

Exploring the association between mobility and  
2 healthcare use among female sex workers in Zimbabwe:  
web Appendix

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8 **Appendix 1: Coding of variables**

**Table A1**

Variable	Data transformation
<b>Population</b>	
(1) Family size	Number of children
(2) Age	18-19, 20-24, 25-29, 30-39, >=40
(3) Education	No formal education, Primary, Secondary
(4) Marital status	Married, Divorced, Widowed, Never married
(5) Mental illness	PHQ9 > 9
(6) Substance use	Drinks alcohol four or more times a week or took drugs to get high in the past 12 months
(7) Social support	Good or very good relations with other sex workers at site of interview and agree or strongly agree that colleagues would support her if refused to have sex with a client without a condom and if a client became aggressive or violent
(8) Hunger	In the past four weeks, was there ever no food to eat of any kind in your house because of lack of resources to get food?
(9) Livelihood options	Proportion of income from sex wor: less than all, all
(10) Has telephone	Has own cellphone
(11) Stigma	Agree or strongly agree that because of work as a sex worker: have lost respect or standing in the community; think less of myself; have felt ashamed. Or, answering 'a few times' or 'often' that because of work as a sex worker: people have talked badly about me; healthcare workers talked badly about me; I have been denied health services; I have been verbally insulted, harassed and/or threatened; I have felt that people have not wanted to sit next to me, for example on public transport, at church or in a waiting room
(12) Violence	Husband, boyfriend, sexual partner, client, or police has hit, slapped, pushed, shoved, or otherwise physically hurt her in past month; or raped by police in past month
(13) HIV status	HIV-negative or living-with-HIV
<b>Behaviour</b>	
<i>Mobility</i>	
(14) Number of trips	0, 1-2, >=3
(15) ... motivated /not-motivated by sex work	0, 1-2, >=3
(16) ... used /not-used healthcare	0, 1-2, >=3
(17) Days away	0, 1-14, 15-30, >=31
(18) ... where worked / where-did-not-work in sex work	0, 1-14, 15-30, >=31
(19) ... within 5km / further than 5km from <i>Sisters</i> site	0, 1-14, 15-30, >=31
(20) ... within Zimbabwe / outside Zimbabwe	0, 1-14, 15-30, >30
(21) ... same linguistic area / different linguistic area	0, 1-14, 15-30, >=31
(22) ... at a mine or growth point / at a town or city	0, 1-14, 15-30, >=31
(23) Distance travelled (km)	0, 1-99, 100-499, >=500
<i>Healthcare use</i>	
(23) Comm. mobilization (N=all)	Attended, not-attended in past 12 months

Variable	Data transformation
(24) Clinic attendance (N=all)	Attended two or more times, attended once or fewer times in past 12 months
(25) Know status (N=all)	Report HIV positive & positive or report testing within last three months and negative
(26) Taking ART (N=Know-HIV-positive)	Taking ART, not taking ART
(27) Viral suppression (N=HIV-positive)	Viral load <1000 copies/ml, viral load $\geq$ 1000 copies/ml
(28) Taking PrEP (N=HIV-negative in intervention-arm only)	Taking PrEP, not taking PrEP

10 **Table A1:** variables in the analysis. The PrEP measures refer to having ever taken PrEP (ever initiated PrEP) as the data on PrEP adherence was not good quality.

12 **Appendix 2: Covariates DAG**

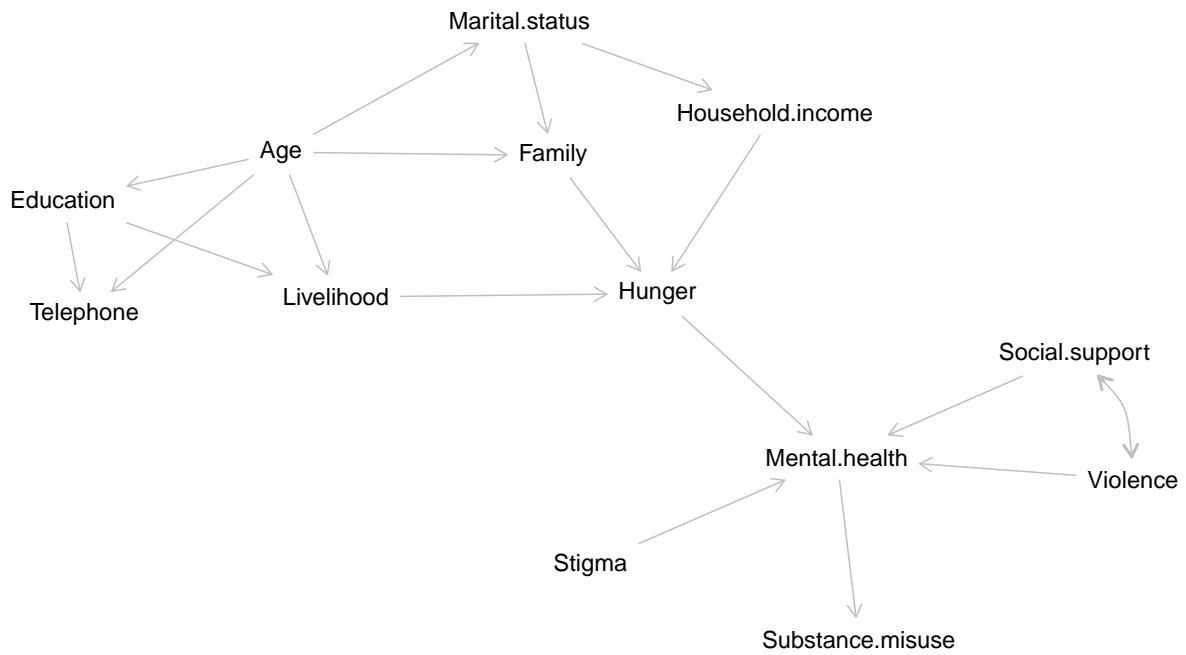


Figure 1: DAG for the selected covariates, where arrows indicate an assumed causal relationship. Each covariate is assumed to be independently causally related to the exposure (mobility) and outcome (healthcare use; the corresponding arrows have been omitted for clarity).

