Figure S1. Association of BMI with cause-specific mortality (sub-distribution hazard ratios and 95 % confidence intervals), modelled using restricted cubic splines with 4 knots in a competing risks regression model, adjusted for age, sex, HIV status and socioeconomic status. A BMI of 22 was used as the reference to display the hazard ratios.
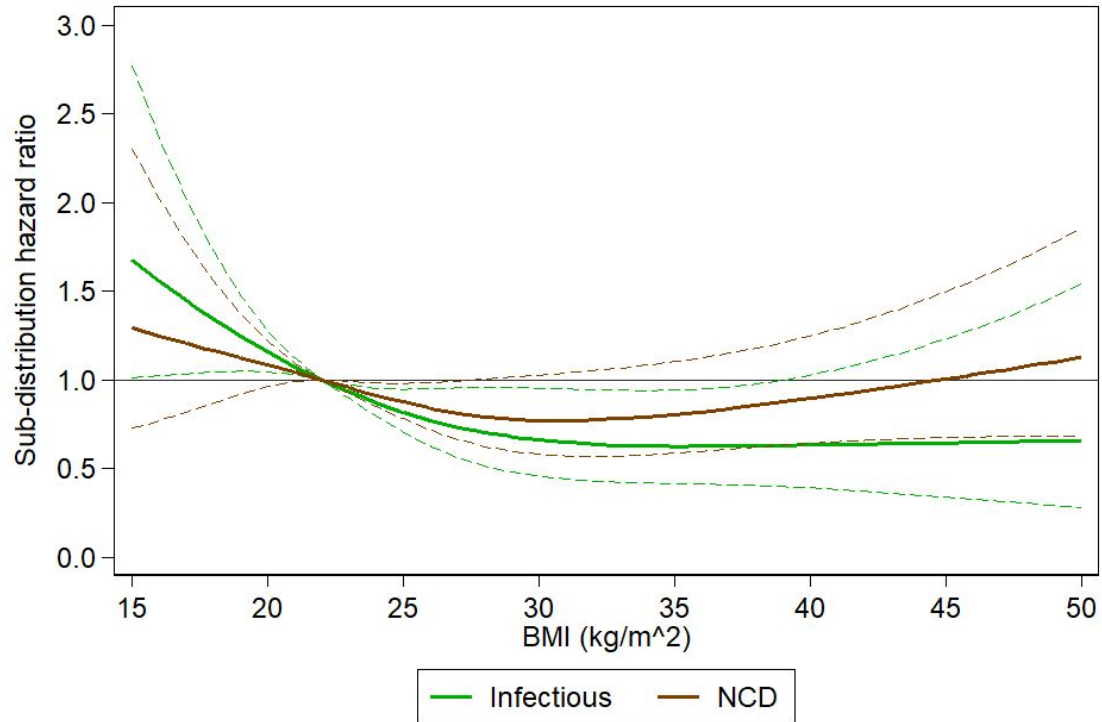
Table S1. Baseline characteristics of those who had BMI measured in the 2010 survey, and those who were eligible for survey but did not have BMI measured

	Eligible for survey[1]	BMI measured	BMI not measured[2]
	N=26,194	**N=9,728**	**N=16,466**
Median (IQR) age (years)	32 (20–50)	31 (20–51)	32 (21–49)
Age group			**P<0.001[3]**
<30	12175 (46.5%)	4656 (47.9%)	7519 (45.7%)
35-44	5516 (21.1%)	1817 (18.7%)	3699 (22.5%)
45-59	4602 (17.6%)	1771 (18.2%)	2831 (17.2%)
60+	3901 (14.9%)	1484 (15.3%)	2417 (14.7%)
Sex			**P<0.001**
Male	9966 (38.0%)	2969 (30.5%)	6997 (42.5%)
Female	16228 (62.0%)	6759 (69.5%)	9469 (57.5%)
Marital status			**P<0.001**
Single (never married)	8114 (31.2%)	3044 (31.5%)	5070 (31.1%)
Married/informal union	14958 (57.6%)	5436 (56.2%)	9522 (58.4%)
Widow/sep/divorced	2910 (11.2%)	1185 (12.3%)	1725 (10.6%)
Missing	*212*	*63*	*149*
Education			**P<0.001**
None	4558 (17.5%)	1824 (18.8%)	2734 (16.7%)
Less than complete secondary	13466 (51.6%)	5287 (54.5%)	8179 (49.9%)
Complete secondary/above	8051 (30.9%)	2589 (26.7%)	5462 (33.4%)
Missing	*119*	*28*	*91*
Employed			**P<0.001**
No	19998 (77.3%)	8164 (84.7%)	11834 (73.0%)
Yes	5859 (22.7%)	1476 (15.3%)	4383 (27.0%)
Missing	*337*	*88*	*249*
Residence			**P<0.001**
Urban	1953 (7.5 %)	537 (5.5 %)	1416 (8.6 %)
Peri-urban	8084 (30.9%)	2980 (30.7%)	5104 (31.1%)
Rural	16092 (61.6%)	6195 (63.8%)	9897 (60.3%)
Missing	*65*	*16*	*49*
SES tertile[4]			**P<0.001**
Low	8566 (33.6%)	3451 (36.0%)	5115 (32.2%)
Middle	8330 (32.7%)	3199 (33.4%)	5131 (32.3%)
High	8569 (33.7%)	2934 (30.6%)	5635 (35.5%)
Missing	*729*	*144*	*585*

