**Supplemental Appendix**

**The state of healthcare for adults with multiple cardiovascular disease risk factors in India: a population-based study of 740,000 adults**

**eMethods1. Computation of the household wealth index**

Multiple dwelling characteristics were used to create the household wealth index:

- Main roof material

- Main wall material

- Main material of floor

- Type of cooking fuel

- Type of toilet facility

- Source of drinking water

Furthermore, durable goods ('assets') ownership of the following items was analyzed:

- Mattress

- Pressure cooker

- Chair

- Cot or bed

- Table

- Electric fan

- Radio or transistor

- Black and white television

- Colour television

- Sewing machine

- Mobile telephone

- Telephone (non-mobile)

- Internet

- Computer

- Refrigerator

- Air conditioner/cooler

- Washing machine

- Watch or clock

- Bicycle

- Motorcycle or Scooter

- Animal-drawn cart

- Car

- Water pump

- Thresher

- Tractor

First, all items listed above were encoded as a binary indicator. Second, a Principal Component Analysis (PCA) was performed separately for rural and urban areas and the first (unrotated) component was selected. The resulting standardized score has a mean of zero, a standard deviation of one, and wealthier households receive higher scores. To improve interpretability, the variable was then divided into quintiles. A description of the exact calculation process used for the DHS surveys has been published.[1, 2]

**eMethods2. Defining the variable 'current smoking '**

Multiple questionnaire items were cumulated to create the variable current smoking. All items used were self-reported. Current smoking was defined as having selected 'Cigar', 'Pipe' or 'Hookah' as answer for the question "In what other form do you currently smoke or use tobacco?" or having responded with 'yes' to the question "Do you currently smoke cigarettes?" or "Do you currently smoke bidis?".

**eTable1. Sample characteristics of excluded individuals[1]**

| | Total | Female | Male |
|---|---|---|---|
| n | 22861 | 18454 | 4407 |
| Diabetes, n (%) | 146 (0.6) | 122 (0.7) | 24 (0.5) |
| Hypertension, n (%) | 1069 (4.7) | 919 (5.0) | 150 (3.4) |
| Age Group, n (%), years | | | |
|   15 - 19 | 4789 (20.9) | 4004 (21.7) | 785 (17.8) |
|   20 - 24 | 3747 (16.4) | 3040 (16.5) | 707 (16.0) |
|   25 - 29 | 3489 (15.3) | 2782 (15.1) | 707 (16.0) |
|   30 - 34 | 2951 (12.9) | 2389 (12.9) | 562 (12.8) |
|   35 - 39 | 2743 (12.0) | 2258 (12.2) | 485 (11.0) |
|   40 - 44 | 2440 (10.7) | 2001 (10.8) | 439 (10.0) |
|   45 - 49 | 2380 (10.4) | 1980 (10.7) | 400 (9.1) |
|   50 - 54 | 322 (1.4) | 0 (0.0) | 322 (7.3) |
| Education, n (%) | | | |
|   Primary school unfinished | 6329 (27.7) | 5536 ( 30.0) | 793 ( 18.0) |
|   Primary school finished | 1255 ( 5.5) | 1021 ( 5.5) | 234 ( 5.3) |
|   Secondary school unfinished | 9199 (40.2) | 7168 ( 38.8) | 2031 ( 46.1) |
|   Secondary school finished or above | 6078 (26.6) | 4729 ( 25.6) | 1349 ( 30.6) |
| Household wealth quintile, n (%) | | | |
|   Q1 (Poorest) | 3897 (17.0) | 3174 ( 17.2) | 723 ( 16.4) |
|   Q2 | 4174 (18.3) | 3352 ( 18.2) | 822 ( 18.7) |
|   Q3 | 4505 (19.7) | 3652 ( 19.8) | 853 ( 19.4) |
|   Q4 | 4687 (20.5) | 3725 ( 20.2) | 962 ( 21.8) |
|   Q5 (Richest) | 5598 (24.5) | 4551 ( 24.7) | 1047 ( 23.8) |
| BMI, n (%) | | | |
|   $<18.5 kg/m^2$ | 4380 (19.2) | 3737 (20.3) | 643 (14.6) |
|   $18.5 - 22.9 kg/m^2$ | 2119 (9.3) | 1889 (10.2) | 230 (5.2) |
|   $23.0 - 24.9 kg/m^2$ | 1182 (5.2) | 977 (5.3) | 205 (4.7) |
|   $25.0 - 27.4 kg/m^2$ | 878 (3.8) | 744 (4.0) | 134 (3.0) |
|   $27.5 - 29.9 kg/m^2$ | 504 (2.2) | 437 (2.4) | 67 (1.5) |
|   $\geq 30.0 kg/m^2$ | 421 (1.8) | 380 (2.1) | 41 (0.9) |
|   Missing | 13377 (58.5) | 10290 (55.8) | 3087 (70.0) |
| Tobacco consumption, n (%) | | | |
|   Current smoker | 1391 (6.1) | 260 (1.4) | 1131 (25.7) |
|   Uses smokeless tobacco | 2451 (10.7) | 1189 (6.4) | 1262 (28.6) |
| Currently married, n (%) | 13974 (61.1) | 11483 (62.2) | 2491 (56.5) |
| Urban area, n (%) | 9530 (41.7) | 7630 (41.3) | 1900 (43.1) |

Abbreviations: n=number; Q=quintile.

[1] The numbers and percentages in this table were not weighted using sampling weights.

**eTable2. Combined cascade estimates by sex**

| Care indicator | Sex | Estimate (in %) | Low CI (in %) | High CI (in %) |
|---|---|---|---|---|
| Aware | All | 28.82 | 26.74 | 30.98 |
| Treated | All | 16.07 | 14.40 | 17.90 |
| Controlled | All | 3.72 | 2.83 | 4.89 |
| Aware | Women | 35.48 | 33.67 | 37.32 |
| Treated | Women | 18.99 | 17.57 | 20.49 |
| Controlled | Women | 4.78 | 3.99 | 5.72 |
| Aware | Men | 25.13 | 22.13 | 28.40 |
| Treated | Men | 14.46 | 12.06 | 17.24 |
| Controlled | Men | 3.14 | 1.93 | 5.07 |

**eTable3. Combined cascade estimates by rural/urban location**

| Care indicator | Location | Estimate (in %) | Low CI (in %) | High CI (in %) |
|---|---|---:|---:|---:|
| Aware | All | 28.82 | 26.74 | 30.98 |
| Treated | All | 16.07 | 14.40 | 17.90 |
| Controlled | All | 3.72 | 2.83 | 4.89 |
| Aware | Urban | 31.89 | 28.69 | 35.26 |
| Treated | Urban | 19.57 | 16.97 | 22.45 |
| Controlled | Urban | 4.28 | 2.95 | 6.19 |
| Aware | Rural | 25.66 | 23.11 | 28.40 |
| Treated | Rural | 12.48 | 10.55 | 14.72 |
| Controlled | Rural | 3.15 | 2.11 | 4.68 |