## Appendix 3: Bivariate categorical results

<b>Table II*: Bivariate analysis</b>		<b>Took part in community mobilisation</b>	<b>Attended clinic two or more times</b>	<b>Recently tested</b>
		N=2,725 RR (95% CI)	N=2,725 RR (95% CI)	N=1,121 RR (95% CI)
<b>Trips in 12 months (cat)</b>				
0	150/538: 28%	(base)	267/538: 51%	130/201: 65%
1	216/760: 29%	1.11 (0.90 to 1.37)	367/761: 50%	206/314: 67%
2	188/638: 30%	1.15 (0.93 to 1.42)	341/640: 55%	169/265: 65%
3+	319/848: 38%	1.47 (1.21 to 1.78)	486/848: 57%	239/367: 66%
<b>motivated by sex work (cat)</b>				
0	403/1,387: 29%	(base)	657/1,387: 48%	348/544: 65%
1	180/654: 28%	0.98 (0.83 to 1.16)	369/657: 57%	167/264: 64%
2	135/384: 35%	1.15 (0.96 to 1.38)	227/384: 61%	126/180: 72%
3+	155/359: 44%	1.50 (1.26 to 1.77)	208/359: 58%	103/159: 66%
<b>not motivated by sex work (cat)</b>				
0	329/1,083: 31%	(base)	577/1,084: 55%	303/451: 69%
1	336/1,069: 32%	1.12 (0.97 to 1.30)	553/1,071: 53%	280/444: 63%
2	119/382: 32%	1.08 (0.88 to 1.33)	196/382: 51%	94/151: 62%
3+	89/250: 35%	1.27 (1.03 to 1.57)	135/250: 53%	67/101: 70%
<b>where did not use healthcare (cat)</b>				
0	189/653: 29%	(base)	329/653: 52%	151/236: 65%
1	225/782: 30%	1.10 (0.91 to 1.34)	381/783: 50%	219/329: 67%
2	185/624: 30%	1.11 (0.91 to 1.36)	334/626: 55%	170/267: 64%
3+	274/724: 38%	1.43 (1.19 to 1.72)	416/724: 57%	204/315: 66%
<b>where used healthcare (cat)</b>				
0	689/2,310: 30%	(base)	1,196/2,313: 53%	620/966: 65%
1	147/391: 38%	1.20 (1.02 to 1.42)	210/391: 55%	99/146: 69%
2	30/69: 46%	1.44 (1.07 to 1.92)	43/69: 66%	22/30: 72%
3+	7/13: 62%	1.83 (0.96 to 3.47)	11/13: 86%	3/5: 69%

<b>Table II*: Bivariate analysis</b>		<b>Took part in community mobilisation</b>		<b>Attended clinic two or more times</b>		<b>Recently tested</b>	
<b>(Continued)</b>		<b>N=2,725</b>	<b>RR (95% CI)</b>	<b>N=2,725</b>	<b>RR (95% CI)</b>	<b>N=1,121</b>	<b>RR (95% CI)</b>
Days away in 12 months (cat)							
0	159/571: 28%	(base)	282/571: 50%	(base)	141/218: 66%	(base)	
1-14	206/696: 30%	1.14 (0.93 to 1.40)	357/695: 52%	1.01 (0.88 to 1.15)	205/317: 66%	1.04 (0.89 to 1.21)	
15-30	151/462: 34%	1.33 (1.07 to 1.65)	253/464: 55%	1.14 (0.99 to 1.31)	130/183: 73%	1.12 (0.96 to 1.32)	
31+	357/1,055: 34%	1.29 (1.07 to 1.55)	569/1,057: 55%	1.09 (0.97 to 1.23)	268/429: 63%	0.96 (0.83 to 1.11)	
where worked in SW (cat)							
0	344/1,211: 29%	(base)	576/1,211: 49%	(base)	314/481: 66%	(base)	
1-14	158/511: 31%	1.12 (0.94 to 1.34)	284/511: 56%	1.14 (1.01 to 1.28)	153/232: 68%	1.02 (0.89 to 1.17)	
15-30	118/343: 34%	1.38 (1.14 to 1.67)	193/346: 57%	1.20 (1.06 to 1.37)	87/129: 69%	1.02 (0.87 to 1.20)	
31+	253/719: 36%	1.21 (1.03 to 1.41)	408/719: 58%	1.21 (1.09 to 1.34)	190/305: 63%	0.94 (0.83 to 1.07)	
where did not work in SW (cat)							
0	406/1,294: 32%	(base)	681/1,295: 54%	(base)	367/544: 69%	(base)	
1-14	232/733: 32%	1.10 (0.95 to 1.29)	404/732: 56%	1.07 (0.97 to 1.18)	187/299: 62%	0.96 (0.85 to 1.08)	
15-30	129/393: 33%	1.08 (0.89 to 1.29)	205/395: 52%	1.04 (0.92 to 1.18)	113/171: 68%	0.97 (0.84 to 1.12)	
31+	106/364: 28%	1.07 (0.87 to 1.32)	171/365: 48%	0.90 (0.77 to 1.04)	77/133: 59%	0.85 (0.71 to 1.02)	
near Sisters site (cat)							
0	330/1,173: 29%	(base)	575/1,173: 50%	(base)	294/452: 65%	(base)	
1-14	212/634: 34%	1.19 (1.01 to 1.41)	352/634: 56%	1.08 (0.97 to 1.21)	184/283: 67%	1.02 (0.90 to 1.16)	
15-30	133/377: 36%	1.34 (1.11 to 1.62)	215/379: 57%	1.18 (1.04 to 1.33)	120/166: 74%	1.08 (0.94 to 1.25)	
31+	198/600: 33%	1.21 (1.02 to 1.44)	319/601: 55%	1.07 (0.95 to 1.20)	146/246: 60%	0.86 (0.74 to 1.00)	
no Sisters site (cat)							
0	374/1,271: 30%	(base)	653/1,273: 53%	(base)	341/532: 65%	(base)	
1-14	188/598: 32%	1.16 (0.98 to 1.37)	320/597: 54%	1.08 (0.97 to 1.21)	180/260: 70%	1.13 (1.00 to 1.27)	
15-30	122/363: 35%	1.23 (1.02 to 1.49)	187/365: 52%	1.01 (0.89 to 1.16)	86/147: 62%	0.91 (0.76 to 1.09)	
31+	189/552: 35%	1.17 (0.99 to 1.39)	301/552: 55%	1.08 (0.97 to 1.21)	137/208: 66%	1.07 (0.93 to 1.23)	
outside Zimbabwe (cat)							
0	670/2,287: 30%	(base)	1,157/2,290: 52%	(base)	618/941: 67%	(base)	
1-14	66/153: 43%	1.29 (1.02 to 1.63)	99/153: 66%	1.09 (0.90 to 1.31)	37/66: 55%	0.92 (0.71 to 1.19)	
15-30	51/138: 36%	1.25 (0.97 to 1.60)	82/138: 59%	1.16 (0.98 to 1.38)	34/56: 64%	1.01 (0.79 to 1.29)	
31+	86/206: 42%	1.17 (0.94 to 1.45)	123/206: 61%	1.08 (0.93 to 1.26)	55/84: 65%	0.94 (0.77 to 1.14)	
inside Zimbabwe (cat)							
0	209/704: 30%	(base)	358/704: 52%	(base)	178/277: 66%	(base)	
1-14	216/722: 31%	1.06 (0.88 to 1.28)	378/721: 53%	1.04 (0.92 to 1.18)	207/320: 65%	1.05 (0.92 to 1.21)	
15-30	153/455: 34%	1.32 (1.08 to 1.60)	251/457: 56%	1.16 (1.02 to 1.31)	129/184: 73%	1.09 (0.93 to 1.27)	
31+	295/903: 33%	1.19 (1.00 to 1.42)	474/905: 54%	1.08 (0.96 to 1.21)	230/366: 63%	0.98 (0.85 to 1.14)	
in different linguistic area (cat)							
0	745/2,426: 31%	(base)	1,266/2,428: 53%	(base)	648/989: 67%	(base)	
1-14	66/160: 44%	1.25 (1.01 to 1.55)	88/160: 56%	1.00 (0.83 to 1.20)	56/84: 68%	1.05 (0.87 to 1.27)	
15-30	30/87: 37%	1.12 (0.82 to 1.52)	42/88: 50%	0.93 (0.73 to 1.18)	15/35: 39%	0.62 (0.41 to 0.96)	
31+	32/111: 26%	1.03 (0.74 to 1.43)	65/111: 57%	1.17 (0.95 to 1.43)	25/39: 65%	0.99 (0.75 to 1.30)	
in the same linguistic area (cat)							
0	244/795: 31%	(base)	405/795: 52%	(base)	201/316: 65%	(base)	
1-14	218/730: 30%	1.04 (0.87 to 1.24)	381/729: 53%	1.03 (0.91 to 1.16)	204/315: 65%	1.06 (0.92 to 1.21)	
15-30	146/445: 33%	1.21 (1.00 to 1.47)	250/447: 56%	1.15 (1.01 to 1.30)	131/186: 73%	1.12 (0.97 to 1.30)	
31+	265/814: 33%	1.14 (0.96 to 1.36)	425/816: 54%	1.06 (0.94 to 1.19)	208/330: 64%	0.98 (0.85 to 1.13)	