[1]Individuals who were on the eligibility list for the 2010 survey (aged ≥15 years as of Dec 2009 and resident in the DSS), were successfully contacted (92% of all on the list) and still eligible at the time of contact (75% of those contacted). [2]Includes 16,431 individuals who refused consent, and 35 individuals who consented but for whom BMI measurements were not available. [3]P-value from Chi-squared test comparing those with BMI measurements and those without (excludes missing values). [4]Calculated from an asset index derived using principal component analysis, based on ownership of household items as measured in the annual household survey.

Table S2. Association of BMI and other covariates with all-cause mortality

	Crude HR[1] (95% CI)	Adjusted HR[1] (95% CI)
BMI (kg/m^2) [2]	P<0.001	P<0.001
<18.5	1.54 (1.28 -1.86)	1.37 (1.12 -1.69)
18.5-24.9	1	1
25.0-29.9	0.64 (0.56 -0.73)	0.80 (0.69 -0.92)
30.0-34.9	0.53 (0.43 -0.65)	0.75 (0.60 -0.93)
≥35	0.54 (0.44 -0.67)	0.80 (0.64 -1.02)
Sex	P<0.001	P<0.001
Male	1	1
Female	0.43 (0.37 -0.50)	0.52 (0.44 -0.62)
HIV status[3]	P<0.001	P<0.001
Negative	1	1
Positive not on ART	3.68 (2.91 -4.67)	3.73 (2.93 -4.75)
Positive on ART	3.27 (2.59 -4.12)	3.11 (2.44 -3.95)
Unknown[4]	3.44 (2.83 -4.19)	3.11 (2.54 -3.81)
SES tertile[5]	P=0.49	P=0.68
Low	1	1
Middle	0.96 (0.81 -1.14)	0.96 (0.81 -1.15)
High	0.90 (0.76 -1.07)	0.93 (0.78 -1.10)

[1]HRs estimated from Cox regression; adjusted for current age (as timescale). Models were weighted to account for non-response in the 2010 survey. [2]BMI modelled as a continuous covariate by restricted cubic splines with 4 knots; deaths / person-years in each group shown for information only. HRs are presented at selected values of BMI, comparing the median value in each BMI group to BMI 22 as the reference. [3]Imputed HIV status in 2010, based on complete history of testing in the DSS, including subsequent years. [4]Includes 402 individuals who never tested, 138 whose last test was negative but >2 years before the survey, and individuals whose first test was after 2010, and was positive. [5]Calculated from an asset index derived using principal component analysis, based on ownership of household items as measured in the annual household survey.

Table S3. Causes of death, by BMI category

	All deaths	BMI (kg/m^2)[1]				
		<18.5	18.5– 24.9	25.0–29.9	30.0–34.9	≥35.0
Infectious/parasitic	261 (33.5%)	31 (36.9%)	131 (39.1%)	52 (28.3%)	29 (31.2%)	18 (21.7%)
Neoplasms	97 (12.5%)	18 (21.4%)	39 (11.6%)	15 (8.2 %)	9 (9.7 %)	16 (19.3%)
Endocrine/metabolic	26 (3.3 %)	0 (0.0 %)	10 (3.0 %)	9 (4.9 %)	4 (4.3 %)	3 (3.6 %)
Cardiovascular	169 (21.7%)	14 (16.7%)	55 (16.4%)	49 (26.6%)	25 (26.9%)	26 (31.3%)
COPD/asthma	8 (1.0 %)	1 (1.2 %)	3 (0.9 %)	1 (0.5 %)	0 (0.0 %)	3 (3.6 %)
Acute abdomen/liver failure	27 (3.5 %)	3 (3.6 %)	7 (2.1 %)	10 (5.4 %)	2 (2.2 %)	5 (6.0 %)
Renal failure	32 (4.1 %)	1 (1.2 %)	7 (2.1 %)	17 (9.2 %)	5 (5.4 %)	2 (2.4 %)
Epilepsy	3 (0.4 %)	1 (1.2 %)	0 (0.0 %)	2 (1.1 %)	0 (0.0 %)	0 (0.0 %)
Pregnancy/childbirth	5 (0.6 %)	0 (0.0 %)	1 (0.3 %)	1 (0.5 %)	1 (1.1 %)	2 (2.4 %)
Injury/accident/poisoning	83 (10.7%)	8 (9.5 %)	52 (15.5%)	18 (9.8 %)	3 (3.2 %)	2 (2.4 %)
Unknown	68 (8.7 %)	7 (8.3 %)	30 (9.0 %)	10 (5.4 %)	15 (16.1%)	6 (7.2 %)
Total	**779**	**84**	**335**	**184**	**93**	**83**