**eTable4. Combined care cascade: 'Aware' estimates by state and GDP per capita**

| State | Estimate (in %) | Low CI (in %) | Upper CI (in %) | Zone | Label | GDP per capita (inter. Dollar) |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 38.44 | 29.43 | 48.31 | South | AP | 5616.677959 |
| Arunachal Pradesh | 29.81 | 18.91 | 43.62 | Northeast | AR | 5849.635825 |
| Assam | 21.93 | 16.07 | 29.19 | Northeast | AS | 3053.653753 |
| Bihar | 24.22 | 18.11 | 31.60 | East | BR | 1972.806858 |
| Chhattisgarh | 8.50 | 5.14 | 13.73 | Central | CT | 4343.709448 |
| Goa | 22.08 | 10.27 | 41.22 | West | GA | 20033.76694 |
| Gujarat | 22.81 | 15.62 | 32.06 | West | GJ | 7570.097496 |
| Haryana | 29.38 | 19.61 | 41.51 | North | HR | 9167.568268 |
| Himachal Pradesh | 27.63 | 17.62 | 40.52 | North | HP | 7189.290719 |
| Jammu and Kashmir | 36.43 | 26.86 | 47.20 | North | JK | 4172.65962 |
| Jharkhand | 24.62 | 17.18 | 33.97 | East | JH | 3129.812781 |
| Karnataka | 17.40 | 11.33 | 25.77 | South | KA | 6011.598363 |
| Kerala | 35.33 | 25.46 | 46.63 | South | KL | 7088.907536 |
| Madhya Pradesh | 23.36 | 18.11 | 29.57 | Central | MP | 3577.032479 |
| Maharashtra | 32.71 | 23.53 | 43.45 | West | MH | 8030.600448 |
| Manipur | 21.71 | 12.44 | 35.12 | Northeast | MN | 2997.351466 |
| Meghalaya | 40.91 | 25.85 | 57.89 | Northeast | ML | 4415.492083 |
| Mizoram | 23.73 | 14.01 | 37.27 | Northeast | MZ | 5608.190718 |
| Nagaland | 30.74 | 19.27 | 45.21 | Northeast | NL | 5360.899074 |
| Odisha | 26.66 | 20.09 | 34.45 | East | OD | 3886.408533 |
| Punjab | 33.25 | 24.85 | 42.86 | North | PB | 6840.090457 |
| Rajasthan | 24.46 | 16.99 | 33.87 | North | RJ | 4512.420172 |
| Sikkim | 37.48 | 21.70 | 56.47 | Northeast | SK | 12113.65458 |
| Tamil Nadu | 37.77 | 31.79 | 44.15 | South | TN | 7075.557494 |
| Telangana | 23.19 | 15.00 | 34.07 | South | TS | 6651.843008 |
| Tripura | 28.93 | 15.89 | 46.73 | Northeast | TR | 4360.81546 |
| Uttar Pradesh | 23.81 | 19.47 | 28.78 | Central | UP | 2580.244624 |
| Uttarakhand | 23.82 | 15.63 | 34.53 | Central | UK | 7281.317689 |
| West Bengal | 24.41 | 17.07 | 33.63 | East | WB | 4625.86283 |

**eTable5. Combined care cascade: 'Treated' estimates by state and GDP per capita**

| State | Estimate (in %) | Low CI (in %) | Upper CI (in %) | Zone | Label | GDP per capita (inter. Dollar) |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 21.41 | 14.60 | 30.26 | South | AP | 5616.677959 |
| Arunachal Pradesh | 9.07 | 3.56 | 21.23 | Northeast | AR | 5849.635825 |
| Assam | 10.99 | 7.05 | 16.73 | Northeast | AS | 3053.653753 |
| Bihar | 11.68 | 7.21 | 18.39 | East | BR | 1972.806858 |
| Chhattisgarh | 3.55 | 1.86 | 6.67 | Central | CT | 4343.709448 |
| Goa | 22.17 | 10.35 | 41.28 | West | GA | 20033.76694 |
| Gujarat | 17.77 | 11.30 | 26.84 | West | GJ | 7570.097496 |
| Haryana | 4.71 | 2.58 | 8.45 | North | HR | 9167.568268 |
| Himachal Pradesh | 11.34 | 5.27 | 22.72 | North | HP | 7189.290719 |
| Jammu and Kashmir | 19.51 | 12.31 | 29.51 | North | JK | 4172.65962 |
| Jharkhand | 5.30 | 2.95 | 9.33 | East | JH | 3129.812781 |
| Karnataka | 15.48 | 9.39 | 24.44 | South | KA | 6011.598363 |
| Kerala | 20.68 | 13.39 | 30.52 | South | KL | 7088.907536 |
| Madhya Pradesh | 13.42 | 9.27 | 19.05 | Central | MP | 3577.032479 |
| Maharashtra | 26.64 | 17.79 | 37.85 | West | MH | 8030.600448 |
| Manipur | 5.42 | 2.30 | 12.23 | Northeast | MN | 2997.351466 |
| Meghalaya | 28.60 | 15.90 | 45.92 | Northeast | ML | 4415.492083 |
| Mizoram | 12.62 | 6.38 | 23.44 | Northeast | MZ | 5608.190718 |
| Nagaland | 10.29 | 4.02 | 23.88 | Northeast | NL | 5360.899074 |
| Odisha | 14.57 | 10.20 | 20.38 | East | OD | 3886.408533 |
| Punjab | 13.89 | 9.03 | 20.78 | North | PB | 6840.090457 |
| Rajasthan | 11.83 | 6.96 | 19.39 | North | RJ | 4512.420172 |
| Sikkim | 11.83 | 6.71 | 20.00 | Northeast | SK | 12113.65458 |
| Tamil Nadu | 15.22 | 11.64 | 19.65 | South | TN | 7075.557494 |
| Telangana | 14.41 | 8.36 | 23.71 | South | TS | 6651.843008 |
| Tripura | 18.00 | 7.44 | 37.50 | Northeast | TR | 4360.81546 |
| Uttar Pradesh | 10.33 | 7.71 | 13.70 | Central | UP | 2580.244624 |
| Uttarakhand | 11.22 | 6.44 | 18.82 | Central | UK | 7281.317689 |
| West Bengal | 19.03 | 12.40 | 28.08 | East | WB | 4625.86283 |

**eTable6. Combined care cascade: 'Controlled' estimates by state and GDP per capita**

| State | Estimate (in %) | Low CI (in %) | Upper CI (in %) | Zone | Label | GDP per capita (inter. Dollar) |
|---|---|---|---|---|---|---|
| Andhra Pradesh | 4.78 | 2.04 | 10.77 | South | AP | 5616.677959 |
| Arunachal Pradesh | 1.58 | 0.38 | 6.39 | Northeast | AR | 5849.635825 |
| Assam | 1.42 | 0.57 | 3.51 | Northeast | AS | 3053.653753 |
| Bihar | 2.60 | 1.50 | 4.48 | East | BR | 1972.806858 |
| Chhattisgarh | 1.41 | 0.44 | 4.38 | Central | CT | 4343.709448 |
| Goa | 2.21 | 0.88 | 5.43 | West | GA | 20033.76694 |
| Gujarat | 2.52 | 0.92 | 6.70 | West | GJ | 7570.097496 |
| Haryana | 1.41 | 0.52 | 3.75 | North | HR | 9167.568268 |
| Himachal Pradesh | 5.31 | 1.16 | 21.18 | North | HP | 7189.290719 |
| Jammu and Kashmir | 3.51 | 1.92 | 6.33 | North | JK | 4172.65962 |
| Jharkhand | 2.79 | 1.16 | 6.55 | East | JH | 3129.812781 |
| Karnataka | 1.54 | 0.54 | 4.31 | South | KA | 6011.598363 |
| Kerala | 5.83 | 2.69 | 12.18 | South | KL | 7088.907536 |
| Madhya Pradesh | 2.47 | 1.02 | 5.89 | Central | MP | 3577.032479 |
| Maharashtra | 11.83 | 5.28 | 24.41 | West | MH | 8030.600448 |
| Manipur | 0.40 | 0.05 | 2.85 | Northeast | MN | 2997.351466 |
| Meghalaya | 22.71 | 10.75 | 41.75 | Northeast | ML | 4415.492083 |
| Mizoram | 0.95 | 0.35 | 2.58 | Northeast | MZ | 5608.190718 |
| Nagaland | 1.06 | 0.14 | 7.37 | Northeast | NL | 5360.899074 |
| Odisha | 1.95 | 1.12 | 3.36 | East | OD | 3886.408533 |
| Punjab | 2.75 | 0.79 | 9.19 | North | PB | 6840.090457 |
| Rajasthan | 4.67 | 1.56 | 13.10 | North | RJ | 4512.420172 |
| Sikkim | 0.00 | 0.00 | 0.00 | Northeast | SK | 12113.65458 |
| Tamil Nadu | 3.21 | 1.83 | 5.56 | South | TN | 7075.557494 |
| Telangana | 3.00 | 1.15 | 7.58 | South | TS | 6651.843008 |
| Tripura | 10.34 | 2.85 | 31.14 | Northeast | TR | 4360.81546 |
| Uttar Pradesh | 1.62 | 0.83 | 3.14 | Central | UP | 2580.244624 |
| Uttarakhand | 4.71 | 1.52 | 13.68 | Central | UK | 7281.317689 |
| West Bengal | 3.38 | 1.16 | 9.44 | East | WB | 4625.86283 |