Table II*: Bivariate analysis (Continued)		Took part in community mobilisation N=2,725 RR (95% CI)		Attended clinic two or more times N=2,725 RR (95% CI)		Recently tested N=1,121 RR (95% CI)	
at mine, growthpoint, or farm (cat)							
0		517/1,700: 30%	(base)	870/1,702: 52%	(base)	449/709: 64%	(base)
1-14		163/522: 33%	1.04 (0.88 to 1.23)	279/521: 54%	1.10 (0.98 to 1.22)	151/211: 73%	1.15 (1.03 to 1.29)
15-30		104/274: 38%	1.33 (1.10 to 1.61)	154/276: 56%	1.12 (0.97 to 1.28)	83/123: 69%	1.05 (0.90 to 1.23)
31+		89/287: 32%	1.09 (0.87 to 1.35)	157/287: 56%	1.09 (0.95 to 1.26)	61/104: 59%	0.97 (0.80 to 1.19)
at a town or city (cat)							
0		303/1,094: 28%	(base)	553/1,095: 52%	(base)	276/424: 66%	(base)
1-14		218/629: 35%	1.27 (1.07 to 1.50)	342/629: 55%	1.05 (0.94 to 1.17)	183/282: 65%	1.05 (0.92 to 1.19)
15-30		137/388: 36%	1.37 (1.13 to 1.65)	212/389: 56%	1.10 (0.97 to 1.25)	114/162: 74%	1.04 (0.90 to 1.21)
31+		215/672: 32%	1.20 (1.01 to 1.42)	353/673: 53%	1.03 (0.92 to 1.15)	171/279: 62%	0.91 (0.79 to 1.04)
Distance travelled in 12 months (cat)							
0		150/538: 28%	(base)	267/538: 51%	(base)	130/201: 65%	(base)
1-99		10/55: 17%	0.77 (0.40 to 1.51)	23/55: 37%	0.93 (0.66 to 1.30)	8/23: 38%	0.53 (0.27 to 1.03)
100-499		225/822: 29%	1.07 (0.87 to 1.32)	402/824: 51%	0.96 (0.84 to 1.10)	237/345: 69%	1.07 (0.92 to 1.24)
500+		488/1,369: 36%	1.37 (1.14 to 1.64)	769/1,370: 56%	1.12 (1.00 to 1.27)	369/578: 65%	0.99 (0.86 to 1.14)

