# Supplementary Material

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**Supplementary Methods**
**Detailed information about sampling selection**
From September 2015 to March 2020, we selected 284 sites (168 rural counties, 116 urban districts) from all the 31 provinces based on their geographic locations within each province, the number of residents living in rural or urban area, minority ethnicity distribution, quality of disease and death registries, and local capacity to support the project (see **Figure** below). Specifically, staff in the provincial coordinating office collected basic information (geographic information, economic development, population size, and minority ethnicity distribution) about the selected sites in their province; reported this information to the national coordinating office; and discussed with staff in the national coordinating office to determine the study sites. In each site, about 8-9 towns or sub-districts were chosen according to their population size, population stability (e.g., no sudden significant change in the number of residents), local staff's commitment, and ability to perform the screening. Initial screening stations were set up in each town or sub-district health center.

Potentially eligible participants were identified in each town or sub-district through official residential records and then invited by local community workers via telephone or extensive publicity campaigns on television and in newspaper. All participants were required to bring their identity cards to the screening clinics to verify that they met the inclusion criteria: 1) aged 35 to 75 years; 2) registered in the selected site's Hukou (a record officially identifying a person as a resident of an area), and had lived in the selected regions at least 6 months during the last 12 months. After the verification, eligible participants who had signed the informed consent agreement were then enrolled in the project (1).

**Figure.** Study sites in China PEACE Million Persons Project

**Supplementary Table 1. Characteristics of participants in the initial screening, those excluded, and the study population included in the analysis**

| Characteristics | Screened Participants | Excluded | Study population |
|---|---|---|---|
| N (%) | 3 110 789 (100) | 205 875 (6.6) | 2 904 914 (93.4) |
| Age group, years | | | |
| 35-44 | 464 485 (14.9) | 33 378 (16.2) | 431 107 (14.8) |
| 45-54 | 964 740 (31.0) | 64 517 (31.3) | 900 223 (31.0) |
| 55-64 | 976 544 (31.4) | 62 873 (30.6) | 913 671 (31.5) |
| 65-75 | 705 020 (22.7) | 45 107 (21.9) | 659 913 (22.7) |
| Women | 1 868 114 (60.0) | 107 864 (52.4) | 1 760 250 (60.6) |
| Urbanity | | | |
| Urban | 1 240 659 (39.9) | 80 084 (38.9) | 1 160 575 (40.0) |
| Rural | 1 870 130 (60.1) | 125 791 (61.1) | 1 744 339 (60.0) |
| Region | | | |
| Eastern | 1 296 506 (41.7) | 85 360 (41.5) | 1 211 146 (41.7) |
| Central | 725 048 (23.3) | 46 485 (22.6) | 678 563 (23.4) |
| Western | 1 089 235 (35.0) | 74 030 (35.9) | 1 015 205 (34.9) |
| Household income, Yuan/year | | | |
| <10 000 | 578 463 (18.6) | 37 806 (18.4) | 540 657 (18.6) |
| 10 000–50 000 | 1 693 842 (54.5) | 112943 (54.9) | 1 580 899 (54.4) |
| >50 000 | 538 927 (17.3) | 36595 (17.8) | 502 332 (17.3) |
| Unknown* | 299 489 (9.6) | 18463 (8.9) | 281 026 (9.7) |
| Health insurance status | | | |
| Insured | 3 041 407 (97.8) | 202 266 (98.2) | 2 839 141 (97.7) |
| Uninsured | 19 018 (0.6) | 1232 (0.6) | 17 786 (0.6) |
| Unknown* | 50 364 (1.6) | 2377 (1.2) | 47 987 (1.7) |
| Lipid-lowering therapy | 87 917 (2.8) | 12 480 (6.1) | 75 437 (2.6) |
| Lipid levels, mmol/L | | | |
| Triglycerides (IQR) | 1.33 (0.96) | 1.23 (3.92) | 1.33 (0.92) |
| Total cholesterol (SD) | 4.56 (1.10) | 4.60 (1.76) | 4.56 (1.03) |
| HDL cholesterol (SD) | 1.44 (0.42) | 1.50 (0.64) | 1.43 (0.40) |
| LDL cholesterol (SD) | 2.42 (0.88) | 2.29 (1.08) | 2.42 (0.87) |
| Cardiovascular risk factors | | | |
| Hypertension | 1 470 293 (47.4) | 101 689 (49.4) | 1 368 604 (47.1) |
| Diabetes mellitus | 239 525 (7.7) | 20 458 (9.9) | 219 067 (7.5) |
| Current smoker | 616 046 (19.8) | 50 531 (24.5) | 565 515 (19.5) |
| Obesity[†] | 515 238 (16.6) | 32 731 (15.9) | 482 507 (16.6) |

Data are N (%) if not otherwise indicated.

[*] Participants either refused to answer the question or did not know the answer.

[†] Defined as BMI $\geq$28 kg/m$^2$.

HDL, high-density lipoprotein; LDL, low-density lipoprotein; IQR, interquartile range; SD, standard deviation.

