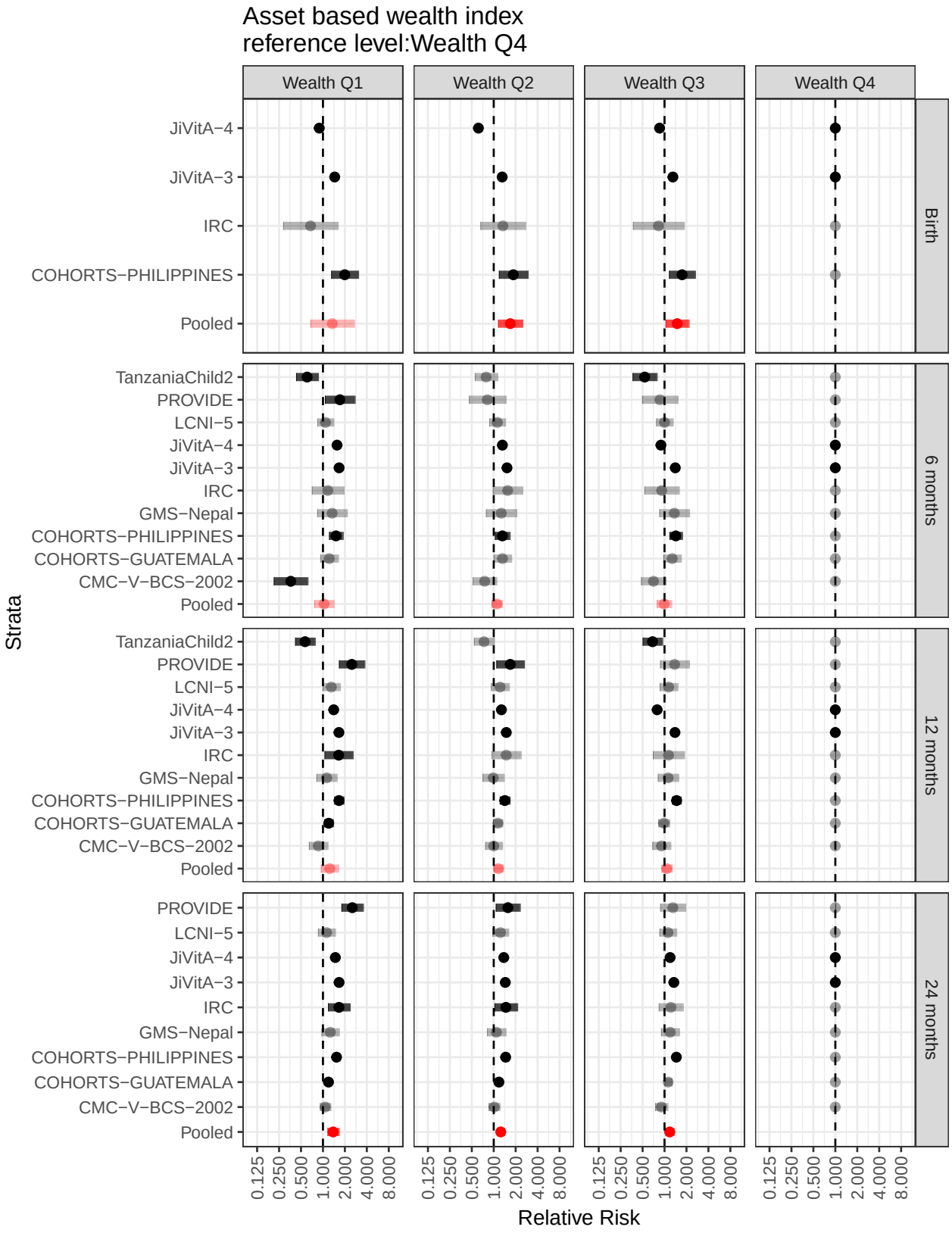

Child delivered at home
reference level:0
0
1
Birth
6 months
12 months
24 months
COHORTS−INDIA
Pooled
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
NIH−Crypto
JiVitA−4
JiVitA−3
GMS−Nepal
EE
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

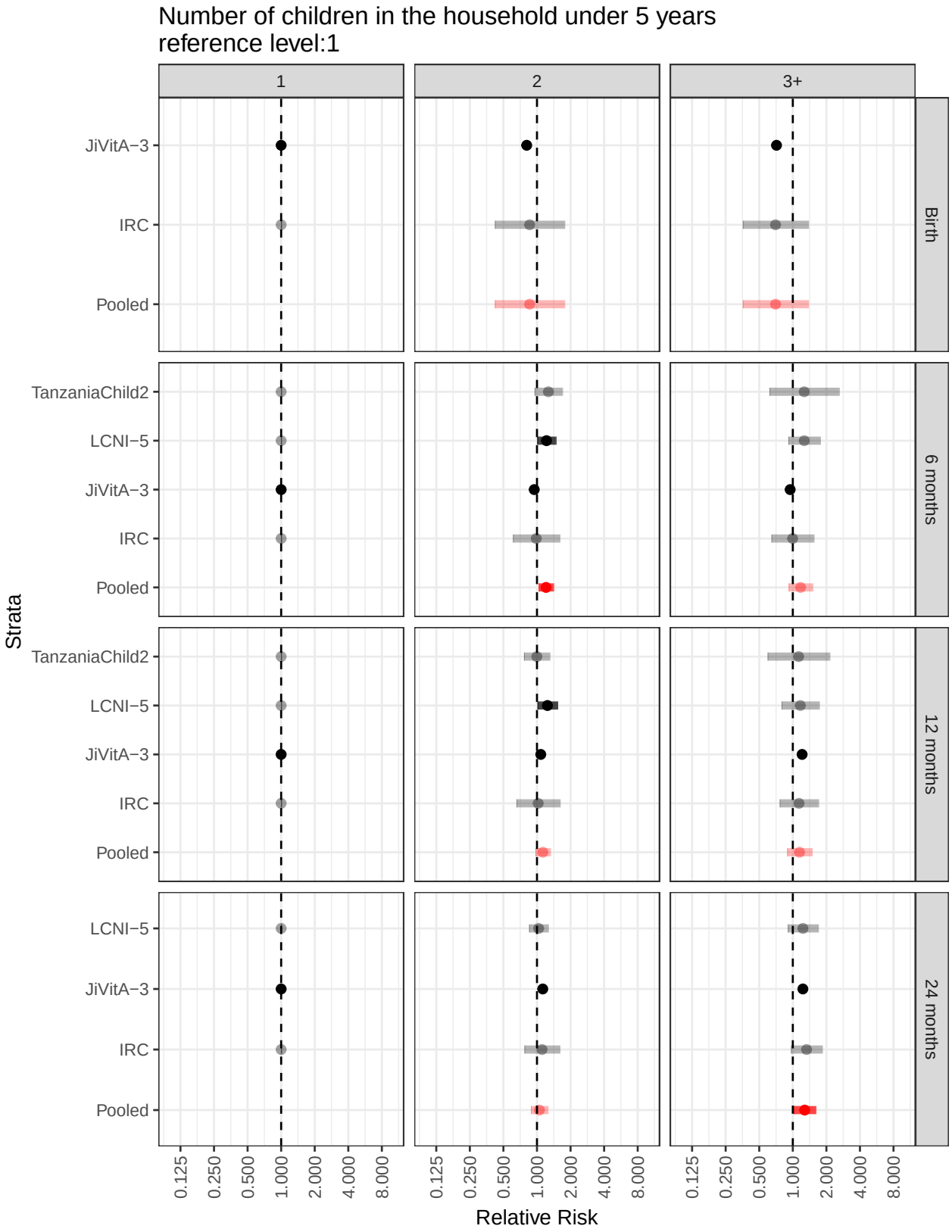

Child's sex
reference level:Female
Female
Male
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
SAS−CompFeed
PROBIT
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
MAL−ED−BRAZIL
MAL−ED−BANGLADESH
Keneba
JiVitA−4
JiVitA−3
IRC
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
CMC−V−BCS−2002
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

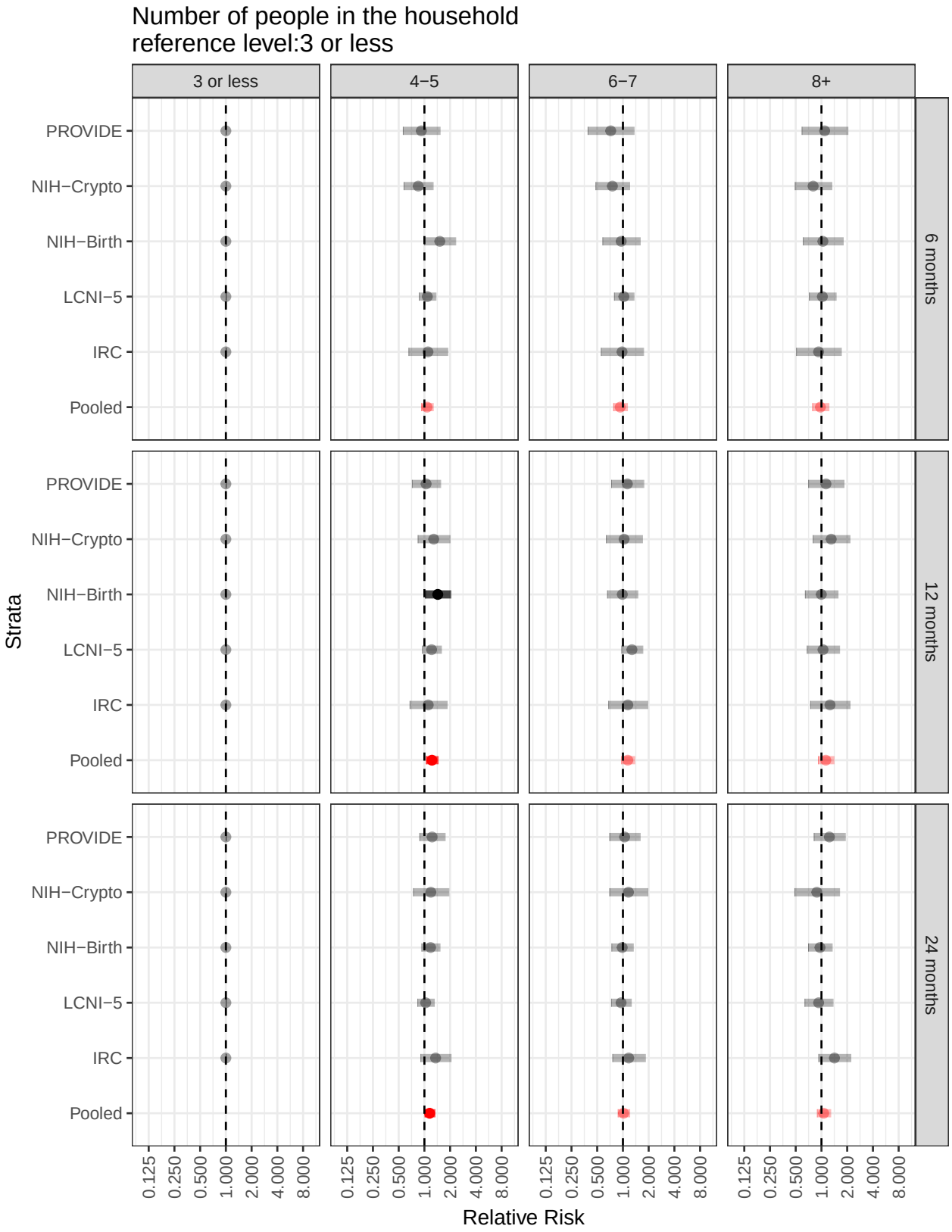

Stunted at enrollment
reference level:0
0
1
6 months
12 months
24 months
Strata
ZVITAMBO
SAS−CompFeed
ResPak
PROBIT
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BANGLADESH
Keneba
JiVitA−4
JiVitA−3
IRC
Guatemala BSC
COHORTS−PHILIPPINES
COHORTS−INDIA
CMIN−GUINEA−BISSAU
CMC−V−BCS−2002
Pooled
MAL−ED−NEPAL
LCNI−5
COHORTS−GUATEMALA
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

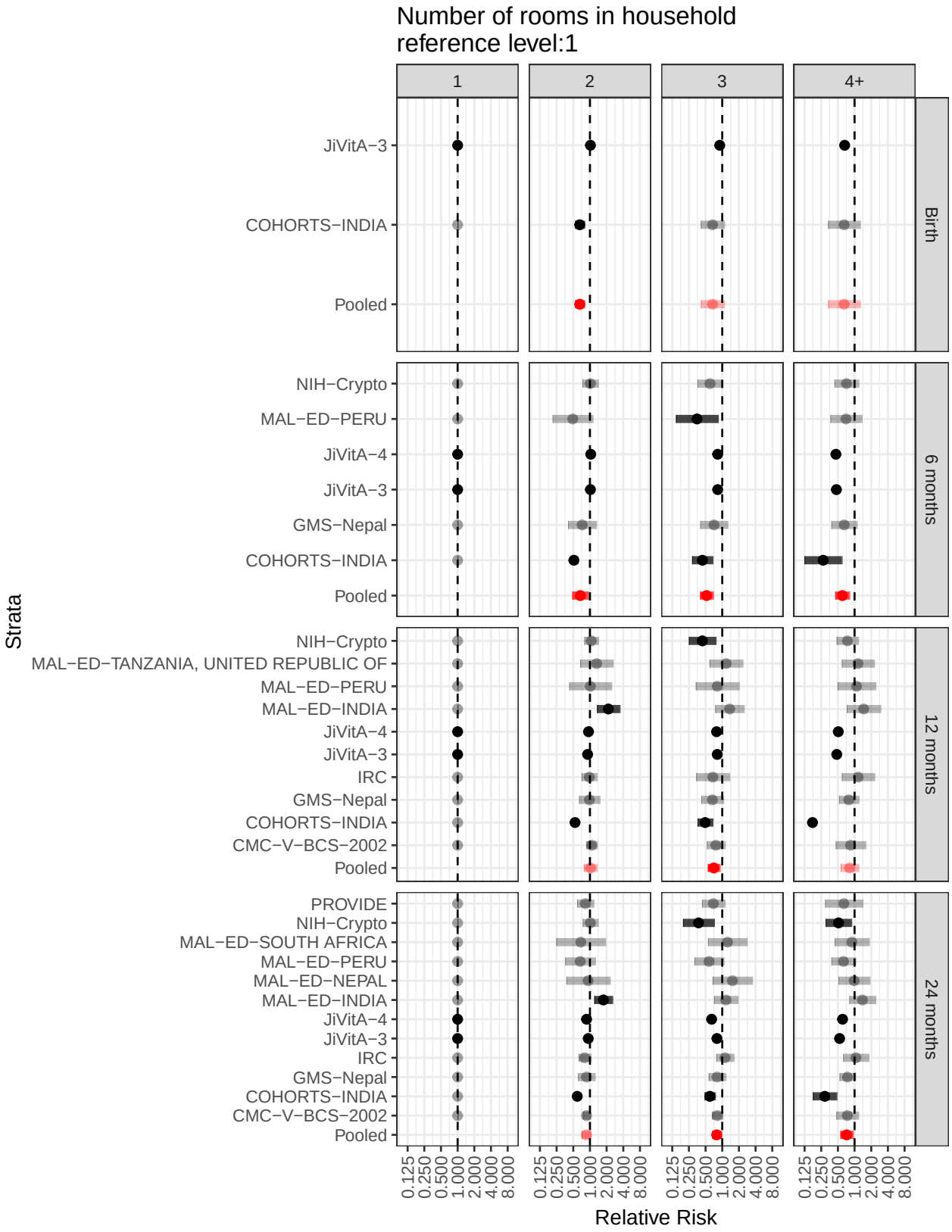

Vaginal delivery
reference level:0
0
1
Birth
6 months
12 months
24 months
ZVITAMBO
TanzaniaChild2
PROVIDE
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
IRC
CMC−V−BCS−2002
Pooled
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

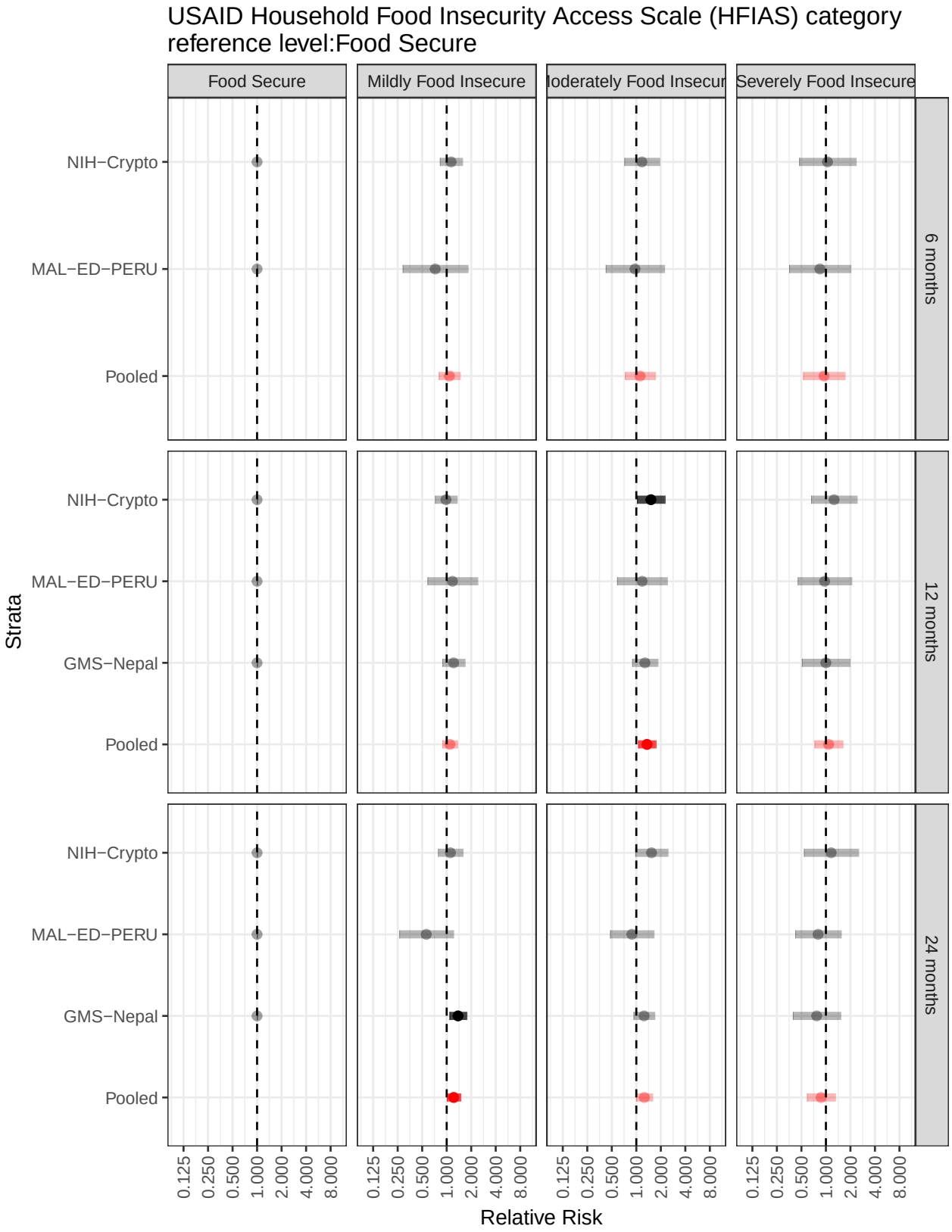
Household characteristics



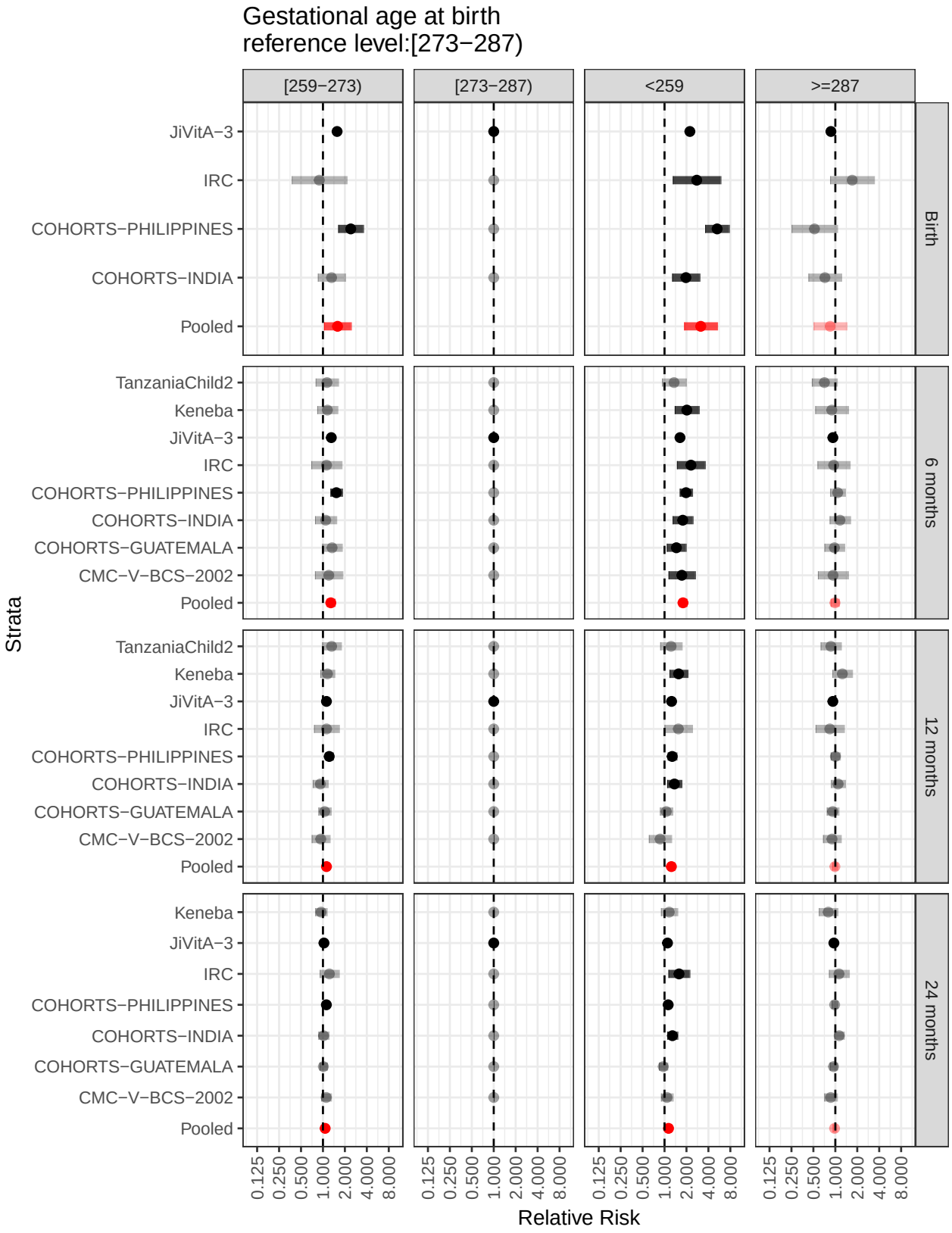

Number of children in the household under 5 years
reference level:1
1
2
3+
Birth
6 months
12 months
24 months
Strata
JiVitA−3
IRC
Pooled
TanzaniaChild2
LCNI−5
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

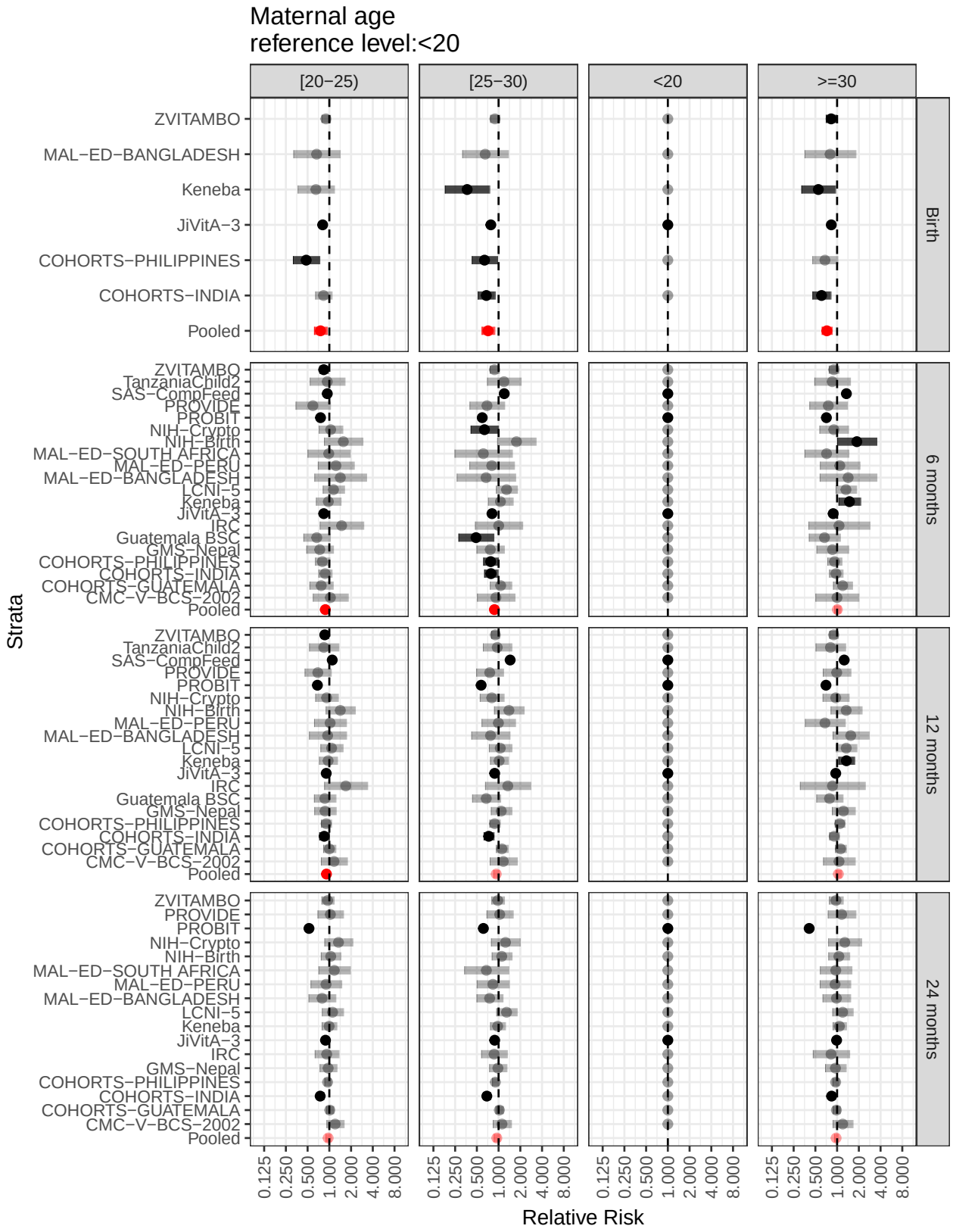

Number of people in the household
reference level:3 or less
3 or less
4−5
6−7
8+
6 months
12 months
24 months
PROVIDE
NIH−Crypto
NIH−Birth
LCNI−5
IRC
Pooled
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

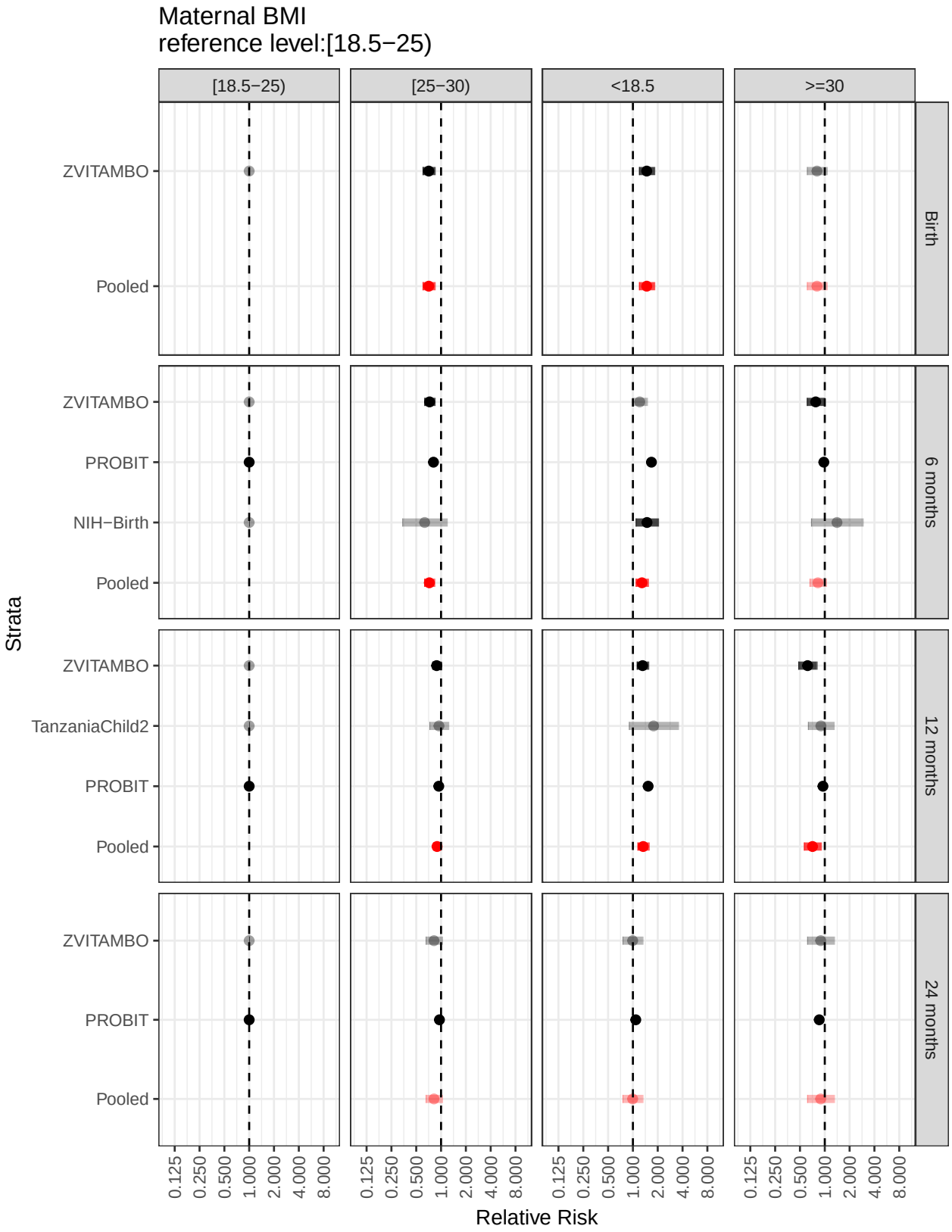

Number of rooms in household
reference level:1
1
2
3
4+
Birth
6 months
12 months
24 months
Strata
JiVitA−3
COHORTS−INDIA
Pooled
NIH−Crypto
MAL−ED−PERU
JiVitA−4
JiVitA−3
GMS−Nepal
COHORTS−INDIA
Pooled
NIH−Crypto
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
COHORTS−INDIA
CMC−V−BCS−2002
Pooled
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
COHORTS−INDIA
CMC−V−BCS−2002
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

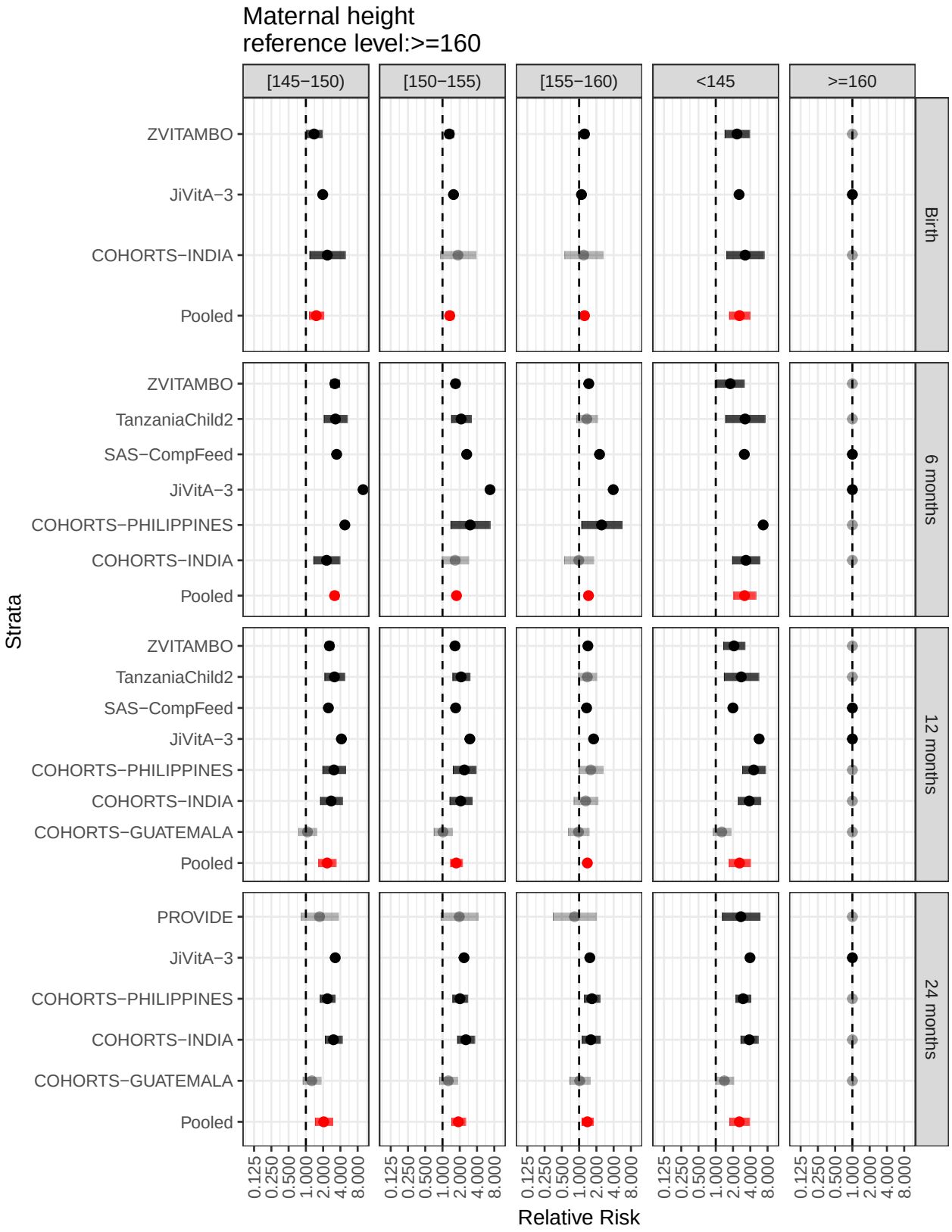

USAID Household Food Insecurity Access Scale (HFIAS) category
reference level:Food Secure
Food Secure
Mildly Food Insecure
loderately Food Insecur
Severely Food Insecure
6 months
12 months
24 months
Strata
NIH−Crypto
MAL−ED−PERU
GMS−Nepal
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

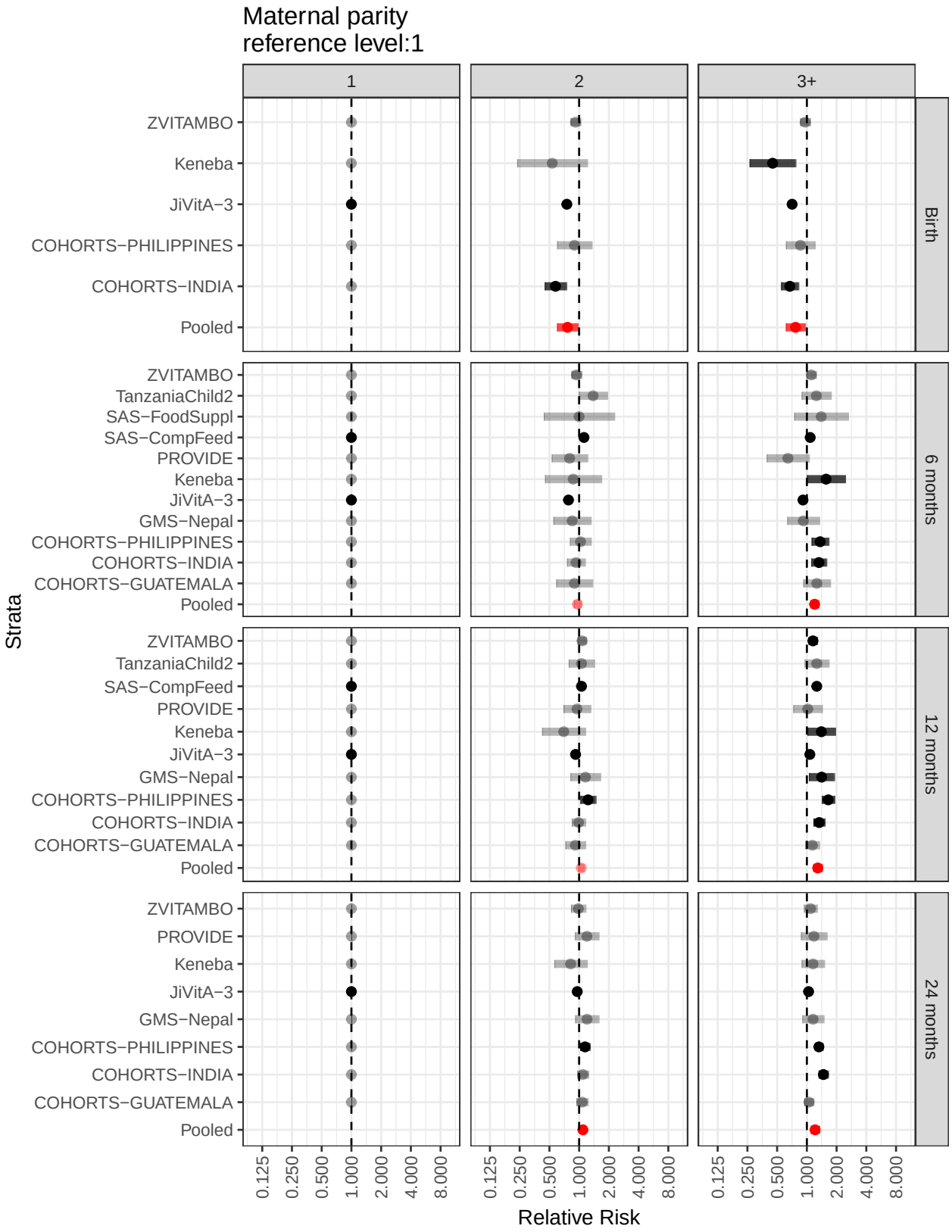
Maternal characteristics

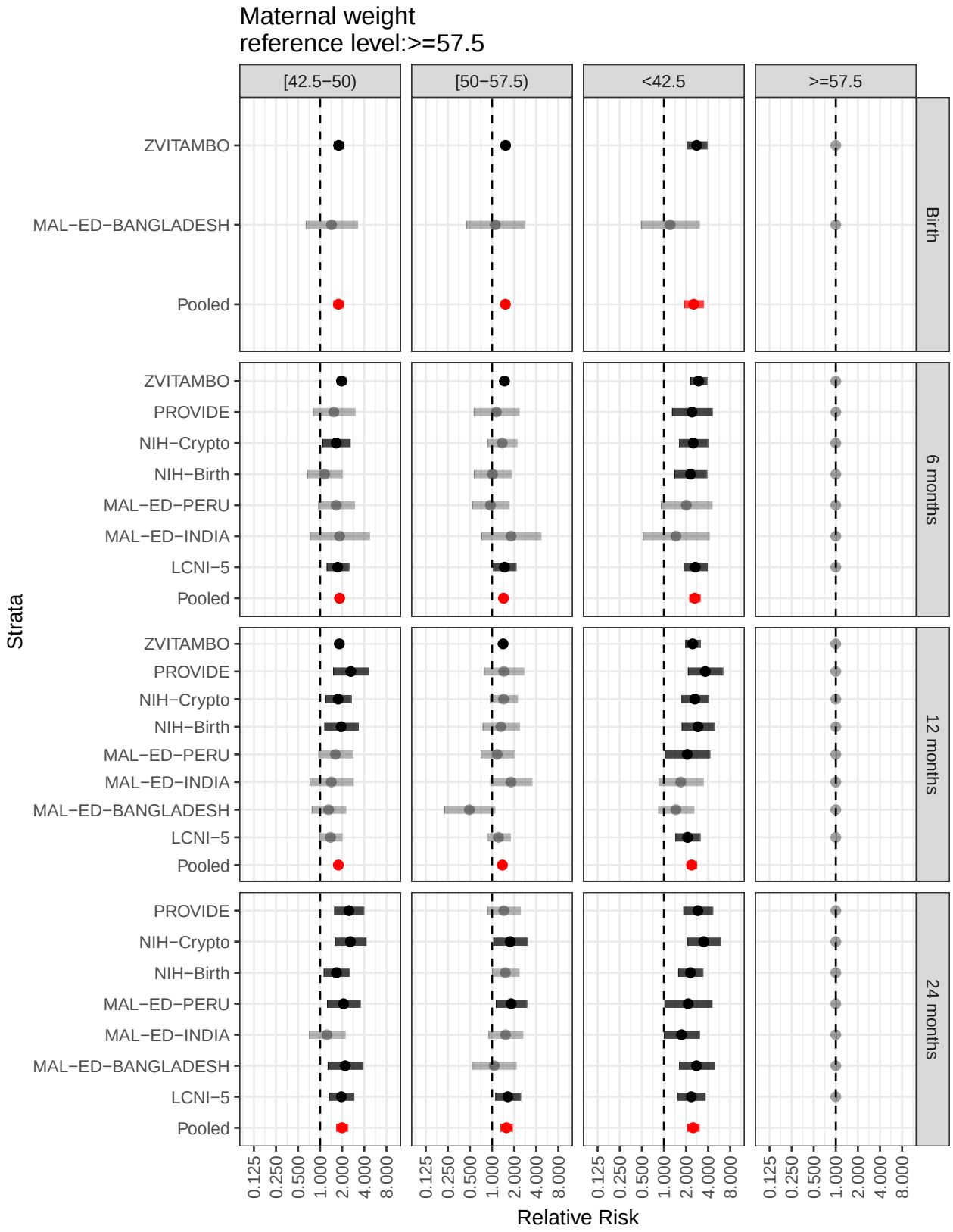


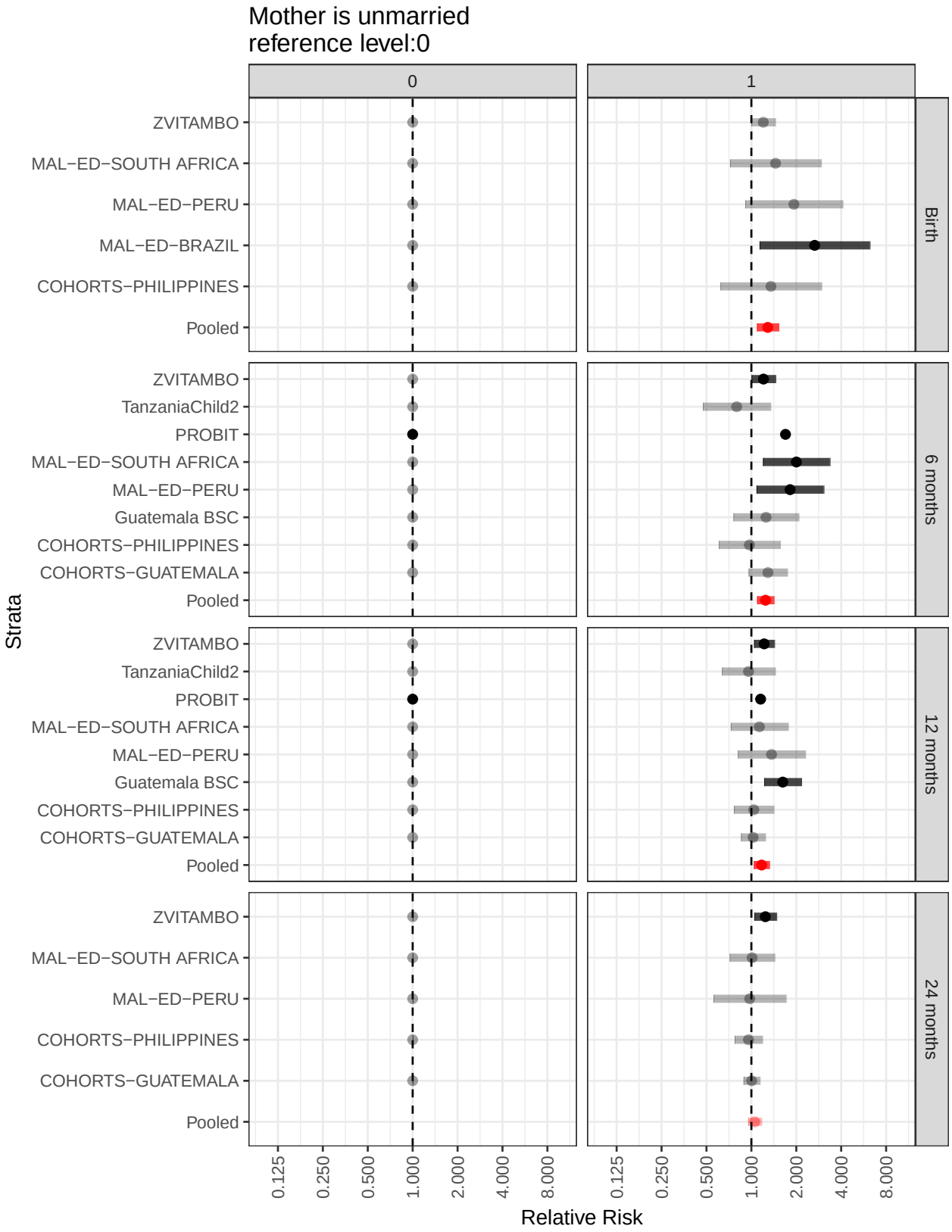

Maternal age
reference level:<20
[20−25)
[25−30)
<20
>=30
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
MAL−ED−BANGLADESH
Keneba
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
TanzaniaChild2
SAS−CompFeed
PROVIDE
PROBIT
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
LCNI−5
IRC
Guatemala BSC
GMS−Nepal
COHORTS−GUATEMALA
CMC−V−BCS−2002
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

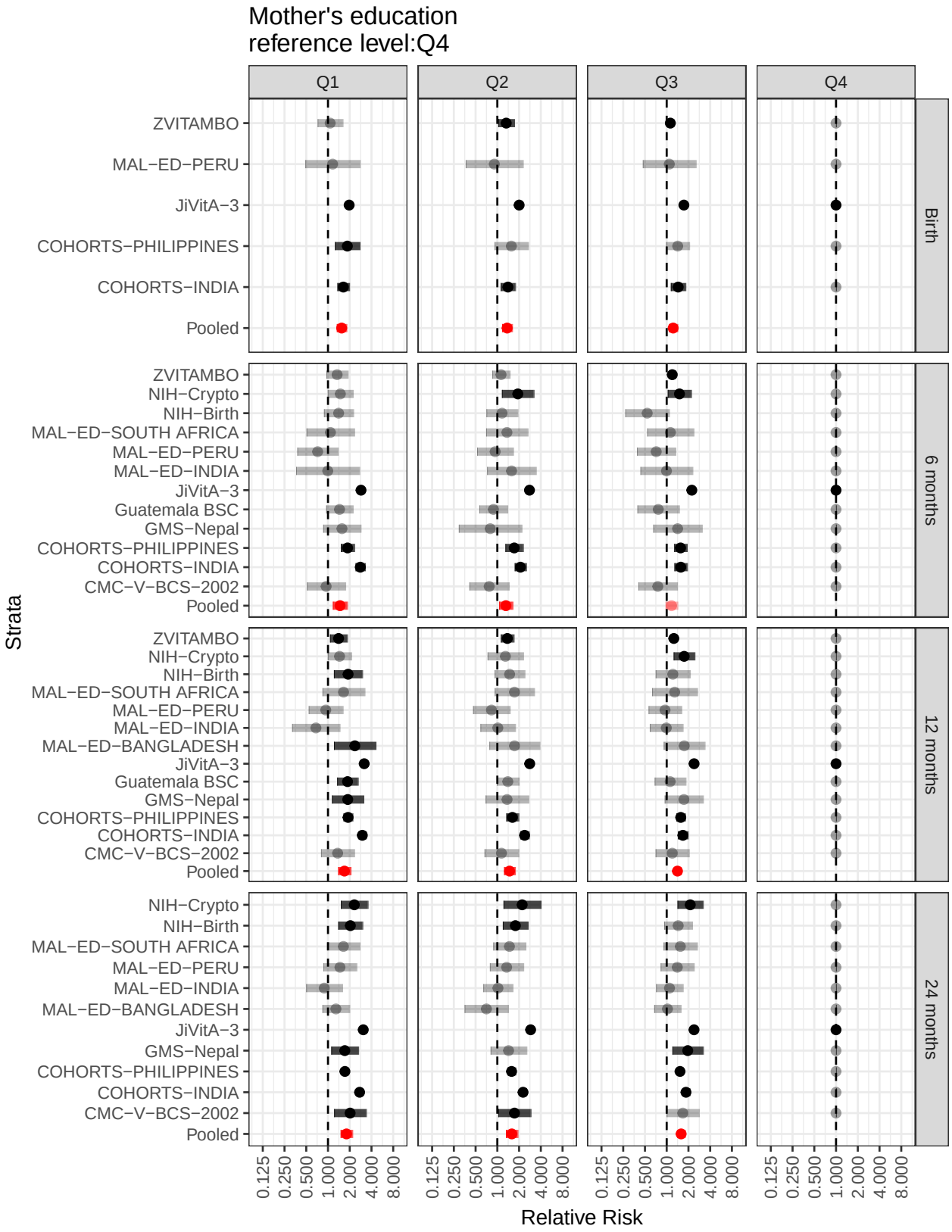

Maternal BMI
reference level:[18.5−25)
[18.5−25)
[25−30)
<18.5
>=30
Birth
6 months
12 months
24 months
ZVITAMBO
Pooled
PROBIT
NIH−Birth
TanzaniaChild2
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk


Maternal height
reference level:>=160
[145−150)
[150−155)
[155−160)
<145
>=160
Birth
6 months
12 months
24 months
ZVITAMBO
JiVitA−3
COHORTS−INDIA
Pooled
TanzaniaChild2
SAS−CompFeed
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
PROVIDE
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

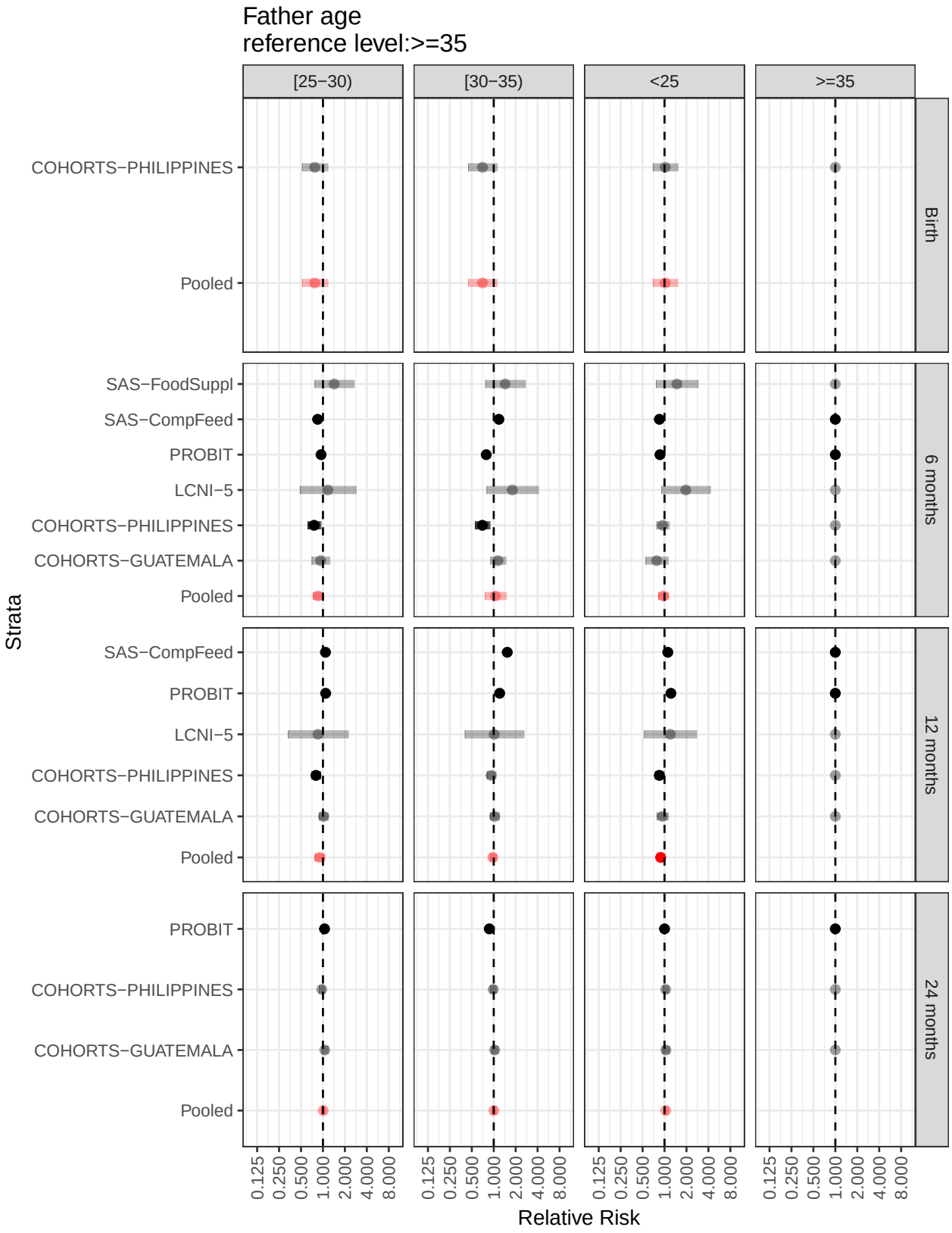

Maternal parity
reference level:1
1
2
3+
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
Keneba
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
GMS−Nepal
COHORTS−GUATEMALA
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

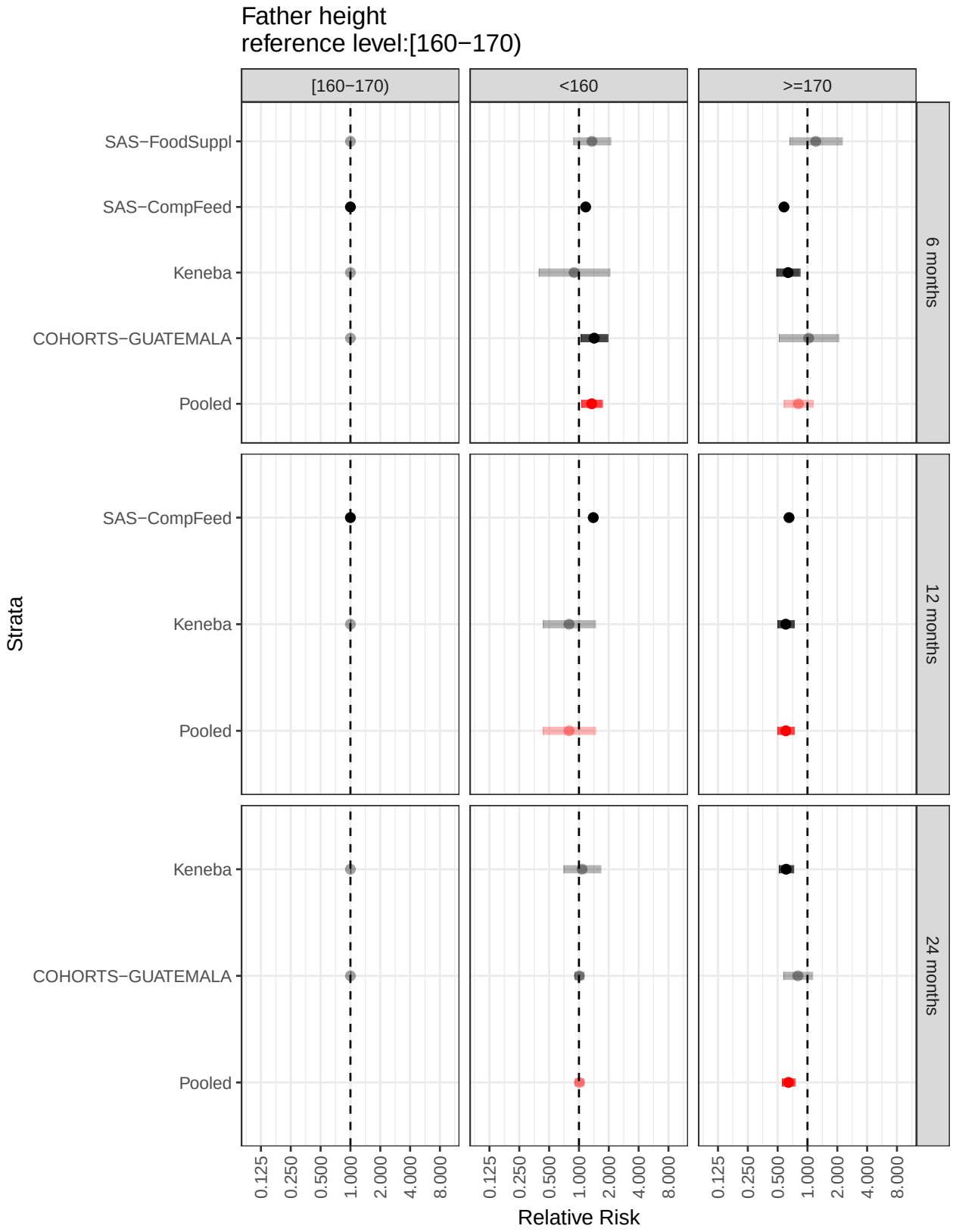

Maternal weight
reference level:>=57.5
[42.5−50)
[50−57.5)
<42.5
>=57.5
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
MAL−ED−BANGLADESH
Pooled
PROVIDE
NIH−Crypto
NIH−Birth
MAL−ED−PERU
MAL−ED−INDIA
LCNI−5
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

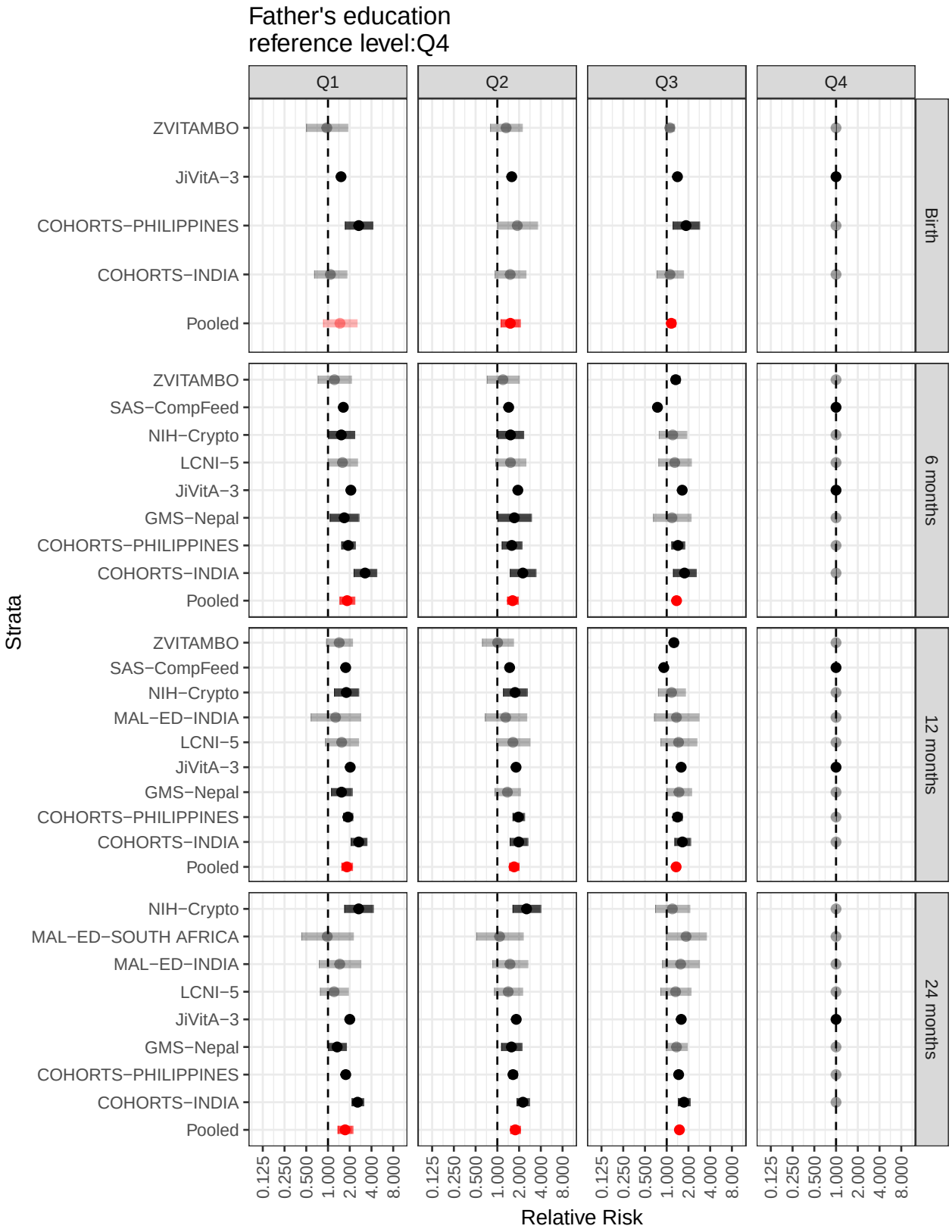

Mother is unmarried
reference level:0
0
1
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−BRAZIL
COHORTS−PHILIPPINES
Pooled
TanzaniaChild2
PROBIT
Guatemala BSC
COHORTS−GUATEMALA
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk


Mother's education
reference level:Q4
Q1
Q2
Q3
Q4
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
MAL−ED−PERU
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−INDIA
Guatemala BSC
GMS−Nepal
CMC−V−BCS−2002
MAL−ED−BANGLADESH
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

Paternal characteristics



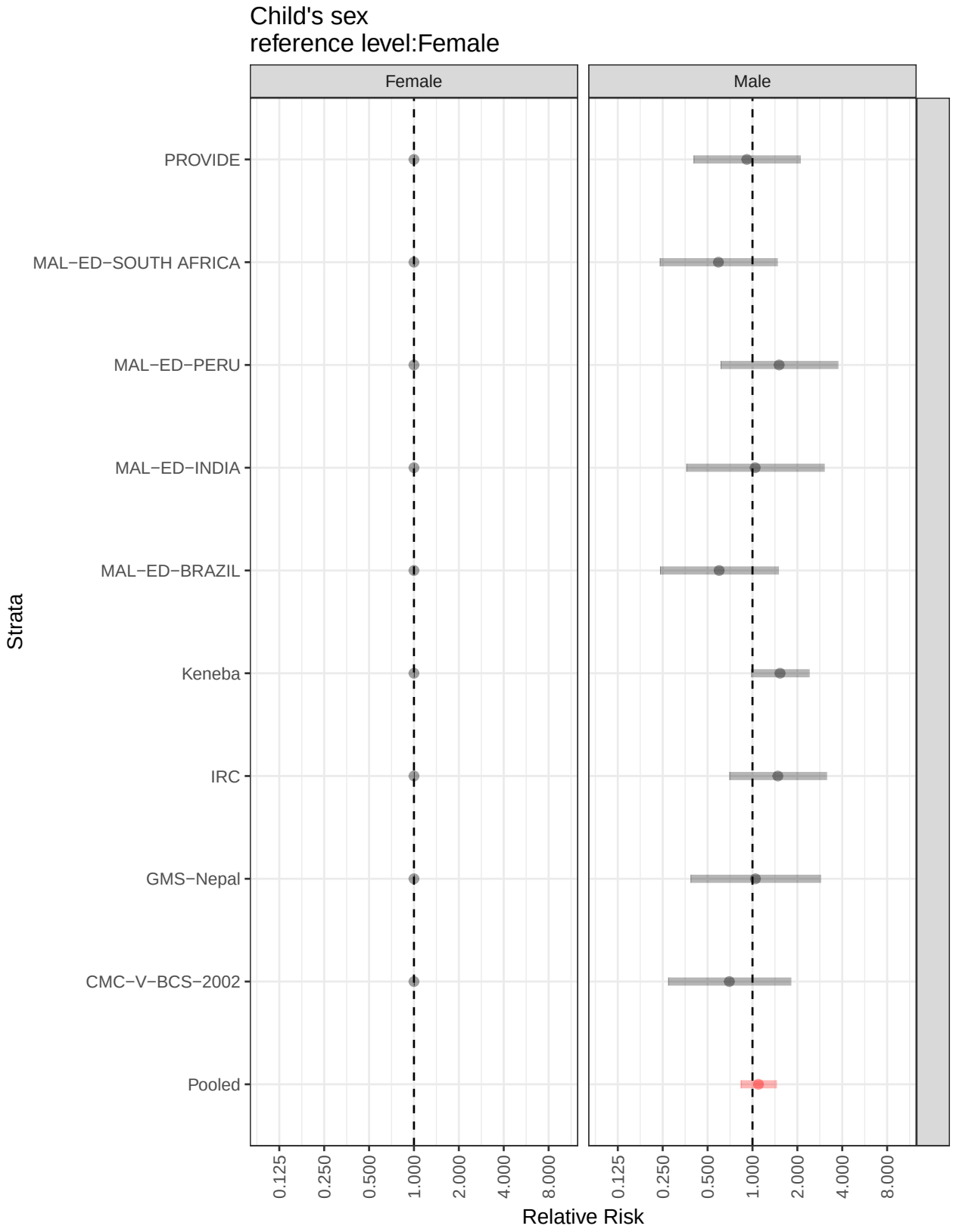

Father height
reference level:[160−170)
[160−170)
<160
>=170
6 months
12 months
24 months
Strata
SAS−FoodSuppl
SAS−CompFeed
Keneba
COHORTS−GUATEMALA
Pooled
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

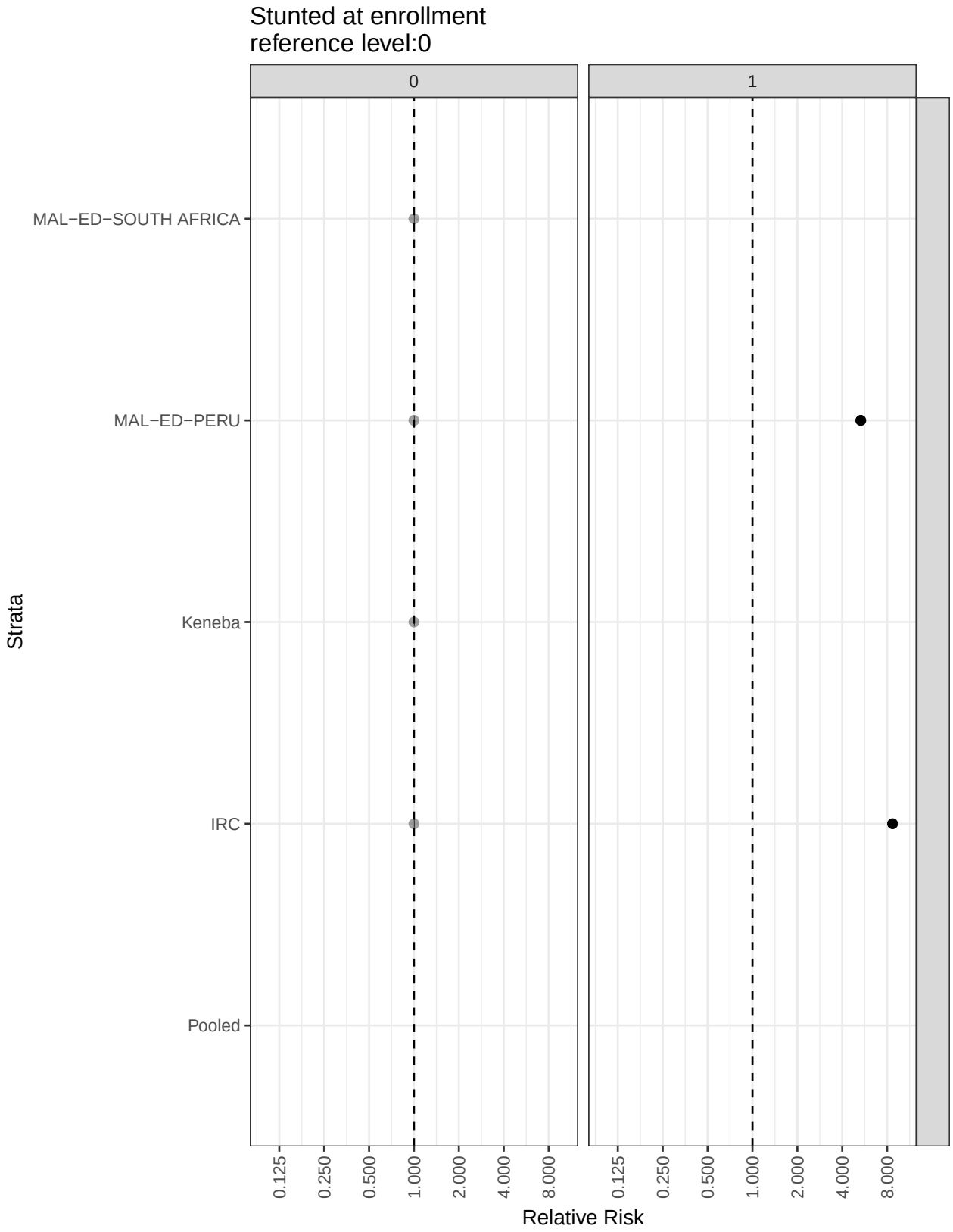

Father's education
reference level:Q4
Q1
Q2
Q3
Q4
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Pooled
SAS−CompFeed
NIH−Crypto
LCNI−5
GMS−Nepal
MAL−ED−INDIA
MAL−ED−SOUTH AFRICA
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

Proportion of children who were stunted

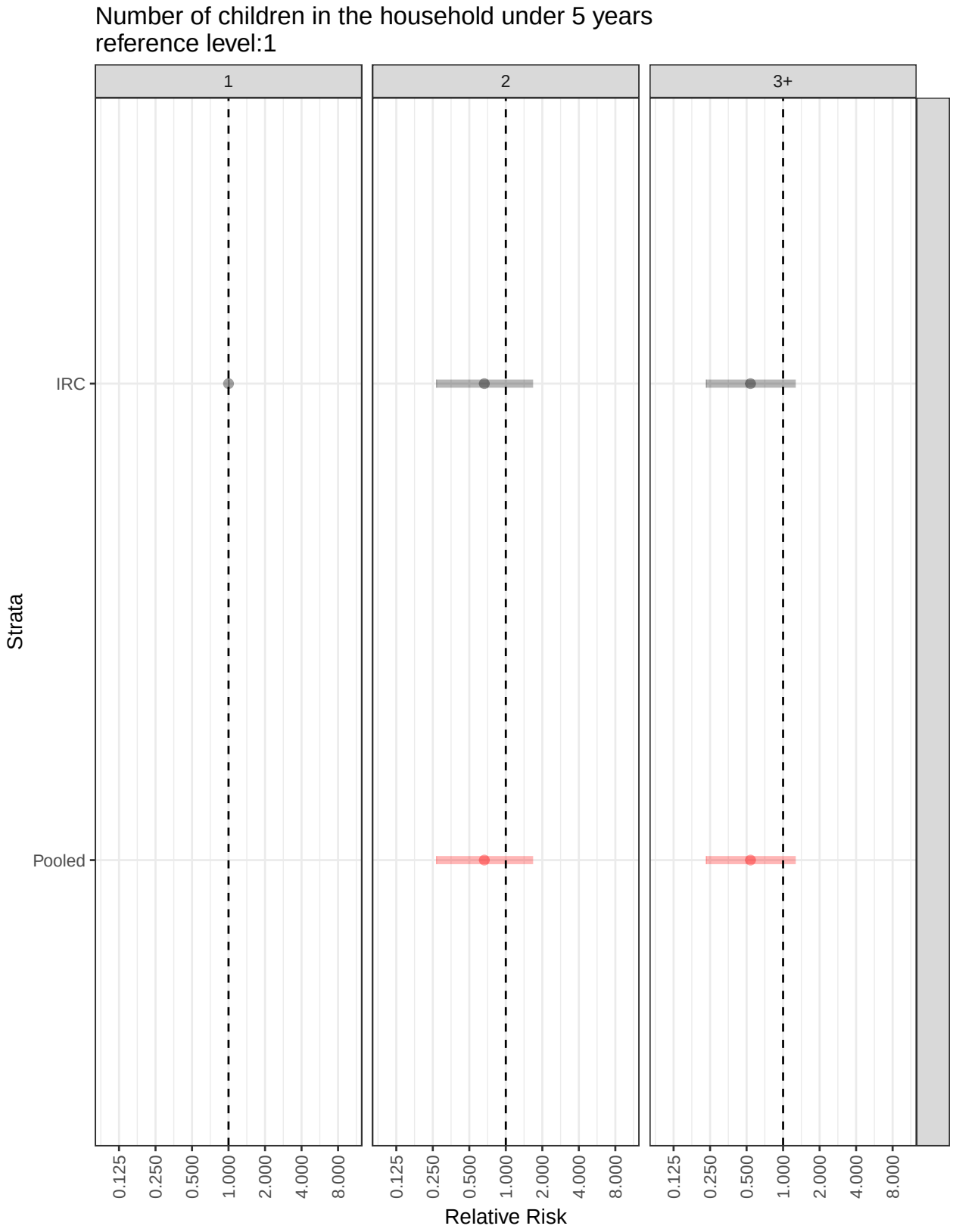
between birth and 3 months who recovered by 24 months

Child characteristics

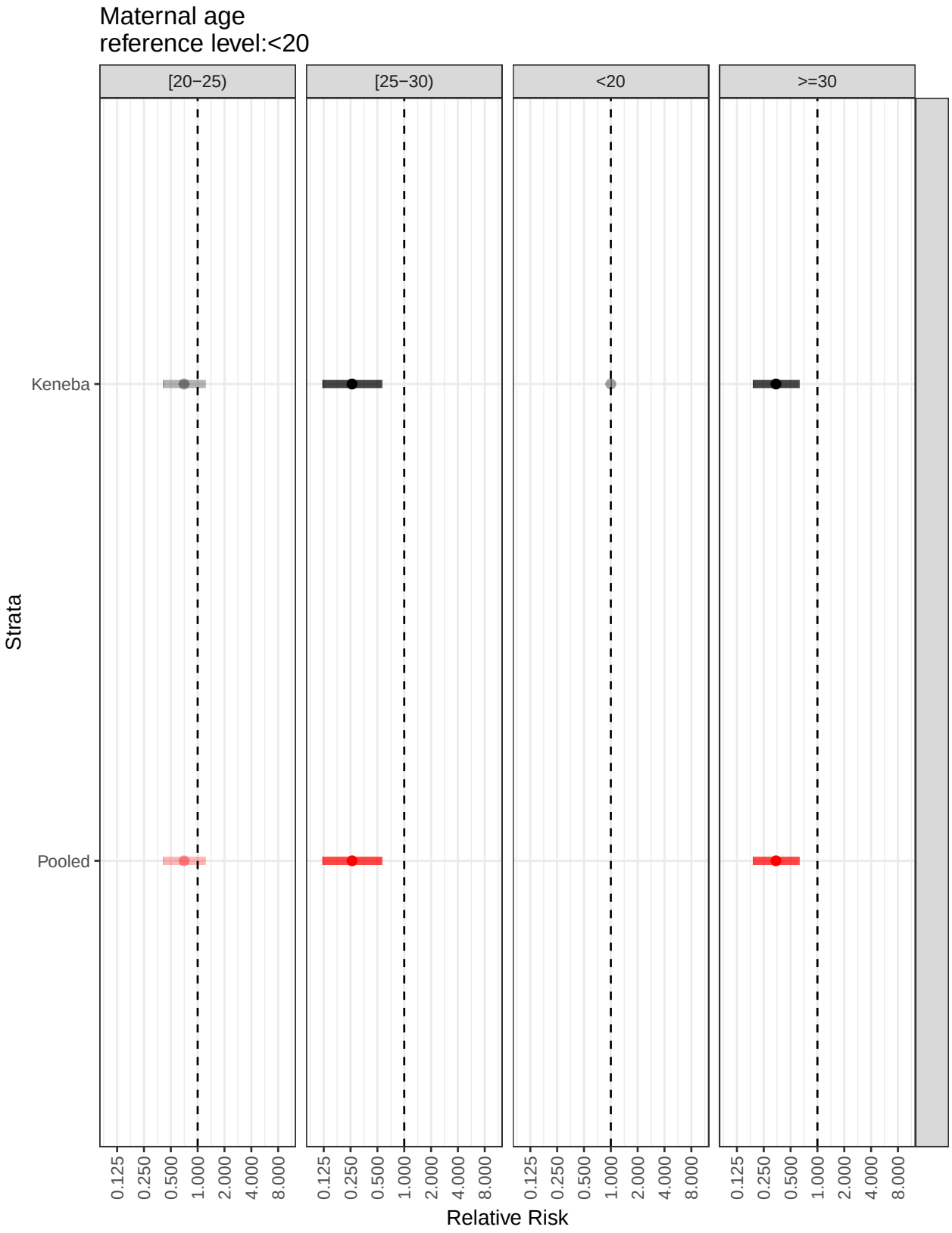



Stunted at enrollment
reference level:0
0
1
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
Keneba
IRC
Pooled
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

Household characteristics



Maternal characteristics



Maternal parity
reference level:1
1
2
3+
Keneba
Pooled
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

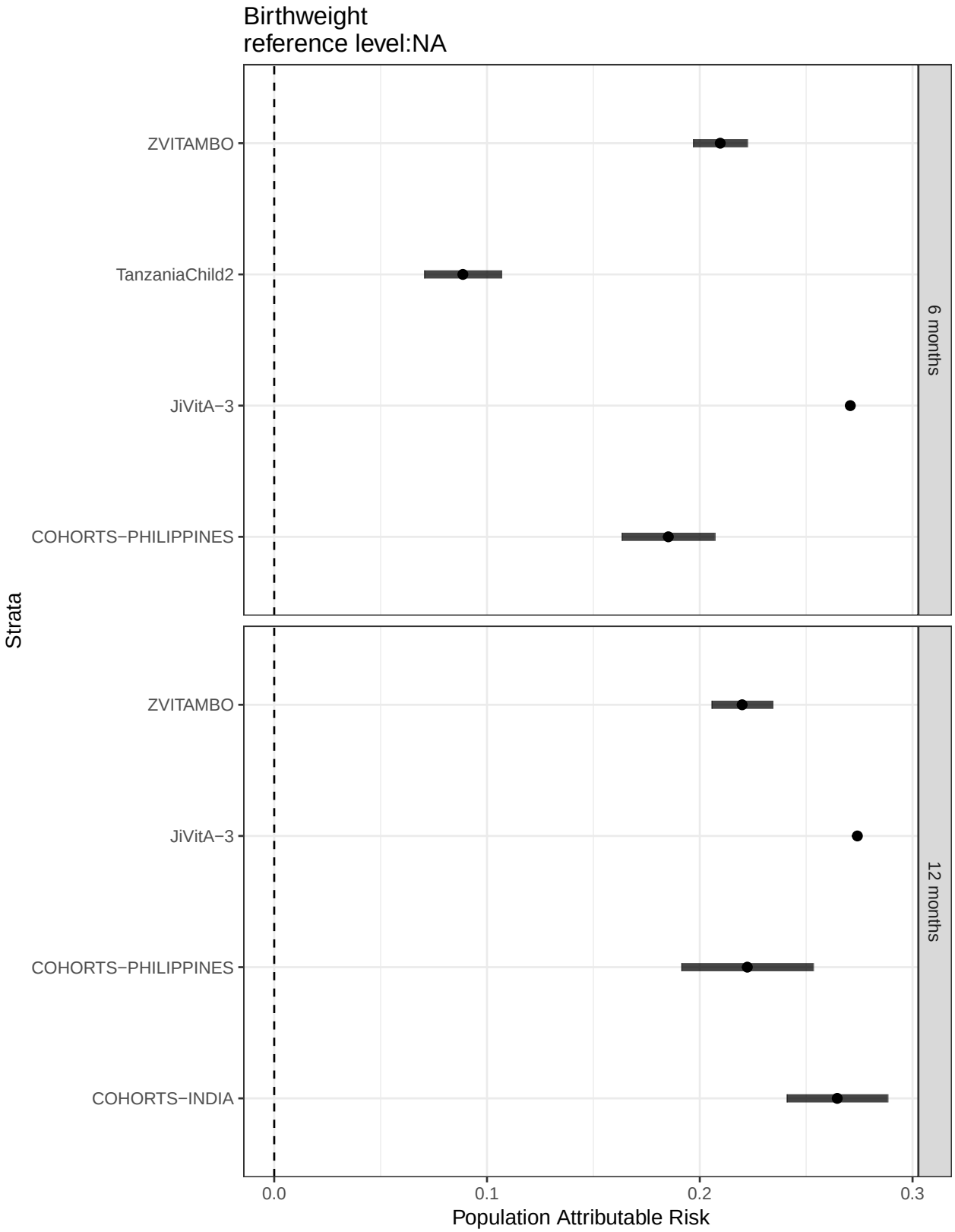
Mother is unmarried
reference level:0
0
1
MAL−ED−SOUTH AFRICA
Pooled
Strata
0.125
0.250
0.500
1.000
2.000
4.000
8.000
Relative Risk