**eTable7. Combined care cascade: 'Aware' estimates by state**

| State | Estimate (in %) | Low CI (in %) | Upper CI (in %) |
|---|---|---|---|
| Andaman and Nicobar Islands | 29.92 | 14.18 | 52.46 |
| Andhra Pradesh | 38.44 | 29.43 | 48.31 |
| Arunachal Pradesh | 29.81 | 18.91 | 43.62 |
| Assam | 21.93 | 16.07 | 29.19 |
| Bihar | 24.22 | 18.11 | 31.60 |
| Chandigarh | 31.45 | 7.99 | 70.80 |
| Chhattisgarh | 8.50 | 5.14 | 13.73 |
| Dadra and Nagar Haveli | 8.32 | 1.55 | 34.39 |
| Daman and Diu | 8.10 | 1.39 | 35.52 |
| Delhi | 34.55 | 18.86 | 54.53 |
| Goa | 22.08 | 10.27 | 41.22 |
| Gujarat | 22.81 | 15.62 | 32.06 |
| Haryana | 29.38 | 19.61 | 41.51 |
| Himachal Pradesh | 27.63 | 17.62 | 40.52 |
| Jammu and Kashmir | 36.43 | 26.86 | 47.20 |
| Jharkhand | 24.62 | 17.18 | 33.97 |
| Karnataka | 17.40 | 11.33 | 25.77 |
| Kerala | 35.33 | 25.46 | 46.63 |
| Lakshadweep | 23.80 | 7.63 | 54.15 |
| Madhya Pradesh | 23.36 | 18.11 | 29.57 |
| Maharashtra | 32.71 | 23.53 | 43.45 |
| Manipur | 21.71 | 12.44 | 35.12 |
| Meghalaya | 40.91 | 25.85 | 57.89 |
| Mizoram | 23.73 | 14.01 | 37.27 |
| Nagaland | 30.74 | 19.27 | 45.21 |
| Odisha | 26.66 | 20.09 | 34.45 |
| Puducherry | 41.37 | 20.39 | 66.03 |
| Punjab | 33.25 | 24.85 | 42.86 |
| Rajasthan | 24.46 | 16.99 | 33.87 |
| Sikkim | 37.48 | 21.70 | 56.47 |
| Tamil Nadu | 37.77 | 31.79 | 44.15 |
| Telangana | 23.19 | 15.00 | 34.07 |
| Tripura | 28.93 | 15.89 | 46.73 |
| Uttar Pradesh | 23.81 | 19.47 | 28.78 |
| Uttarakhand | 23.82 | 15.63 | 34.53 |
| West Bengal | 24.41 | 17.07 | 33.63 |

**eTable8. Combined care cascade: 'Treated' estimates by state**

| State | Estimate (in %) | Low CI (in %) | Upper CI (in %) |
|---|---|---|---|
| Andaman and Nicobar Islands | 26.60 | 12.35 | 48.26 |
| Andhra Pradesh | 21.41 | 14.60 | 30.26 |
| Arunachal Pradesh | 9.07 | 3.56 | 21.23 |
| Assam | 10.99 | 7.05 | 16.73 |
| Bihar | 11.68 | 7.21 | 18.39 |
| Chandigarh | 17.50 | 3.92 | 52.49 |
| Chhattisgarh | 3.55 | 1.86 | 6.67 |
| Dadra and Nagar Haveli | 5.42 | 0.78 | 29.58 |
| Daman and Diu | 8.10 | 1.39 | 35.52 |
| Delhi | 19.99 | 8.61 | 39.85 |
| Goa | 22.17 | 10.35 | 41.28 |
| Gujarat | 17.77 | 11.30 | 26.84 |
| Haryana | 4.71 | 2.58 | 8.45 |
| Himachal Pradesh | 11.34 | 5.27 | 22.72 |
| Jammu and Kashmir | 19.51 | 12.31 | 29.51 |
| Jharkhand | 5.30 | 2.95 | 9.33 |
| Karnataka | 15.48 | 9.39 | 24.44 |
| Kerala | 20.68 | 13.39 | 30.52 |
| Lakshadweep | 15.33 | 4.66 | 40.17 |
| Madhya Pradesh | 13.42 | 9.27 | 19.05 |
| Maharashtra | 26.64 | 17.79 | 37.85 |
| Manipur | 5.42 | 2.30 | 12.23 |
| Meghalaya | 28.60 | 15.90 | 45.92 |
| Mizoram | 12.62 | 6.38 | 23.44 |
| Nagaland | 10.29 | 4.02 | 23.88 |
| Odisha | 14.57 | 10.20 | 20.38 |
| Puducherry | 30.87 | 12.86 | 57.46 |
| Punjab | 13.89 | 9.03 | 20.78 |
| Rajasthan | 11.83 | 6.96 | 19.39 |
| Sikkim | 11.83 | 6.71 | 20.00 |
| Tamil Nadu | 15.22 | 11.64 | 19.65 |
| Telangana | 14.41 | 8.36 | 23.71 |
| Tripura | 18.00 | 7.44 | 37.50 |
| Uttar Pradesh | 10.33 | 7.71 | 13.70 |
| Uttarakhand | 11.22 | 6.44 | 18.82 |
| West Bengal | 19.03 | 12.40 | 28.08 |

**eTable9. Combined care cascade: 'Controlled' estimates by state**

| State | Estimate (in %) | Low CI (in %) | Upper CI (in %) |
|---|---|---|---|
| Andaman and Nicobar Islands | 1.31 | 0.17 | 9.45 |
| Andhra Pradesh | 4.78 | 2.04 | 10.77 |
| Arunachal Pradesh | 1.58 | 0.38 | 6.39 |
| Assam | 1.42 | 0.57 | 3.51 |
| Bihar | 2.60 | 1.50 | 4.48 |
| Chandigarh | 0.00 | 0.00 | 0.00 |
| Chhattisgarh | 1.41 | 0.44 | 4.38 |
| Dadra and Nagar Haveli | 0.00 | 0.00 | 0.00 |
| Daman and Diu | 0.00 | 0.00 | 0.00 |
| Delhi | 1.07 | 0.30 | 3.77 |
| Goa | 2.21 | 0.88 | 5.43 |
| Gujarat | 2.52 | 0.92 | 6.70 |
| Haryana | 1.41 | 0.52 | 3.75 |
| Himachal Pradesh | 5.31 | 1.16 | 21.18 |
| Jammu and Kashmir | 3.51 | 1.92 | 6.33 |
| Jharkhand | 2.79 | 1.16 | 6.55 |
| Karnataka | 1.54 | 0.54 | 4.31 |
| Kerala | 5.83 | 2.69 | 12.18 |
| Lakshadweep | 1.15 | 0.13 | 9.47 |
| Madhya Pradesh | 2.47 | 1.02 | 5.89 |
| Maharashtra | 11.83 | 5.28 | 24.41 |
| Manipur | 0.40 | 0.05 | 2.85 |
| Meghalaya | 22.71 | 10.75 | 41.75 |
| Mizoram | 0.95 | 0.35 | 2.58 |
| Nagaland | 1.06 | 0.14 | 7.37 |
| Odisha | 1.95 | 1.12 | 3.36 |
| Puducherry | 5.60 | 1.83 | 15.89 |
| Punjab | 2.75 | 0.79 | 9.19 |
| Rajasthan | 4.67 | 1.56 | 13.10 |
| Sikkim | 0.00 | 0.00 | 0.00 |
| Tamil Nadu | 3.21 | 1.83 | 5.56 |
| Telangana | 3.00 | 1.15 | 7.58 |
| Tripura | 10.34 | 2.85 | 31.14 |
| Uttar Pradesh | 1.62 | 0.83 | 3.14 |
| Uttarakhand | 4.71 | 1.52 | 13.68 |
| West Bengal | 3.38 | 1.16 | 9.44 |

**eTable10. Univariable regressions: Individual-level correlates of reaching each cascade step among those with co-morbid diabetes and hypertension[1,2]**

*Aware*

| | RR | 95% CI (low) | 95% CI (high) | P Value |
|---|---|---|---|---|
| Age group, y | | | | |
|     15-19 | 1(Reference) | | | |
|     20-24 | 1.28 | 0.73 | 2.24 | 0.390 |
|     25-29 | 1.18 | 0.69 | 2.03 | 0.547 |
|     30-34 | 1.06 | 0.63 | 1.80 | 0.825 |
|     35-40 | 1.20 | 0.71 | 2.03 | 0.485 |
|     40-44 | 1.29 | 0.77 | 2.17 | 0.330 |
|     45-49 | 1.56 | 0.93 | 2.61 | 0.093 |
|     50-54 | 1.25 | 0.73 | 2.13 | 0.416 |
| Education | | | | |
|     Primary school unfinished | 1(Reference) | | | |
|     Primary school finished | 1.10 | 0.97 | 1.24 | 0.144 |
|     Secondary school unfinished | 1.12 | 1.03 | 1.21 | 0.006 |
|     Secondary school or above | 1.17 | 1.06 | 1.28 | 0.001 |
| Household wealth quintile | | | | |
|     Q1 (Poorest) | 1(Reference) | | | |
|     Q2 | 1.12 | 0.96 | 1.30 | 0.150 |
|     Q3 | 1.23 | 1.06 | 1.42 | 0.006 |
|     Q4 | 1.36 | 1.18 | 1.56 | < 0.001 |
|     Q5 (Richest) | 1.42 | 1.23 | 1.63 | < 0.001 |
| Currently married | 1.07 | 0.96 | 1.19 | 0.221 |
| Female | 1.48 | 1.34 | 1.63 | < 0.001 |
| Urban | 1.22 | 1.13 | 1.31 | < 0.001 |