<b>Table III*: Bivariate analysis</b>		<b>Taking PrEP</b> N=710 RR (95% CI)	<b>Know living with HIV</b> N=1,604 RR (95% CI)	<b>Taking ART</b> N=1,293 RR (95% CI)	<b>Viral suppresion</b> N=1,109 RR (95% CI)
<b>Trips in 12 months (cat)</b>					
0	20/135: 13%	(base)	279/337: 82%	248/279: 90%	205/248: 82%
1	36/209: 18%	1.24 (0.71 to 2.16)	370/446: 82%	313/370: 84%	265/313: 84%
2	27/158: 17%	1.34 (0.74 to 2.44)	303/372: 82%	255/303: 84%	216/255: 85%
3+	35/235: 17%	1.01 (0.56 to 1.81)	366/478: 76%	315/366: 85%	269/315: 86%
<b>motivated by sex work (cat)</b>					
0	61/375: 16%	(base)	687/842: 81%	595/687: 86%	502/595: 84%
1	26/156: 18%	0.87 (0.53 to 1.43)	321/388: 83%	270/321: 84%	231/270: 87%
2	19/113: 19%	0.99 (0.59 to 1.65)	152/204: 74%	125/152: 82%	107/125: 85%
3+	12/93: 15%	0.74 (0.38 to 1.44)	158/199: 79%	141/158: 88%	115/141: 82%
<b>not motivated by sex work (cat)</b>					
0	44/281: 16%	(base)	521/632: 82%	453/521: 87%	379/453: 84%
1	42/286: 15%	1.09 (0.71 to 1.68)	504/624: 81%	423/504: 83%	350/423: 83%
2	23/101: 25%	1.46 (0.87 to 2.44)	182/228: 81%	160/182: 89%	145/160: 91%
3+	9/69: 15%	0.89 (0.43 to 1.86)	111/149: 72%	95/111: 85%	81/95: 86%
<b>where did not use healthcare (cat)</b>					
0	26/156: 17%	(base)	350/416: 83%	308/350: 89%	258/308: 84%
1	39/228: 17%	1.20 (0.73 to 1.97)	368/454: 81%	315/368: 85%	264/315: 83%
2	24/156: 16%	1.02 (0.56 to 1.85)	285/356: 80%	238/285: 82%	204/238: 87%
3+	29/197: 17%	0.97 (0.55 to 1.69)	314/406: 77%	269/314: 85%	228/269: 86%
<b>where used healthcare (cat)</b>					
0	93/617: 16%	(base)	1,082/1,341: 80%	928/1,082: 85%	780/928: 84%
1	20/98: 21%	1.28 (0.79 to 2.05)	200/244: 81%	171/200: 85%	147/171: 86%
2	5/18: 31%	1.44 (0.64 to 3.25)	28/39: 72%	24/28: 90%	21/24: 85%
3+	0/4: 0%	0.00 (0.00 to 0.00)	7/8: 86%	7/7: 100%	6/7: 87%