Appendix 2 - Population Attributable Risk Forest Plots

Cumulative incidence of stunting

Child characteristics

```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
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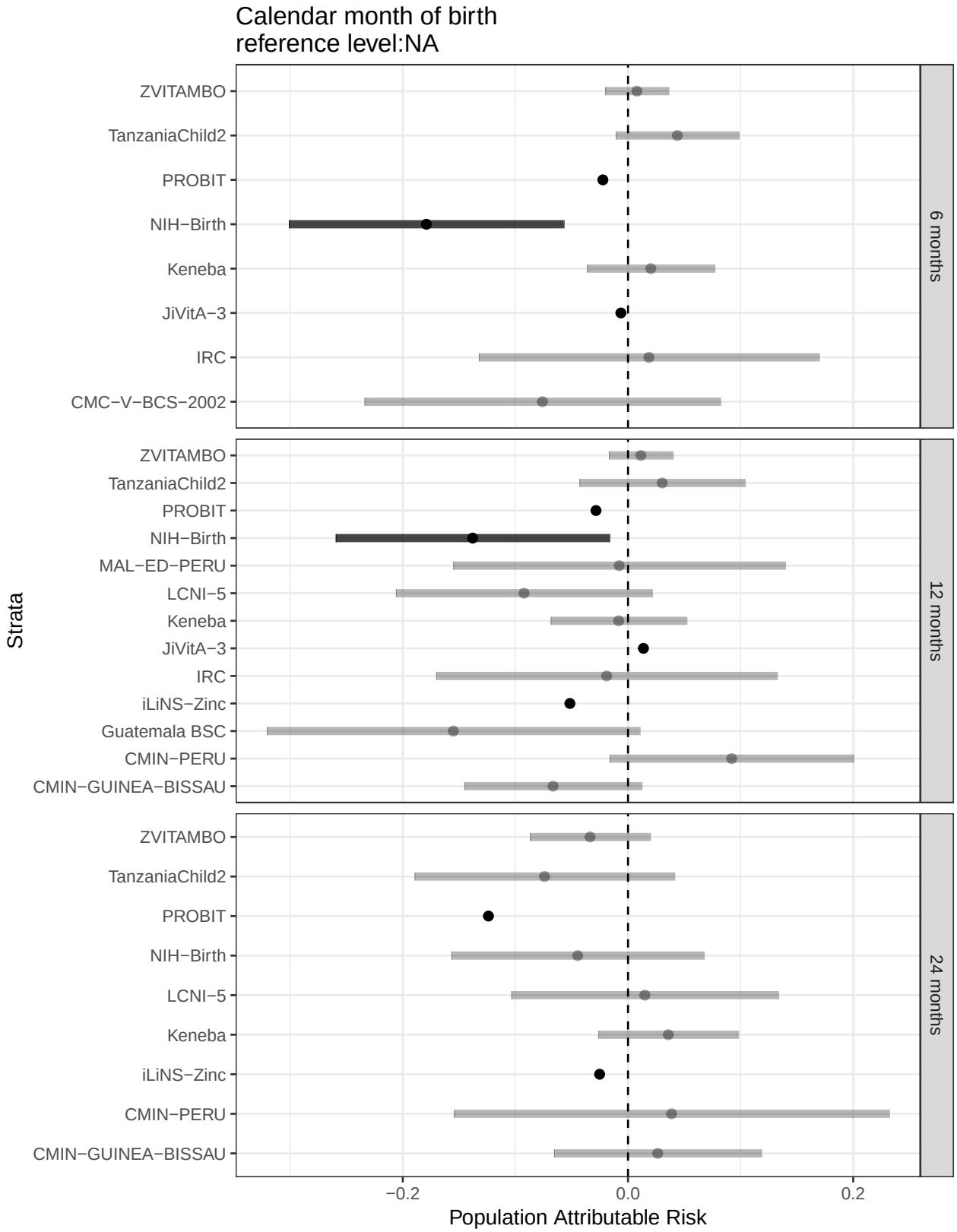
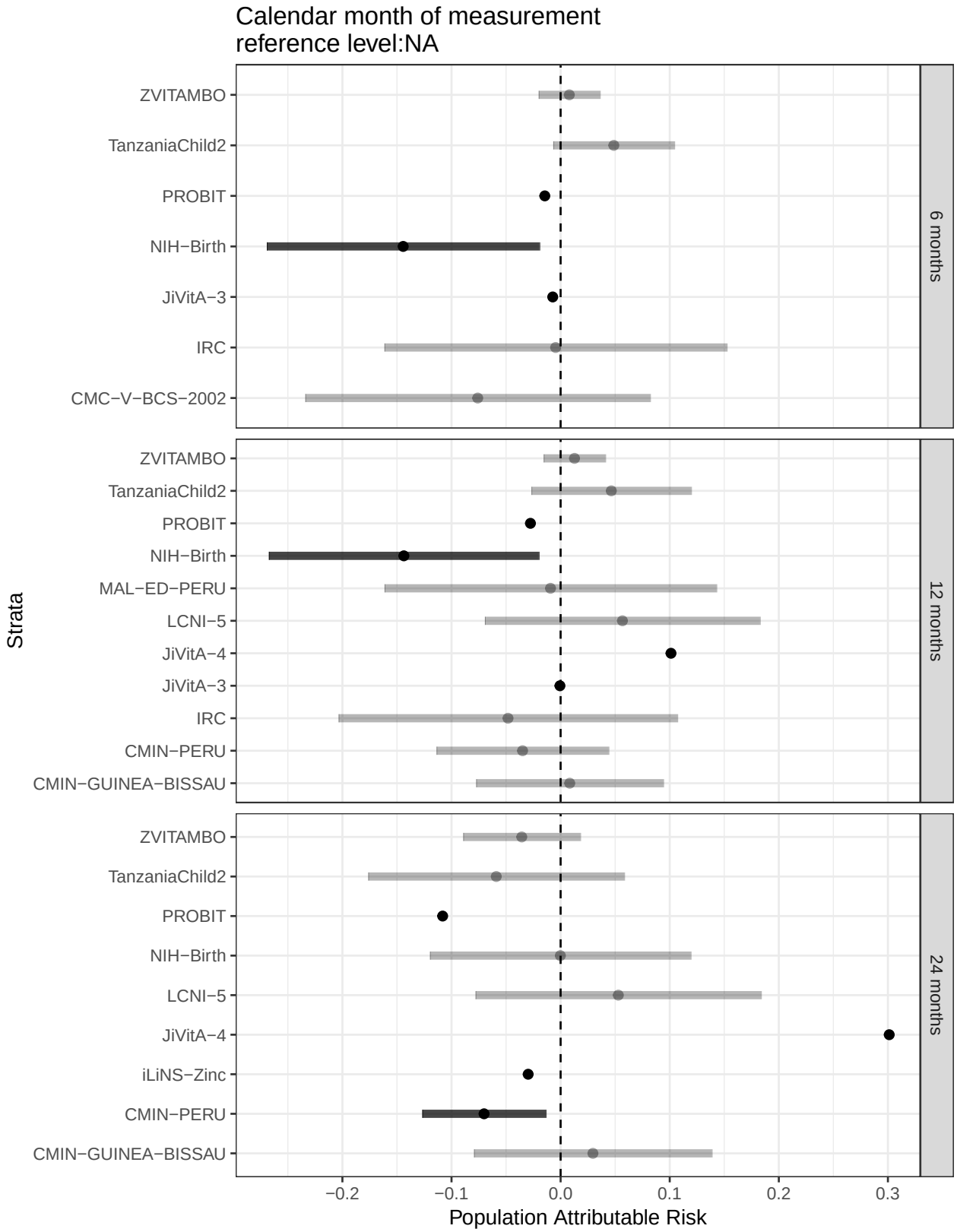
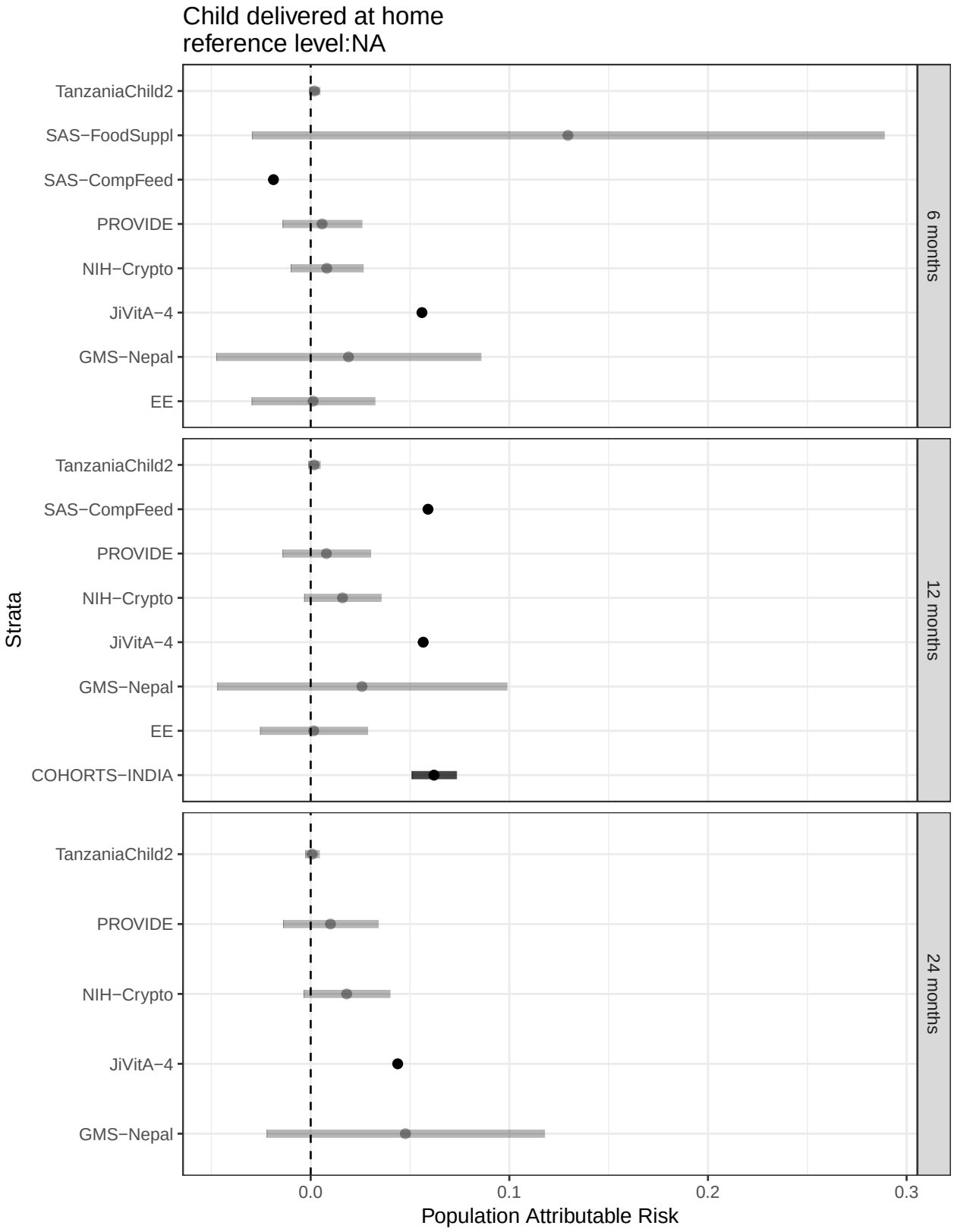


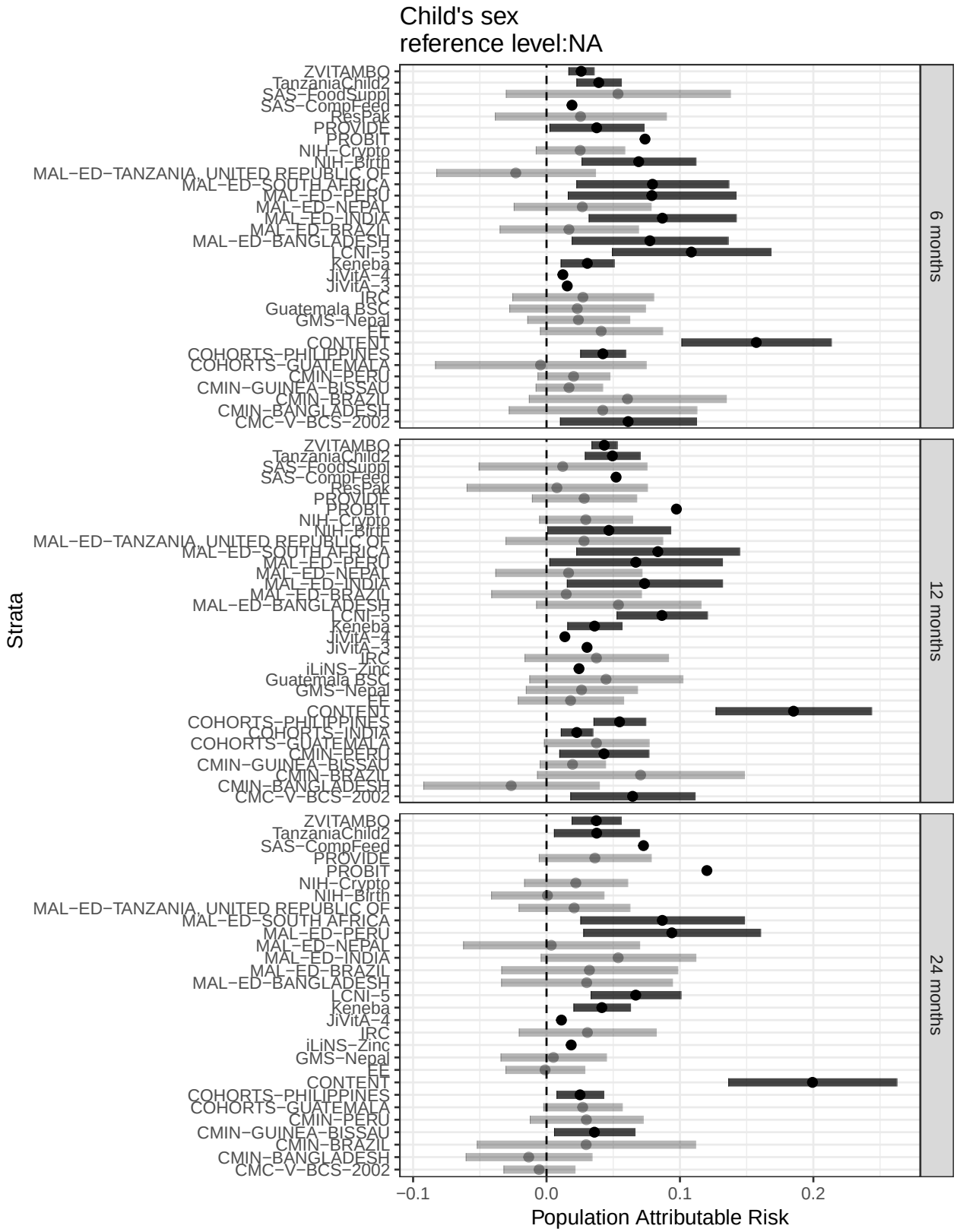

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

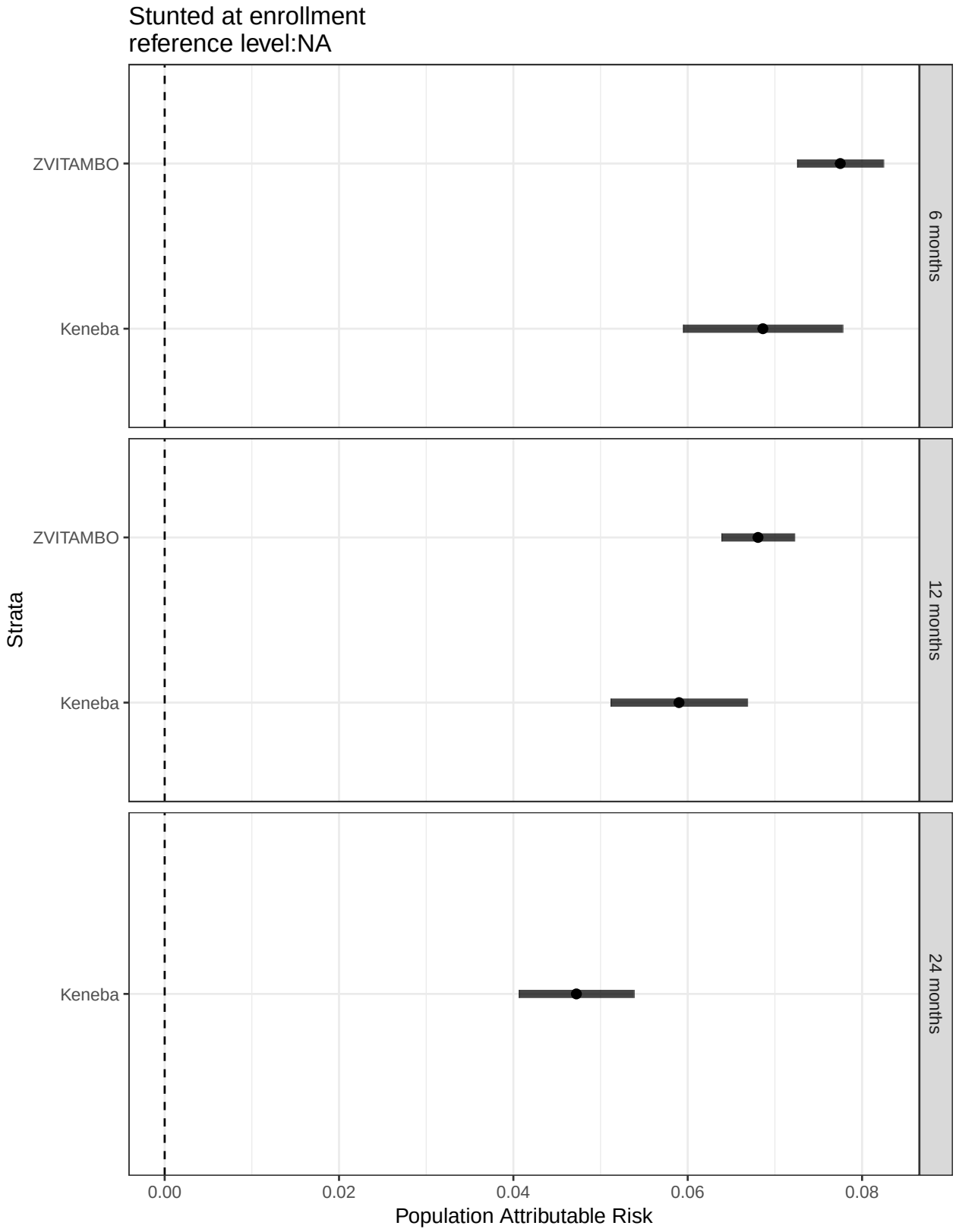



```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```

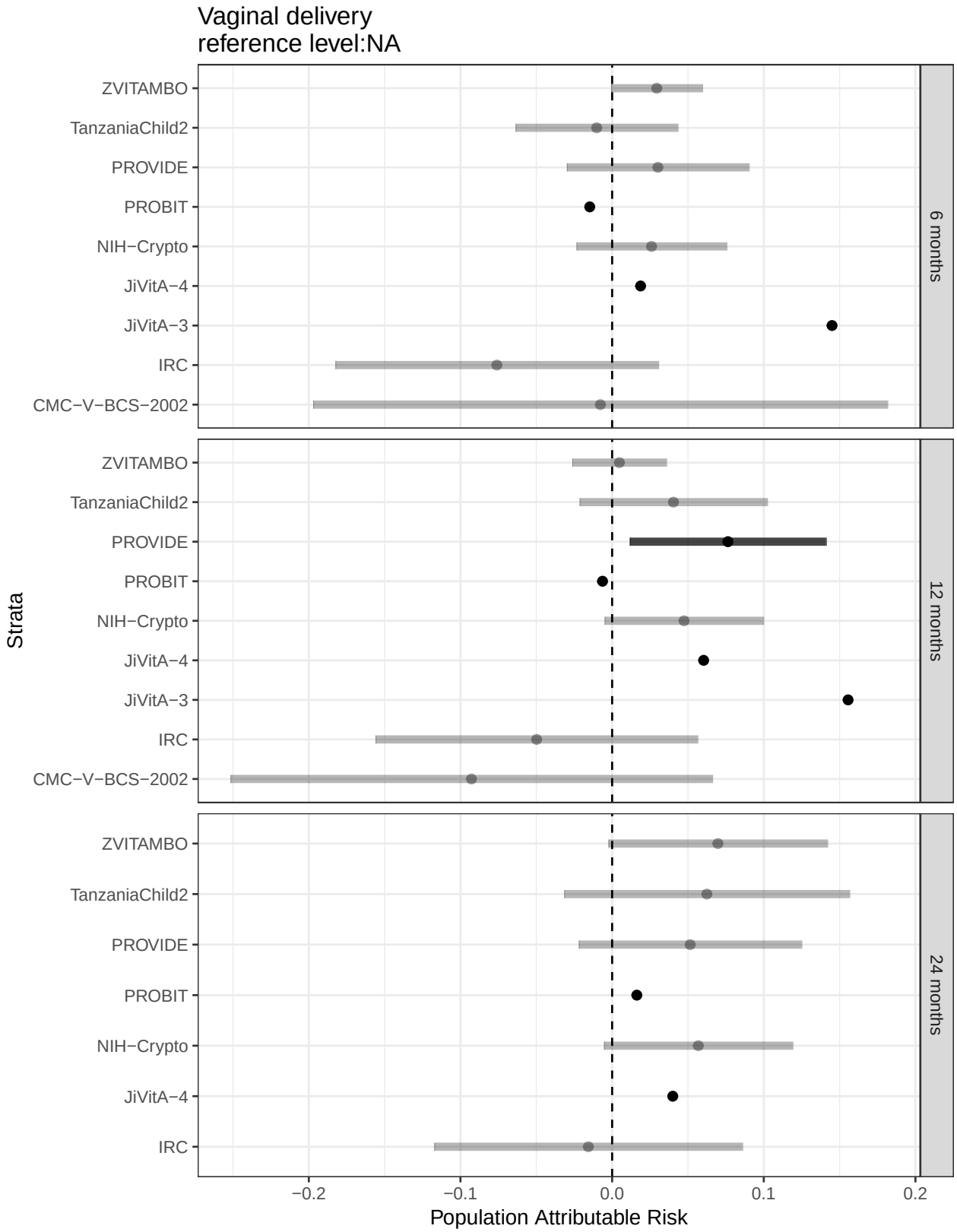



```
## Warning: Removed 13 rows containing missing values (geom_errorbar).
```


Child's sex
reference level:NA
Strata
6 months
12 months
24 months
ZVITAMBO
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
ResPak
PROVIDE
PROBIT
NIH−Crypto
NIH−Birth
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
MAL−ED−BRAZIL
MAL−ED−BANGLADESH
LCNI−5
Keneba
JiVitA−4
JiVitA−3
IRC
iLiNS−Zinc
Guatemala BSC
GMS−Nepal
EE
CONTENT
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
CMIN−PERU
CMIN−GUINEA−BISSAU
CMIN−BRAZIL
CMIN−BANGLADESH
CMC−V−BCS−2002
−0.1
0.0
0.1
0.2
Population Attributable Risk

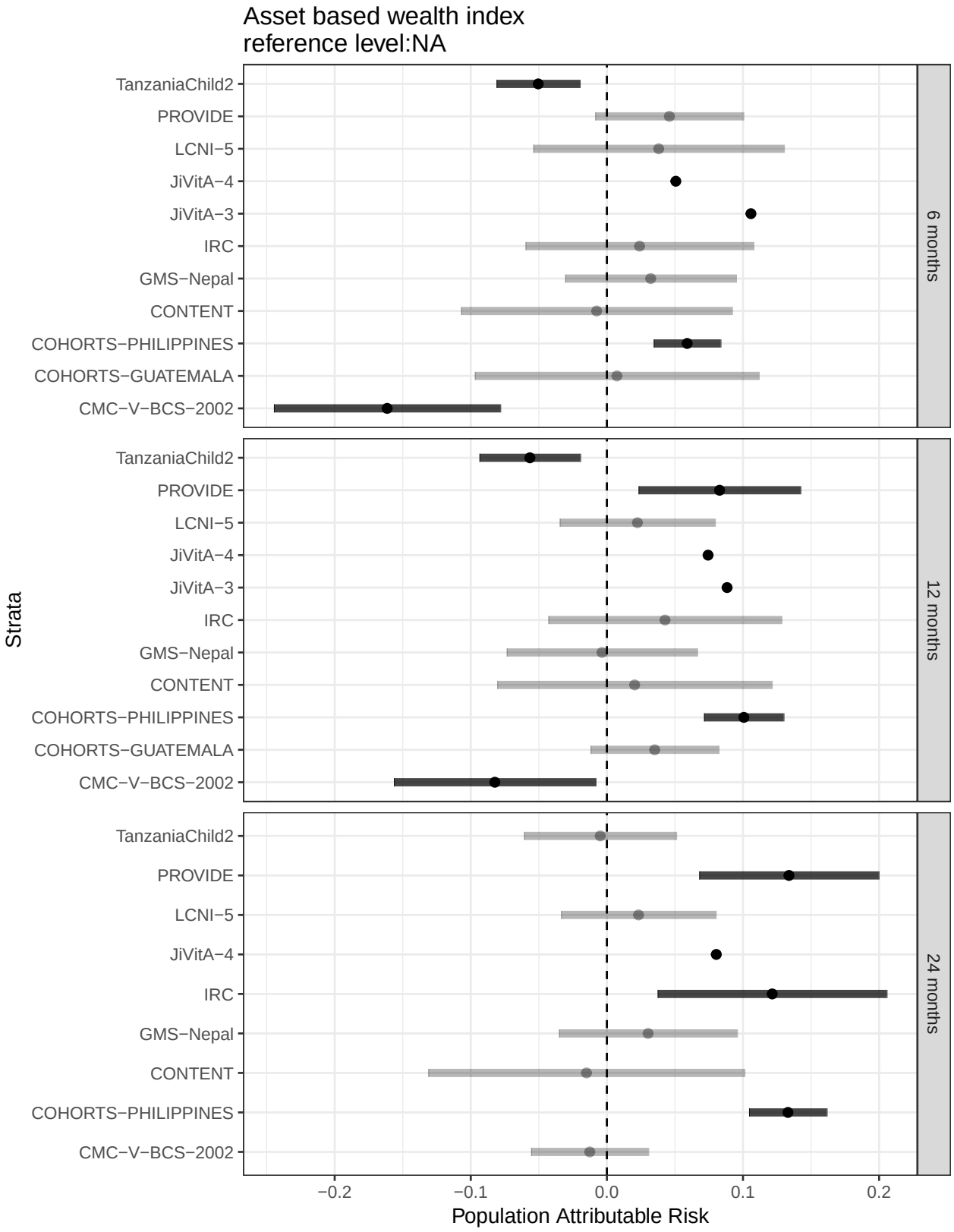



```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

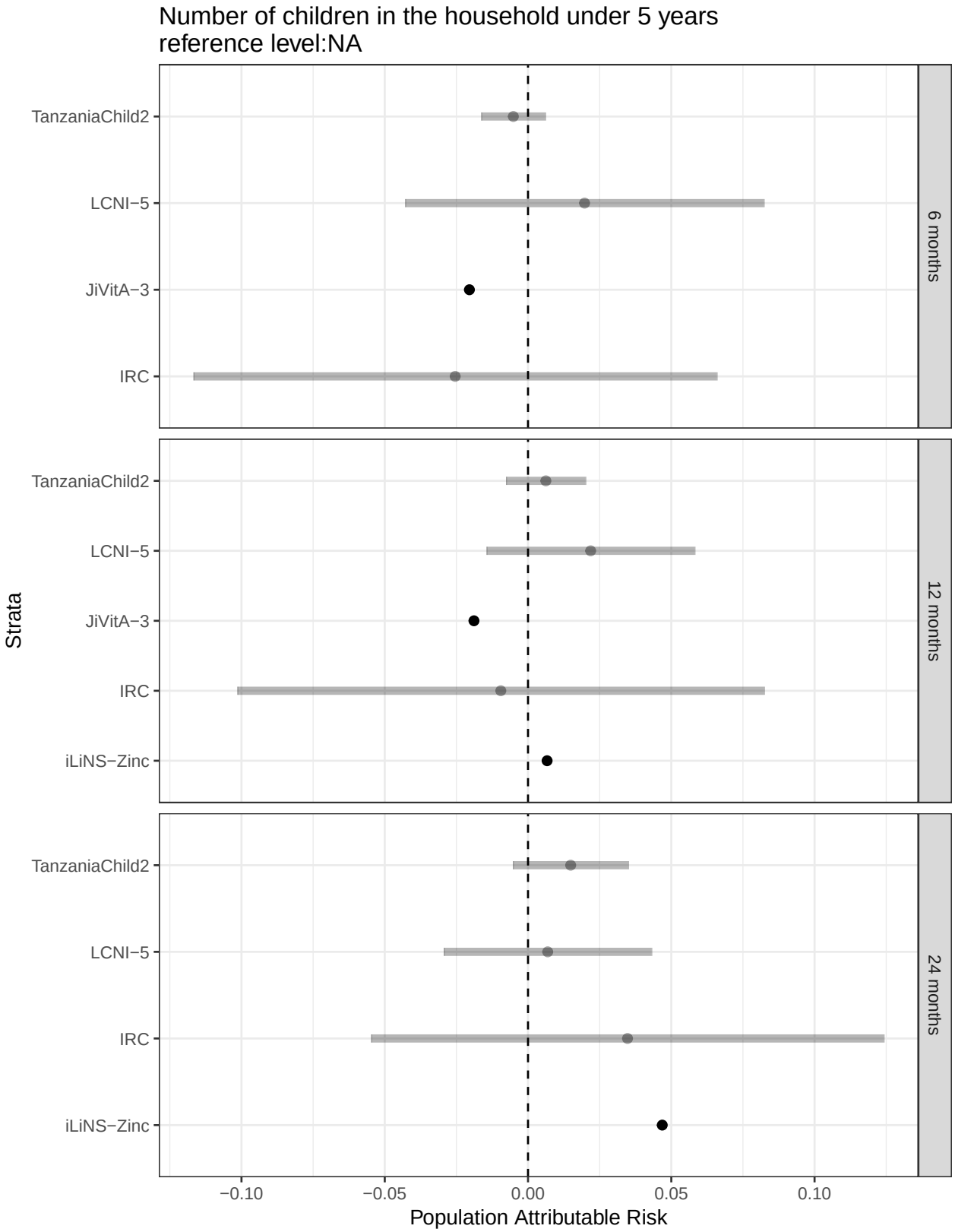

Vaginal delivery
reference level:NA
ZVITAMBO
TanzaniaChild2
PROVIDE
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
IRC
CMC−V−BCS−2002
6 months
12 months
24 months
Strata
−0.2
−0.1
0.0
0.1
0.2
Population Attributable Risk

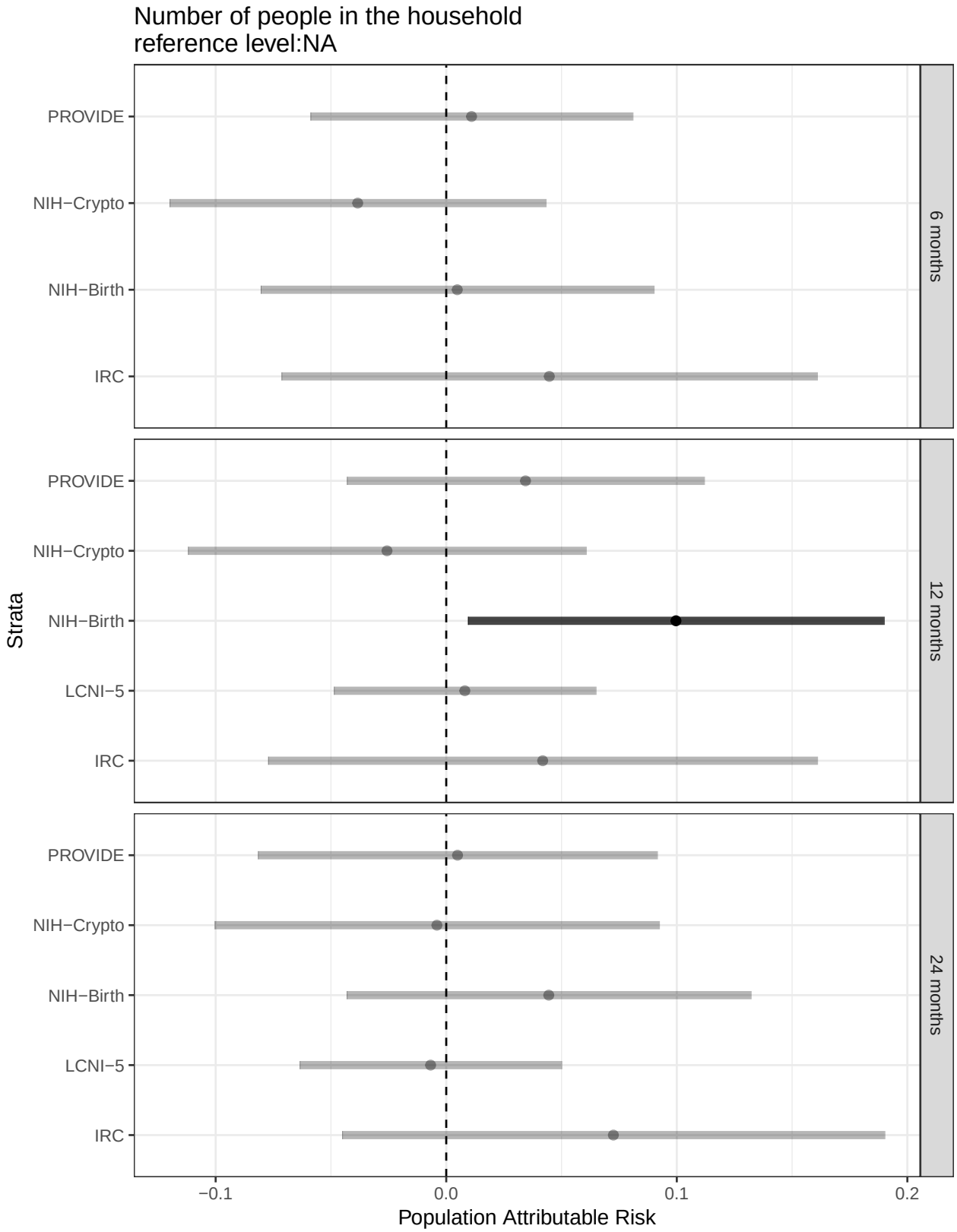
Household characteristics

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```

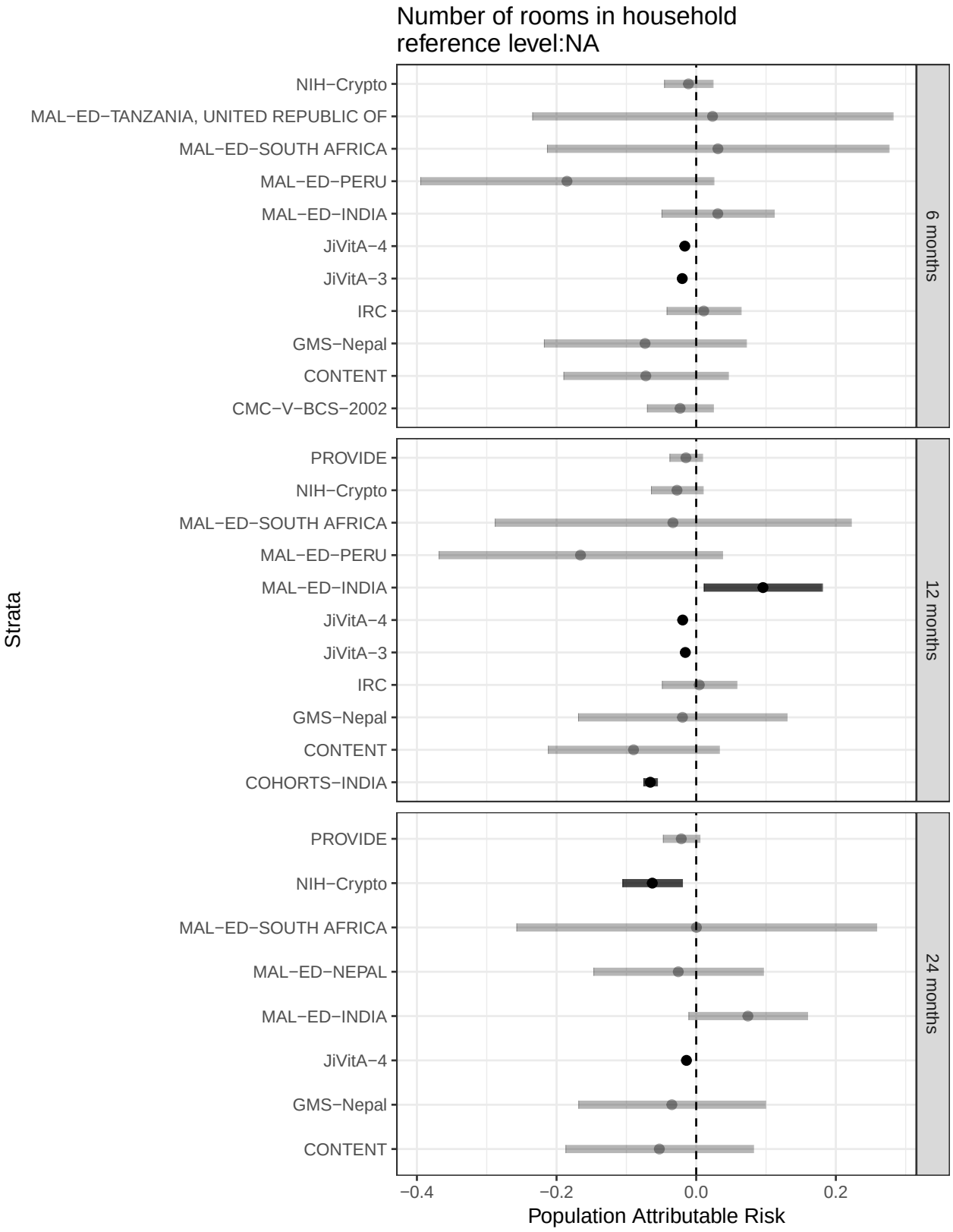


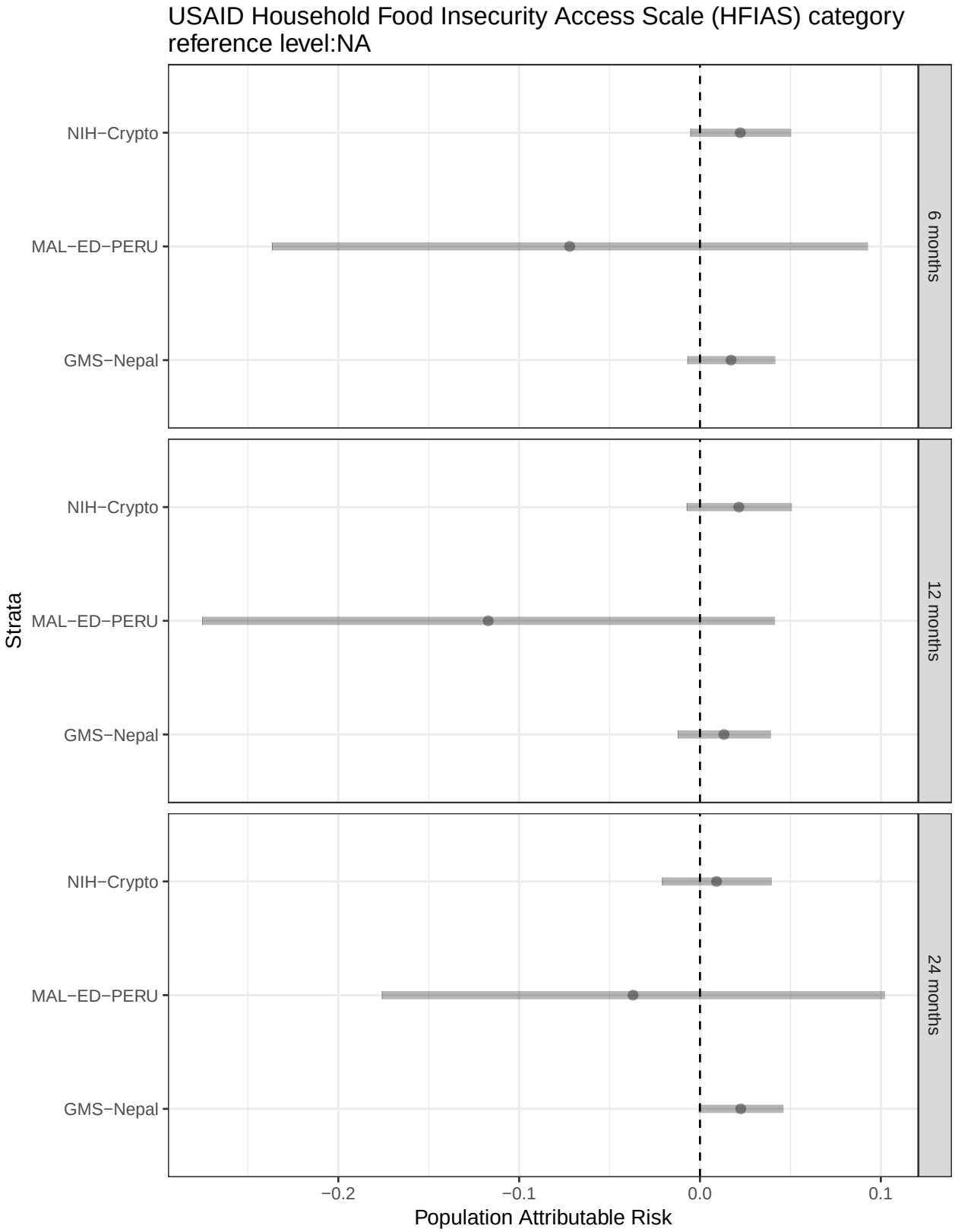

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Number of children in the household under 5 years
reference level:NA
Strata
TanzaniaChild2
LCNI−5
JiVitA−3
IRC
iLiNS−Zinc
6 months
12 months
24 months
−0.10
−0.05
0.00
0.05
0.10
Population Attributable Risk



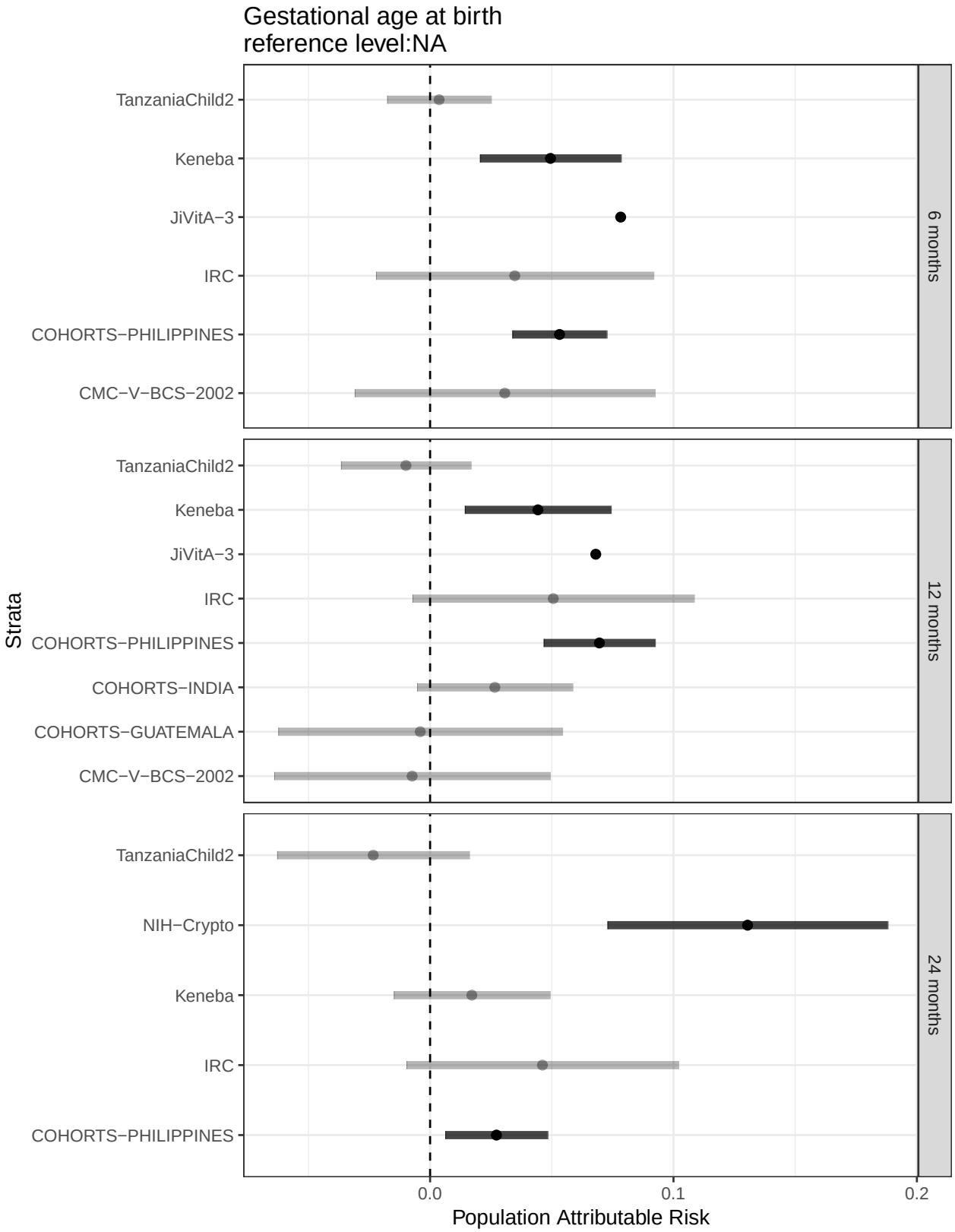

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```


Number of rooms in household
reference level:NA
Strata
NIH−Crypto
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
CONTENT
CMC−V−BCS−2002
6 months
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
CONTENT
COHORTS−INDIA
12 months
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−NEPAL
MAL−ED−INDIA
JiVitA−4
GMS−Nepal
CONTENT
24 months
−0.4
−0.2
0.0
0.2
Population Attributable Risk

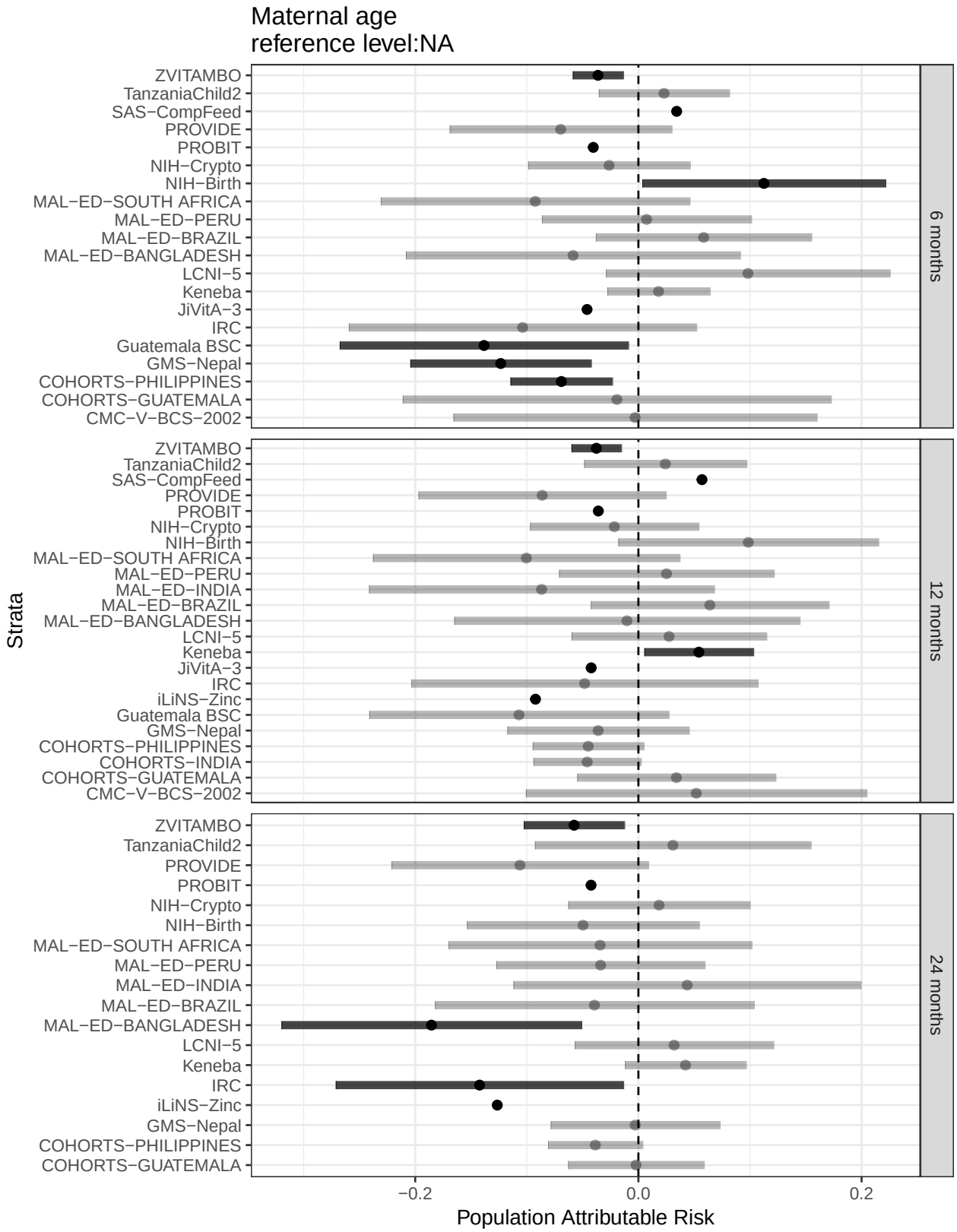

USAID Household Food Insecurity Access Scale (HFIAS) category
reference level:NA
Strata
NIH−Crypto
MAL−ED−PERU
GMS−Nepal
6 months
12 months
24 months
−0.2
−0.1
0.0
0.1
Population Attributable Risk

Maternal characteristics

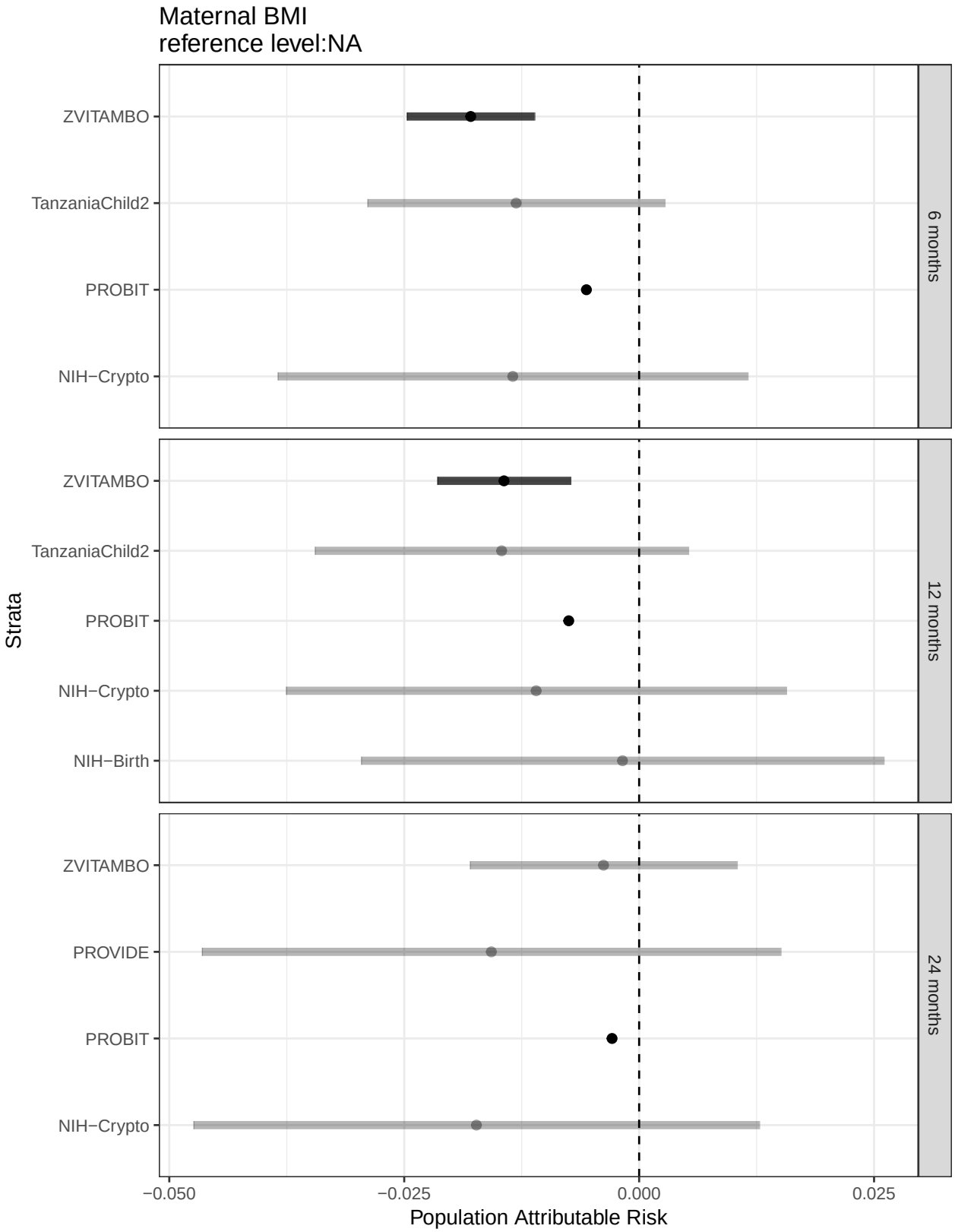
```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```



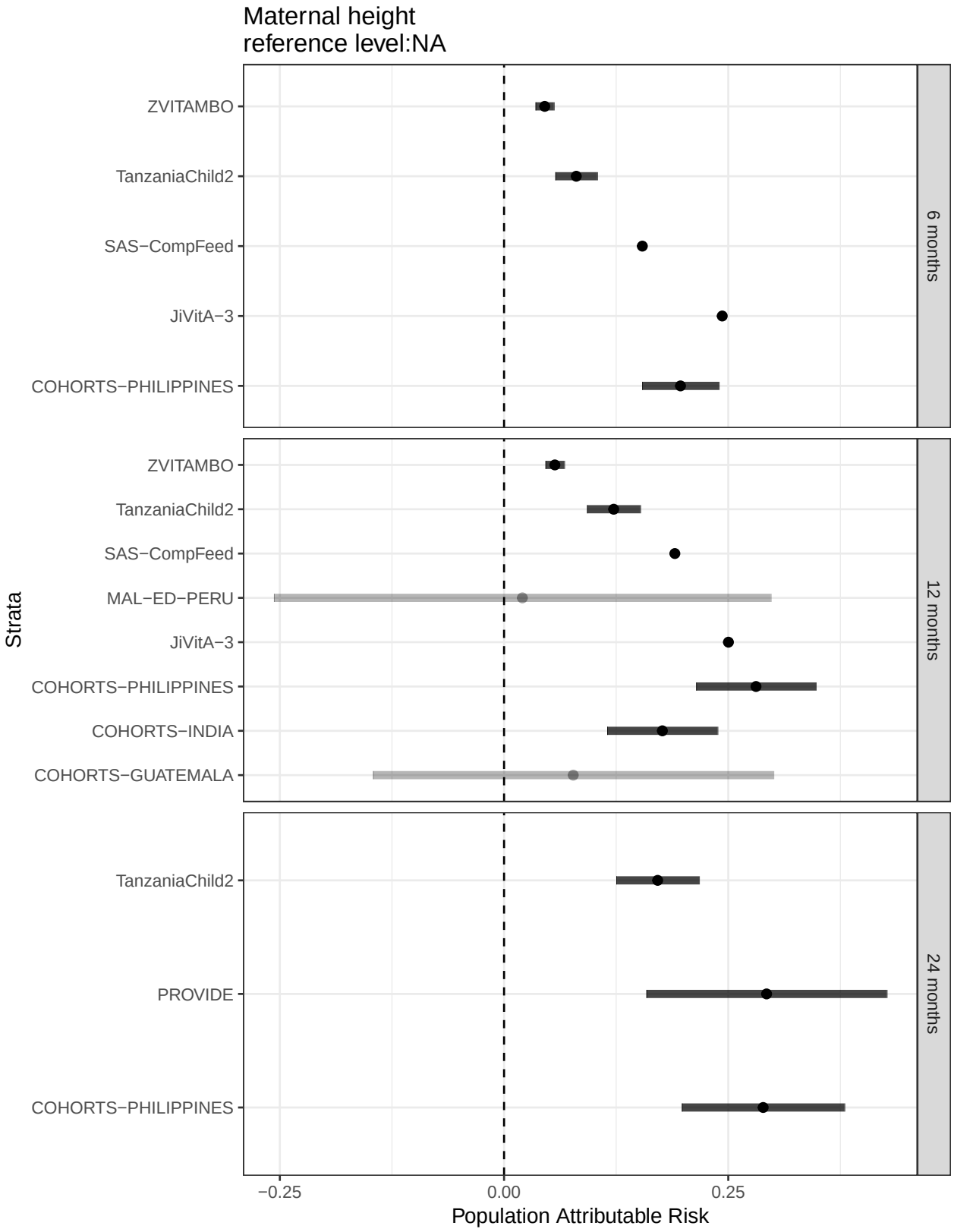

```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
```



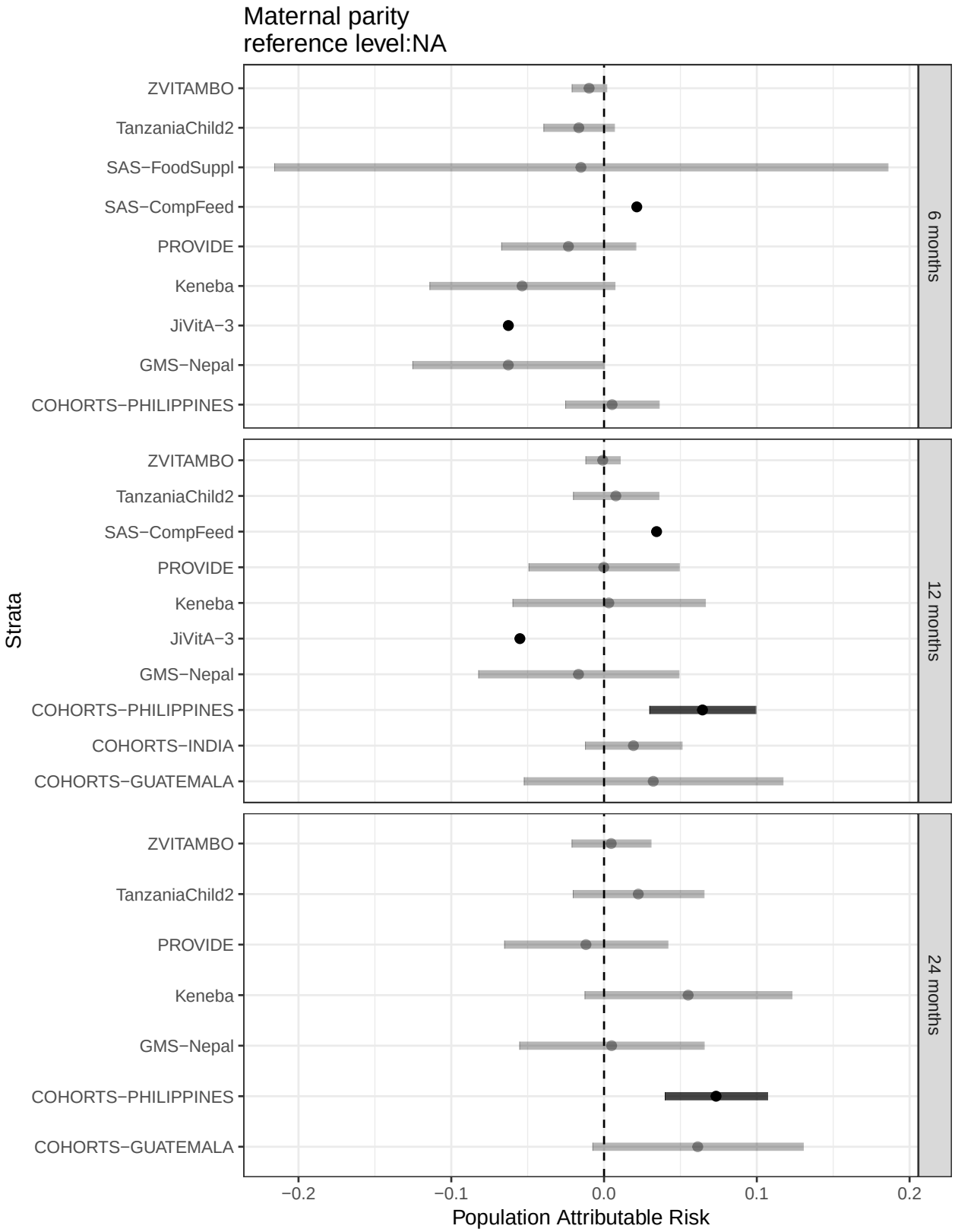

```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```



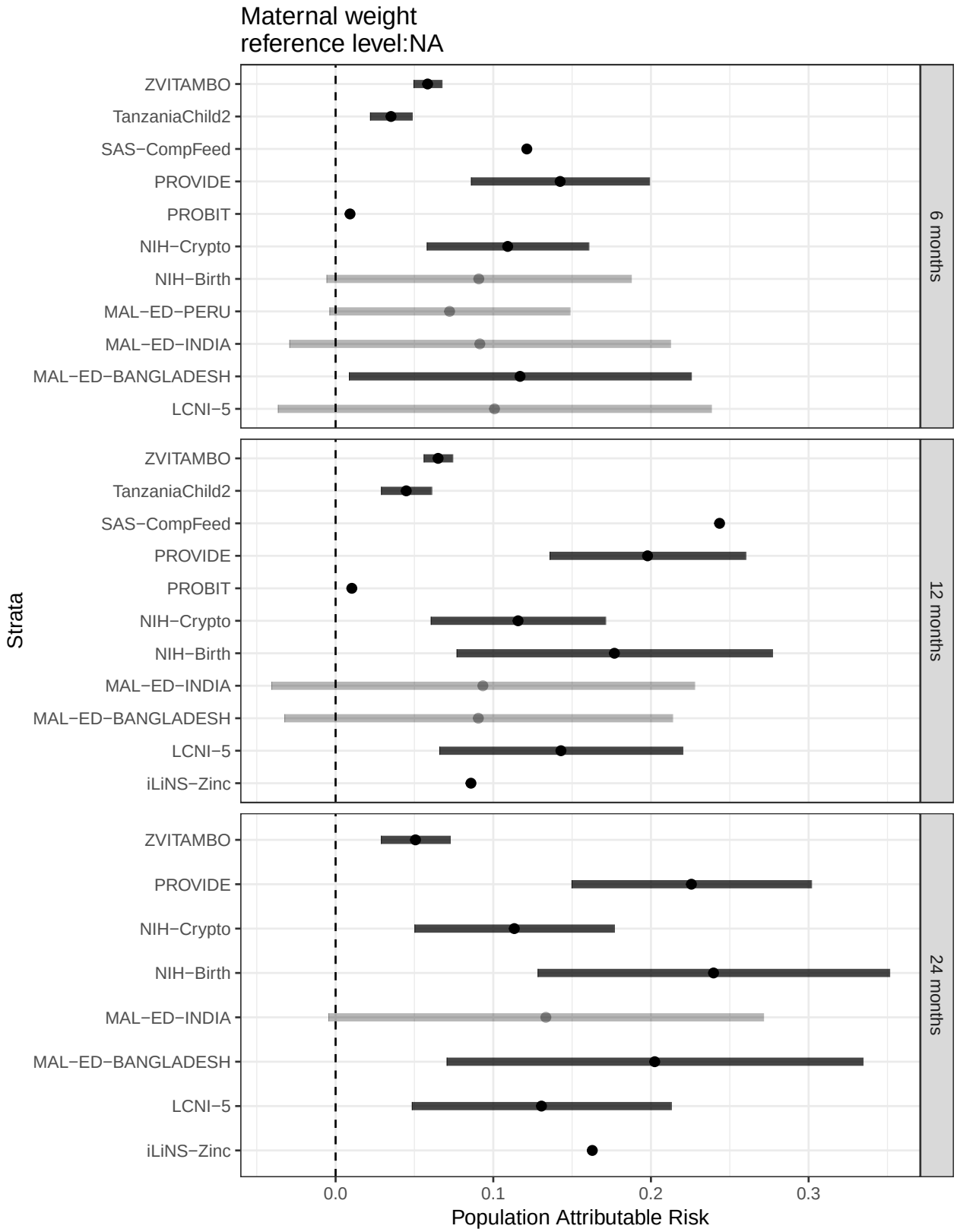

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



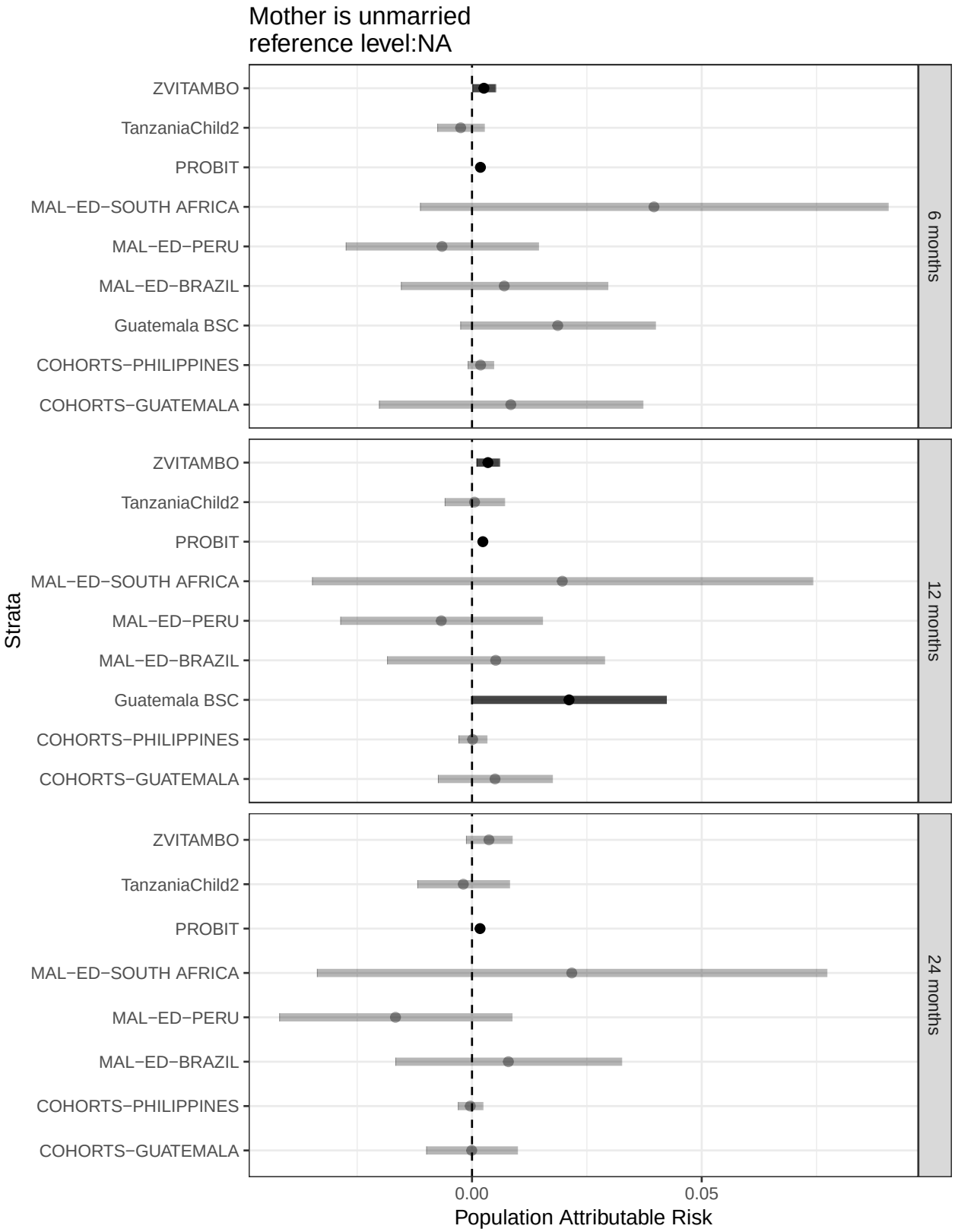

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



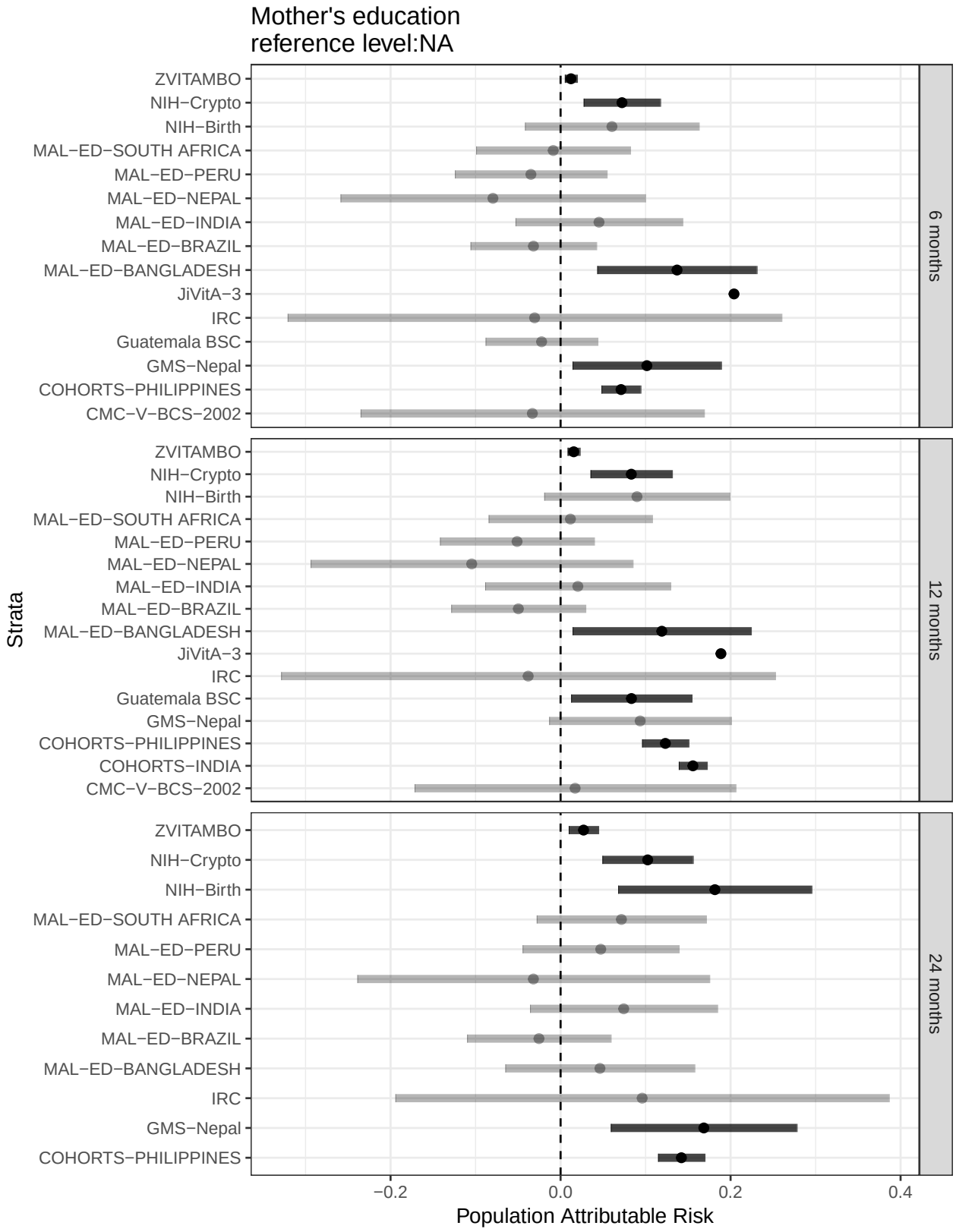

```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```

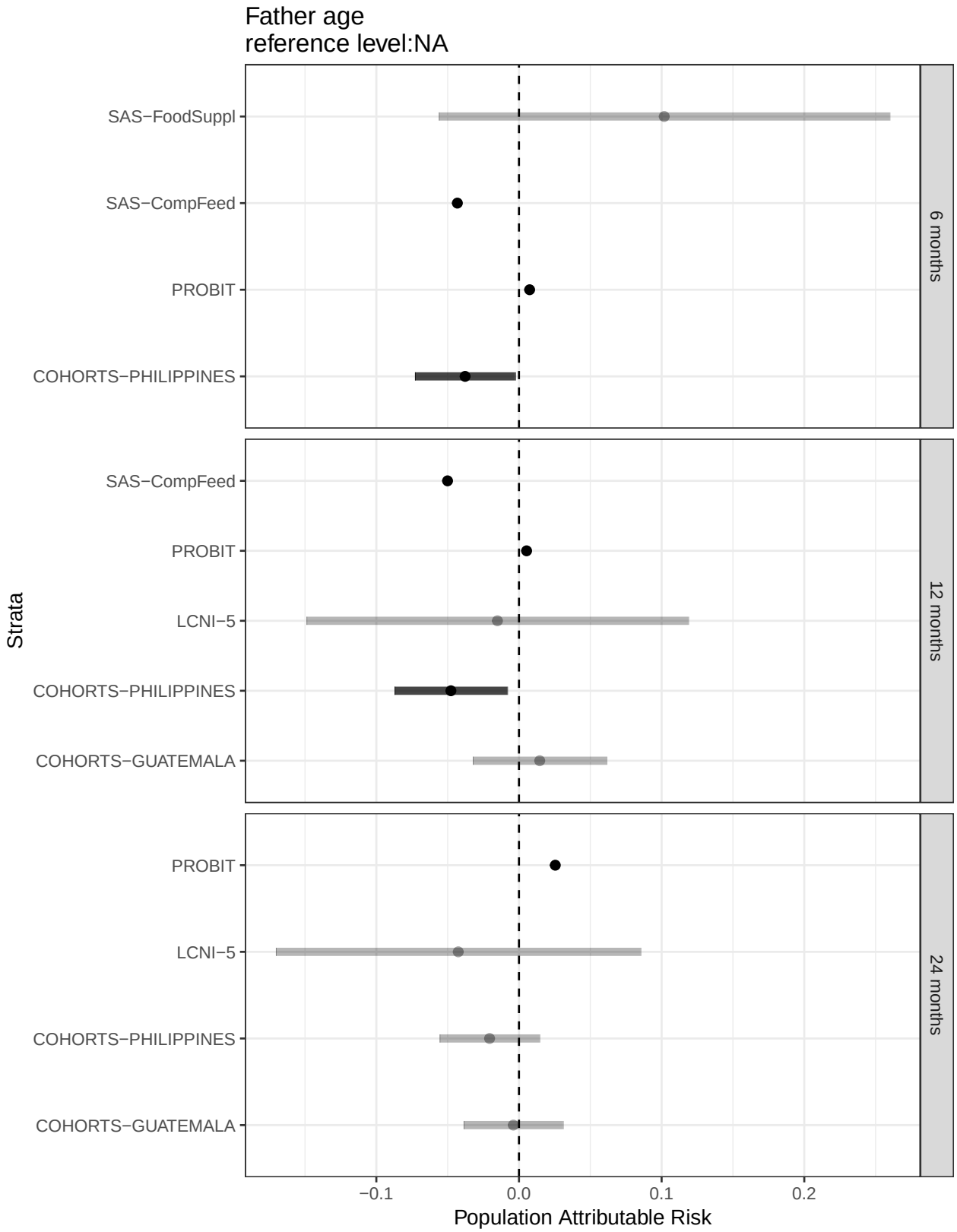



```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```

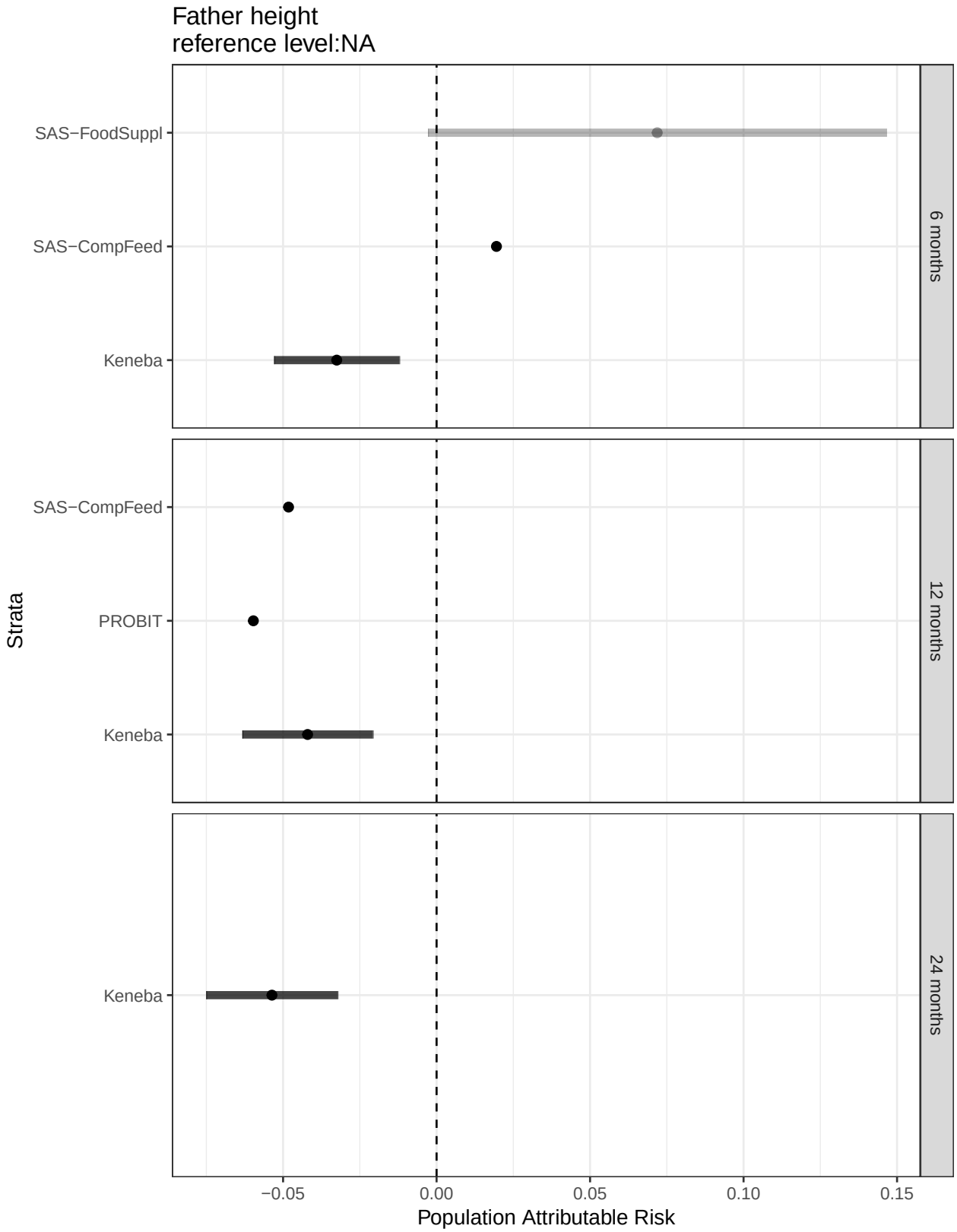

Mother's education
reference level:NA
6 months
12 months
24 months
Strata
ZVITAMBO
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
MAL−ED−BRAZIL
MAL−ED−BANGLADESH
JiVitA−3
IRC
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
−0.2
0.0
0.2
0.4
Population Attributable Risk

Paternal characteristics

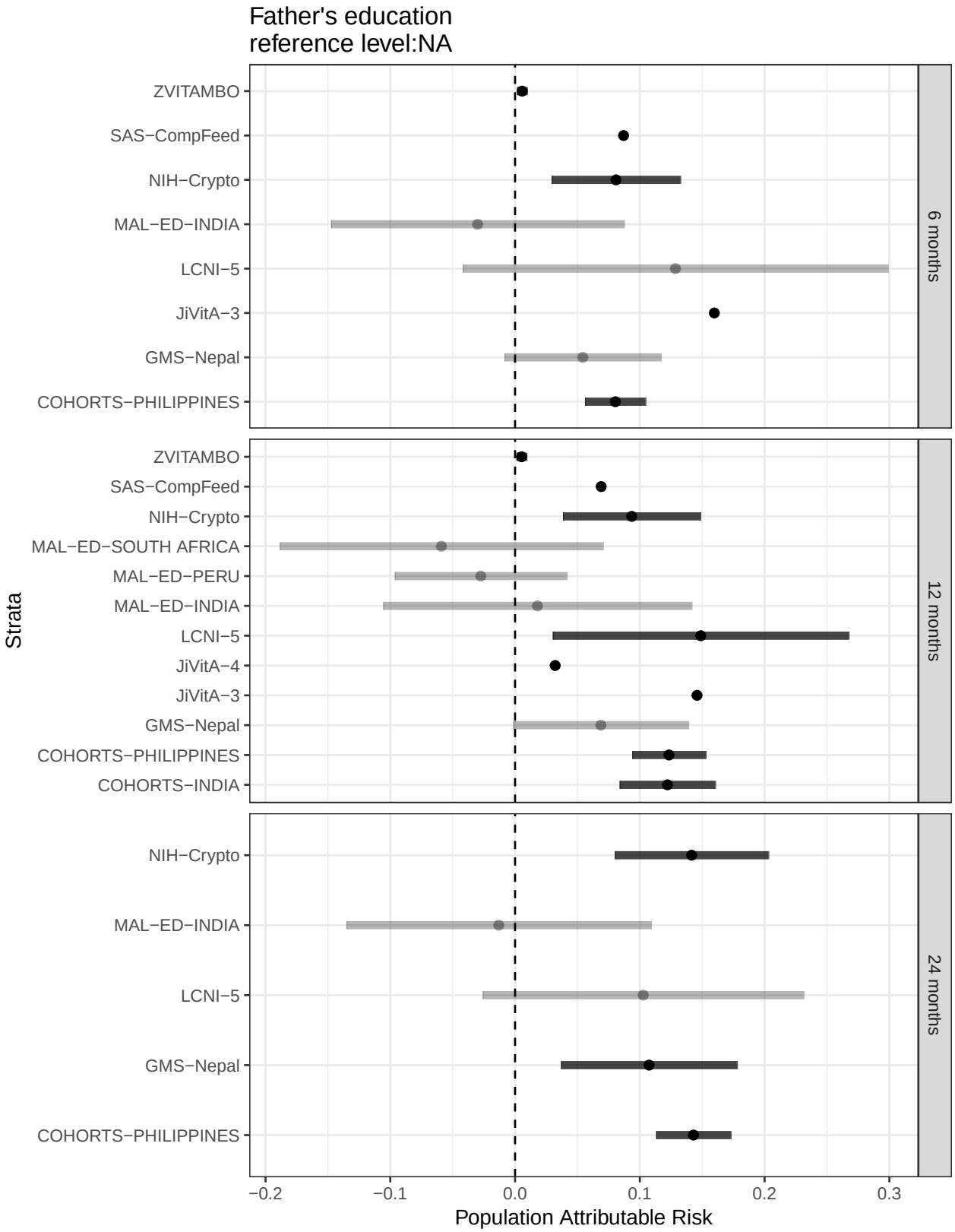
```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```