*Treated*

| | RR | 95% CI (low) | 95% CI (high) | P Value |
|---|---|---|---|---|
| Age group, y | | | | |
| 15-19 | 1(Reference) | | | |
| 20-24 | 1.34 | 0.39 | 4.66 | 0.644 |
| 25-29 | 3.56 | 1.23 | 10.25 | 0.019 |
| 30-34 | 4.12 | 1.47 | 11.54 | 0.007 |
| 35-40 | 7.65 | 2.80 | 20.95 | < 0.001 |
| 40-44 | 11.69 | 4.30 | 31.80 | < 0.001 |
| 45-49 | 18.12 | 6.68 | 49.11 | < 0.001 |
| 50-54 | 14.17 | 5.12 | 39.20 | < 0.001 |
| Education | | | | |
| Primary school unfinished | 1(Reference) | | | |
| Primary school finished | 1.21 | 0.99 | 1.48 | 0.058 |
| Secondary school unfinished | 1.06 | 0.93 | 1.20 | 0.398 |
| Secondary school or above | 1.10 | 0.94 | 1.29 | 0.217 |
| Household wealth quintile | | | | |
| Q1 (Poorest) | 1(Reference) | | | |
| Q2 | 1.62 | 1.24 | 2.13 | < 0.001 |
| Q3 | 1.70 | 1.30 | 2.22 | < 0.001 |
| Q4 | 2.01 | 1.56 | 2.60 | < 0.001 |
| Q5 (Richest) | 2.49 | 1.93 | 3.21 | < 0.001 |
| Currently married | 1.63 | 1.36 | 1.95 | < 0.001 |
| Female | 1.42 | 1.23 | 1.65 | < 0.001 |
| Urban | 1.82 | 1.61 | 2.06 | < 0.001 |

*Controlled*

| | RR | 95% CI (low) | 95% CI (high) | P Value |
|---|---|---|---|---|
| Age group, y | | | | |
| 15-19 | 1(Reference) | | | |
| 20-24 | 1.16 | 0.32 | 4.25 | 0.819 |
| 25-29 | 2.14 | 0.69 | 6.62 | 0.187 |
| 30-34 | 1.14 | 0.36 | 3.63 | 0.821 |
| 35-40 | 2.27 | 0.78 | 6.55 | 0.131 |
| 40-44 | 3.24 | 1.14 | 9.19 | 0.027 |
| 45-49 | 4.78 | 1.70 | 13.41 | 0.003 |
| 50-54 | 3.31 | 1.08 | 10.18 | 0.036 |
| Education | | | | |
| Primary school unfinished | 1(Reference) | | | |
| Primary school finished | 1.25 | 0.82 | 1.92 | 0.305 |
| Secondary school unfinished | 0.93 | 0.71 | 1.21 | 0.574 |
| Secondary school or above | 1.16 | 0.84 | 1.58 | 0.370 |
| Household wealth quintile | | | | |
| Q1 (Poorest) | 1(Reference) | | | |
| Q2 | 1.05 | 0.67 | 1.67 | 0.824 |
| Q3 | 1.00 | 0.63 | 1.60 | 0.984 |
| Q4 | 1.27 | 0.82 | 1.96 | 0.287 |
| Q5 (Richest) | 1.41 | 0.91 | 2.19 | 0.123 |
| Currently married | 1.70 | 1.17 | 2.46 | 0.005 |
| Female | 1.69 | 1.25 | 2.29 | < 0.001 |
| Urban | 1.91 | 1.48 | 2.47 | < 0.001 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval; Q = Quintile

[1] These regressions were run among those with co-morbid diabetes and hypertension, whereby aware, treated, and controlled refers to being aware, treated, and controlled for both conditions.

[2] The regressions included all variables listed in the table and an additional binary indicator for each of 640 districts (district-level fixed effects) as independent variables. All standard errors were adjusted for clustering at the level of a primary sampling unit.

**eTable11. Individual-level correlates of reaching each cascade step among those with co-morbid diabetes and hypertension, using sampling weights[1,2]**

*Aware*

| | RR (95% CI) | P Value |
|---|---|---|
| Age group, y | | |
| 15-19 | 1(Reference) | |
| 20-24 | 0.60 (0.38-0.95) | 0.03 |
| 25-29 | 0.75 (0.51-1.12) | 0.16 |
| 30-34 | 0.55 (0.37-0.82) | 0.003 |
| 35-40 | 0.73 (0.50-1.07) | 0.107 |
| 40-44 | 0.80 (0.55-1.16) | 0.24 |
| 45-49 | 1.04 (0.71-1.51) | 0.852 |
| 50-54 | 1.33 (0.91-1.95) | 0.143 |
| Education | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 0.96 (0.85-1.07) | 0.453 |
| Secondary school unfinished | 1.10 (1.02-1.18) | 0.016 |
| Secondary school or above | 1.02 (0.93-1.12) | 0.612 |
| Household wealth quintile | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 1.20 (1.06-1.36) | 0.004 |
| Q3 | 1.31 (1.16-1.48) | <0.001 |
| Q4 | 1.51 (1.34-1.71) | <0.001 |
| Q5 (Richest) | 1.83 (1.61-2.08) | <0.001 |
| Currently married | 1.02 (0.92-1.14) | 0.698 |
| Female | 1.70 (1.59-1.81) | <0.001 |
| Urban | 1.43 (1.33-1.53) | <0.001 |

*Treated*

|  | RR (95% CI) | P Value |
|---|---|---|
| **Age group, y** | | |
| 15-19 | 1(Reference) | |
| 20-24 | 0.53 (0.15-1.94) | 0.34 |
| 25-29 | 0.73 (0.24-2.17) | 0.566 |
| 30-34 | 0.94 (0.32-2.74) | 0.906 |
| 35-40 | 1.19 (0.41-3.43) | 0.752 |
| 40-44 | 1.90 (0.66-5.47) | 0.231 |
| 45-49 | 2.71 (0.94-7.76) | 0.064 |
| 50-54 | 3.72 (1.29-10.73) | 0.015 |
| **Education** | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 1.04 (0.89-1.22) | 0.611 |
| Secondary school unfinished | 1.09 (0.99-1.22) | 0.093 |
| Secondary school or above | 1.02 (0.89-1.15) | 0.813 |
| **Household wealth quintile** | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 1.46 (1.21-1.76) | <0.001 |
| Q3 | 1.56 (1.29-1.88) | <0.001 |
| Q4 | 1.92 (1.60-2.32) | <0.001 |
| Q5 (Richest) | 2.63 (2.17-3.19) | <0.001 |
| Currently married | 1.22 (1.05-1.42) | 0.009 |
| Female | 1.70 (1.55-1.85) | <0.001 |
| Urban | 1.85 (1.68-2.04) | <0.001 |

*Controlled*

|  | RR (95% CI) | P Value |
|---|---|---|
| Age group, y | | |
| 15-19 | 1(Reference) | |
| 20-24 | 0.52 (0.13-2.19) | 0.375 |
| 25-29 | 0.52 (0.15-1.78) | 0.295 |
| 30-34 | 0.13 (0.04-0.47) | 0.002 |
| 35-40 | 0.19 (0.06-0.64) | 0.007 |
| 40-44 | 0.33 (0.10-1.09) | 0.069 |
| 45-49 | 0.43 (0.13-1.42) | 0.167 |
| 50-54 | 0.92 (0.27-3.08) | 0.889 |
| Education | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 0.55 (0.37-0.81) | 0.003 |
| Secondary school unfinished | 0.99 (0.79-1.24) | 0.906 |
| Secondary school or above | 1.45 (1.10-1.92) | 0.009 |
| Household wealth quintile | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 0.46 (0.33-0.63) | <0.001 |
| Q3 | 0.44 (0.31-0.61) | <0.001 |
| Q4 | 0.29 (0.21-0.42) | <0.001 |
| Q5 (Richest) | 0.71 (0.51-1.01) | 0.054 |
| Currently married | 3.07 (2.08-4.53) | <0.001 |
| Female | 2.71 (2.20-3.34) | <0.001 |
| Urban | 1.48 (1.21-1.81) | <0.001 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval; Q = Quintile

[1] These regressions were run among those with co-morbid diabetes and hypertension, whereby aware, treated, and controlled refers to being aware, treated, and controlled for both conditions.