**Definition of lipid-lowering therapy**

Among the 75 437 participants with self-reported lipid-lowering medications, 35 352 (46.9%) recalled the name of the medications (generic or brand name), in whom 90.1% reported using guideline-recommended lipid-lowering medications (i.e., statin, Xuezhikang, or ezetimibe). 40 085 (53.1%) of the treated participants did not recall the name of their lipid-lowering medications. Xuezhikang is a partially purified extract of red yeast rice, which was reported could decrease the LDL-C levels and the recurrence of major coronary events in Chinese patients who experienced a previous myocardial infarction in the China Coronary Secondary Prevention Study (CCSPS) (2). And Xuezhikang 1.2 g is recommended as a moderate-intensity lipid-lowering therapy in the 2016 Chinese Guideline for the Management of Dyslipidemia in Adults (3).

In the simulation, we assumed those treated participants who were not taking guideline-recommended lipid-lowering medications or did not recall the name of their lipid-lowering medications as not receiving lipid-lowering therapy (LLT). The baseline characteristics of participants taking guideline-recommended lipid-lowering medications, and those assumed as not receiving LLT are shown in **Supplementary Table 2**. Comparing with the participants assumed as not receiving LLT, those taking guideline-recommended lipid-lowering medications tended to be older, more likely to be male, to live in urban area, have higher household income, be insured, be at very-high ASCVD risk, and have much lower lipid levels.

**Supplementary Table 2. Characteristics of participants assumed as not receiving lipid-lowering therapy and participants taking guideline-recommended lipid-lowering medications**

| Characteristics | Assumed as not receiving LLT | Receiving guideline-recommended LLT | P Value |
|---|---|---|---|
| N (%) | 43 587 (57.8) | 31 850 (42.2) | |
| Age group, years | | | <0.0001 |
| 35-44 | 1808 (4.1) | 726 (2.3) | |
| 45-54 | 8715 (20.0) | 5518 (17.3) | |
| 55-64 | 17 650 (40.5) | 13 180 (41.4) | |
| 65-75 | 15 414 (35.4) | 12 426 (39.0) | |
| Women | 27 460 (63.0) | 18 529 (58.2) | <0.0001 |
| Urbanity | | | <0.0001 |
| Urban | 20 856 (47.9) | 18 241 (57.3) | |
| Rural | 22 731 (52.1) | 13 609 (42.7) | |
| Region | | | <0.0001 |
| Eastern | 24 930 (57.2) | 14 327 (45.0) | |
| Central | 8743 (20.1) | 9635 (30.2) | |
| Western | 9914 (22.7) | 7888 (24.8) | |
| Household income, Yuan/year | | | <0.0001 |
| <10 000 | 7138 (16.4) | 4720 (14.8) | |
| 10 000–50 000 | 21 413 (49.1) | 16 293 (51.2) | |
| >50 000 | 10 122 (23.2) | 8783 (27.6) | |
| Unknown* | 4914 (11.3) | 2054 (6.4) | |
| Health insurance status | | | <0.0001 |
| Insured | 42 598 (97.7) | 31 498 (98.9) | |
| Uninsured | 245 (0.6) | 75 (0.2) | |
| Unknown* | 744 (1.7) | 277 (0.9) | |
| Lipid levels, mmol/L | | | |
| Triglycerides (IQR) | 1.63 (1.14) | 1.48 (1.03) | <0.0001 |
| Total cholesterol (SD) | 4.65 (1.20) | 4.10 (1.05) | <0.0001 |
| HDL cholesterol (SD) | 1.38 (0.39) | 1.37 (0.37) | 0.0585 |
| LDL cholesterol (SD) | 2.42 (1.02) | 1.96 (0.88) | <0.0001 |
| ASCVD risk | | | <0.0001 |
| Low-risk | 12 408 (28.5) | 10 708 (33.6) | |
| Moderate-risk | 8673 (19.9) | 5431 (17.1) | |
| High-risk | 15 713 (36.0) | 6592 (20.7) | |
| Very-high-risk | 6793 (15.6) | 9119 (28.6) | |
| Cardiovascular risk factors | | | |
| Hypertension | 34 695 (79.6) | 25 871 (81.2) | <0.0001 |
| Diabetes mellitus | 16 112 (37.0) | 8556 (26.9) | <0.0001 |

| | | | |
|---|---|---|---|
| Current smoker | 7796 (17.9) | 5451 (17.1) | 0.006 |
| Obesity[†] | 12 010 (27.6) | 8682 (27.3) | 0.370 |

Data are N (%) if not otherwise indicated.

* Participants either refused to answer the question or did not know the answer.

† Defined as BMI ≥28 kg/m$^2$.

ASCVD, atherosclerotic cardiovascular disease; HDL, high-density lipoprotein; LDL, low-density lipoprotein;

LLT, lipid-lowering therapy; IQR, interquartile range; SD, standard deviation.

