

**Table 1. Response rate per District
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 - 2002**

District	Cases	
	Expected	Registered (%)*
Graaff-Reinette	11	19 (172.7)
Uitenhage	63	59 (93.7)
Port Elizabeth	232	262 (112.9)
Humansdorp	9	10 (111.1)
Cradock	7	7 (100.0)
Queenstown	9	18 (200.0)
Aliwal North	8	7 (87.5)
Fort Beaufort	35	30 (85.7)
East London	45	42 (93.3)
King William's Town	30	23 (76.7)
Butterworth	85	166 (195.3)
Umtata	119	129 (108.4)
Libode Health District	65	57 (87.7)
Qumbu Health District	33	32 (97.0)
Flagstaff	111	96 (86.5)
Mount Fletcher	31	34 (109.7)
Mount Frere	31	16 (51.6)
Total	924	1007 (109.0)

* Total of 762 culture-confirmed patients required

Table 2. Treatment history of suspect cases by District
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002

District	Treatment history*						
	No history of prior treatment		History of prior treatment		History unknown		Total
	n	%	n	%	n	%	n
Graaff-Reinette	28	46.7	21	35.0	11	18.3	60
Uitenhage	64	42.7	84	56.0	2	1.3	150
Port Elizabeth	284	47.0	265	43.9	55	9.1	604
Humansdorp	26	65.0	14	35.0	0	0.0	40
Cradock	27	64.3	15	35.7	0	0.0	42
Queenstown	30	51.7	27	46.6	1	1.7	58
Aliwal North	19	73.1	3	11.5	4	15.4	26
Fort Beaufort	47	49.0	45	46.9	4	4.2	96
East London	113	50.9	84	37.8	25	11.3	222
King William's Town	96	63.2	39	25.7	17	11.2	152
Butterworth	203	53.6	141	37.2	35	9.2	379
Umtata	157	60.2	101	38.7	3	1.1	261
Libode Health District	34	43.0	45	57.0	0	0.0	79
Qumbu Health District	95	77.2	27	22.0	1	0.8	123
Flagstaff	199	76.2	52	19.9	10	3.8	261
Mount Fletcher	97	70.8	39	28.5	1	0.7	137
Mount Frere	37	52.9	32	45.7	1	1.4	70
Total	1556	56.4	1034	37.5	170	6.2	2760

* According to patient and/or record

**Table 3. Case detection (microscopy and culture) by District
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002**

District	No of suspects*	Microscopy			Culture		
		Smears done**	Smears positive		Cultures done***	Cultures positive	
			n	%		n	%
Graaff-Reinette	60	59	16	27.1	57	19	33.3
Uitenhage	150	150	50	33.3	144	59	41.0
Port Elizabeth	604	604	236	39.1	563	262	46.5
Humansdorp	40	40	5	12.5	40	10	25.0
Cradock	42	42	5	11.9	36	7	19.4
Queenstown	58	58	16	27.6	53	18	34.0
Aliwal North	26	26	4	15.4	25	7	28.0
Fort Beaufort	96	95	28	29.5	85	30	35.3
East London	222	220	39	17.7	191	42	22.0
King William's Town	152	152	16	10.5	143	23	16.1
Butterworth	379	378	144	38.1	342	166	48.5
Umtata	261	257	118	45.9	239	129	54.0
Libode Health District	79	79	52	65.8	79	57	72.2
Qumbu Health District	123	123	29	23.6	119	32	26.9
Flagstaff	261	260	86	33.1	237	96	40.5
Mount Fletcher	137	137	34	24.8	105	34	32.4
Mount Frere	70	70	16	22.9	64	16	25.0
Total	2760	2750	894	32.5	2522	1007	39.9

* All specimens received

** Excludes smears unreadable

*** Excludes cultures contaminated/not done

Ratio of suspects : smear-positive cases = 3.08 : 1.00

Ratio of suspects : culture-positive cases = 2.50 : 1.00

**Table 4. Demographic profile of culture-confirmed tuberculosis patients (n = 789)
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 - 2002**