[2] The regressions included all variables listed in the table and an additional binary indicator for each of 640 districts (district-level fixed effects) as independent variables. All standard errors were adjusted for clustering at the level of a primary sampling unit.

**eTable12. Individual-level correlates of reaching each cascade step among those with co-morbid diabetes and hypertension, women only[1,2]**

*Aware*

|  | RR (95% CI) | P Value |
|---|---|---|
| Age group, y | | |
| 15-19 | 1(Reference) | |
| 20-24 | 1.49 (0.77-2.88) | 0.238 |
| 25-29 | 1.37 (0.72-2.64) | 0.339 |
| 30-34 | 1.24 (0.65-2.36) | 0.517 |
| 35-40 | 1.33 (0.70-2.53) | 0.377 |
| 40-44 | 1.40 (0.74-2.65) | 0.295 |
| 45-49 | 1.66 (0.88-3.14) | 0.115 |
| Education | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 1.11 (0.97-1.26) | 0.121 |
| Secondary school unfinished | 1.14 (1.04-1.25) | 0.005 |
| Secondary school or above | 1.19 (1.06-1.35) | 0.004 |
| Household wealth quintile | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 1.08 (0.92-1.28) | 0.347 |
| Q3 | 1.18 (1.01-1.39) | 0.043 |
| Q4 | 1.34 (1.14-1.57) | <0.001 |
| Q5 (Richest) | 1.34 (1.13-1.58) | 0.001 |
| Currently married | 1.08 (0.96-1.22) | 0.182 |
| Urban | 1.24 (1.13-1.35) | <0.001 |

*Treated*

| | RR (95% CI) | P Value |
|---|---|---|
| Age group, y | | |
| 15-19 | 1(Reference) | |
| 20-24 | 0.41 (0.12-1.36) | 0.146 |
| 25-29 | 0.63 (0.24-1.70) | 0.366 |
| 30-34 | 0.56 (0.21-1.45) | 0.23 |
| 35-40 | 0.80 (0.32-2.05) | 0.647 |
| 40-44 | 1.08 (0.43-2.71) | 0.876 |
| 45-49 | 1.45 (0.58-3.65) | 0.431 |
| Education | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 1.11 (0.91-1.37) | 0.311 |
| Secondary school unfinished | 1.06 (0.92-1.22) | 0.446 |
| Secondary school or above | 1.10 (0.91-1.33) | 0.319 |
| Household wealth quintile | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 1.45 (1.08-1.95) | 0.014 |
| Q3 | 1.56 (1.17-2.09) | 0.002 |
| Q4 | 1.82 (1.37-2.41) | <0.001 |
| Q5 (Richest) | 2.03 (1.52-2.72) | <0.001 |
| Currently married | 1.14 (0.95-1.36) | 0.17 |
| Urban | 1.60 (1.39-1.84) | <0.001 |

*Controlled*

|  | RR (95% CI) | P Value |
|---|---|---|
| **Age group, y** | | |
| 15-19 | 1(Reference) | |
| 20-24 | 0.43 (0.12-1.57) | 0.201 |
| 25-29 | 0.30 (0.09-0.97) | 0.045 |
| 30-34 | 0.13 (0.04-0.43) | 0.001 |
| 35-40 | 0.21 (0.07-0.64) | 0.006 |
| 40-44 | 0.25 (0.09-0.72) | 0.01 |
| 45-49 | 0.35 (0.12-0.99) | 0.049 |
| **Education** | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 1.20 (0.76-1.89) | 0.443 |
| Secondary school unfinished | 0.87 (0.62-1.23) | 0.433 |
| Secondary school or above | 1.22 (0.78-1.91) | 0.389 |
| **Household wealth quintile** | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 0.98 (0.58-1.67) | 0.953 |
| Q3 | 0.98 (0.59-1.62) | 0.932 |
| Q4 | 1.40 (0.86-2.28) | 0.181 |
| Q5 (Richest) | 1.29 (0.76-2.21) | 0.346 |
| Currently married | 1.31 (0.86-2.01) | 0.213 |
| Urban | 1.67 (1.22-2.29) | 0.001 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval; Q = Quintile

[1] These regressions were run among those with co-morbid diabetes and hypertension, whereby aware, treated, and controlled refers to being aware, treated, and controlled for both conditions.

[2] The regressions included all variables listed in the table and an additional binary indicator for each of 640 districts (district-level fixed effects) as independent variables. All standard errors were adjusted for clustering at the level of a primary sampling unit.

**eTable13. Individual-level correlates of reaching each cascade step among those with co-morbid diabetes and hypertension, men only[1,2]**

*Aware*

| | RR (95% CI) | P Value |
|---|---|---|
| Age group, y | | |
| 15-19 | 1(Reference) | |
| 20-24 | 0.43 (0.09-2.02) | 0.283 |
| 25-29 | 0.71 (0.21-2.35) | 0.575 |
| 30-34 | 0.47 (0.14-1.53) | 0.209 |
| 35-40 | 0.75 (0.25-2.28) | 0.609 |
| 40-44 | 1.04 (0.36-3.01) | 0.948 |
| 45-49 | 1.32 (0.45-3.87) | 0.618 |
| 50-54 | 1.47 (0.50-4.33) | 0.48 |
| Education | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 1.14 (0.66-1.96) | 0.647 |
| Secondary school unfinished | 1.24 (0.91-1.67) | 0.17 |
| Secondary school or above | 1.28 (0.91-1.81) | 0.153 |
| Household wealth quintile | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 1.22 (0.75-2.00) | 0.424 |
| Q3 | 1.25 (0.76-2.04) | 0.378 |
| Q4 | 1.21 (0.73-2.00) | 0.466 |
| Q5 (Richest) | 1.63 (0.97-2.74) | 0.064 |
| Currently married | 0.75 (0.47-1.19) | 0.222 |
| Urban | 1.31 (0.99-1.72) | 0.055 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval; Q = Quintile

[1] These regressions were run among those with co-morbid diabetes and hypertension, whereby aware, treated, and controlled refers to being aware, treated, and controlled for both conditions.

[2] The regressions included all variables listed in the table and an additional binary indicator for each of 640 districts (district-level fixed effects) as independent variables. All standard errors were adjusted for clustering at the level of a primary sampling unit.

*Treated[1]*

| | RR (95% CI) | P Value |
|---|---|---|
| Age group, y | | |
| 15-24 | 1(Reference) | |
| 25-34 | 1.08 (0.17-7.03) | 0.934 |
| 35-44 | 2.19 (0.31-15.56) | 0.432 |
| 45-54 | 4.25 (0.62-29.38) | 0.142 |
| Education | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 2.01 (0.80-5.01) | 0.136 |
| Secondary school unfinished | 1.38 (0.78-2.44) | 0.273 |
| Secondary school or above | 1.62 (0.85-3.08) | 0.141 |
| Household wealth quintile | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 0.87 (0.40-1.88) | 0.724 |
| Q3 | 0.61 (0.28-1.35) | 0.224 |
| Q4 | 0.79 (0.35-1.79) | 0.573 |
| Q5 (Richest) | 1.19 (0.52-2.72) | 0.682 |
| Currently married | 0.94 (0.43-2.08) | 0.885 |
| Urban | 1.74 (1.11-2.72) | 0.016 |

[1] Age groups were larger in this regression (10 years) due to the fact that the age groups used in previous regressions (5 years) were too small for this subgroup, resulting in empty groups.

*Controlled[1]*

|  | RR (95% CI) | P Value |
|---|---|---|
| Age group, y | | |
| 15-28 | 1(Reference) | |
| 29-41 | 0.19 (0.04-0.89) | 0.035 |
| 42-54 | 0.60 (0.17-2.14) | 0.43 |
| Education | | |
| Primary school unfinished | 1(Reference) | |
| Primary school finished | 0.92 (0.07-12.75) | 0.95 |
| Secondary school unfinished | 2.20 (0.41-11.68) | 0.355 |
| Secondary school or above | 2.65 (0.45-15.75) | 0.284 |
| Household wealth quintile | | |
| Q1 (Poorest) | 1(Reference) | |
| Q2 | 0.20 (0.05-0.76) | 0.019 |
| Q3 | 0.17 (0.03-0.79) | 0.024 |
| Q4 | 0.09 (0.02-0.56) | 0.009 |
| Q5 (Richest) | 0.32 (0.07-1.49) | 0.148 |
| Currently married | 1.88 (0.29-12.18) | 0.508 |
| Urban | 1.98 (0.84-4.65) | 0.117 |

[1] Age groups were larger in this regression (10 years) due to the fact that the age groups used in previous regressions (5 years) were too small for this subgroup, resulting in empty groups.