**Supplementary Table 3. Mean and SD percentage reduction in LDL-C with statins, ezetimibe, and PCSK9 inhibitors**

| Drug | Dose, mg | Mean (Reference) | SD (Reference) |
|---|---|---|---|
| Atorvastatin | 10 | 35.5%[4] | 10.6%[5,6] |
| | 20 | 41.4%[4] | 13.5%[5,6] |
| | 40 | 46.2%[4] | 12.5%[5,6] |
| | 80 | 50.2%[4] | 13.8%[5,6] |
| Fluvastatin | 20 | 17.0%[6] | 8.0%[6] |
| | 40 | 23.0%[6] | 10.0%[6] |
| | 80 | 26.0%[6] | 9.0%[6] |
| Lovastatin | 10 | 21.0%[7] | 10.1%[5] |
| | 20 | 24.0%[8] | 11.0%[8] |
| | 40 | 30.0%[8] | 11.0%[8] |
| | 60 | 34.5%[5] | 11.7%[5] |
| Pravastatin | 10 | 20.0%[6] | 11.0%[6] |
| | 20 | 24.0%[6] | 11.0%[6] |
| | 40 | 30.0%[6] | 13.0%[6] |
| | 80 | 33.0%[7] | 11.2%[5] |
| Rosuvastatin | 5 | 38.8%[4] | 13.2%[5] |
| | 10 | 44.1%[4] | 12.5%[5,6] |
| | 20 | 49.5%[4] | 13.3%[5,6] |
| | 40 | 54.7%[4] | 12.9%[5,6] |
| Simvastatin | 5 | 23.0%[7] | 11.0%[5,6] |
| | 10 | 27.4%[4] | 13.7%[5,6] |
| | 20 | 33.0%[4] | 10.4%[5,6] |
| | 40 | 38.9%[4] | 14.0%[5,6] |
| | 80 | 45.0%[4] | 11.7%[5,6] |
| Ezetimibe | 10 | 22.7%[9] | 16.5%[10] |
| Evolocumab | 140 (biweekly) | 59.0%[5,11] | 26.9%[5,12] |
| Alirocumab | 75 (biweekly) | 48.6%[5,13] | 25.0%[5,13] |

Mean and SD of the LDL-C reduction were presented by Cannon et al (5). Estimates were obtained from clinical trials, or estimated using data from clinical trials (5). The effect of evolocumab 140 mg biweekly was estimated using data from intention-to-treat analyses of the FOURIER trial (5,12). The effect of alirocumab 75 mg biweekly was presented by Allahyari A et al (5,13).

**Supplementary Table 4. Use of lipid-lowering therapy among participants failing to achieve the LDL-C goals**

| ASCVD risk stratification | Lipid-lowering therapy | Proportion |
|---|---|---|
| Low-risk | No lipid-lowering therapy | 98.9% |
| | Unknown name or not guideline-recommended medications | 0.8% |
| | Statins or ezetimibe | 0.3% |
| Moderate-risk | No lipid-lowering therapy | 98.0% |
| | Unknown name or not guideline-recommended medications | 1.5% |
| | Statins or ezetimibe | 0.5% |
| High-risk | No lipid-lowering therapy | 95.7% |
| | Unknown name or not guideline-recommended medications | 3.4% |
| | Statins or ezetimibe | 0.9% |
| Very-high risk | No lipid-lowering therapy | 85.6% |
| | Unknown name or not guideline-recommended medications | 7.5% |
| | Statins or ezetimibe | 6.9% |

**Supplementary Table 5. Estimated 95% CI for the proportion of participants by lipid-lowering therapy in the base-case scenario.**
Numbers are shown in percent

| Step in simulation | Lipid-lowering therapy | Low-risk | | | Moderate-risk | | | High-risk | | | Very-high-risk | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Lower CI | Upper CI | Mean | Lower CI | Upper CI | Mean | Lower CI | Upper CI | Mean | Lower CI | Upper CI |
| Add/uptitrate to atorvastatin 20 mg | No lipid-lowering therapy | 90.7 | 90.7 | 90.7 | 78.4 | 78.4 | 78.4 | 43.6 | 43.6 | 43.6 | - | - | - |
| | Unknown name or not guideline-recommended medications | 0.6 | 0.6 | 0.6 | 1.2 | 1.2 | 1.2 | 2.0 | 2.0 | 2.0 | - | - | - |
| | LMIS only | 0.3 | 0.3 | 0.3 | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 2.6 | 2.6 | 2.6 |
| | HMIS only | 8.4 | 8.4 | 8.4 | 19.9 | 19.9 | 19.9 | 53.8 | 53.8 | 53.8 | 97.3 | 97.3 | 97.3 |
| | Ezetimibe only | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.03 | 0.03 | 0.03 |
| | HMIS + ezetimibe | - | - | - | - | - | - | <0.01 | <0.01 | <0.01 | 0.03 | 0.03 | 0.03 |
| Add ezetimibe | No lipid-lowering therapy | - | - | - | - | - | - | 43.6 | 43.6 | 43.6 | - | - | - |
| | Unknown name or not guideline-recommended medications | - | - | - | - | - | - | 2.0 | 2.0 | 2.0 | - | - | - |
| | LMIS only | - | - | - | - | - | - | 0.6 | 0.6 | 0.6 | 2.6 | 2.6 | 2.6 |
| | HMIS only | - | - | - | - | - | - | 42.5 | 42.5 | 42.5 | 72.9 | 72.9 | 72.9 |
| | Ezetimibe only | - | - | - | - | - | - | <0.01 | <0.01 | <0.01 | 0.03 | 0.03 | 0.03 |
| | HMIS + ezetimibe | - | - | - | - | - | - | 11.3 | 11.3 | 11.3 | 24.5 | 24.5 | 24.5 |
| Add evolocumab | No lipid-lowering therapy | - | - | - | - | - | - | 43.6 | 43.6 | 43.6 | - | - | - |
| | Unknown name or not guideline-recommended medications | - | - | - | - | - | - | 2.0 | 2.0 | 2.0 | - | - | - |
| | LMIS only | - | - | - | - | - | - | 0.6 | 0.6 | 0.6 | 2.6 | 2.6 | 2.6 |
| | HMIS only | - | - | - | - | - | - | 42.5 | 42.5 | 42.5 | 72.9 | 72.9 | 72.9 |
| | Ezetimibe only | - | - | - | - | - | - | <0.01 | <0.01 | <0.01 | 0.03 | 0.03 | 0.03 |
| | HMIS + ezetimibe | - | - | - | - | - | - | 6.5 | 6.5 | 6.5 | 13.2 | 13.2 | 13.2 |
| | HMIS + ezetimibe + evolocumab | - | - | - | - | - | - | 4.8 | 4.8 | 4.8 | 11.3 | 11.3 | 11.3 |

