health
Department:
Health
REPUBLIC OF SOUTH AFRICA

THE NEW DR-TB NATIONAL POLICY AND STATE OF IMPLEMENTATION

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OUTLINE

- Burden of disease
- Available DR-TB services
- Detecting DR-TB
- Treating DR-TB in the hospital
- Decentralization of MDR-TB services
- Conclusion

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BURDEN OF DISEASE

BURDEN: TB

- WHO estimated 1% of the population gets TB annually (490,000)
  - Over 400,000 notified in 2010
- RSA 3rd high burden country after India and China
- RSA is the 5th high burden country globally for DR-TB and 2nd country with notified DR-TB patients on treatment

Laboratory diagnosed MDR-TB

PROVINCE	2004	2005	2006	2007	2008	2009	2010	TOTAL
Eastern Cape	379	545	836	1092	1501	1858	1782	7993
Free State	116	151	198	179	381	253	267	1545
Gauteng	537	676	732	986	1028	1307	934	6200
KwaZulu-Natal	583	1024	2200	2208	1573	1773	2032	11393
Limpopo	59	40	77	91	185	204	126	782
Mpumalanga	162	134	139	506	657	446	312	2356
Northern Cape	168	155	188	199	290	631	353	1984
North West	130	203	225	397	363	520	158	1996
Western Cape	1085	1192	1179	1771	2220	2078	1422	10947
TOTAL	3219	4120	5774	7429	8198	9070	7386	45196

MDR-TB Cases Started on Treatment

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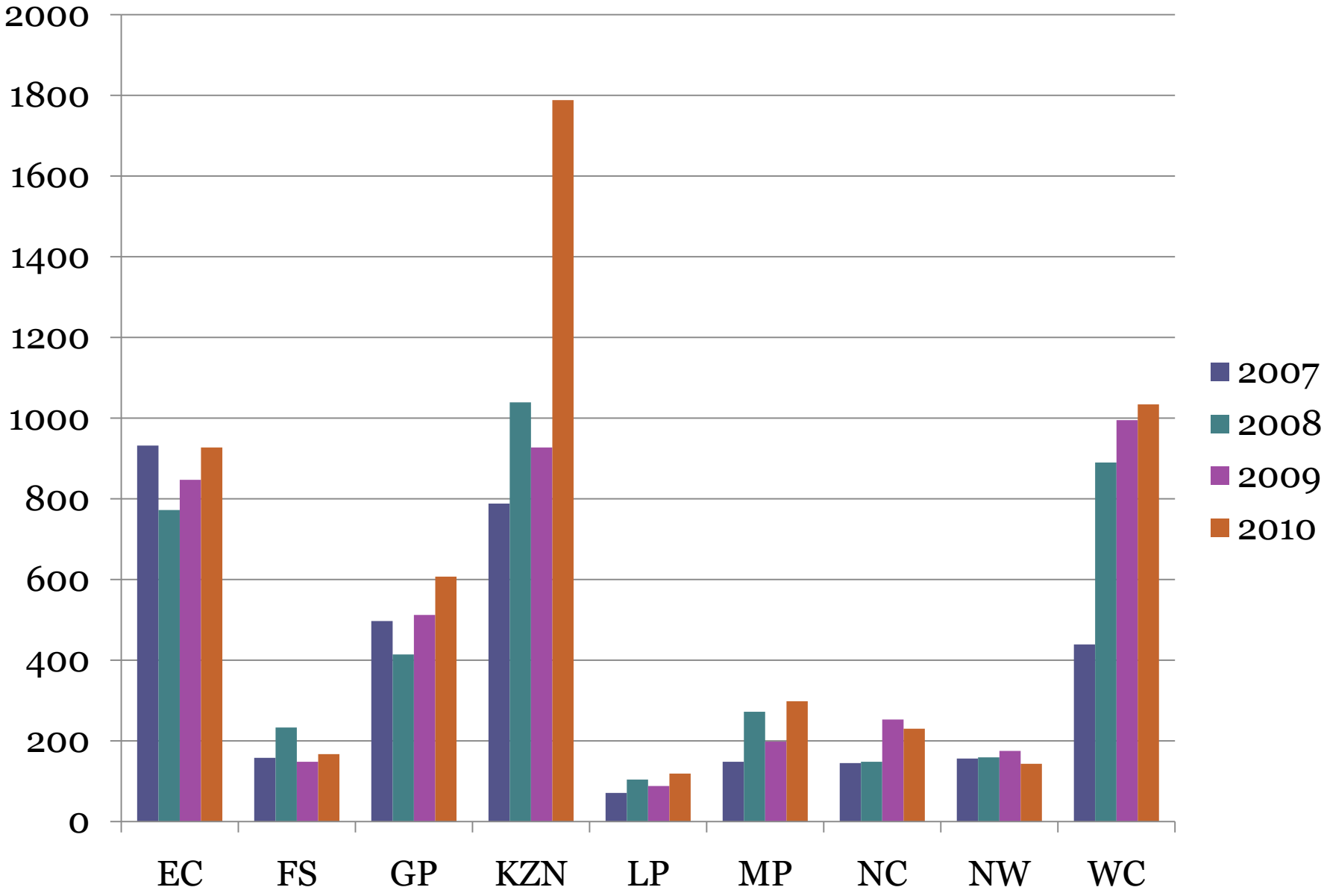