**eTable14. Diabetes cascade estimates with comorbidities**

| Care indicator | Comorbidity | Estimate (in %) | Low CI (in %) | High CI (in %) |
|---|---|---|---|---|
| Aware | No other CVD risk factor | 55.83 | 53.04 | 58.58 |
| Treated | No other CVD risk factor | 39.92 | 37.35 | 42.55 |
| Controlled | No other CVD riskfactor | 27.86 | 25.46 | 30.41 |
| Aware | One other CVD risk factor | 52.85 | 50.30 | 55.38 |
| Treated | One other CVD risk factor | 41.56 | 39.04 | 44.12 |
| Controlled | One other CVD risk factor | 24.22 | 21.86 | 26.75 |
| Aware | Two other CVD risk factors | 50.50 | 46.84 | 54.15 |
| Treated | Two other CVD risk factors | 43.87 | 40.21 | 47.59 |
| Controlled | Two other CVD risk factors | 21.59 | 18.87 | 24.58 |
| Aware | Three other CVD risk factors | 49.07 | 40.72 | 57.46 |
| Treated | Three other CVD risk factors | 40.74 | 32.67 | 49.35 |
| Controlled | Three other CVD risk factors | 18.56 | 12.23 | 27.14 |
| Aware | No Asthma/Anemia | 49.06 | 47.14 | 50.98 |
| Treated | No Asthma/Anemia | 40.02 | 38.17 | 41.89 |
| Controlled | No Asthma/Anemia | 22.20 | 20.67 | 23.81 |
| Aware | Asthma or Anemia | 66.13 | 62.52 | 69.57 |
| Treated | Asthma or Anemia | 46.24 | 42.02 | 50.51 |
| Controlled | Asthma or Anemia | 31.08 | 27.37 | 35.05 |
| Aware | Asthma and Anemia | 87.94 | 79.68 | 93.13 |
| Treated | Asthma and Anemia | 68.05 | 56.63 | 77.65 |
| Controlled | Asthma and Anemia | 51.48 | 38.79 | 63.99 |

**eTable15. Hypertension cascade estimates with comorbidities**

| Care indicator | Comorbidity | Estimate (in %) | Low CI (in %) | High CI (in %) |
|---|---|---|---|---|
| Screened | No other CVD risk factor | 78.08 | 77.18 | 78.96 |
| Aware | No other CVD risk factor | 48.69 | 47.44 | 49.94 |
| Treated | No other CVD risk factor | 12.51 | 12.00 | 13.04 |
| Controlled | No other CVD risk factor | 8.42 | 8.00 | 8.85 |
| Screened | One other CVD risk factor | 73.18 | 72.07 | 74.26 |
| Aware | One other CVD risk factor | 39.12 | 37.79 | 40.46 |
| Treated | One other CVD risk factor | 13.29 | 12.55 | 14.06 |
| Controlled | One other CVD risk factor | 6.95 | 6.39 | 7.55 |
| Screened | Two other CVD risk factors | 78.95 | 76.65 | 81.08 |
| Aware | Two other CVD risk factors | 43.44 | 40.77 | 46.15 |
| Treated | Two other CVD risk factors | 23.56 | 21.57 | 25.66 |
| Controlled | Two other CVD risk factors | 9.93 | 8.57 | 11.49 |
| Screened | Three other CVD risk factors | 84.75 | 78.25 | 89.56 |
| Aware | Three other CVD risk factors | 48.87 | 39.18 | 58.66 |
| Treated | Three other CVD risk factors | 25.15 | 18.09 | 33.83 |
| Controlled | Three other CVD risk factors | 8.54 | 4.61 | 15.27 |
| Screened | No Asthma/Anemia | 74.90 | 74.07 | 75.72 |
| Aware | No Asthma/Anemia | 41.94 | 40.80 | 43.10 |
| Treated | No Asthma/Anemia | 13.09 | 12.59 | 13.61 |
| Controlled | No Asthma/Anemia | 7.36 | 6.97 | 7.76 |
| Screened | Asthma or Anemia | 82.89 | 81.80 | 83.93 |
| Aware | Asthma or Anemia | 56.79 | 55.26 | 58.30 |
| Treated | Asthma or Anemia | 17.59 | 16.68 | 18.55 |
| Controlled | Asthma or Anemia | 10.99 | 10.32 | 11.70 |
| Screened | Asthma and Anemia | 89.33 | 84.09 | 92.99 |
| Aware | Asthma and Anemia | 64.93 | 57.92 | 71.36 |
| Treated | Asthma and Anemia | 27.60 | 20.93 | 35.44 |
| Controlled | Asthma and Anemia | 13.14 | 9.46 | 17.97 |

**eTable16. Combined cascade estimates with comorbidities**

| Care indicator | Comorbidity | Estimate (in %) | Low CI (in %) | High CI (in %) |
|---|---|---|---|---|
| Aware | No other CVD risk factor | 28.88 | 26.14 | 31.79 |
| Treated | No other CVD risk factor | 13.68 | 11.61 | 16.06 |
| Controlled | No other CVD risk factor | 3.29 | 2.32 | 4.65 |
| Aware | One other CVD risk factor | 29.45 | 26.40 | 32.70 |
| Treated | One other CVD risk factor | 18.21 | 15.72 | 21.00 |
| Controlled | One other CVD risk factor | 4.45 | 3.03 | 6.50 |
| Aware | Two other CVD risk factors | 24.21 | 16.93 | 33.36 |
| Treated | Two other CVD risk factors | 13.90 | 8.21 | 22.56 |
| Controlled | Two other CVD risk factors | 1.41 | 0.39 | 4.95 |
| Aware | No Asthma/Anemia | 26.30 | 24.05 | 28.67 |
| Treated | No Asthma/Anemia | 15.10 | 13.22 | 17.19 |
| Controlled | No Asthma/Anemia | 3.40 | 2.39 | 4.82 |
| Aware | Asthma or Anemia | 38.36 | 33.53 | 43.43 |
| Treated | Asthma or Anemia | 19.60 | 16.34 | 23.34 |
| Controlled | Asthma or Anemia | 5.21 | 3.69 | 7.30 |
| Aware | Asthma and Anemia | 73.08 | 53.40 | 86.54 |
| Treated | Asthma and Anemia | 35.92 | 16.25 | 61.82 |
| Controlled | Asthma and Anemia | 4.97 | 1.91 | 12.30 |

**eTable17. 'Treated' for tobacco consumption with comorbidities**

| State | Estimate (in %) | Low CI (in %) | Upper CI (in %) | State |
|---|---|---|---|---|
| Treated | No other CVD risk factor | 50.87 | 48.48 | 53.26 |
| Treated | One other CVD risk factor | 55.99 | 52.85 | 59.09 |
| Treated | Two other CVD risk factors | 58.94 | 51.41 | 66.07 |
| Treated | Three other CVD risk factors | 47.76 | 27.76 | 68.50 |
| Treated | No Asthma/Anemia | 51.94 | 49.70 | 54.18 |
| Treated | Asthma or Anemia | 55.27 | 51.69 | 58.79 |
| Treated | Asthma and Anemia | 72.18 | 54.67 | 84.81 |