Table III*: Bivariate analysis (Continued)		Taking PrEP N=710 RR (95% CI)		Know living with HIV N=1,604 RR (95% CI)		Taking ART N=1,293 RR (95% CI)		Viral suppression N=1,109 RR (95% CI)	
Days away in 12 months (cat)									
0	20/148: 12%	(base)	290/353: 82%	(base)	256/290: 89%	(base)	212/256: 83%	(base)	
1-14	35/176: 20%	1.65 (0.96 to 2.85)	314/375: 84%	0.98 (0.90 to 1.08)	269/314: 85%	0.94 (0.89 to 1.03)	228/269: 85%	1.01 (0.93 to 1.09)	
15-30	14/107: 16%	0.90 (0.42 to 1.91)	225/280: 80%	0.97 (0.88 to 1.06)	195/225: 86%	0.99 (0.92 to 1.07)	167/195: 87%	0.99 (0.91 to 1.08)	
31+	49/306: 18%	1.19 (0.69 to 2.06)	489/625: 78%	0.96 (0.89 to 1.03)	411/489: 84%	0.94 (0.87 to 1.01)	348/411: 84%	0.99 (0.92 to 1.06)	
where worked in SW (cat)									
0	48/330: 14%	(base)	587/729: 80%	(base)	514/587: 87%	(base)	432/514: 84%	(base)	
1-14	21/130: 17%	1.02 (0.61 to 1.72)	227/275: 83%	0.97 (0.88 to 1.07)	192/227: 84%	0.94 (0.87 to 1.01)	165/192: 86%	1.00 (0.93 to 1.08)	
15-30	14/72: 23%	1.11 (0.60 to 2.03)	179/217: 84%	1.01 (0.92 to 1.10)	154/179: 85%	1.00 (0.94 to 1.07)	131/154: 86%	1.00 (0.92 to 1.08)	
31+	35/205: 19%	0.94 (0.59 to 1.48)	325/412: 78%	0.98 (0.92 to 1.06)	271/325: 84%	0.93 (0.87 to 1.00)	227/271: 84%	0.96 (0.89 to 1.04)	
where did not work in SW (cat)									
0	56/345: 17%	(base)	621/750: 82%	(base)	534/621: 87%	(base)	451/534: 85%	(base)	
1-14	31/172: 17%	1.52 (1.00 to 2.33)	349/430: 81%	0.95 (0.88 to 1.02)	298/349: 84%	1.01 (0.95 to 1.07)	248/298: 84%	1.01 (0.95 to 1.08)	
15-30	17/108: 18%	0.84 (0.48 to 1.46)	172/223: 77%	0.93 (0.85 to 1.02)	150/172: 86%	1.04 (0.96 to 1.12)	129/150: 86%	1.00 (0.91 to 1.09)	
31+	14/112: 14%	1.02 (0.55 to 1.89)	176/230: 76%	0.93 (0.85 to 1.02)	149/176: 85%	1.00 (0.93 to 1.08)	127/149: 84%	1.00 (0.92 to 1.09)	
near Sisters site (cat)									
0	41/295: 12%	(base)	593/719: 82%	(base)	516/593: 88%	(base)	428/516: 83%	(base)	
1-14	29/158: 20%	1.56 (0.98 to 2.49)	288/349: 82%	0.98 (0.90 to 1.07)	247/288: 84%	1.00 (0.93 to 1.06)	211/247: 87%	1.04 (0.97 to 1.11)	
15-30	19/98: 21%	1.37 (0.78 to 2.39)	169/212: 79%	0.99 (0.91 to 1.08)	144/169: 83%	1.01 (0.94 to 1.08)	120/144: 83%	0.99 (0.90 to 1.09)	
31+	29/186: 18%	1.03 (0.63 to 1.68)	268/353: 76%	0.94 (0.86 to 1.02)	224/268: 84%	0.93 (0.87 to 1.01)	196/224: 86%	1.05 (0.98 to 1.12)	
no Sisters site (cat)									
0	64/355: 20%	(base)	597/738: 80%	(base)	520/597: 87%	(base)	440/520: 84%	(base)	
1-14	25/146: 16%	1.14 (0.72 to 1.80)	274/334: 83%	0.99 (0.92 to 1.07)	237/274: 86%	0.99 (0.93 to 1.06)	199/237: 85%	1.00 (0.93 to 1.07)	
15-30	6/91: 7%	0.24 (0.08 to 0.67)	172/218: 79%	0.95 (0.86 to 1.06)	146/172: 84%	0.99 (0.91 to 1.07)	131/146: 92%	1.02 (0.94 to 1.10)	
31+	23/145: 17%	0.93 (0.57 to 1.52)	275/343: 79%	1.01 (0.94 to 1.09)	228/275: 83%	0.97 (0.90 to 1.04)	185/228: 81%	0.92 (0.84 to 1.00)	
outside Zimbabwe (cat)									
0	97/612: 16%	(base)	1,085/1,342: 81%	(base)	926/1,085: 85%	(base)	775/926: 84%	(base)	
1-14	6/34: 19%	0.86 (0.39 to 1.91)	68/87: 78%	0.90 (0.73 to 1.11)	61/68: 88%	1.07 (0.97 to 1.18)	56/61: 96%	1.17 (1.09 to 1.26)	
15-30	6/39: 18%	0.88 (0.39 to 1.98)	67/82: 80%	1.06 (0.94 to 1.19)	59/67: 87%	1.09 (0.99 to 1.19)	54/59: 92%	1.09 (0.99 to 1.20)	
31+	9/52: 20%	0.94 (0.50 to 1.80)	98/122: 79%	1.03 (0.93 to 1.14)	85/98: 87%	1.05 (0.95 to 1.15)	70/85: 82%	0.94 (0.81 to 1.09)	
inside Zimbabwe (cat)									
0	25/180: 13%	(base)	352/427: 82%	(base)	308/352: 88%	(base)	253/308: 82%	(base)	
1-14	38/189: 20%	1.69 (1.03 to 2.76)	334/398: 84%	1.00 (0.92 to 1.08)	283/334: 84%	0.95 (0.88 to 1.01)	240/283: 85%	1.03 (0.95 to 1.11)	
15-30	14/101: 16%	0.94 (0.46 to 1.95)	220/272: 80%	0.98 (0.90 to 1.07)	195/220: 87%	1.01 (0.94 to 1.08)	169/195: 87%	1.03 (0.95 to 1.12)	
31+	41/267: 17%	1.18 (0.70 to 1.98)	412/536: 77%	0.93 (0.87 to 1.01)	345/412: 84%	0.93 (0.86 to 0.99)	293/345: 85%	1.01 (0.94 to 1.09)	
in different linguistic area (cat)									
0	102/616: 17%	(base)	1,164/1,433: 81%	(base)	1,005/1,164: 86%	(base)	847/1,005: 84%	(base)	
1-14	8/65: 14%	0.84 (0.39 to 1.82)	59/75: 77%	0.97 (0.83 to 1.13)	44/59: 72%	0.88 (0.76 to 1.03)	37/44: 85%	1.05 (0.92 to 1.19)	
15-30	1/21: 5%	0.35 (0.05 to 2.48)	44/53: 83%	1.06 (0.94 to 1.20)	37/44: 84%	0.98 (0.86 to 1.12)	31/37: 87%	0.95 (0.79 to 1.14)	
31+	7/35: 21%	1.15 (0.56 to 2.37)	51/72: 73%	0.88 (0.74 to 1.05)	45/51: 89%	0.93 (0.75 to 1.14)	40/45: 86%	1.09 (0.99 to 1.20)	
in the same linguistic area (cat)									
0	30/211: 15%	(base)	393/479: 82%	(base)	342/393: 87%	(base)	284/342: 83%	(base)	
1-14	37/184: 19%	1.76 (1.09 to 2.82)	343/411: 83%	0.99 (0.91 to 1.07)	295/343: 86%	0.96 (0.90 to 1.03)	251/295: 85%	1.01 (0.93 to 1.08)	
15-30	15/107: 16%	1.00 (0.51 to 1.98)	208/260: 79%	0.97 (0.89 to 1.06)	181/208: 85%	1.00 (0.93 to 1.08)	157/181: 87%	1.02 (0.94 to 1.11)	
31+	36/235: 17%	1.14 (0.68 to 1.91)	374/483: 77%	0.94 (0.87 to 1.01)	313/374: 84%	0.94 (0.87 to 1.01)	263/313: 84%	0.98 (0.91 to 1.06)	

Table III*: Bivariate analysis (Continued)		Taking PrEP N=710 RR (95% CI)		Know living with HIV N=1,604 RR (95% CI)		Taking ART N=1,293 RR (95% CI)		Viral suppression N=1,109 RR (95% CI)	
at mine, growthpoint, or farm (cat)									
0	79/475: 17%	(base)	792/989: 79%	(base)	686/792: 87%	(base)	583/686: 85%	(base)	
1-14	22/116: 19%	1.30 (0.82 to 2.05)	261/309: 86%	1.02 (0.94 to 1.10)	218/261: 83%	0.95 (0.88 to 1.01)	184/218: 85%	0.98 (0.91 to 1.06)	
15-30	7/69: 11%	0.45 (0.18 to 1.12)	124/153: 79%	1.02 (0.92 to 1.13)	109/124: 86%	1.01 (0.93 to 1.09)	93/109: 88%	0.95 (0.86 to 1.06)	
31+	10/77: 13%	0.91 (0.47 to 1.76)	140/181: 78%	0.95 (0.85 to 1.05)	117/140: 84%	0.92 (0.83 to 1.02)	94/117: 81%	0.93 (0.84 to 1.03)	
at a town or city (cat)									
0	39/279: 13%	(base)	550/669: 82%	(base)	471/550: 86%	(base)	391/471: 83%	(base)	
1-14	27/156: 17%	1.56 (0.97 to 2.50)	283/344: 81%	0.98 (0.90 to 1.07)	245/283: 86%	1.01 (0.94 to 1.07)	208/245: 86%	1.01 (0.94 to 1.09)	
15-30	18/96: 22%	1.34 (0.76 to 2.35)	177/226: 78%	0.97 (0.89 to 1.06)	153/177: 86%	1.03 (0.96 to 1.11)	132/153: 85%	1.05 (0.97 to 1.13)	
31+	34/206: 19%	1.06 (0.65 to 1.71)	307/393: 77%	0.97 (0.90 to 1.05)	261/307: 85%	0.99 (0.92 to 1.05)	223/261: 85%	1.01 (0.94 to 1.08)	
Distance travelled in 12 months (cat)									
0	20/135: 13%	(base)	279/337: 82%	(base)	248/279: 90%	(base)	205/248: 82%	(base)	
1-99	1/12: 7%	0.88 (0.13 to 6.06)	28/32: 89%	1.01 (0.84 to 1.20)	20/28: 75%	0.78 (0.60 to 1.02)	15/20: 77%	0.78 (0.56 to 1.10)	
100-499	31/177: 19%	1.19 (0.68 to 2.09)	394/479: 83%	0.97 (0.89 to 1.05)	330/394: 82%	0.93 (0.87 to 1.01)	281/330: 85%	0.99 (0.92 to 1.07)	
500+	66/413: 17%	1.19 (0.70 to 2.03)	617/785: 78%	0.95 (0.88 to 1.02)	533/617: 86%	0.97 (0.90 to 1.03)	454/533: 86%	1.00 (0.93 to 1.07)	