MDR-TB Outcomes 2007

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Province	Rx Success	Failure	Defaulted	Died	T/Out	Still on Rx	HIV +ve
E/Cape	10.0%	10.2%	2.3%	21.0%	15.1%	41.4%	44.4%
F/State	41.9%	8.1%	23.6%	20.9%	5.5%	0	46.6%
Gauteng	19.2%	2.0%	7.0%	16.8%	5.7%	49.2%	50.2%
KZN	70.9%	0.7%	7.0%	16.0%	0	5.3%	0
Limpopo	38.1%	2.8%	22.5%	31.0%	5.6%	0	52.1%
Mpumalanga	56.5%	9.7%	1.4%	32.4%	0	0	36.6%
N/Cape	18.9%	6.2%	15.9%	44.1%	2.1%	13.1%	17.9%
N/West	66.3%	1.9%	6.4%	18.5%	7.0%	0	0
W/Cape	35.4%	8.8%	28.8%	23.4%	2.5%	2.5%	32.9%
RSA	**41.9%**	**4.8%**	**9.6%**	**20.4%**	**5.1%**	**18.2%**	**24.5%**

RSA Treatment Outcome 2003- 2008 (Sensitive TB)

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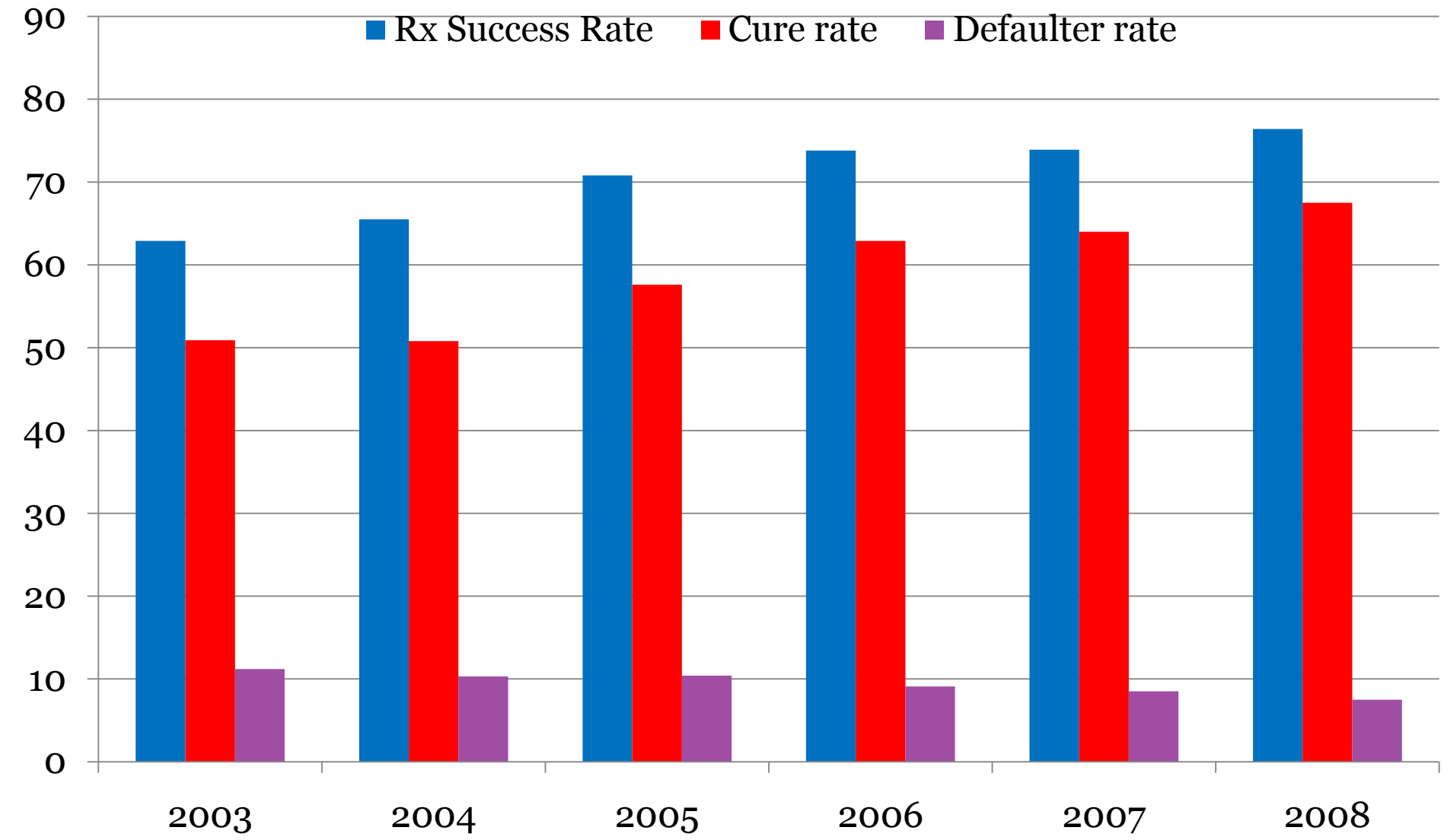