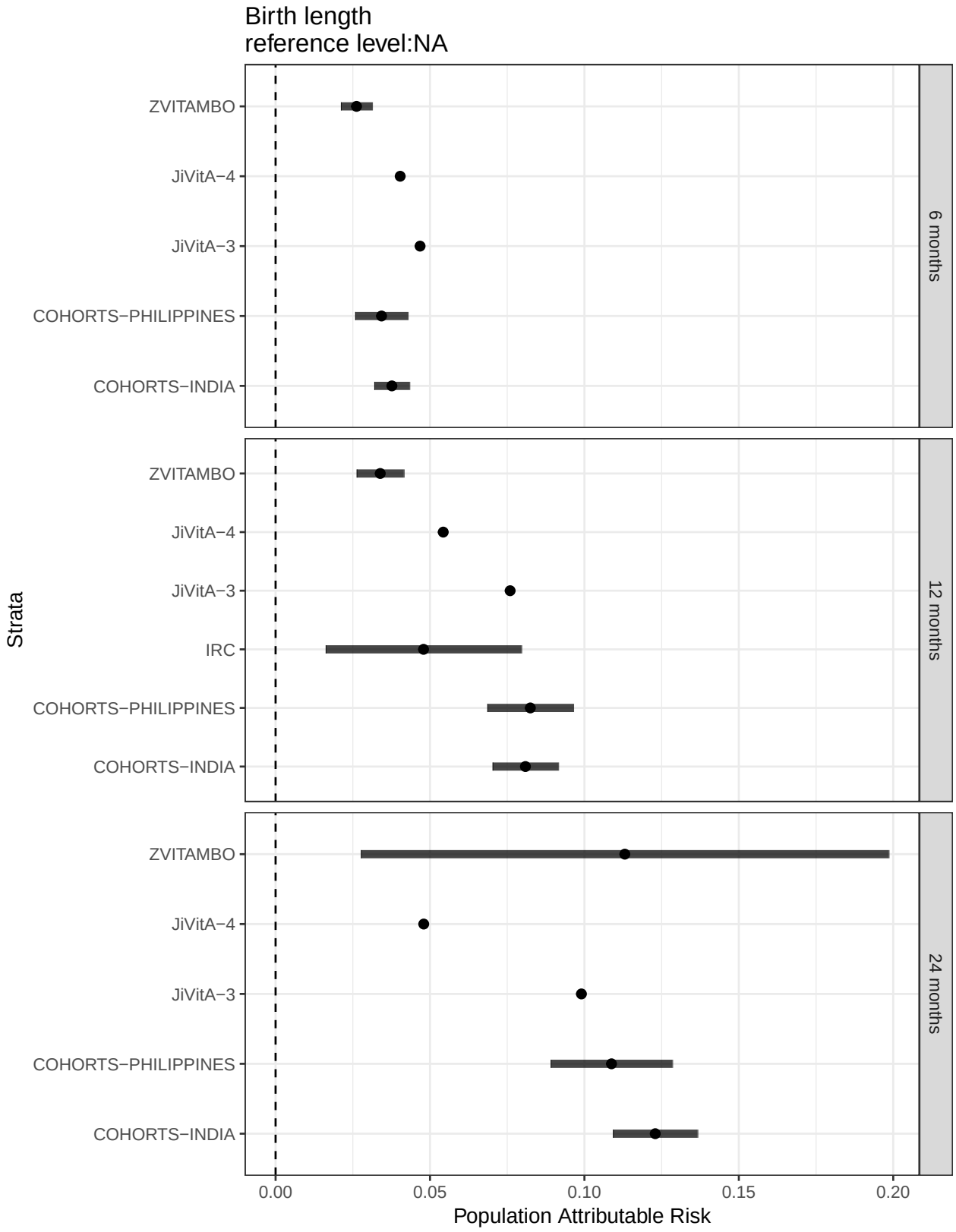

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```


Father's education
reference level:NA
ZVITAMBO
SAS−CompFeed
NIH−Crypto
MAL−ED−INDIA
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
6 months
ZVITAMBO
SAS−CompFeed
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
LCNI−5
JiVitA−4
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
12 months
NIH−Crypto
MAL−ED−INDIA
LCNI−5
GMS−Nepal
COHORTS−PHILIPPINES
24 months
Strata
−0.2
−0.1
0.0
0.1
0.2
0.3
Population Attributable Risk

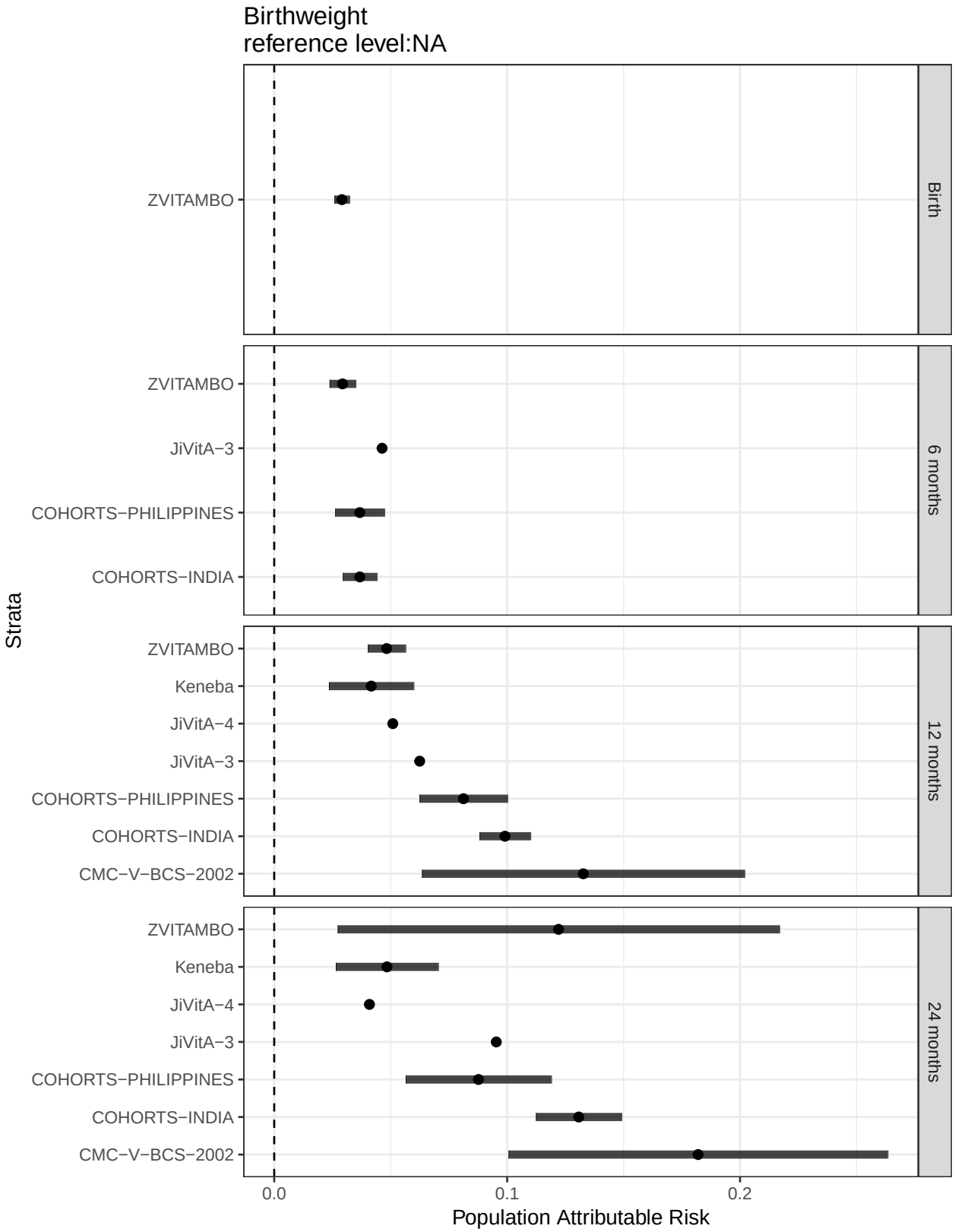
Point prevalence of severe stunting

Child characteristics

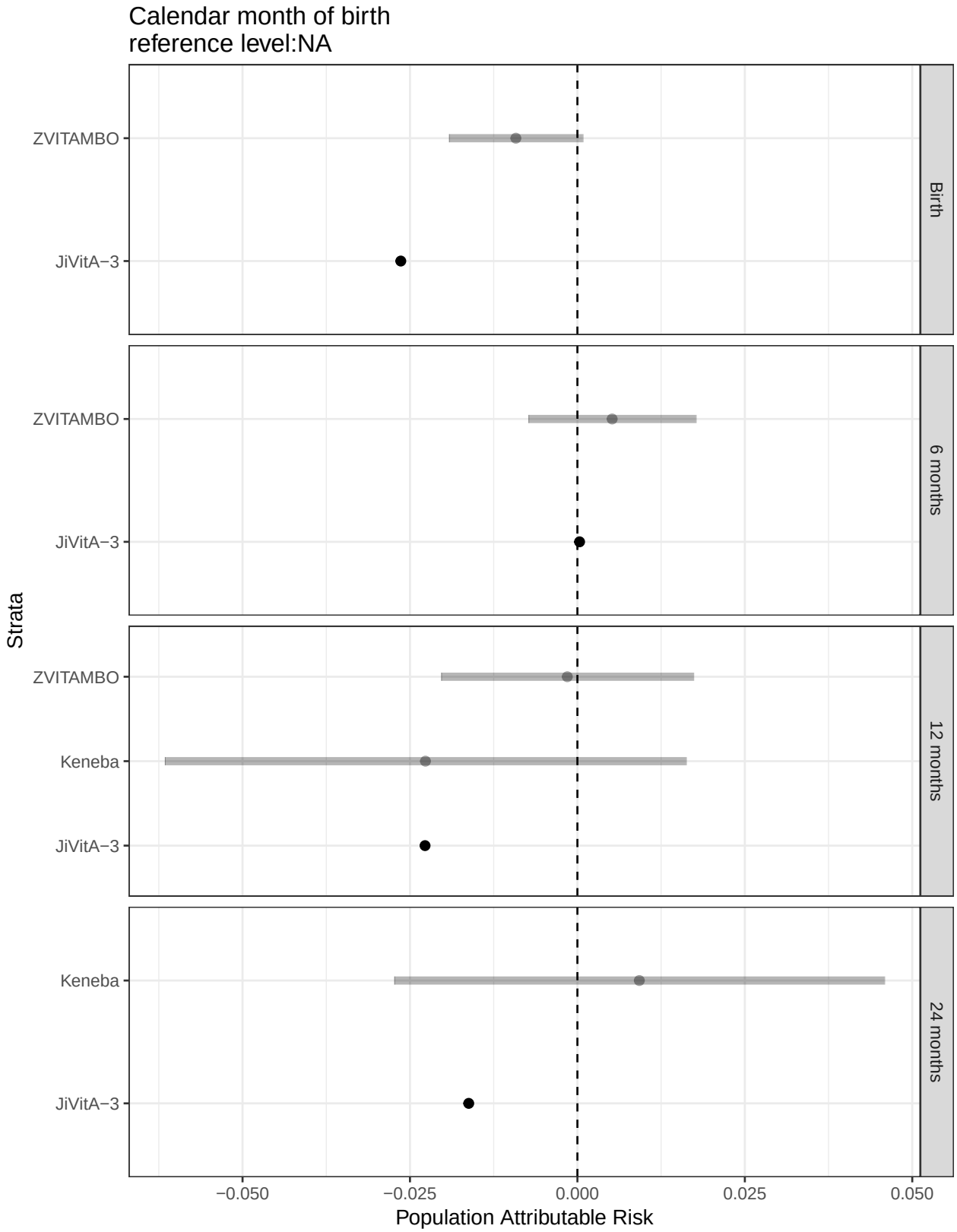
```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```



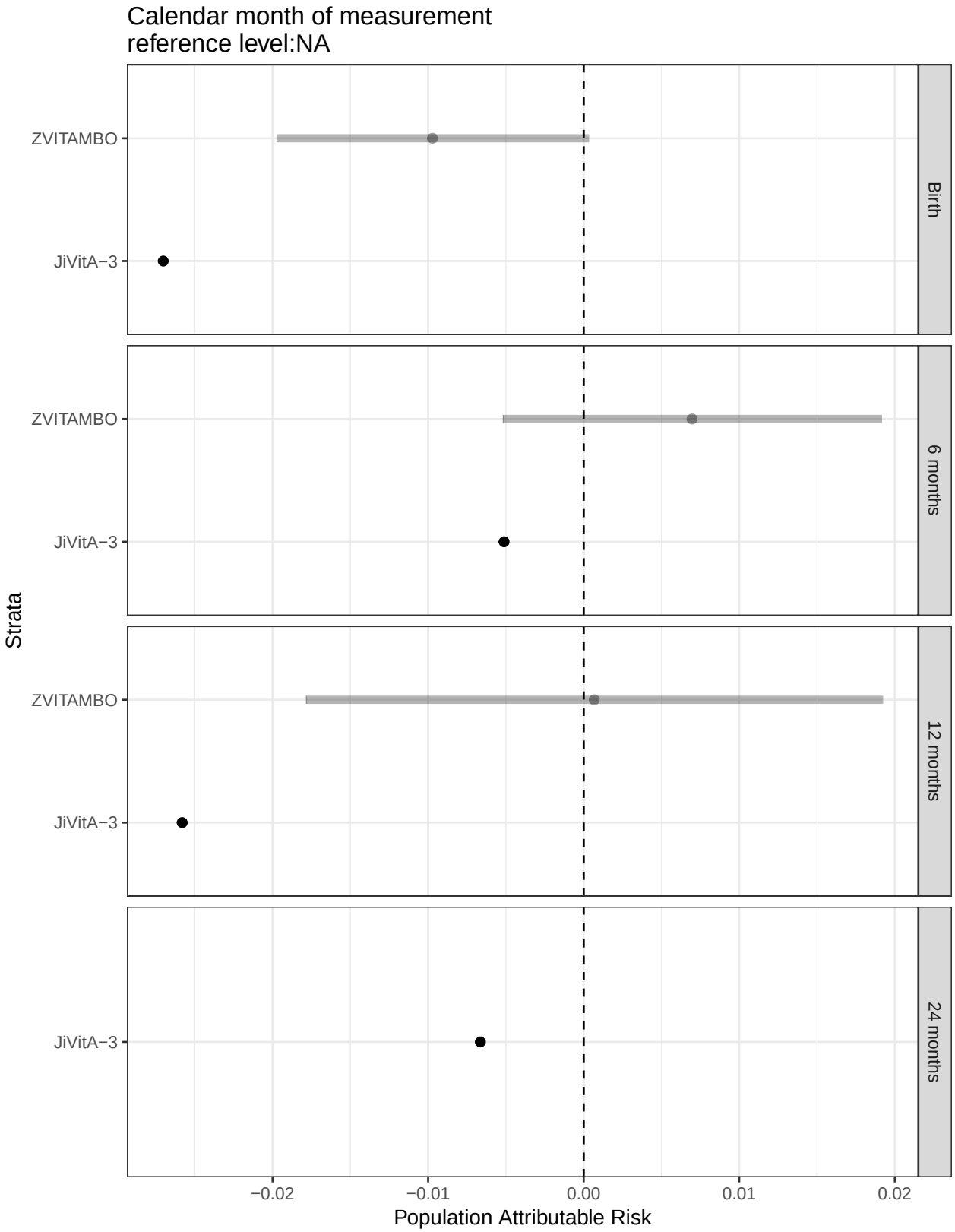

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```



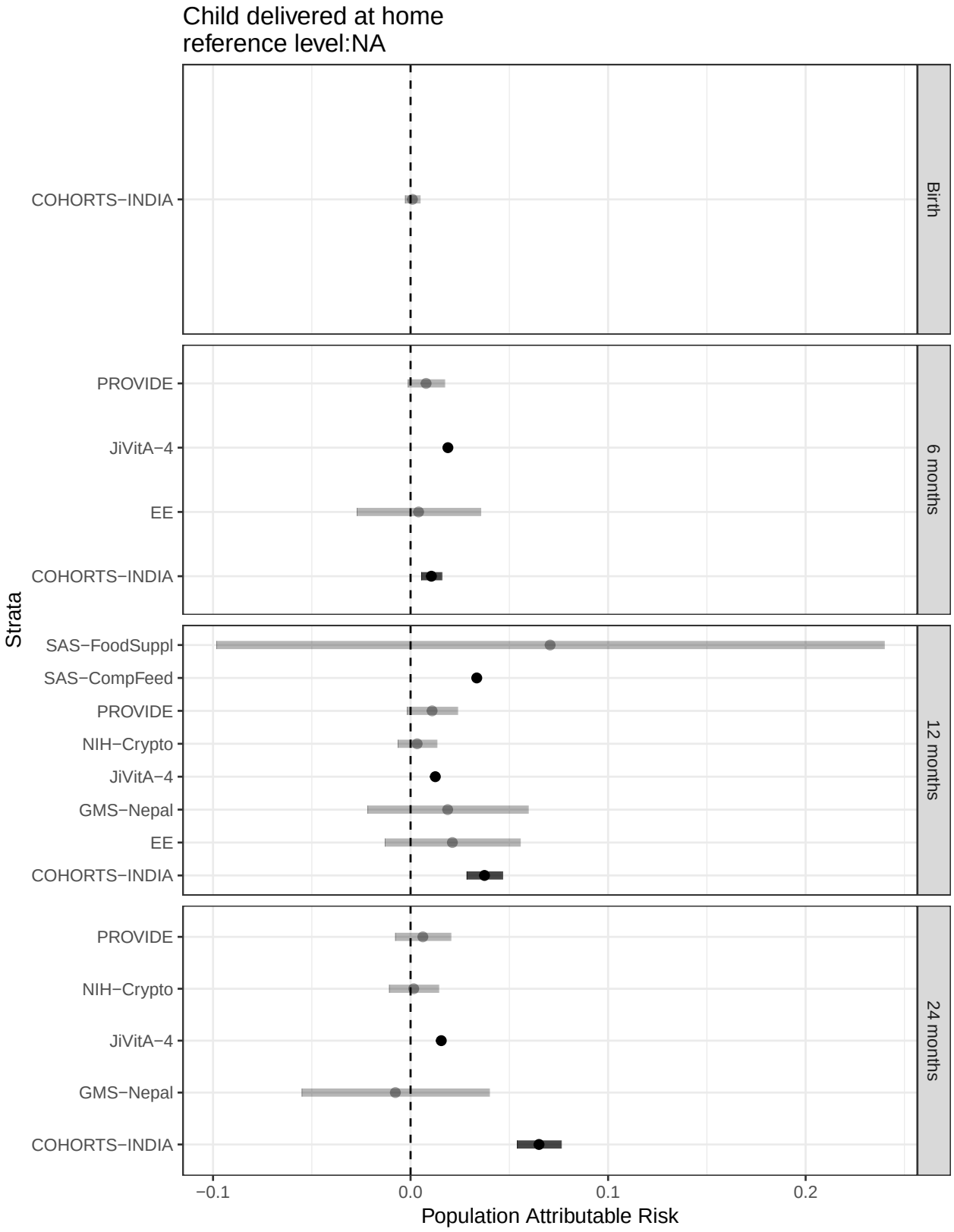

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



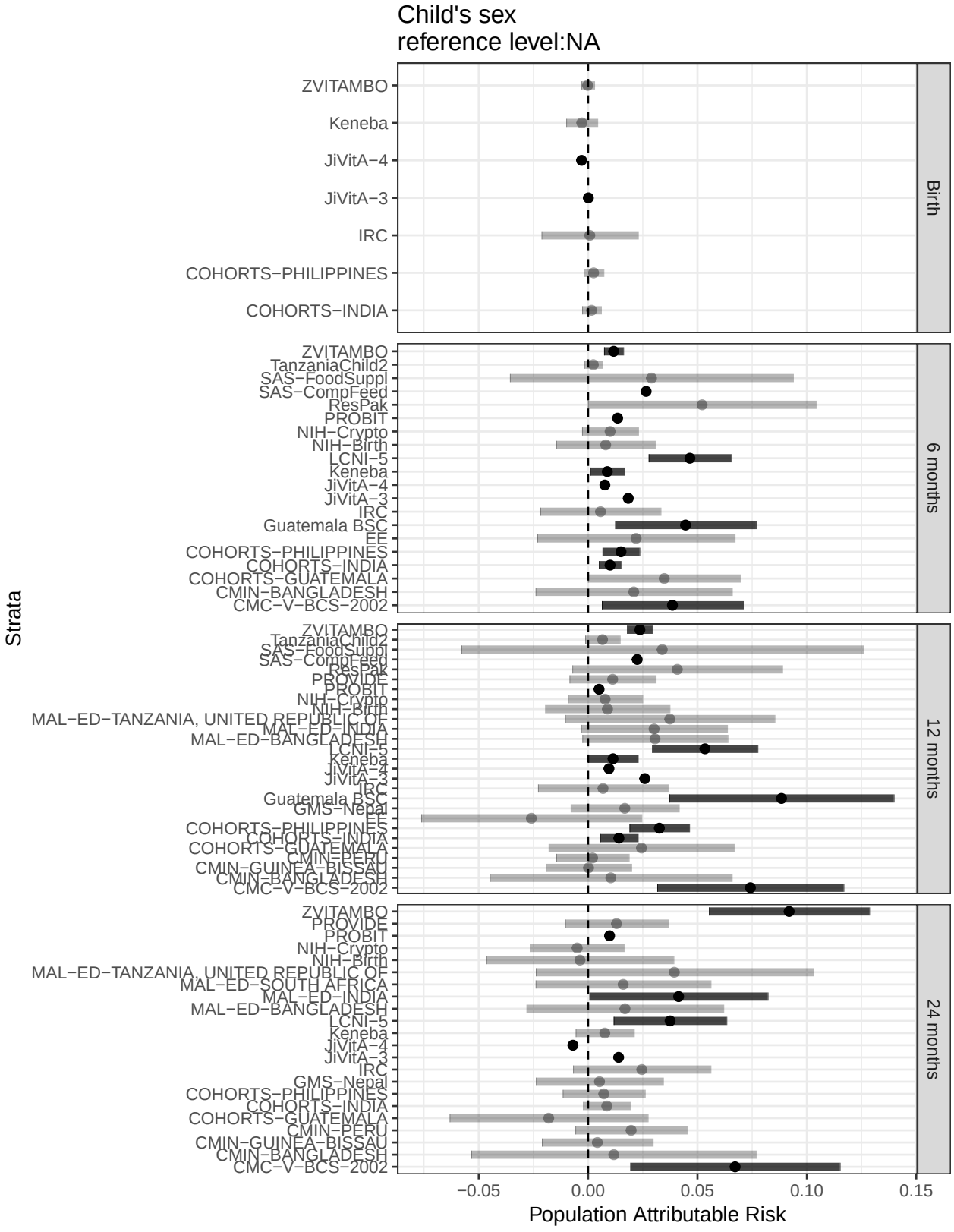

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



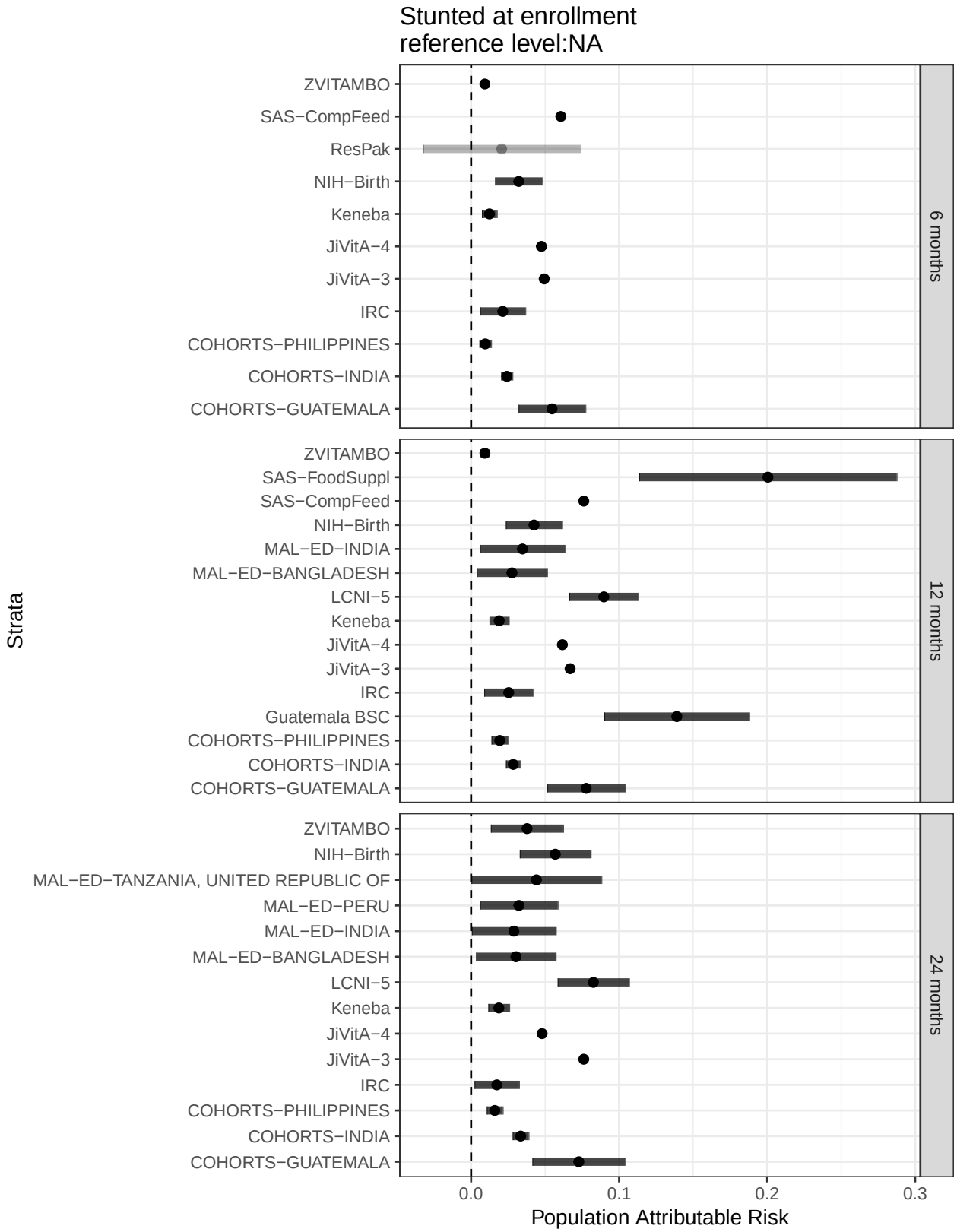

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



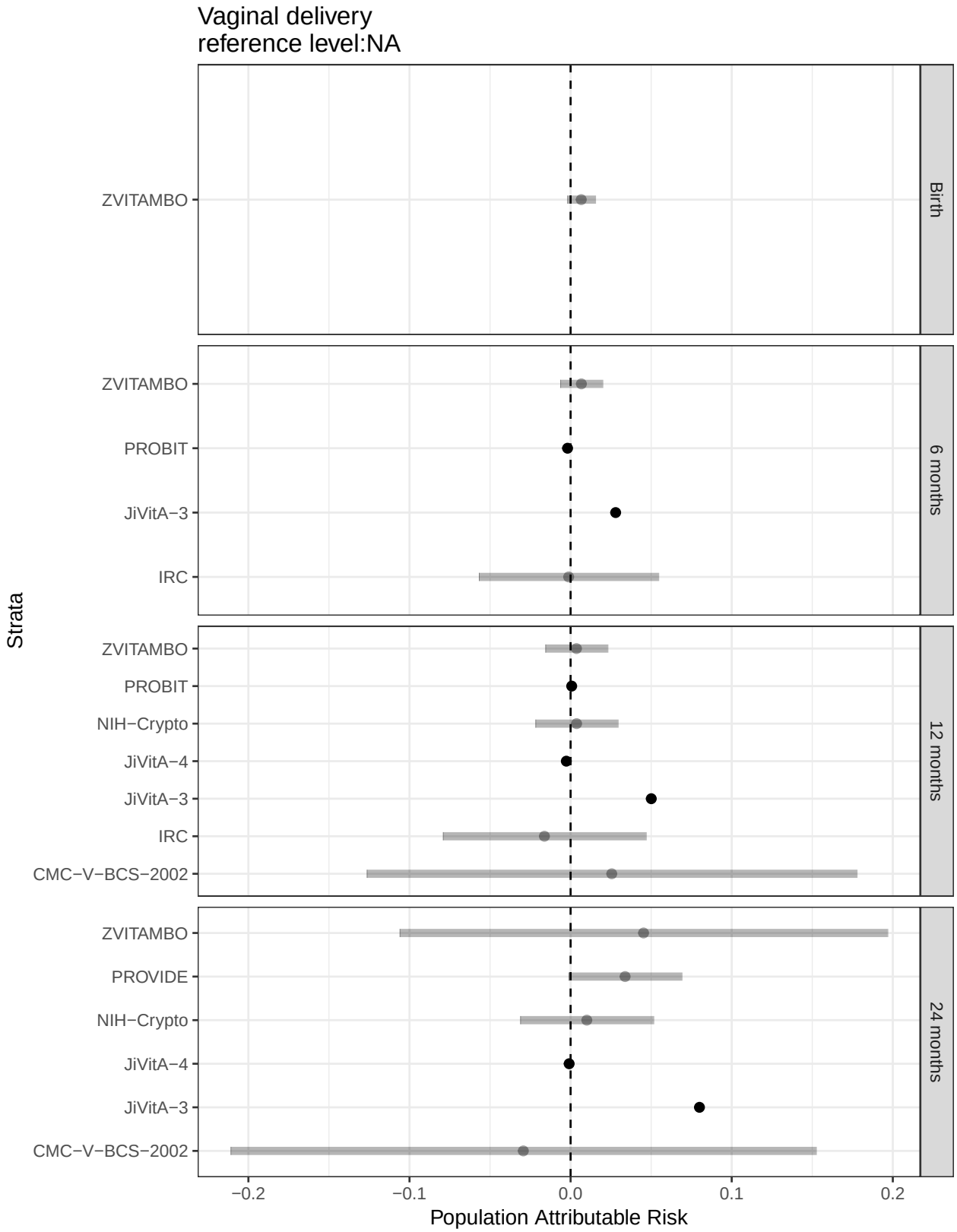

```
## Warning: Removed 13 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

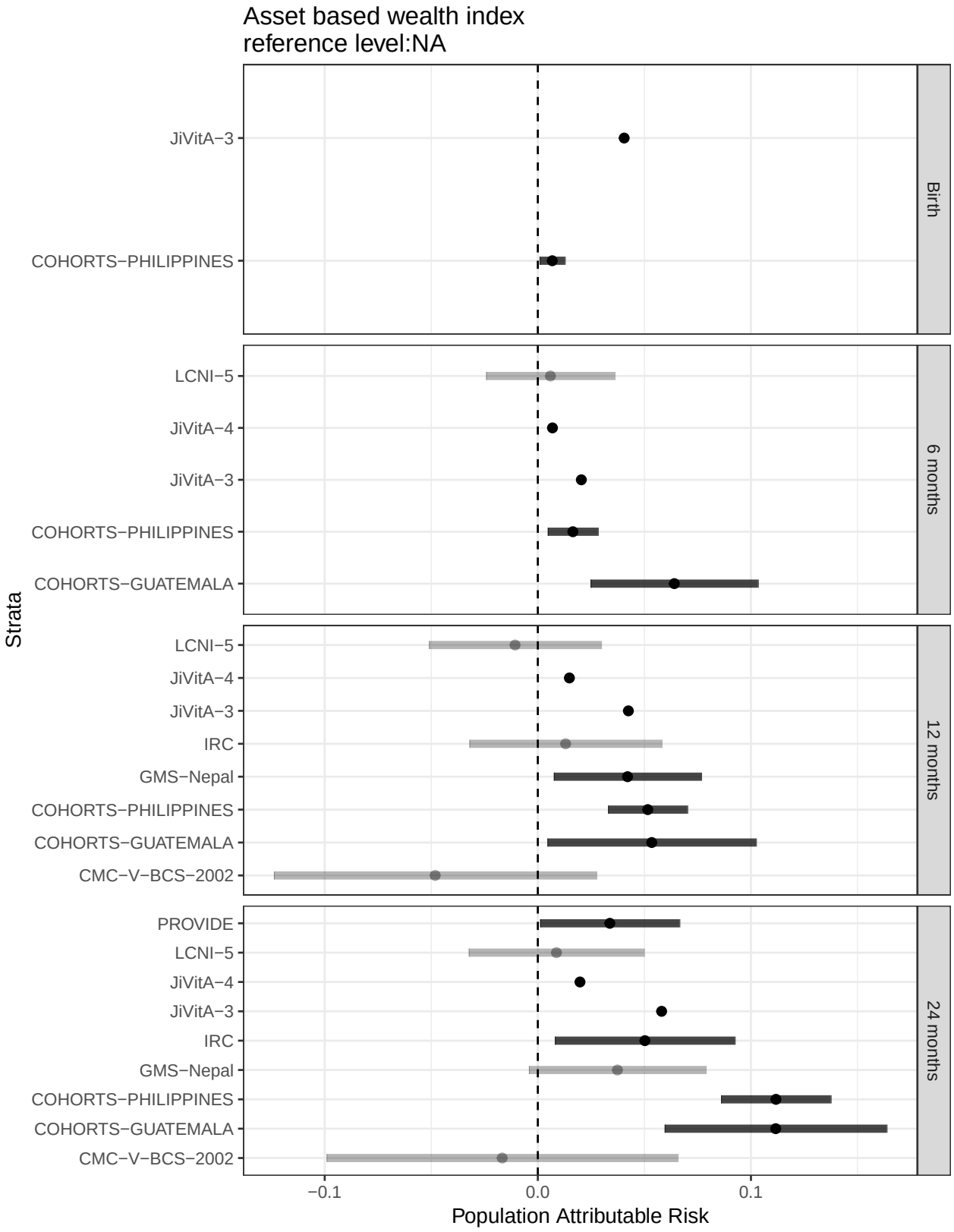



```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```

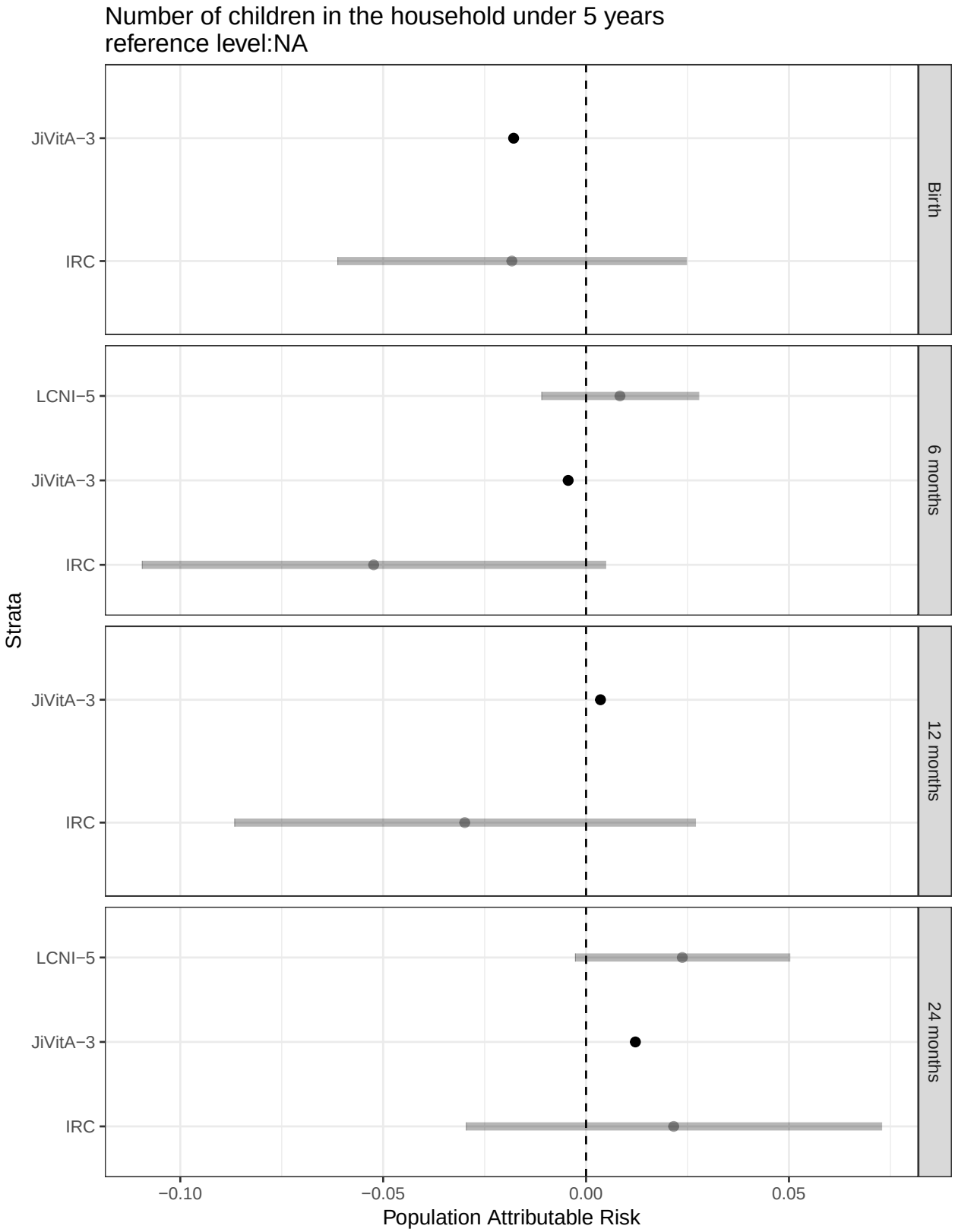

Vaginal delivery
reference level:NA
Strata
Birth
ZVITAMBO
6 months
ZVITAMBO
PROBIT
JiVitA−3
IRC
12 months
ZVITAMBO
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
IRC
CMC−V−BCS−2002
24 months
ZVITAMBO
PROVIDE
NIH−Crypto
JiVitA−4
JiVitA−3
CMC−V−BCS−2002
−0.2
−0.1
0.0
0.1
0.2
Population Attributable Risk

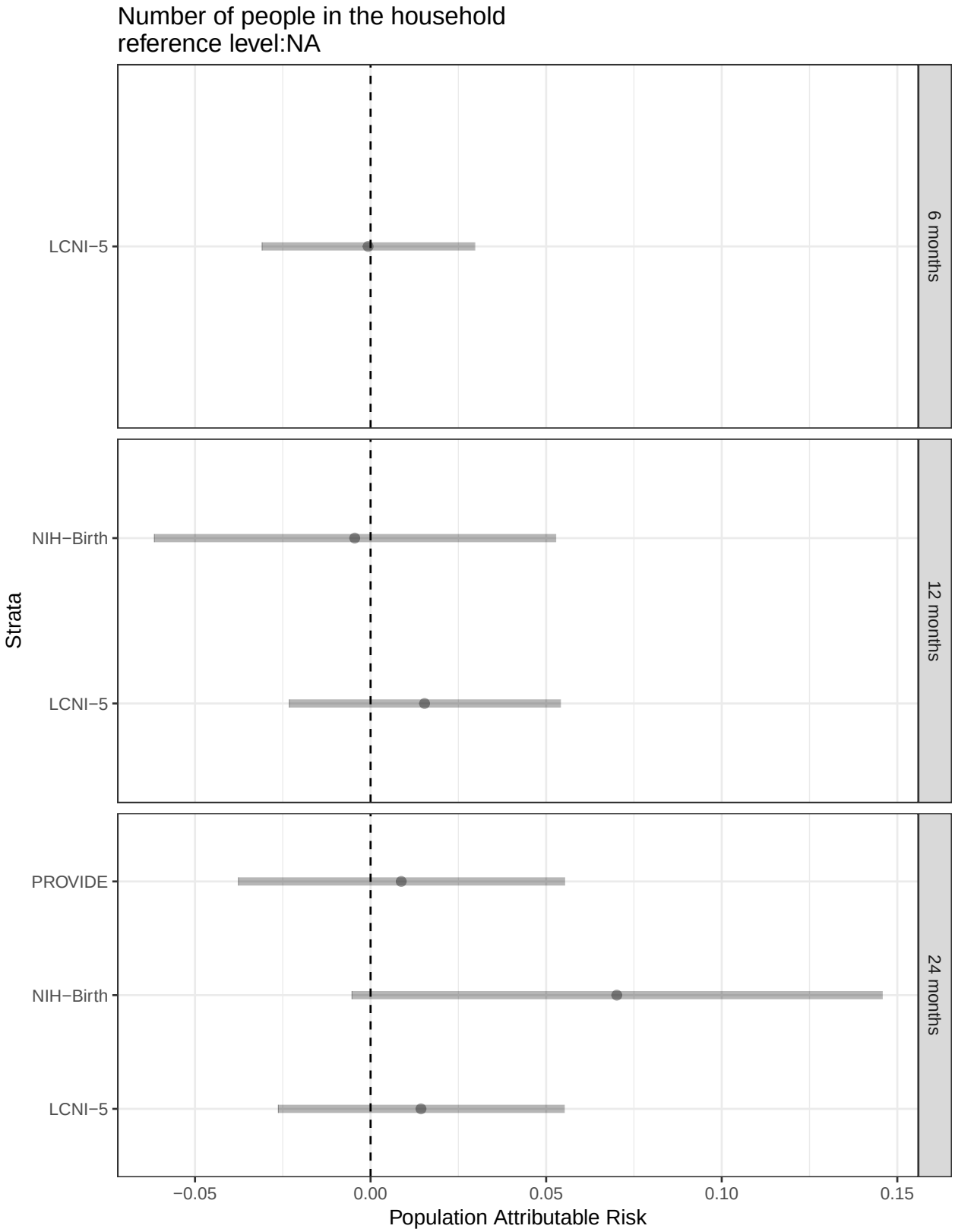
Household characteristics

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```

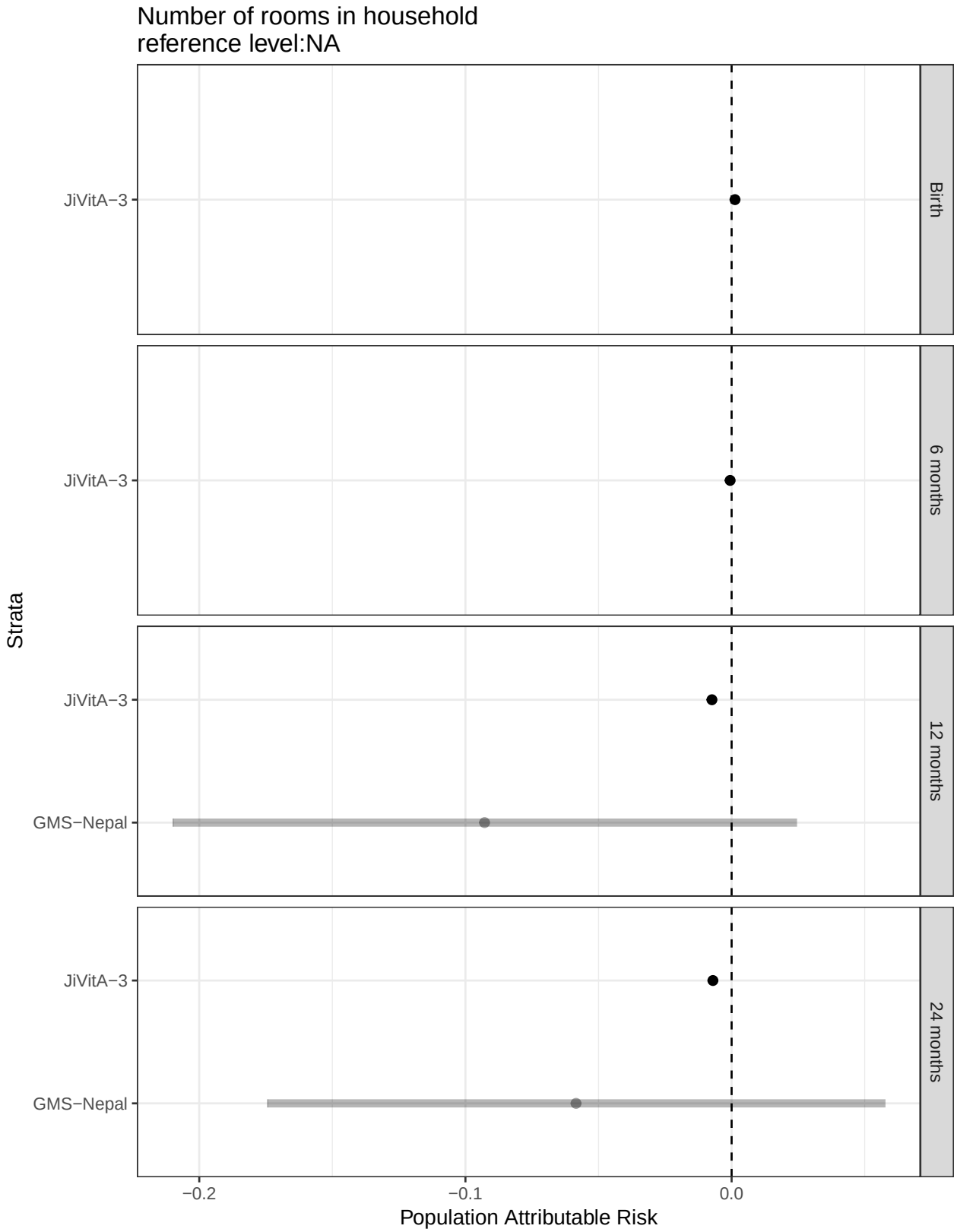



```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Number of children in the household under 5 years
reference level:NA
Strata
JiVitA−3
IRC
Birth
LCNI−5
JiVitA−3
IRC
6 months
JiVitA−3
IRC
12 months
LCNI−5
JiVitA−3
IRC
24 months
−0.10
−0.05
0.00
0.05
Population Attributable Risk

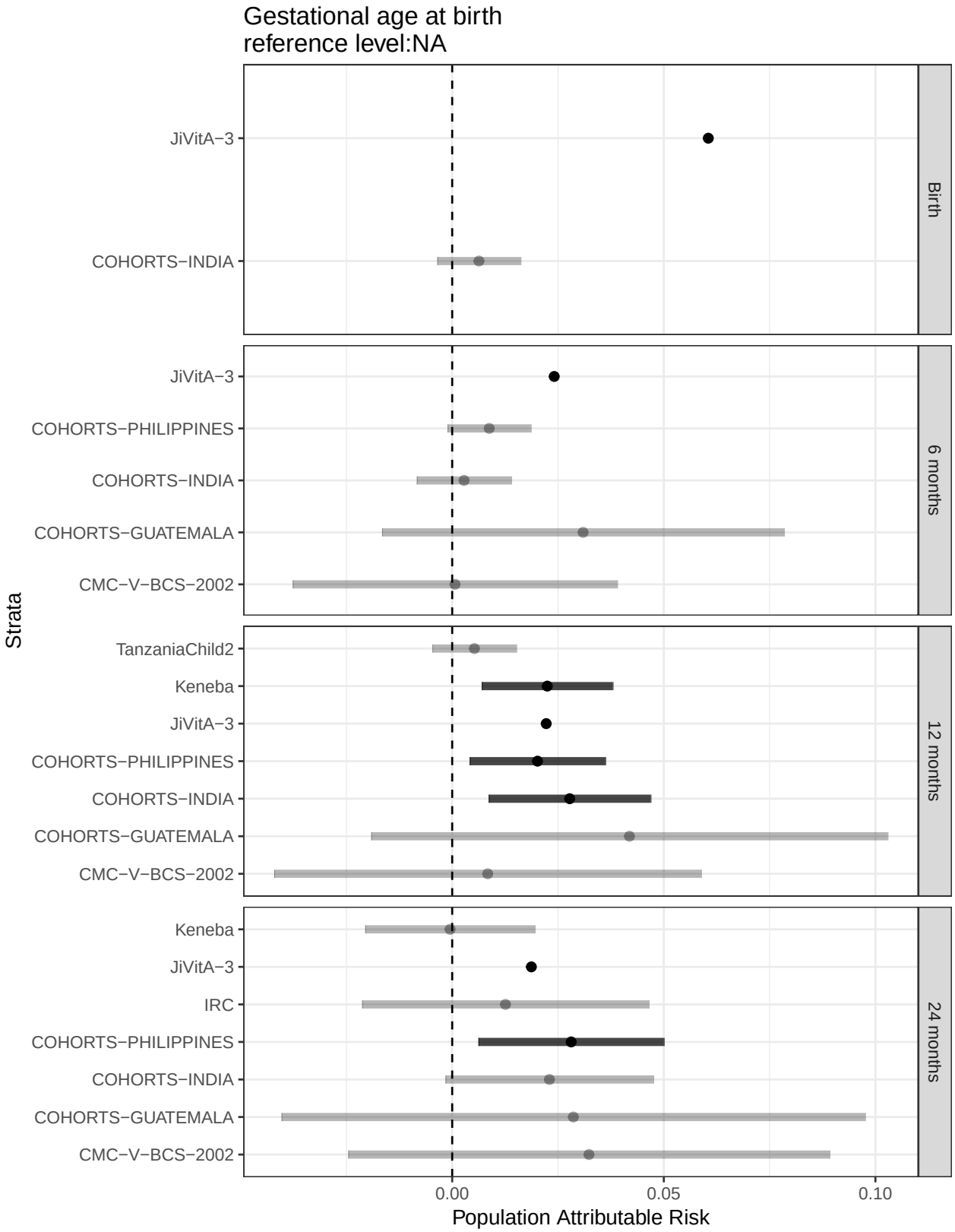



```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```

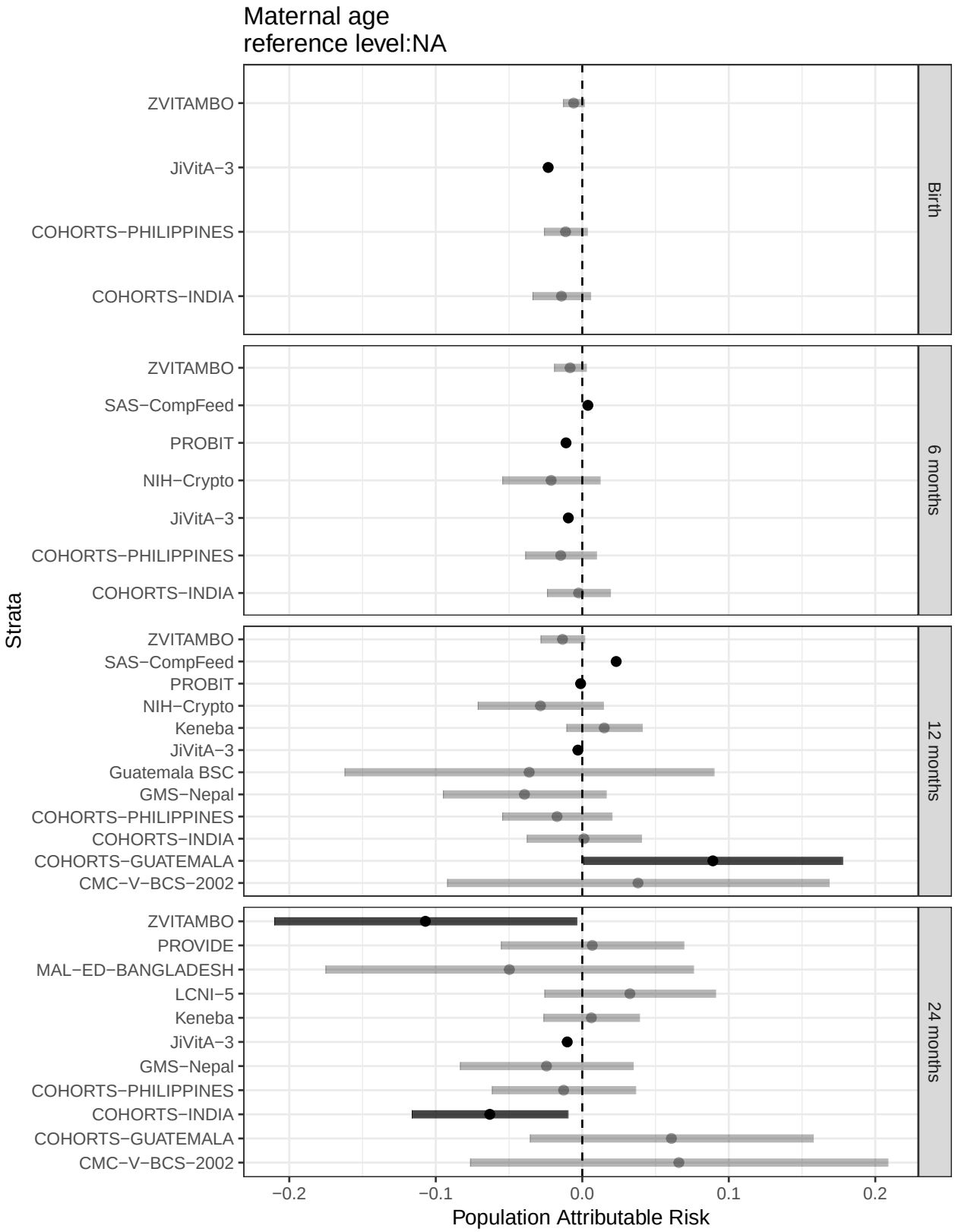

Number of rooms in household
reference level:NA
Strata
JiVitA−3
JiVitA−3
JiVitA−3
GMS−Nepal
JiVitA−3
GMS−Nepal
Birth
6 months
12 months
24 months
−0.2
−0.1
0.0
Population Attributable Risk

Maternal characteristics

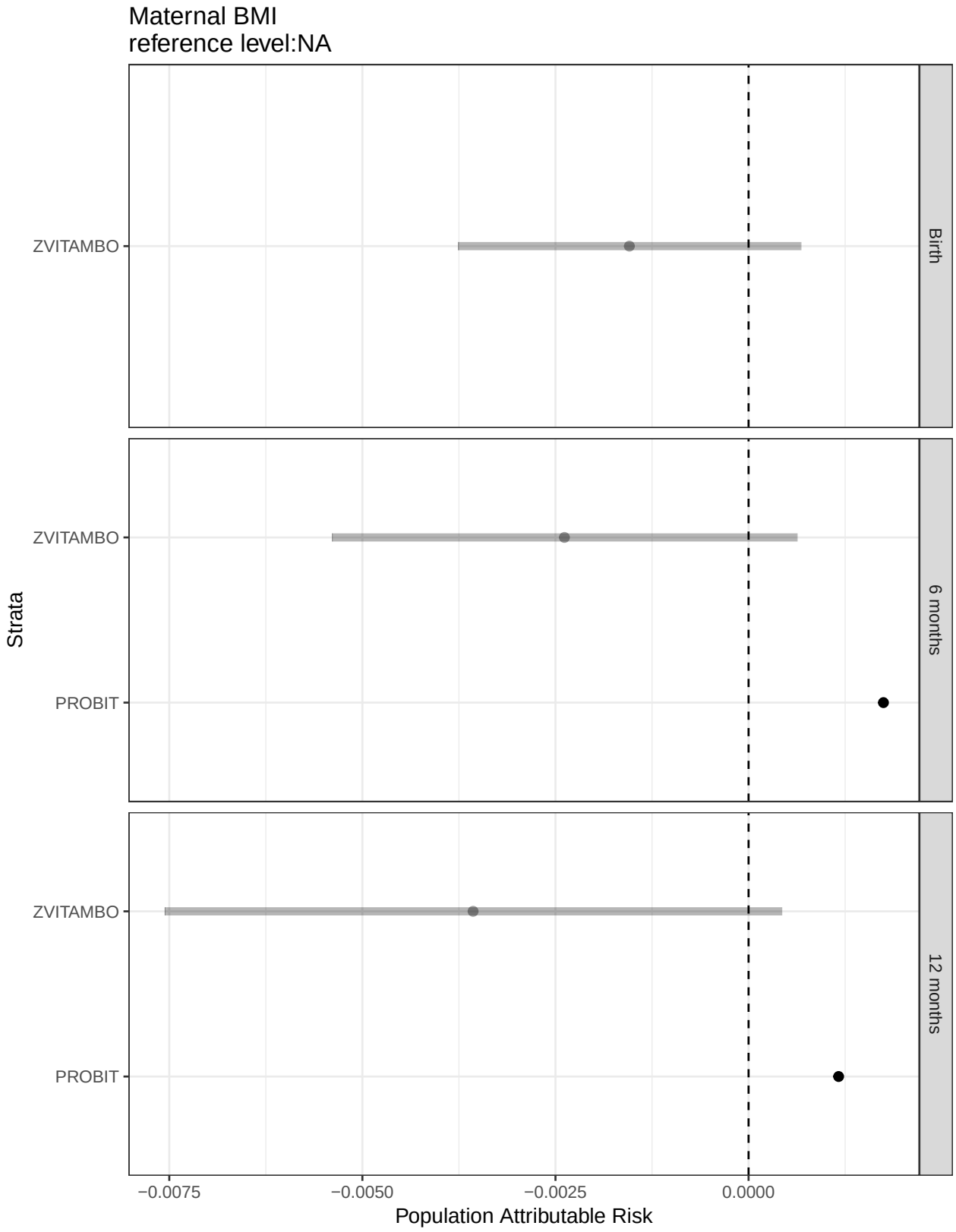
```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



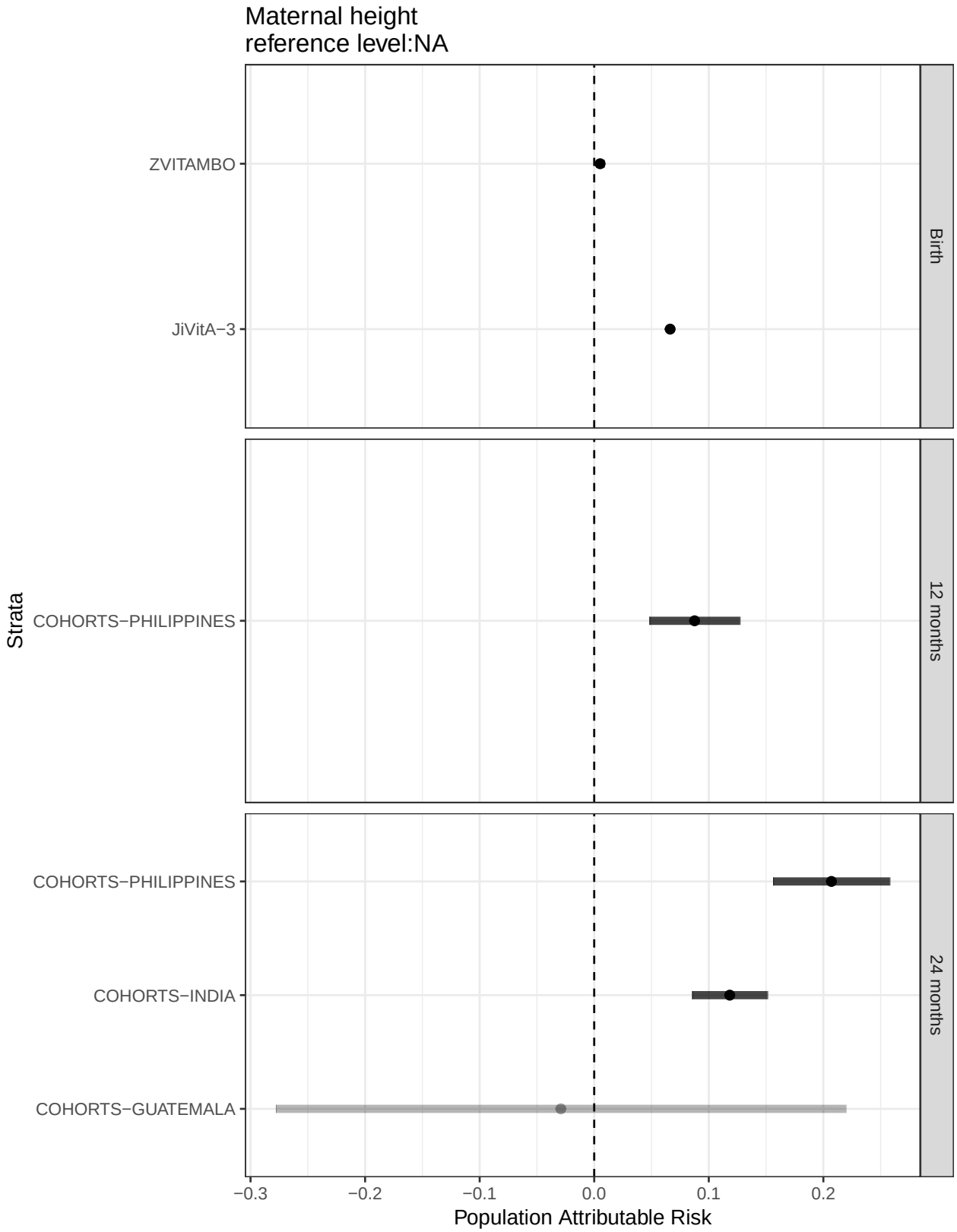

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```



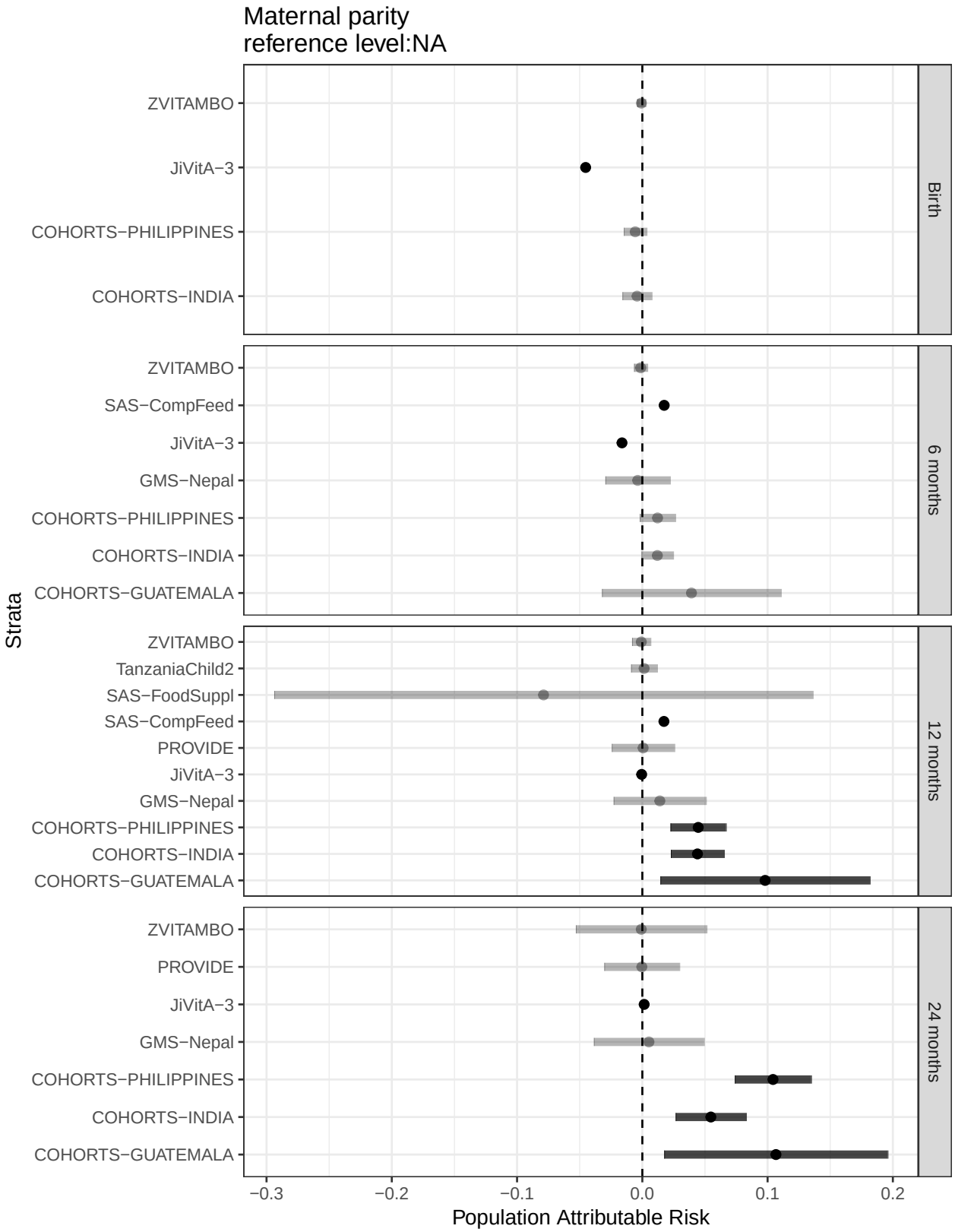

```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```

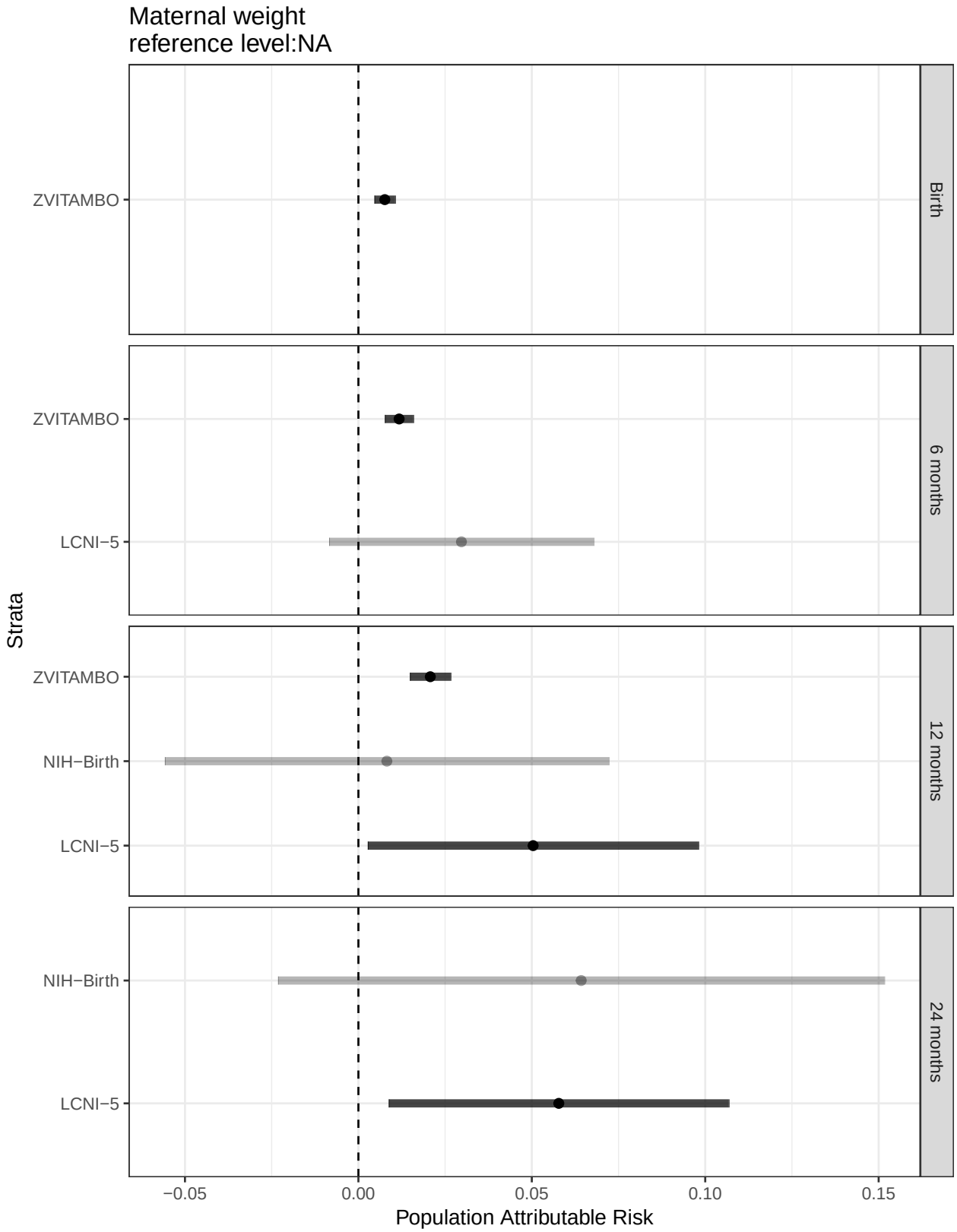



```
## Warning: Removed 1 rows containing missing values (geom_errorbar).
```

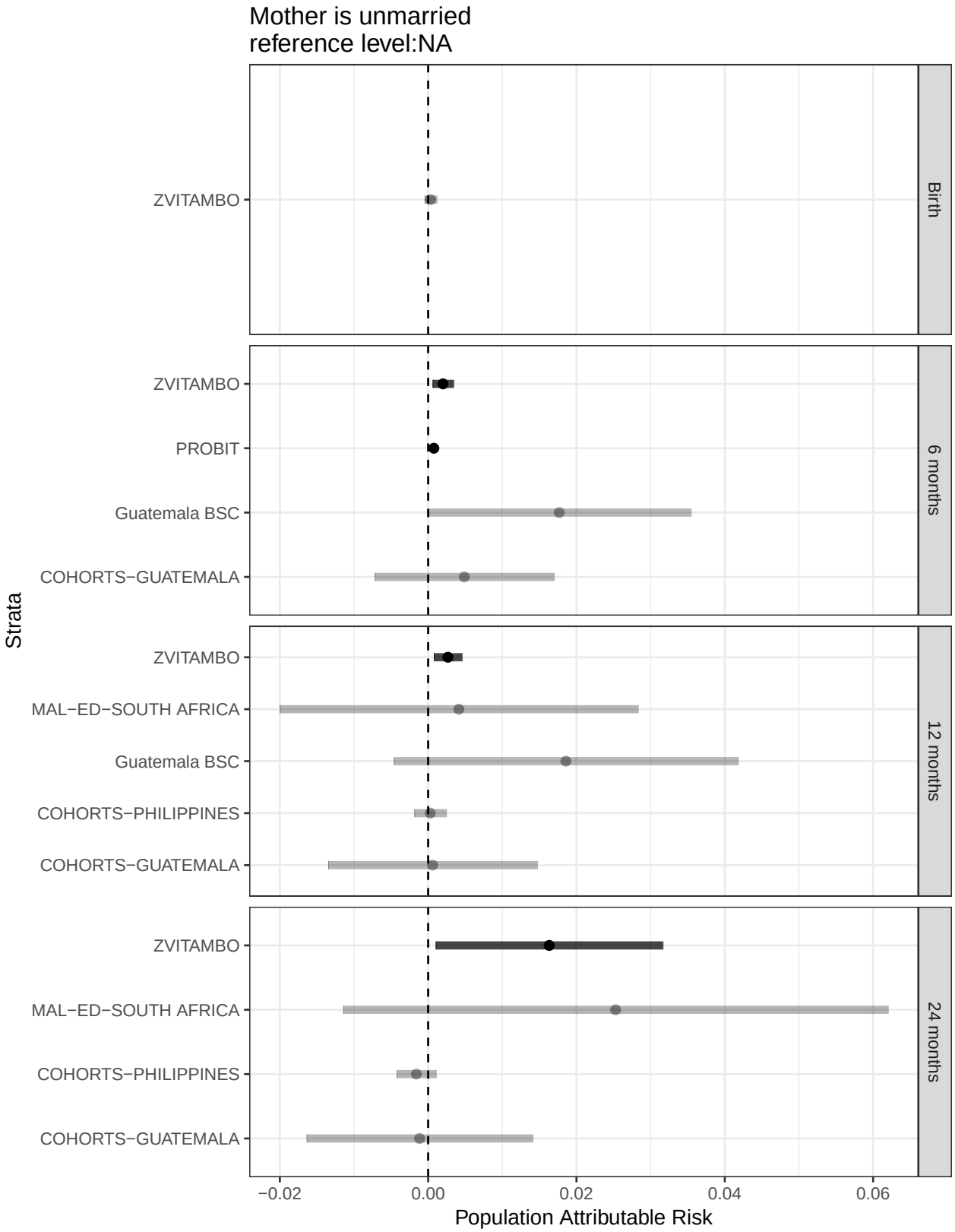



```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```

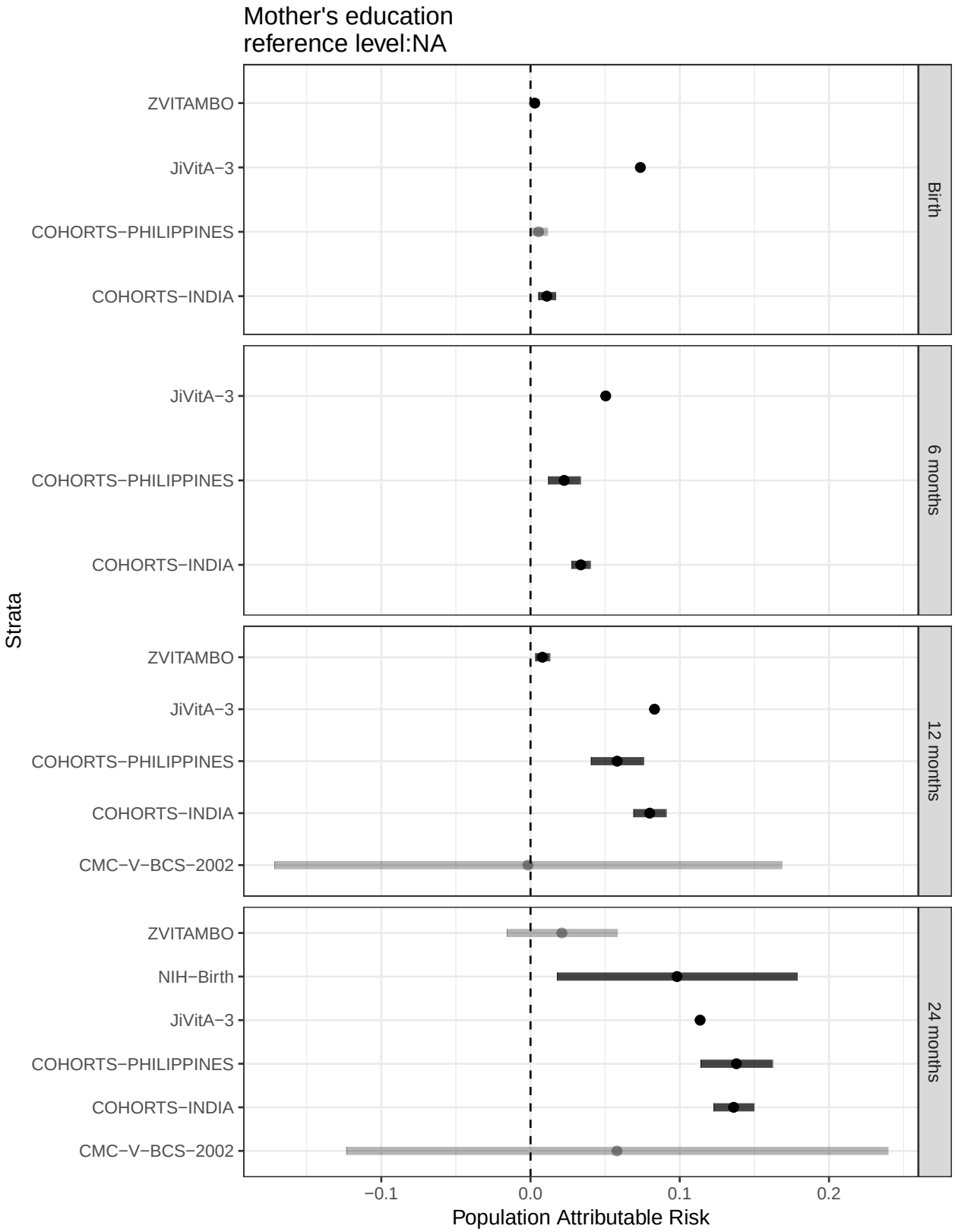

Maternal parity
reference level:NA
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
ZVITAMBO
SAS−CompFeed
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
6 months
ZVITAMBO
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
12 months
ZVITAMBO
PROVIDE
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
24 months
−0.3
−0.2
−0.1
0.0
0.1
0.2
Population Attributable Risk




```
## Warning: Removed 1 rows containing missing values (geom_errorbar).
```

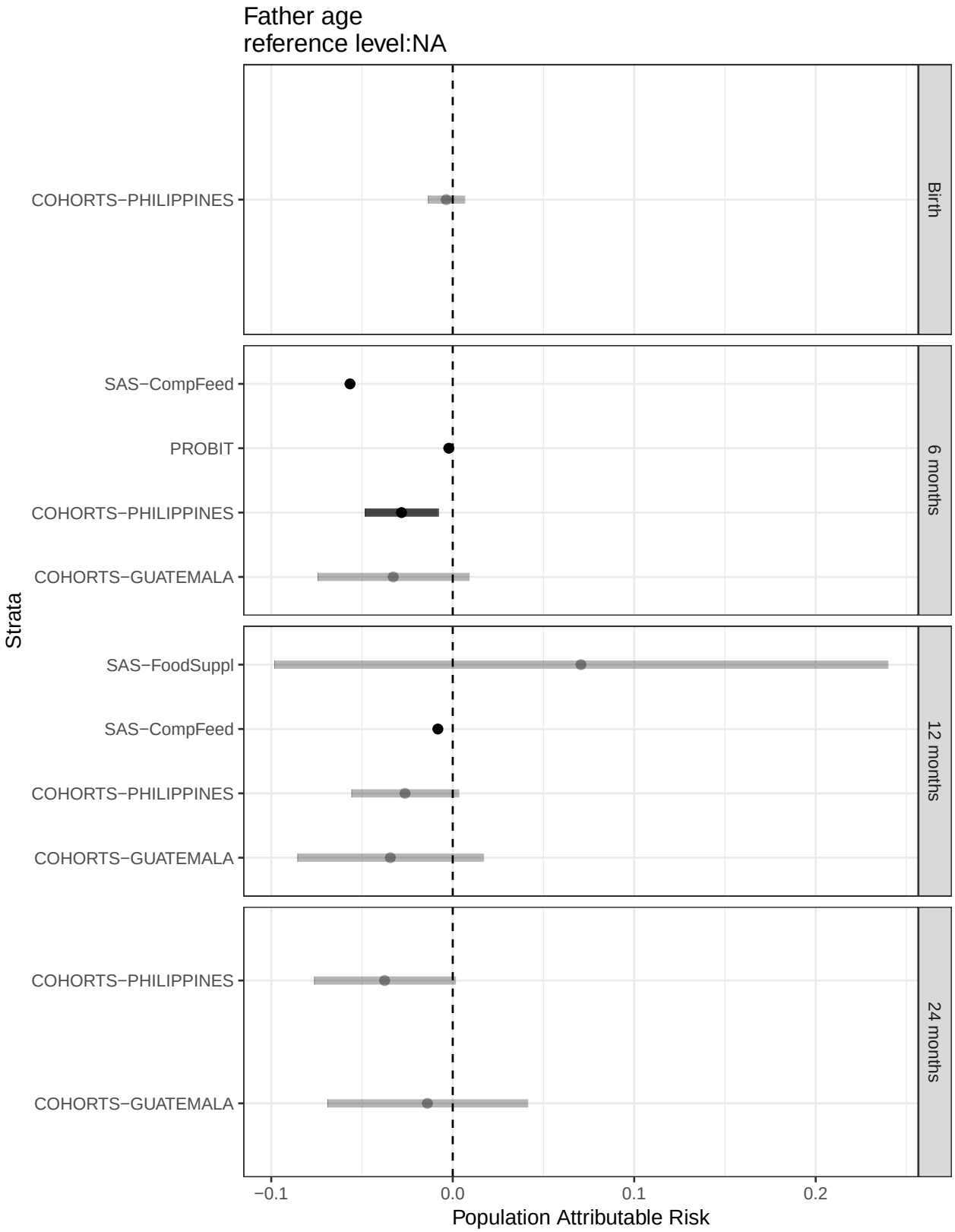


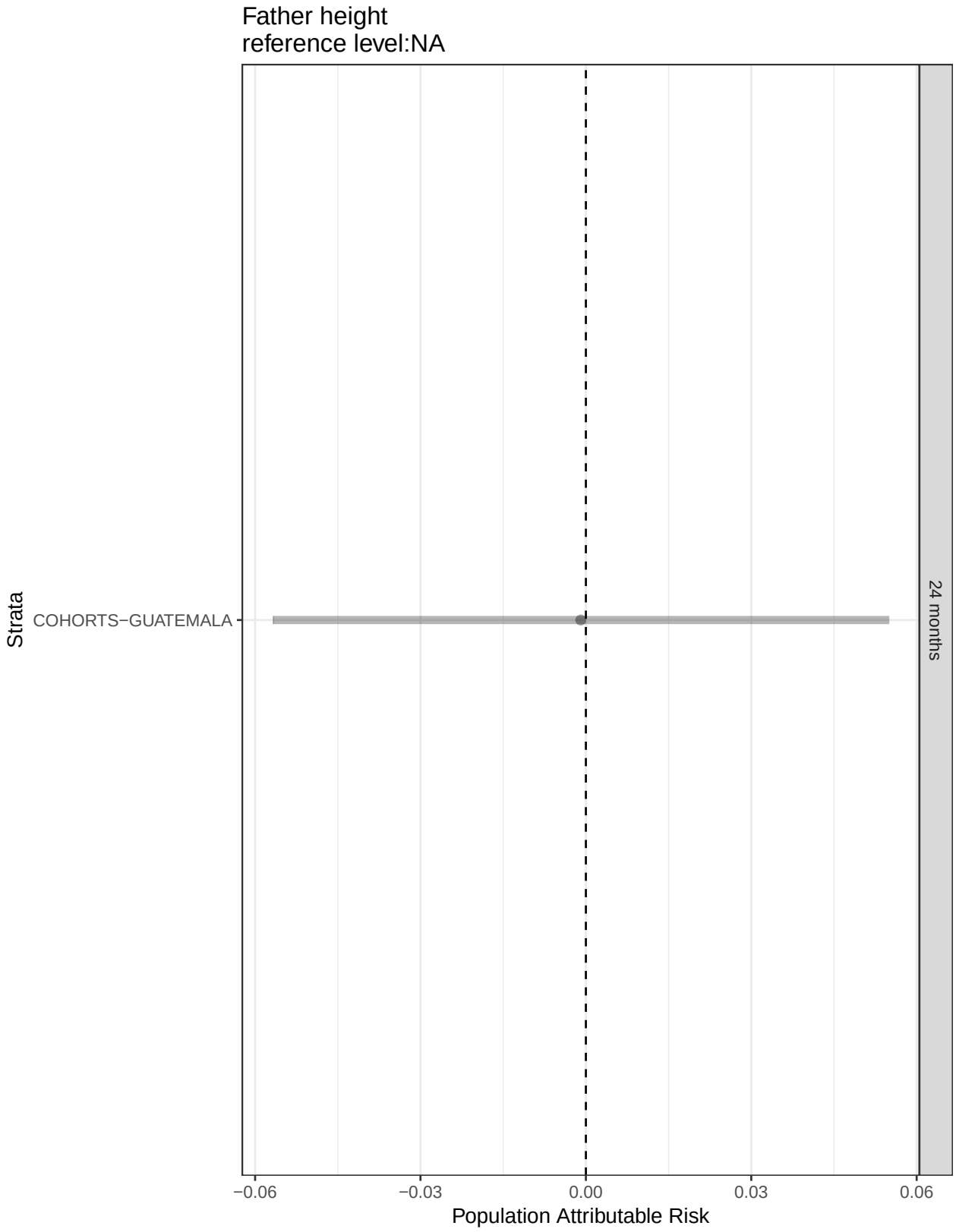

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Mother's education
reference level:NA
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
6 months
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
12 months
ZVITAMBO
NIH−Birth
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
24 months
−0.1
0.0
0.1
0.2
Population Attributable Risk