CI, confidence interval; HMIS, maximized uptake of moderate-intensity statins; LMIS, statins with doses less than HMIS.

**Supplementary Table 6. Estimated 95% CI for the proportion of participants achieving LDL-C goals in the base-case scenario**

Numbers are shown in percent

| ASCVD risk | LDL-C goals | Maximized uptake of MIS | | | Add ezetimibe | | | Add evolocumab | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Lower CI | Upper CI | Mean | Lower CI | Upper CI | Mean | Lower CI | Upper CI |
| Low-risk | LDL-C <3.4 mmol/L | 99.8 | 99.8 | 99.8 | - | - | - | - | - | - |
| Moderate-risk | LDL-C <3.4 mmol/L | 99.6 | 99.6 | 99.6 | - | - | - | - | - | - |
| High-risk | LDL-C <2.6 mmol/L | 88.7 | 88.7 | 88.7 | 95.2 | 95.2 | 95.2 | 99.6 | 99.6 | 99.6 |
| Very-high risk | LDL-C <1.8 mmol/L | 75.5 | 75.5 | 75.5 | 88.7 | 88.7 | 88.7 | 99.0 | 99.0 | 99.0 |

MIS, moderate-intensity statin; CI, confidence interval.

**Supplementary Table 7. Proportion of lipid-lowering therapy use in men and women before and after full treatment intensification in the base-case scenario**

Numbers are shown in percent

| | Lipid-lowering therapy | Low-risk | | Moderate-risk | | High-risk | | Very-high-risk | |
|---|---|---|---|---|---|---|---|---|---|
| | | Before | After | Before | After | Before | After | Before | After |
| **Men** | No lipid-lowering therapy | 98.8 | 95.0 | 98.3 | 82.2 | 96.2 | 49.0 | 78.6 | - |
| | Unknown name or not guideline-recommended | 0.6 | 0.6 | 1.0 | 0.9 | 2.7 | 1.5 | 8.4 | - |
| | Statin only | 0.6 | 4.4 | 0.7 | 16.9 | 1.1 | 42.8 | 12.9 | 79.6 |
| | Statin + ezetimibe | - | - | - | - | - | 4.2 | 0.1 | 11.4 |
| | Statin + ezetimibe + evolocumab | - | - | - | - | - | 2.5 | - | 9.0 |
| **Women** | No lipid-lowering therapy | 98.7 | 88.5 | 97.2 | 75.7 | 92.4 | 36.3 | 82.7 | - |
| | Unknown name or not guideline-recommended | 0.7 | 0.6 | 1.7 | 1.3 | 5.4 | 2.7 | 8.1 | - |
| | Statin only | 0.6 | 10.9 | 1.1 | 23.0 | 2.2 | 43.7 | 9.2 | 71.4 |
| | Statin + ezetimibe | - | - | - | - | - | 9.6 | - | 15.0 |
| | Statin + ezetimibe + evolocumab | - | - | - | - | - | 7.7 | - | 13.6 |

**Supplementary Table 8. The proportion achieving LDL-C goals in men and women before and after full treatment intensification in the base-case scenario**

Numbers are shown in percent

| ASCVD risk | LDL-C goals | Men | | Women | |
|---|---|---|---|---|---|
| | | Before | After | Before | After |
| Low-risk | LDL-C <3.4 mmol/L | 96.2 | 99.9 | 89.7 | 99.8 |
| Moderate-risk | LDL-C <3.4 mmol/L | 83.7 | 99.6 | 78.0 | 99.4 |
| High-risk | LDL-C <2.6 mmol/L | 51.4 | 99.8 | 40.5 | 99.3 |
| Very-high risk | LDL-C <1.8 mmol/L | 37.2 | 99.1 | 26.5 | 98.6 |

**Supplementary Table 9. Mean (SD) levels of LDL-C in men and women before and after full treatment intensification in the base-case scenario**

Numbers are shown as Mean (SD), mmol/L

| ASCVD risk | Men | | Women | |
|---|---|---|---|---|
| | **Before** | **After** | **Before** | **After** |
| Low-risk | 2.06 (0.72) | 2.0 (0.63) | 2.33 (0.80) | 2.16 (0.62) |
| Moderate-risk | 2.55 (0.81) | 2.29 (0.57) | 2.83 (0.73) | 2.48 (0.48) |
| High-risk | 2.67 (0.90) | 1.90 (0.35) | 3.08 (1.26) | 1.87 (0.35) |
| Very-high risk | 2.16 (0.86) | 1.13 (0.16) | 2.45 (0.96) | 1.17 (0.16) |

