Table S1. Causes of infection-related mortality

Causes	ICD-10 code, planned	ICD-10 code observed in this population	Number
All infection	A00-B99, G00-09, I00- I09, I30, I33, I40, J00-J06, J09-18, J20-22, J36, J85-86, K35, K57, K61, K65, K75, L00-08, M00-03, M46, M86, N10-11, N30, N39, N41, N45, N49, N70-N77	A00-09, A15-19, A30-49, A80-89, B15-19, B20-24, B35-49, G00-06, I05, I33,I40, J02, J10-18, J36, J85-86, K57,K61,K65, K75, K80-81, K83, K85, L03, M00, M46, N10-11, N39, N76	313
Respiratory tract infections	J00-J06, J09-18, J20-22, J36, J85-86	J02, J10-18, J36, J85-86	161
Bacterial infections including sepsis	A30-49	A30-49	35
Hepatobiliary tract infection	B15-19, K80, K81, K83, K85	B15-19, K75,K80-81,K83, K85	38
Tuberculosis	A15-19	A15-19	15
Genitourinary tract infection	N10-11, N30, N39, N41, N45, N49, N70-N77	N10-11, N39, N76	12
Central nervous system infection	A80-89, G00-09	A80-89, G00-06	13
Gastrointestinal tract infection	A00-09, K35, K57, K61, K65, K75	A00-09, K57,K61,K65	11
HIV infection	B20-24	B20-24	4
Mycoses	B35-49	B35-49	3
Musculoskeletal system infection	L00-08, M00-03, M46, M86	L03, M00, M46	5
Cardiac infection	I00- I09, I30, I33, I40	I05, I33,I40	6
Others			34

HIV, human immunodeficiency virus; ICD-10, International Classification of Diseases and Related Health Problems 10th Revision

Table S2. Hazard ratios (95% CIs) for infection related mortality by glucose category or HOMA-IR level after adjustment for BMI category [*] instead of BMI as continuous variable

	Multivariable-adjusted HR[†] (95% CI)
Total subjects	
FBG category (mmol/L)	
<5.0	2.32 (1.47-3.65)
5.0-5.5	1.00 (reference)
5.6-6.9	1.62 (1.03-2.55)
≥7.0 (screen-detected diabetes)	3.27 (1.59-6.71)
P for quadratic trend	<0.001
Previously diagnosed diabetes	2.57 (1.56-4.22)
HbA1c category (mmol/mol)	
<36	1.51 (0.93-2.48)
36-38	1.00 (reference)
39-46	1.22 (0.78-1.91)
≥48 (screen-detected diabetes)	2.35 (1.19-4.63)
P for quadratic trend	0.012
Previously diagnosed diabetes	2.06 (1.25-3.42)
Subjects without previously diagnosed diabetes	
HOMA-IR quintile	
Q1	1.57 (0.82-3.02)
Q2	1.77 (0.90-3.47)
Q3	1.00 (reference)
Q4	1.70 (0.85-3.42)
Q5	2.60 (1.37-4.96)
P for trend	0.049
Insulin Resistance	
HOMA-IR < 75 percentile	1.00 (reference)
HOMA-IR ≥ 75 percentile	1.47 (0.98-2.20)

[*] BMI was categorized according to Asian-specific criteria (6) as underweight (BMI <18.5 kg/m^2), normal weight (BMI 18.5–22.9 kg/m^2), overweight (BMI 23–24.9 kg/m^2), obesity I (BMI 25–29.9 kg/m^2) and obesity II (BMI ≥30 kg/m^2).

[†] Cox proportional hazard models using age as a timescale were used to estimate HRs and 95% CIs; multivariable Model was adjusted for age (timescale), sex, center, year of screening exam, smoking status, alcohol intake, regular exercise, BMI category, education level, history of CVD, history of respiratory disease, history of kidney disease, history of psychiatric disorder, immunosuppressive agents and medication for dyslipidemia.

Table S3. Hazard ratios (95% CIs) for non-infection mortality by glucose category in the overall population (N = 666,888)

	Person-years (PY)	Number of events	Mortality rate (10^5 PY)	Age, sex-adjusted HR (95% CI)	Multivariable-adjusted HR* (95% CI)		HR (95% CI)† in model using time-dependent variables
					Model 1	Model 2	
FBG category (mmol/L)							
<5.0	1,916,655	1,261	65.8	1.05 (0.98-1.13)	1.01 (0.92-1.11)	1.01 (0.92-1.11)	1.12 (1.01-1.23)
5.0-5.5	2,428,299	1,959	80.7	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
5.6-6.9	1,112,086	1,556	139.9	1.08 (1.01-1.16)	1.09 (1.00-1.19)	1.07 (0.98-1.17)	1.10 (1.01-1.19)
≥7.0 (screen-detected diabetes)	72,886	246	337.5	1.77 (1.55-2.02)	1.80 (1.52-2.13)	1.67 (1.41-1.98)	1.93 (1.63-2.28)
P for quadratic trend				<0.001	<0.001	<0.001	<0.001
Previously diagnosed diabetes	151,233	784	518.4	1.69 (1.55-1.84)	1.70 (1.52-1.91)	1.67 (1.50-1.87)	1.66 (1.49-1.85)
HbA1c category (mmol/mol)							
<36	1,976,245	1,317	66.6	1.09 (1.01-1.17)	1.03 (0.94-1.13)	1.06 (0.96-1.16)	1.19 (1.08-1.32)
36-38	2,143,239	1,638	76.4	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
39-46	1,331,660	1,794	134.7	1.06 (0.99-1.13)	1.11 (1.02-1.21)	1.08 (0.99-1.18)	1.05 (0.96-1.14)
≥48 (screen-detected diabetes)	78,782	273	346.5	1.63 (1.44-1.86)	1.75 (1.48-2.06)	1.61 (1.36-1.90)	1.83 (1.55-2.15)
P for quadratic trend				<0.001	<0.001	<0.001	<0.001
Previously diagnosed diabetes	151,233	784	518.4	1.69 (1.55-1.85)	1.75 (1.55-1.96)	1.71 (1.52-1.92)	1.65 (1.48-1.85)