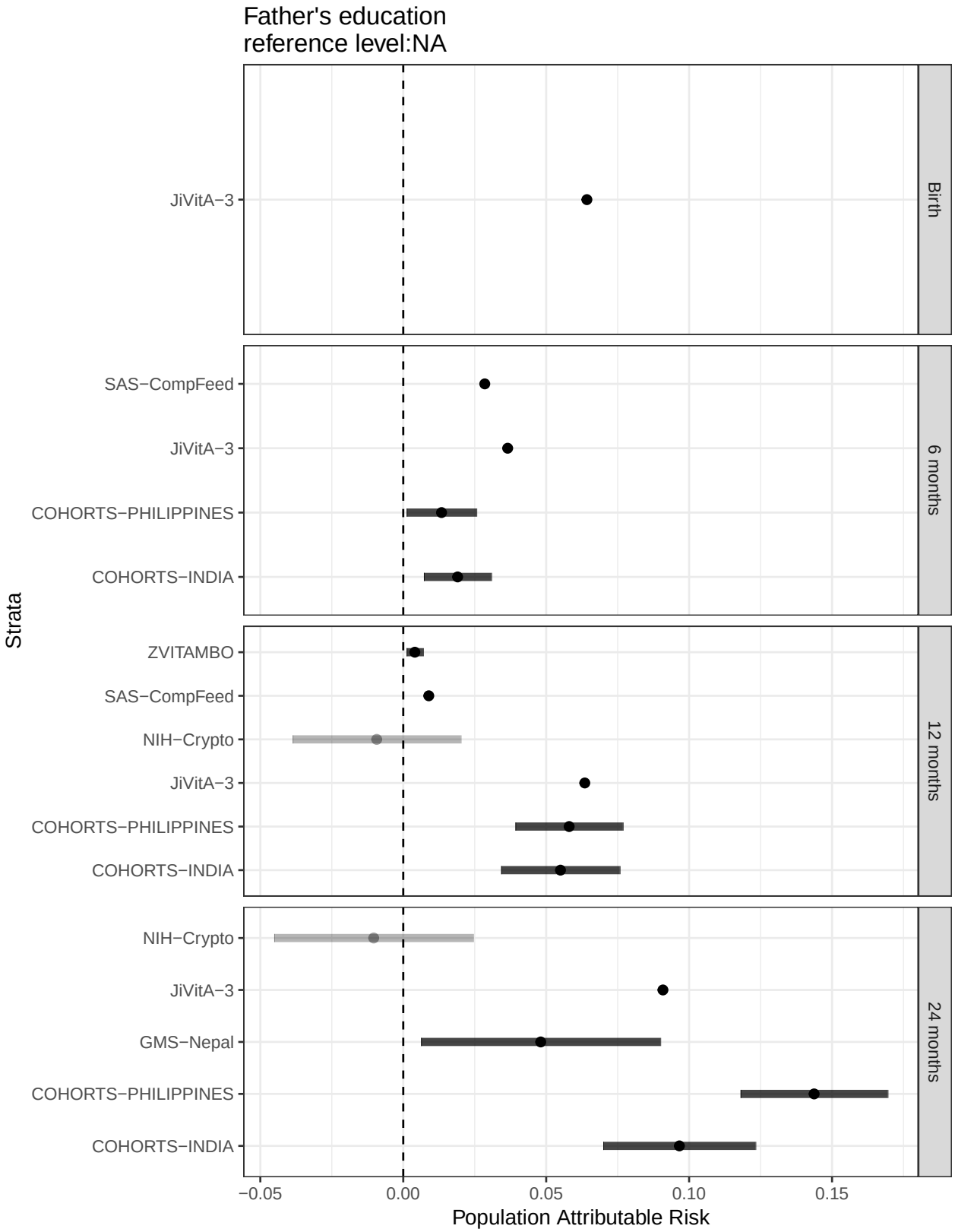
Paternal characteristics

```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```


Father age
reference level:NA
Birth
6 months
12 months
24 months
COHORTS−PHILIPPINES
SAS−CompFeed
PROBIT
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
SAS−FoodSuppl
SAS−CompFeed
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
Strata
−0.1
0.0
0.1
0.2
Population Attributable Risk



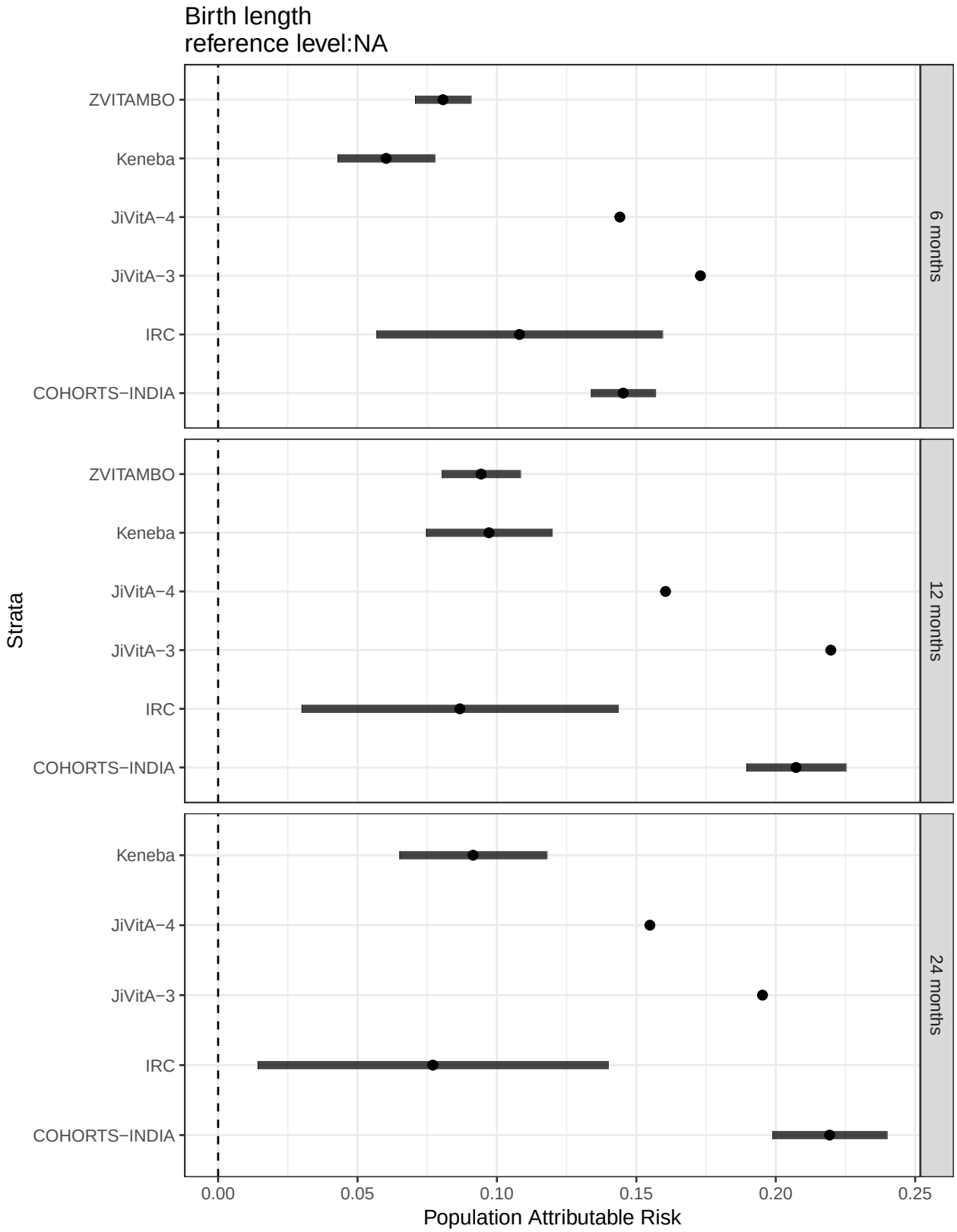

```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```


Father's education
reference level:NA
Strata
Birth
JiVitA−3
6 months
SAS−CompFeed
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
12 months
ZVITAMBO
SAS−CompFeed
NIH−Crypto
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
24 months
NIH−Crypto
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
−0.05
0.00
0.05
0.10
0.15
Population Attributable Risk

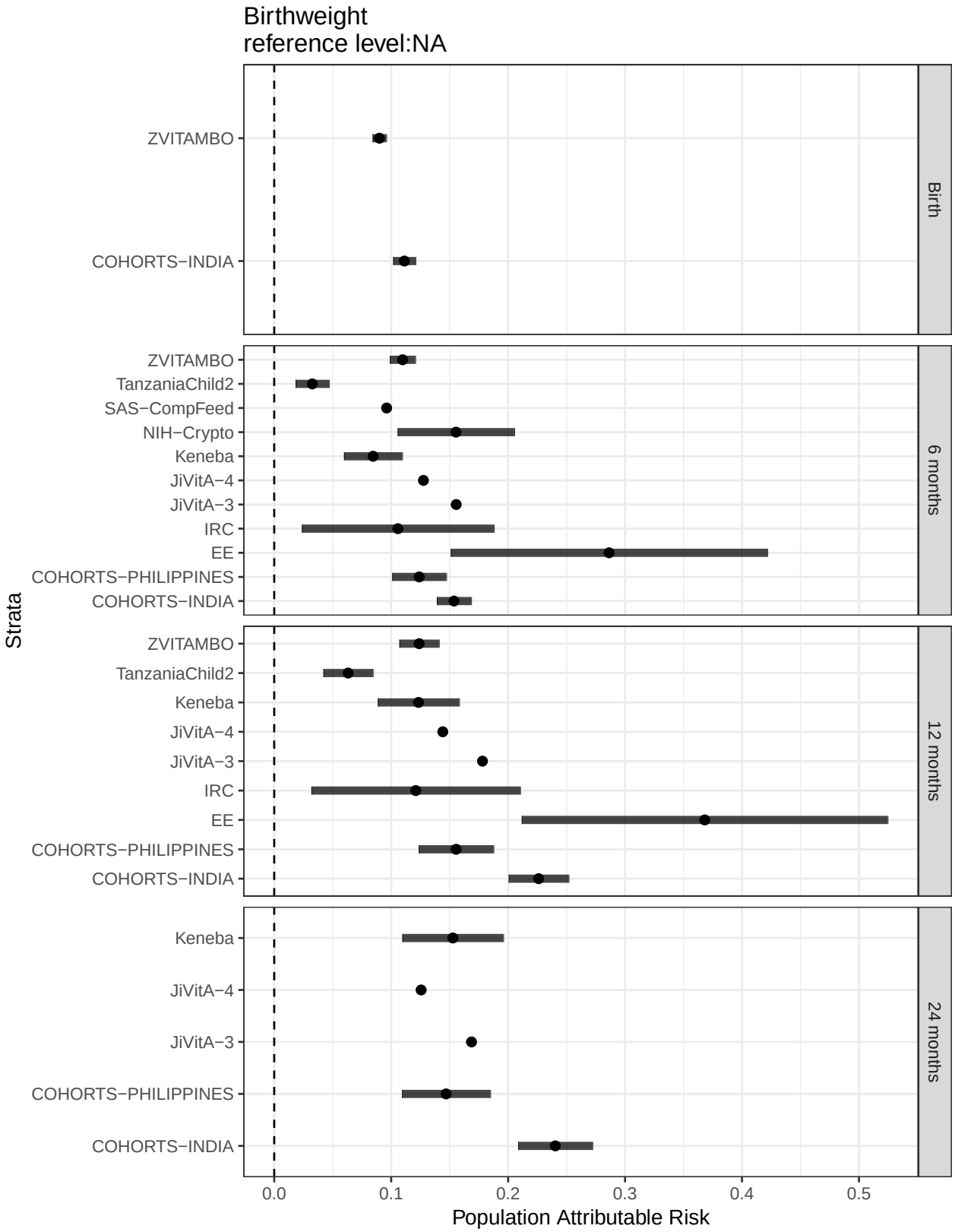
Point prevalence of stunting

Child characteristics

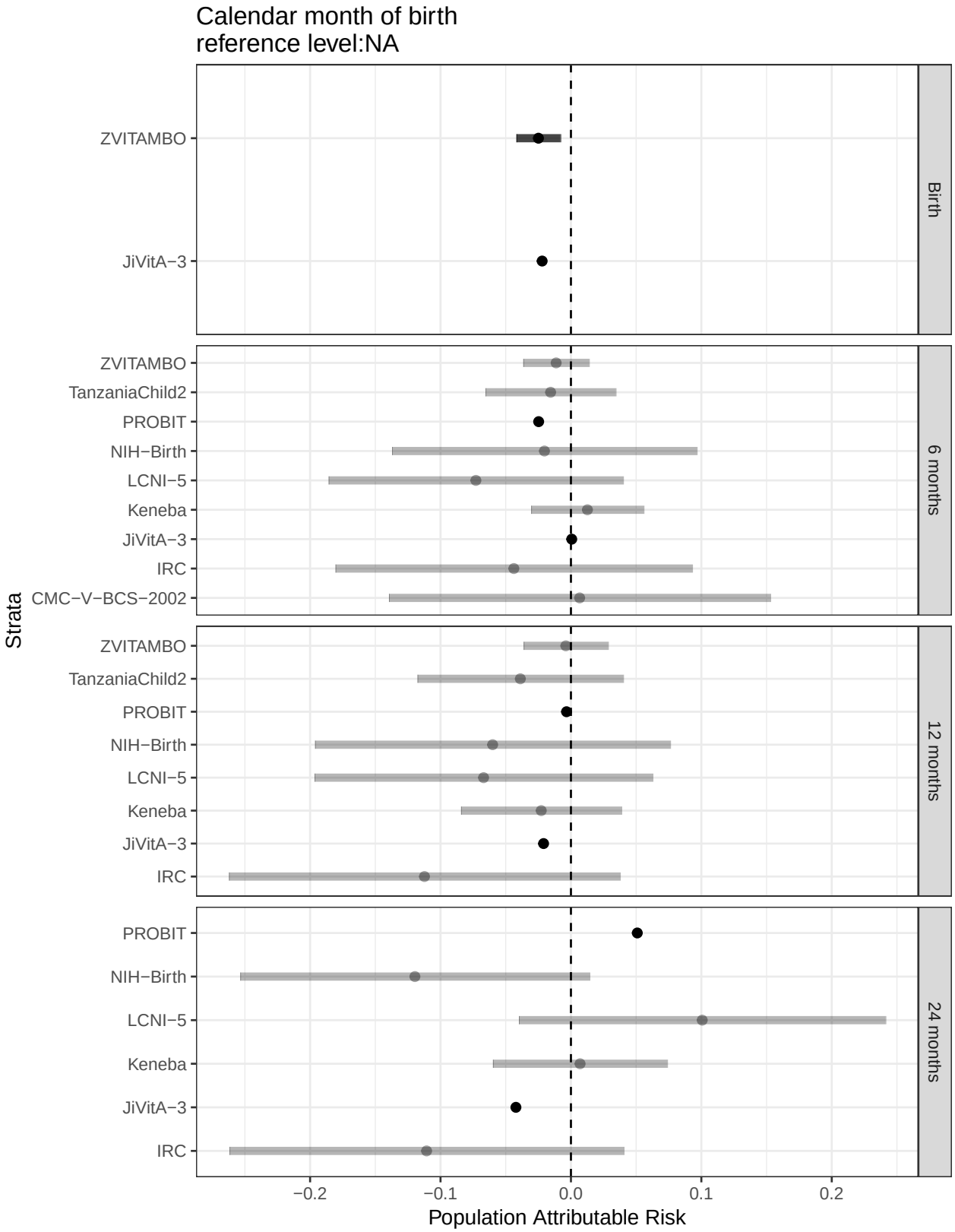
```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```



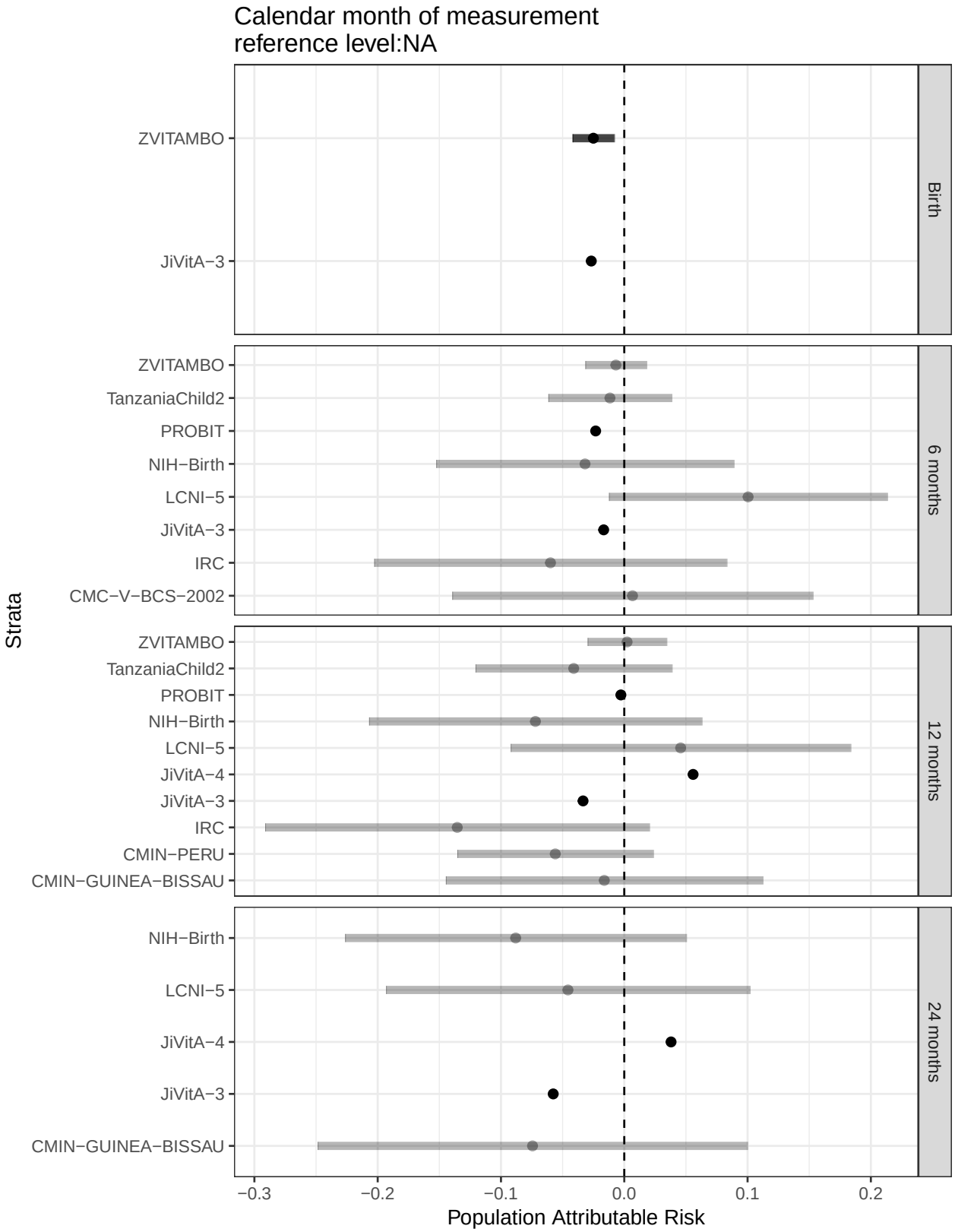

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```



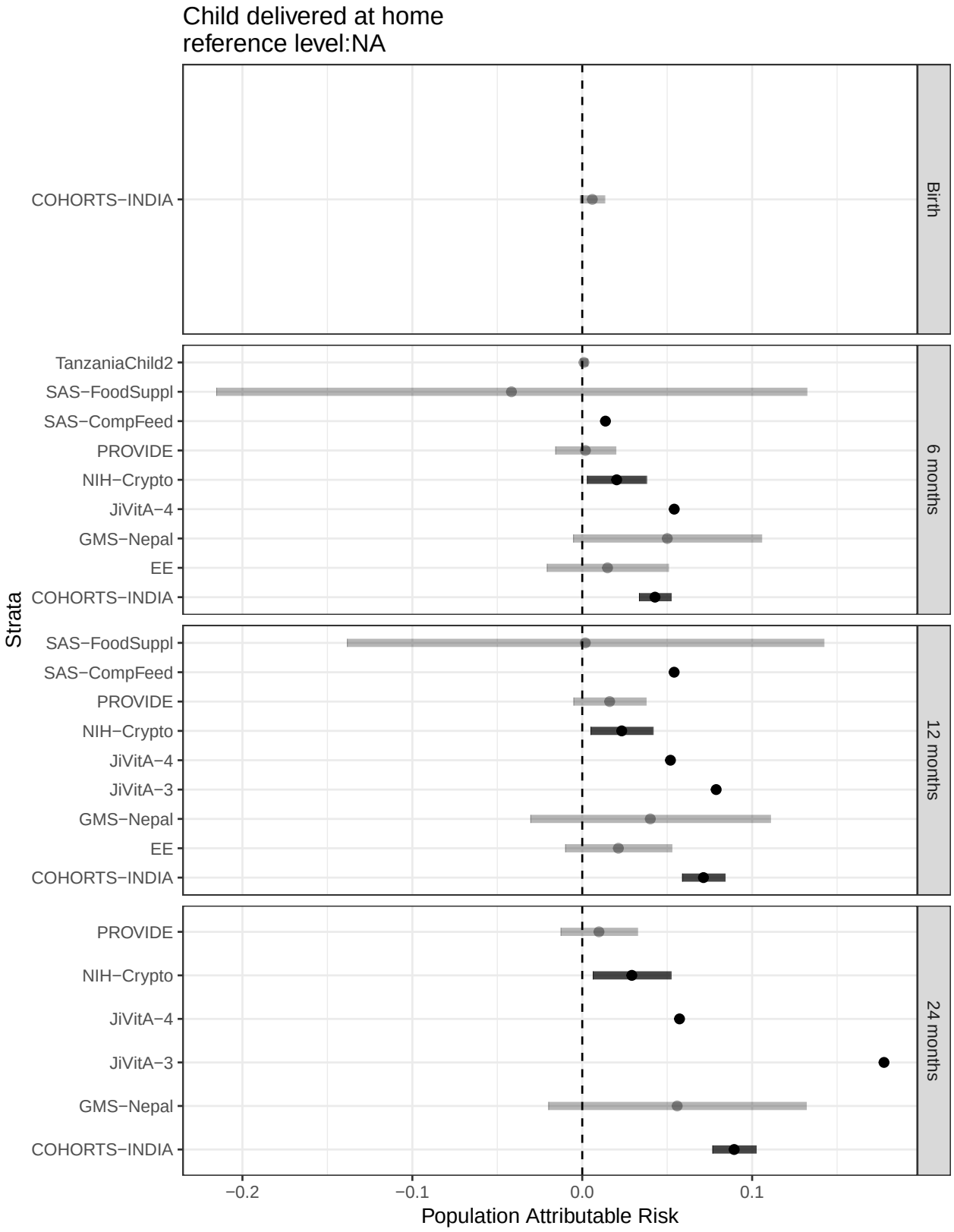

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```



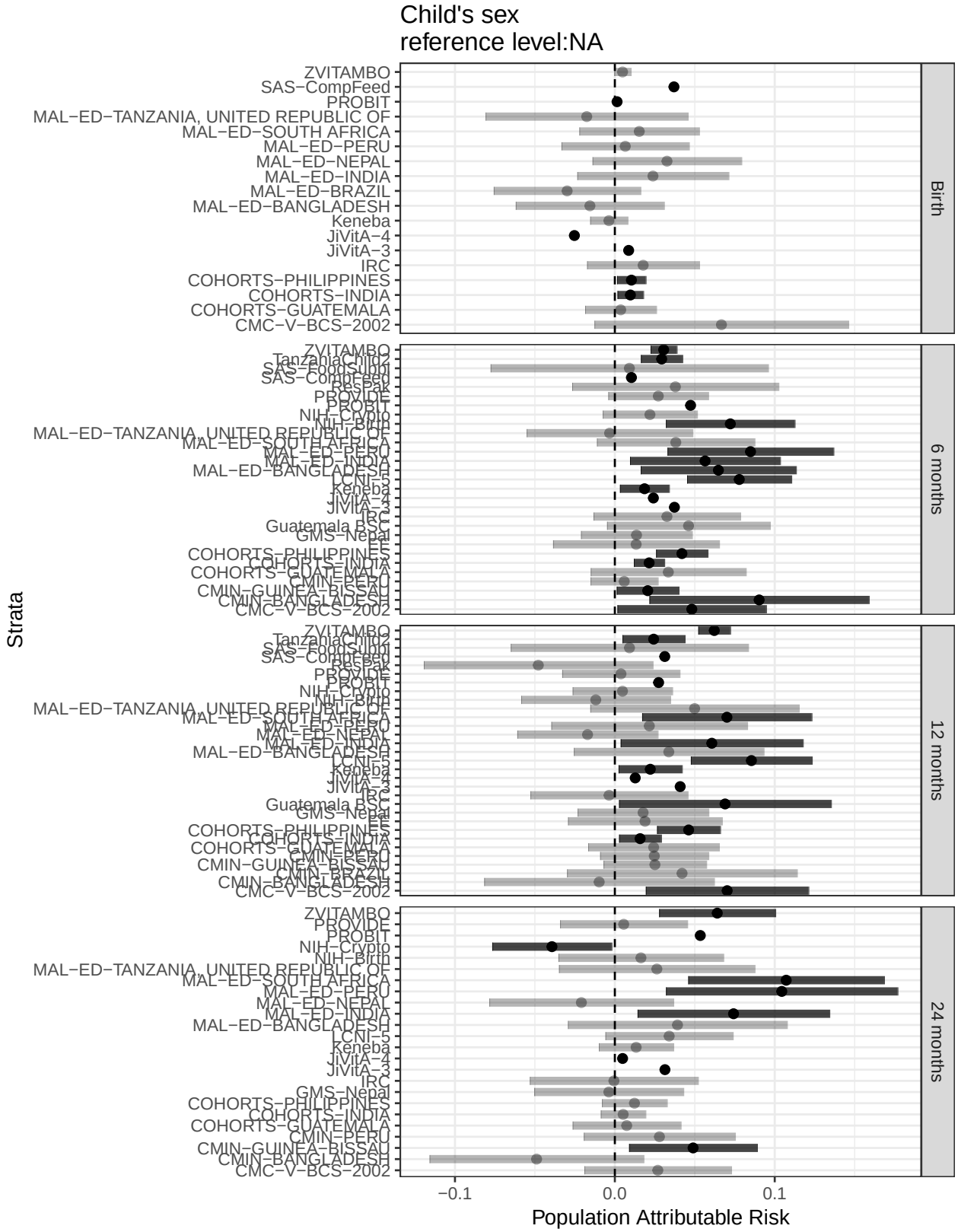

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```



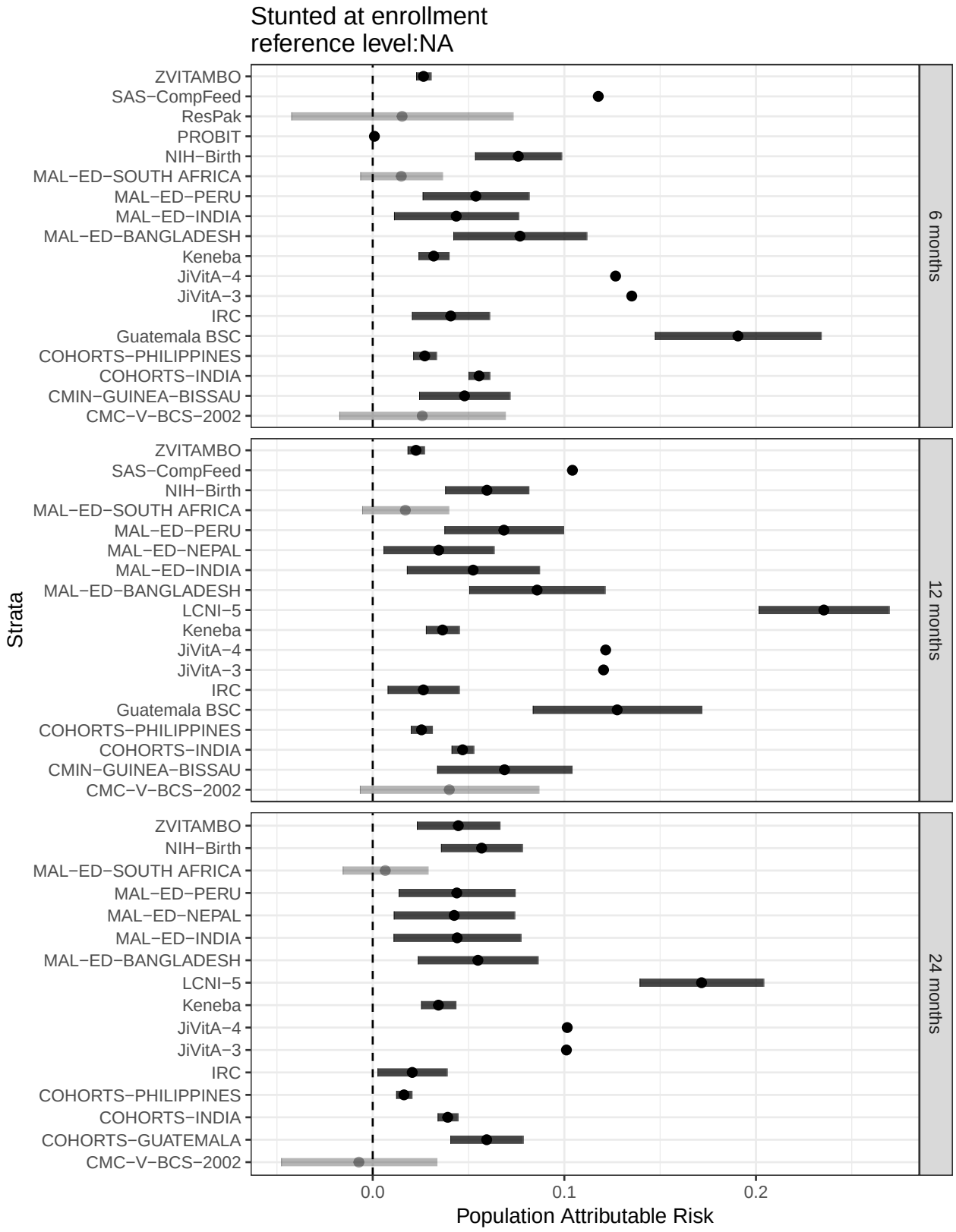

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```



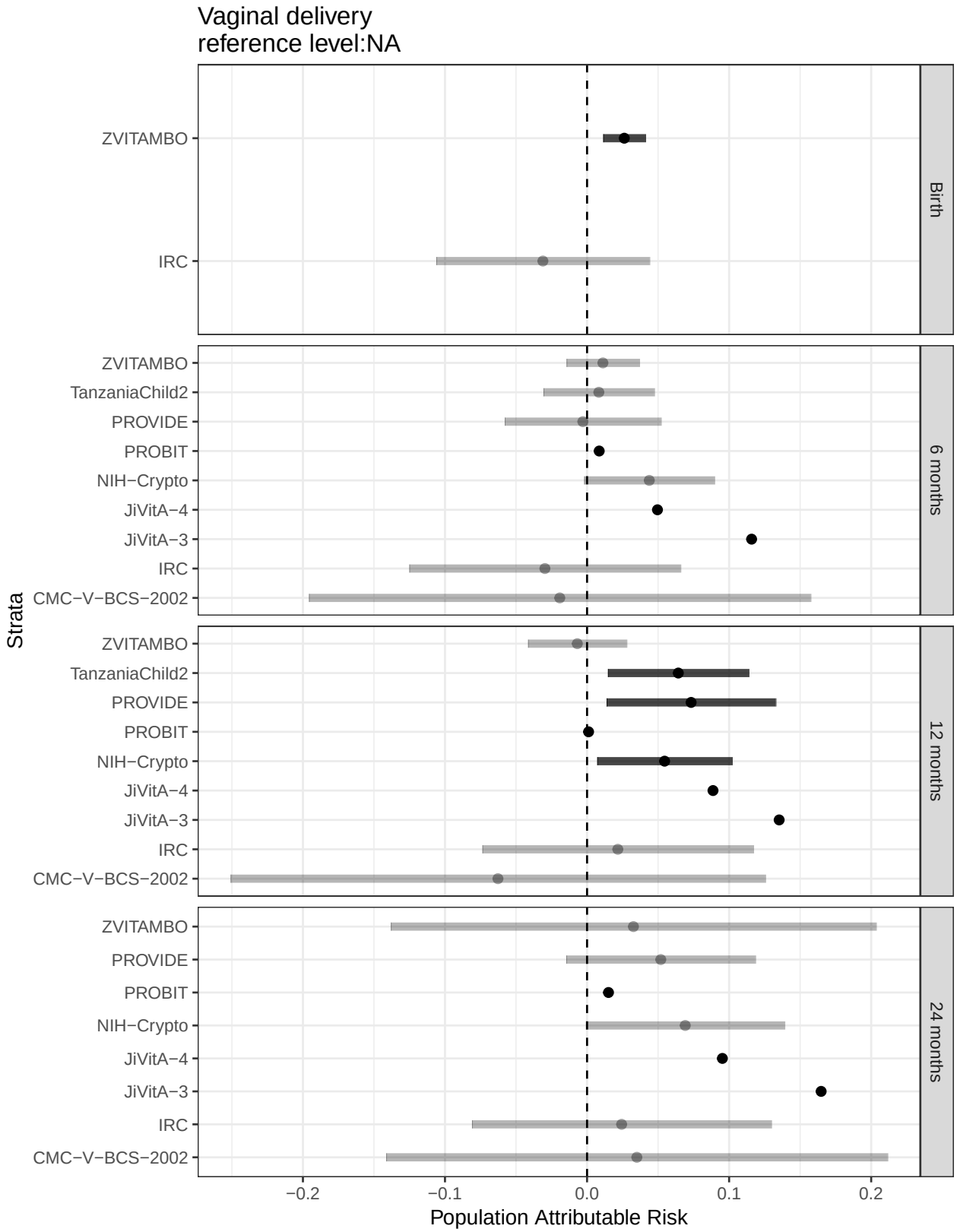

```
## Warning: Removed 15 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
```

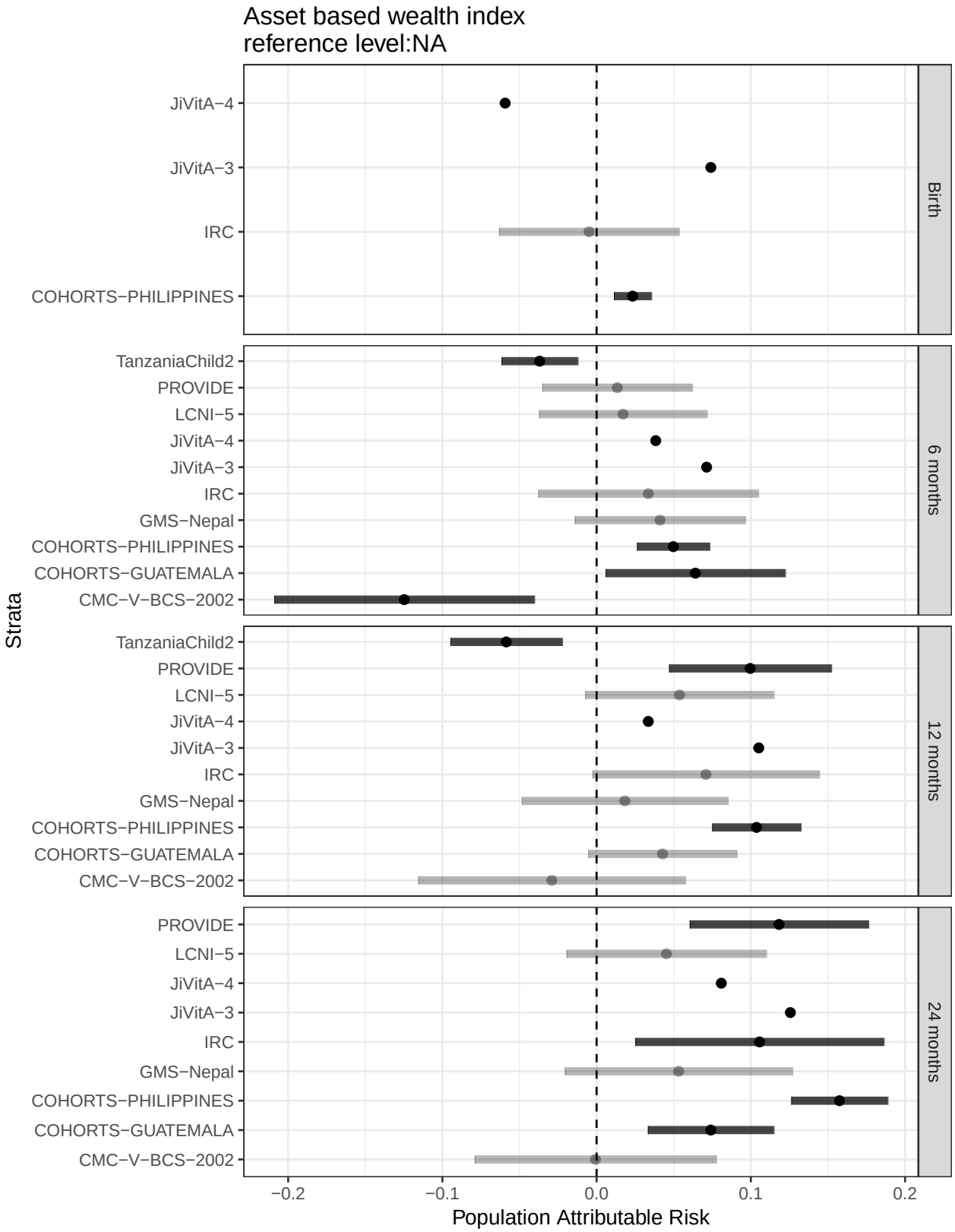



```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
```

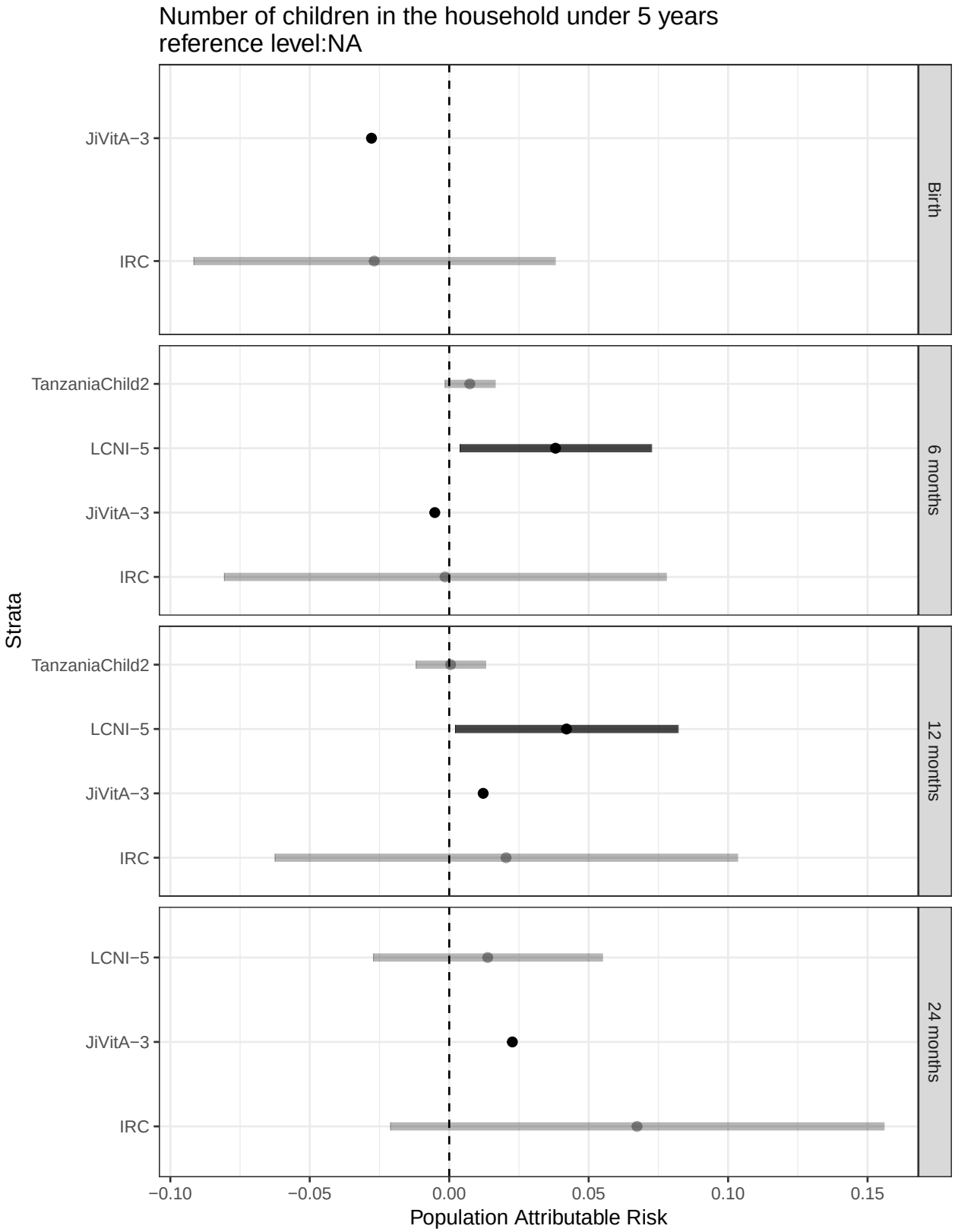

Vaginal delivery
reference level:NA
Birth
6 months
12 months
24 months
ZVITAMBO
IRC
TanzaniaChild2
PROVIDE
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
CMC−V−BCS−2002
Strata
−0.2
−0.1
0.0
0.1
0.2
Population Attributable Risk

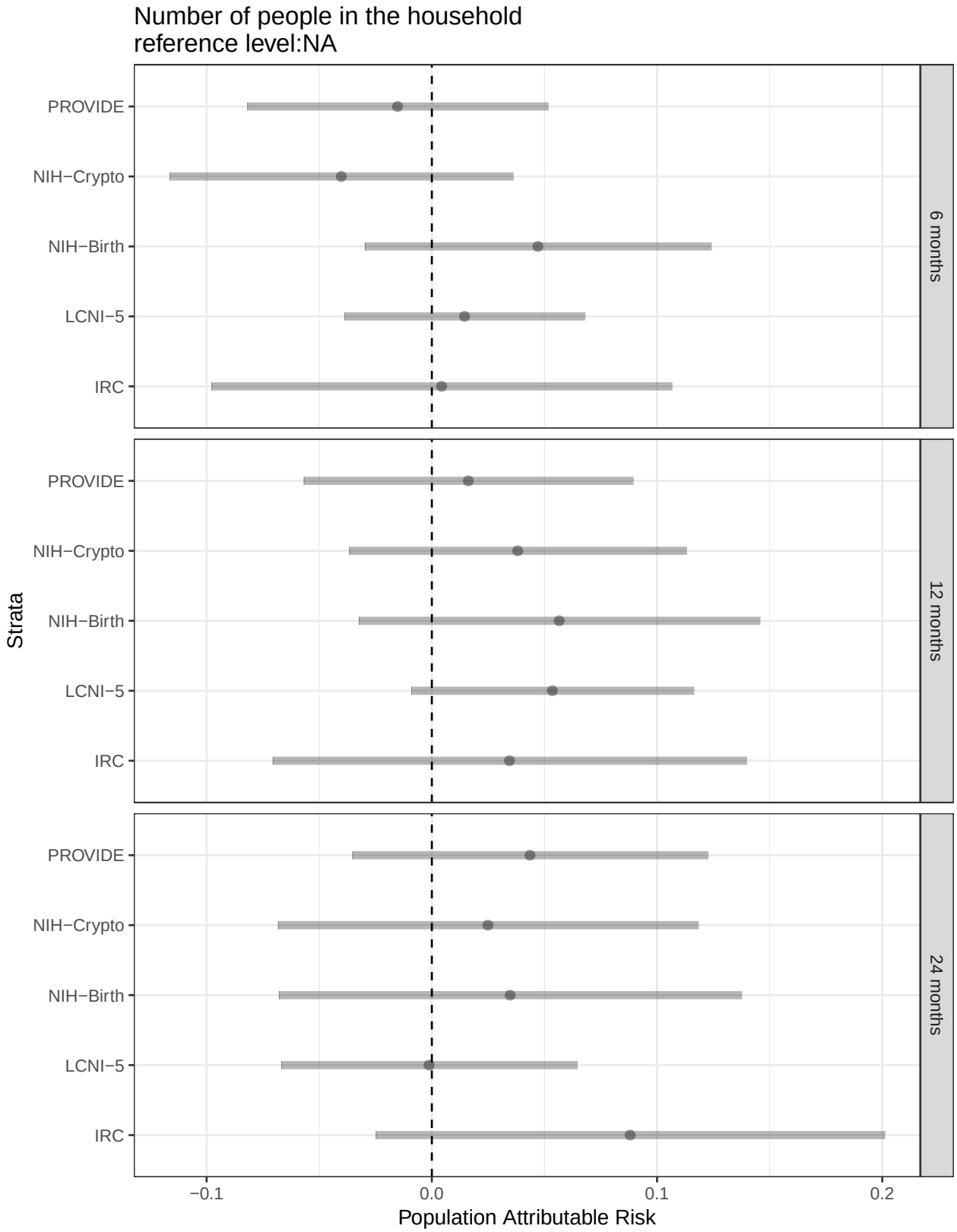
Household characteristics

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

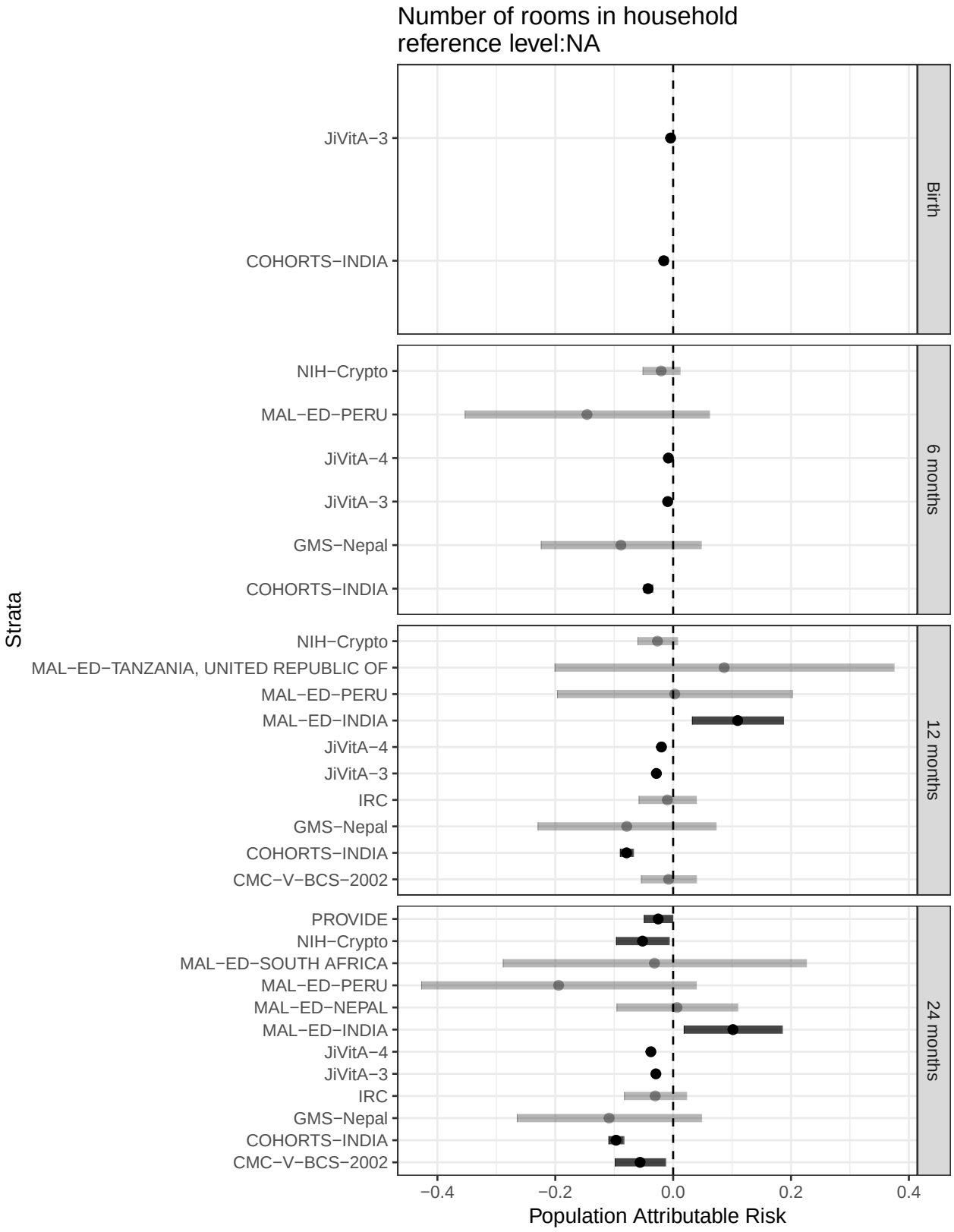


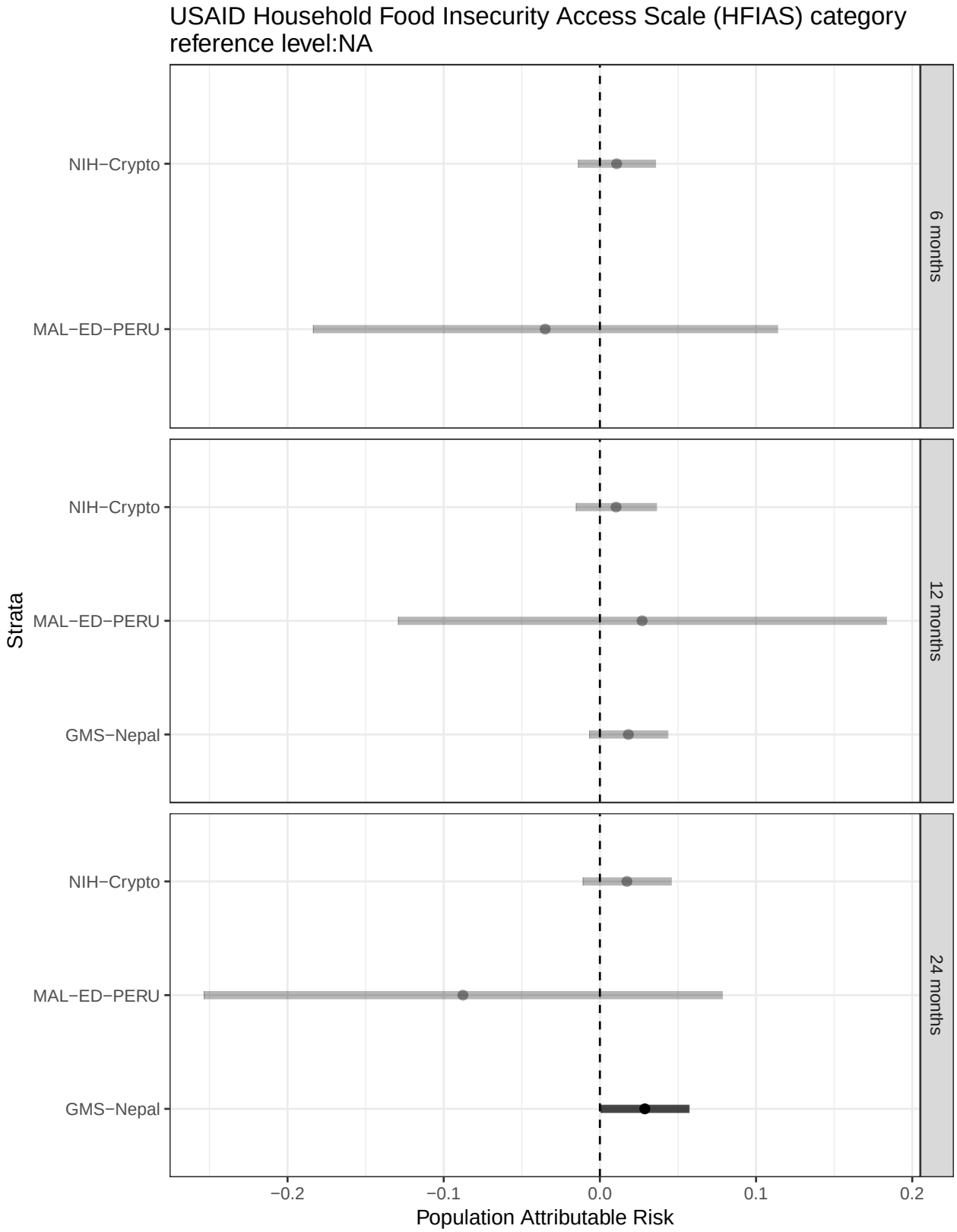

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Number of children in the household under 5 years
reference level:NA
Strata
JiVitA−3
IRC
Birth
TanzaniaChild2
LCNI−5
JiVitA−3
IRC
6 months
TanzaniaChild2
LCNI−5
JiVitA−3
IRC
12 months
LCNI−5
JiVitA−3
IRC
24 months
−0.10
−0.05
0.00
0.05
0.10
0.15
Population Attributable Risk



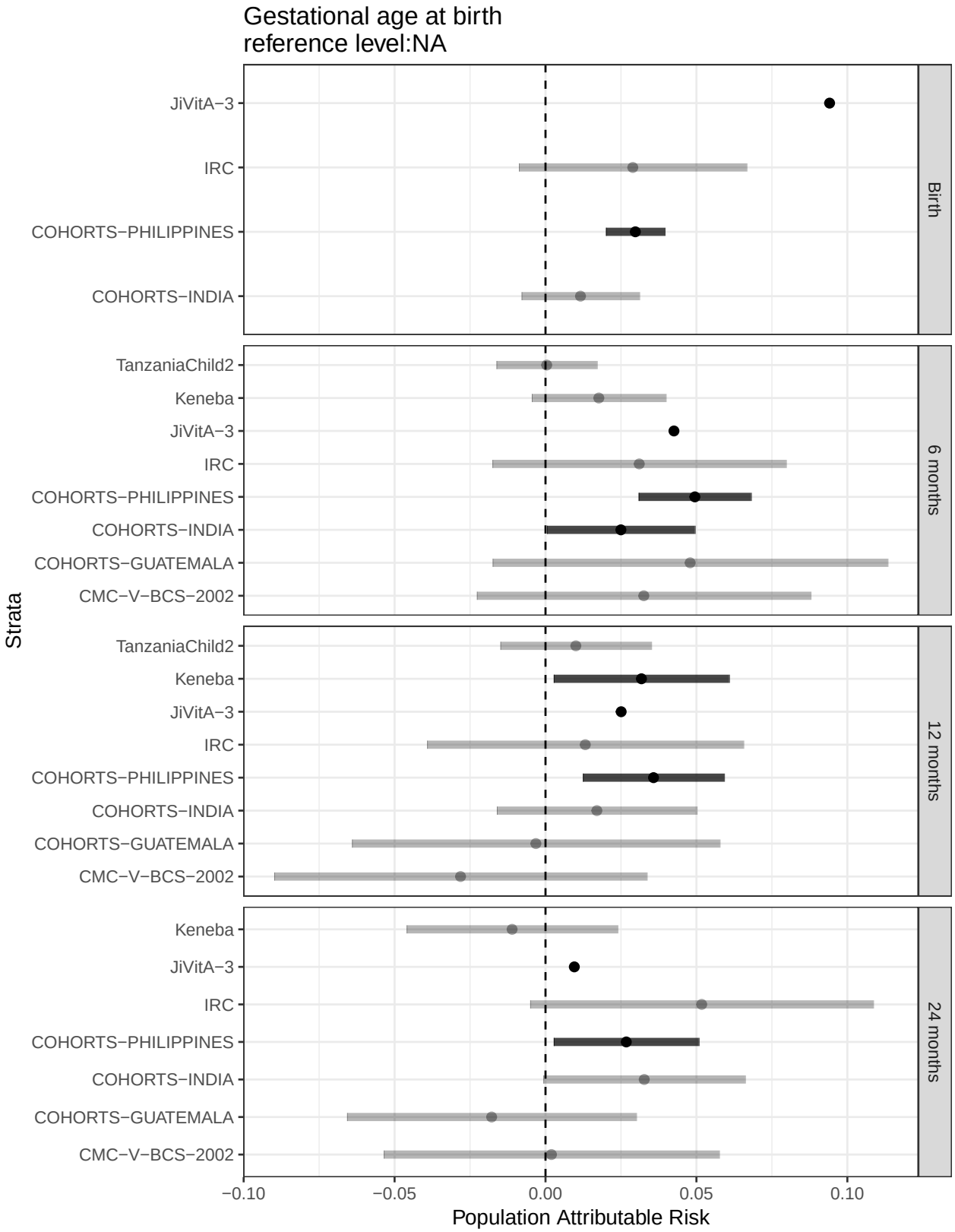

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```


Number of rooms in household
reference level:NA
Strata
JiVitA−3
COHORTS−INDIA
Birth
NIH−Crypto
MAL−ED−PERU
JiVitA−4
JiVitA−3
GMS−Nepal
COHORTS−INDIA
6 months
NIH−Crypto
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
COHORTS−INDIA
CMC−V−BCS−2002
12 months
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
COHORTS−INDIA
CMC−V−BCS−2002
24 months
−0.4
−0.2
0.0
0.2
0.4
Population Attributable Risk

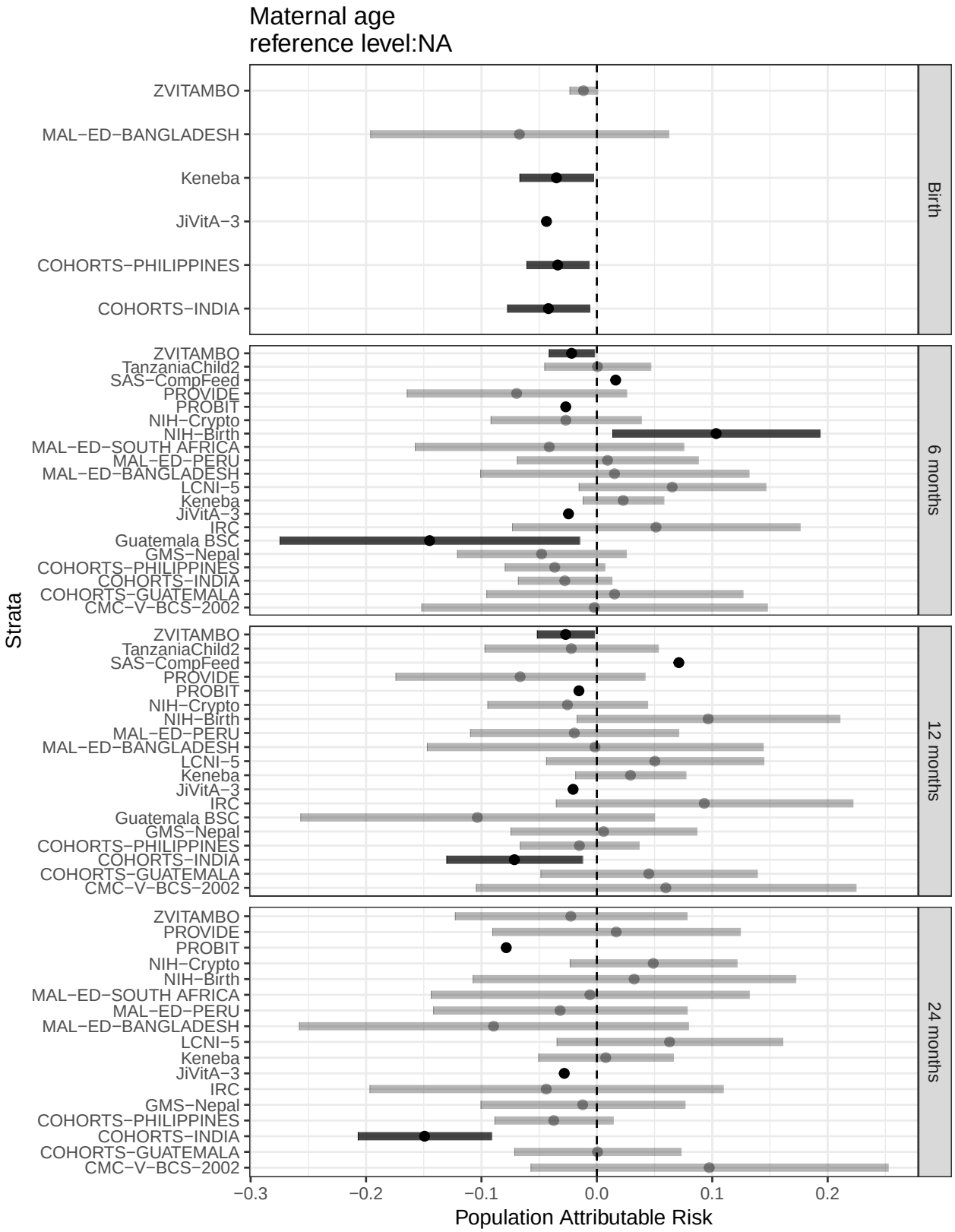

USAID Household Food Insecurity Access Scale (HFIAS) category
reference level:NA
Strata
NIH−Crypto
MAL−ED−PERU
6 months
NIH−Crypto
MAL−ED−PERU
GMS−Nepal
12 months
NIH−Crypto
MAL−ED−PERU
GMS−Nepal
24 months
−0.2
−0.1
0.0
0.1
0.2
Population Attributable Risk

Maternal characteristics

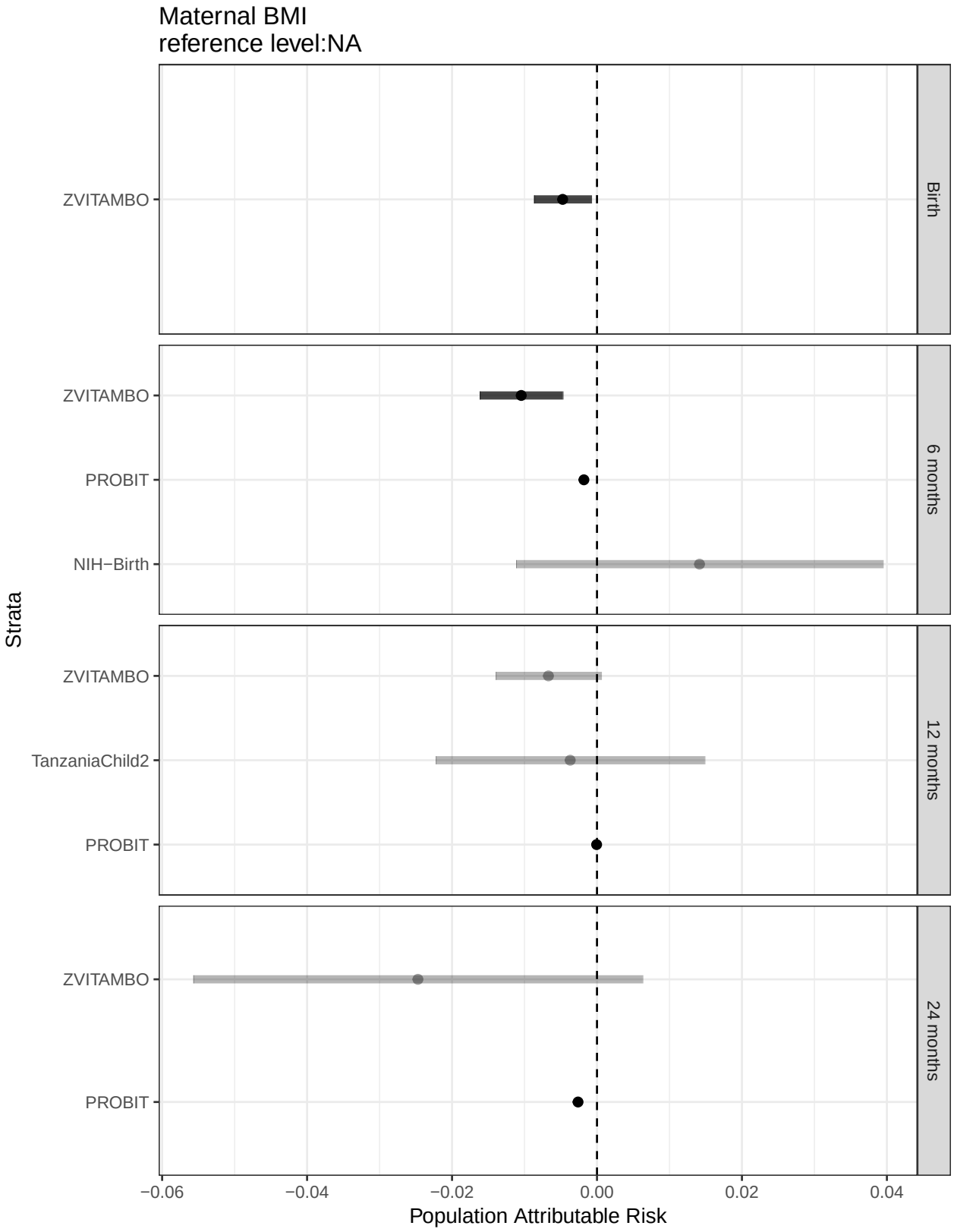
```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



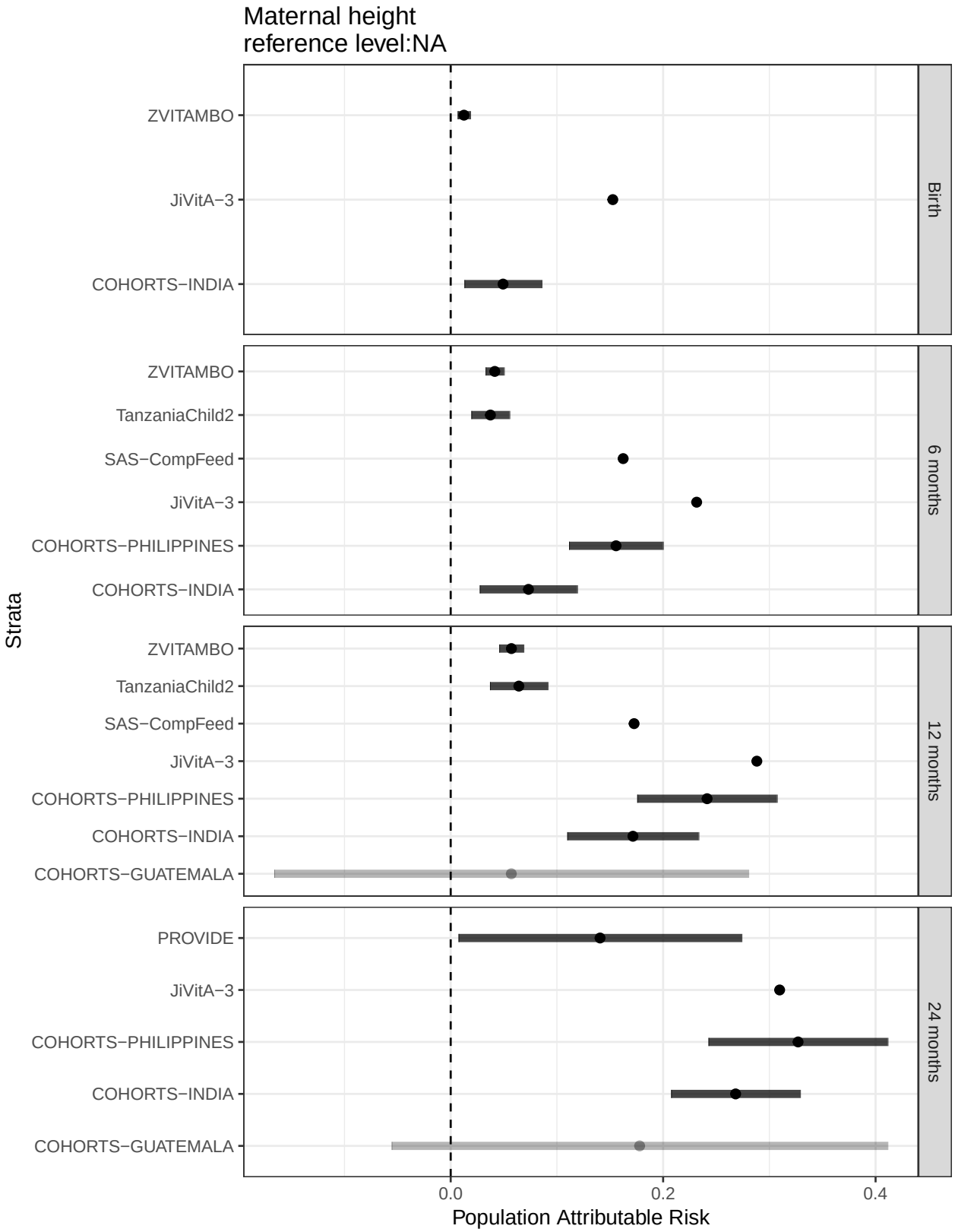

```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
```



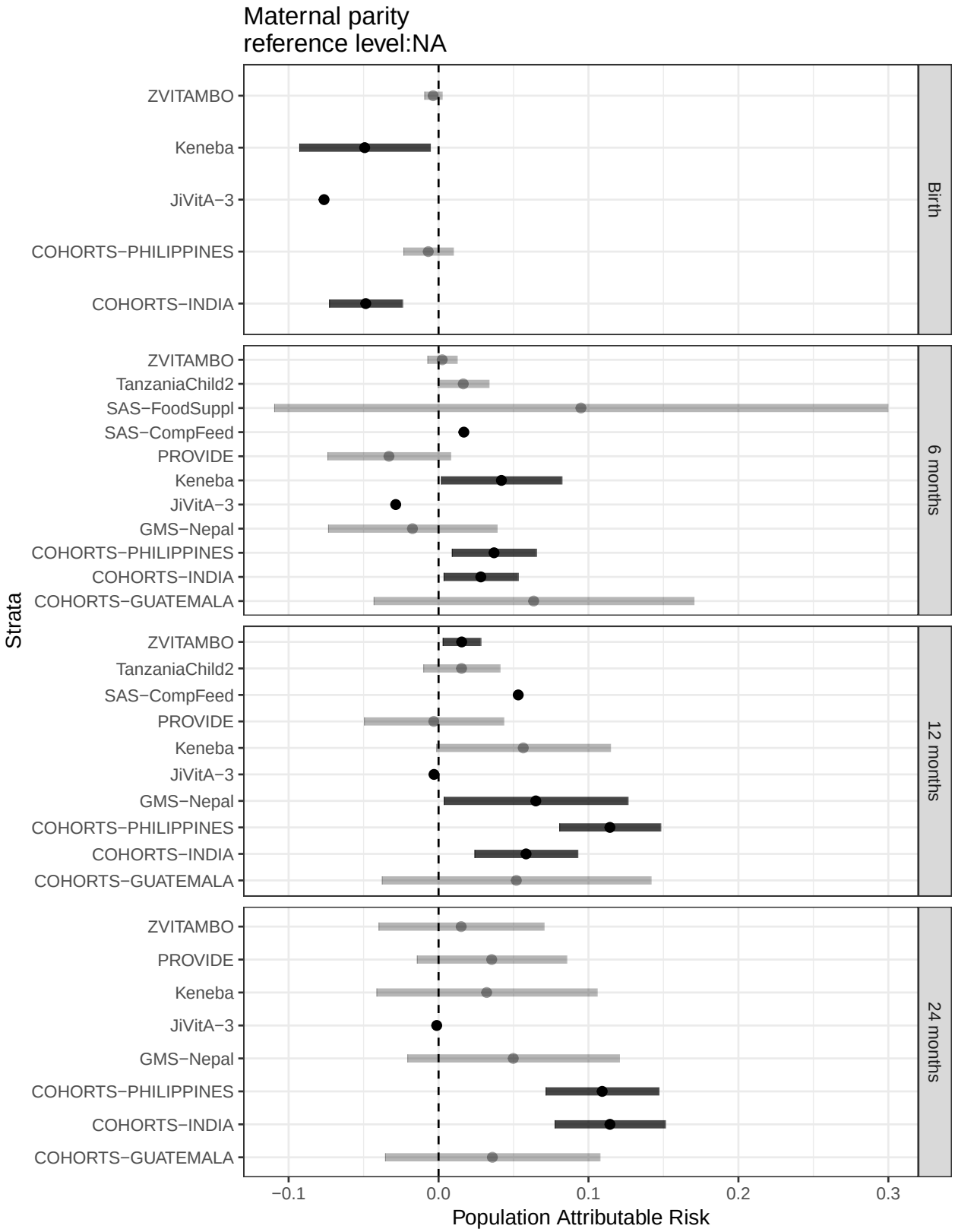

```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```

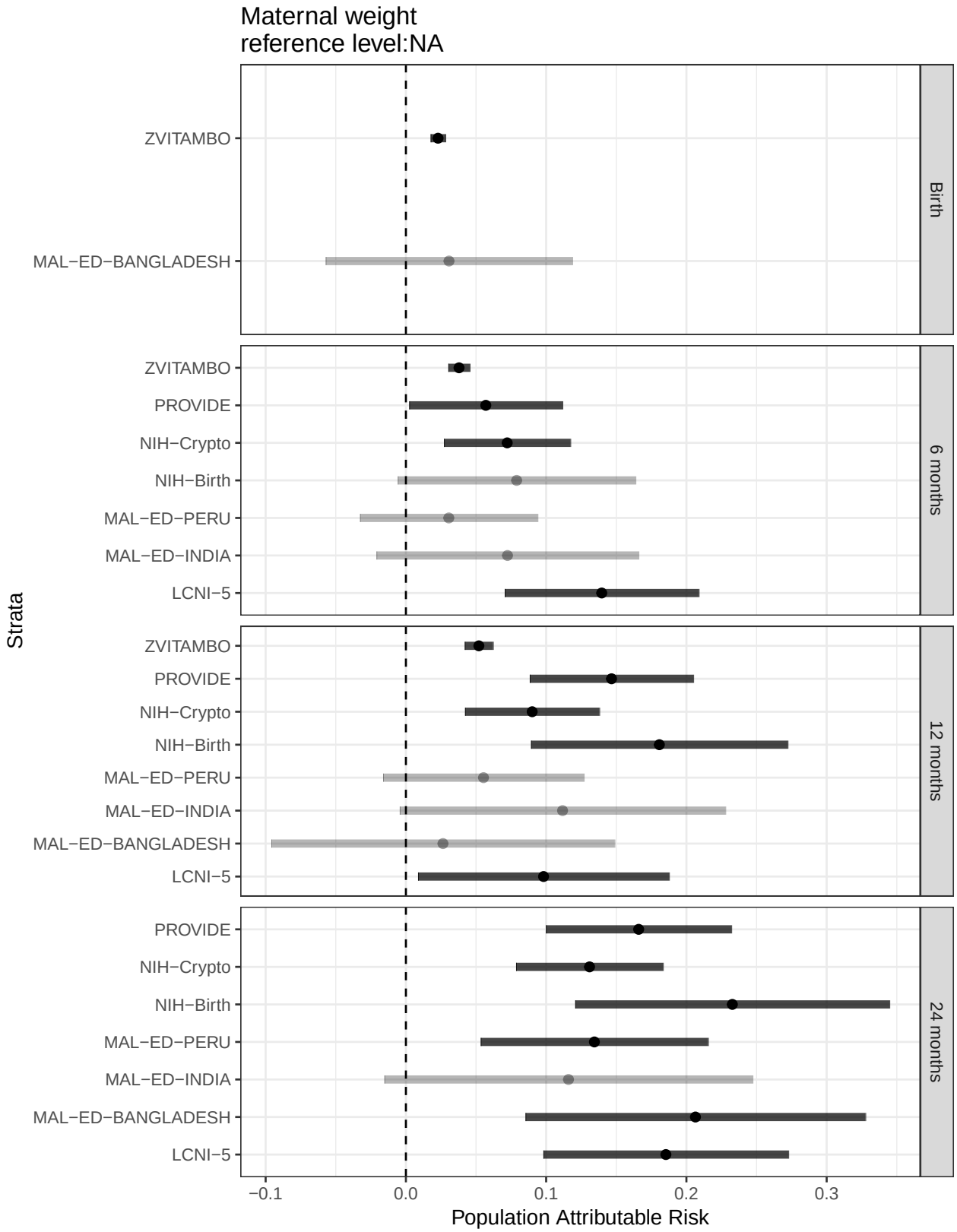



```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```

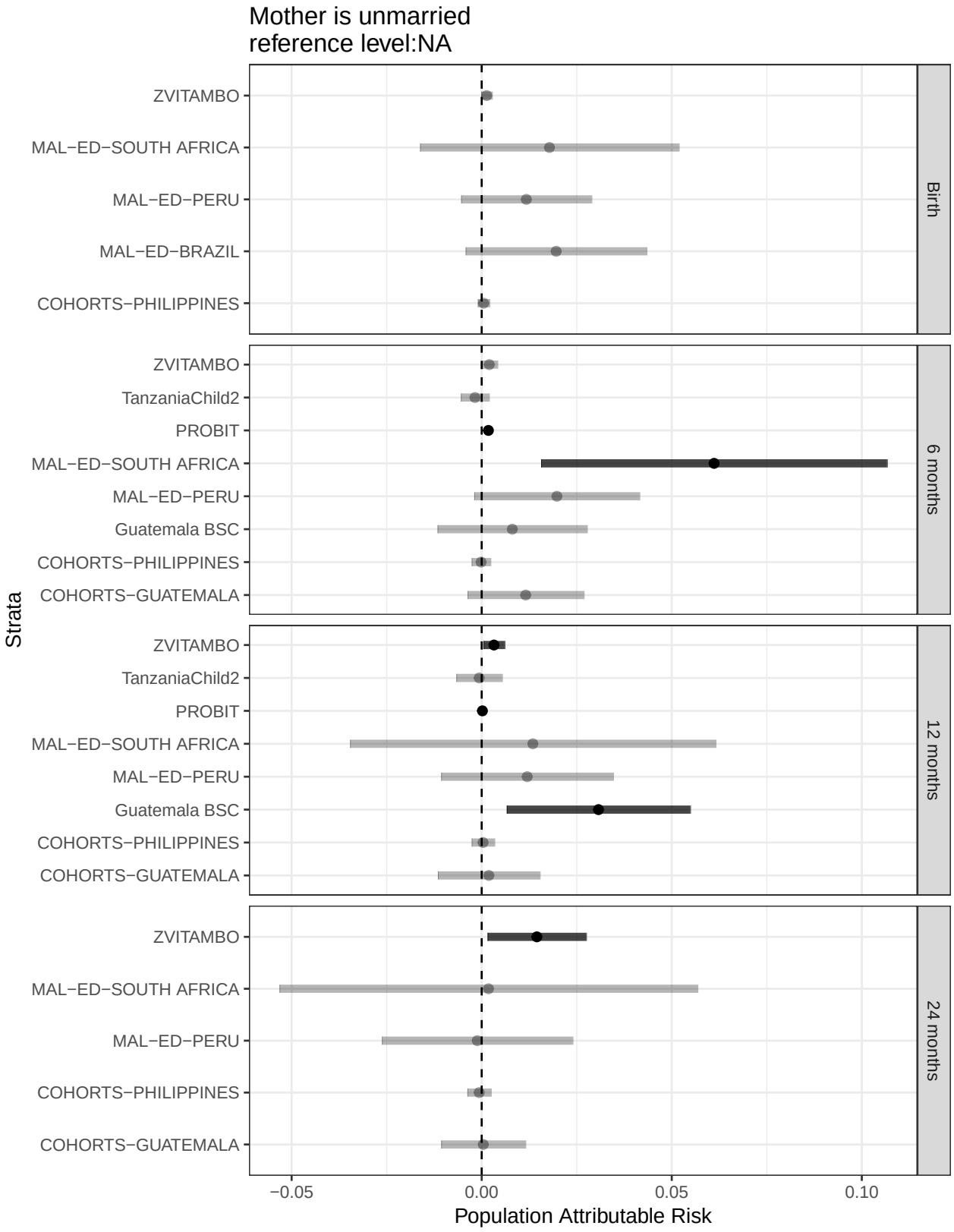



```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```

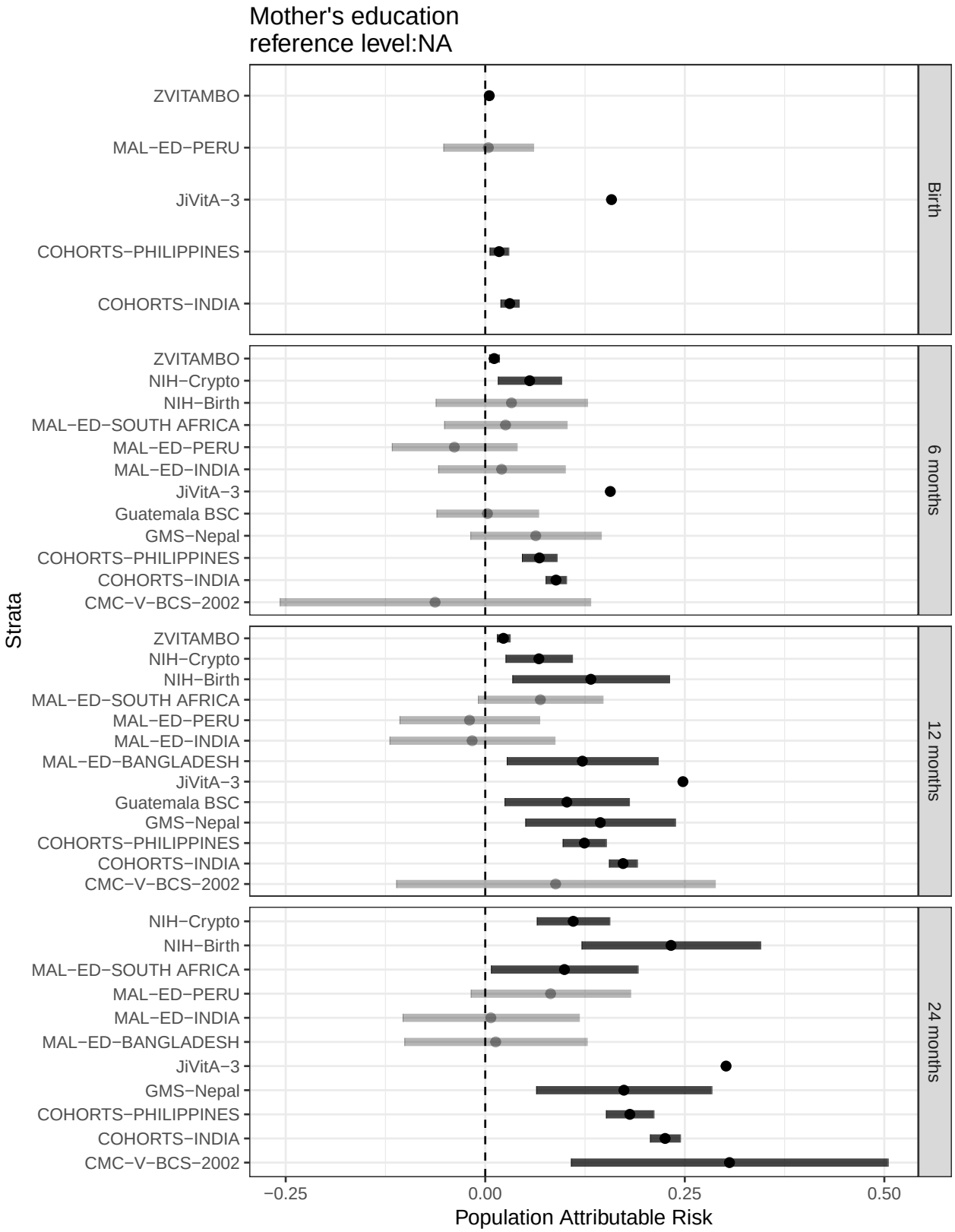

Maternal parity
reference level:NA
Strata
ZVITAMBO
Keneba
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
ZVITAMBO
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
Keneba
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
6 months
ZVITAMBO
TanzaniaChild2
SAS−CompFeed
PROVIDE
Keneba
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
12 months
ZVITAMBO
PROVIDE
Keneba
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
24 months
−0.1
0.0
0.1
0.2
0.3
Population Attributable Risk