Table IV*: Multivariate analysis		Took part in community mobilisation N=2,725 ARR (95% CI)	Attended clinic two or more times N=2,725 ARR (95% CI)	Recently tested N=1,121 ARR (95% CI)	Taking PrEP N=710 ARR (95% CI)	Know living with HIV N=1,604 ARR (95% CI)	Taking ART N=1,293 ARR (95% CI)	Viral suppression N=1,109 ARR (95% CI)
Trips in 12 months (cat)								
0	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)
1	1.10 (0.89 to 1.35)	0.97 (0.85 to 1.11)	1.01 (0.87 to 1.17)	1.23 (0.74 to 2.06)	1.00 (0.93 to 1.09)	0.94 (0.87 to 1.01)	0.99 (0.92 to 1.07)	
2	1.12 (0.91 to 1.38)	1.03 (0.90 to 1.18)	0.97 (0.83 to 1.14)	1.31 (0.74 to 2.32)	1.00 (0.92 to 1.08)	0.95 (0.88 to 1.02)	1.04 (0.96 to 1.12)	
3+	1.41 (1.16 to 1.72)	1.11 (0.98 to 1.26)	0.99 (0.85 to 1.16)	1.03 (0.58 to 1.82)	0.95 (0.87 to 1.03)	0.98 (0.91 to 1.05)	1.02 (0.94 to 1.10)	
motivated by sex work (cat)								
0	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)
1	0.97 (0.82 to 1.14)	1.17 (1.05 to 1.30)	0.97 (0.85 to 1.11)	1.01 (0.62 to 1.66)	1.03 (0.96 to 1.10)	0.98 (0.92 to 1.05)	1.01 (0.94 to 1.08)	
2	1.12 (0.94 to 1.34)	1.18 (1.04 to 1.33)	1.04 (0.90 to 1.19)	1.02 (0.59 to 1.76)	0.92 (0.83 to 1.02)	0.97 (0.89 to 1.06)	1.02 (0.93 to 1.12)	
3+	1.42 (1.19 to 1.69)	1.15 (1.01 to 1.31)	1.01 (0.86 to 1.19)	0.78 (0.40 to 1.53)	1.00 (0.92 to 1.10)	1.04 (0.96 to 1.12)	0.96 (0.87 to 1.06)	
not motivated by sex work (cat)								
0	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)
1	1.12 (0.97 to 1.29)	0.98 (0.89 to 1.08)	0.95 (0.85 to 1.06)	1.11 (0.73 to 1.66)	0.98 (0.92 to 1.04)	0.97 (0.92 to 1.03)	0.98 (0.92 to 1.04)	
2	1.05 (0.86 to 1.29)	0.95 (0.83 to 1.09)	0.95 (0.81 to 1.11)	1.41 (0.85 to 2.35)	0.95 (0.87 to 1.04)	0.99 (0.92 to 1.06)	1.09 (1.03 to 1.16)	
3+	1.25 (1.02 to 1.55)	0.98 (0.85 to 1.14)	0.97 (0.81 to 1.15)	0.85 (0.41 to 1.79)	0.94 (0.84 to 1.05)	0.99 (0.91 to 1.07)	1.02 (0.92 to 1.13)	
where did not use healthcare (cat)								
0	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)
1	1.09 (0.90 to 1.32)	0.98 (0.87 to 1.11)	1.06 (0.92 to 1.22)	1.22 (0.75 to 1.97)	0.94 (0.87 to 1.01)	0.97 (0.91 to 1.04)	0.98 (0.91 to 1.06)	
2	1.10 (0.90 to 1.34)	1.03 (0.91 to 1.17)	1.00 (0.86 to 1.18)	0.99 (0.56 to 1.78)	0.95 (0.88 to 1.03)	0.97 (0.90 to 1.04)	1.05 (0.97 to 1.13)	
3+	1.38 (1.15 to 1.67)	1.12 (0.99 to 1.26)	1.01 (0.86 to 1.18)	0.97 (0.56 to 1.69)	0.93 (0.86 to 1.00)	0.98 (0.92 to 1.06)	1.00 (0.92 to 1.09)	
where used healthcare (cat)								
0	(base)	(base)	(base)	(base)	(base)	(base)	(base)	(base)
1	1.17 (0.99 to 1.38)	1.00 (0.89 to 1.12)	1.03 (0.89 to 1.19)	1.35 (0.86 to 2.12)	1.06 (0.99 to 1.14)	0.98 (0.91 to 1.06)	1.00 (0.92 to 1.08)	
2	1.42 (1.06 to 1.92)	1.19 (0.96 to 1.48)	1.15 (0.92 to 1.43)	1.82 (0.77 to 4.32)	0.94 (0.76 to 1.18)	1.06 (0.89 to 1.26)	1.09 (0.94 to 1.28)	
3+	1.66 (1.03 to 2.70)	1.21 (0.84 to 1.73)	1.51 (1.20 to 1.89)	0.00 (0.00 to 0.00)	1.01 (0.83 to 1.23)	1.13 (1.04 to 1.22)	0.98 (0.71 to 1.35)	