**Supplementary Table 10. Mean (SD) levels of LDL-C at each step in the base-case scenario and the final step in scenarios S1 to S7**

| Scenario | ASCVD risk | Logic step | Mean (SD) LDL-C, mmol/L |
|---|---|---|---|
| Base-case Scenario | Low-risk | Add/uptitrate to atorvastatin 20 mg | 2.11(0.62) |
| | Moderate-risk | Add/uptitrate to atorvastatin 20 mg | 2.40 (0.53) |
| | High-risk | Add/uptitrate to atorvastatin 20 mg | 2.06 (0.51) |
| | | Add ezetimibe | 1.97 (0.37) |
| | | Add evolocumab 140 mg | 1.89 (0.35) |
| | Very-high-risk | Add/uptitrate to atorvastatin 20 mg | 1.43 (0.57) |
| | | Add ezetimibe | 1.30 (0.32) |
| | | Add evolocumab 140 mg | 1.15 (0.16) |
| Scenario S1 | Low-risk[*] | No simulation | 2.24 (0.78) |
| | Moderate-risk | Add/uptitrate to atorvastatin 20 mg | 2.63 (0.69) |
| Scenario S2 | High-risk | Add evolocumab 140 mg (removing ezetimibe) | 1.91 (0.32) |
| | Very-high-risk | Add evolocumab 140 mg (removing ezetimibe) | 1.19 (0.14) |
| Scenario S3 | Very-high-risk | Add evolocumab 140 mg | 1.16 (0.44) |
| Scenario S4 | Very-high-risk | Add evolocumab 140 mg | 1.13 (0.44) |
| Scenario S5 | High-risk | Add evolocumab 140 mg | 1.91 (0.32) |
| | Very-high-risk | Add evolocumab 140 mg | 1.18 (0.28) |
| Scenario S6 | High-risk | Add alirocumab 75mg | 1.90 (0.33) |
| | Very-high-risk | Add alirocumab 75mg | 1.17 (0.14) |
| Scenario S7 | Very-high-risk | Add evolocumab 140 mg | 1.00 (0.40) |

[*]The proportion of people at low ASCVD risk with an LDL-C level of ≥4.1mmol/L was only 1.7%.
Thus, we did not conduct LLT simulation in the low-risk participants in scenario S1.

**Supplementary Table 11. Proportion of lipid-lowering therapy use after full treatment intensification across scenarios S1 to S7**

| Lipid-lowering therapy | Scenarios, % of participants | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Scenario S1 | | Scenario S2 | | Scenario S3 | Scenario S4 | Scenario S5 | | Scenario S6 | | Scenario S7 |
| | Low-risk | Moderate-risk | High-risk | Very-high-risk | | | High-risk | Very-high-risk | High-risk | Very-high-risk | |
| No lipid-lowering therapy | 98.7 | 93.3 | 43.6 | - | - | - | 43.6 | - | 43.6 | - | - |
| Unknown name or not guideline-recommended | 0.7 | 1.4 | 2.0 | - | - | - | 2.0 | - | 2.0 | - | - |
| Statin only | 0.6 | 5.3 | 43.1 | 75.5 | 75.5 | 70.1 | 49.4* | 88.5† | 43.1 | 75.5 | 54.8 |
| Statin + ezetimibe | - | - | 6.5 | 13.2 | 14.6 | 17.4 | 1.6 | 3.5 | 6.5 | 13.2 | 25.6 |
| Statin + evolocumab | - | - | 4.8 | 11.3 | - | - | - | - | - | - | - |
| Statin + ezetimibe + evolocumab | - | - | - | - | 9.9 | 12.5 | 3.4 | 8.0 | - | - | 19.6 |
| Statin + ezetimibe + alirocumab | - | - | - | - | - | - | - | | 4.8 | 11.3 | - |

*Including 43.1% with moderate-intensity statin monotherapy; 6.3% with high-intensity statin monotherapy (atorvastatin 40-80 mg).
†Including 75.5% with moderate-intensity statin monotherapy; 13.0% with high-intensity statin monotherapy (atorvastatin 40-80 mg).