```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```

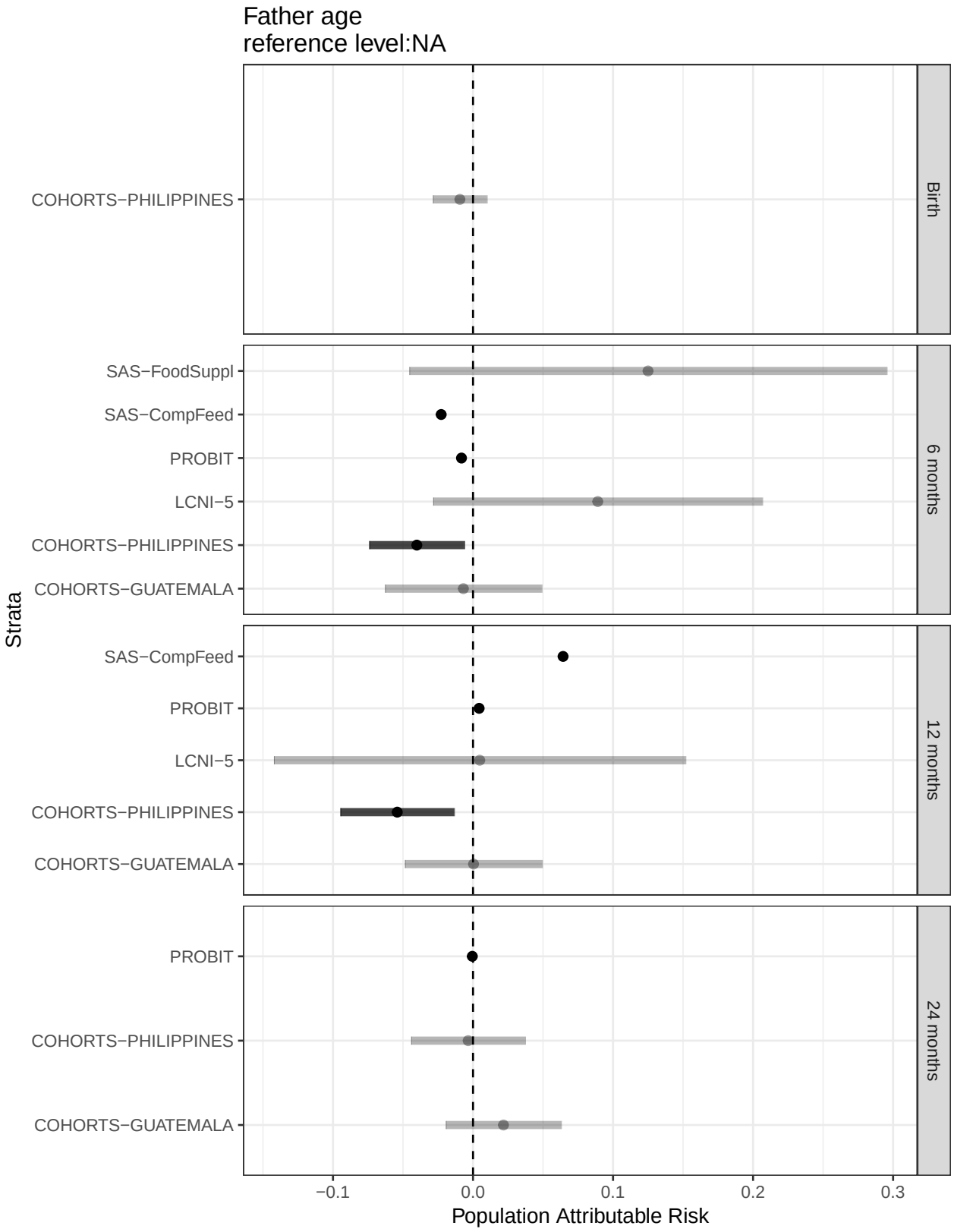



```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```

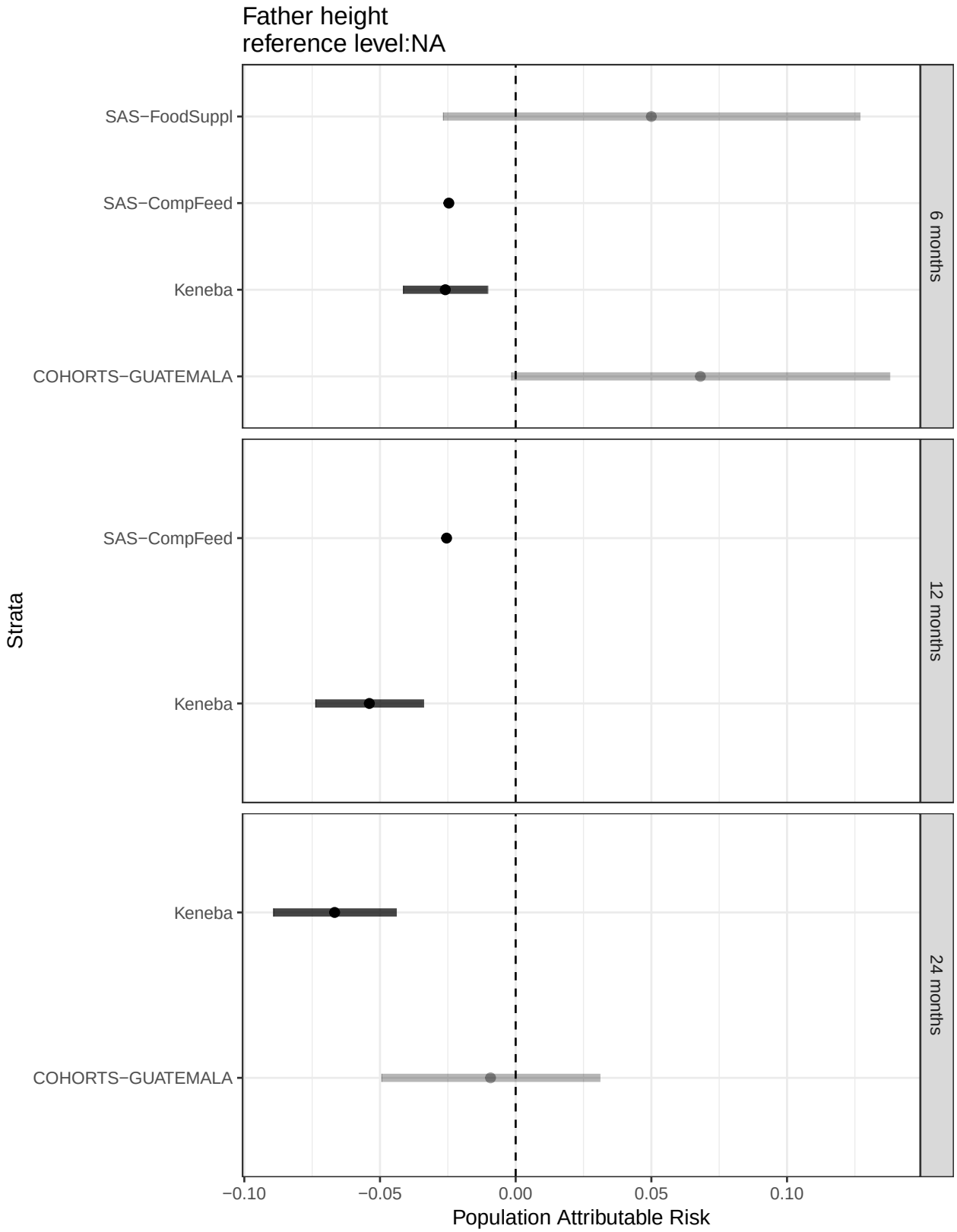

Mother's education
reference level:NA
Birth
ZVITAMBO
MAL−ED−PERU
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
6 months
ZVITAMBO
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−3
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
12 months
ZVITAMBO
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BANGLADESH
JiVitA−3
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
24 months
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BANGLADESH
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
Strata
−0.25
0.00
0.25
0.50
Population Attributable Risk

Paternal characteristics

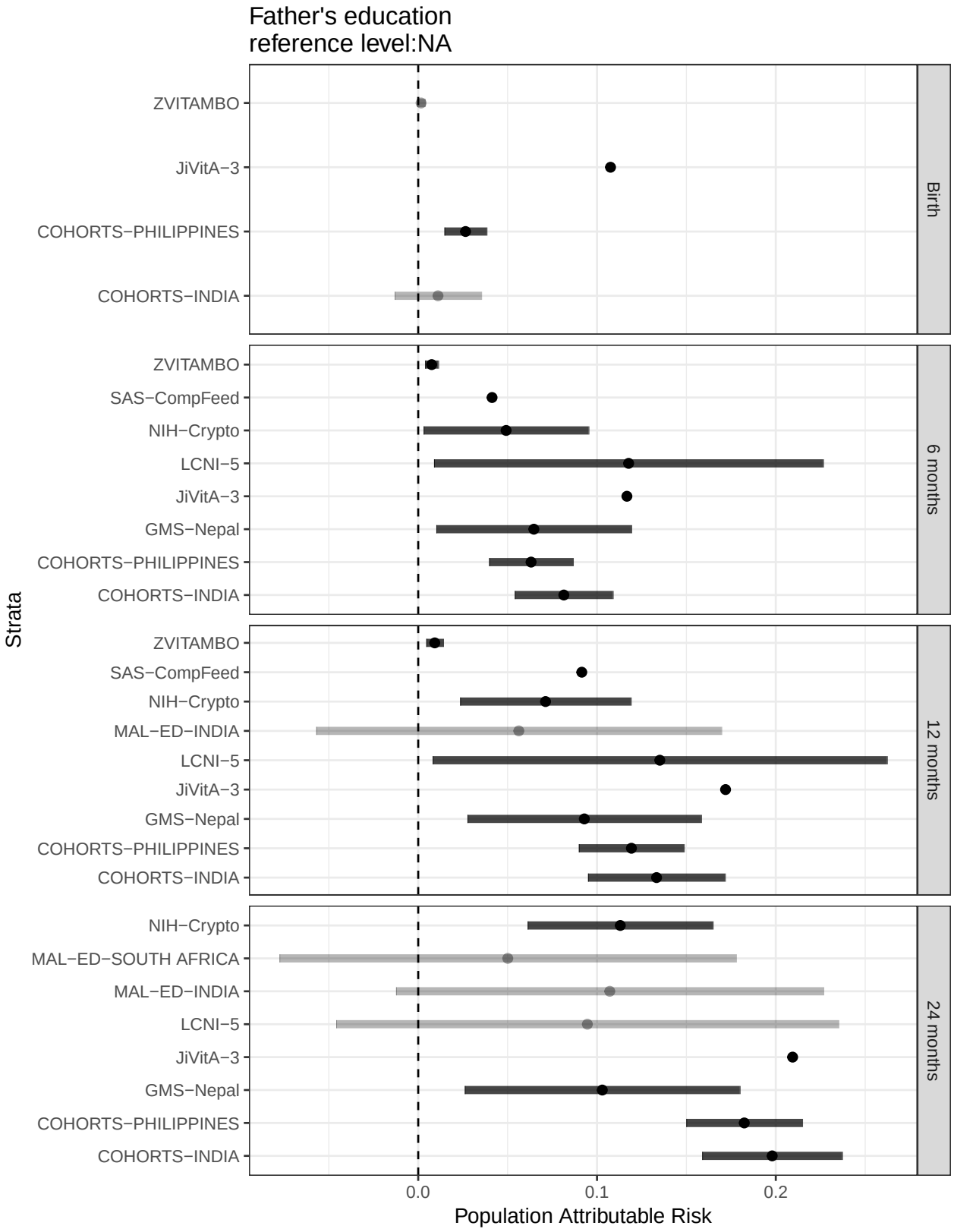
```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```



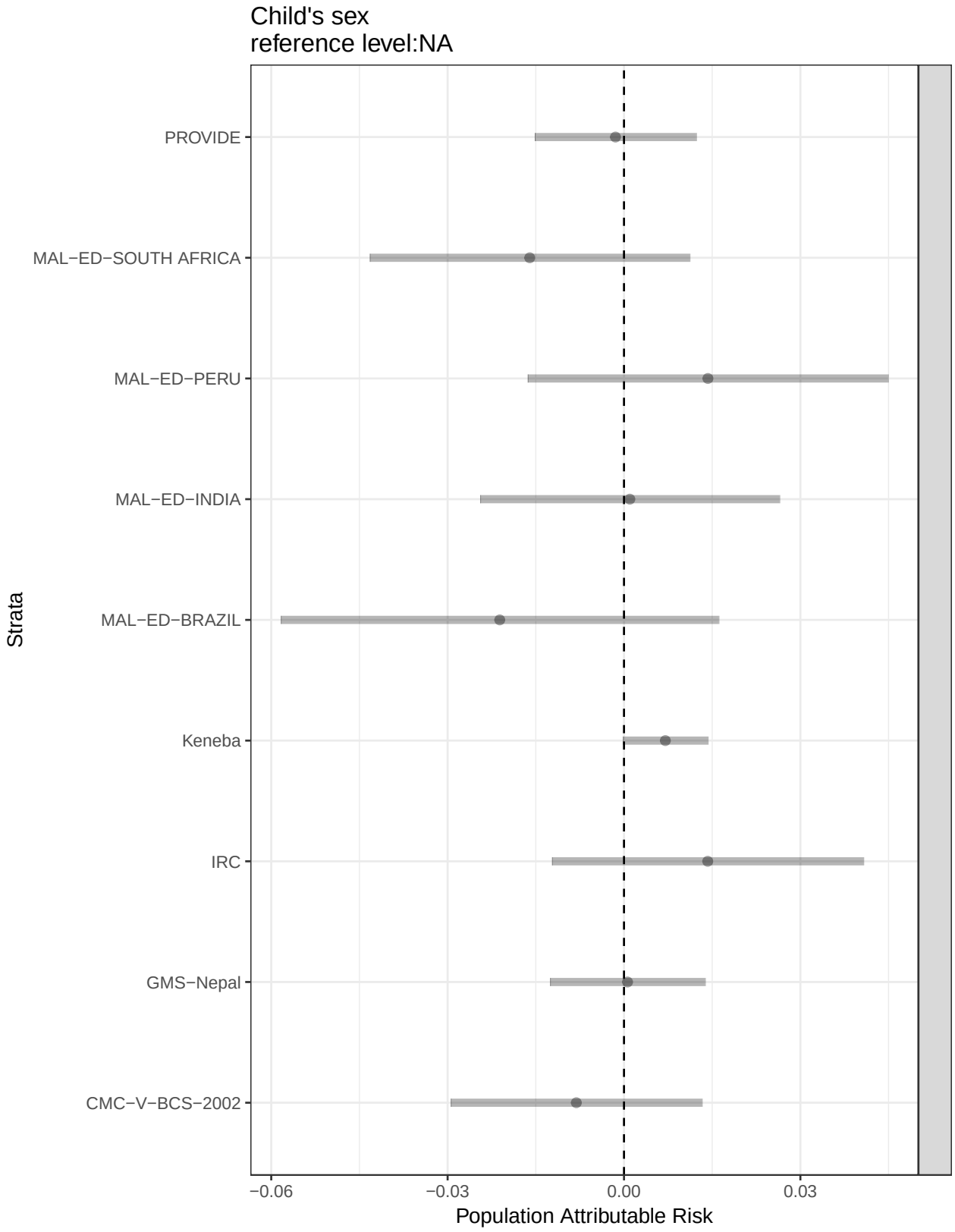

```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```

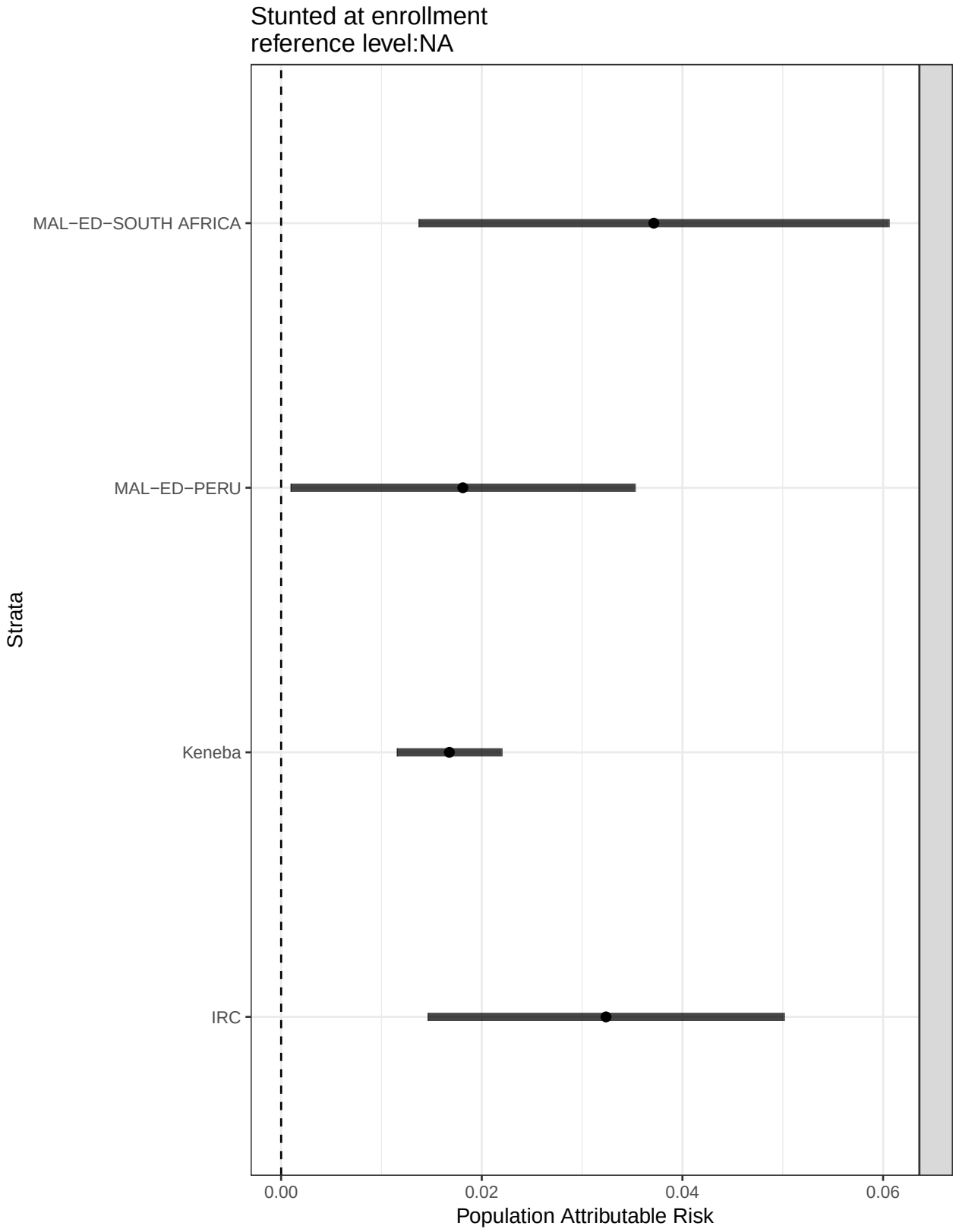

Father's education
reference level:NA
Strata
Birth
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
6 months
ZVITAMBO
SAS−CompFeed
NIH−Crypto
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
12 months
ZVITAMBO
SAS−CompFeed
NIH−Crypto
MAL−ED−INDIA
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
24 months
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−INDIA
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
0.0
0.1
0.2
Population Attributable Risk

Proportion of children who were stunted

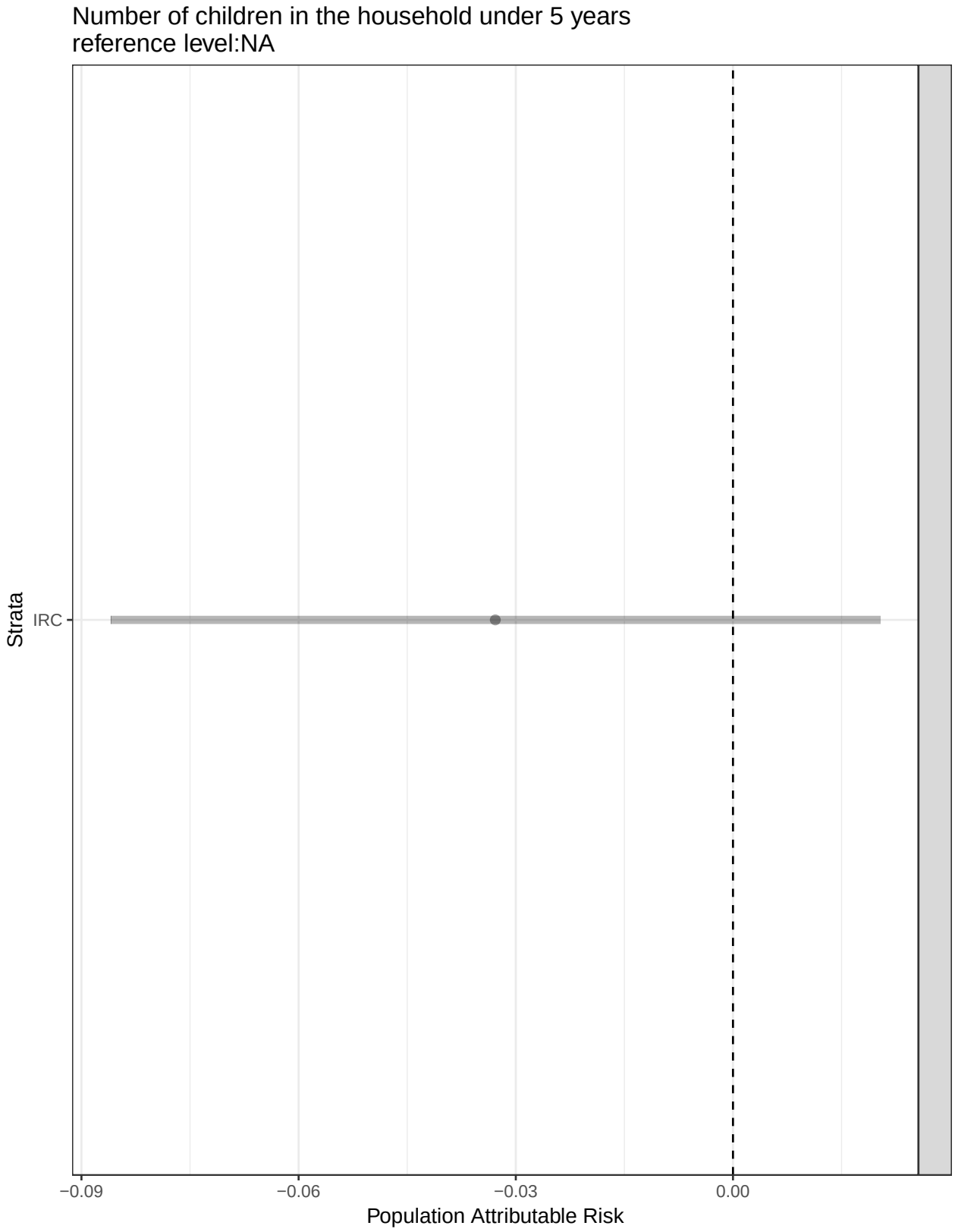
between birth and 3 months who recovered by 24 months

Child characteristics

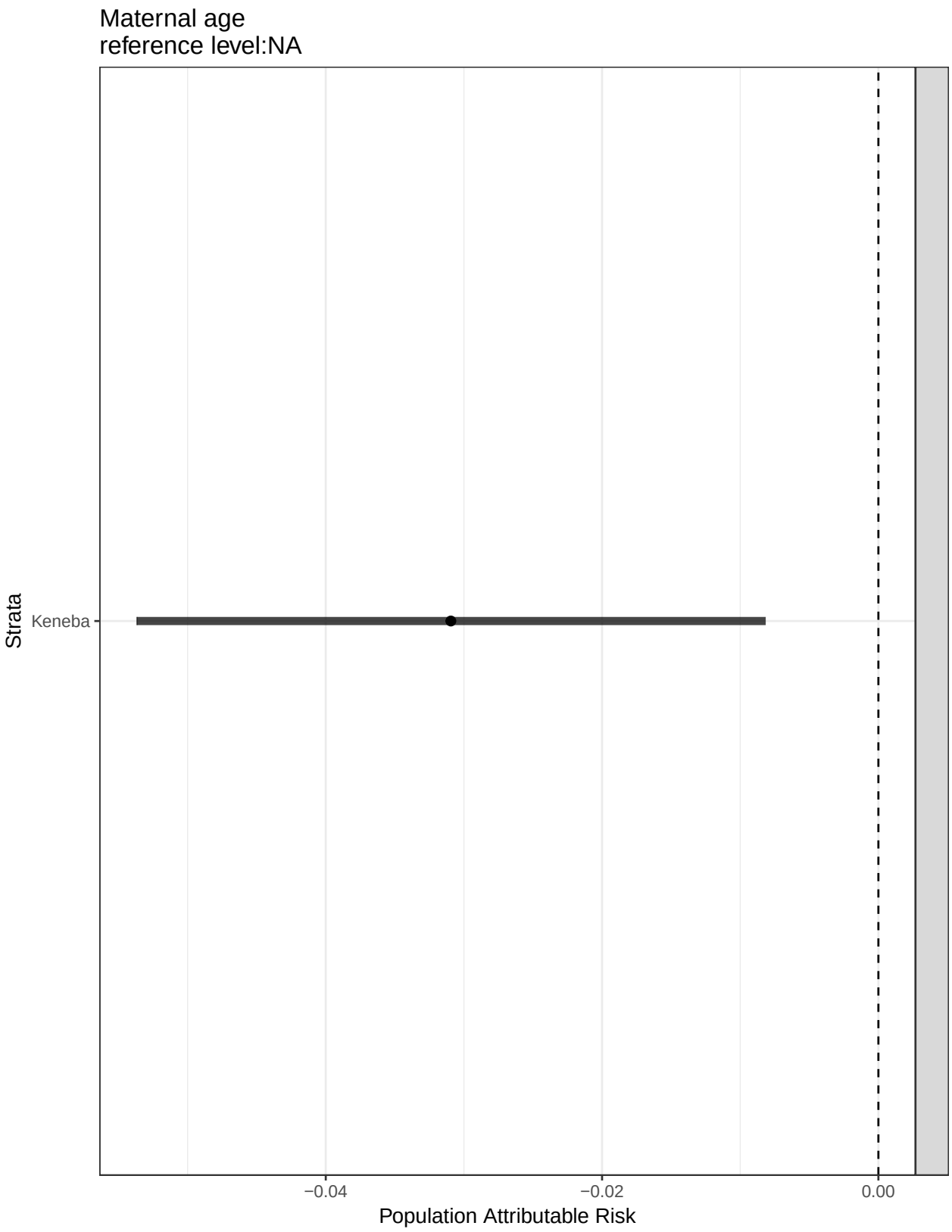


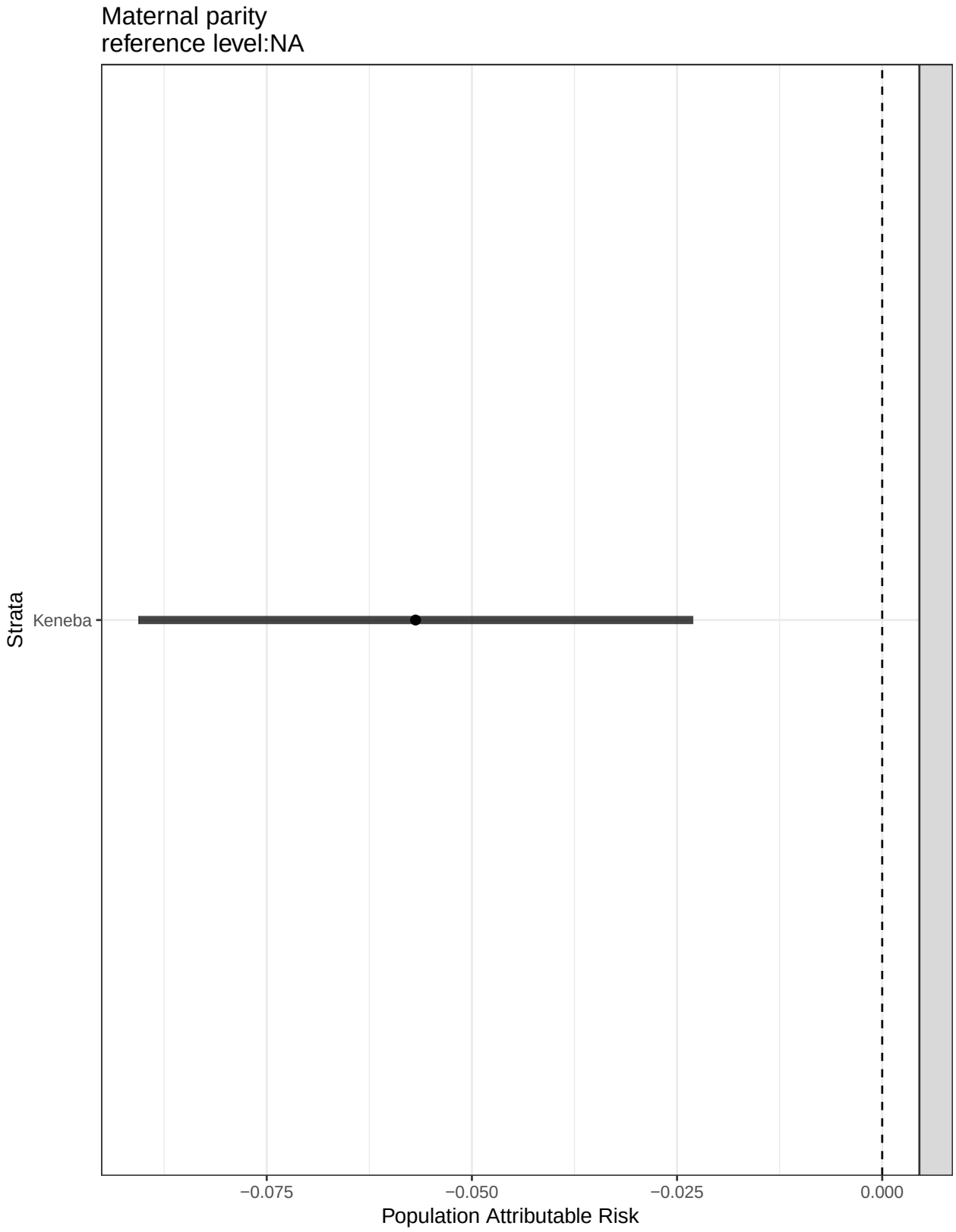

Stunted at enrollment
reference level:NA
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
Keneba
IRC
Strata
0.00
0.02
0.04
0.06
Population Attributable Risk

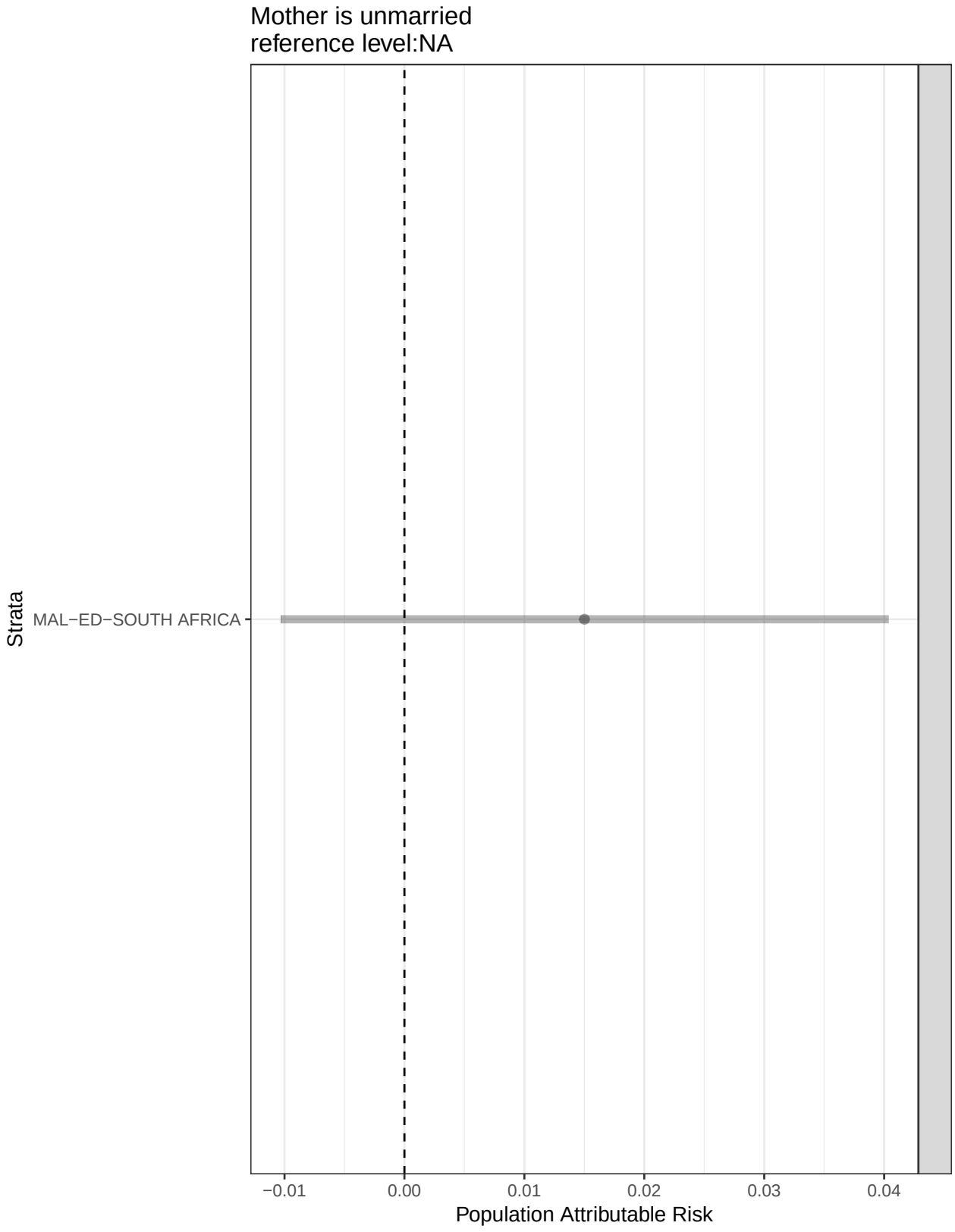
Household characteristics



Maternal characteristics




Maternal parity
reference level:NA
Strata
Keneba
−0.075
−0.050
−0.025
0.000
Population Attributable Risk

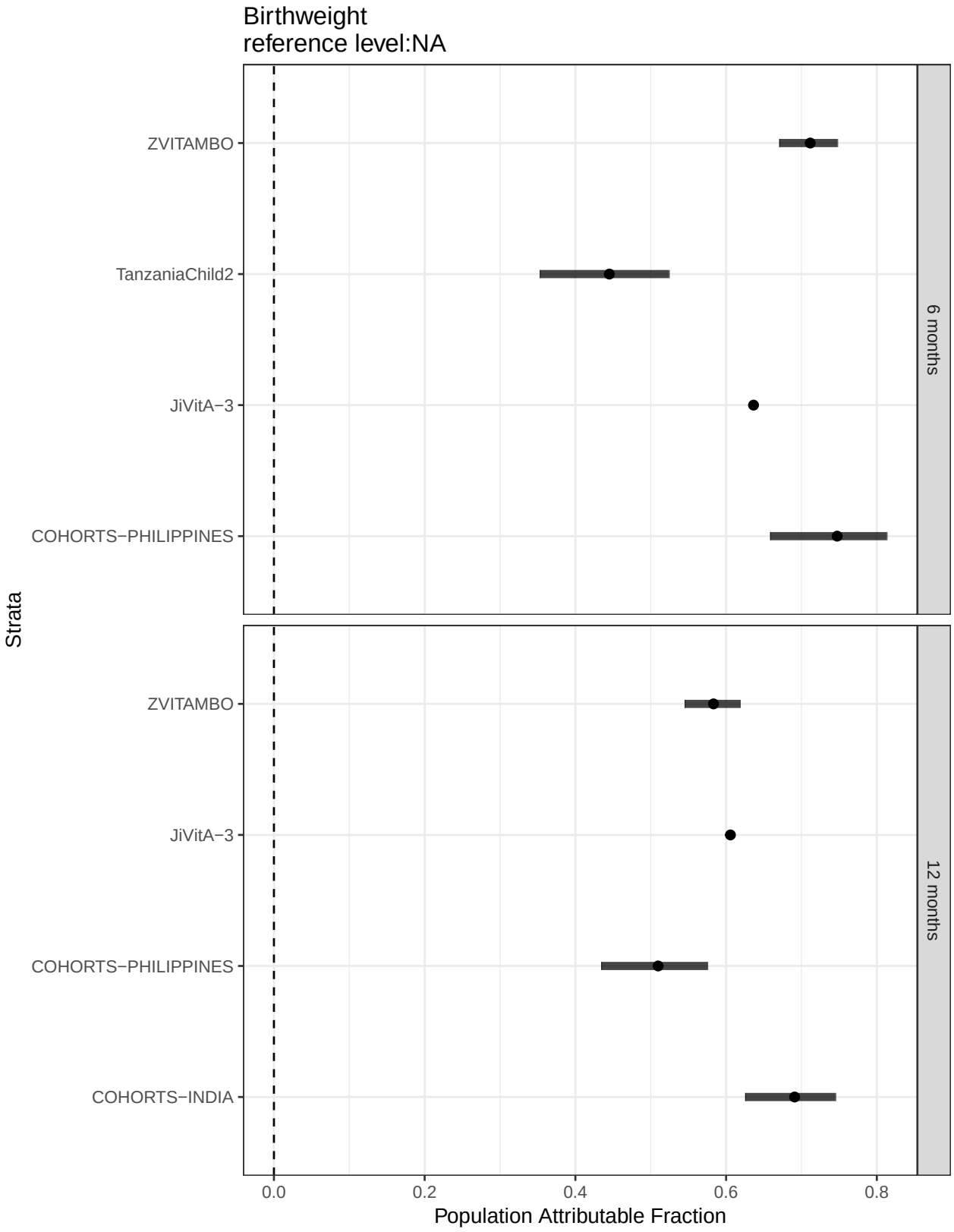

Mother is unmarried
reference level:NA
Strata
MAL−ED−SOUTH AFRICA
−0.01
0.00
0.01
0.02
0.03
0.04
Population Attributable Risk

Appendix 3 - Population Attributable Fraction Forest Plots

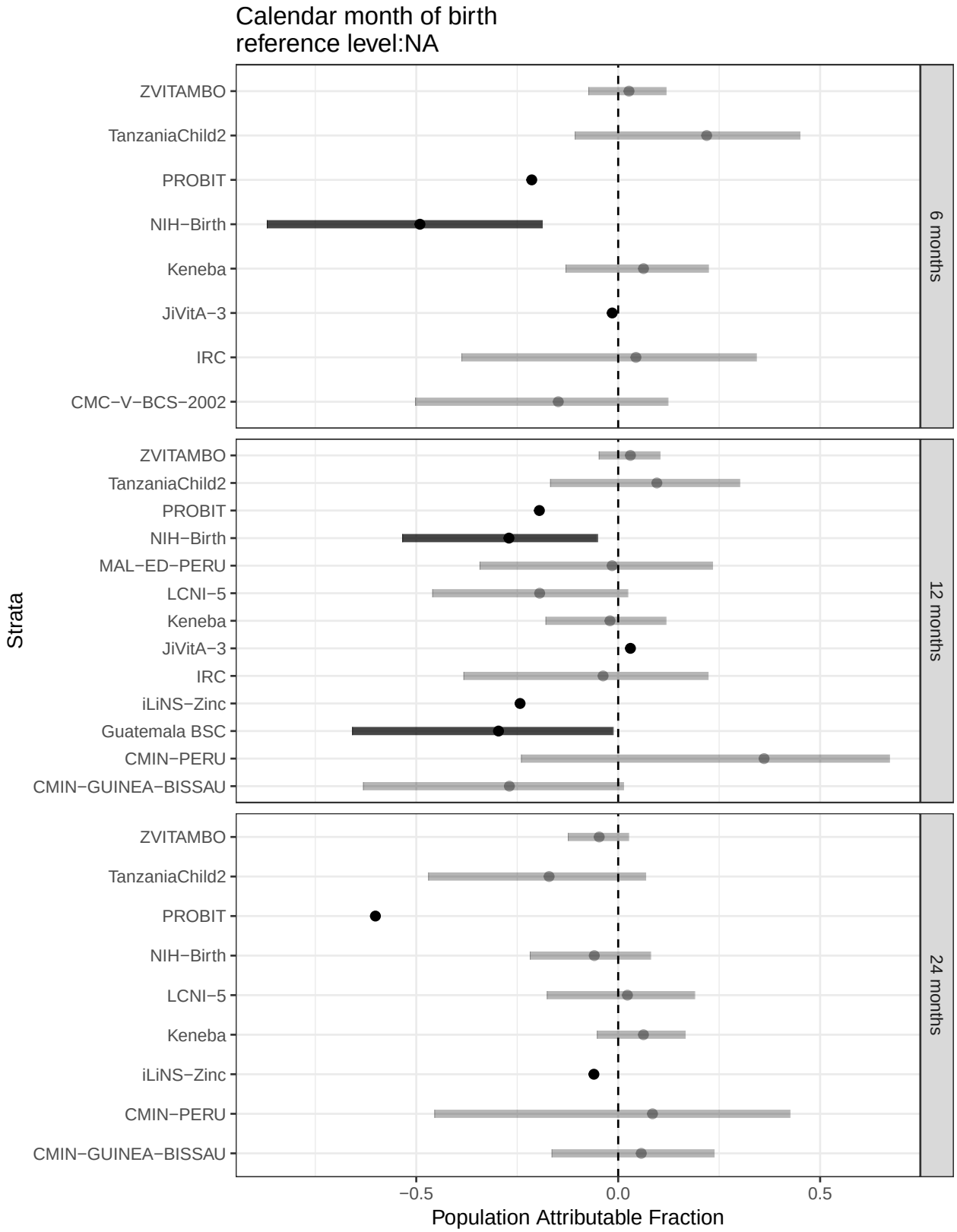
Cumulative incidence of stunting

Child characteristics

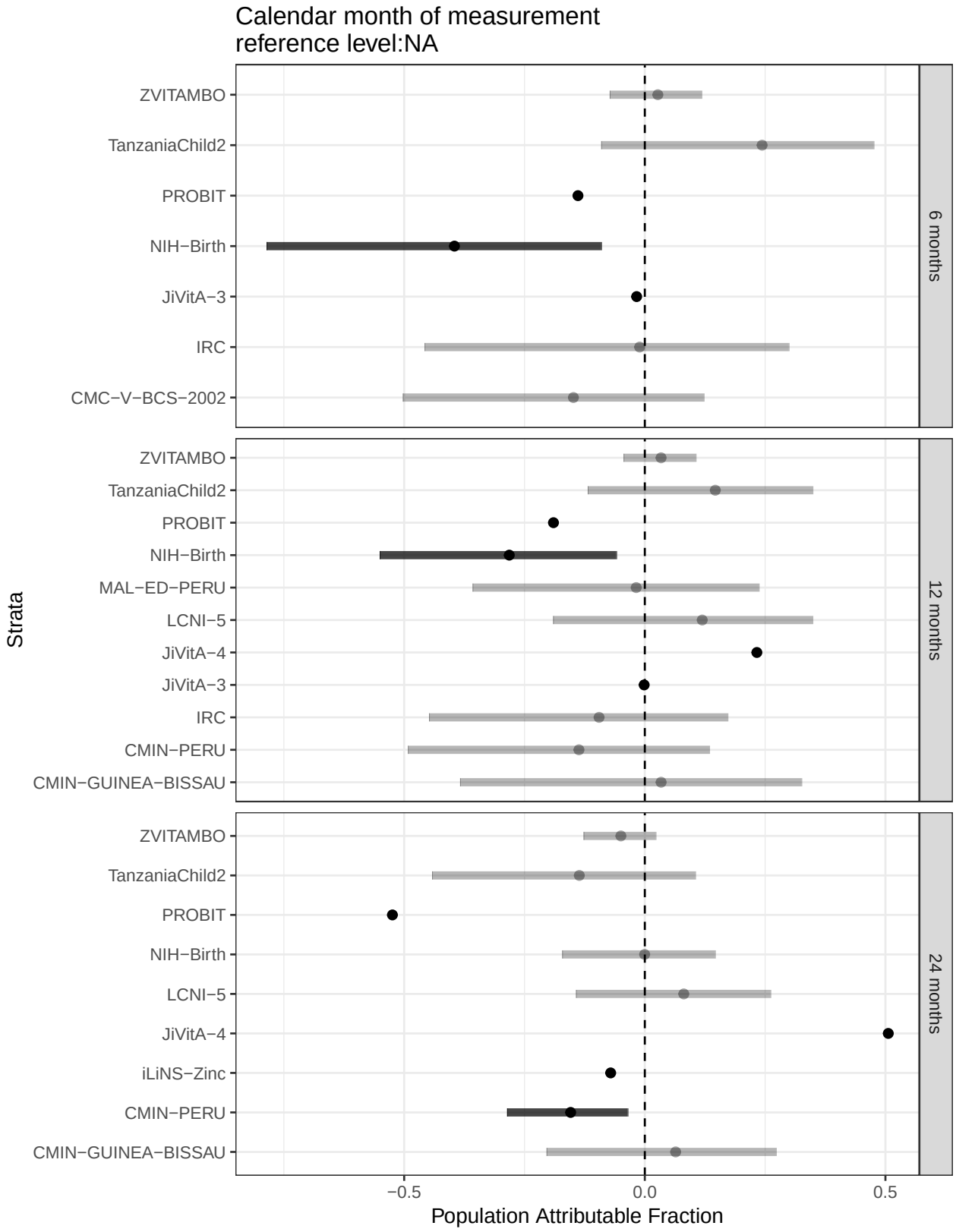
```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```



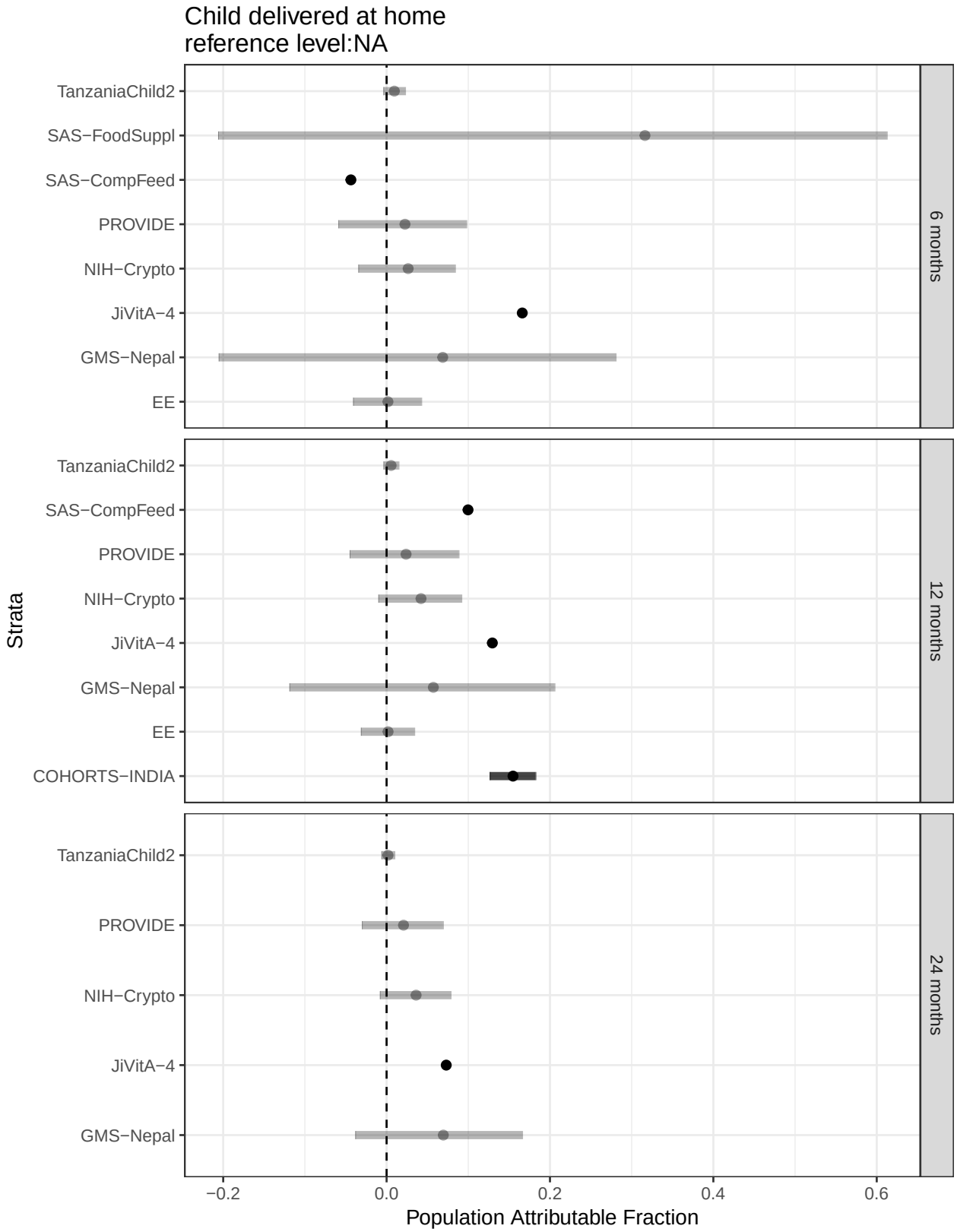

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```



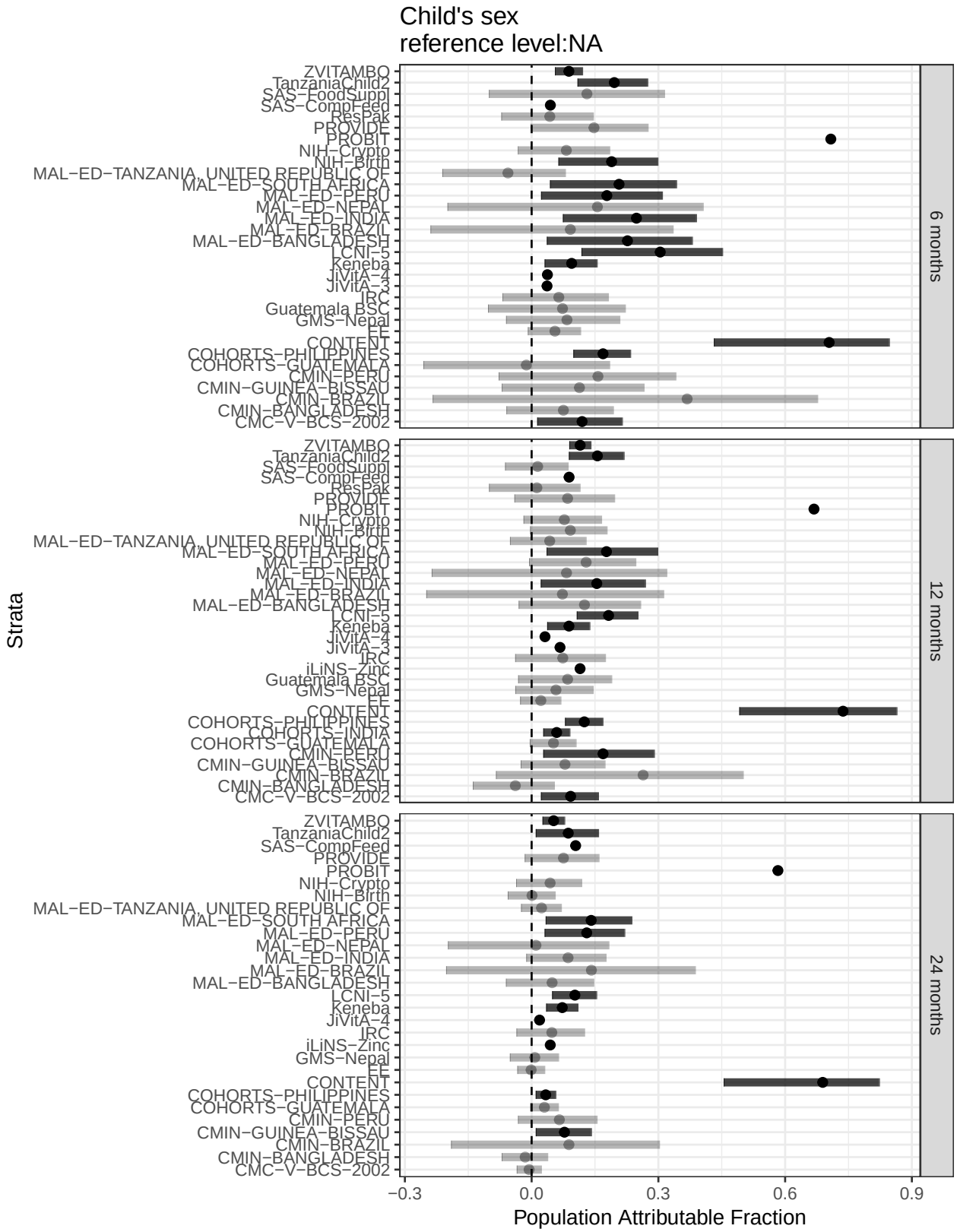

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

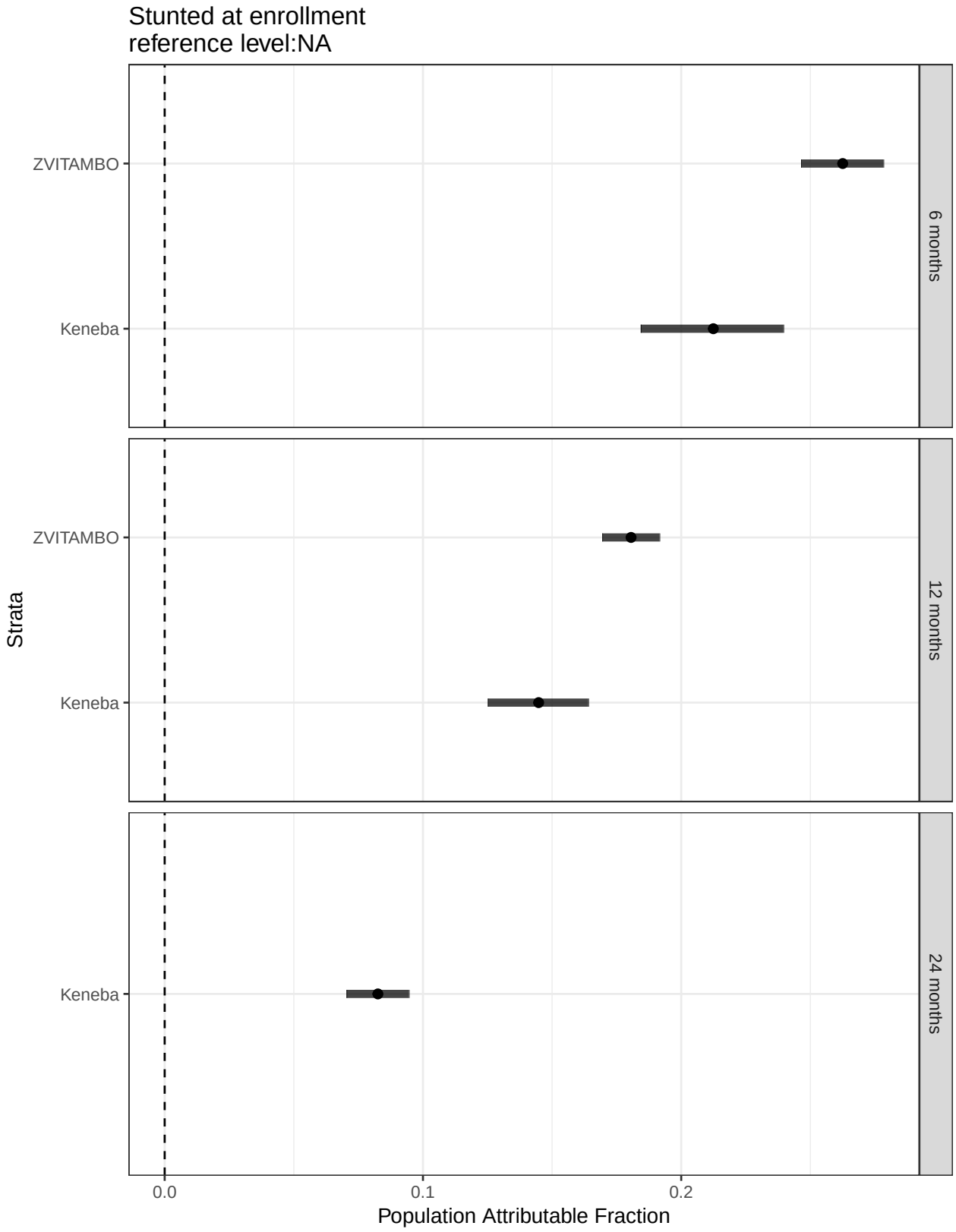



```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```

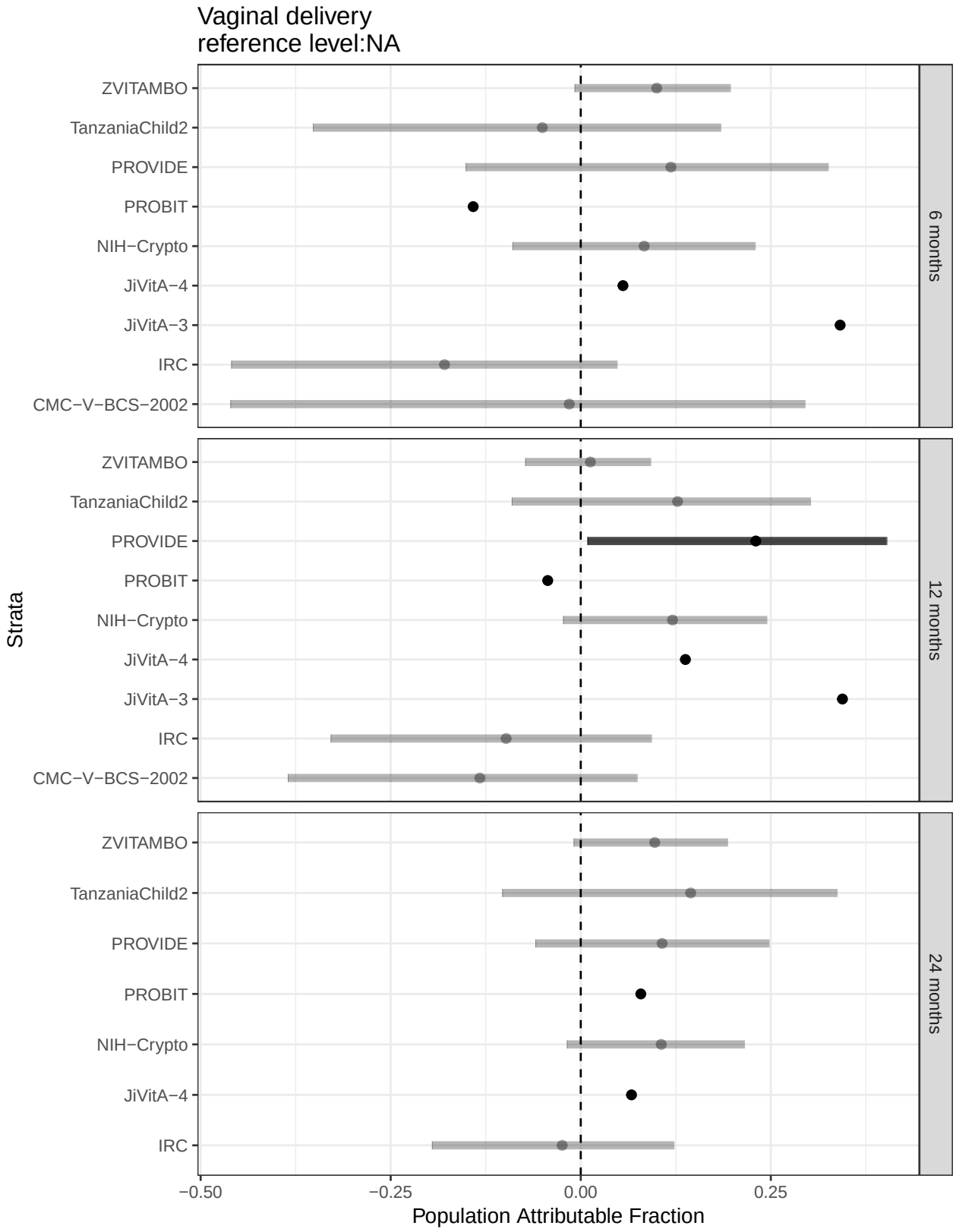



```
## Warning: Removed 13 rows containing missing values (geom_errorbar).
```


Child's sex
reference level:NA
Strata
6 months
12 months
24 months
ZVITAMBO
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
ResPak
PROVIDE
PROBIT
NIH−Crypto
NIH−Birth
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
MAL−ED−BRAZIL
MAL−ED−BANGLADESH
LCNI−5
Keneba
JiVitA−4
JiVitA−3
IRC
iLiNS−Zinc
Guatemala BSC
GMS−Nepal
EE
CONTENT
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
CMIN−PERU
CMIN−GUINEA−BISSAU
CMIN−BRAZIL
CMIN−BANGLADESH
CMC−V−BCS−2002
−0.3
0.0
0.3
0.6
0.9
Population Attributable Fraction

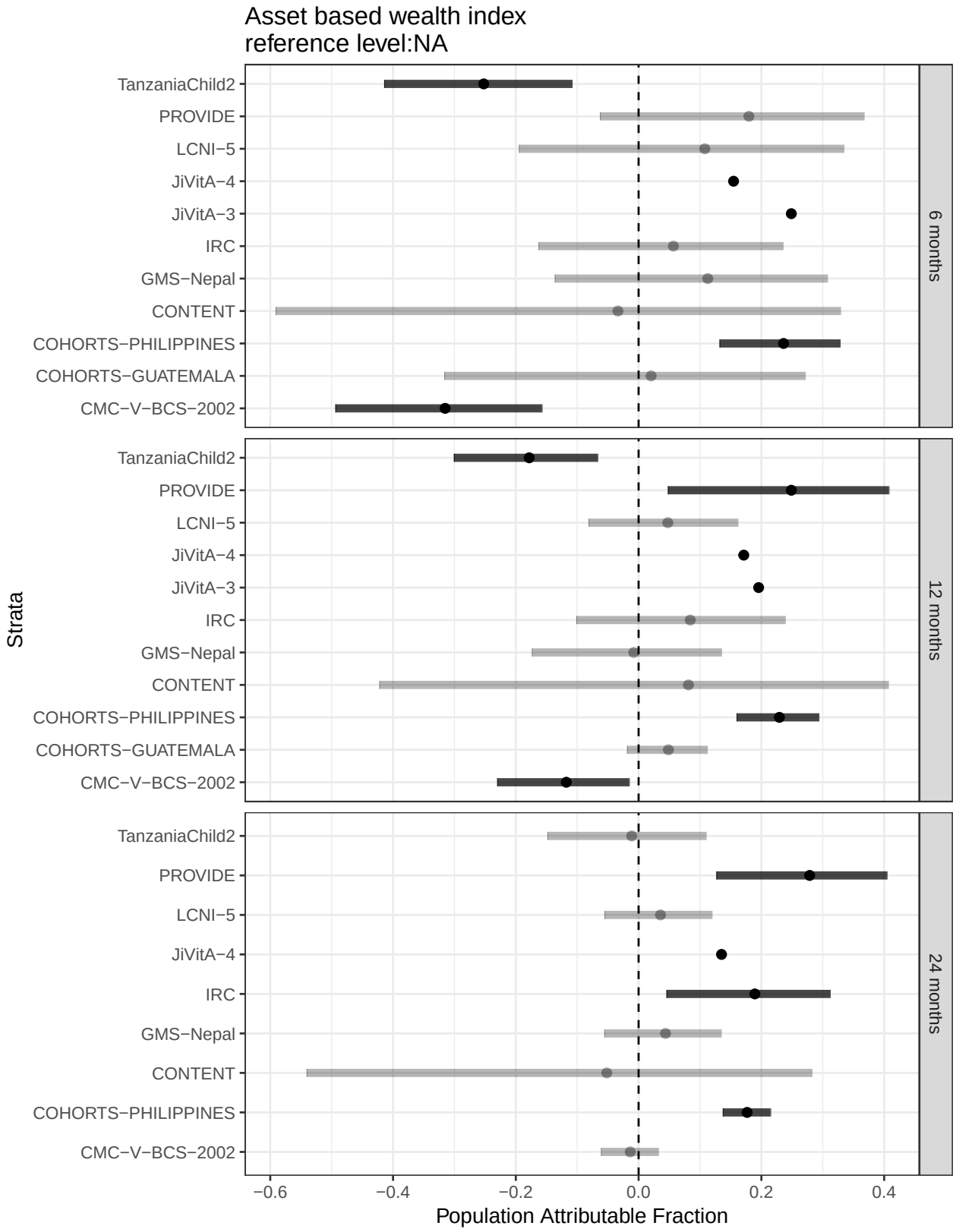



```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

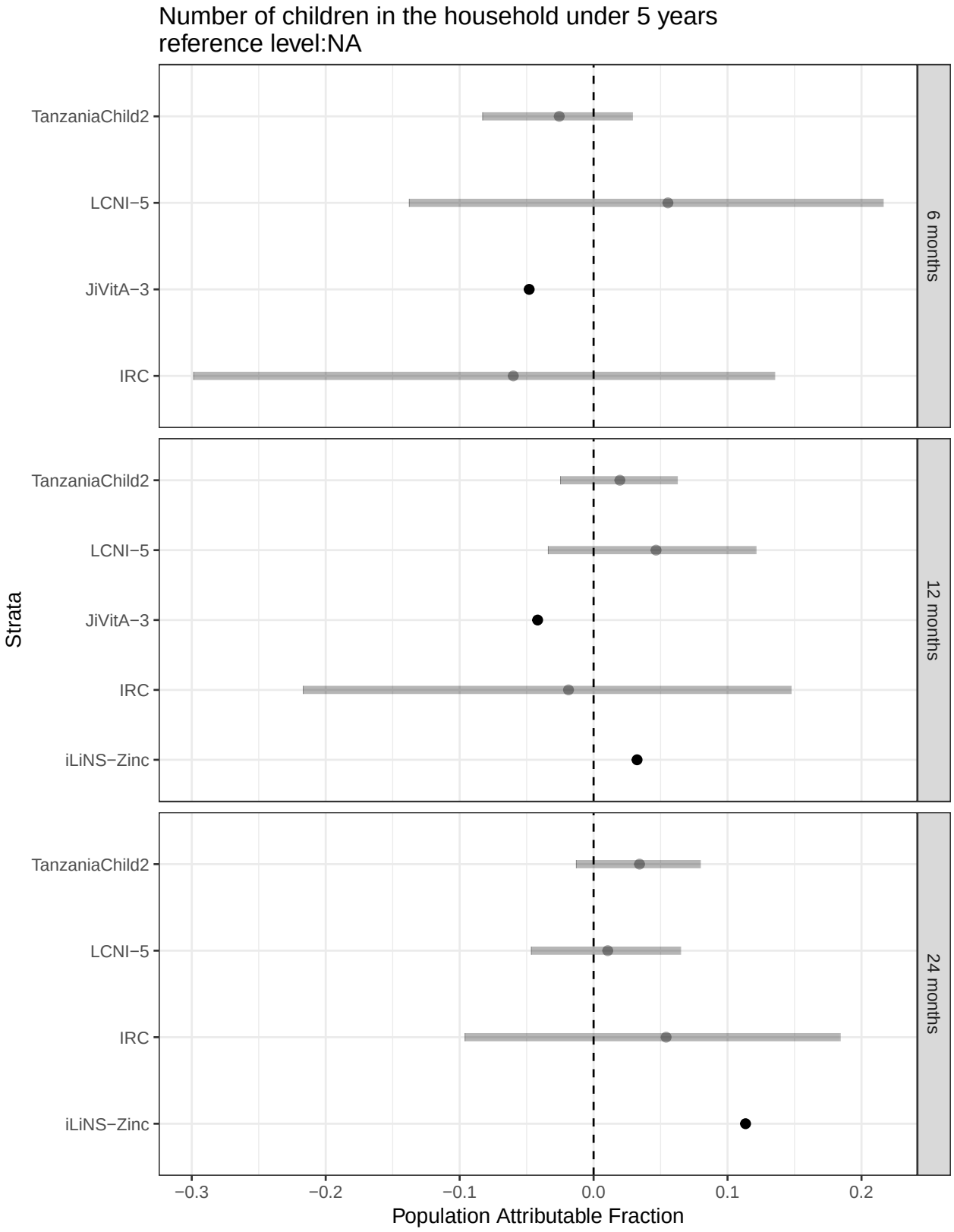

Vaginal delivery
reference level:NA
Strata
ZVITAMBO
TanzaniaChild2
PROVIDE
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
IRC
CMC−V−BCS−2002
6 months
12 months
24 months
−0.50
−0.25
0.00
0.25
Population Attributable Fraction

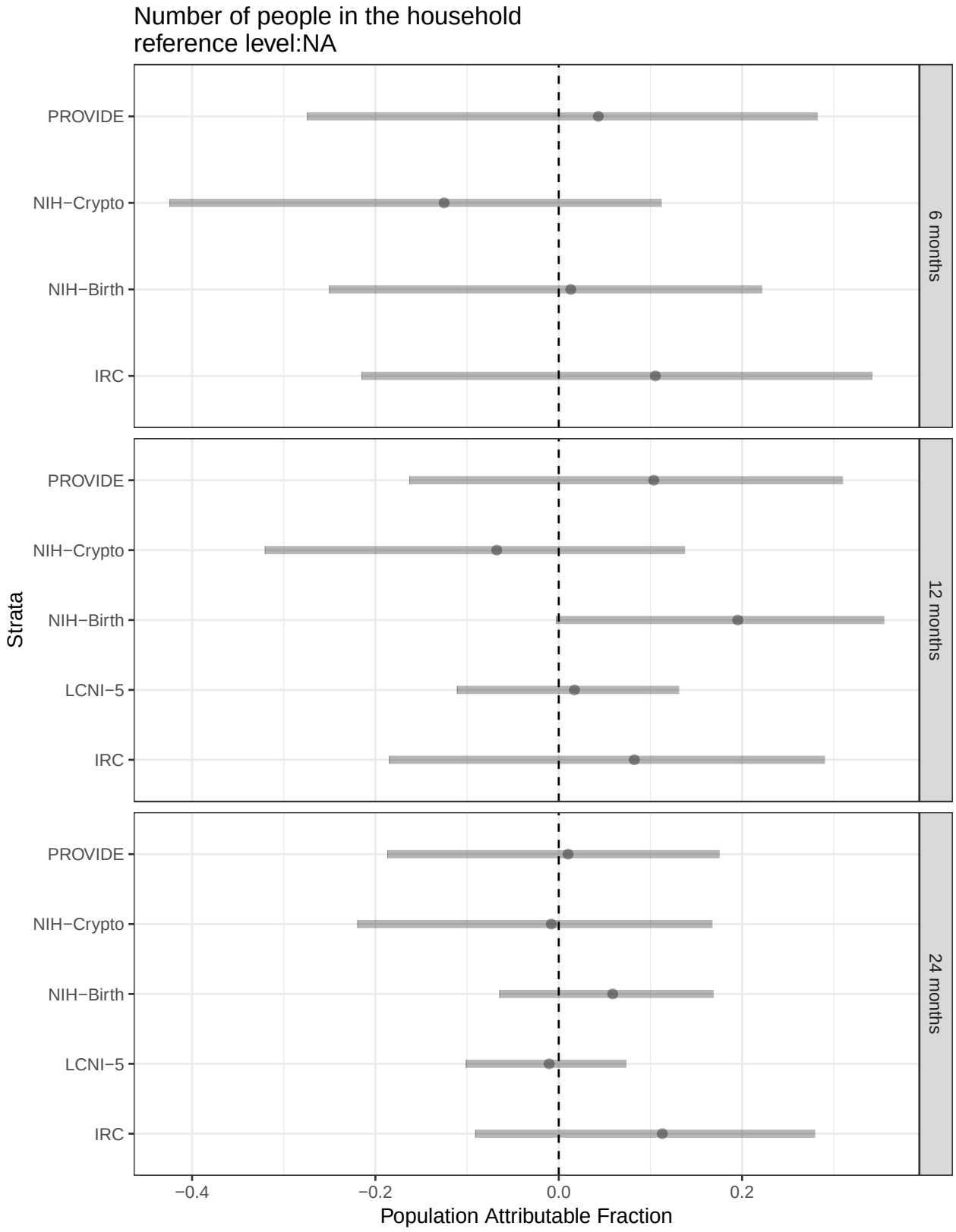
Household characteristics

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Number of children in the household under 5 years
reference level:NA
Strata
TanzaniaChild2
LCNI−5
JiVitA−3
IRC
iLiNS−Zinc
6 months
12 months
24 months
−0.3
−0.2
−0.1
0.0
0.1
0.2
Population Attributable Fraction




```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
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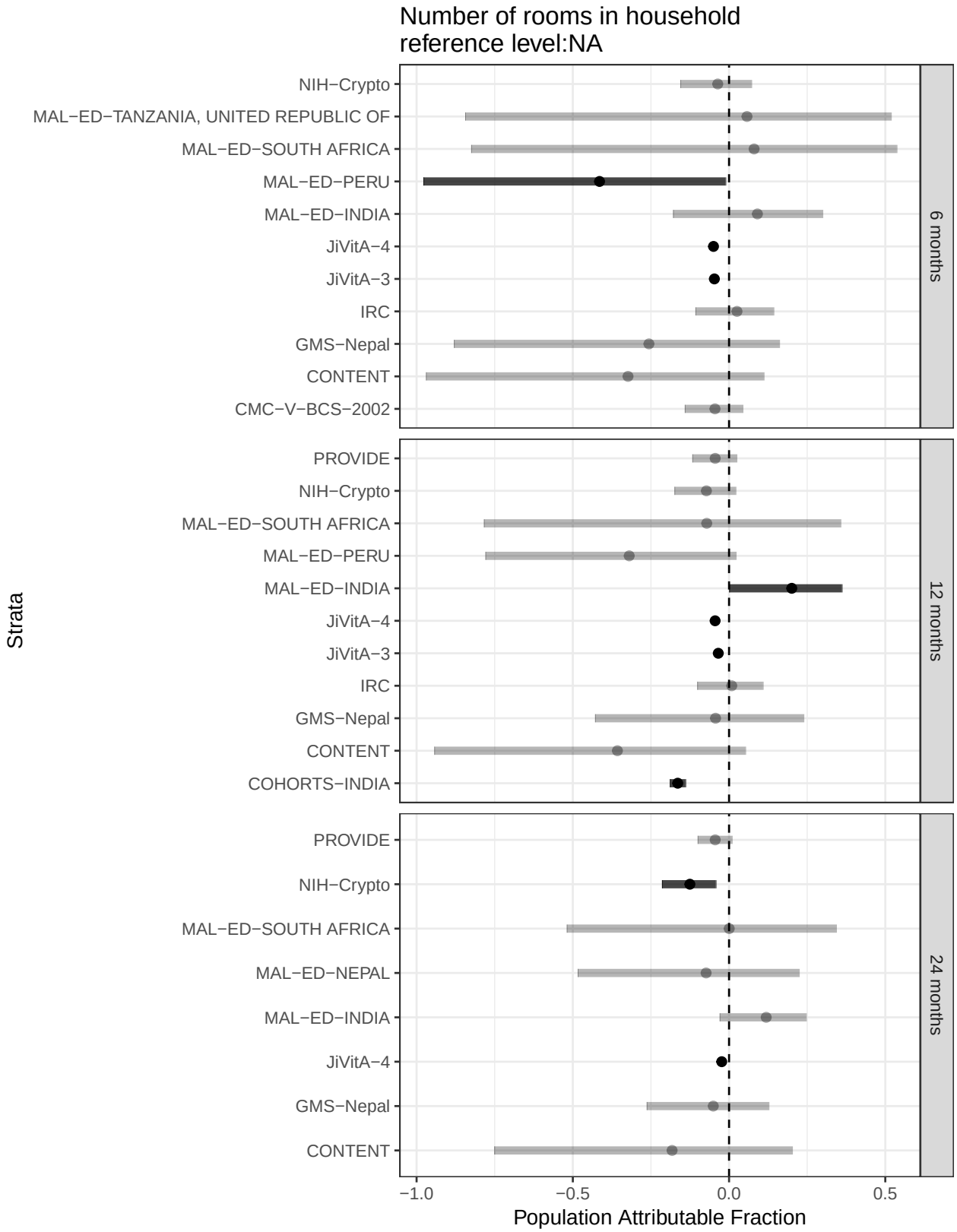
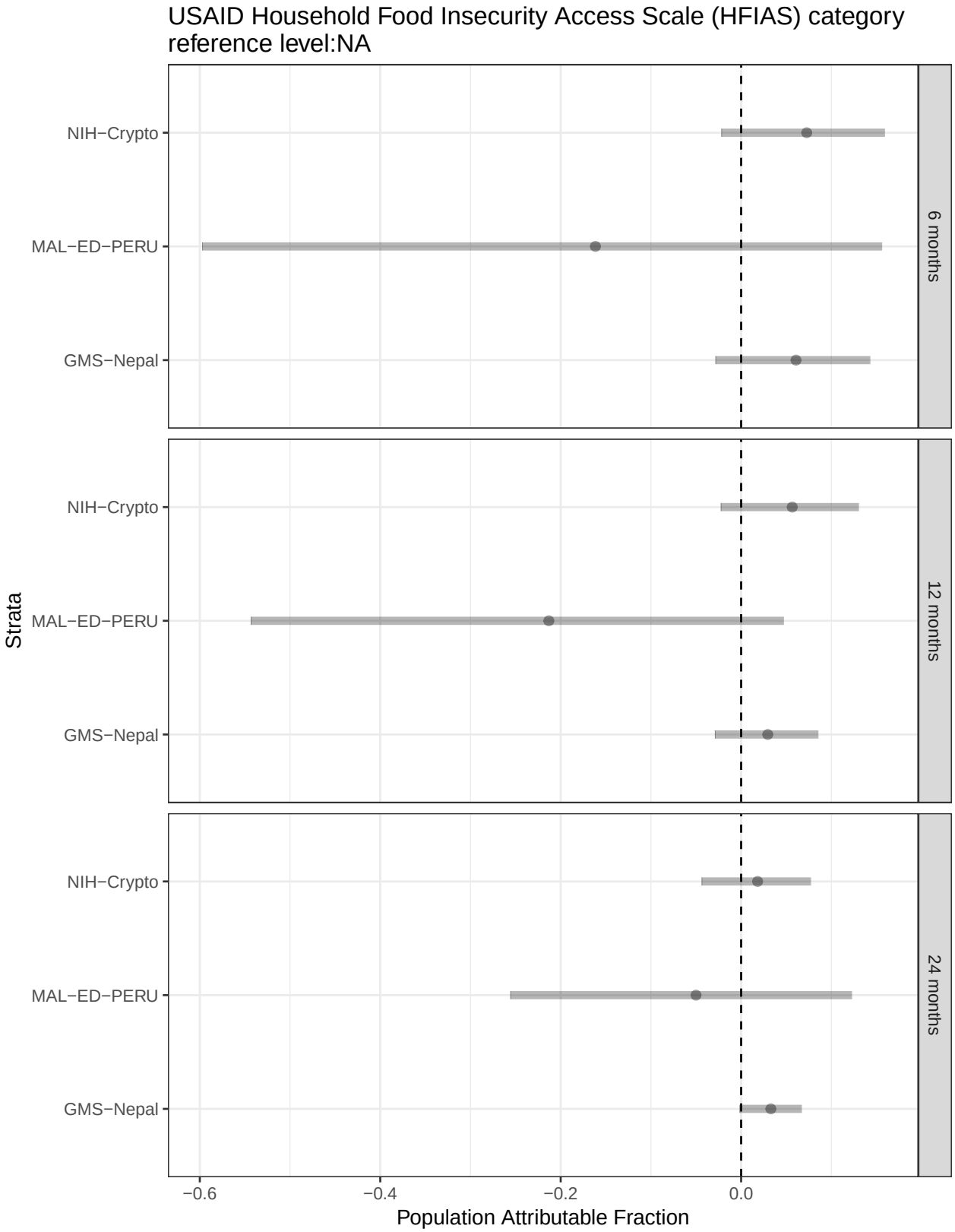
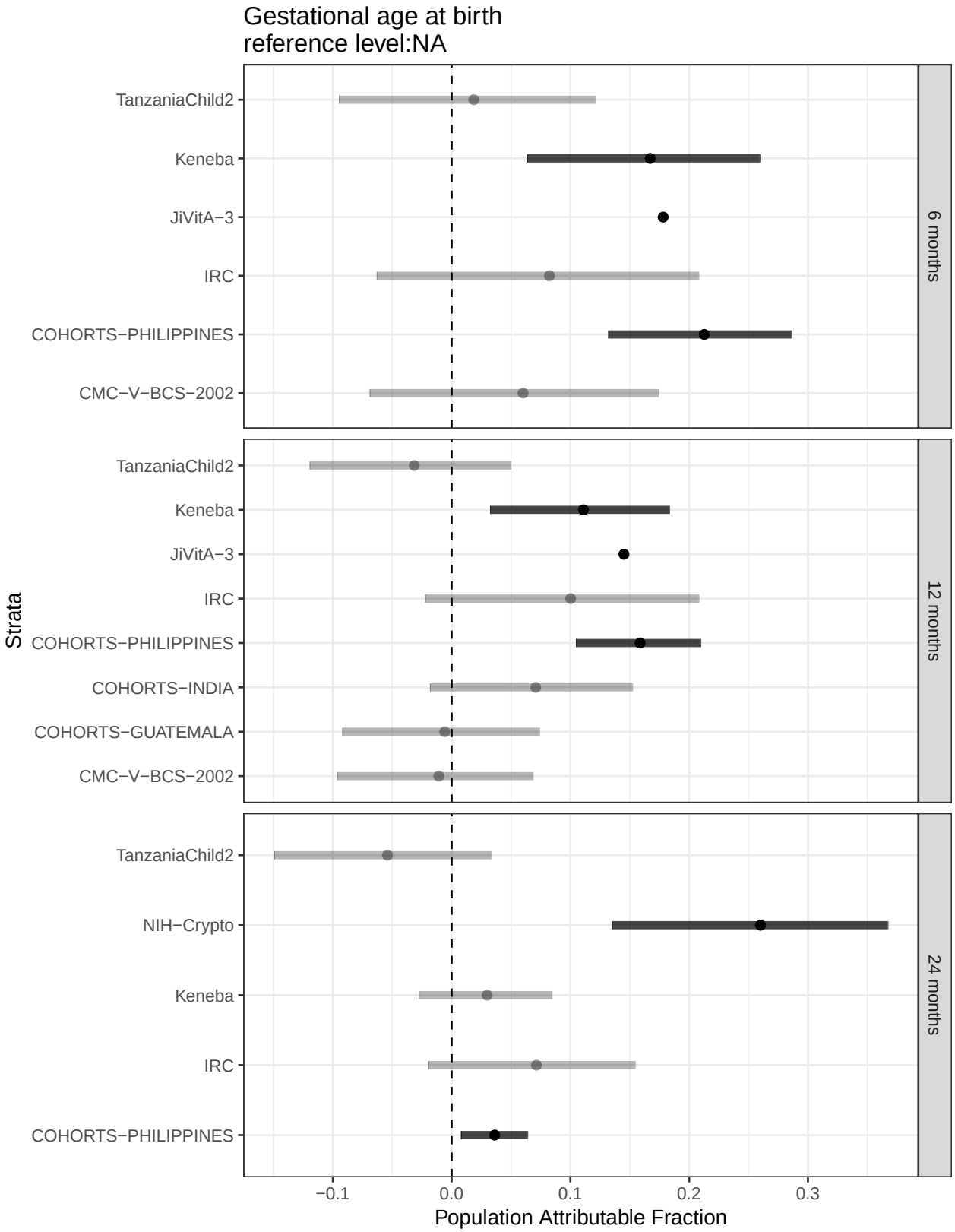

Number of rooms in household
reference level:NA
Strata
NIH−Crypto
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
CONTENT
CMC−V−BCS−2002
6 months
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
CONTENT
COHORTS−INDIA
12 months
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−NEPAL
MAL−ED−INDIA
JiVitA−4
GMS−Nepal
CONTENT
24 months
−1.0
−0.5
0.0
0.5
Population Attributable Fraction


USAID Household Food Insecurity Access Scale (HFIAS) category
reference level:NA
Strata
NIH−Crypto
MAL−ED−PERU
GMS−Nepal
6 months
12 months
24 months
−0.6
−0.4
−0.2
0.0
Population Attributable Fraction

Maternal characteristics