Demographics		n	%
Gender	Male	502	63.6
	Female	287	36.4
Age group (years)	0 - 14	12	1.5
	15 - 24	145	18.4
	25 - 34	210	26.6
	35 - 44	192	24.3
	45 - 54	106	13.4
	55 - 64	64	8.1
	65 - 99	51	6.5
	Unknown	9	1.1
History of prior TB treatment*	No	505	64.0
	Yes	283	35.9
	Unknown	1	0.1
	<i>Retreatment RC</i>	76	26.9
	<i>RF</i>	12	4.2
	<i>RI</i>	84	29.7
	<i>RT</i>	101	35.7
<i>Unknown</i>	10	3.5	
History of incarceration	No	644	81.6
	Currently	3	0.4
	Previously	127	16.1
	Unknown	15	1.9

* According to patient and/or record

Retreatment categories

RC = after cure

RF = after failure

RI = after interruption

RT = after treatment completion

**Table 5. Microscopy and culture results (all specimens)
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002**

Microscopy	n	%
Negative	1856	67.2
Positive	894	32.4
Not done	10	0.4
Total	2760	100.0
Culture		
Culture	n	%
Negative	1515	54.9
<i>Mycobacterium tuberculosis</i>	789	28.6
MOTT*	3	0.1
Identification not possible	215	7.8
Contaminated	238	8.6
Total	2760	100.0

* Mycobacteria other than tubercle bacilli

**Table 6. Grading of bacteriology results (confirmed *M. tuberculosis* strains)
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002**

Microscopy		n	%
Grading	Negative	179	22.7
	2 - 9 AFB* per 100 fields	35	4.4
	10 - 99 AFB per 100 fields (1+)	129	16.3
	10 - 99 AFB in 50 fields (2+)	163	20.7
	More than 10 AFB per field in 20 fields (3+)	282	35.9
	Not done	1	0.1
	Total	789	100.0
Culture			
Grading	2 - 19 colonies	156	19.8
	20 - 99 colonies (1+)	101	12.8
	100 - 200 colonies (2+)	132	16.7
	Innumerable, discrete (3+)	301	38.1
	Confluent colonies (4+)	99	12.5
	Total	789	100.0

* AFB = Acid Fast Bacilli

**Table 7. Comparison of microscopy and culture results (both results available)
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002**

		Culture results		Total	
		Positive (%)	Negative (%)	n	(%)
Microscopy results	Positive (%)	808 (80.3)	18 (1.2)	826	(32.8)
	Negative (%)	198 (19.7)	1492 (98.8)	1690	(67.2)
Total		1006 (100.0)	1510 (100.0)	2516	(100.0)

Proportion of culture-confirmed cases

smear-positive: 80.3%
smear negative: 19.7%

**Table 8. History of prior treatment and number of resistant drugs (confirmed *M. tuberculosis* strains)
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002**

Resistance to	Treatment history						Total		
	No history of prior treatment*			History of prior treatment*			n	%	95% CI
	n	%	95% CI	n	%	95% CI			
1 drug	40	7.9	5.0 – 12.1	21	7.4	3.9 – 13.4	61	7.7	5.4 – 10.9
2 drugs	14	2.8	1.2 – 5.9	21	7.4	3.9 – 13.4	35	4.4	2.7 – 7.1
3 drugs	1	0.2	0.0 – 2.2	6	2.1	0.5 – 6.6	7	0.9	0.3 – 2.6
4 drugs	2	0.4	0.0 – 2.5	2	0.7	0.0 – 4.5	4	0.5	0.1 – 2.0
No resistance	449	88.7	84.0 – 92.2	233	82.3	74.8 – 88.0	682	86.4	82.6 – 89.6
Total	506	100.0		283	100.0		789	100.0	

* Prior treatment according patient and/or record

Table 9. Antituberculosis drug resistance
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002