**Supplementary Table 12. Estimated proportion of LDL-C goals achievement across scenarios S1 to S7**
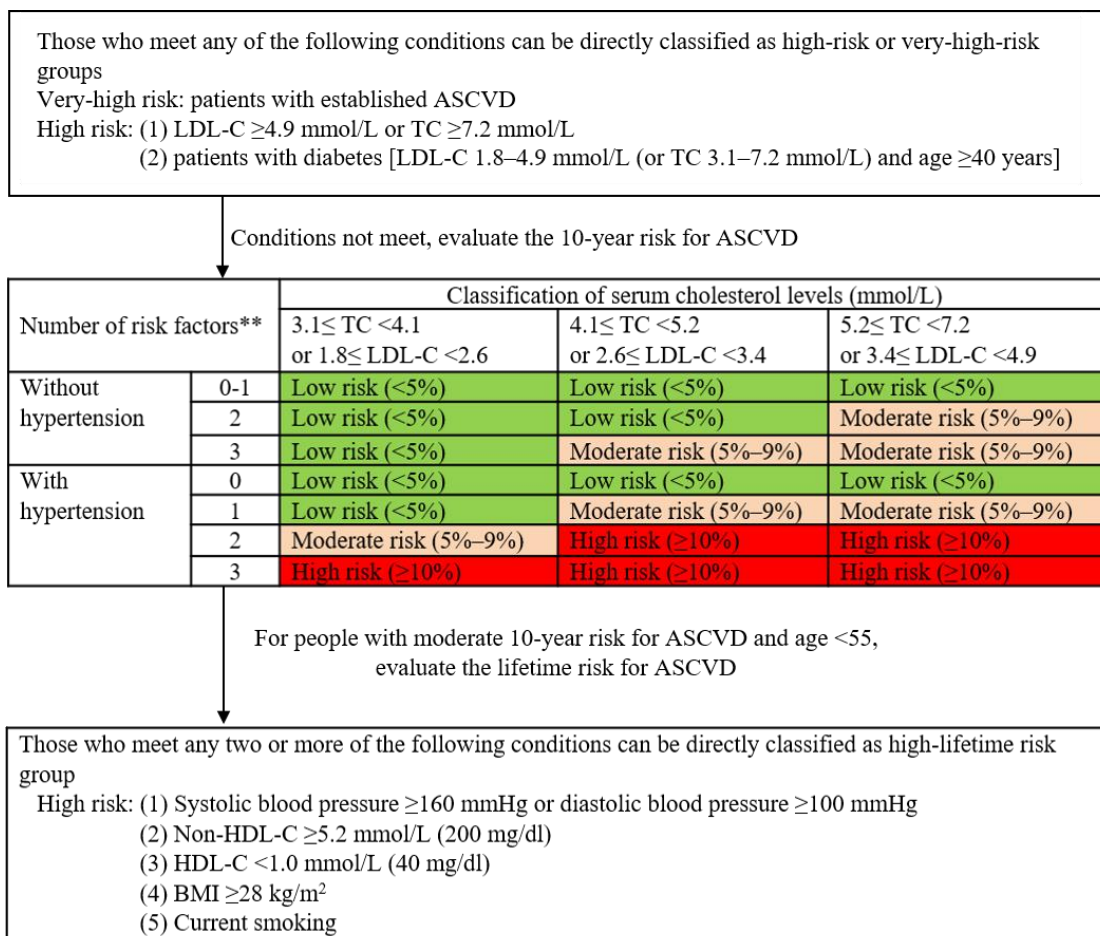
| Scenario | ASCVD risk | % in the study population |
|---|---|---|
| Scenario S1 | Low-risk | 98.3 |
| | Moderate-risk | 99.6 |
| Scenario S2 | High-risk | 99.0 |
| | Very-high-risk | 97.1 |
| Scenario S3 | Very-high-risk | 97.6 |
| Scenario S4 | Very-high-risk | 99.0 |
| Scenario S5 | High-risk | 99.5 |
| | Very-high-risk | 98.8 |
| Scenario S6 | High-risk | 99.4 |
| | Very-high-risk | 98.3 |
| Scenario S7 | Very-high-risk | 91.2 |

**Supplementary Figure 1. Population pyramid charts of the age and sex compositions in the 2010 population census of China, the regular inhabitants aged 35–75 years at the selected 284 sites, and the participants in the current study**
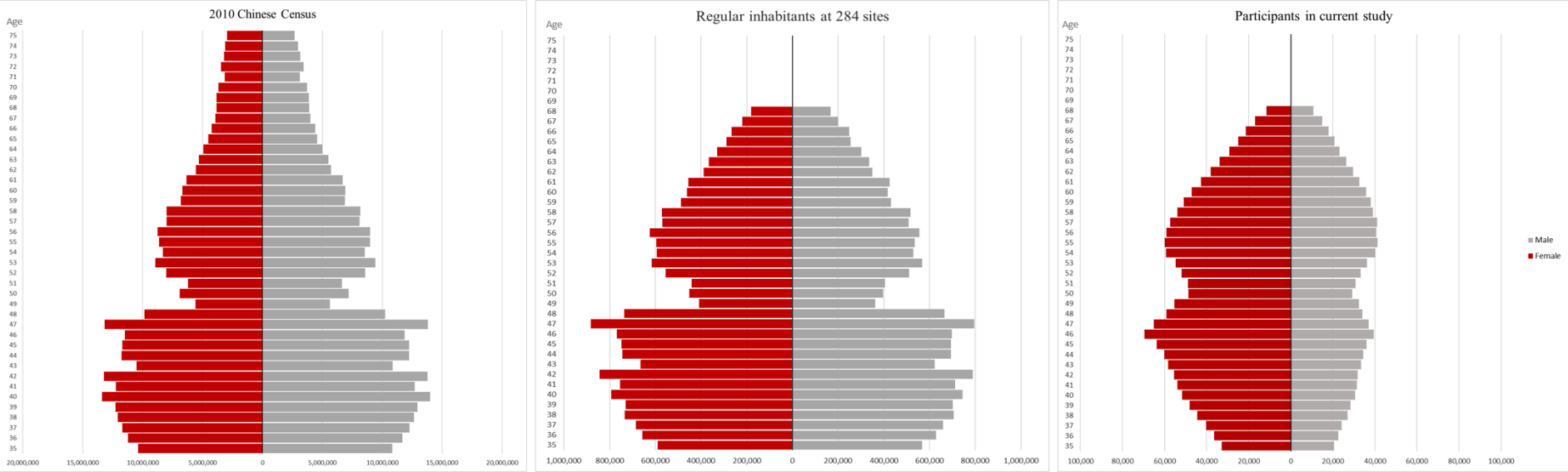


Our screening was from 2015 to 2020, so we adjust the age by minus 7 years in the regular inhabitants at the selected 284 sites and the participants in current study, to make it comparable with the data in the 2010 Chinese census.