```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
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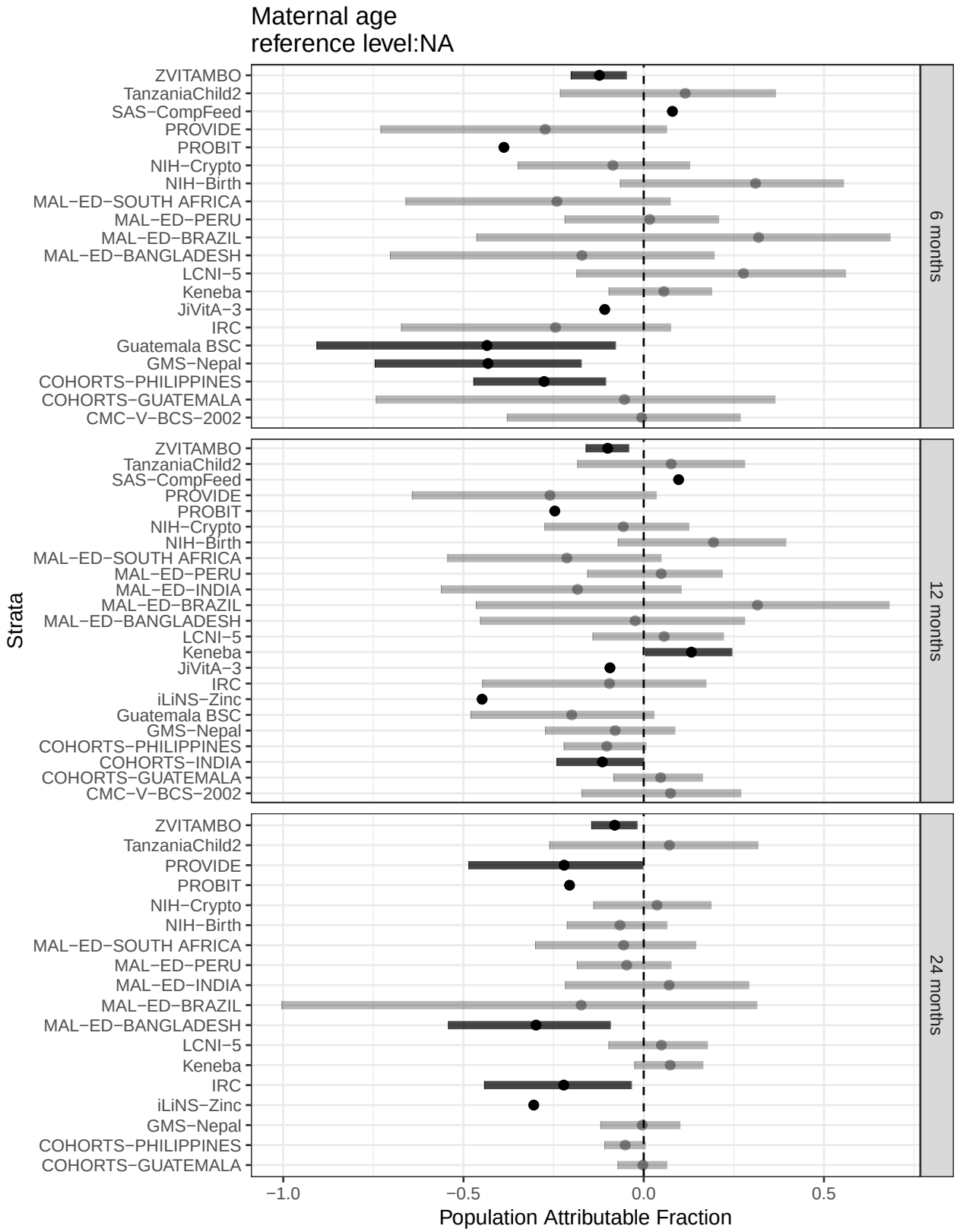
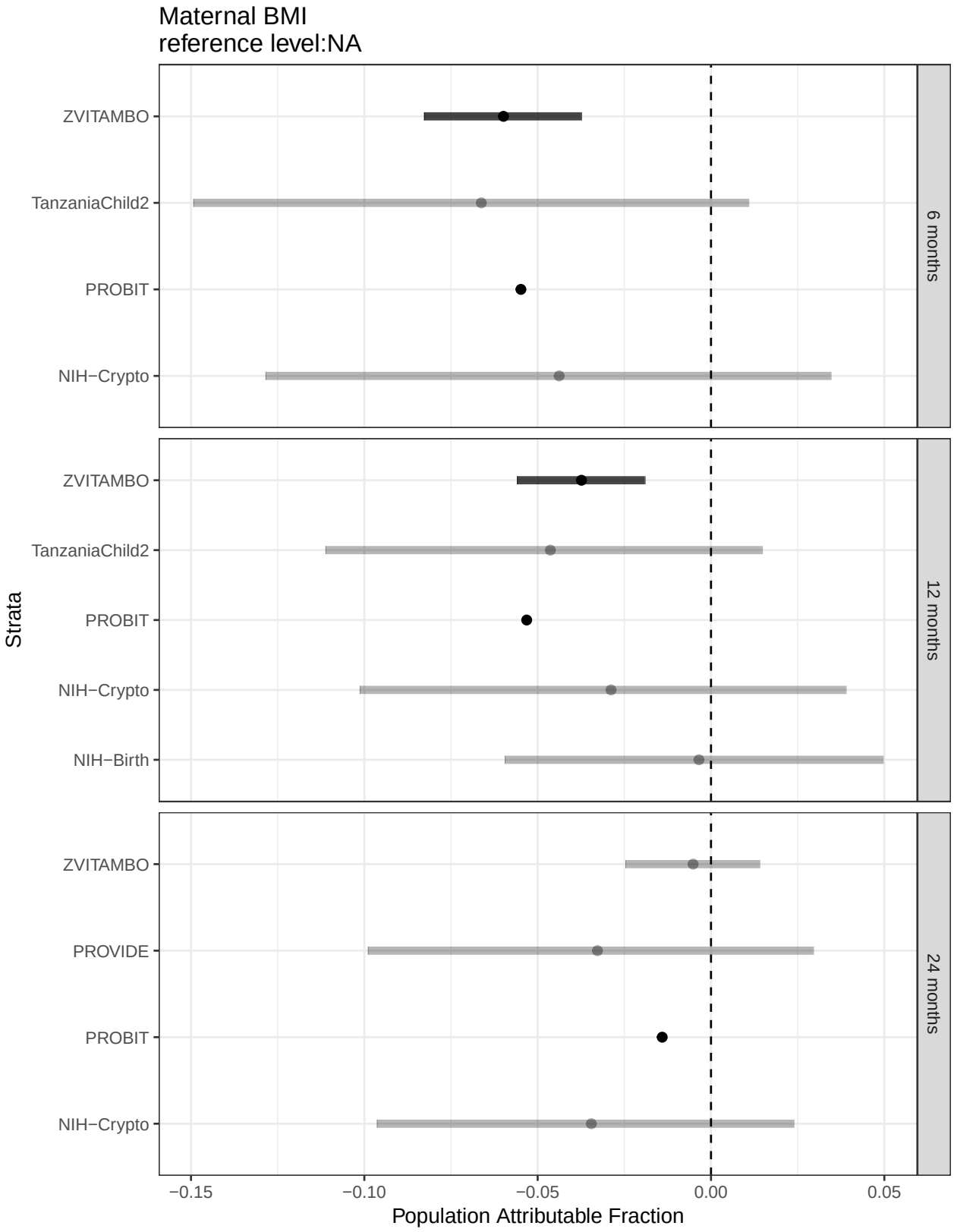
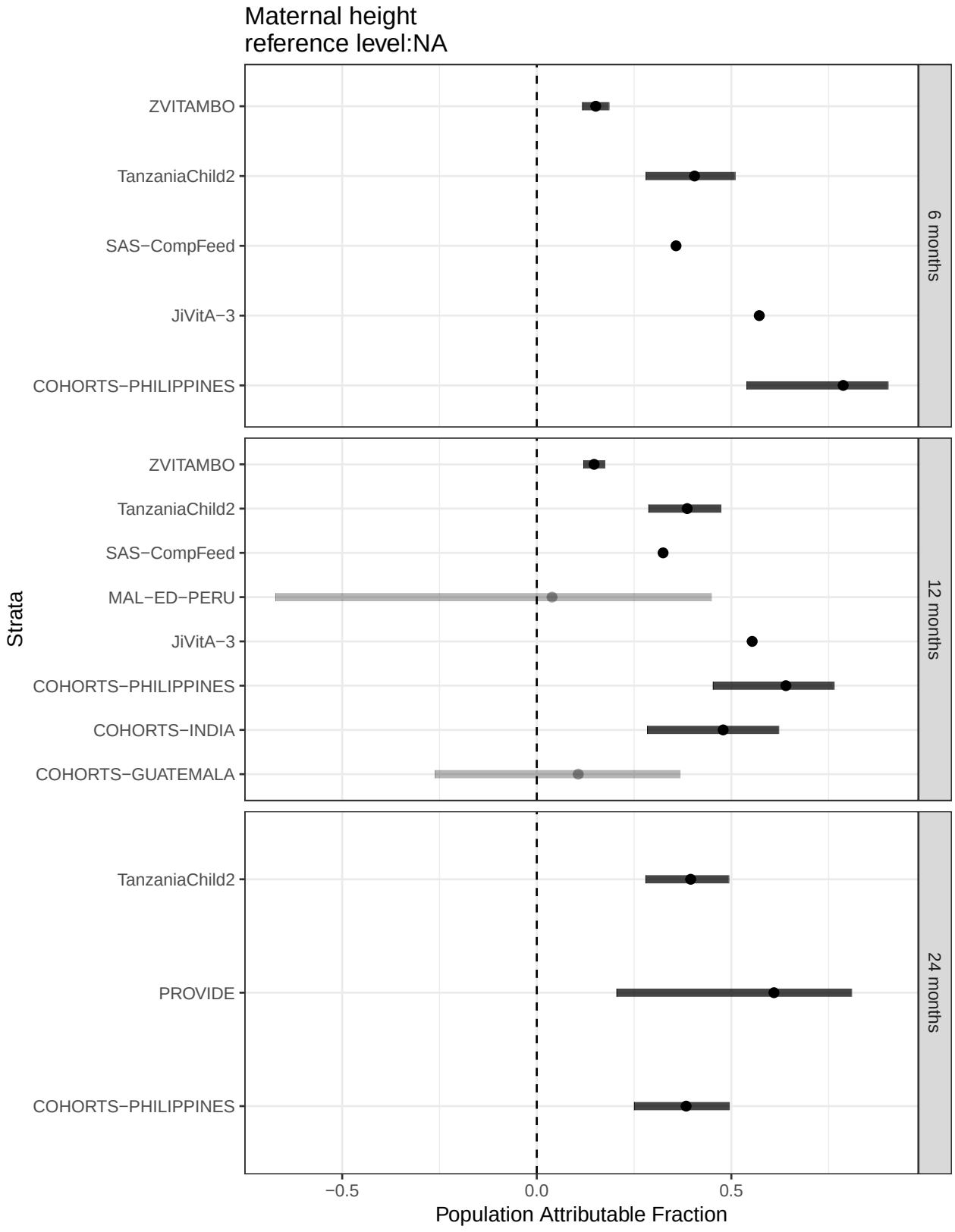


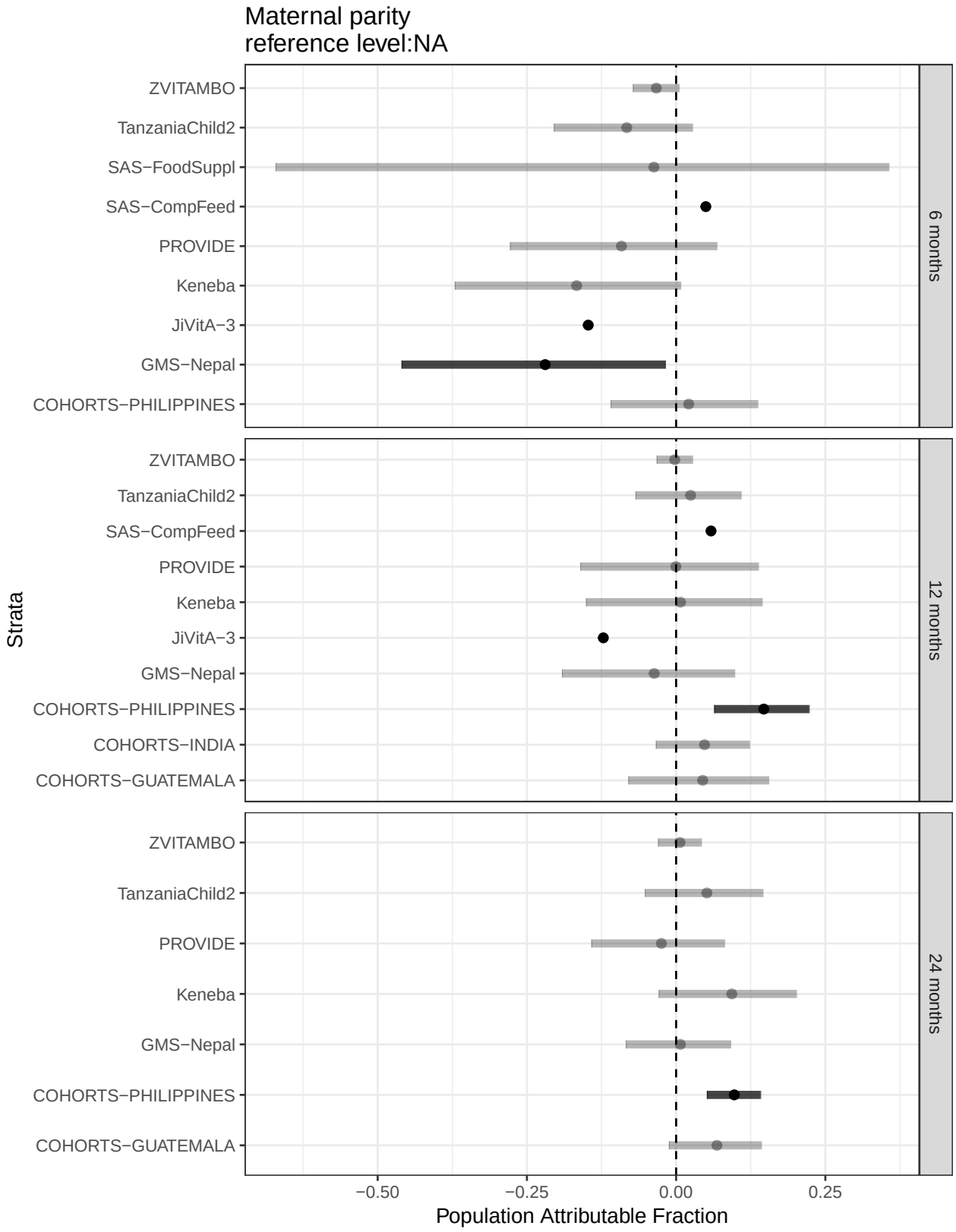

```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```



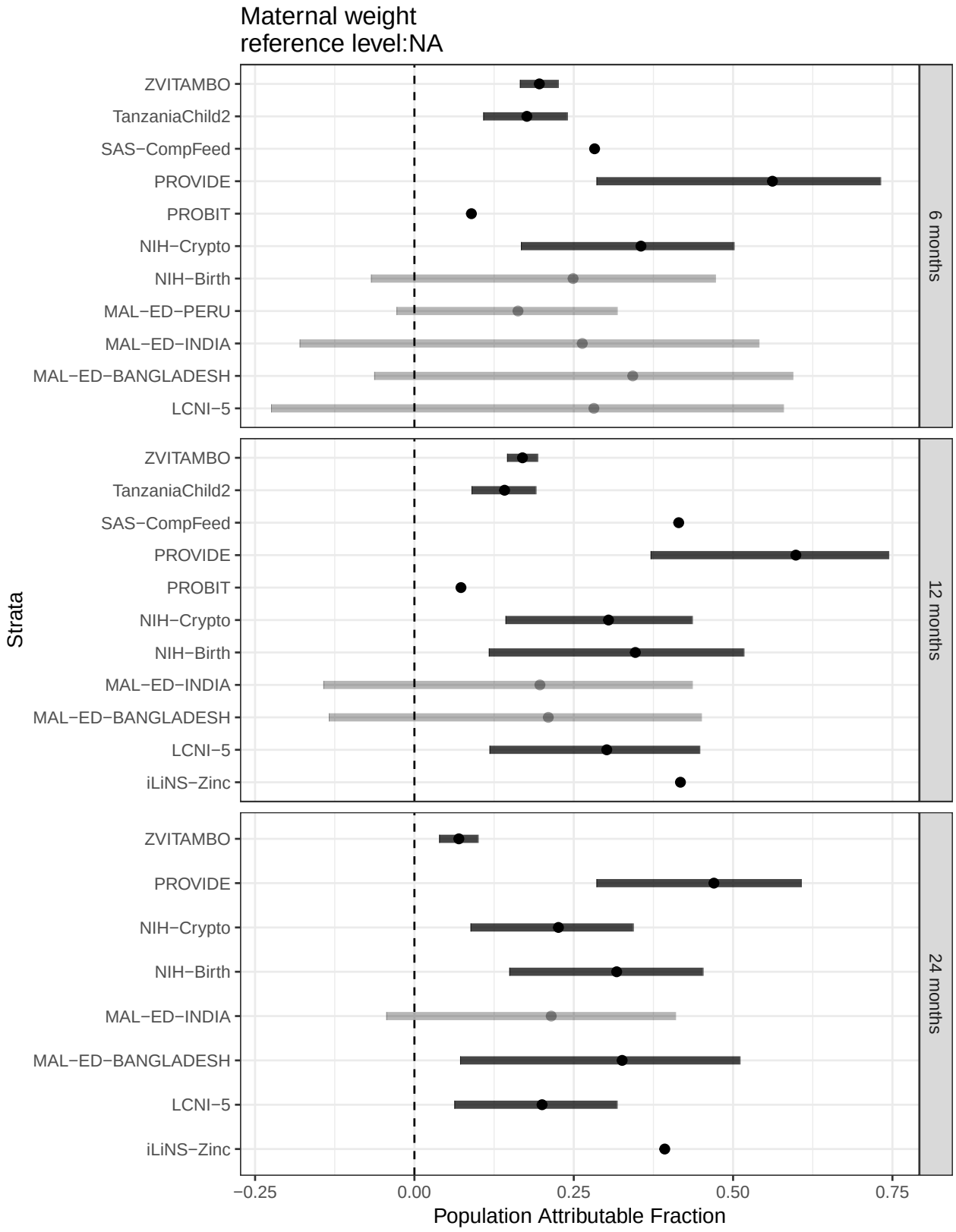

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



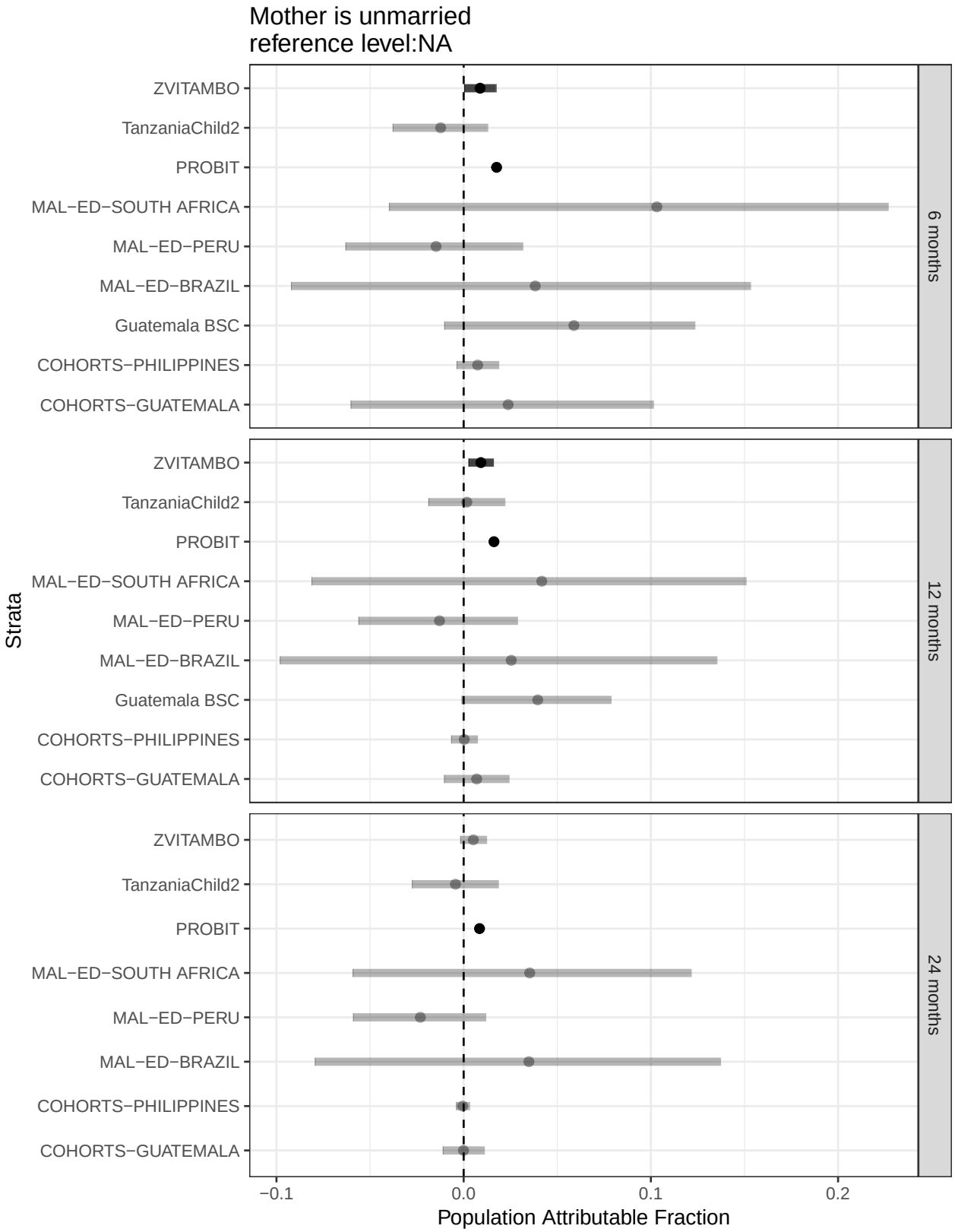

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



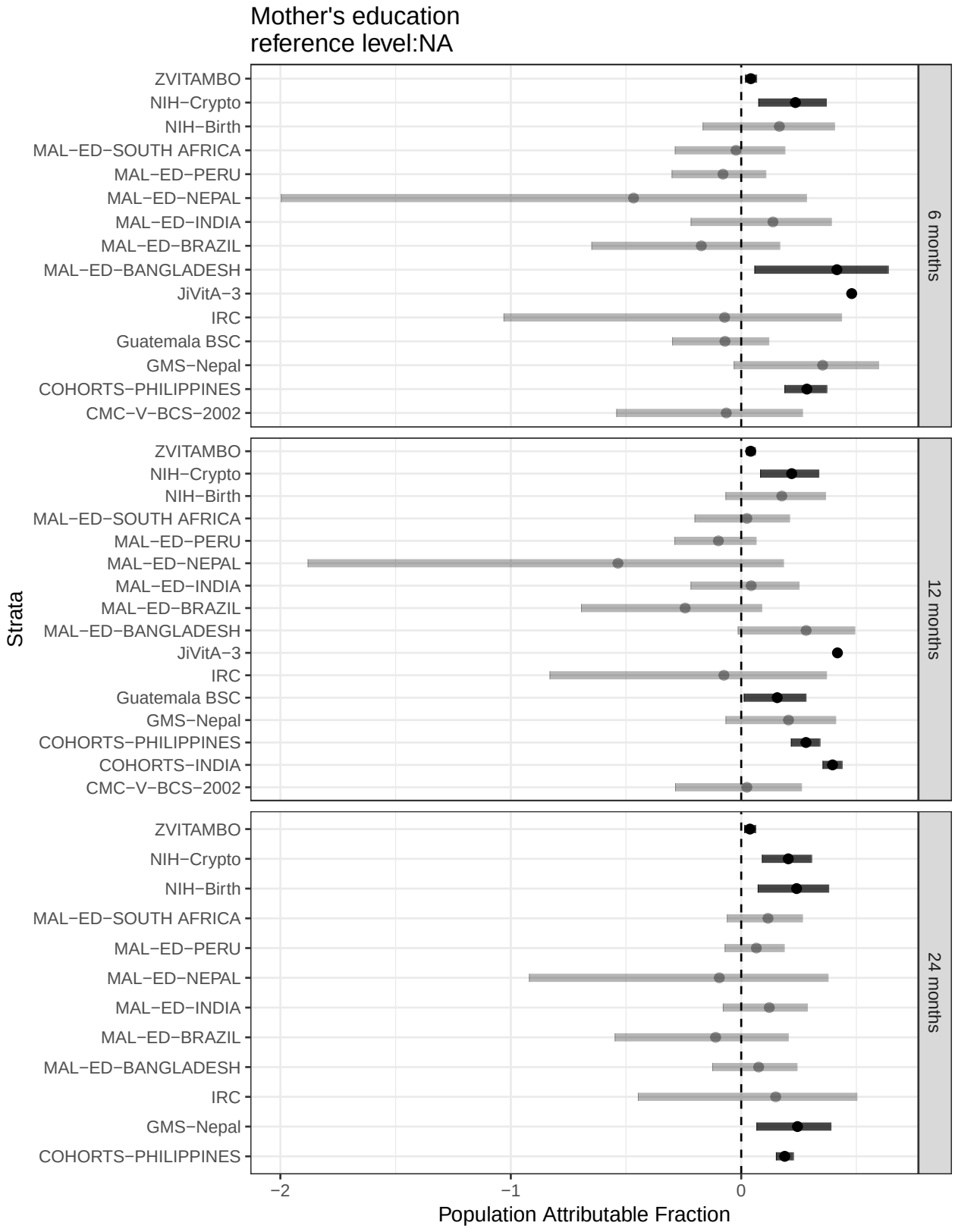

```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```

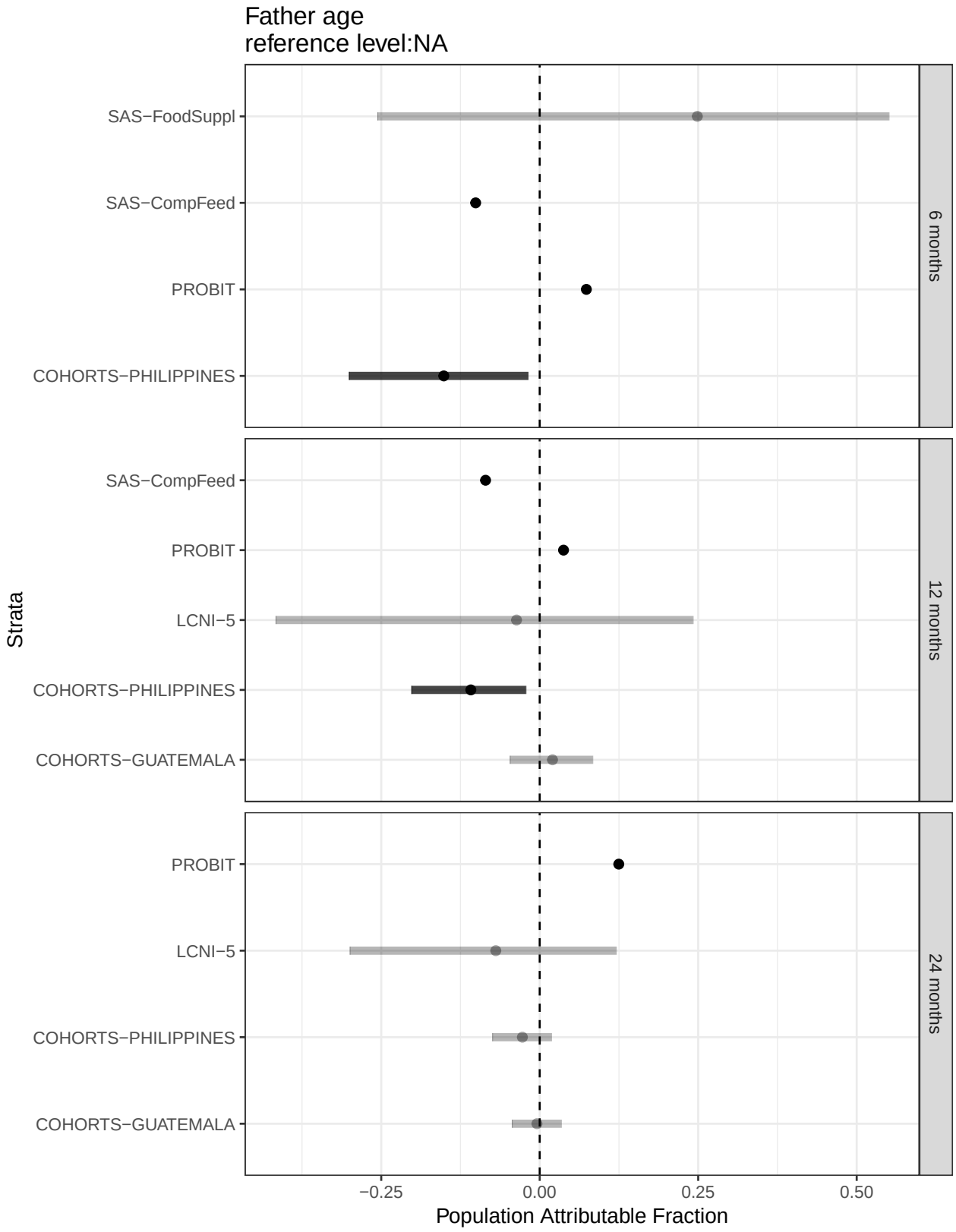



```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```


Mother's education
reference level:NA
6 months
12 months
24 months
Strata
ZVITAMBO
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
MAL−ED−BRAZIL
MAL−ED−BANGLADESH
JiVitA−3
IRC
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
−2
−1
0
Population Attributable Fraction

Paternal characteristics

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
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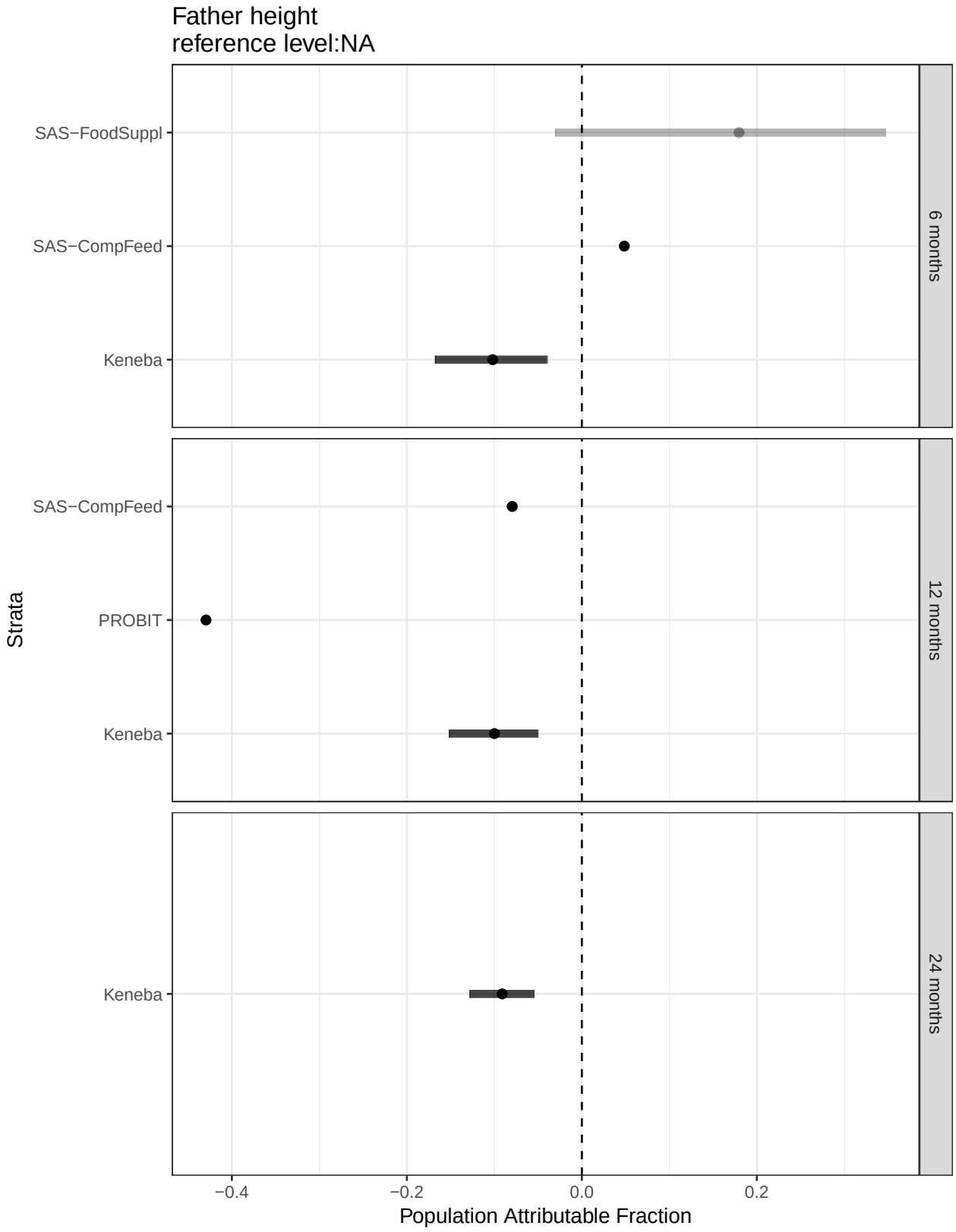
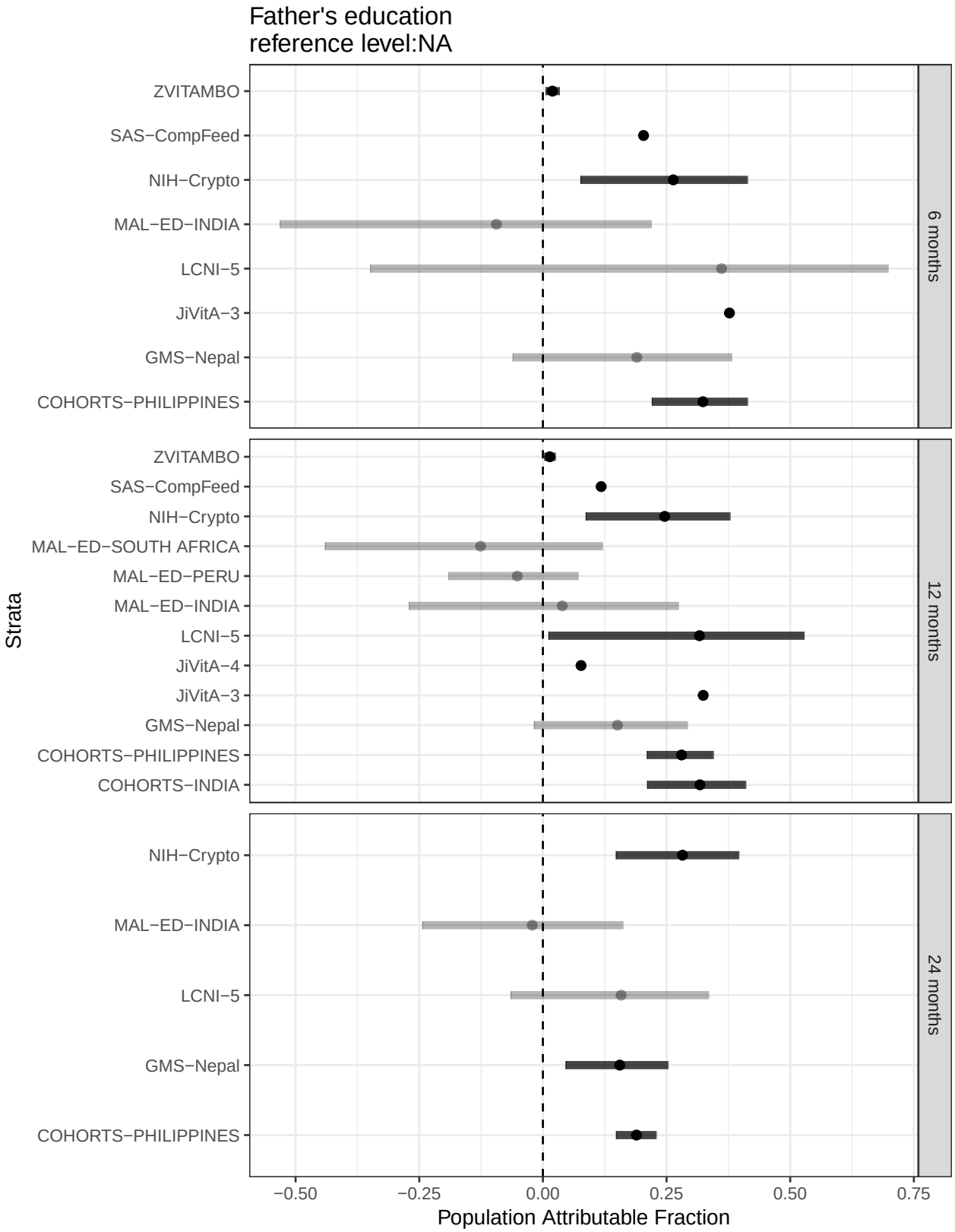


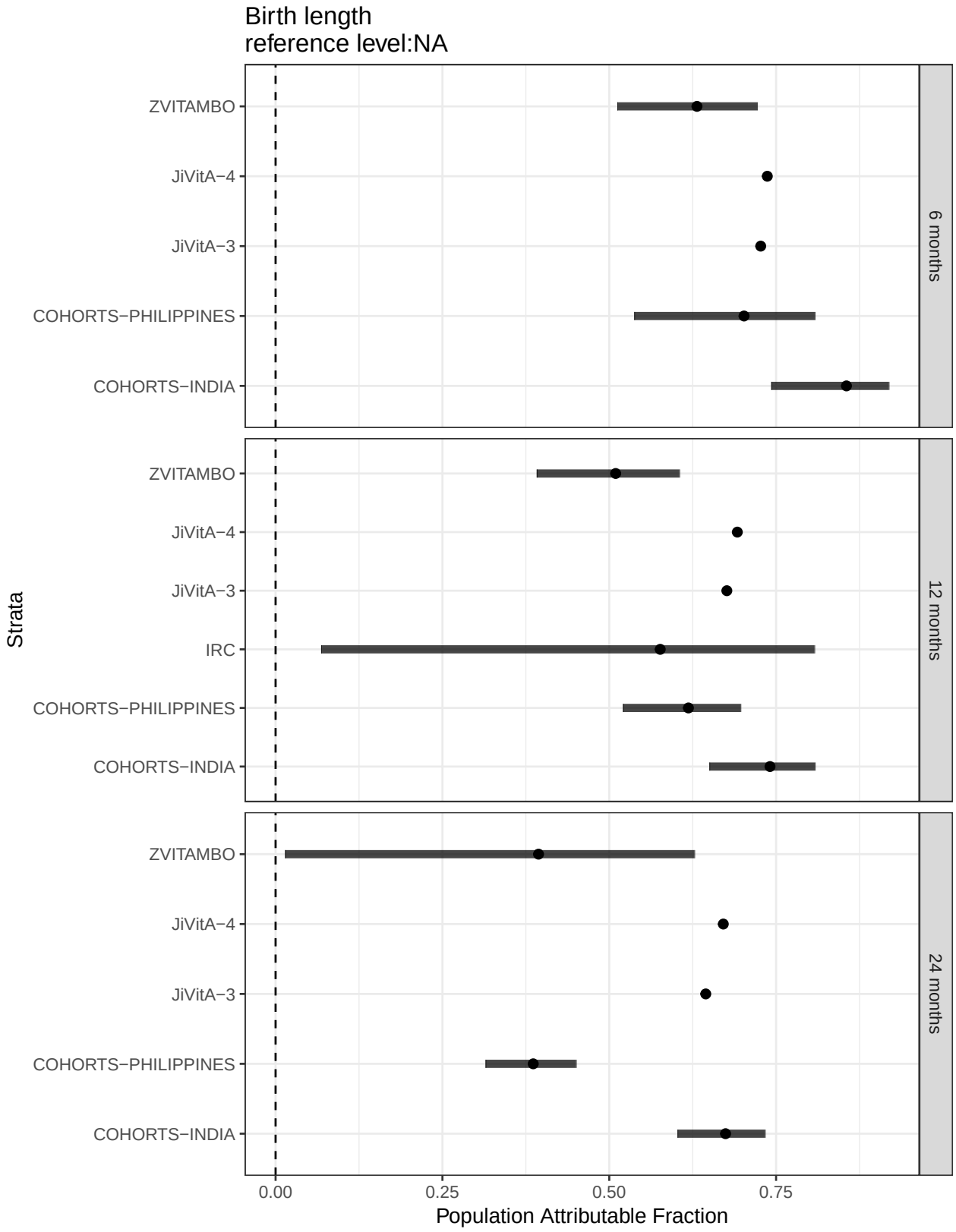

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```


Father's education
reference level:NA
ZVITAMBO
SAS−CompFeed
NIH−Crypto
MAL−ED−INDIA
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
6 months
ZVITAMBO
SAS−CompFeed
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
LCNI−5
JiVitA−4
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
12 months
NIH−Crypto
MAL−ED−INDIA
LCNI−5
GMS−Nepal
COHORTS−PHILIPPINES
24 months
Strata
−0.50
−0.25
0.00
0.25
0.50
0.75
Population Attributable Fraction

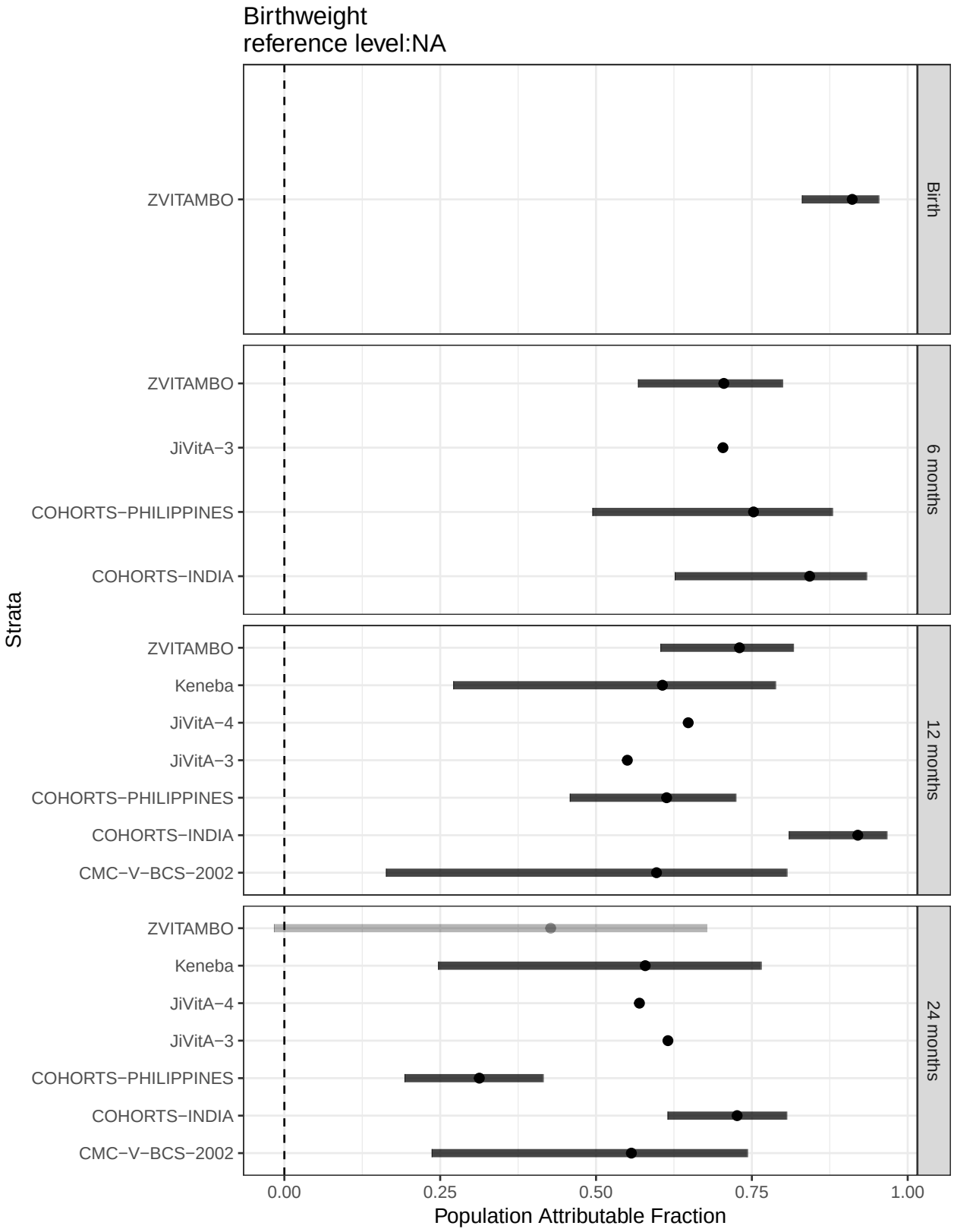
Point prevalence of severe stunting

Child characteristics

```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
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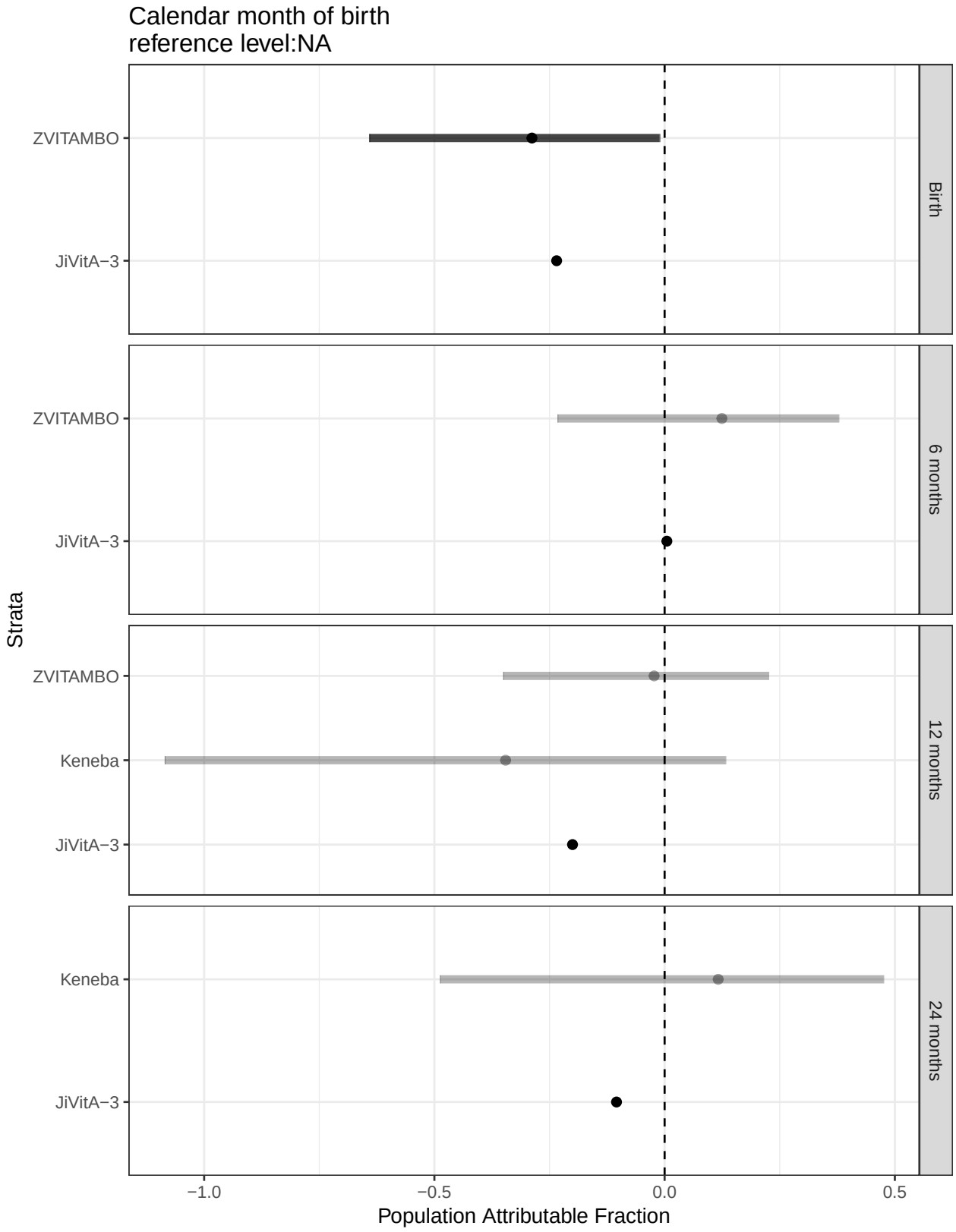
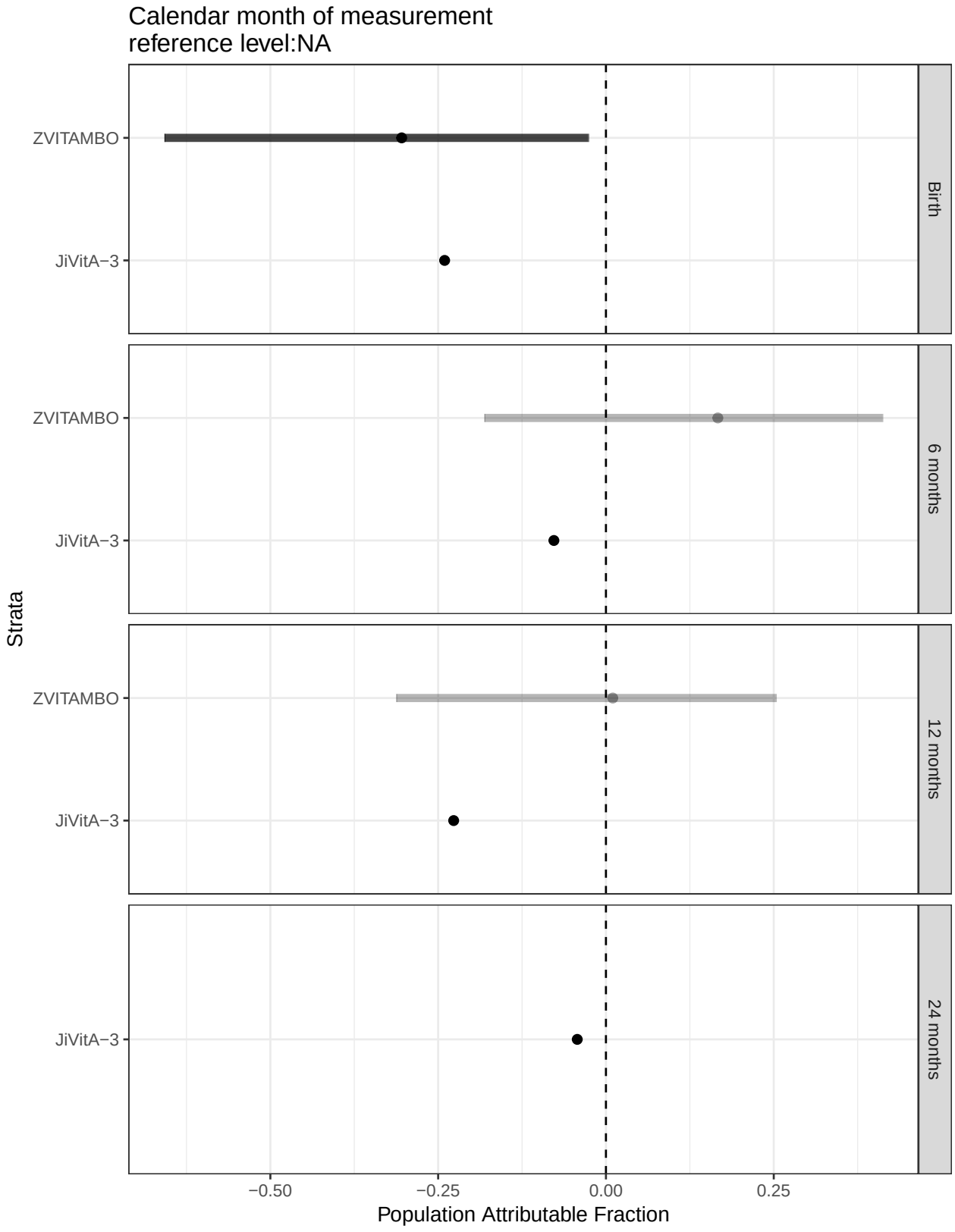
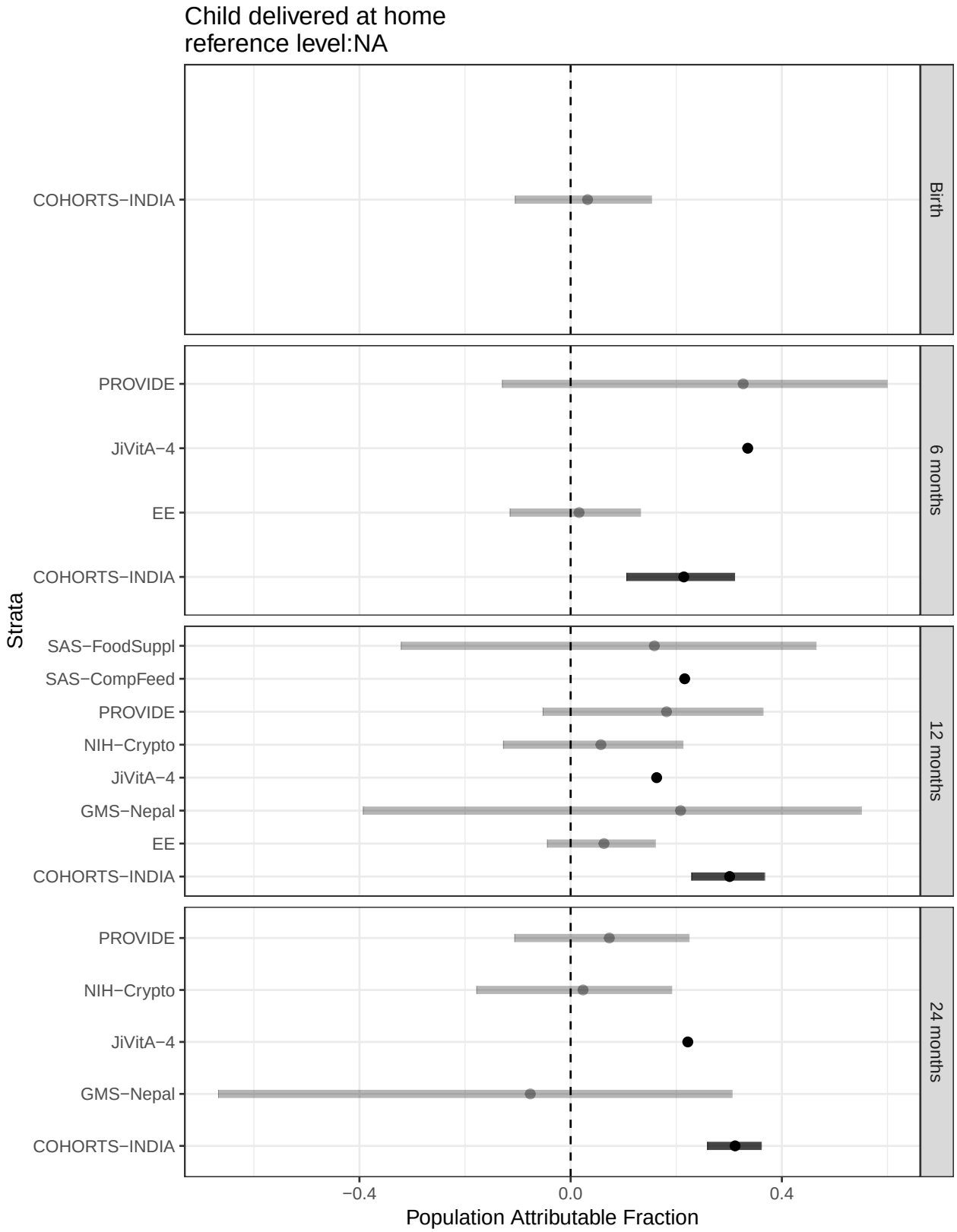


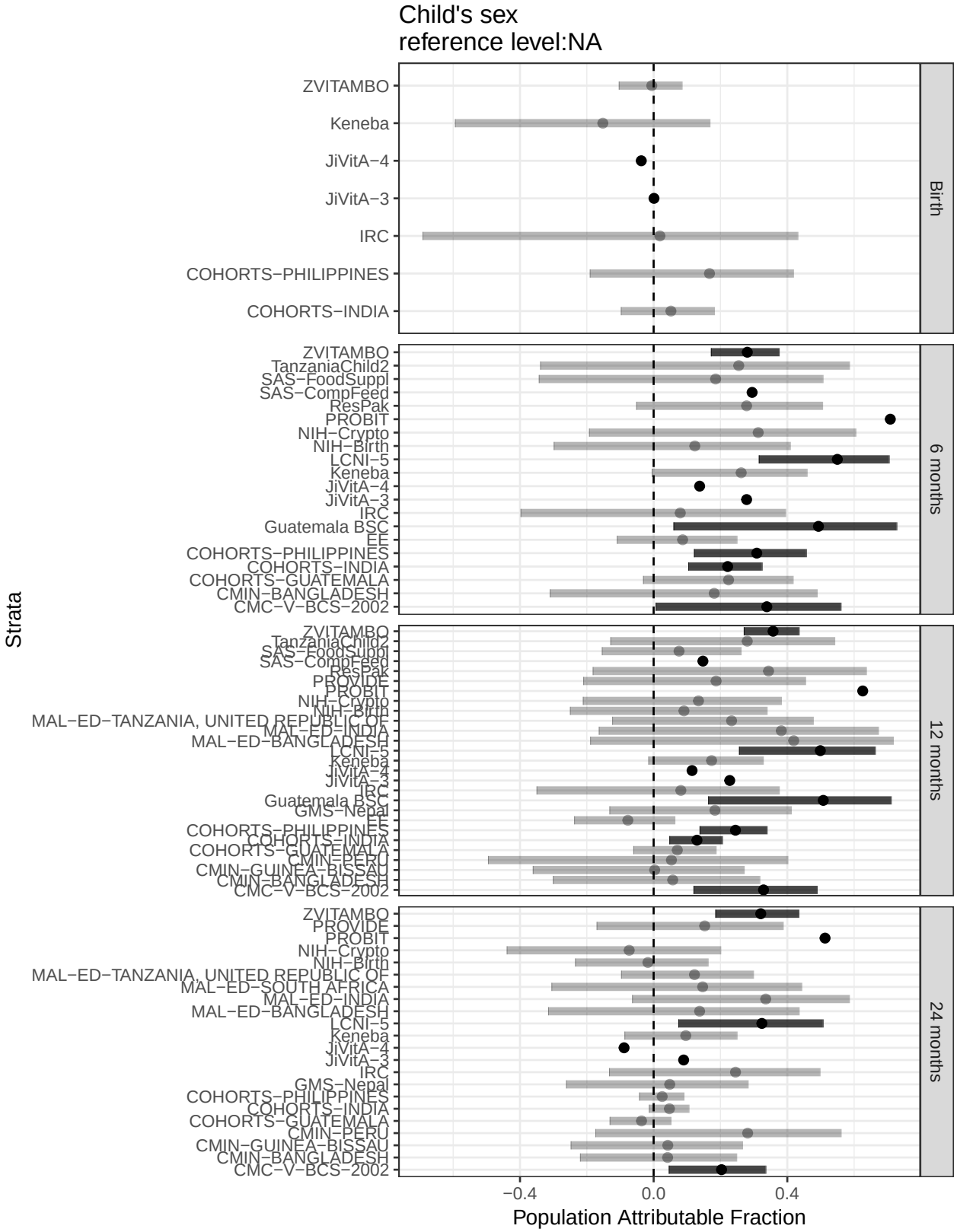

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



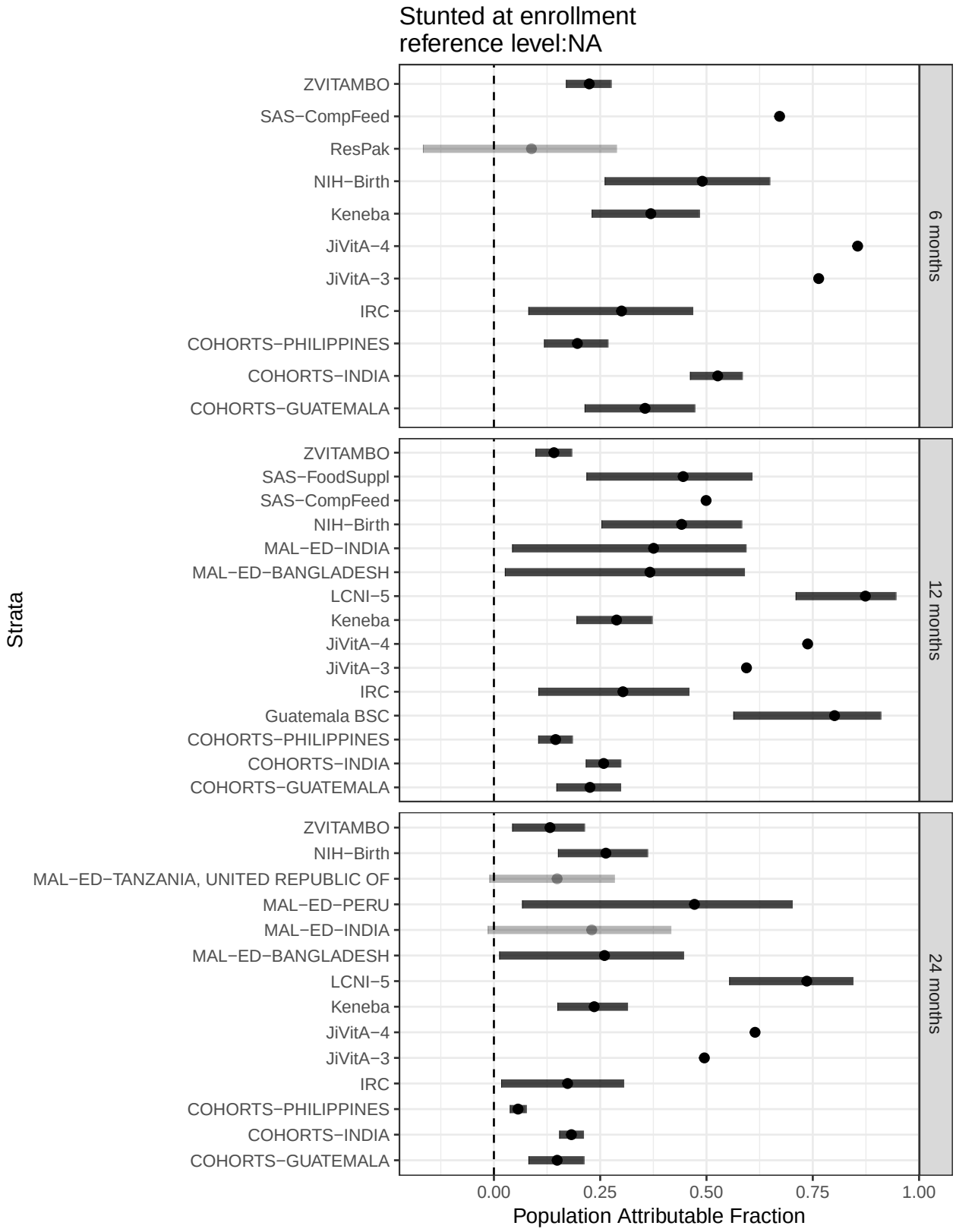

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



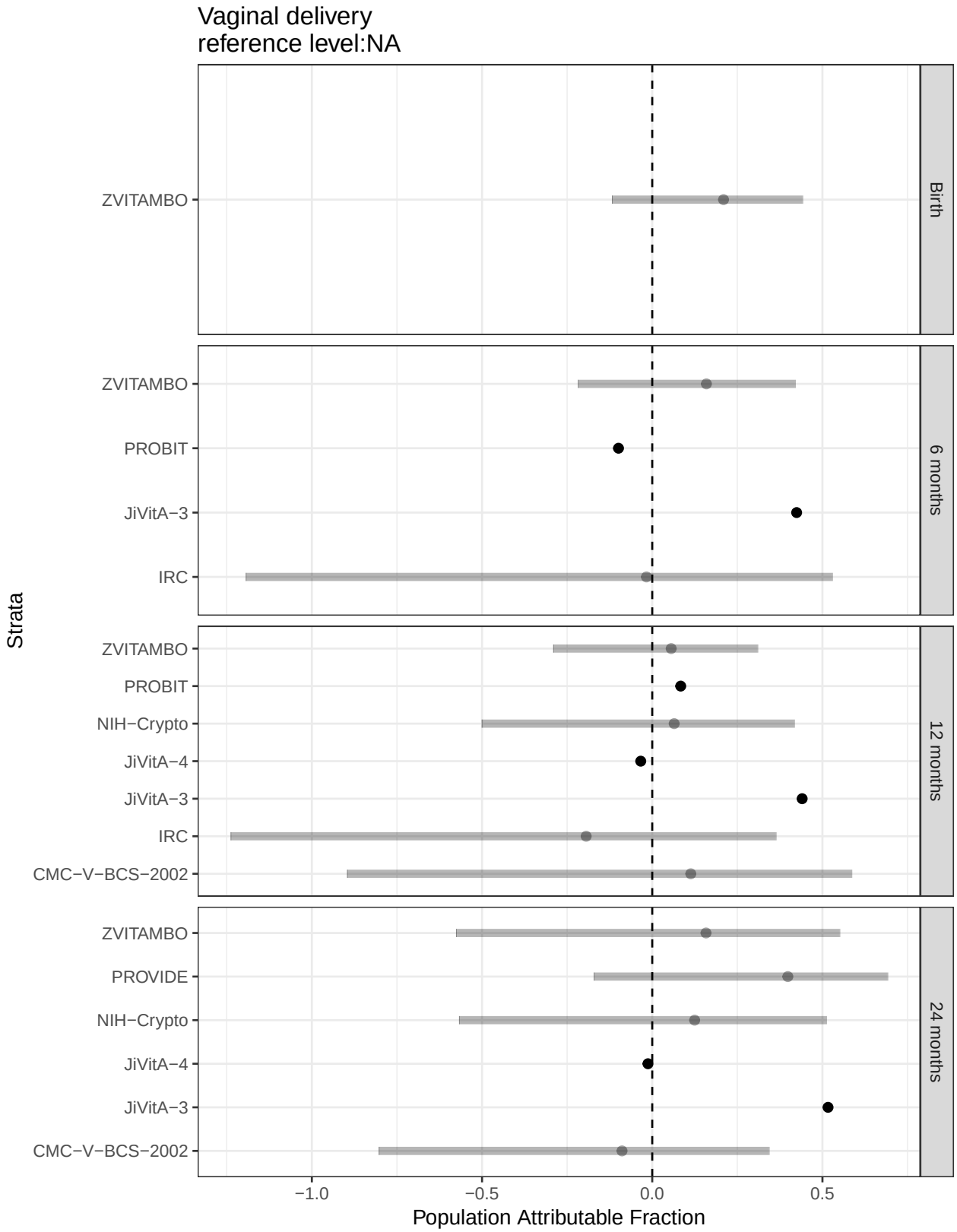

```
## Warning: Removed 13 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

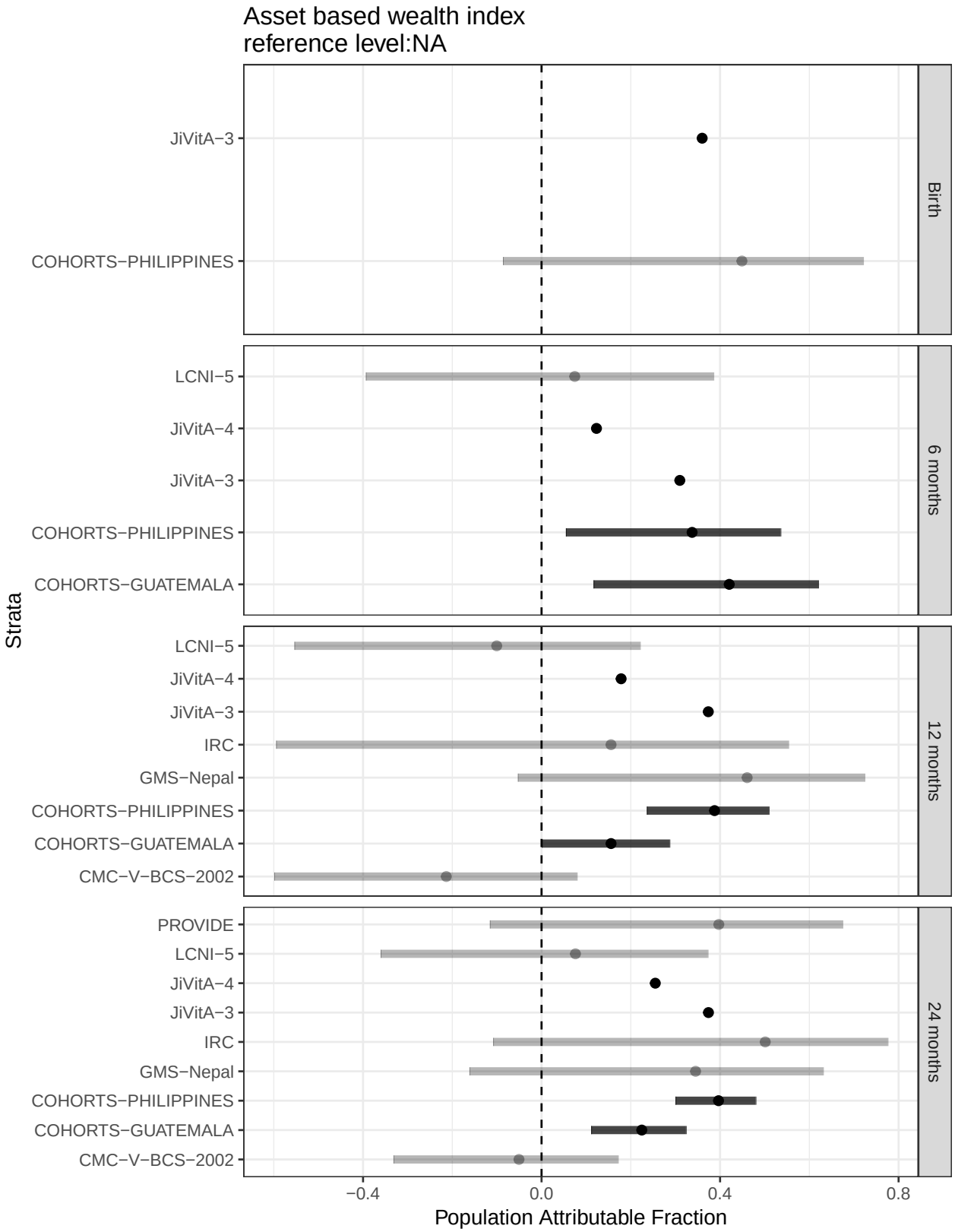



```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```

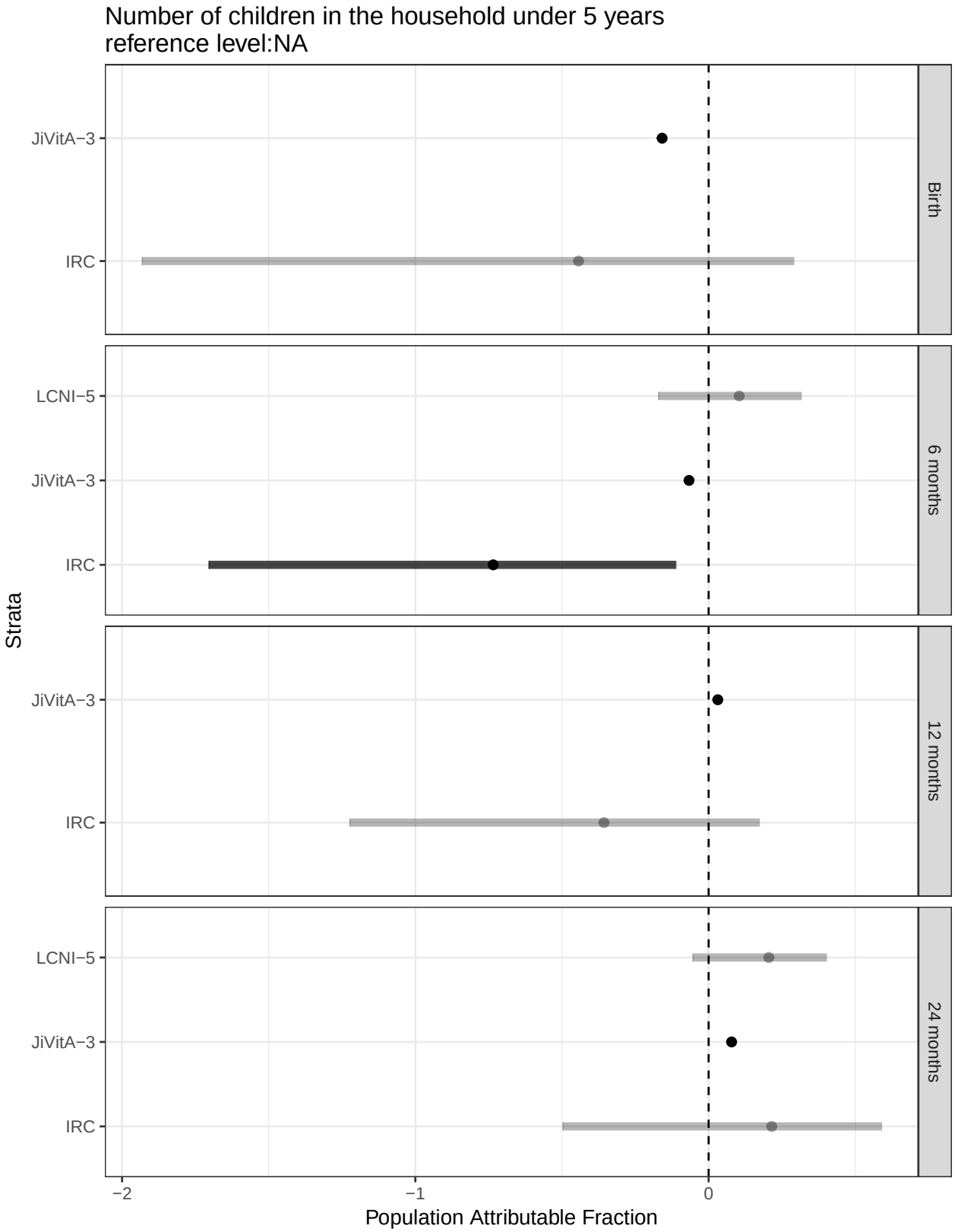

Vaginal delivery
reference level:NA
Strata
Birth
ZVITAMBO
6 months
ZVITAMBO
PROBIT
JiVitA−3
IRC
12 months
ZVITAMBO
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
IRC
CMC−V−BCS−2002
24 months
ZVITAMBO
PROVIDE
NIH−Crypto
JiVitA−4
JiVitA−3
CMC−V−BCS−2002
−1.0
−0.5
0.0
0.5
Population Attributable Fraction