Table IV*: Multivariate analysis		Took part in community mobilisation	Attended clinic two or more times	Recently tested	Taking PrEP	Know living with HIV	Taking ART	Viral suppression
		N=2,725 ARR (95% CI)	N=2,725 ARR (95% CI)	N=1,121 ARR (95% CI)	N=710 ARR (95% CI)	N=1,604 ARR (95% CI)	N=1,293 ARR (95% CI)	N=1,109 ARR (95% CI)
(Continued)								
Days away in 12 months (cat)								
0	(base)							
1-14	1.11 (0.91 to 1.36)	1.00 (0.88 to 1.14)	1.03 (0.89 to 1.19)	1.69 (1.00 to 2.83)	(base)	1.01 (0.93 to 1.09)	0.96 (0.89 to 1.03)	1.03 (0.96 to 1.11)
15-30	1.29 (1.04 to 1.59)	1.11 (0.97 to 1.27)	1.09 (0.93 to 1.28)	0.95 (0.47 to 1.93)	(base)	0.97 (0.89 to 1.07)	0.97 (0.90 to 1.05)	1.00 (0.92 to 1.09)
31+	1.21 (1.01 to 1.46)	1.04 (0.92 to 1.17)	0.95 (0.82 to 1.11)	1.18 (0.70 to 2.00)	(base)	0.99 (0.91 to 1.06)	0.94 (0.88 to 1.01)	1.00 (0.93 to 1.08)
where worked in SW (cat)								
0	(base)							
1-14	1.10 (0.92 to 1.32)	1.14 (1.01 to 1.28)	1.00 (0.88 to 1.14)	1.10 (0.67 to 1.81)	(base)	1.02 (0.94 to 1.11)	0.96 (0.89 to 1.03)	1.02 (0.95 to 1.10)
15-30	1.30 (1.08 to 1.57)	1.16 (1.02 to 1.31)	1.01 (0.86 to 1.19)	1.08 (0.60 to 1.96)	(base)	1.03 (0.94 to 1.12)	1.00 (0.94 to 1.07)	1.01 (0.93 to 1.09)
31+	1.14 (0.97 to 1.33)	1.15 (1.04 to 1.28)	0.93 (0.82 to 1.06)	1.01 (0.64 to 1.58)	(base)	1.03 (0.96 to 1.11)	0.95 (0.89 to 1.02)	0.97 (0.90 to 1.05)
where did not work in SW (cat)								
0	(base)							
1-14	1.08 (0.93 to 1.25)	1.05 (0.95 to 1.16)	0.96 (0.85 to 1.08)	1.53 (0.98 to 2.39)	(base)	0.96 (0.90 to 1.03)	1.00 (0.94 to 1.06)	1.02 (0.96 to 1.09)
15-30	1.08 (0.90 to 1.30)	1.03 (0.91 to 1.17)	0.95 (0.83 to 1.09)	0.85 (0.48 to 1.50)	(base)	0.91 (0.84 to 1.00)	1.01 (0.94 to 1.09)	0.99 (0.91 to 1.08)
31+	1.07 (0.88 to 1.32)	0.89 (0.76 to 1.03)	0.84 (0.71 to 1.01)	0.98 (0.55 to 1.75)	(base)	0.95 (0.87 to 1.03)	1.00 (0.93 to 1.08)	1.02 (0.94 to 1.11)
near Sisters site (cat)								
0	(base)							
1-14	1.15 (0.98 to 1.36)	1.06 (0.95 to 1.19)	1.01 (0.89 to 1.14)	1.44 (0.90 to 2.31)	(base)	1.01 (0.94 to 1.09)	1.00 (0.94 to 1.06)	1.05 (0.98 to 1.13)
15-30	1.31 (1.08 to 1.57)	1.16 (1.03 to 1.31)	1.06 (0.92 to 1.21)	1.22 (0.69 to 2.15)	(base)	0.98 (0.91 to 1.07)	0.99 (0.92 to 1.06)	0.99 (0.90 to 1.08)
31+	1.15 (0.97 to 1.37)	1.03 (0.91 to 1.15)	0.84 (0.73 to 0.98)	1.02 (0.62 to 1.68)	(base)	0.98 (0.91 to 1.06)	0.95 (0.89 to 1.02)	1.06 (0.99 to 1.14)
no Sisters site (cat)								
0	(base)							
1-14	1.14 (0.96 to 1.34)	1.07 (0.96 to 1.19)	1.14 (1.01 to 1.28)	1.18 (0.75 to 1.87)	(base)	1.00 (0.93 to 1.08)	1.00 (0.94 to 1.07)	1.02 (0.95 to 1.09)
15-30	1.18 (0.98 to 1.43)	0.98 (0.86 to 1.12)	0.90 (0.75 to 1.07)	0.24 (0.09 to 0.68)	(base)	0.96 (0.87 to 1.05)	0.99 (0.92 to 1.06)	1.03 (0.95 to 1.11)
31+	1.13 (0.95 to 1.33)	1.05 (0.93 to 1.17)	1.08 (0.94 to 1.24)	0.92 (0.56 to 1.54)	(base)	1.02 (0.95 to 1.10)	0.98 (0.91 to 1.05)	0.93 (0.85 to 1.01)
outside Zimbabwe (cat)								
0	(base)							
1-14	1.25 (1.00 to 1.57)	1.06 (0.88 to 1.27)	0.91 (0.71 to 1.18)	0.85 (0.35 to 2.06)	(base)	0.92 (0.76 to 1.11)	1.08 (0.98 to 1.20)	1.20 (1.12 to 1.30)
15-30	1.17 (0.92 to 1.49)	1.11 (0.94 to 1.32)	0.99 (0.78 to 1.27)	0.93 (0.42 to 2.08)	(base)	1.06 (0.95 to 1.19)	1.08 (0.99 to 1.18)	1.09 (0.99 to 1.21)
31+	1.11 (0.89 to 1.38)	1.03 (0.88 to 1.21)	0.96 (0.79 to 1.17)	0.91 (0.46 to 1.82)	(base)	1.04 (0.94 to 1.15)	1.04 (0.95 to 1.14)	0.95 (0.82 to 1.10)
inside Zimbabwe (cat)								
0	(base)							
1-14	1.05 (0.88 to 1.27)	1.04 (0.92 to 1.18)	1.05 (0.91 to 1.21)	1.73 (1.06 to 2.81)	(base)	1.03 (0.95 to 1.11)	0.95 (0.88 to 1.01)	1.05 (0.97 to 1.14)
15-30	1.29 (1.06 to 1.56)	1.13 (0.99 to 1.28)	1.06 (0.91 to 1.24)	0.94 (0.47 to 1.88)	(base)	0.98 (0.90 to 1.07)	0.99 (0.92 to 1.06)	1.04 (0.95 to 1.12)
31+	1.15 (0.96 to 1.36)	1.04 (0.93 to 1.17)	0.97 (0.84 to 1.13)	1.22 (0.74 to 2.01)	(base)	0.97 (0.90 to 1.05)	0.94 (0.88 to 1.01)	1.03 (0.96 to 1.11)
in different linguistic area (cat)								
0	(base)							
1-14	1.18 (0.96 to 1.47)	0.96 (0.80 to 1.16)	1.06 (0.89 to 1.27)	0.78 (0.35 to 1.73)	(base)	0.95 (0.82 to 1.10)	0.88 (0.76 to 1.01)	1.04 (0.92 to 1.17)
15-30	1.06 (0.78 to 1.46)	0.88 (0.69 to 1.11)	0.61 (0.39 to 0.95)	0.38 (0.05 to 2.86)	(base)	1.04 (0.92 to 1.19)	1.00 (0.87 to 1.15)	0.95 (0.80 to 1.14)
31+	0.97 (0.70 to 1.33)	1.11 (0.91 to 1.35)	1.01 (0.77 to 1.31)	0.96 (0.49 to 1.90)	(base)	0.93 (0.77 to 1.12)	0.94 (0.79 to 1.12)	1.11 (1.01 to 1.23)
in the same linguistic area (cat)								
0	(base)							
1-14	1.03 (0.87 to 1.23)	1.03 (0.92 to 1.16)	1.05 (0.92 to 1.20)	1.92 (1.18 to 3.13)	(base)	1.02 (0.95 to 1.11)	0.97 (0.91 to 1.04)	1.04 (0.96 to 1.12)
15-30	1.19 (0.98 to 1.43)	1.13 (0.99 to 1.28)	1.09 (0.94 to 1.26)	1.02 (0.53 to 1.98)	(base)	0.97 (0.89 to 1.06)	0.98 (0.91 to 1.05)	1.02 (0.94 to 1.11)
31+	1.11 (0.93 to 1.31)	1.03 (0.92 to 1.15)	0.97 (0.84 to 1.13)	1.27 (0.75 to 2.16)	(base)	0.97 (0.90 to 1.05)	0.95 (0.89 to 1.02)	1.00 (0.92 to 1.08)