**eTable 18. Univariable regressions: The association of having multiple cardiovascular disease risk factors with the probability of reaching each cascade step[1]**

| Has hypertension and … | BP ever measured | | Aware of hypertension | | Hypertension treated | | Hypertension controlled | |
|---|---|---|---|---|---|---|---|---|
| | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| diabetes | 1.34 (1.27-1.43) | < 0.001 | 1.10 (1.08-1.12) | < 0.001 | 1.84 (1.77-1.91) | < 0.001 | 1.34 (1.27-1.43) | < 0.001 |
| obesity | 1.15 (1.13-1.17) | < 0.001 | 1.07 (1.05-1.08) | < 0.001 | 1.56 (1.51-1.60) | < 0.001 | 1.16 (1.12-1.21) | < 0.001 |
| smokes | 0.90 (0.88-0.92) | < 0.001 | 0.79 (0.77-0.80) | < 0.001 | 0.81 (0.78-0.84) | < 0.001 | 0.72 (0.69-0.76) | < 0.001 |
| Has diabetes and … | - | | Aware of diabetes | | Diabetes treated | | Diabetes controlled | |
| | - | - | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| hypertension | - | - | 0.97 (0.95-1.00) | 0.052 | 1.08 (1.05-1.12) | < 0.001 | 0.82 (0.78-0.86) | < 0.001 |
| obesity | - | - | 0.97 (0.94-1.00) | 0.060 | 1.07 (1.03 -1.11) | < 0.001 | 0.85 (0.80-0.90) | < 0.001 |
| smokes | - | - | 0.93 (0.90-0.97) | < 0.001 | 0.89 (0.85-0.93) | < 0.001 | 0.89 (0.84-0.96) | 0.001 |
| Has diabetes, hypertension, and … | - | | Aware of both | | Both treated | | Both controlled | |
| | - | - | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| obesity | - | - | 1.12 (1.05-1.20) | 0.001 | 2.34 (2.10-2.64) | < 0.001 | 2.04 (1.62-2.55) | < 0.001 |
| smokes | - | - | 0.80 (0.73-0.88) | < 0.001 | 0.77 (0.66-0.90) | 0.001 | 0.74 (0.53-1.02) | 0.070 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval

[1] The univariable regressions were run separately for each care cascade step and contained one of the listed indicators in the table (hypertension, diabetes, smoking) and a binary indicator for each of 640 districts (district-level fixed effects) as independent variables. Standard errors were adjusted for clustering at the level of a primary sampling unit.

**eTable 19. The association of having multiple cardiovascular disease risk factors with the probability of reaching each cascade step using sampling weights[1]**

| Has hypertension and … | BP ever measured | | Aware of hypertension | | Hypertension treated | | Hypertension controlled | |
|---|---|---|---|---|---|---|---|---|
| | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| diabetes | 1.04 (1.03-1.06) | <0.001 | 1.11 (1.09-1.13) | <0.001 | 1.58 (1.54-1.63) | <0.001 | 1.46 (1.40-1.53) | <0.001 |
| obesity | 1.02 (1.01-1.04) | <0.001 | 1.02 (1.01-1.04) | 0.006 | 1.42 (1.39-1.46) | <0.001 | 1.16 (1.12-1.20) | <0.001 |
| smokes | 0.98 (0.97-0.99) | 0.001 | 0.99 (0.98-1.01) | 0.32 | 0.91 (0.89-0.94) | <0.001 | 0.85 (0.82-0.89) | <0.001 |
| Has diabetes and … | - | | Aware of diabetes | | Diabetes treated | | Diabetes controlled | |
| | - | - | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| hypertension | - | - | 0.98 (0.95-1.00) | 0.108 | 1.07 (1.04-1.10) | <0.001 | 0.91 (0.88-0.95) | <0.001 |
| obesity | - | - | 0.94 (0.92-0.97) | <0.001 | 0.97 (0.94-1.00) | 0.084 | 0.83 (0.80-0.87) | <0.001 |
| smokes | - | - | 0.99 (0.95-1.02) | 0.397 | 0.97 (0.94-1.01) | 0.106 | 1.08 (1.03-1.13) | 0.003 |
| Has diabetes, hypertension, and … | - | | Aware of both | | Both treated | | Both controlled | |
| | - | - | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| obesity | - | - | 1.08 (1.02-1.14) | 0.409 | 1.48 (1.37-1.60) | <0.001 | 1.49 (1.26-1.76) | <0.001 |
| smokes | - | - | 0.98 (0.91-1.05) | 0.893 | 0.79 (0.71-0.87) | <0.001 | 0.73 (0.58-0.92) | 0.006 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval

[1] The regressions were run separately for each care cascade step and – in addition to the cardiovascular disease risk factor shown in the table – contained age group, household wealth quintile, education, currently married, urban vs. rural location, sex, and a binary indicator for each of 640 districts (district-level fixed effects) as independent variables. Standard errors were adjusted for clustering at the level of a primary sampling unit and sampling weights were used that also accounted for the lower probability of sampling men.

**eTable 20. The association of having multiple cardiovascular disease risk factors with the probability of reaching each cascade step, men only[1]**

| Has hypertension and … | BP ever measured | | Aware of hypertension | | Hypertension treated | | Hypertension controlled | |
|---|---|---|---|---|---|---|---|---|
| | RR (95% CI) | P | RR (95% CI) | P | RR (95% CI) | P | RR (95% CI) | P |
| diabetes | 1.06 (1.04-1.09) | <0.001 | 1.18 (1.11-1.26) | <0.001 | 1.59 (1.43-1.76) | <0.001 | 1.57 (1.33-1.85) | <0.001 |
| obesity | 1.03 (1.01-1.05) | 0.007 | 1.06 (1.01-1.11) | 0.025 | 1.37 (1.25-1.50) | <0.001 | 1.12 (0.97-1.29) | 0.114 |
| smokes | 0.98 (0.96-1.00) | 0.018 | 0.99 (0.95-1.03) | 0.634 | 0.93 (0.85-1.02) | 0.109 | 0.89 (0.78-1.01) | 0.06 |
| **Has diabetes and …** | - | | **Aware of diabetes** | | **Diabetes treated** | | **Diabetes controlled** | |
| | - | - | RR (95% CI) | P | RR (95% CI) | P | RR (95% CI) | P |
| hypertension | - | - | 0.93 (0.86-0.99) | 0.029 | 0.98 (0.89-1.07) | 0.586 | 0.82 (0.71-0.94) | 0.004 |
| obesity | - | - | 0.93 (0.85-1.01) | 0.071 | 0.95 (0.85-1.05) | 0.324 | 0.81 (0.68-0.97) | 0.024 |
| smokes | - | - | 0.94 (0.88-1.01) | 0.104 | 0.92 (0.84-1.00) | 0.059 | 0.94 (0.83-1.07) | 0.354 |
| **Has diabetes, hypertension, and …** | - | | **Aware of both** | | **Both treated** | | **Both controlled** | |
| | - | - | RR (95% CI) | P | RR (95% CI) | P | RR (95% CI) | P |
| obesity | - | - | 1.06 (0.84-1.34) | 0.609 | 1.30 (0.89-1.88) | 0.17 | 1.72 (0.80-3.67) | 0.163 |
| smokes | - | - | 1.00 (0.80-1.25) | 0.998 | 0.90 (0.64-1.26) | 0.532 | 1.00 (0.42-2.36) | 0.999 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval

[1] The regressions were run separately for each care cascade step and – in addition to the cardiovascular disease risk factor shown in the table – contained age group, household wealth quintile, education, currently married, urban vs. rural location, sex, and a binary indicator for each of 640 districts (district-level fixed effects) as independent variables. Standard errors were adjusted for clustering at the level of a primary sampling unit. The analysis was only performed in the male sample.

**eTable 21. The association of having multiple cardiovascular disease risk factors with the probability of reaching each cascade step, women only[1]**

| Has hypertension and … | BP ever measured | | Aware of hypertension | | Hypertension treated | | Hypertension controlled | |
|---|---|---|---|---|---|---|---|---|
| | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| diabetes | 1.04 (1.03-1.05) | <0.001 | 1.11 (1.08-1.13) | <0.001 | 1.50 (1.44-1.56) | <0.001 | 1.29 (1.21-1.37) | <0.001 |
| obesity | 1.02 (1.01-1.03) | <0.001 | 1.01 (0.99-1.02) | 0.421 | 1.29 (1.25-1.33) | <0.001 | 1.07 (1.02-1.12) | 0.003 |
| smokes | 0.99 (0.98-1.00) | 0.15 | 0.99 (0.96-1.01) | 0.193 | 1.00 (0.95-1.05) | 0.963 | 1.01 (0.95-1.08) | 0.739 |
| **Has diabetes and …** | - | | **Aware of diabetes** | | **Diabetes treated** | | **Diabetes controlled** | |
| | - | - | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| hypertension | - | - | 0.96 (0.93-0.99) | 0.008 | 1.00 (0.96-1.04) | 0.981 | 0.83 (0.78-0.88) | <0.001 |
| obesity | - | - | 0.91 (0.88-0.94) | <0.001 | 0.93 (0.90-0.97) | <0.001 | 0.82 (0.77-0.87) | <0.001 |
| smokes | - | - | 1.07 (1.02-1.13) | 0.007 | 1.06 (1.00-1.13) | 0.069 | 1.10 (1.00-1.20) | 0.045 |
| **Has diabetes, hypertension, and …** | - | | **Aware of both** | | **Both treated** | | **Both controlled** | |
| | - | - | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* | *RR (95% CI)* | *P* |
| obesity | - | - | 1.00 (0.93-1.08) | 0.965 | 1.30 (1.16-1.45) | <0.001 | 1.20 (0.92-1.57) | 0.174 |
| smokes | - | - | 1.03 (0.90-1.17) | 0.658 | 1.03 (0.83-1.27) | 0.794 | 0.99 (0.60-1.64) | 0.969 |

Abbreviations: RR = Relative Risk; CI = Confidence Interval

[1] The regressions were run separately for each care cascade step and – in addition to the cardiovascular disease risk factor shown in the table – contained age group, household wealth quintile, education, currently married, urban vs. rural location, sex, and a binary indicator for each of 640 districts (district-level fixed effects) as independent variables. Standard errors were adjusted for clustering at the level of a primary sampling unit. The analysis was only performed in the female sample.