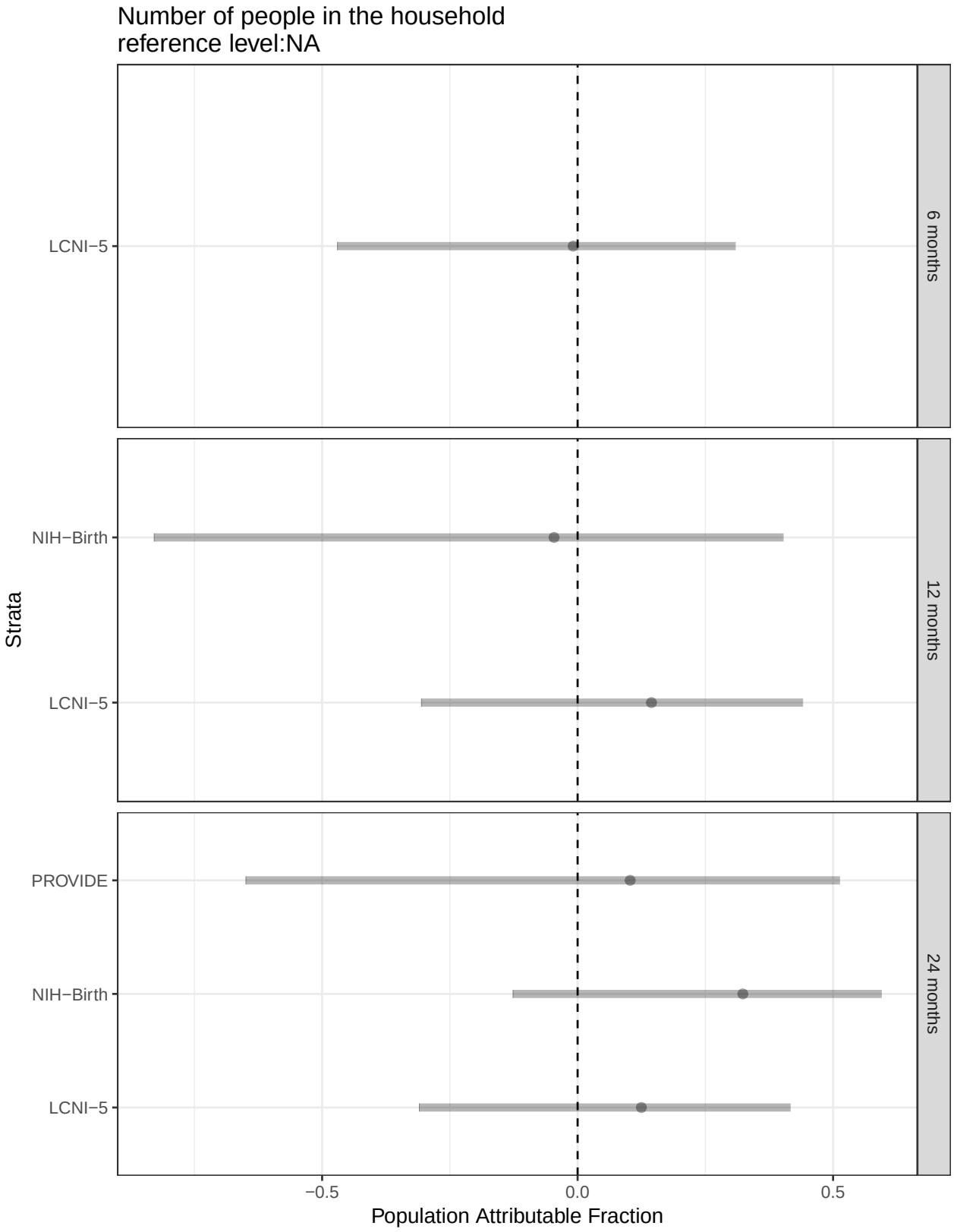
Household characteristics

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```

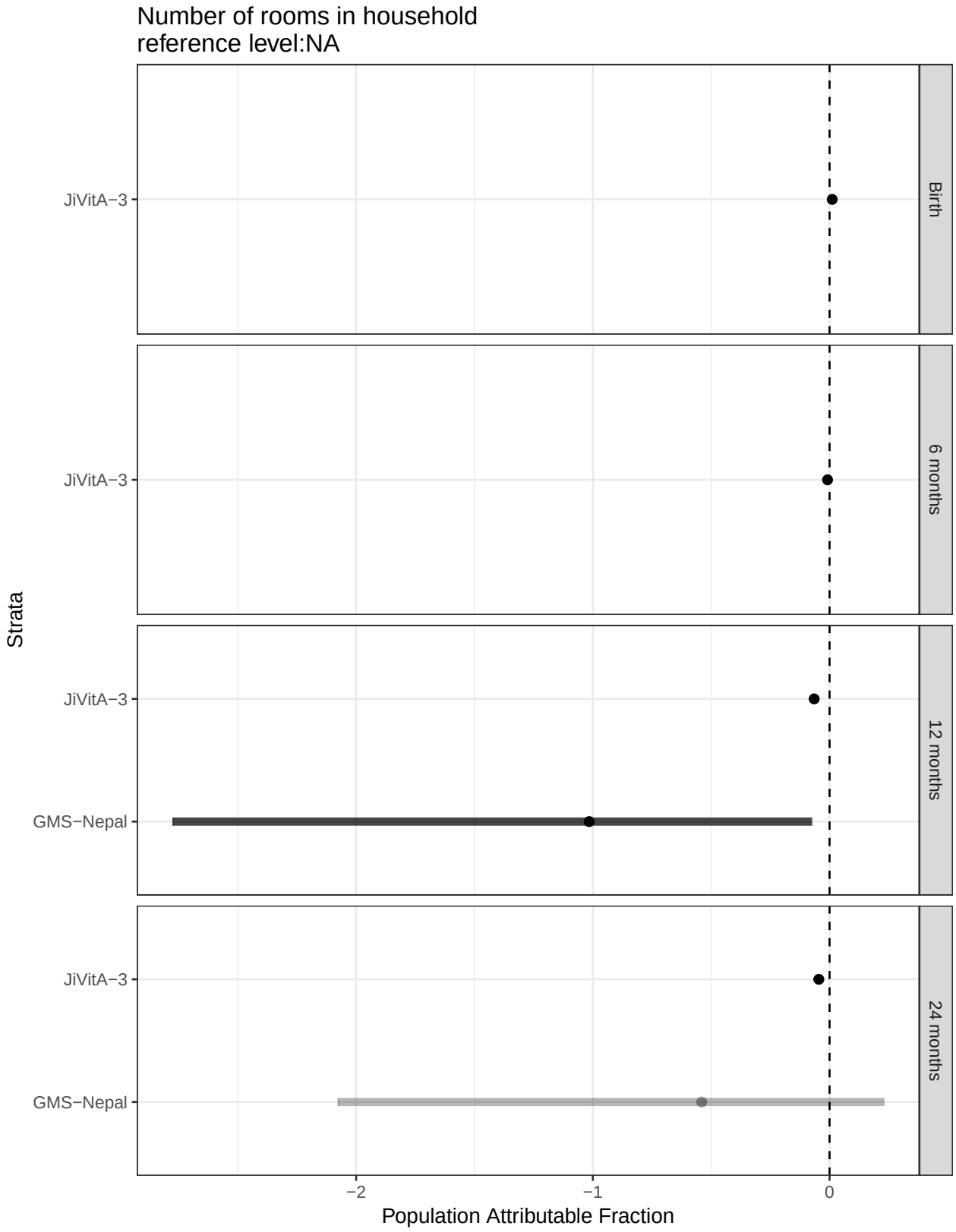



```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Number of children in the household under 5 years
reference level:NA
Strata
JiVitA−3
IRC
Birth
LCNI−5
JiVitA−3
IRC
6 months
JiVitA−3
IRC
12 months
LCNI−5
JiVitA−3
IRC
24 months
−2
−1
0
Population Attributable Fraction

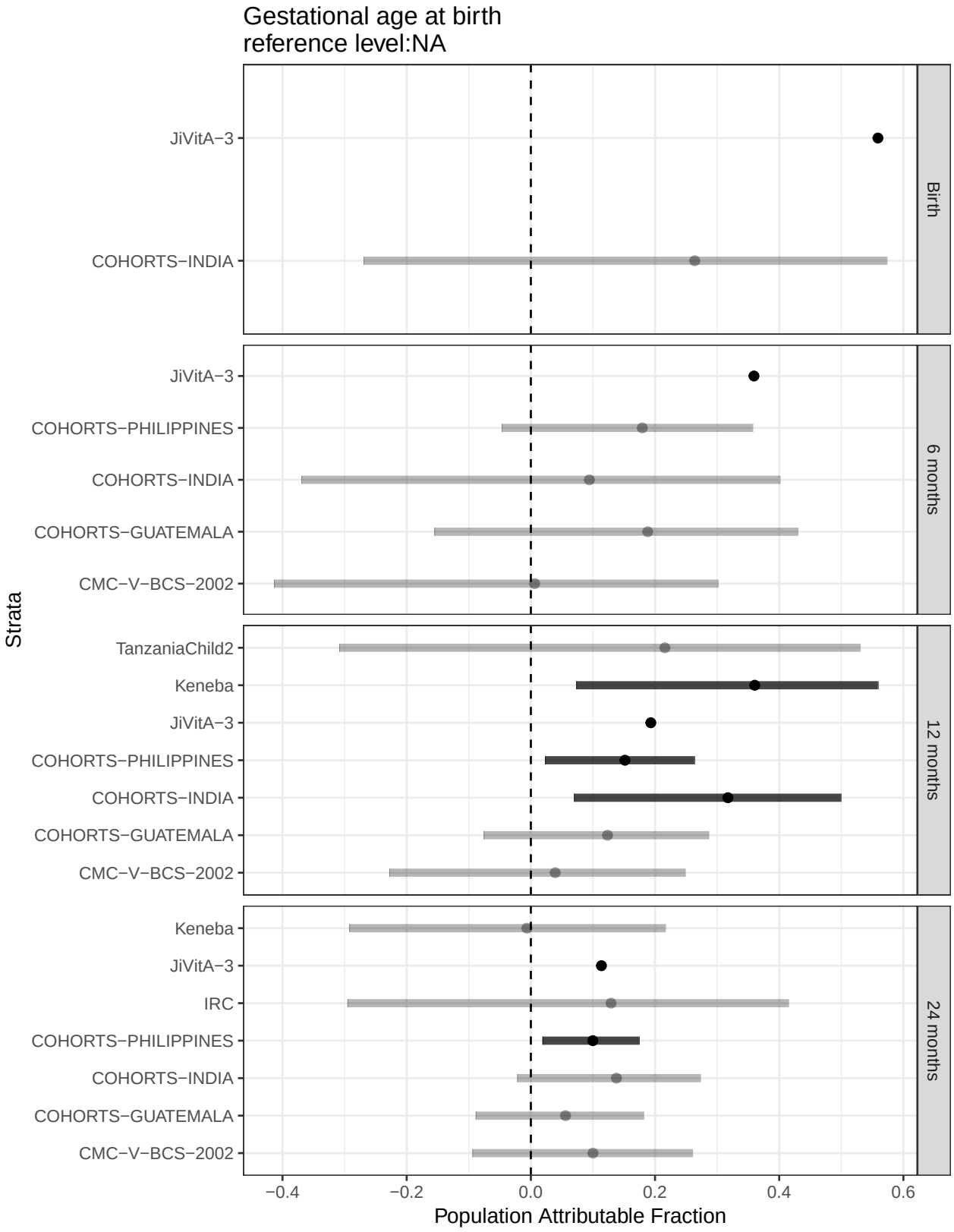



```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```

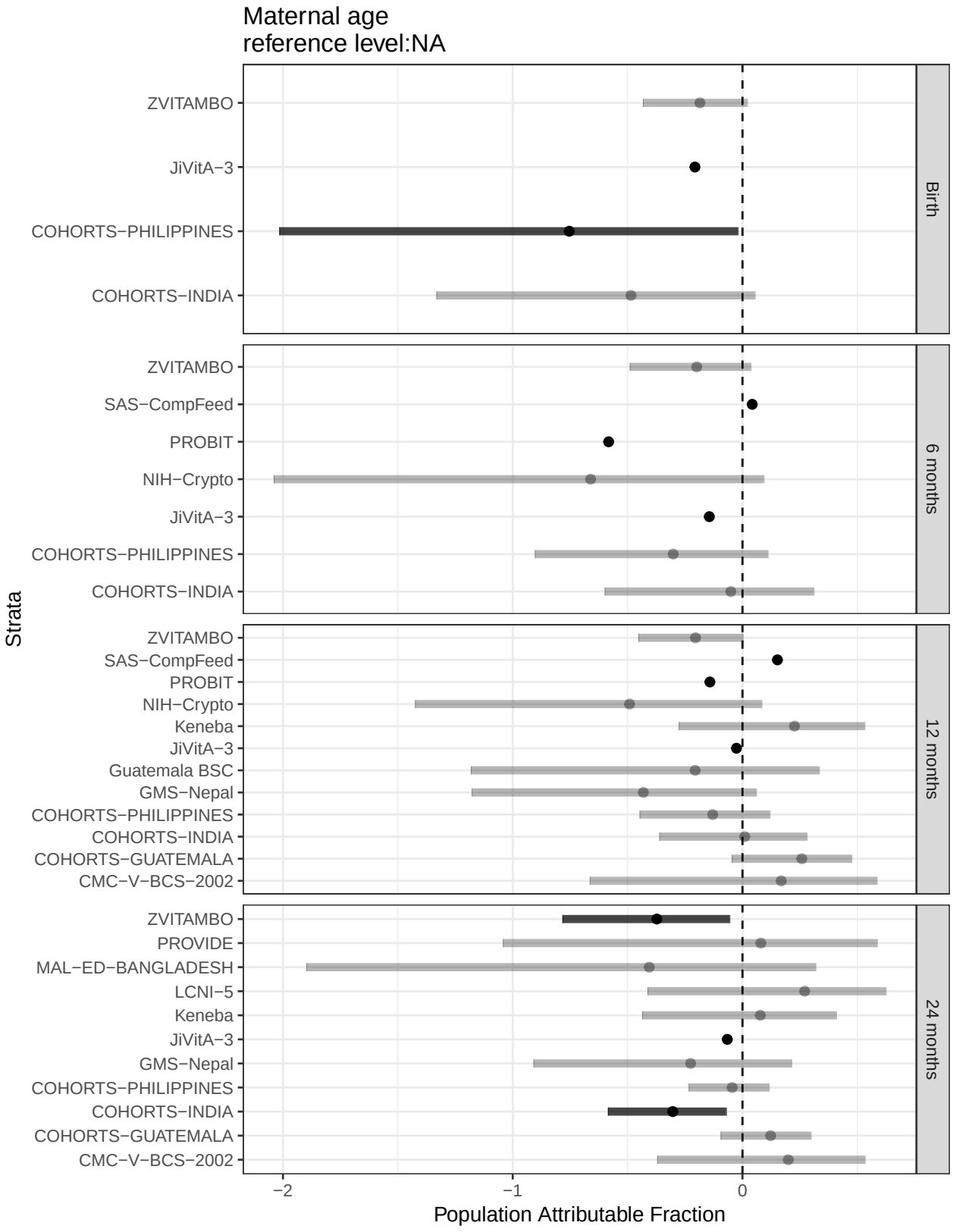

Number of rooms in household
reference level:NA
Strata
JiVitA−3
JiVitA−3
JiVitA−3
GMS−Nepal
JiVitA−3
GMS−Nepal
Birth
6 months
12 months
24 months
−2
−1
0
Population Attributable Fraction

Maternal characteristics

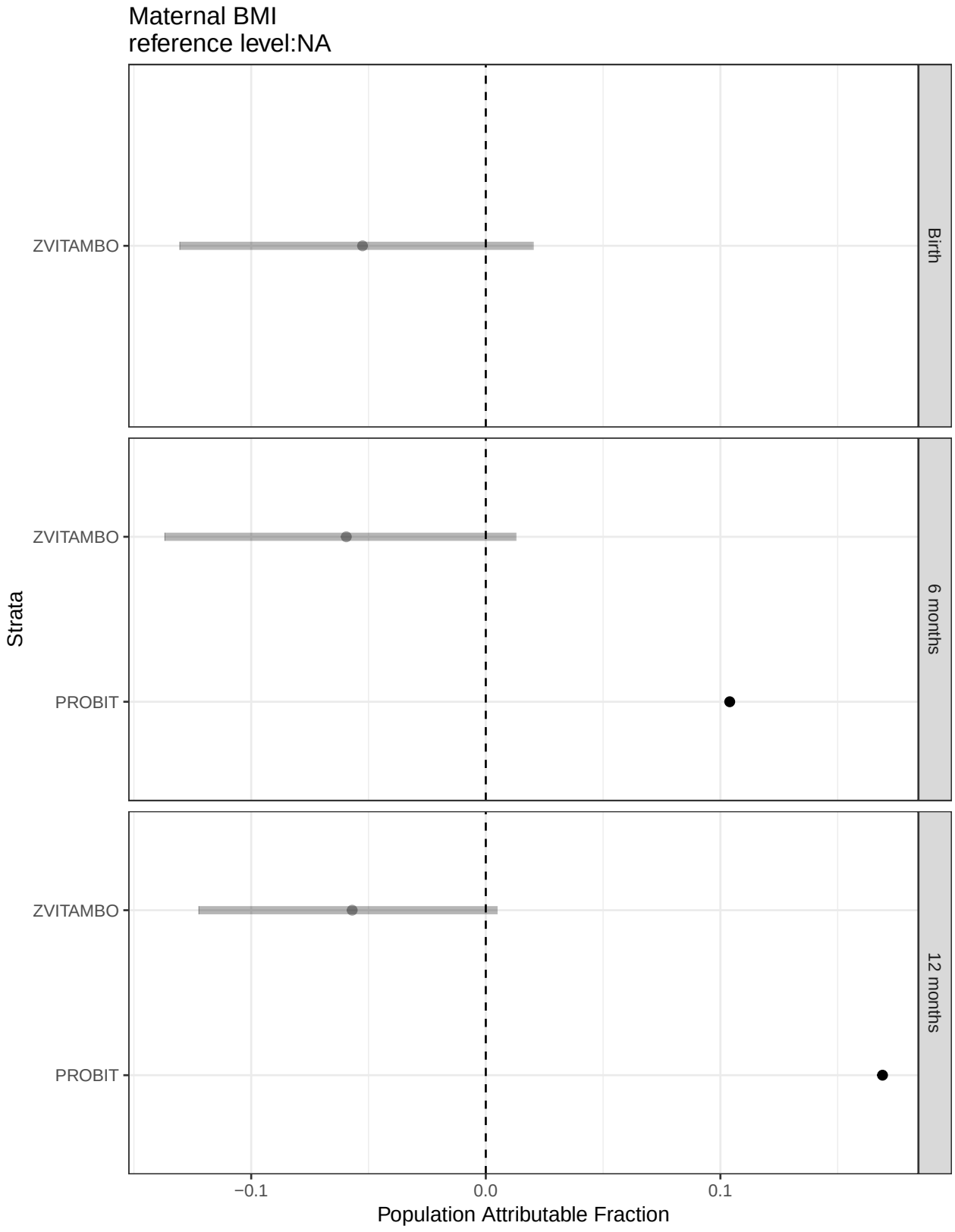
```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



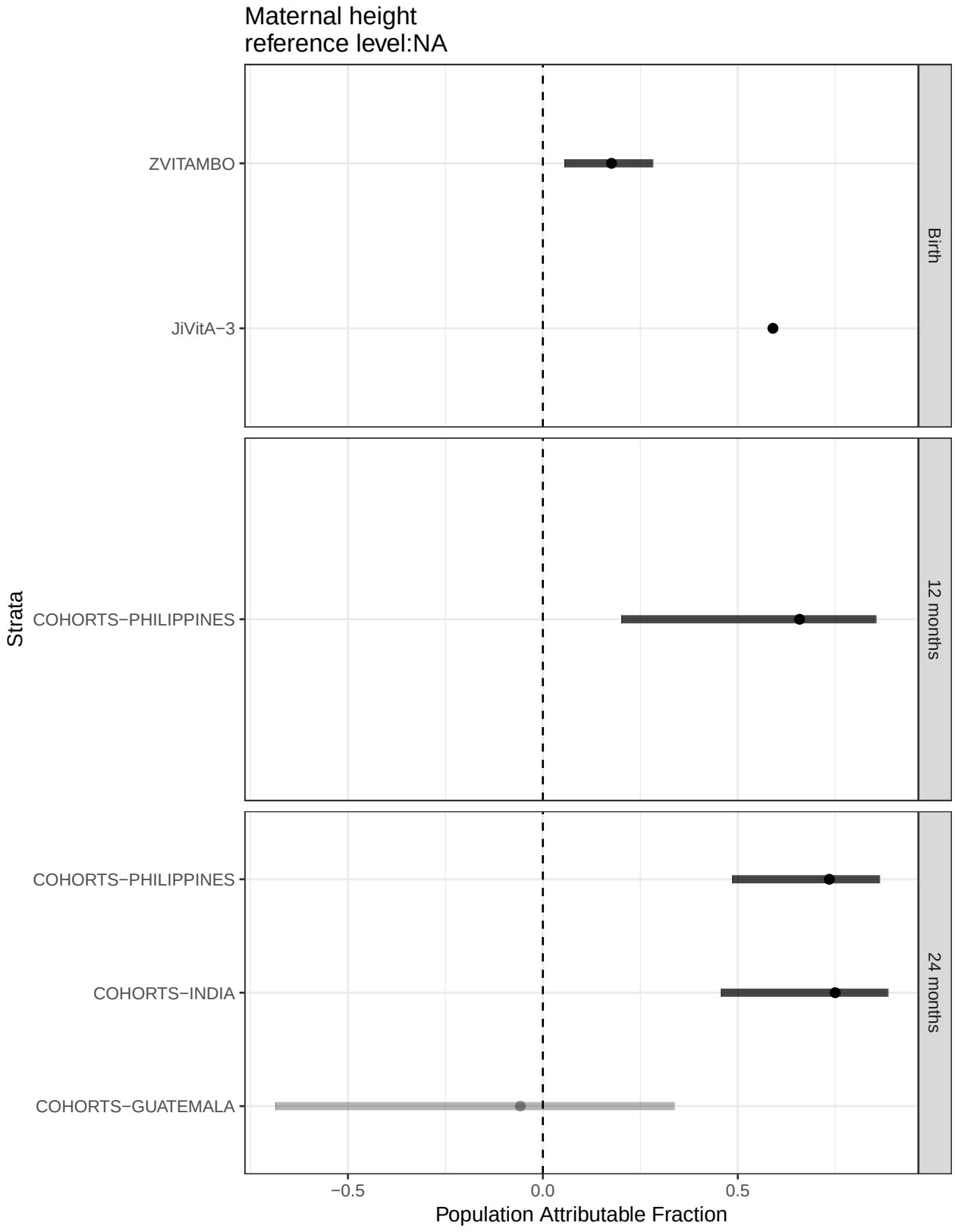

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```



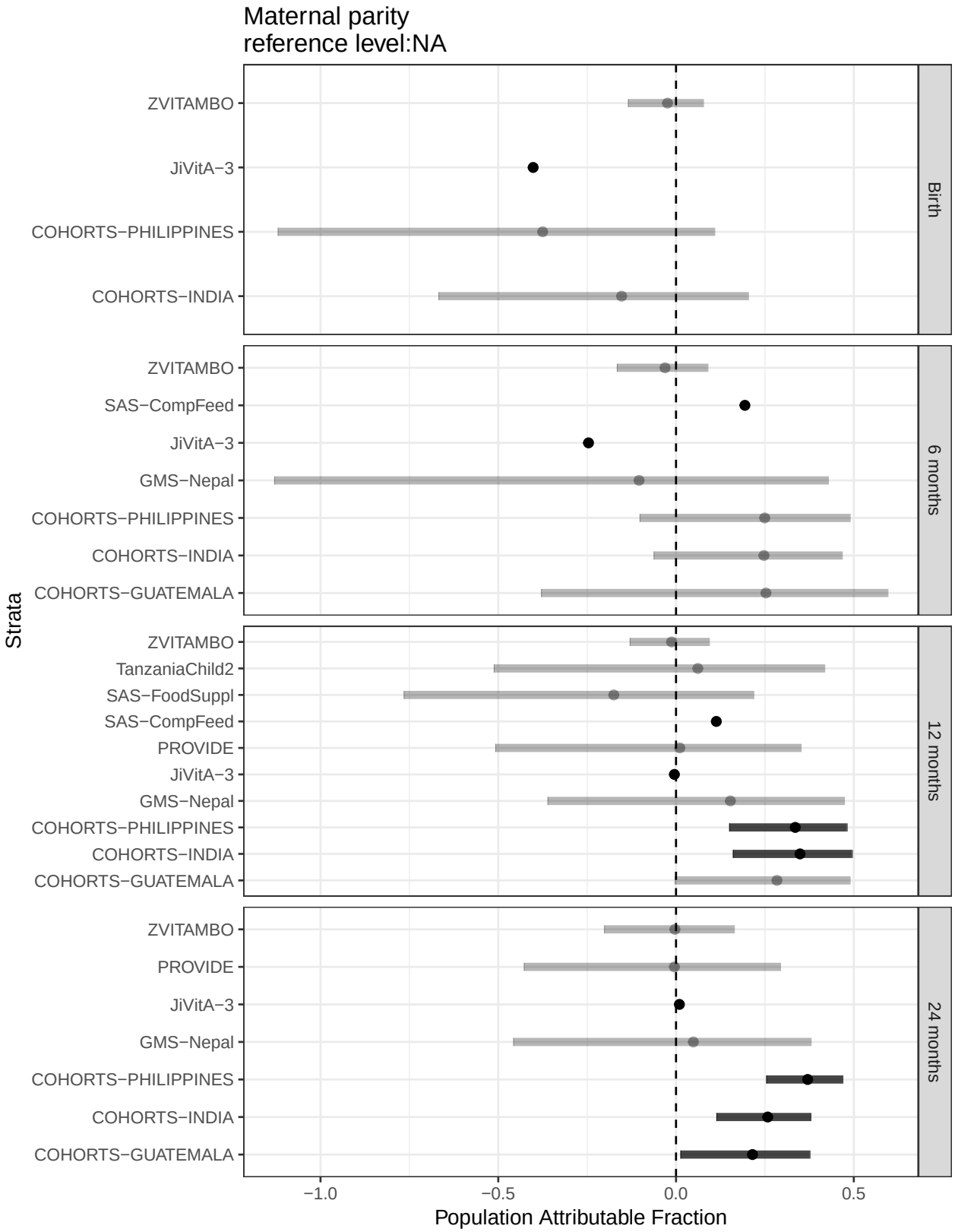

```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```

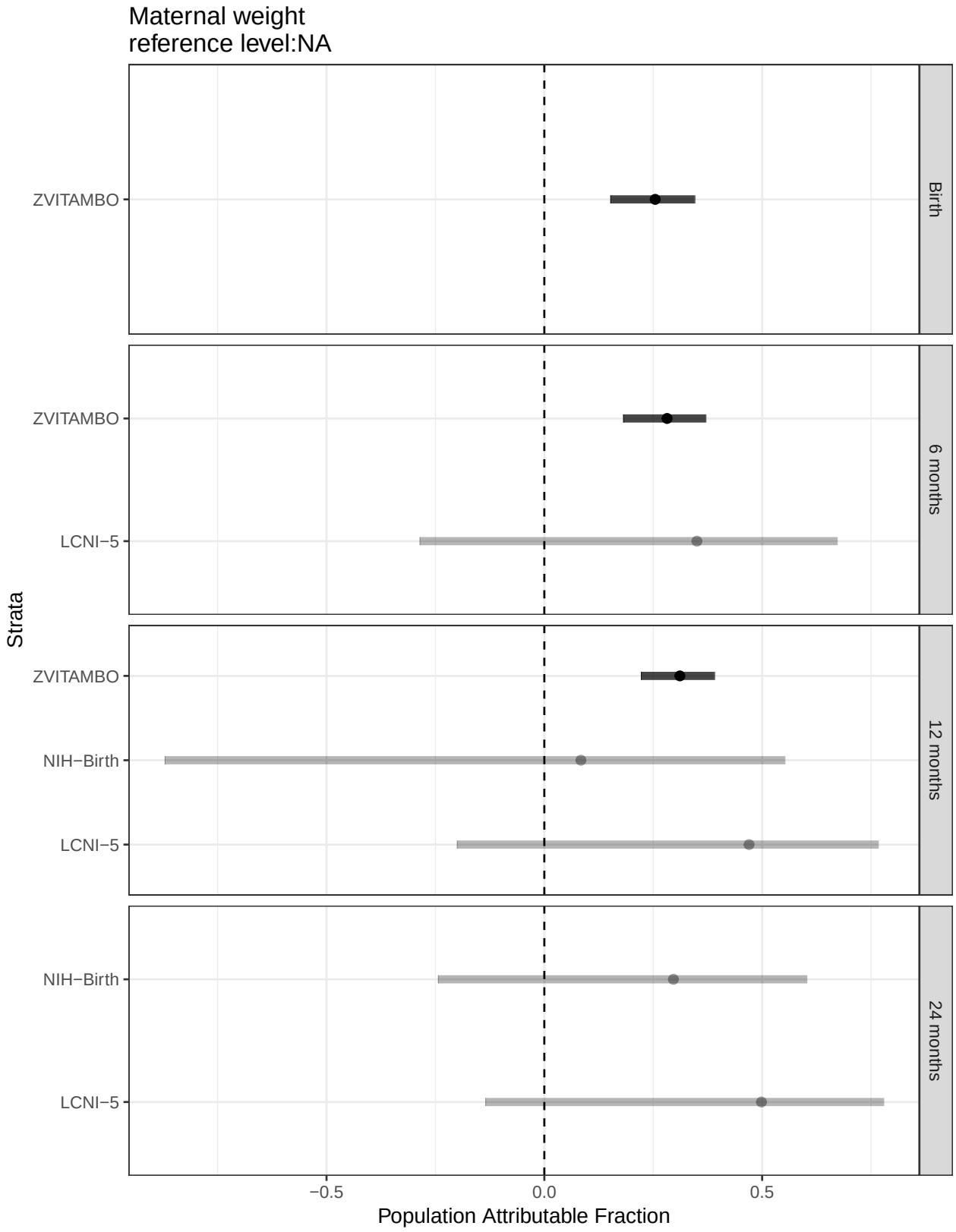



```
## Warning: Removed 1 rows containing missing values (geom_errorbar).
```

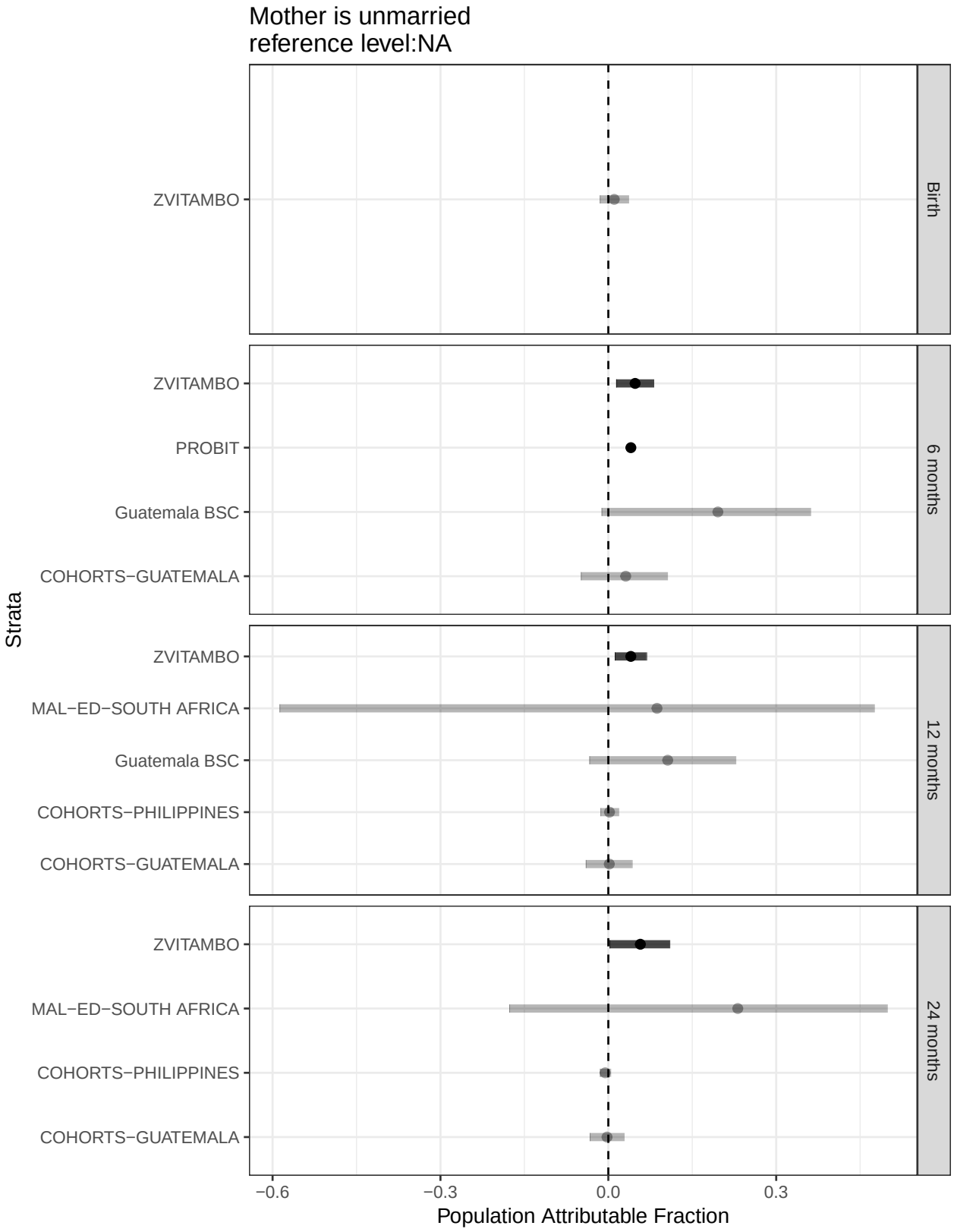



```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```

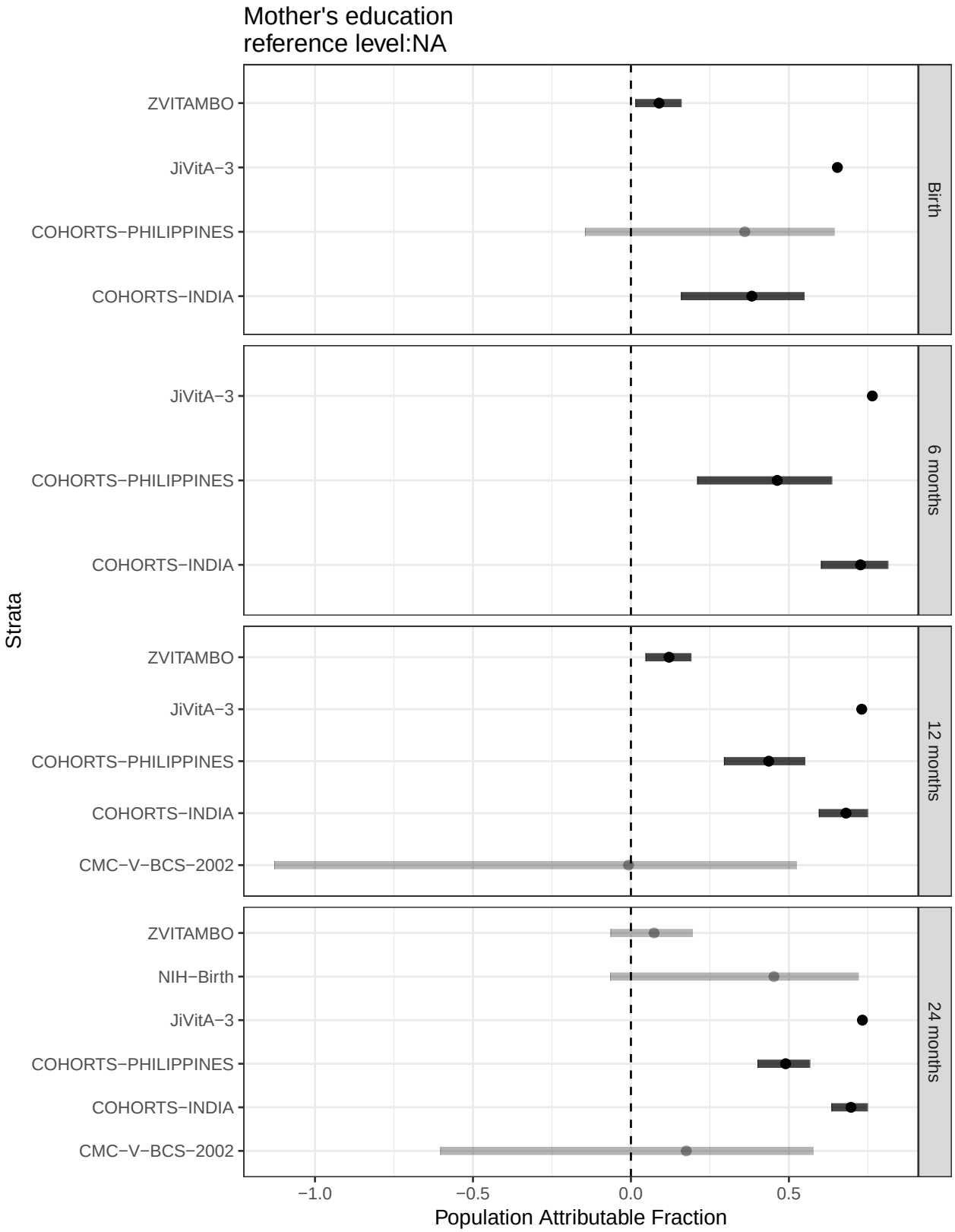

Maternal parity
reference level:NA
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
ZVITAMBO
SAS−CompFeed
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
6 months
ZVITAMBO
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
12 months
ZVITAMBO
PROVIDE
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
24 months
−1.0
−0.5
0.0
0.5
Population Attributable Fraction




```
## Warning: Removed 1 rows containing missing values (geom_errorbar).
```

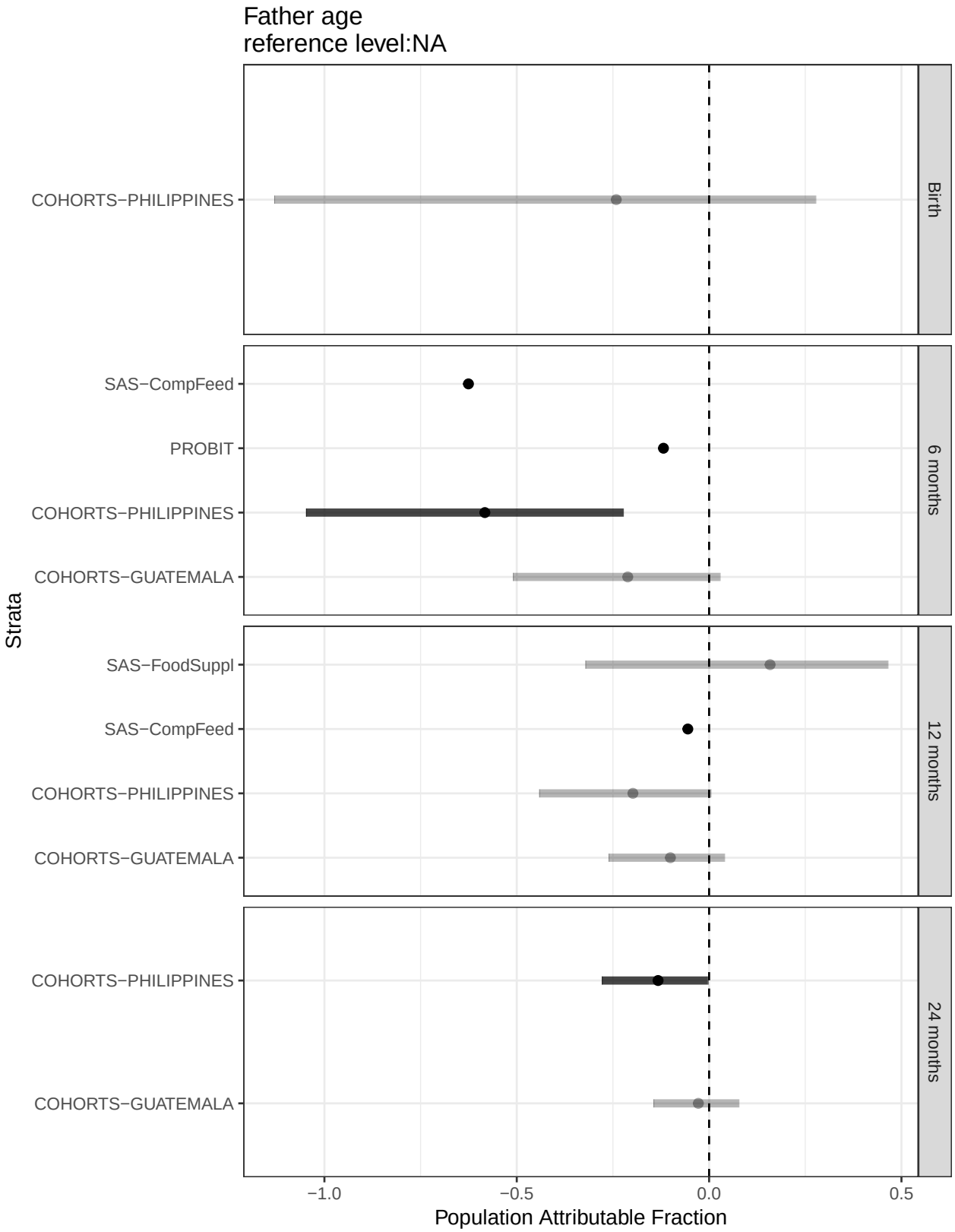


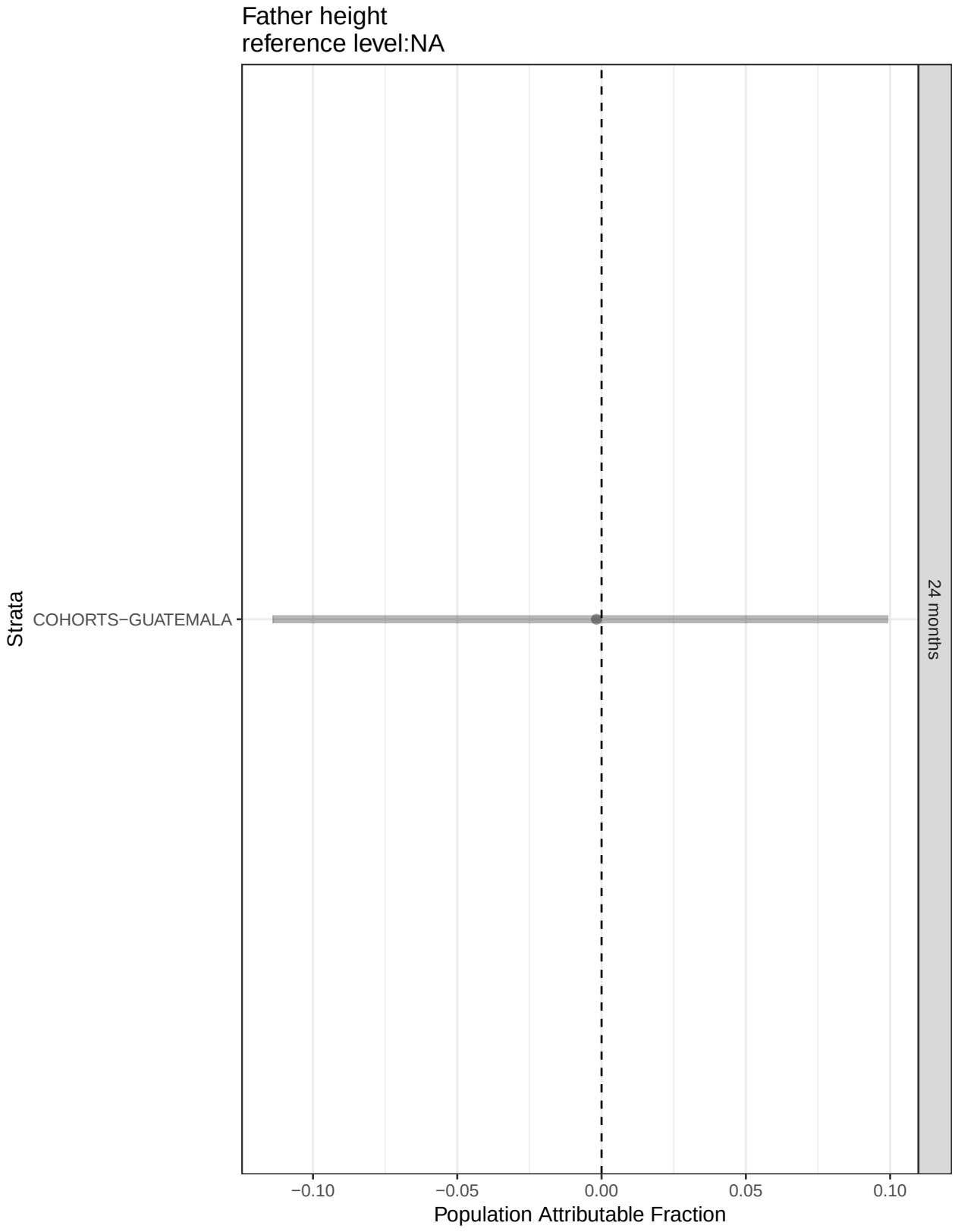

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Mother's education
reference level:NA
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
6 months
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
12 months
ZVITAMBO
NIH−Birth
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
24 months
−1.0
−0.5
0.0
0.5
Population Attributable Fraction

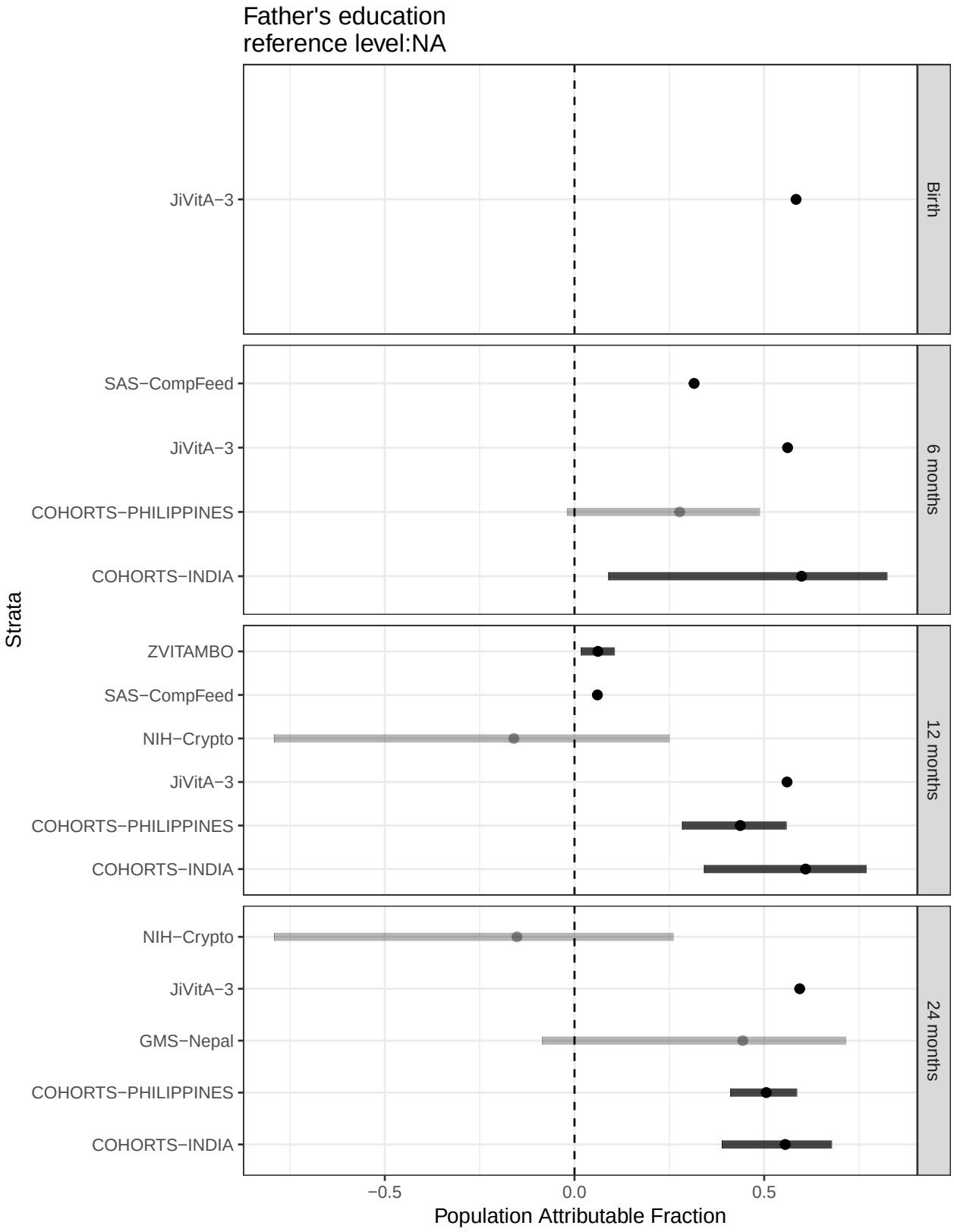
Paternal characteristics

```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```


Father age
reference level:NA
Strata
COHORTS−PHILIPPINES
Birth
SAS−CompFeed
PROBIT
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
6 months
SAS−FoodSuppl
SAS−CompFeed
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
12 months
COHORTS−PHILIPPINES
COHORTS−GUATEMALA
24 months
−1.0
−0.5
0.0
0.5
Population Attributable Fraction



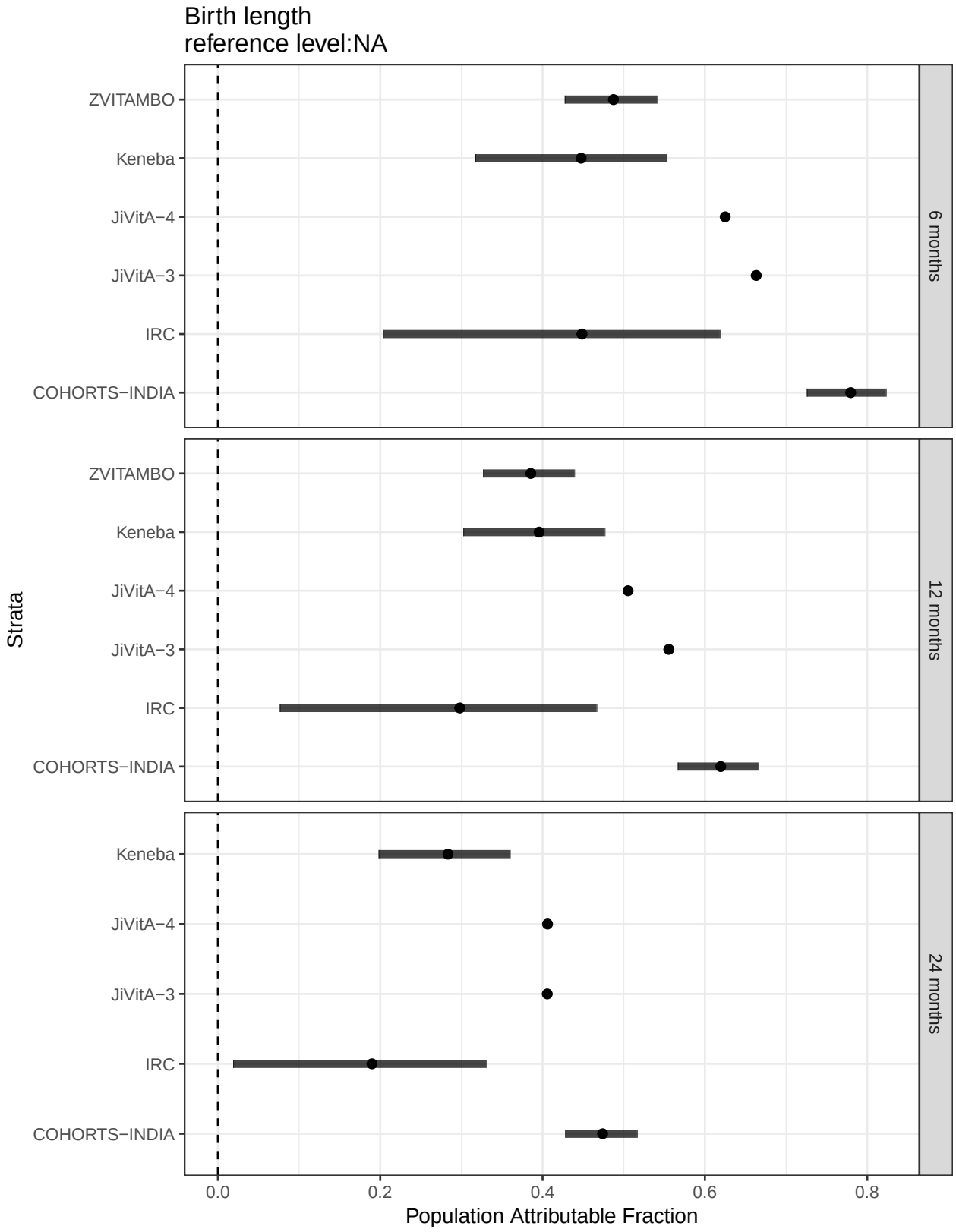

```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```


Father's education
reference level:NA
Strata
JiVitA−3
Birth
SAS−CompFeed
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
6 months
ZVITAMBO
SAS−CompFeed
NIH−Crypto
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
12 months
NIH−Crypto
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
24 months
−0.5
0.0
0.5
Population Attributable Fraction

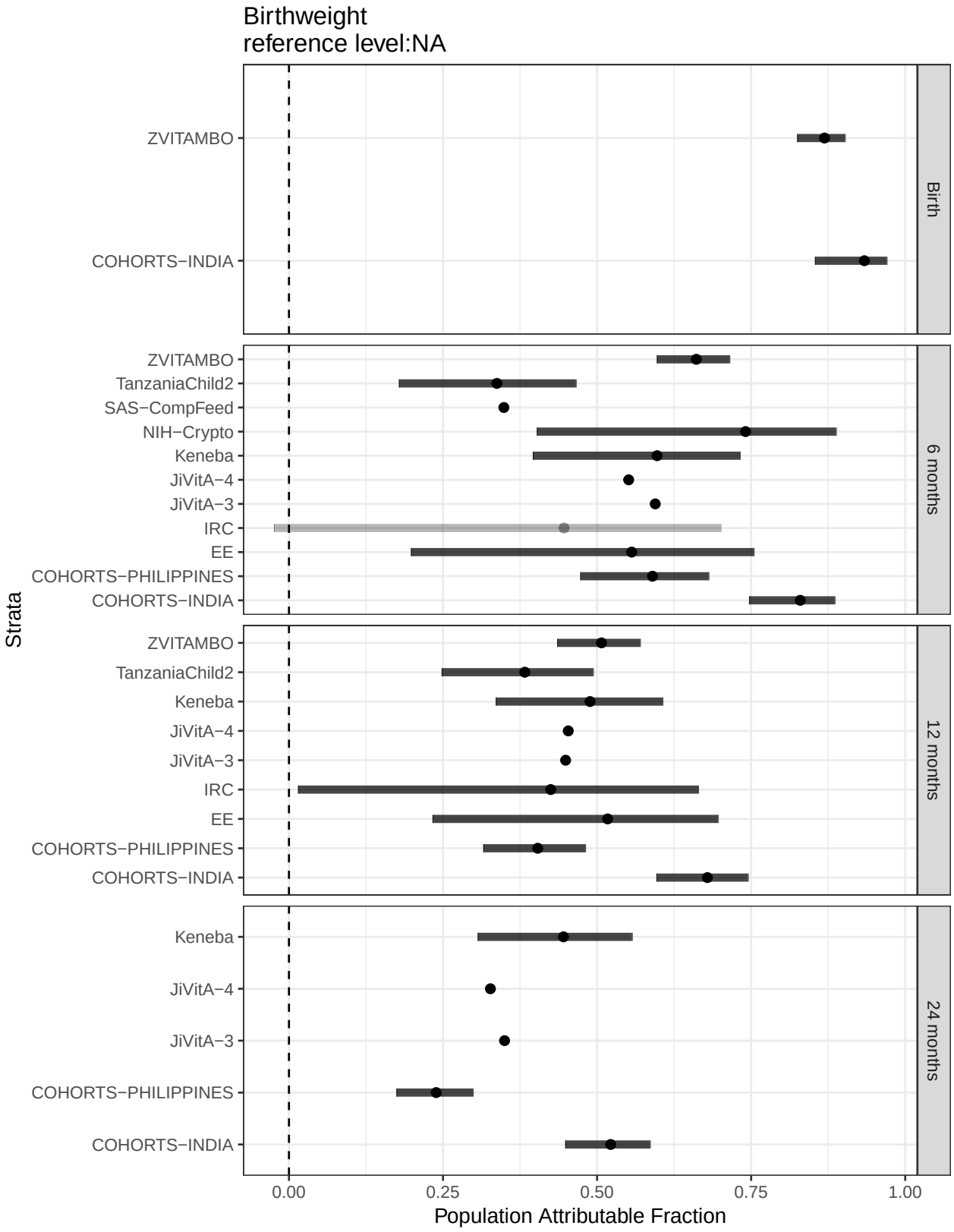
Point prevalence of stunting

Child characteristics

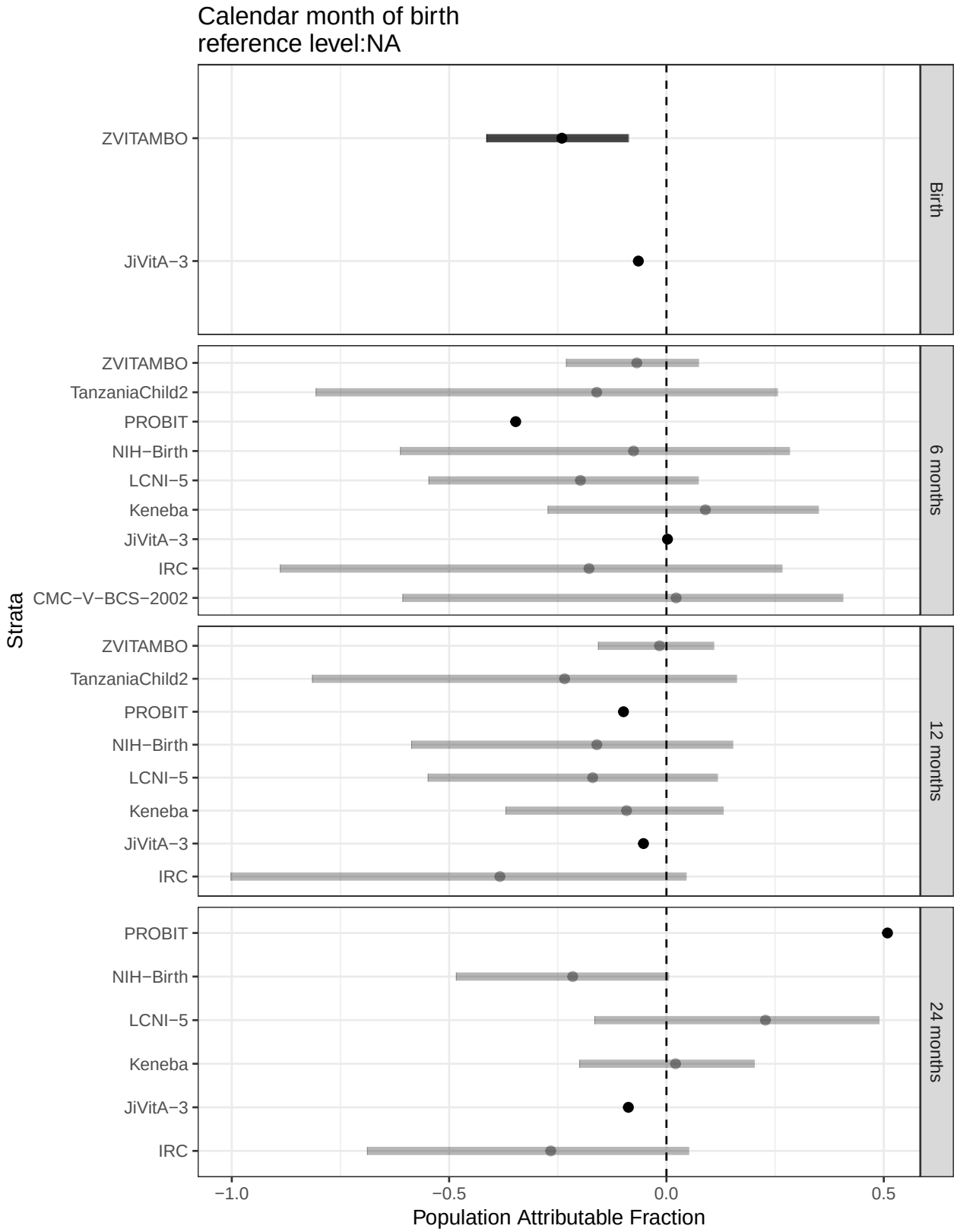
```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```



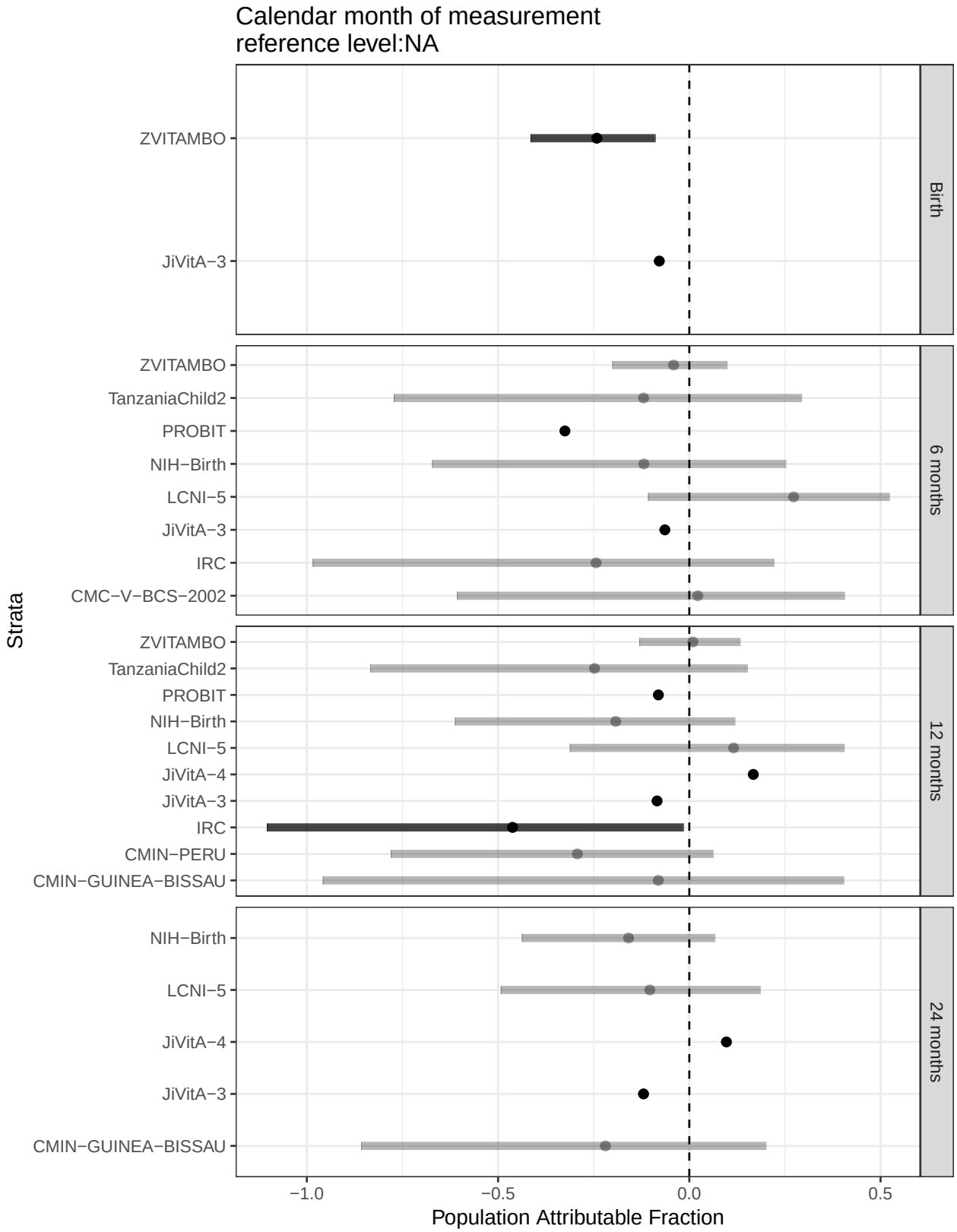

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```



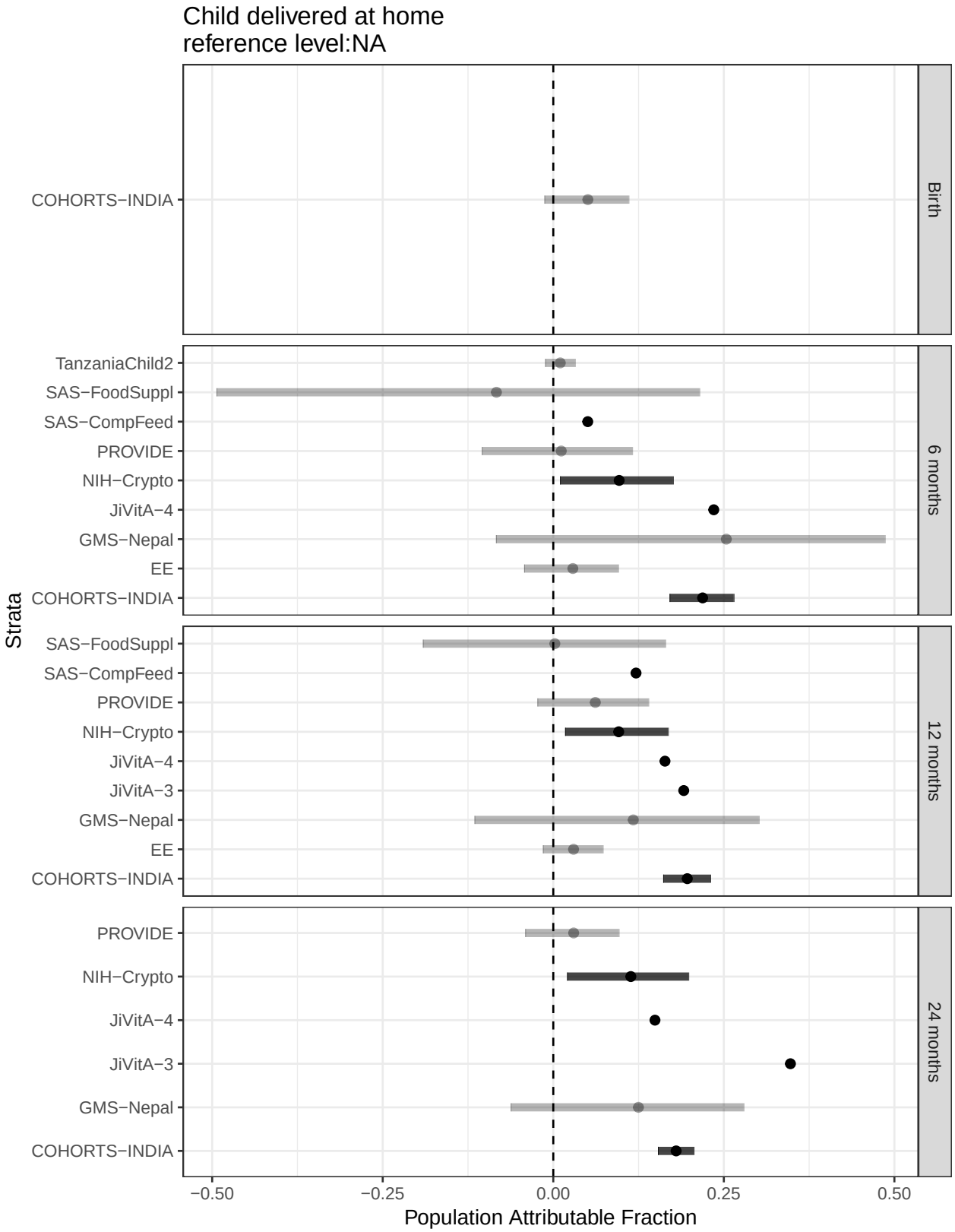

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```



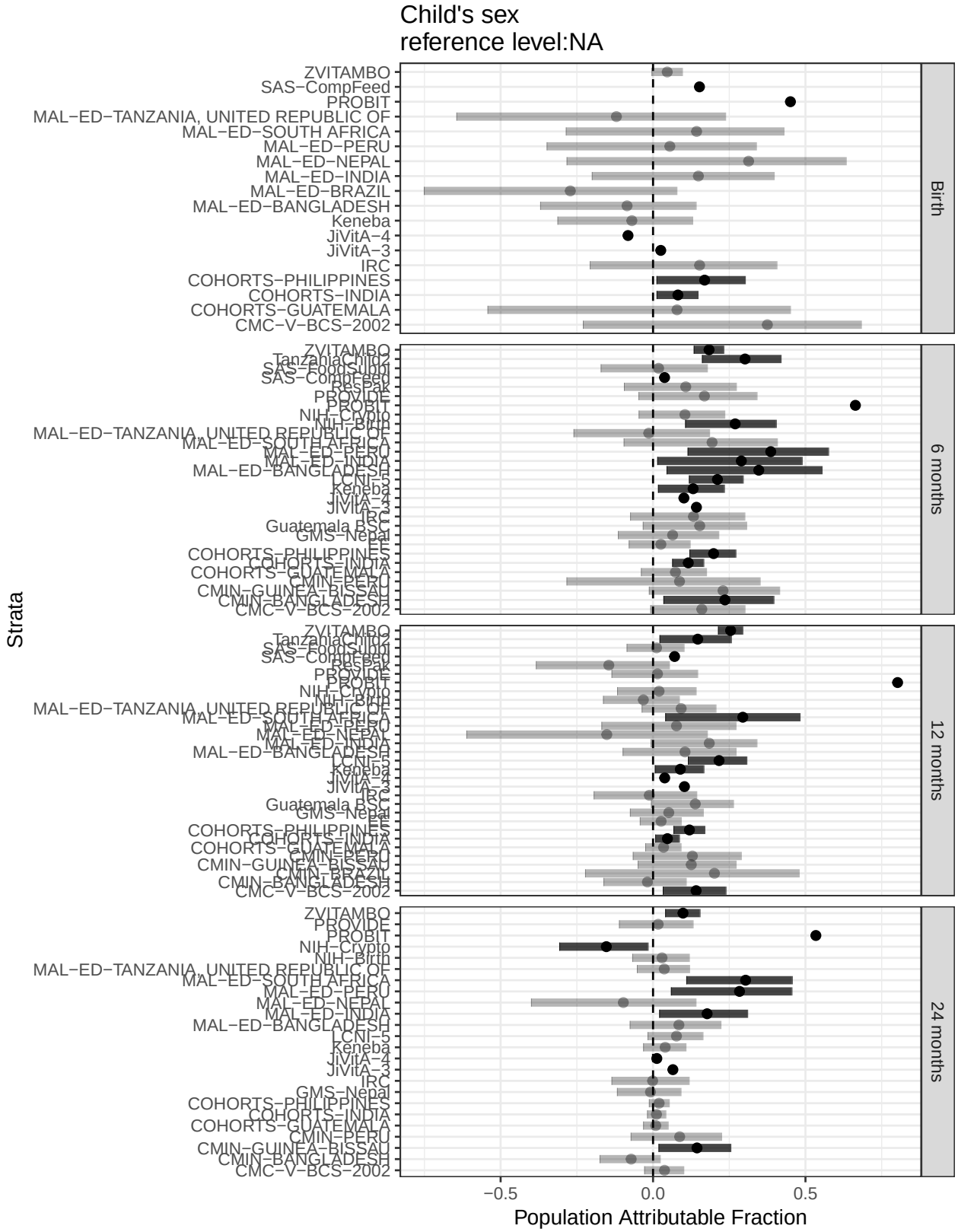

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```



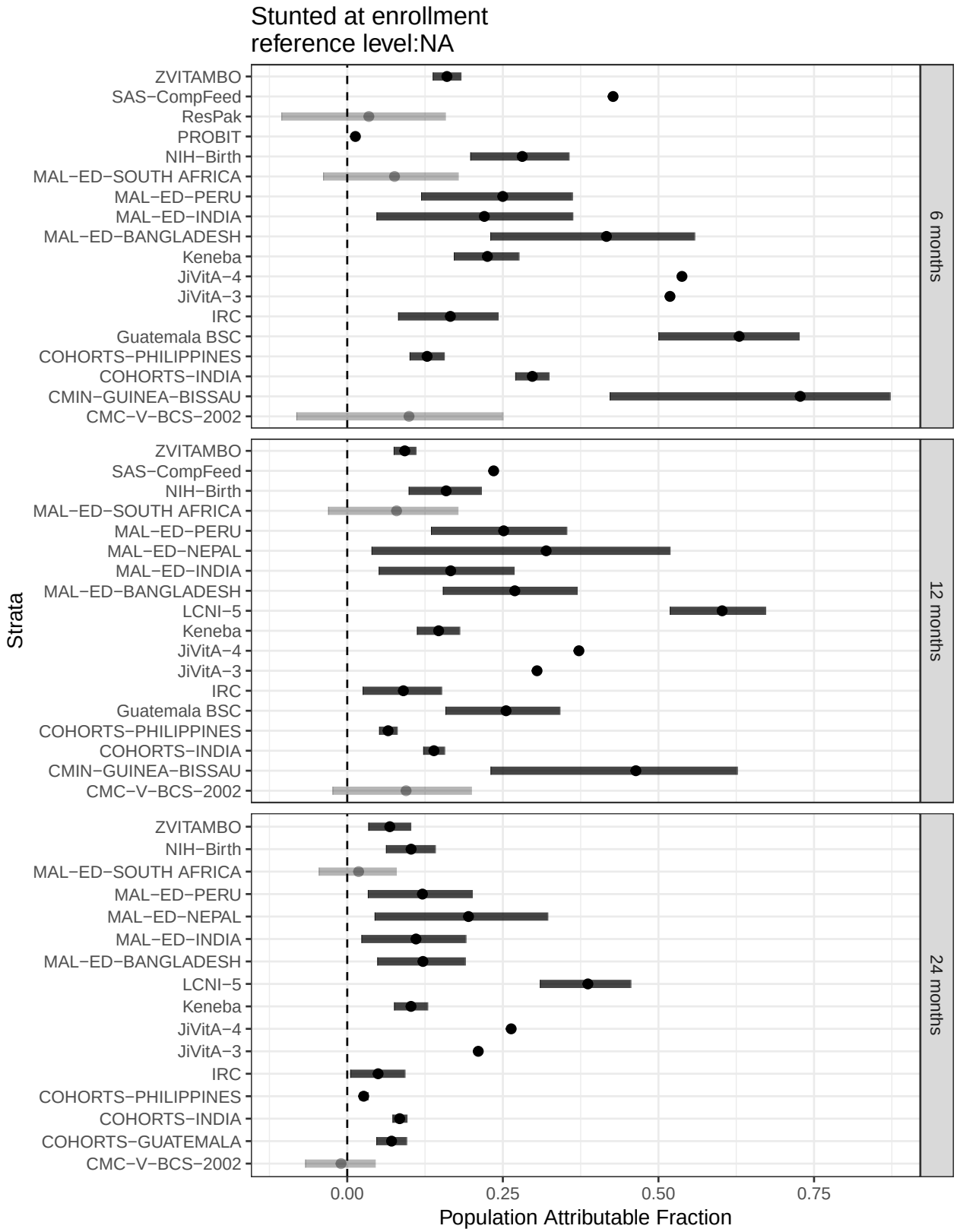

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```



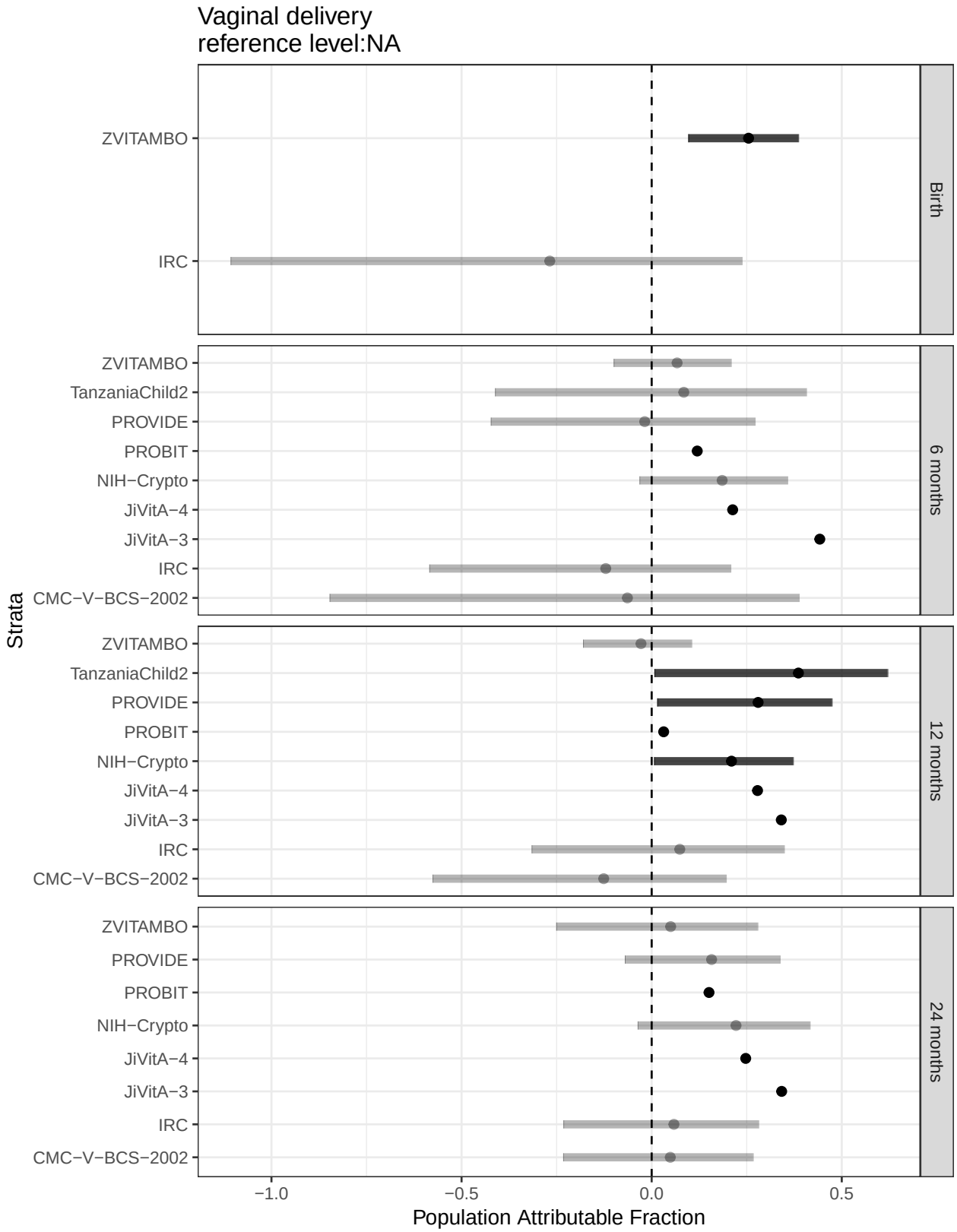

```
## Warning: Removed 15 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
```

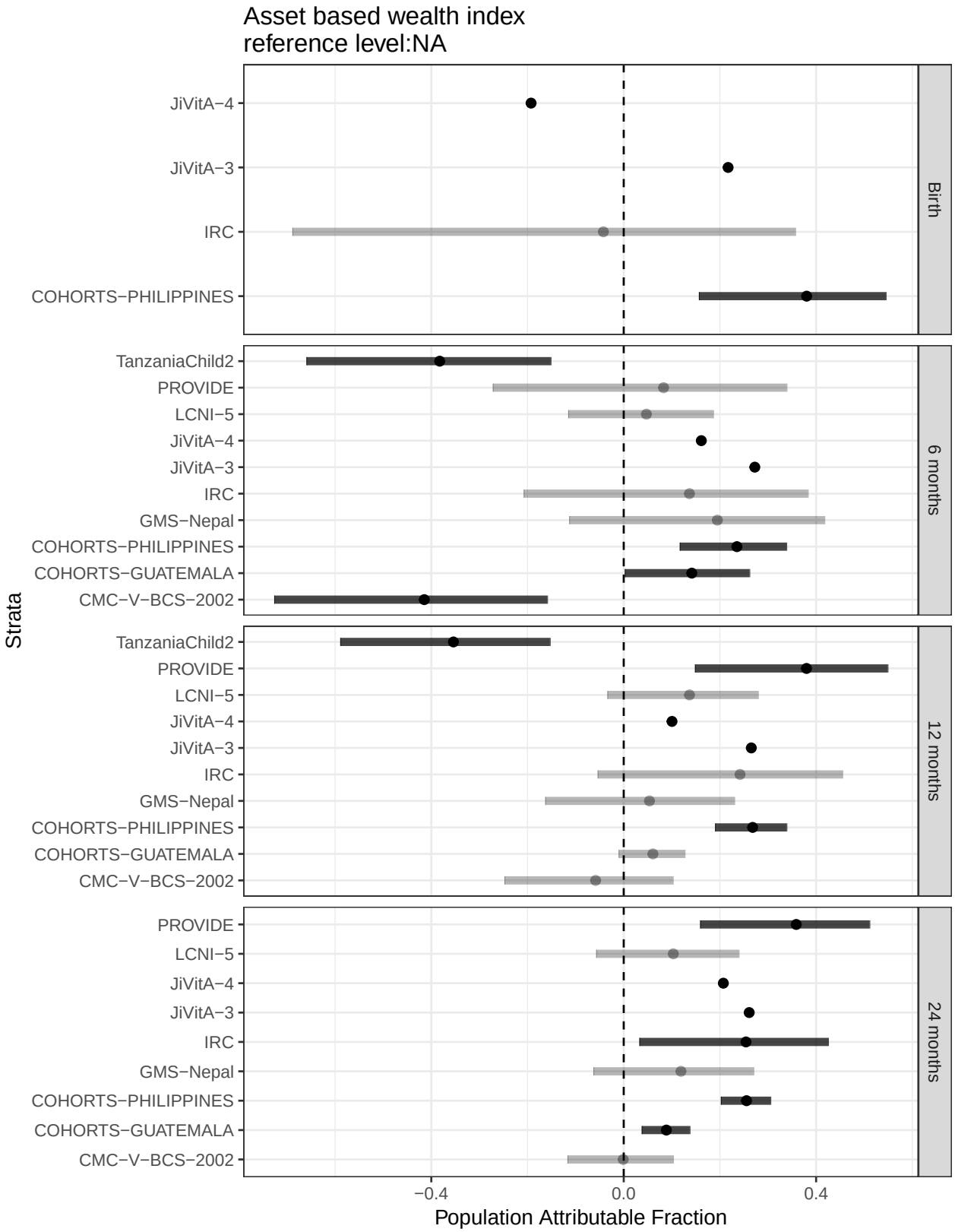



```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
```