Table IV*: Multivariate analysis		Took part in community mobilisation	Attended clinic two or more times	Recently tested	Taking PrEP	Know living with HIV	Taking ART	Viral suppression
(Continued)		N=2,725 ARR (95% CI)	N=2,725 ARR (95% CI)	N=1,121 ARR (95% CI)	N=710 ARR (95% CI)	N=1,604 ARR (95% CI)	N=1,293 ARR (95% CI)	N=1,109 ARR (95% CI)
at mine, growthpoint, or farm (cat)								
0		(base)	(base)	(base)	(base)	(base)	(base)	(base)
1-14		1.02 (0.86 to 1.20)	1.08 (0.97 to 1.21)	1.14 (1.01 to 1.27)	1.30 (0.82 to 2.06)	1.05 (0.98 to 1.12)	0.95 (0.89 to 1.02)	1.00 (0.93 to 1.07)
15-30		1.29 (1.07 to 1.56)	1.09 (0.96 to 1.25)	1.02 (0.88 to 1.19)	0.46 (0.18 to 1.17)	1.01 (0.92 to 1.12)	1.01 (0.93 to 1.10)	0.96 (0.87 to 1.07)
31+		1.07 (0.86 to 1.34)	1.08 (0.94 to 1.24)	0.96 (0.79 to 1.17)	1.08 (0.58 to 2.04)	0.98 (0.88 to 1.09)	0.95 (0.86 to 1.04)	0.94 (0.85 to 1.04)
at a town or city (cat)								
0		(base)	(base)	(base)	(base)	(base)	(base)	(base)
1-14		1.25 (1.06 to 1.47)	1.04 (0.93 to 1.16)	1.04 (0.92 to 1.17)	1.47 (0.92 to 2.34)	1.00 (0.93 to 1.08)	1.01 (0.94 to 1.08)	1.03 (0.96 to 1.11)
15-30		1.34 (1.12 to 1.62)	1.08 (0.95 to 1.23)	1.02 (0.88 to 1.19)	1.24 (0.69 to 2.22)	0.95 (0.88 to 1.04)	1.01 (0.94 to 1.08)	1.04 (0.96 to 1.12)
31+		1.14 (0.96 to 1.35)	0.98 (0.88 to 1.10)	0.90 (0.78 to 1.04)	1.02 (0.63 to 1.65)	1.00 (0.93 to 1.08)	0.99 (0.93 to 1.06)	1.02 (0.95 to 1.10)
Distance travelled in 12 months (cat)								
0		(base)	(base)	(base)	(base)	(base)	(base)	(base)
1-99		0.80 (0.41 to 1.55)	0.96 (0.69 to 1.32)	0.53 (0.27 to 1.02)	1.13 (0.20 to 6.52)	1.04 (0.85 to 1.27)	0.81 (0.61 to 1.08)	0.82 (0.60 to 1.13)
100-499		1.06 (0.86 to 1.31)	0.96 (0.84 to 1.09)	1.04 (0.90 to 1.20)	1.27 (0.76 to 2.13)	0.99 (0.91 to 1.07)	0.94 (0.88 to 1.01)	1.01 (0.94 to 1.09)
500+		1.31 (1.09 to 1.57)	1.08 (0.96 to 1.22)	0.98 (0.85 to 1.13)	1.17 (0.71 to 1.93)	0.98 (0.91 to 1.05)	0.97 (0.91 to 1.03)	1.02 (0.95 to 1.09)