**eFigure 1. Combined care cascade: states' gross domestic product (GDP) per capita and each care cascade step[1,2,3,4,5,6,7]**
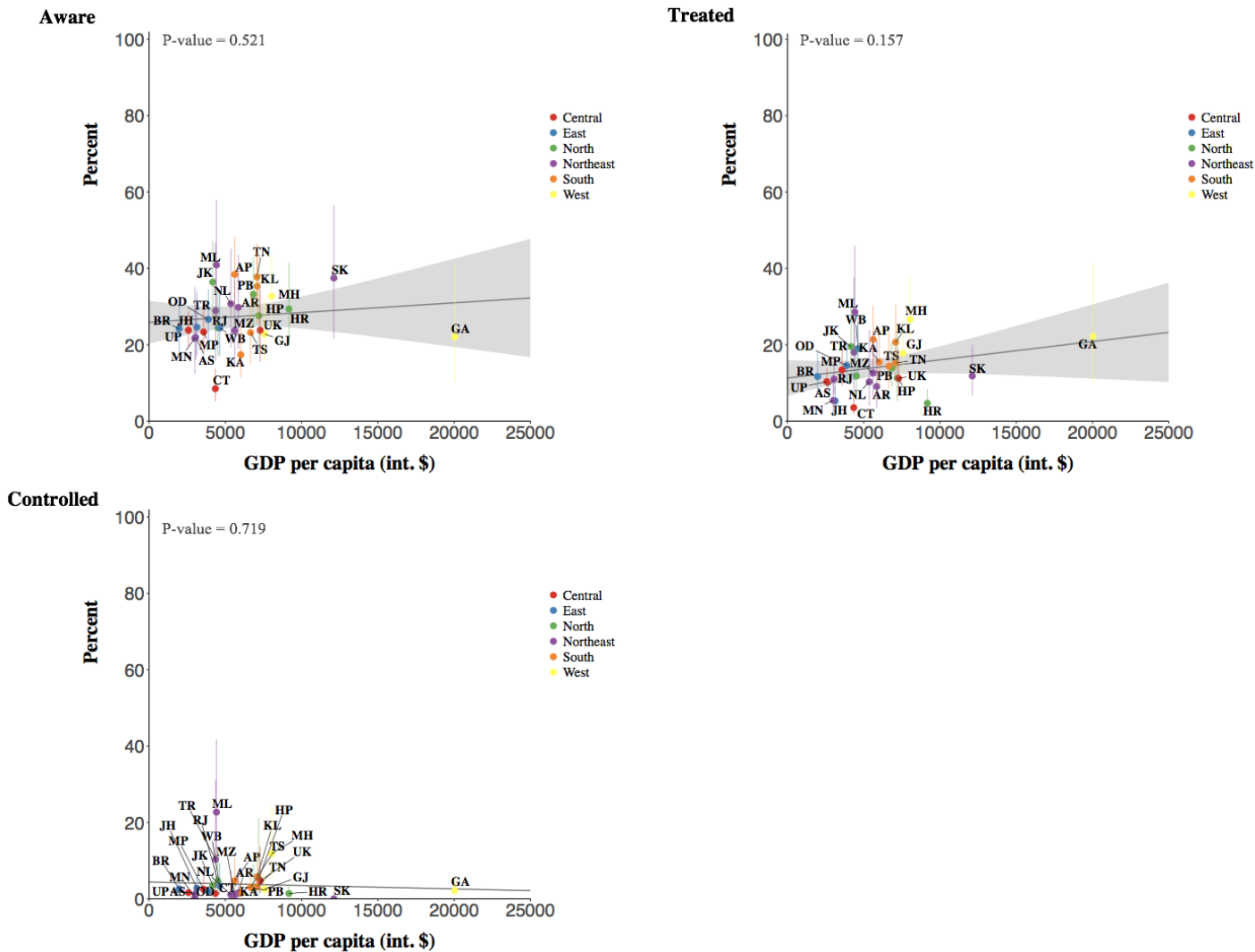


GDP=Gross Domestic Product; int. = international.

[1]State population estimates from the 2011 Census of India and GDP data (for 2013/2014) from the Central Statistics Office, Ministry of Statistics and Programme Implementation, Government of India were used.(3, 4) Indian Rupees were converted to 2015 international dollars in accordance with the purchasing power parity conversion factors published by the World Bank.(5)

[2] The grey ribbon represents the point-wise 95% prediction interval, whereas the vertical bars depict 95% confidence intervals.

[3]P-values refer to the regression coefficient of the ordinary least squares regression line (with each state having the same weight) shown in the figure.

[4]States were divided into regions in accordance with their allocation to Zonal Councils by the Government of India.(6)

[5]Union Territories were excluded from this figure, since GDP per capita information was not available for three of seven Union Territories.

[6]AP indicates Andhra Pradesh; AR, Arunachal Pradesh; AS, Assam; BR, Bihar; CT, Chhattisgarh; GA, Goa; GJ, Gujarat; HR, Haryana; HP, Himachal Pradesh; JH, Jharkhand; JK, Jammu and Kashmir; KA, Karnataka; KL,

Kerala; MP, Madhya Pradesh; MH, Maharashtra; MN, Manipur; ML, Meghalaya; MZ, Mizoram; NL, Nagaland; OD, Odisha (Orissa); PB, Punjab; RJ, Rajasthan; SK, Sikkim; TN, Tamil Nadu; TS, Telangana State; TR, Tripura; UP, Uttar Pradesh; UK, Uttarakhand (Uttaranchal); WB, West Bengal

[7]Estimates can be found in **eTable4-6**.

**eFigure 2. 'Treated' for smoking tobacco with additional CVD-risk factors or non-CVD morbidites[1,2]**
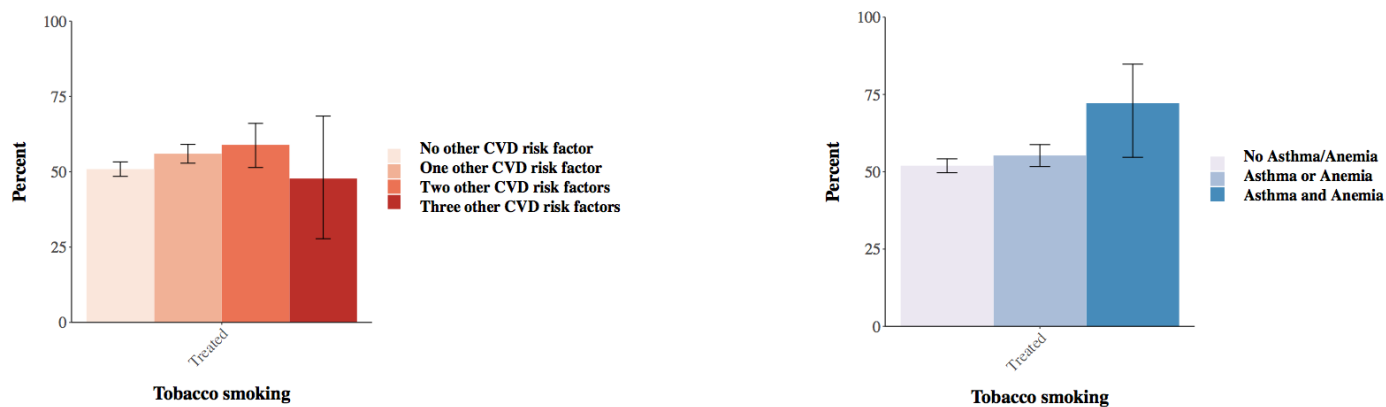


[1]Estimates can be found in **eTable17.**
[2]All estimates are weighted using sampling weights that also accounted for the lower probability of sampling men.

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