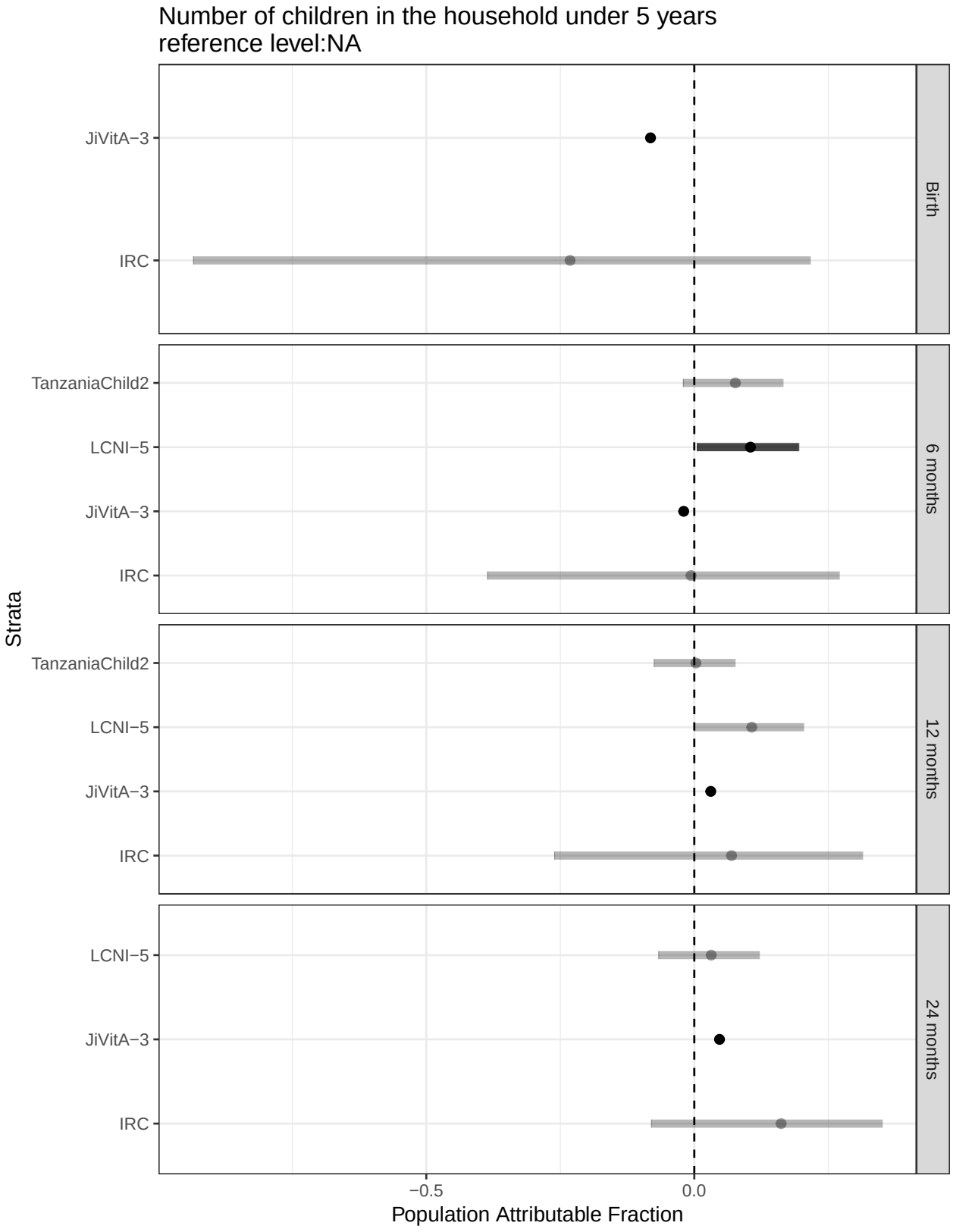

Vaginal delivery
reference level:NA
Birth
6 months
12 months
24 months
Strata
ZVITAMBO
IRC
TanzaniaChild2
PROVIDE
PROBIT
NIH−Crypto
JiVitA−4
JiVitA−3
CMC−V−BCS−2002
−1.0
−0.5
0.0
0.5
Population Attributable Fraction

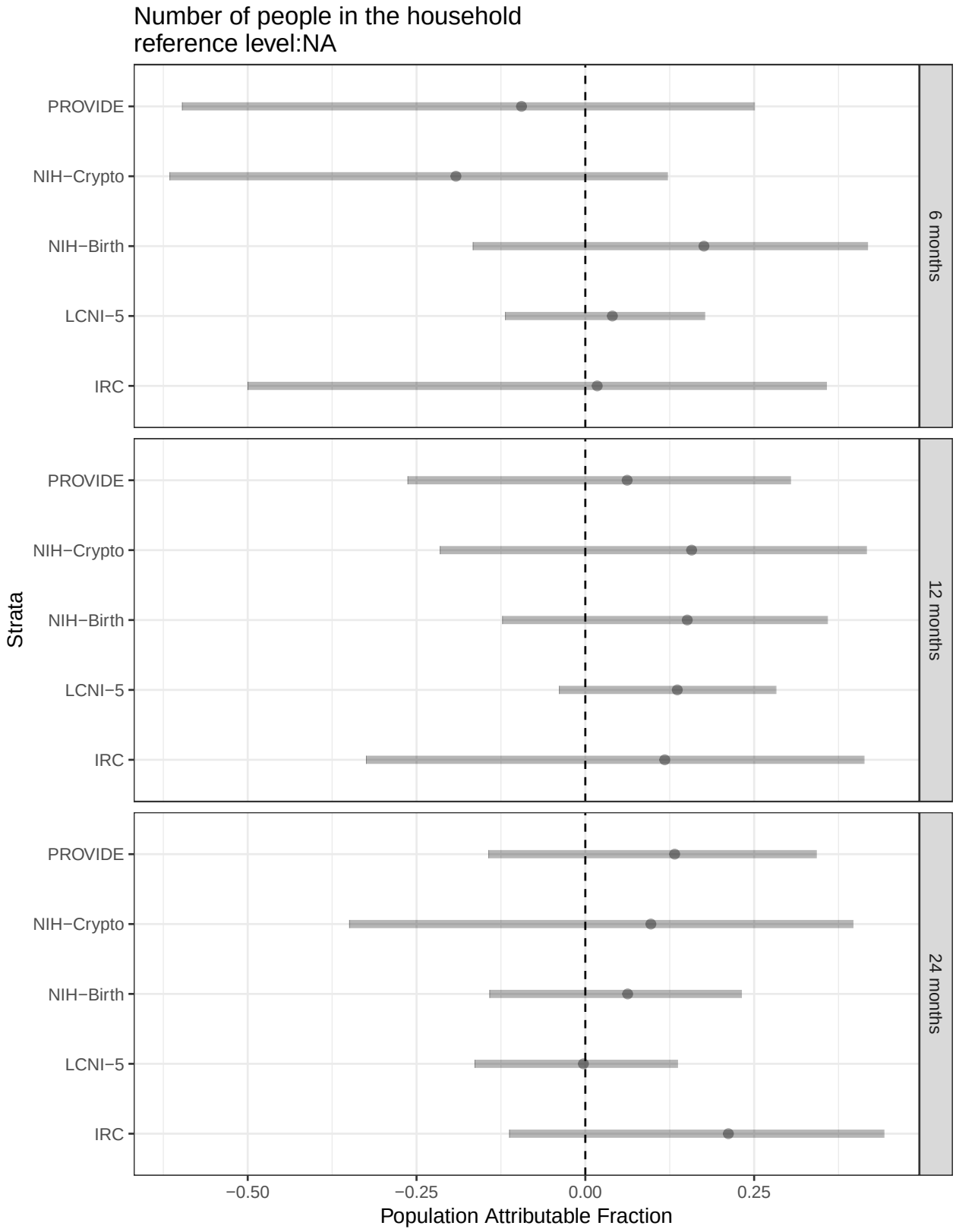
Household characteristics

```
## Warning: Removed 8 rows containing missing values (geom_errorbar).
```

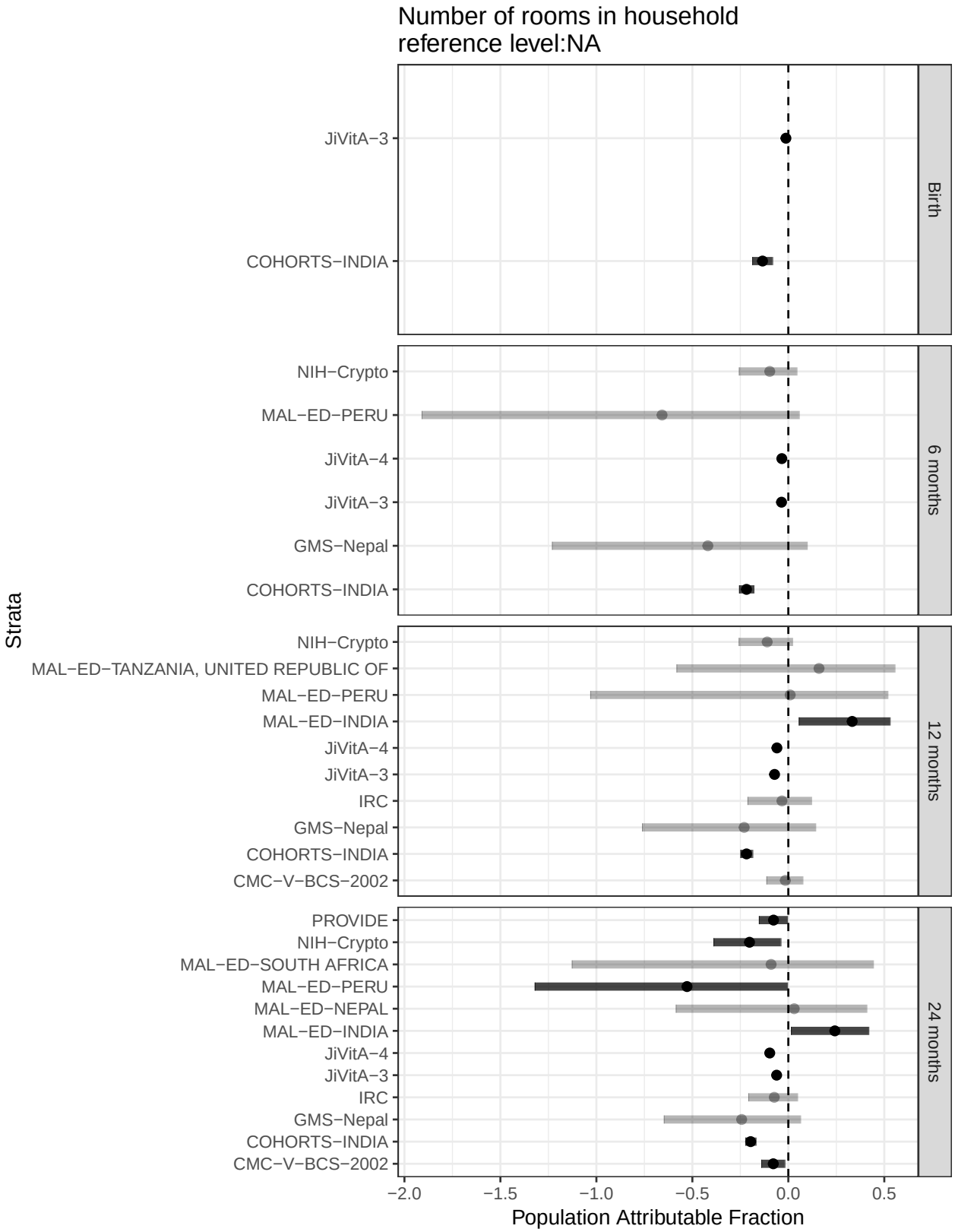


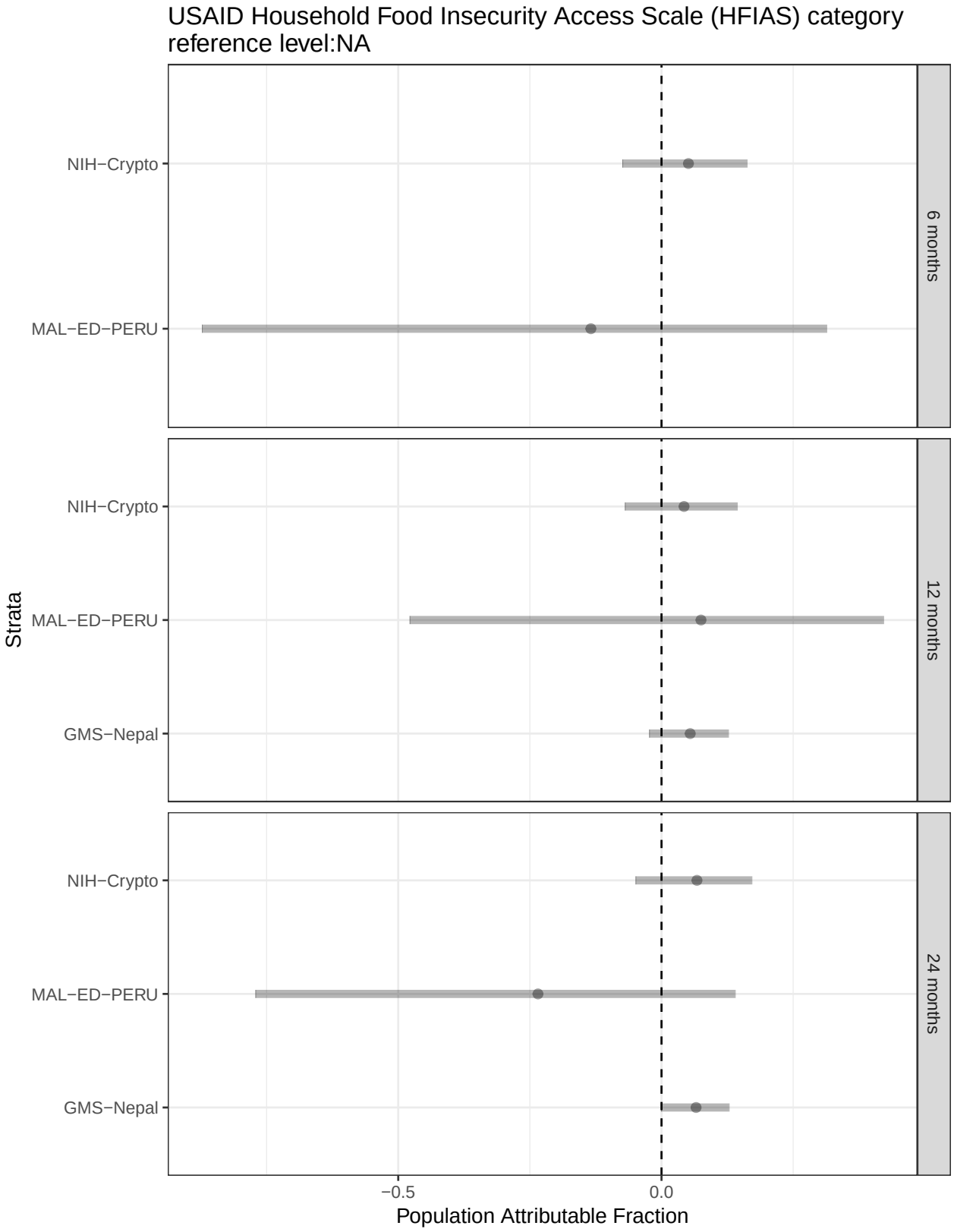

```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Number of children in the household under 5 years
reference level:NA
Strata
JiVitA−3
IRC
Birth
TanzaniaChild2
LCNI−5
JiVitA−3
IRC
6 months
TanzaniaChild2
LCNI−5
JiVitA−3
IRC
12 months
LCNI−5
JiVitA−3
IRC
24 months
−0.5
0.0
Population Attributable Fraction



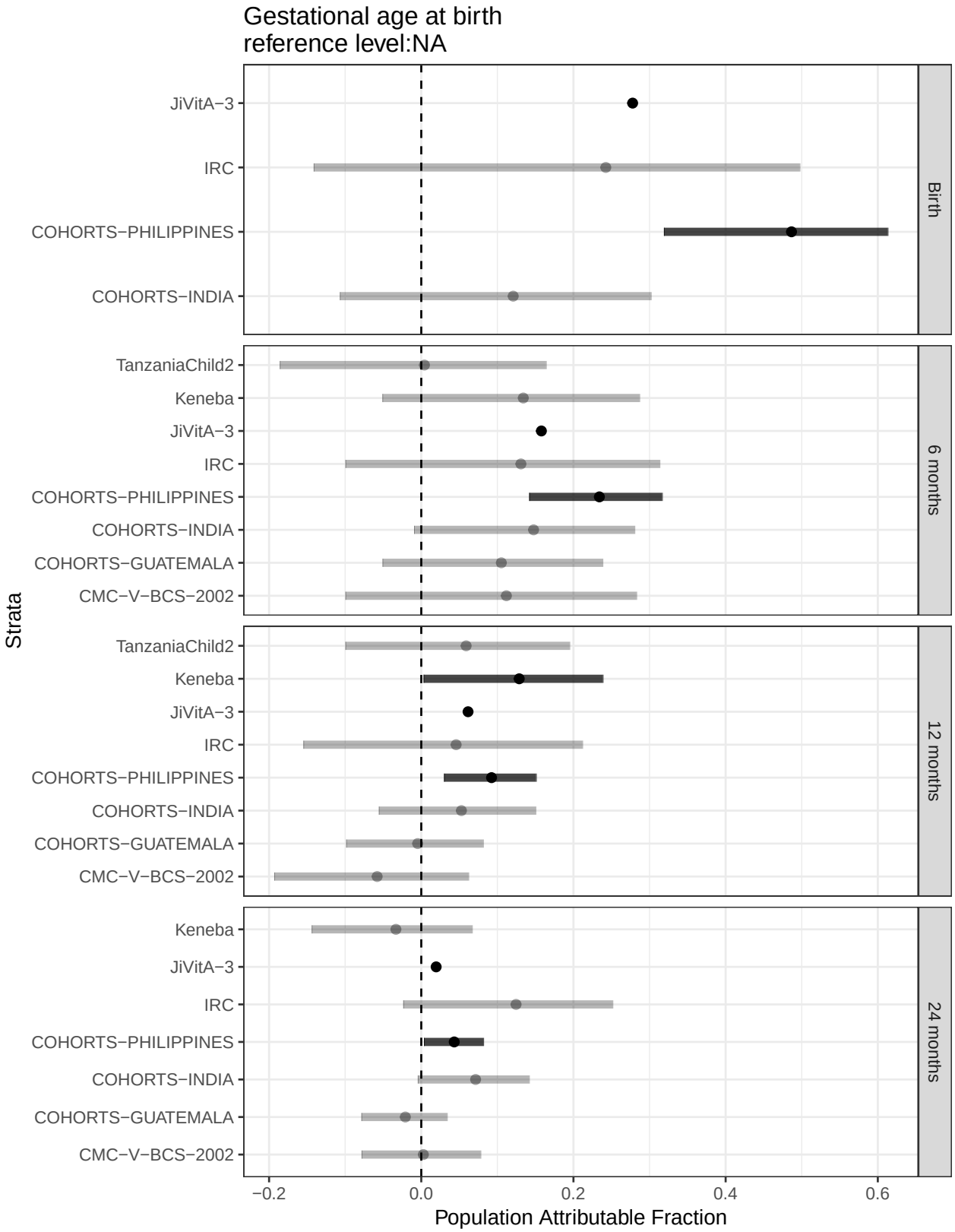

```
## Warning: Removed 7 rows containing missing values (geom_errorbar).
```


Number of rooms in household
reference level:NA
Strata
JiVitA−3
COHORTS−INDIA
Birth
NIH−Crypto
MAL−ED−PERU
JiVitA−4
JiVitA−3
GMS−Nepal
COHORTS−INDIA
6 months
NIH−Crypto
MAL−ED−TANZANIA, UNITED REPUBLIC OF
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
COHORTS−INDIA
CMC−V−BCS−2002
12 months
PROVIDE
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−NEPAL
MAL−ED−INDIA
JiVitA−4
JiVitA−3
IRC
GMS−Nepal
COHORTS−INDIA
CMC−V−BCS−2002
24 months
−2.0
−1.5
−1.0
−0.5
0.0
0.5
Population Attributable Fraction

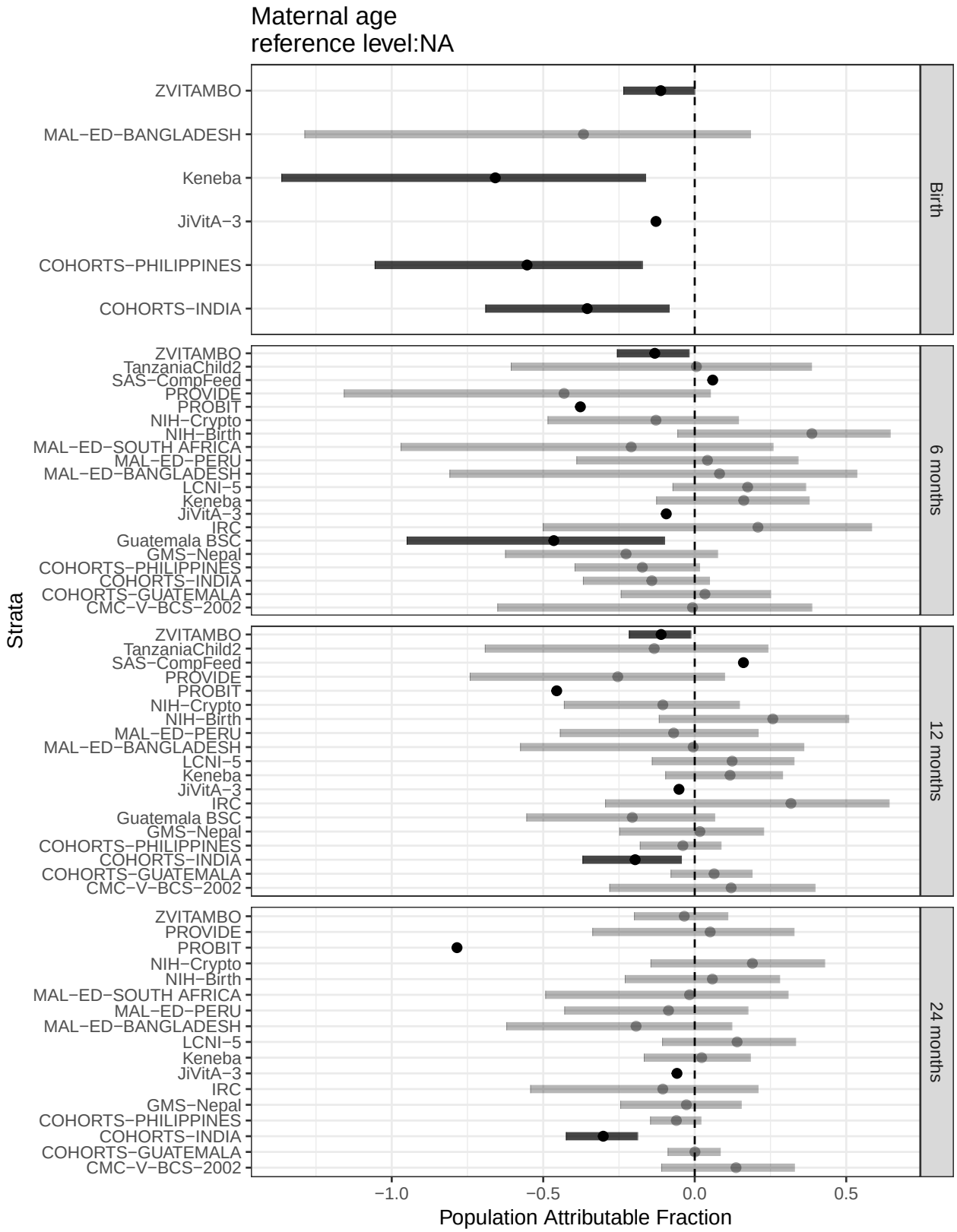

USAID Household Food Insecurity Access Scale (HFIAS) category
reference level:NA
Strata
NIH−Crypto
MAL−ED−PERU
GMS−Nepal
6 months
12 months
24 months
−0.5
0.0
Population Attributable Fraction

Maternal characteristics

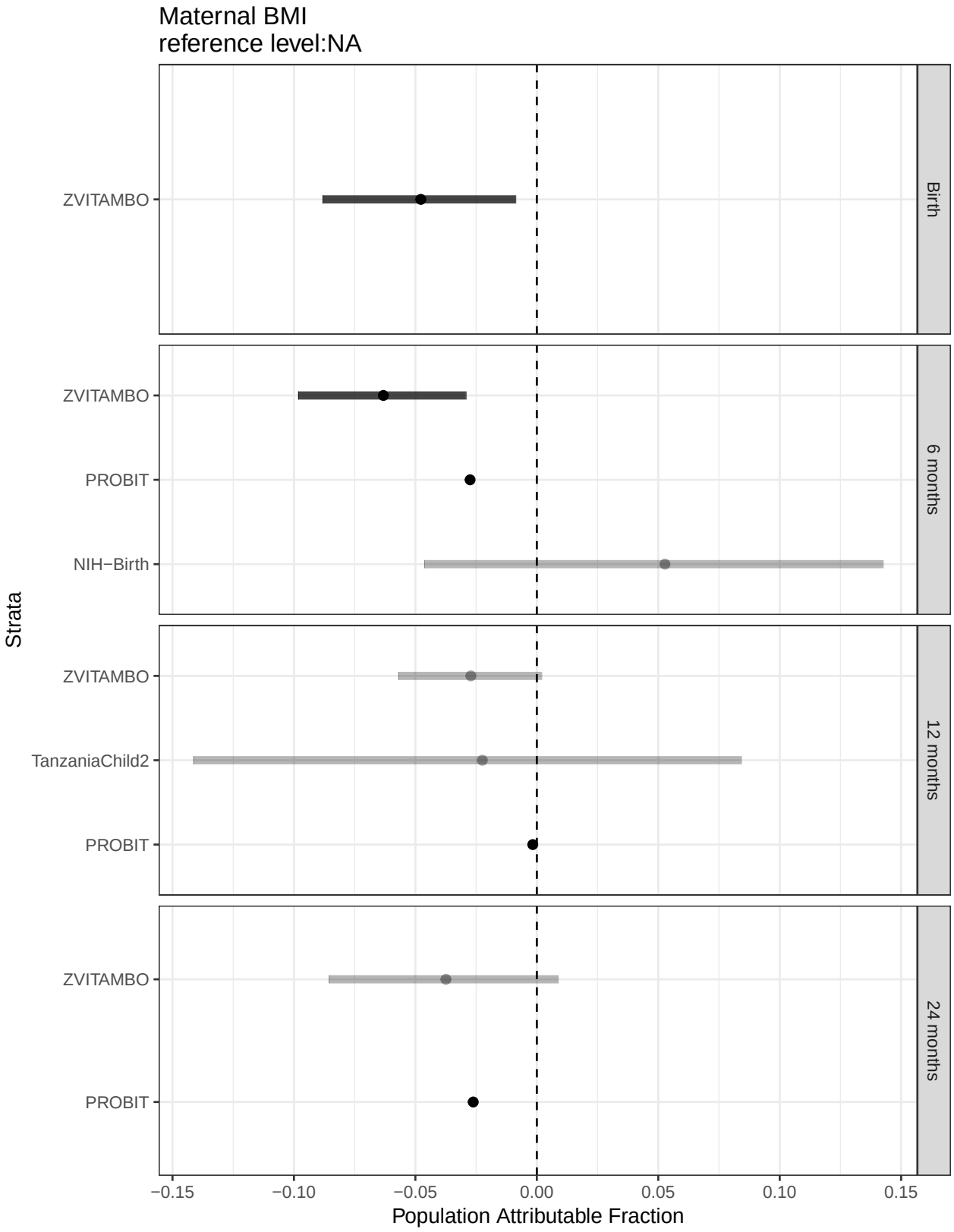
```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```



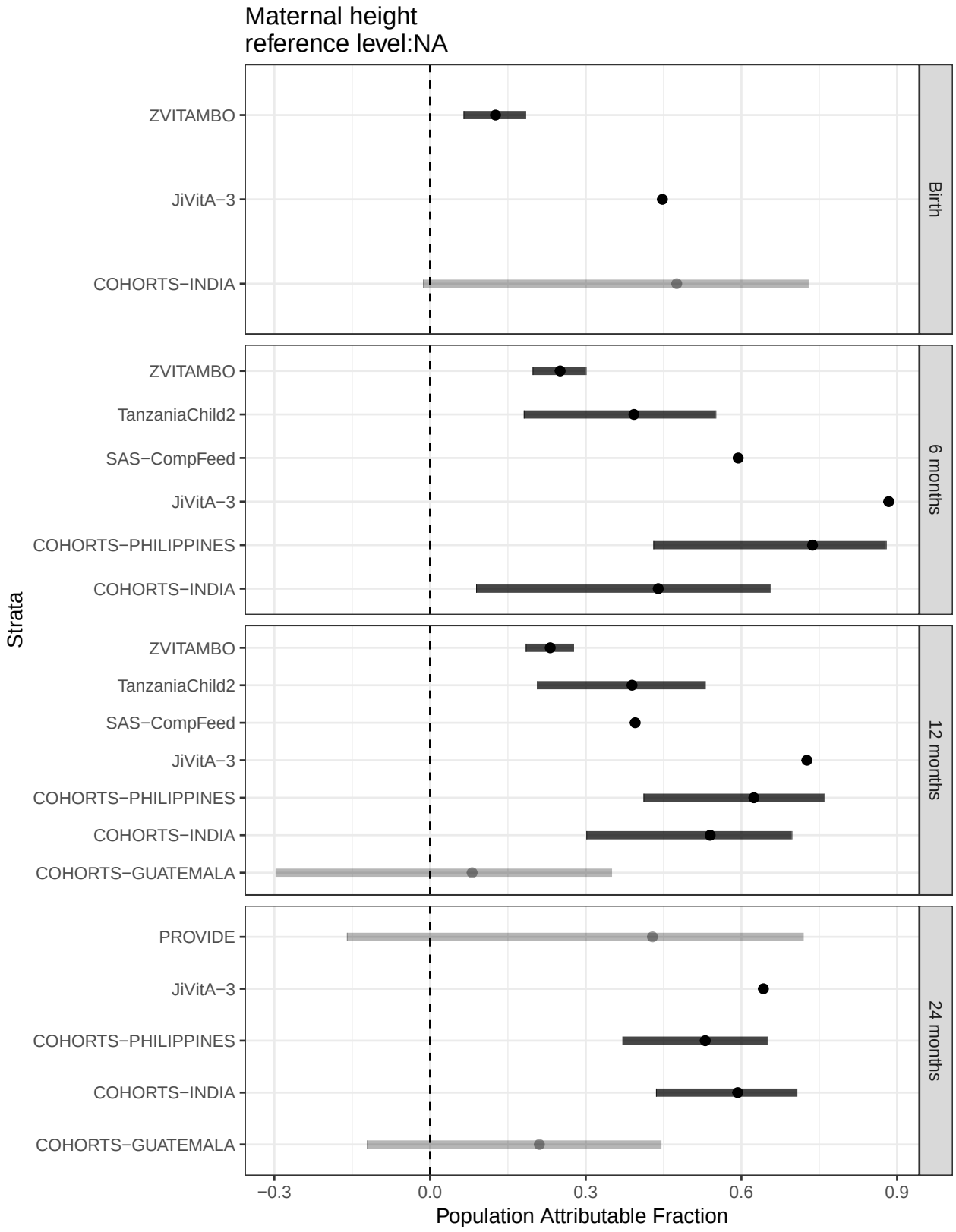

```
## Warning: Removed 9 rows containing missing values (geom_errorbar).
```



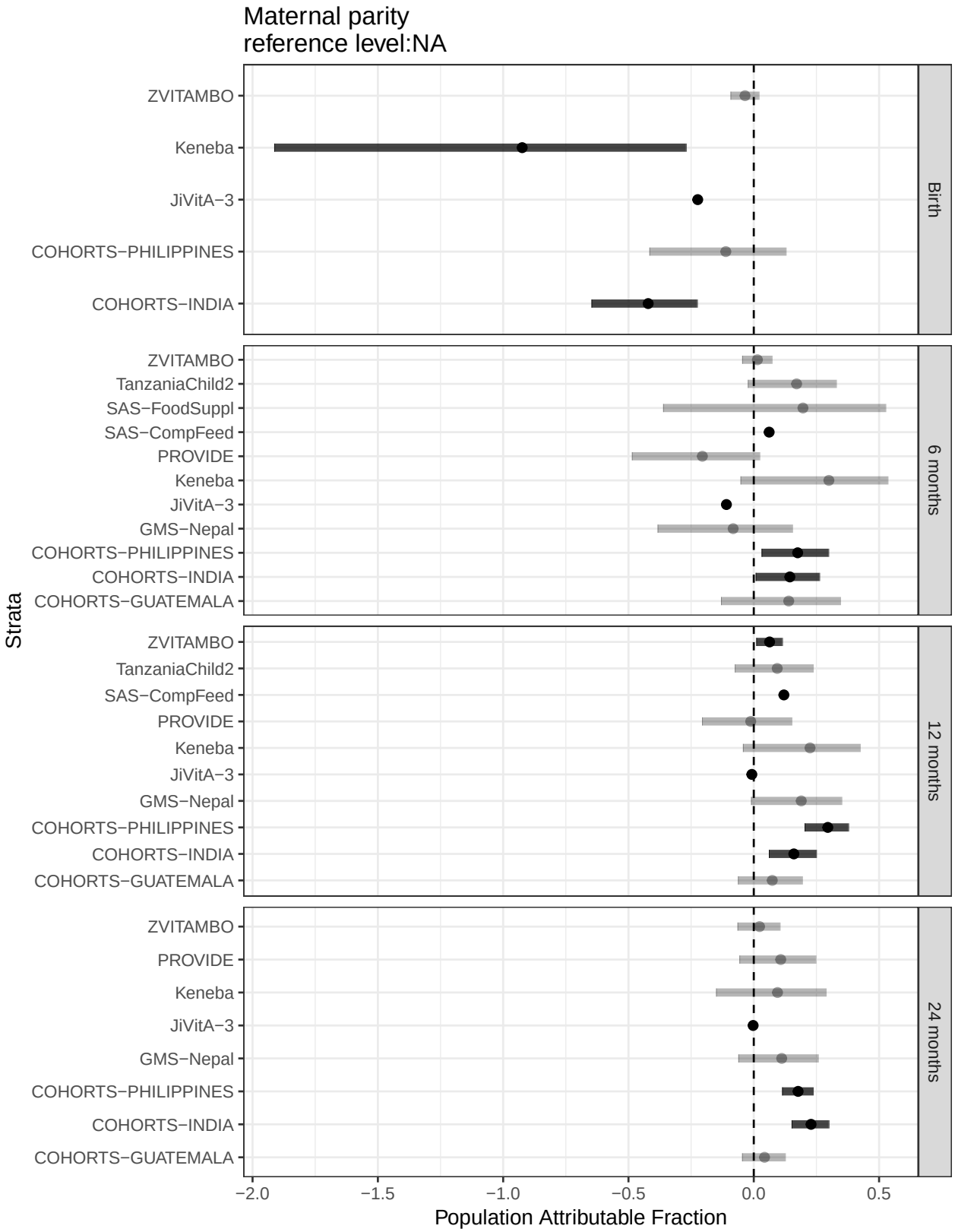

```
## Warning: Removed 3 rows containing missing values (geom_errorbar).
```

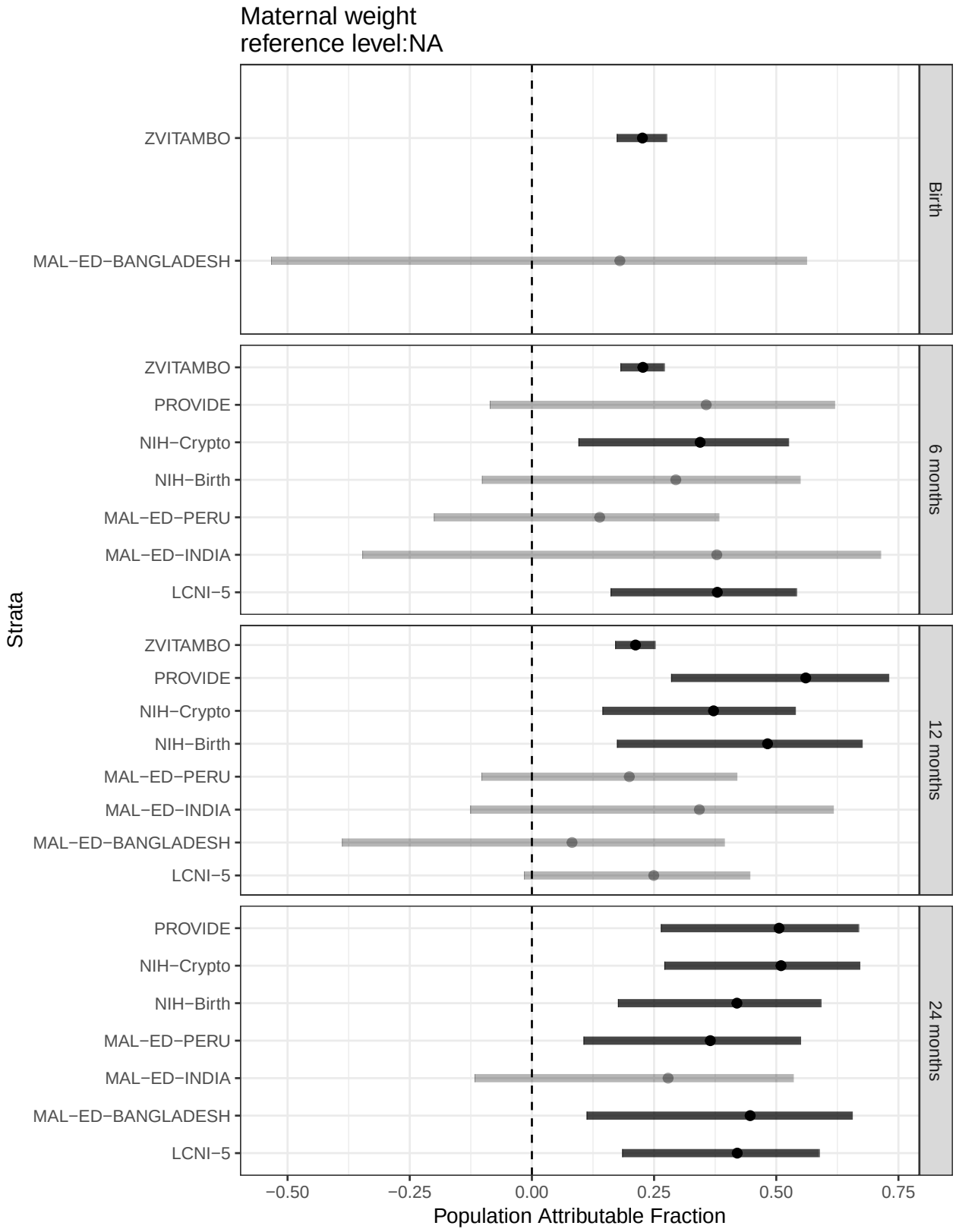



```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```

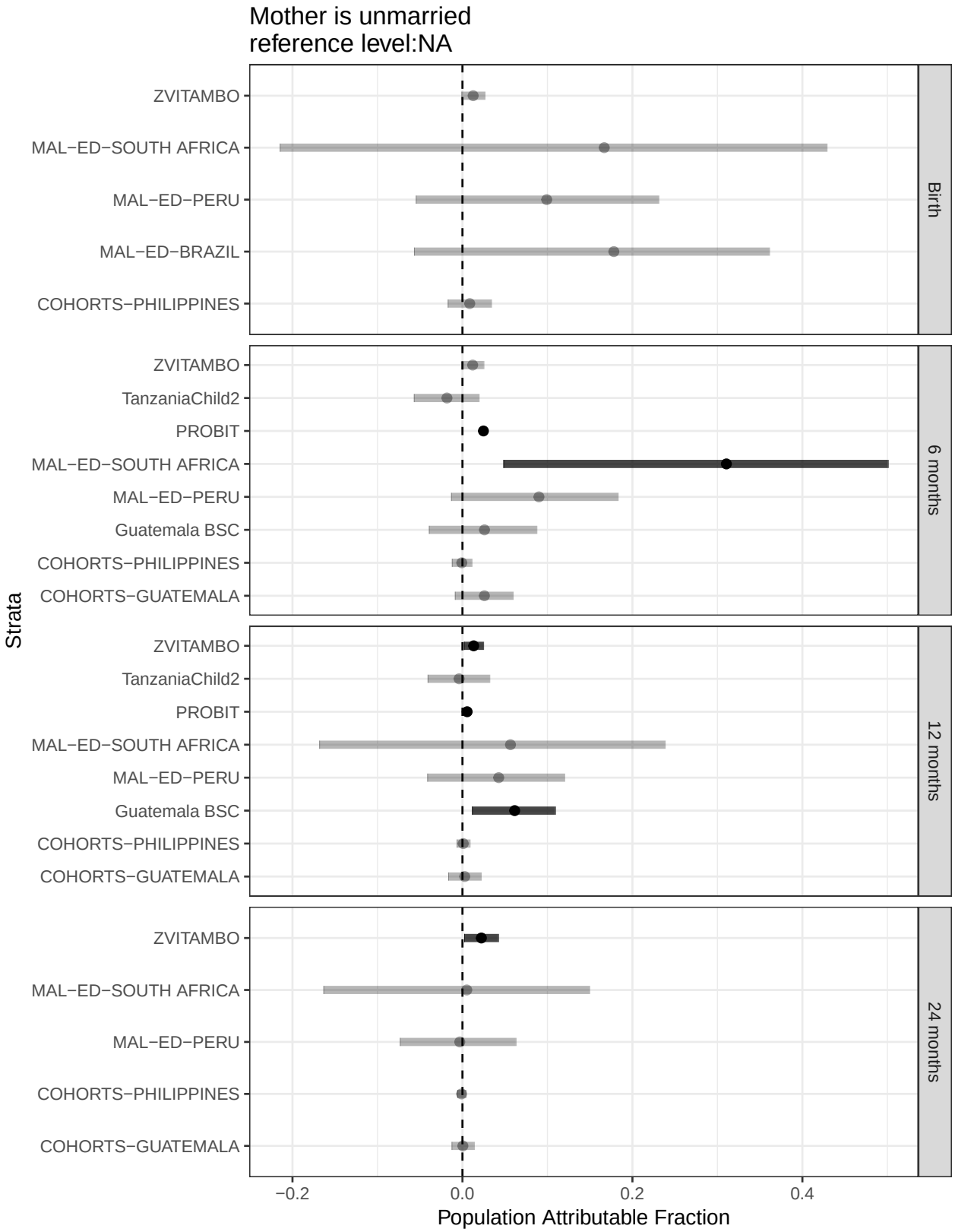



```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
```

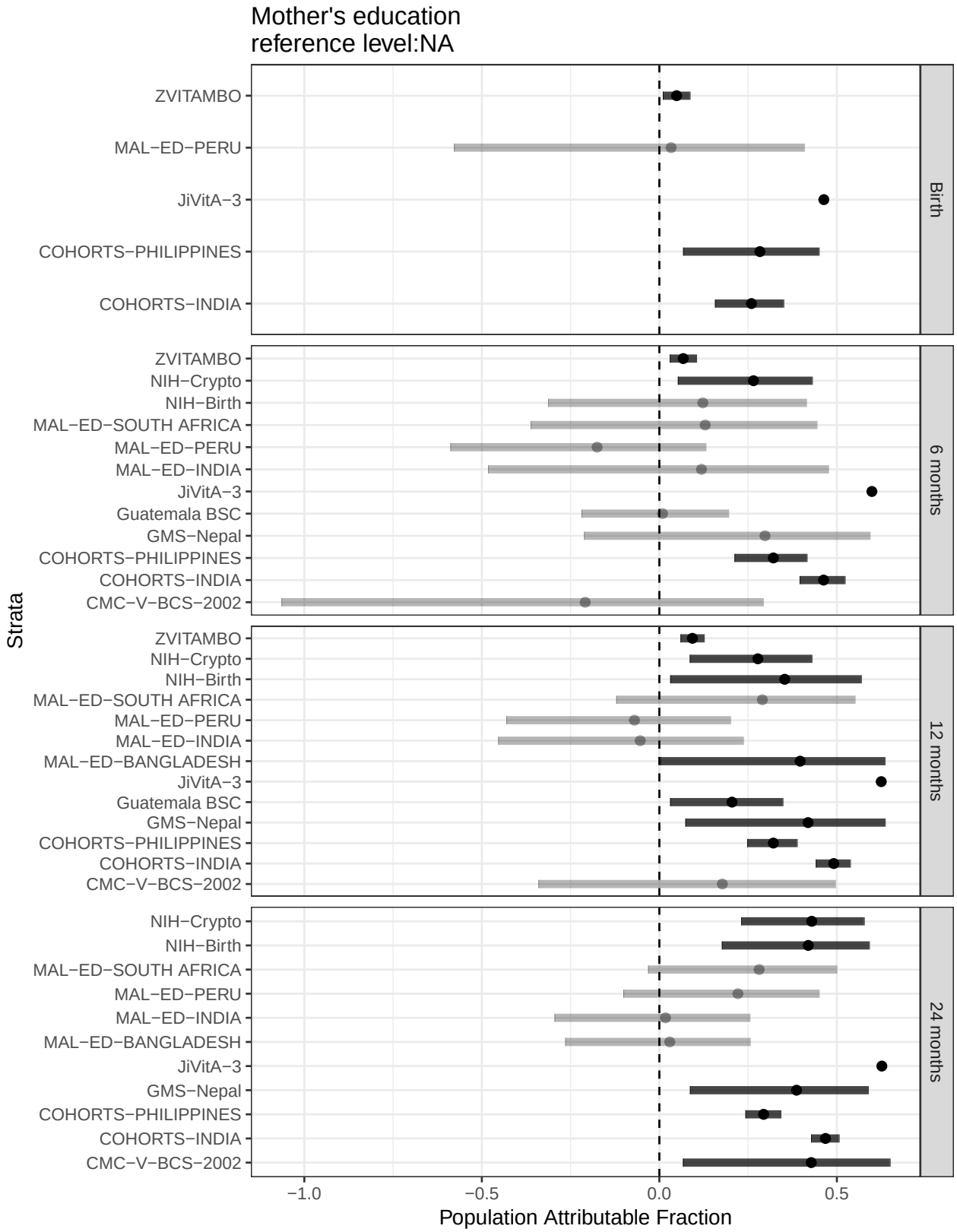

Maternal parity
reference level:NA
Strata
ZVITAMBO
Keneba
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
ZVITAMBO
TanzaniaChild2
SAS−FoodSuppl
SAS−CompFeed
PROVIDE
Keneba
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
6 months
ZVITAMBO
TanzaniaChild2
SAS−CompFeed
PROVIDE
Keneba
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
12 months
ZVITAMBO
PROVIDE
Keneba
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
COHORTS−GUATEMALA
24 months
−2.0
−1.5
−1.0
−0.5
0.0
0.5
Population Attributable Fraction




```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
```

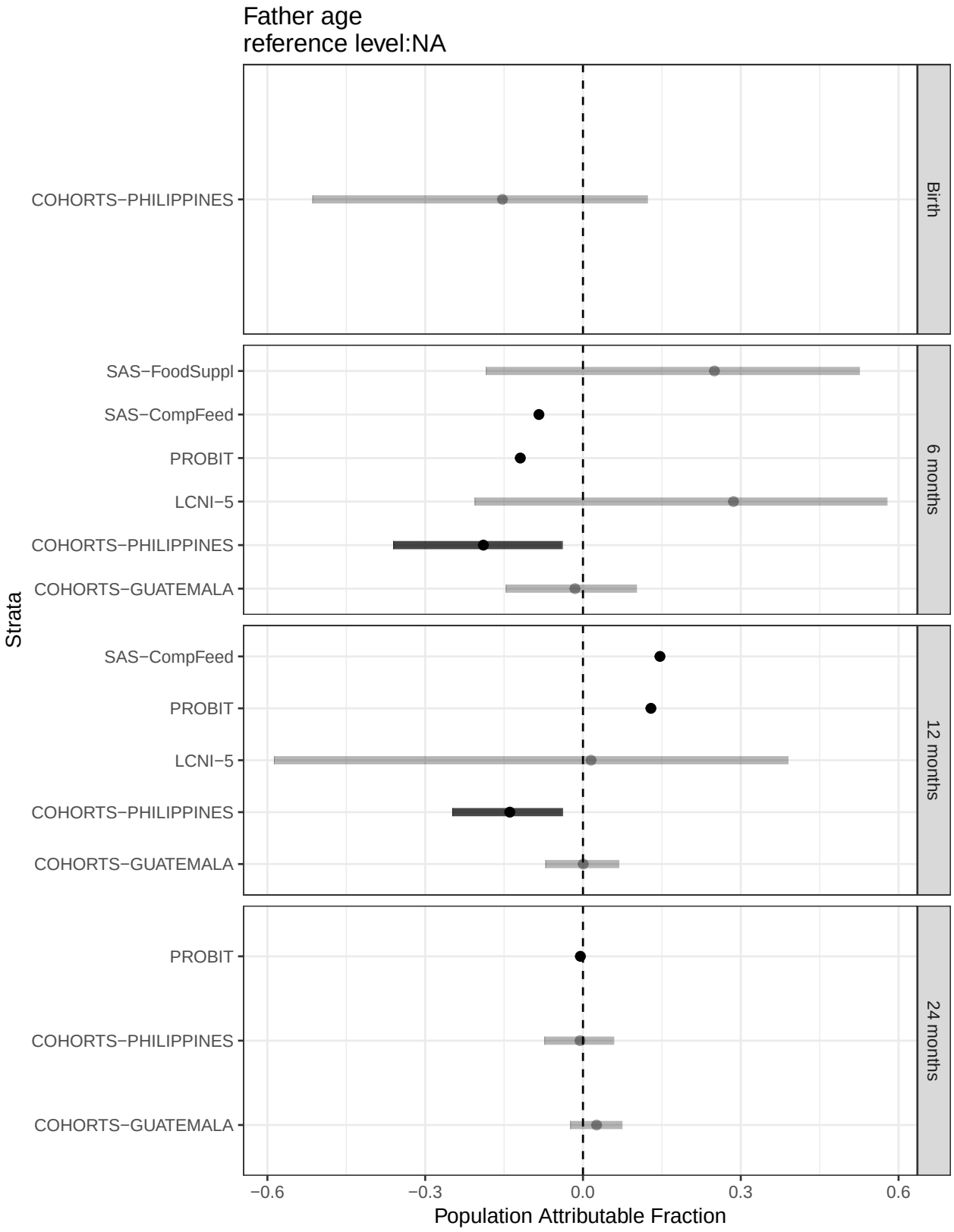



```
## Warning: Removed 4 rows containing missing values (geom_errorbar).
```


Mother's education
reference level:NA
Strata
ZVITAMBO
MAL−ED−PERU
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
ZVITAMBO
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
JiVitA−3
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
6 months
ZVITAMBO
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BANGLADESH
JiVitA−3
Guatemala BSC
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
12 months
NIH−Crypto
NIH−Birth
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
MAL−ED−INDIA
MAL−ED−BANGLADESH
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
CMC−V−BCS−2002
24 months
−1.0
−0.5
0.0
0.5
Population Attributable Fraction

Paternal characteristics

```
## Warning: Removed 5 rows containing missing values (geom_errorbar).
```




```
## Warning: Removed 2 rows containing missing values (geom_errorbar).
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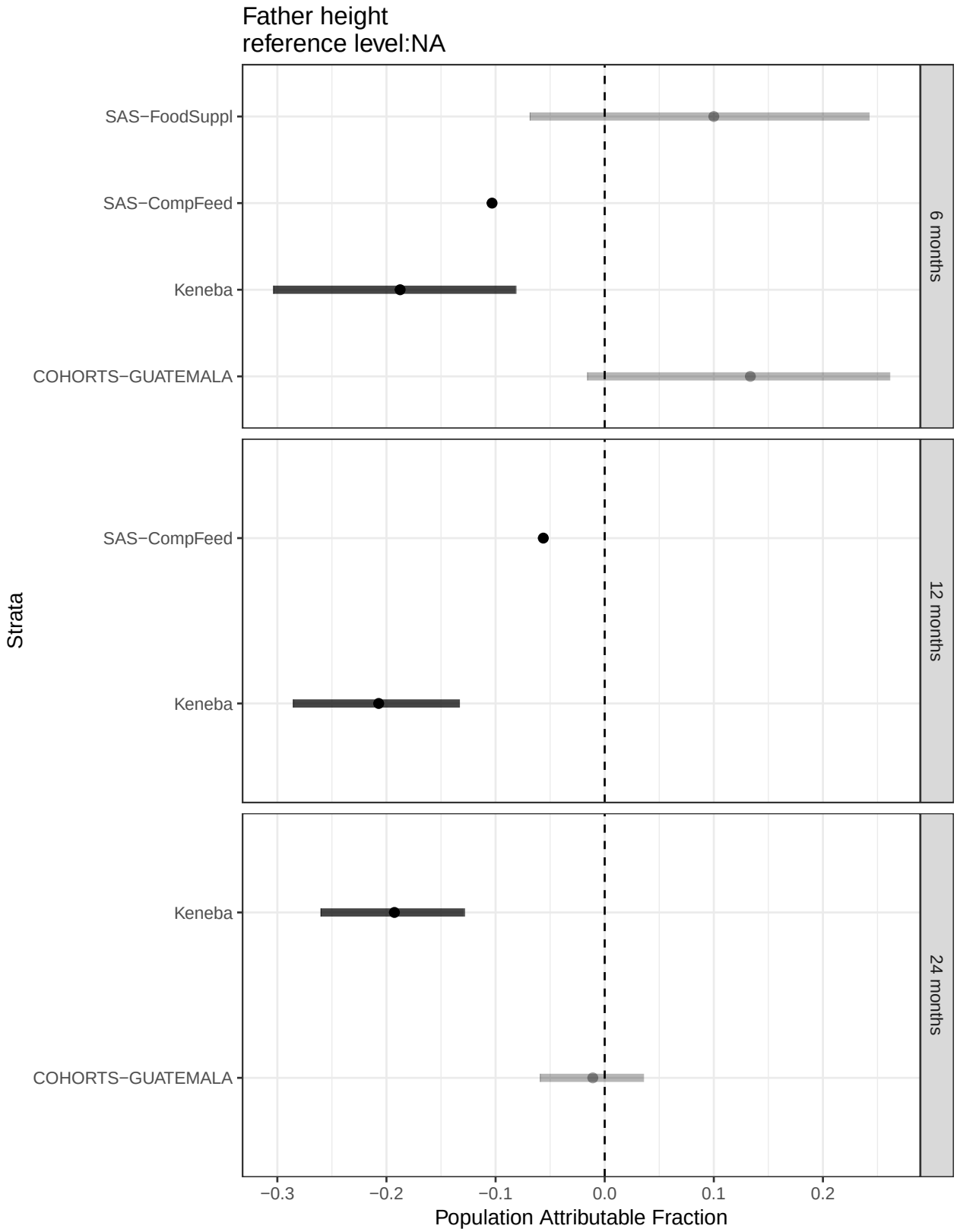


```
## Warning: Removed 6 rows containing missing values (geom_errorbar).
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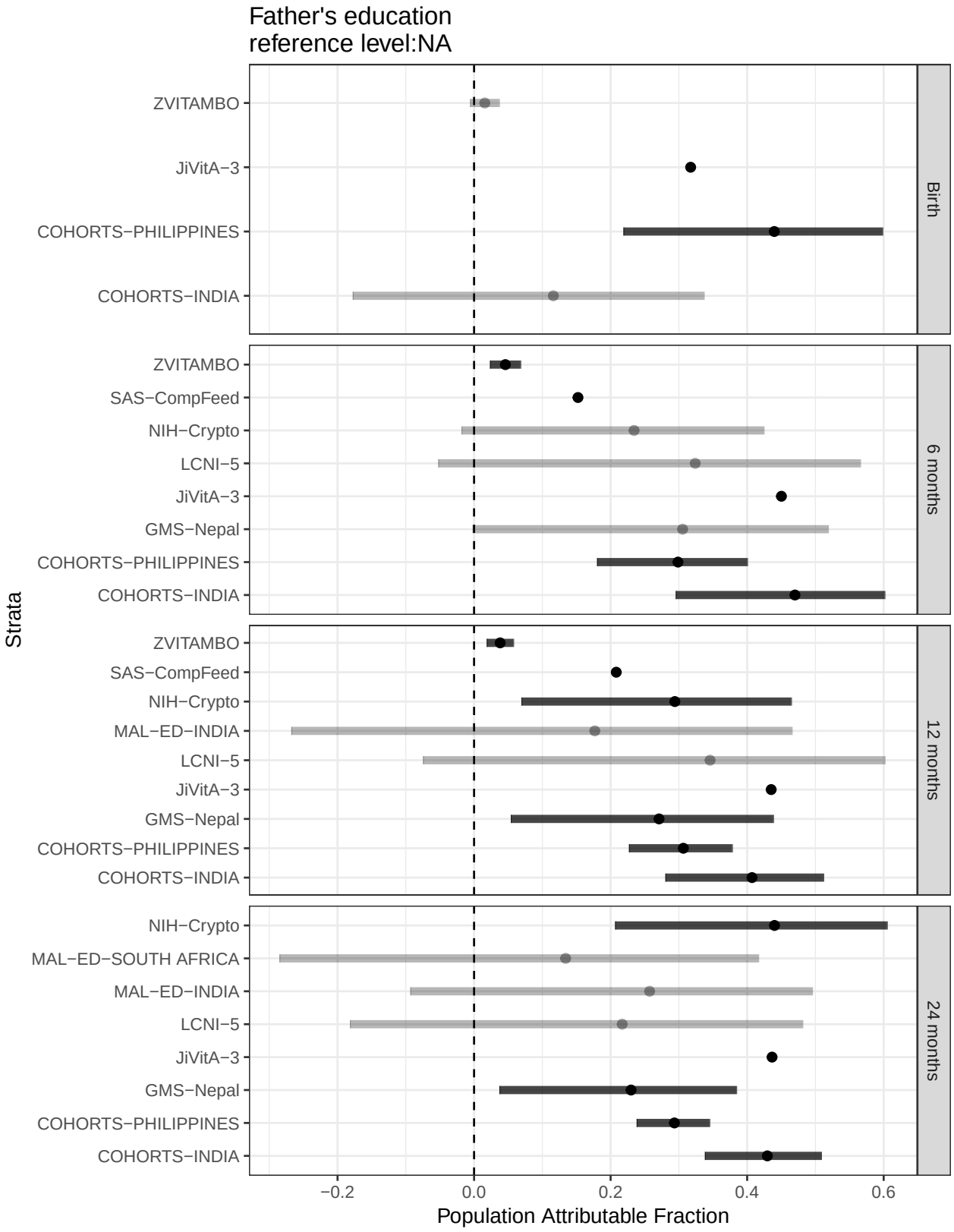
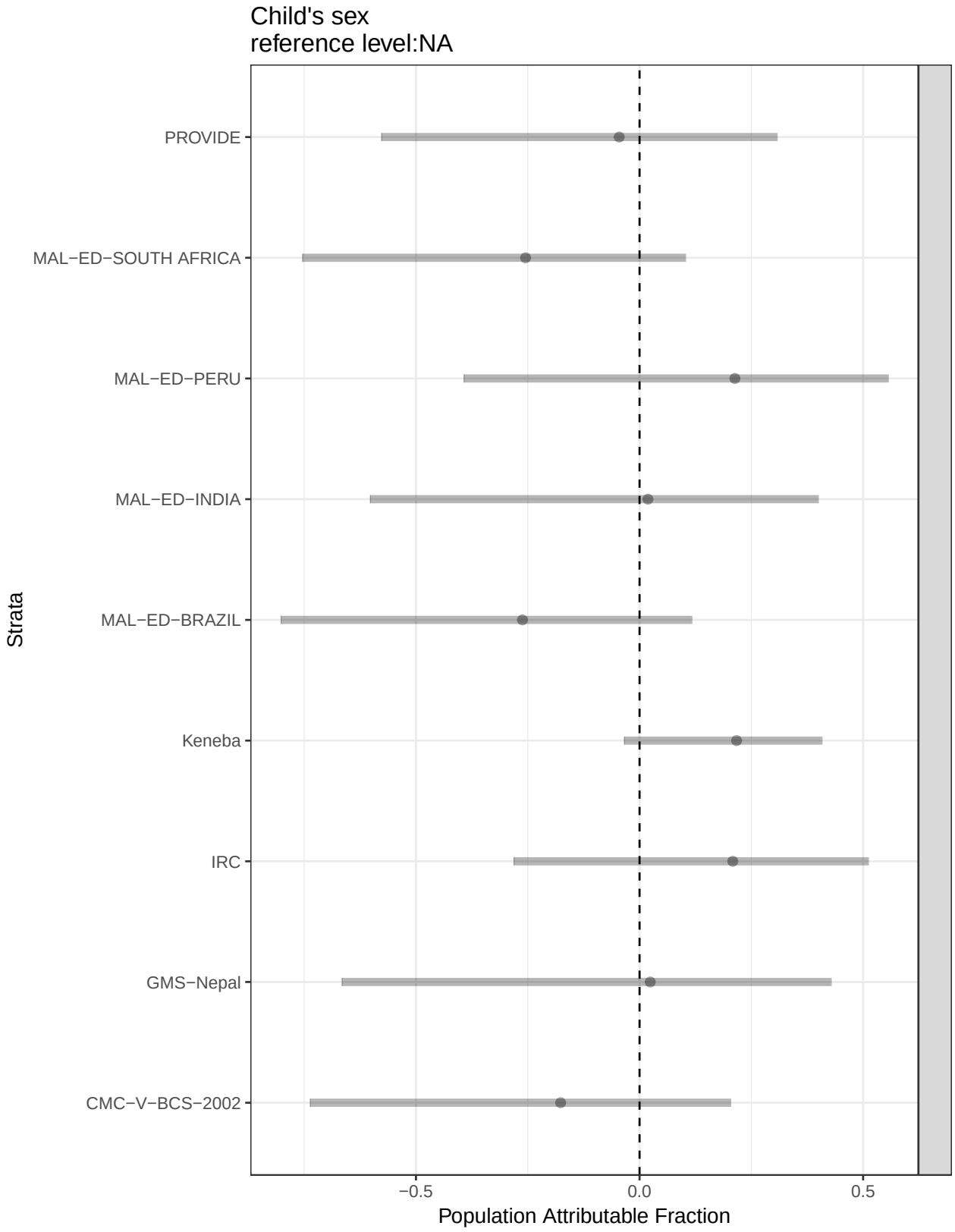
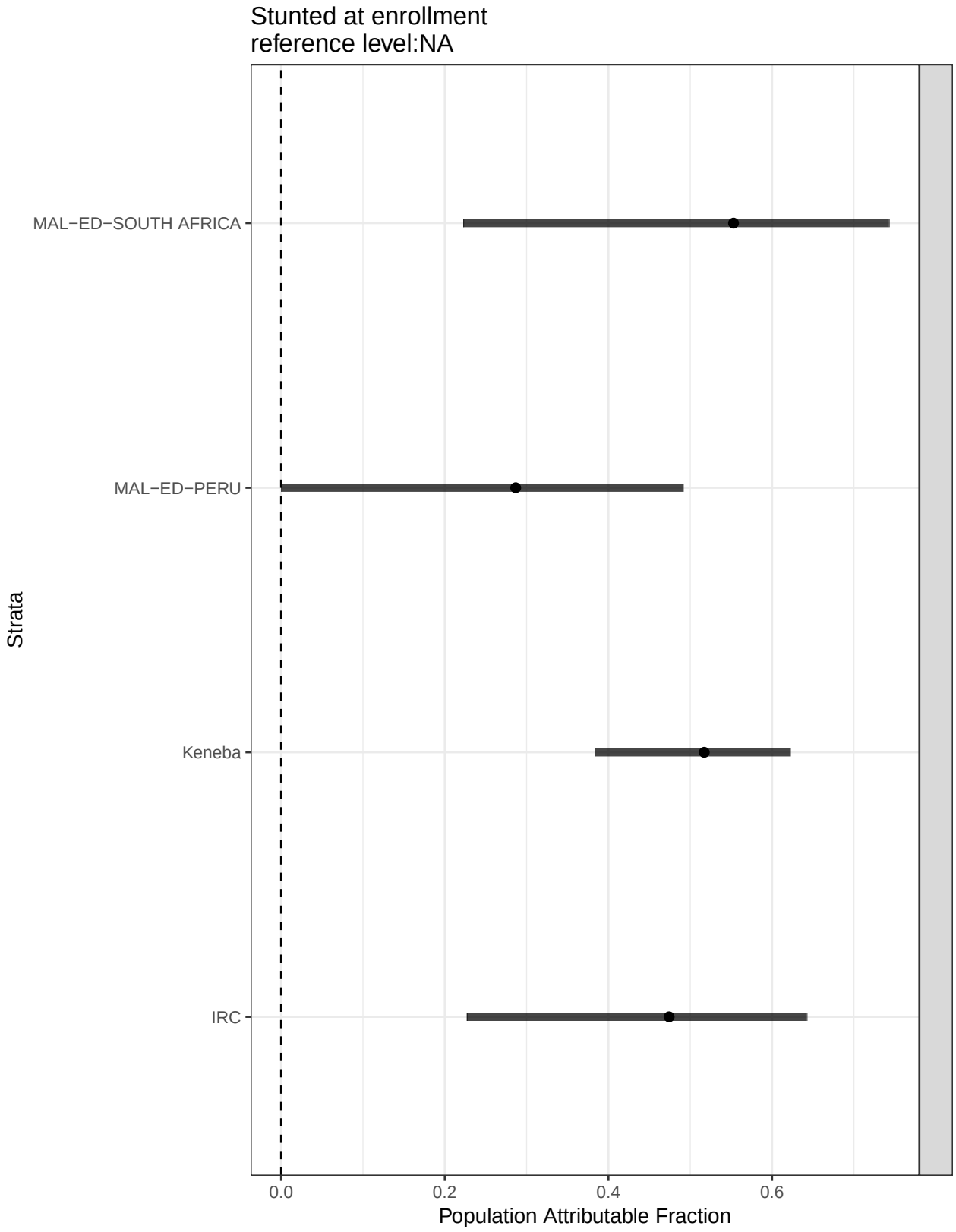

Father's education
reference level:NA
Strata
ZVITAMBO
JiVitA−3
COHORTS−PHILIPPINES
COHORTS−INDIA
Birth
ZVITAMBO
SAS−CompFeed
NIH−Crypto
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
6 months
ZVITAMBO
SAS−CompFeed
NIH−Crypto
MAL−ED−INDIA
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
12 months
NIH−Crypto
MAL−ED−SOUTH AFRICA
MAL−ED−INDIA
LCNI−5
JiVitA−3
GMS−Nepal
COHORTS−PHILIPPINES
COHORTS−INDIA
24 months
−0.2
0.0
0.2
0.4
0.6
Population Attributable Fraction

Proportion of children who were stunted

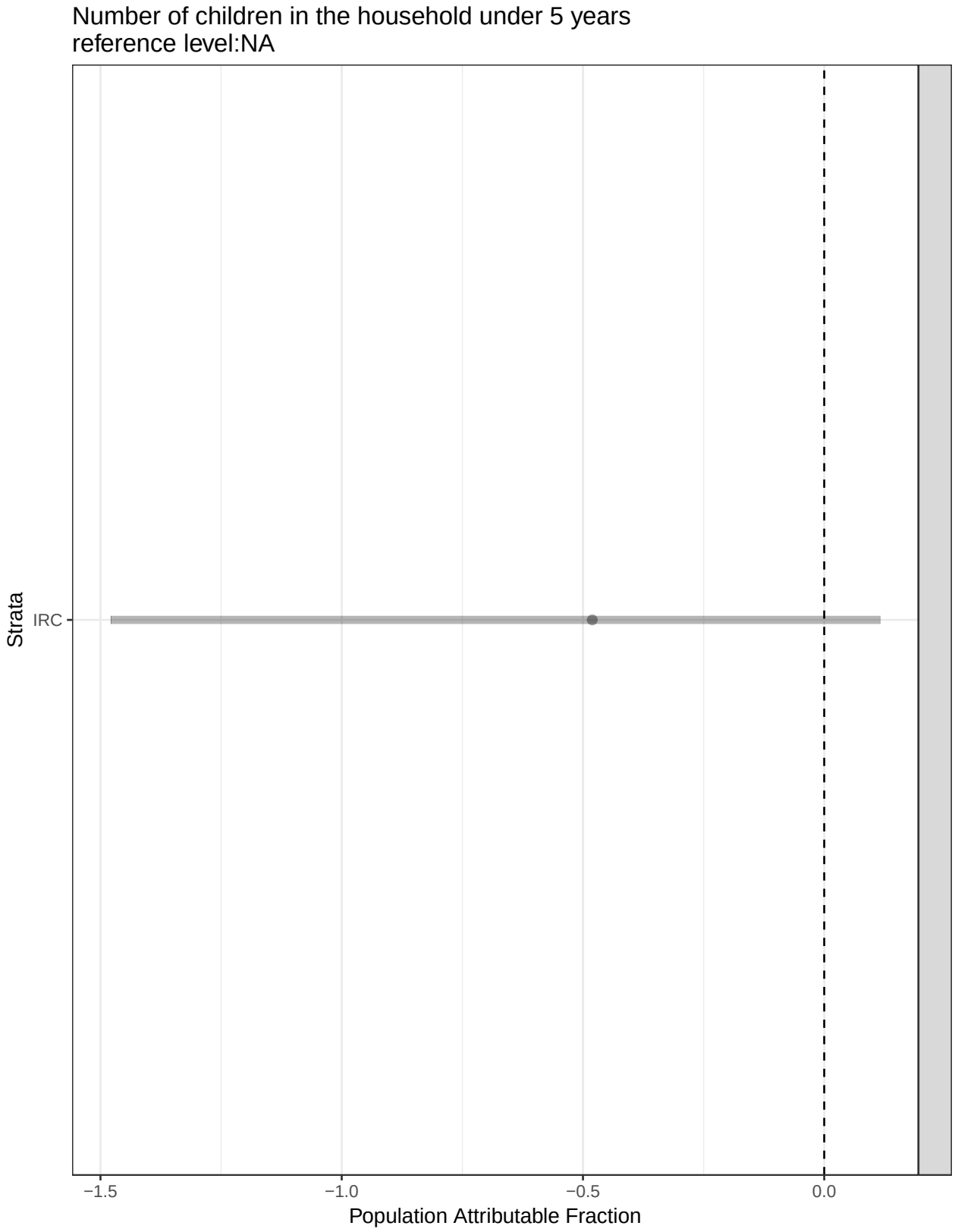
between birth and 3 months who recovered by 24 months

Child characteristics

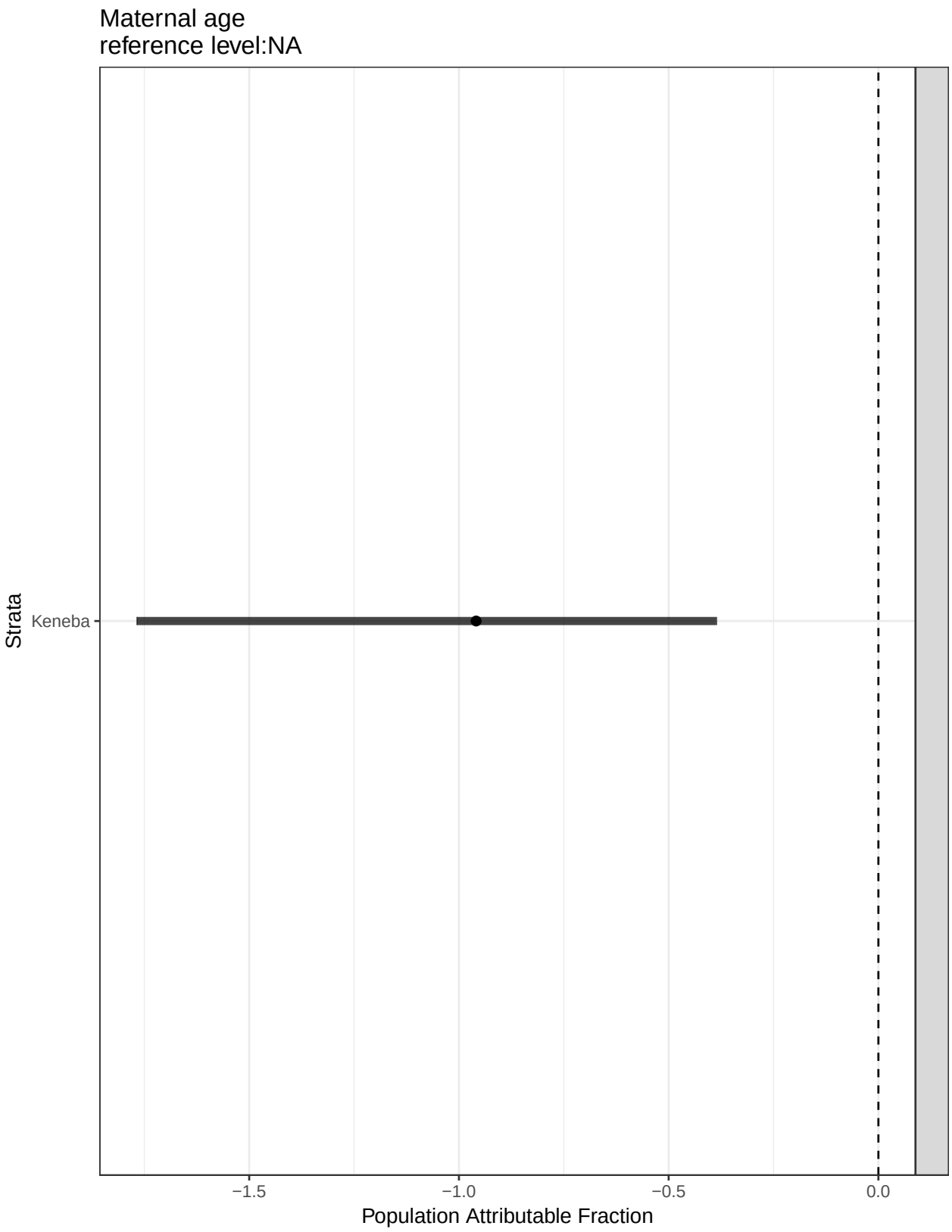


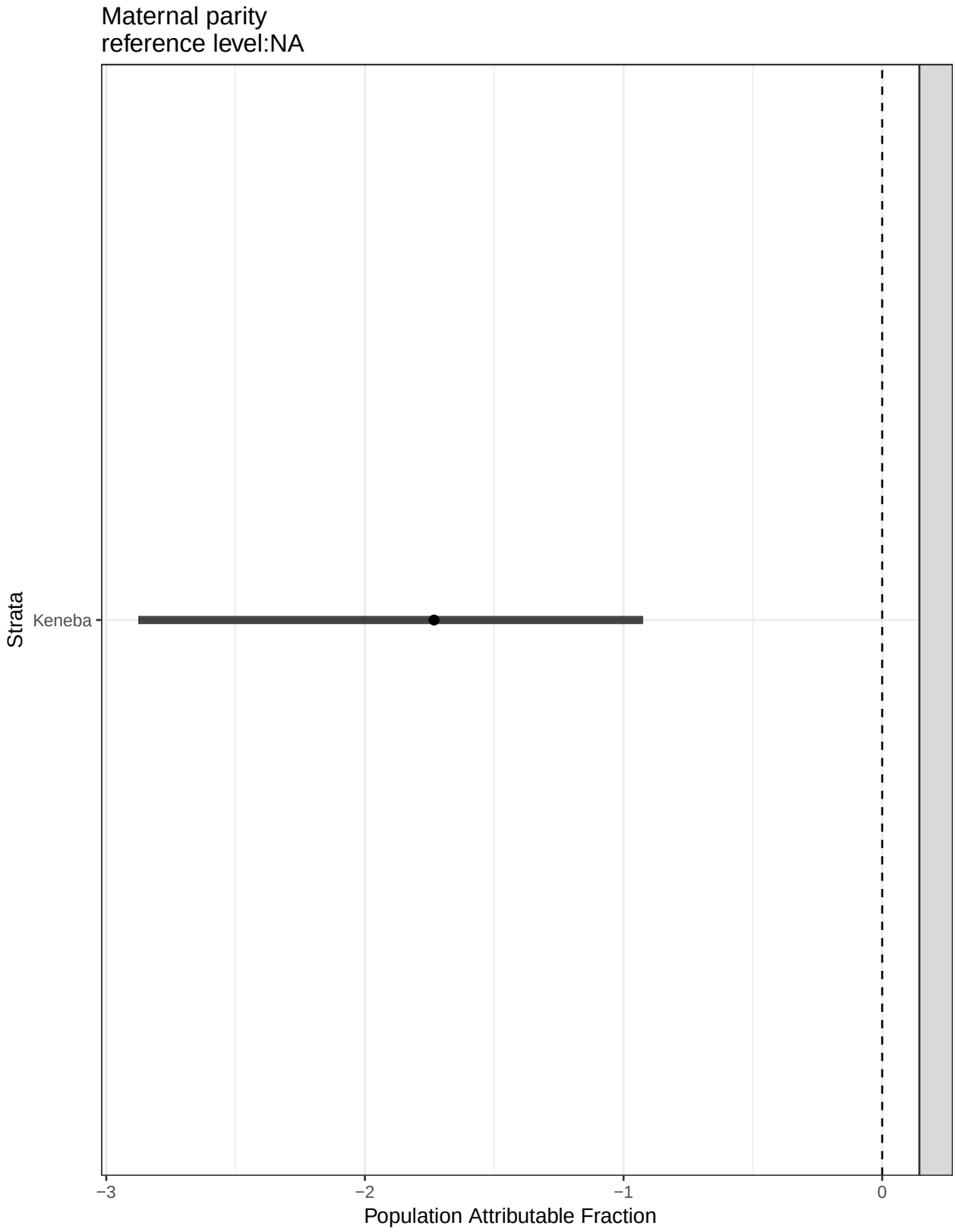

Stunted at enrollment
reference level:NA
MAL−ED−SOUTH AFRICA
MAL−ED−PERU
Keneba
IRC
Strata
0.0
0.2
0.4
0.6
Population Attributable Fraction

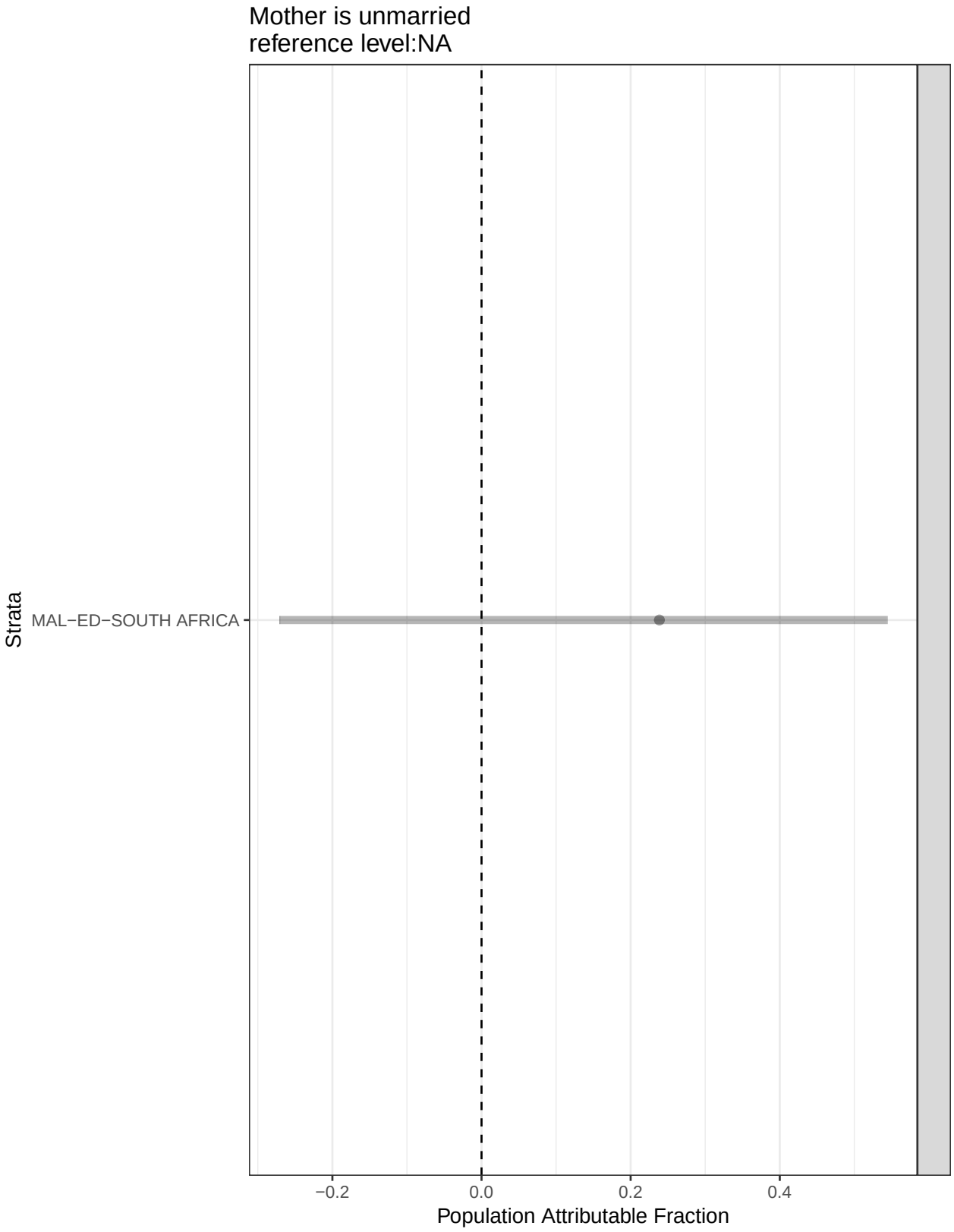
Household characteristics



Maternal characteristics




Maternal parity
reference level:NA
Strata
Keneba
−3
−2
−1
0
Population Attributable Fraction


Mother is unmarried
reference level:NA
Strata
MAL−ED−SOUTH AFRICA
−0.2
0.0
0.2
0.4
Population Attributable Fraction