	No history of prior treatment*			History of prior treatment*		
	n	%	(95% CI)	n	%	(95% CI)
Total tested	506	100.0		283	100.0	
Fully susceptible	449	88.7	(84.0 – 92.2)	233	82.3	(74.8 – 88.0)
Any resistance	57	11.3	(7.8 – 16.0)	50	17.7	(12.0 – 25.2)
Mono-resistance						
H	19	3.8	(1.9 – 7.1)	9	3.2	(1.1 – 8.0)
R	1	0.2	(0.0 – 2.2)	1	0.4	(0.0 – 3.9)
E	0	0.0	(0.0 – 1.9)	0	0.0	(0.0 – 3.3)
S	20	4.0	(2.0 – 7.4)	11	3.9	(1.5 – 8.9)
H+R resistance						
HR	3	0.6	(0.1 – 2.8)	13	4.6	(2.0 – 9.9)
HRE	0	0.0	(0.0 – 1.9)	1	0.4	(0.0 – 3.3)
HRS	0	0.0	(0.0 – 1.9)	5	1.8	(0.4 – 6.0)
HRSE	2	0.4	(0.0 – 2.5)	2	0.7	(0.0 – 4.5)
H+ other resistance						
HE	0	0.0	(0.0 – 1.9)	1	0.4	(0.0 – 3.3)
HS	11	2.2	(0.8 – 5.1)	7	2.5	(0.7 – 7.0)
HES	1	0.2	(0.0 – 2.2)	0	0.0	(0.0 – 3.3)
R+ other resistance						
RE	0	0.0	(0.0 – 1.9)	0	0.0	(0.0 – 3.3)
RS	0	0.0	(0.0 – 1.9)	0	0.0	(0.0 – 3.3)
RES	0	0.0	(0.0 – 1.9)	0	0.0	(0.0 – 3.3)
Other multi-resistance						
ES	0	0.0	(0.0 – 1.9)	0	0.0	(0.0 – 3.3)
Any H resistance	36	7.1	(4.4 – 11.2)	38	13.4	(8.5 – 20.4)
Any R resistance	6	1.2	(0.3 – 3.7)	22	7.8	(4.1 – 13.8)
Any E resistance	3	0.6	(0.1 – 2.8)	4	1.4	(0.2 – 5.5)
Any S resistance	34	6.7	(4.1 – 10.7)	25	8.8	(4.9 – 15.1)

* Prior treatment according to patient and/or record

**Table 10. Prevalence of resistance among retreatment patient categories
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002**

Patient category	Total	Fully susceptible		Any resistance		MDR	
		n	%	n	%	n	%
RC	76	69	90.8	7	9.2	1	1.3
RF	12	5	41.7	7	58.3	6	50.0
RI	84	70	83.3	14	16.7	10	11.9
RT	101	79	78.2	22	21.8	4	4.0
Unknown	10	10	100.0	0	0.0	0	0.0
Total	283	233	82.3	50	17.7	21	7.4

RC = Retreatment after cure
 RF = Retreatment after failure
 RI = Retreatment after interruption
 RT = Retreatment after completion

Any resistance among
 Unfavourable outcome = 21.9%
 Favourable outcome = 16.4%

MDR among
 Unfavourable outcome = 16.7%
 Favourable outcome = 2.8%

Table 11. Estimated MDR tuberculosis case load, 2001
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002

	Worst case scenario	Best case scenario
Estimated number of total cases	64976	35452
Proportion retreatment cases	35.9%	35.9%
Proportion new cases	64.1%	64.1%
Estimated number of:		
New cases	41650	22725
Retreatment cases	23326	12727
MDR Prevalence		
New MDR cases	1.0%	1.0%
Retreatment MDR cases	7.4%	7.4%
Estimated number of:		
New MDR cases	416	227
Retreatment MDR cases	1726	942
Total number of MDR cases expected	2142	1169

Table 12. HIV status of confirmed tuberculosis patients by gender, previous treatment and drug resistance (N = 442)
National survey of tuberculosis drug resistance in the Eastern Cape, 2001 – 2002

HIV status	Gender							
	Male		Female		Total			
	n	%	n	%	n	%		
Positive	81	27.5	54	36.7	135	30.5		
Negative	214	72.5	93	63.3	307	69.5		
Total	295	100.0	147	100.0	442	100.0		
	Previous treatment for tuberculosis							
	No history of prior treatment		History of prior treatment		History of prior treatment unknown		Total	
	n	%	n	%	n	%	n	%
Positive	88	32.0	47	28.3	0	0.0	135	30.5
Negative	187	68.0	119	71.7	1	100.0	307	69.5
Total	275	100.0	166	100.0	1	100.0	442	100.0
	Drug resistance							
	Fully susceptible		Any resistance		MDR		Total	
	n	%	n	%	n	%	n	%
Positive	118	32.0	17	23.3	6	33.3	135	30.5
Negative	251	68.0	56	76.7	12	66.7	307	69.5
Total	369	100.0	73	100.0	18	100.0	442	100.0