**Supplementary Figure 2. Classification of low, moderate, high, and very-high risk for ASCVD according to the 2016 Chinese Guideline for the Management of Dyslipidemia in Adults**

Those who meet any of the following conditions can be directly classified as high-risk or very-high-risk groups
Very-high risk: patients with established ASCVD
High risk: (1) LDL-C ≥4.9 mmol/L or TC ≥7.2 mmol/L
          (2) patients with diabetes [LDL-C 1.8–4.9 mmol/L (or TC 3.1–7.2 mmol/L) and age ≥40 years]

Conditions not meet, evaluate the 10-year risk for ASCVD

| Number of risk factors** | | Classification of serum cholesterol levels (mmol/L) | | |
|---|---|---|---|---|
| | | 3.1≤ TC <4.1 or 1.8≤ LDL-C <2.6 | 4.1≤ TC <5.2 or 2.6≤ LDL-C <3.4 | 5.2≤ TC <7.2 or 3.4≤ LDL-C <4.9 |
| Without hypertension | 0-1 | Low risk (<5%) | Low risk (<5%) | Low risk (<5%) |
| | 2 | Low risk (<5%) | Low risk (<5%) | Moderate risk (5%–9%) |
| | 3 | Low risk (<5%) | Moderate risk (5%–9%) | Moderate risk (5%–9%) |
| With hypertension | 0 | Low risk (<5%) | Low risk (<5%) | Low risk (<5%) |
| | 1 | Low risk (<5%) | Moderate risk (5%–9%) | Moderate risk (5%–9%) |
| | 2 | Moderate risk (5%–9%) | High risk (≥10%) | High risk (≥10%) |
| | 3 | High risk (≥10%) | High risk (≥10%) | High risk (≥10%) |

For people with moderate 10-year risk for ASCVD and age <55, evaluate the lifetime risk for ASCVD

Those who meet any two or more of the following conditions can be directly classified as high-lifetime risk group
  High risk: (1) Systolic blood pressure ≥160 mmHg or diastolic blood pressure ≥100 mmHg
            (2) Non-HDL-C ≥5.2 mmol/L (200 mg/dl)
            (3) HDL-C <1.0 mmol/L (40 mg/dl)
            (4) BMI ≥28 kg/m$^2$
            (5) Current smoking

**Risk factors include current smoking, low HDL-C level, and men with age ≥45 or women with age ≥55. ASCVD, atherosclerotic cardiovascular disease; BMI, body mass index; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; TC, total cholesterol.

**Supplementary Figure 3. Logic of lipid-lowering therapy simulation and proportion of very-high-risk patients flowing through the treatment intensification logic in the base-case scenario**
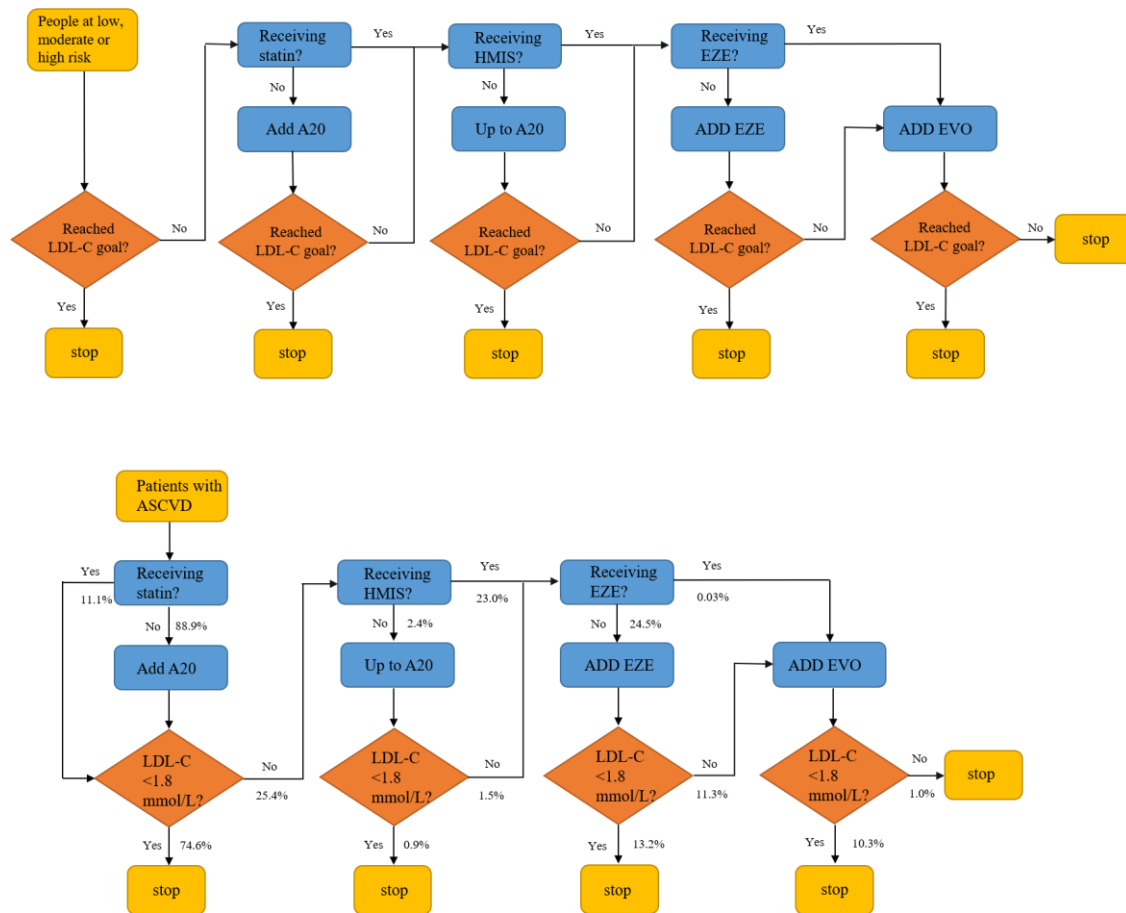