*Cox proportional hazard models using age as a timescale were used to estimate HRs and 95% CIs; multivariable Model 1 was adjusted for age (timescale), sex, center, year of screening exam, smoking status, alcohol intake, regular exercise, BMI, education level, history of hypertension, history of CVD, history of respiratory disease, history of kidney disease, history of psychiatric disorder, immunosuppressive agents and medication for dyslipidemia; model 2: model 1 plus adjustment for quintile of hsCRP.

†Estimated from Cox proportional hazard models with glucose/HbA1c category, alcohol intake, smoking status, regular exercise, BMI, history of hypertension, history of CVD, history of respiratory disease, history of kidney disease, history of psychiatric disorder, immunosuppressive agents and medication for dyslipidemia as time-dependent categorical variables, and baseline age, sex, center, year of screening exam, and education level as time-fixed variables.

Abbreviations: CVD, cardiovascular disease; FBG, fasting blood glucose; HbA1c, glycated hemoglobin; HR, hazard ratio

Table S4. Hazard ratios (95% CIs) for non-infection mortality by HOMA-IR without screen-detected diabetes or previously diagnosed diabetes (N=639,751)

		Person-years (PY)	Number of events	Mortality rate (10^5 PY)	Age, sex-adjusted HR (95% CI)	Multivariable-adjusted HR* (95% CI)		HR (95% CI)† in model using time-dependent variables
						Model 1	Model 2	
HOMA-IR quintile‡								
Q1		1,153,520	1,028	89.1	1.12 (1.02-1.22)	1.04 (0.93-1.17)	1.05 (0.93-1.18)	1.10 (0.97-1.24)
Q2		1,107,324	893	80.6	1.05 (0.96-1.16)	0.98 (0.87-1.11)	0.98 (0.87-1.11)	0.95 (0.84-1.08)
Q3		1,082,927	851	78.6	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
Q4		1,058,952	875	82.6	1.03 (0.94-1.14)	1.06 (0.94-1.20)	1.05 (0.93-1.19)	1.07 (0.95-1.22)
Q5		1,069,402	1,230	115.0	1.30 (1.19-1.42)	1.39 (1.23-1.56)	1.34 (1.19-1.51)	1.35 (1.20-1.52)
P for quadratic trend					<0.001	<0.001	<0.001	<0.001
Insulin Resistance§								
HOMA-IR percentile	<75	4,139,608	3,432	82.9	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
HOMA-IR percentile	≥75	1,332,516	1,445	108.4	1.18 (1.11-1.26)	1.28 (1.17-1.39)	1.23 (1.13-1.35)	1.27 (1.16-1.38)

*Cox proportional hazard models using age as a timescale were used to estimate HRs and 95% CIs; multivariable Model was adjusted for age (timescale), sex, center, year of screening exam, smoking status, alcohol intake, regular exercise, BMI, education level, history of CVD, history of respiratory disease, history of kidney disease, history of psychiatric disorder, immunosuppressive agents and medication for dyslipidemia; model 2: model 1 plus adjustment for quintile of hsCRP.

†Estimated from Cox proportional hazard models with HOMA-IR category, alcohol intake, smoking status, regular exercise, BMI, history of hypertension, history of CVD, history of respiratory disease, history of chronic kidney disease, medication for psychiatric disorder, use of immunosuppressive agents and medication for dyslipidemia as a time-dependent categorical variables and baseline age, sex, center, year of screening exam and education level as time-fixed variables.

Abbreviations: BMI, body mass index; CI, confidence interval; CVD, cardiovascular disease; DM, diabetes mellitus; FBG, fasting blood glucose; HR, hazard ratio; HOMA-IR, homeostasis model assessment of insulin resistance

‡HOMA-IR quintile levels. EIA: quintile 1, < 0.74; quintile 2, 0.74 to 1.05; quintile 3, 1.06 to 1.42; quintile 4, 1.43 to 2.01 ; quintile 5, ≥2.02
RIA: quintile 1, < 1.50; quintile 2, 1.51 to 1.80; quintile 3, 1.81 to 2.16; quintile 4, 2.17 to 2.70 ; quintile 5, ≥2.71

§HOMA -IR 75 percentile level. RIA: 2.54, EIA : 1.83