The goal level of LDL-C is <1.8 mmol/L for very-high-risk patients, <2.6 mmol/L for high-risk patients, and <3.4 mmol/L for low- or moderate-risk individuals, respectively. A20, atorvastatin 20 mg; HMIS, maximized uptake of moderate-intensity statins, including: atorvastatin 20 mg, simvastatin 40 mg, rosuvastatin 10 mg, pravastatin 40 mg, pitavastatin 4 mg, lovastatin 40 mg, or fluvastatin 80 mg; EZE, ezetimibe; EVO, evolocumab 140 mg, biweekly.

**Supplementary Figure 4. Use of lipid-lowering therapy and distribution of LDL-C levels among patients at high and very-high ASCVD risk after adding atorvastatin, and add-on ezetimibe in the base-case scenario**
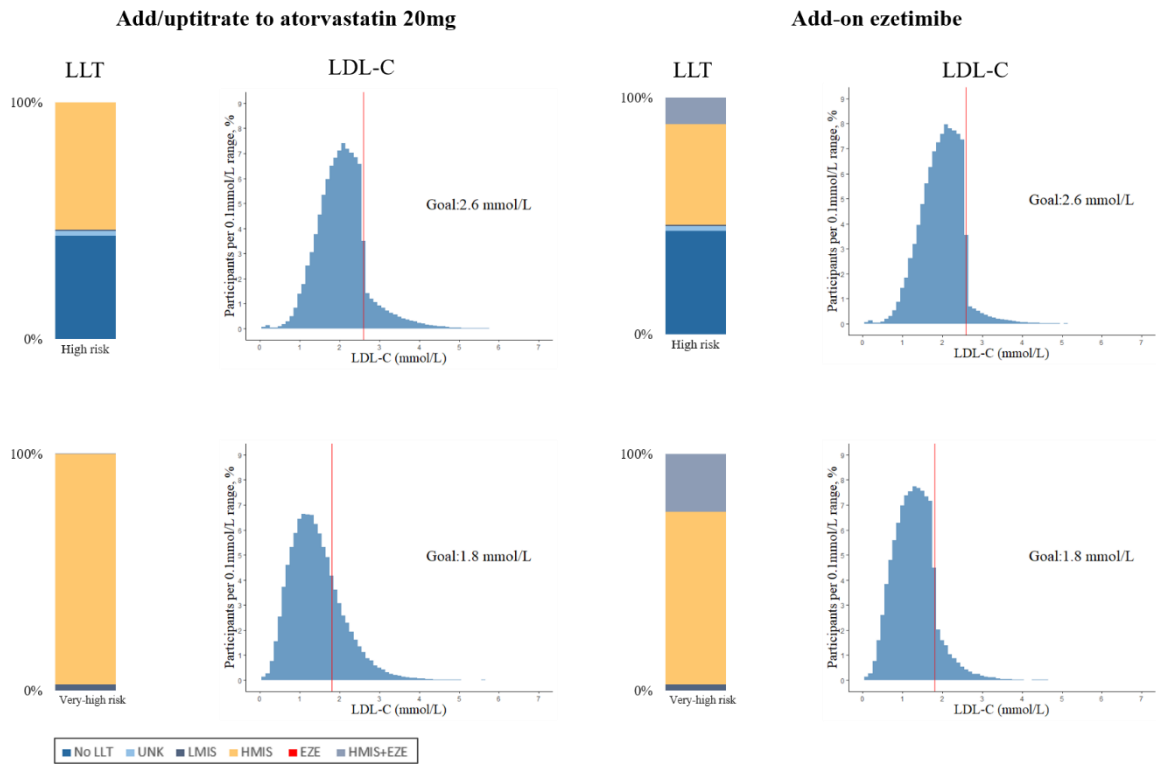


LLT, lipid-lowering therapy; UNK, unknown name or not guideline-recommended medications; LMIS, statins with dose less than HMIS; HMIS, maximized uptake of moderate-intensity statins; EZE, ezetimibe.

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