AVAILABLE DR-TB SERVICES

MDR-TB units

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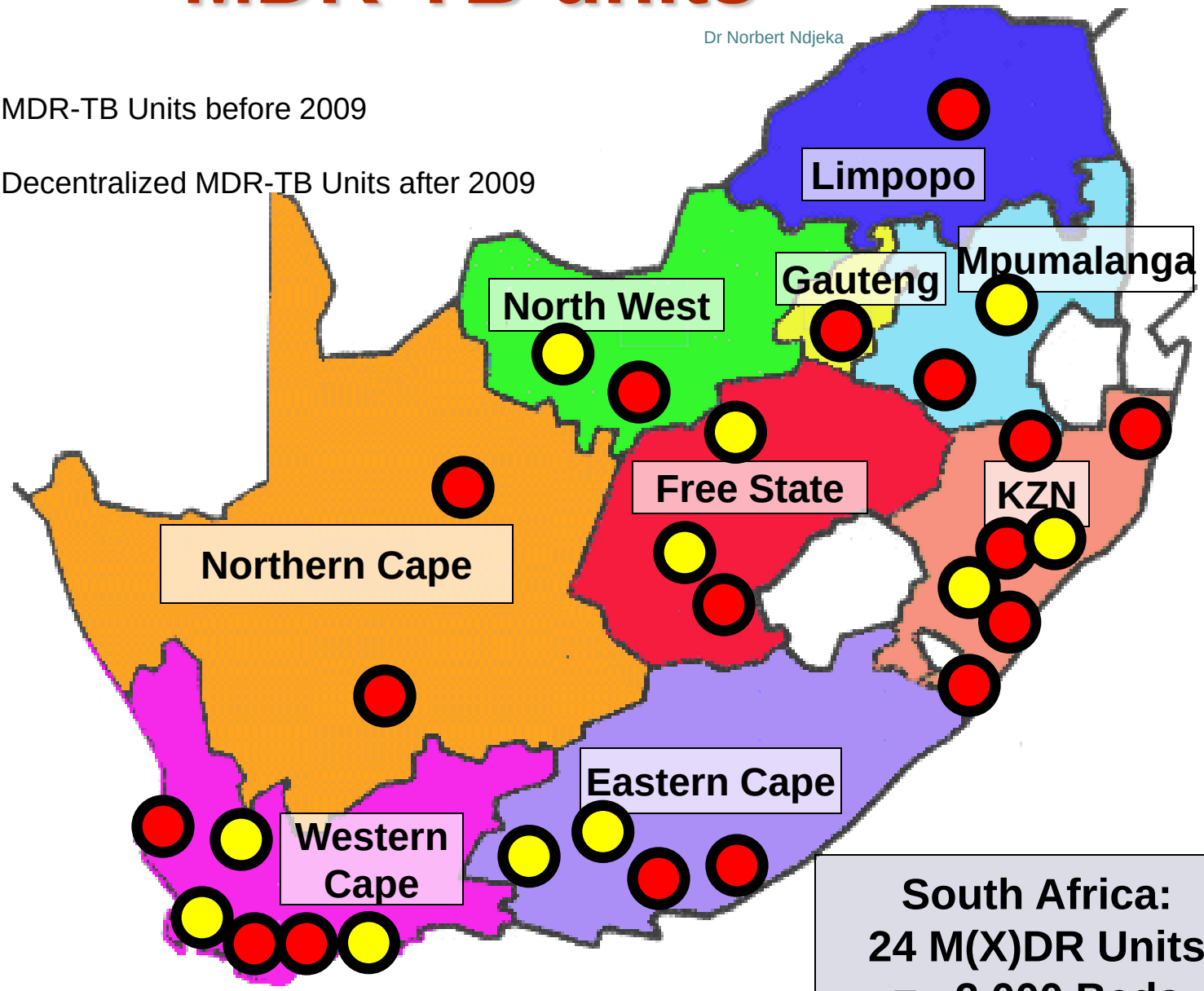
MDR-TB Units before 2009

Decentralized MDR-TB Units after 2009



South Africa:
24 M(X)DR Units
= ~2,000 Beds

Patient Load & Bed Availability

Province	MDR-TB Started on treatment (2010)	XDR-TB Started on treatment (2010)	Available Beds (Apr'11)
EC	927	244	622
FS	167	5	162
GP	607	30	266
KZN	1788	235	777
LP	119	3	50
MP	298	6	130
NC	230	37	65
NW	143	14	97
WC	1034	61	363
RSA	5313	635	2532
Bed requirements	2655	635	Required: 3290 Gap: 758

CURRENT TRENDS

Year	MDR-TB			MDR-TB annual increase		
	Diagsed	Registd	Started on Rx	Diagsed	Registd	Started on Rx
2007	7429	3 757	3334	-	49 %	89 %
2008	8198	4 552	4 031	9 %	44 %	89 %
2009	9070	4933	4143	10 %	54 %	84 %
2010				10 %	60 %	90 %
2011				8 %	70 %	92 %
2012				7 %	75 %	94 %
2013				7 %	80 %	95 %

PROJECTION

Year	MDR-TB		
	Diagnosed	Registered	Started on treated
2007	7429	3757	3334
2008	8198	4552	4031
2009	9070	4933	4143
2010	9977	5986	5388 ACTUAL: 5313
2011	10801	7561	6956
2012	11601	8701	8179
2013	12461	9968	9470

DETECTING DR-TB

- TB microscopy
- TB culture
- DST (MGIT)
- Line Probe Assay
- Genexpert

Recommendation from NDOH

- At PHC level: request TB microscopy and DST for Rifampicin and INH (not ethambutol and streptomycin)

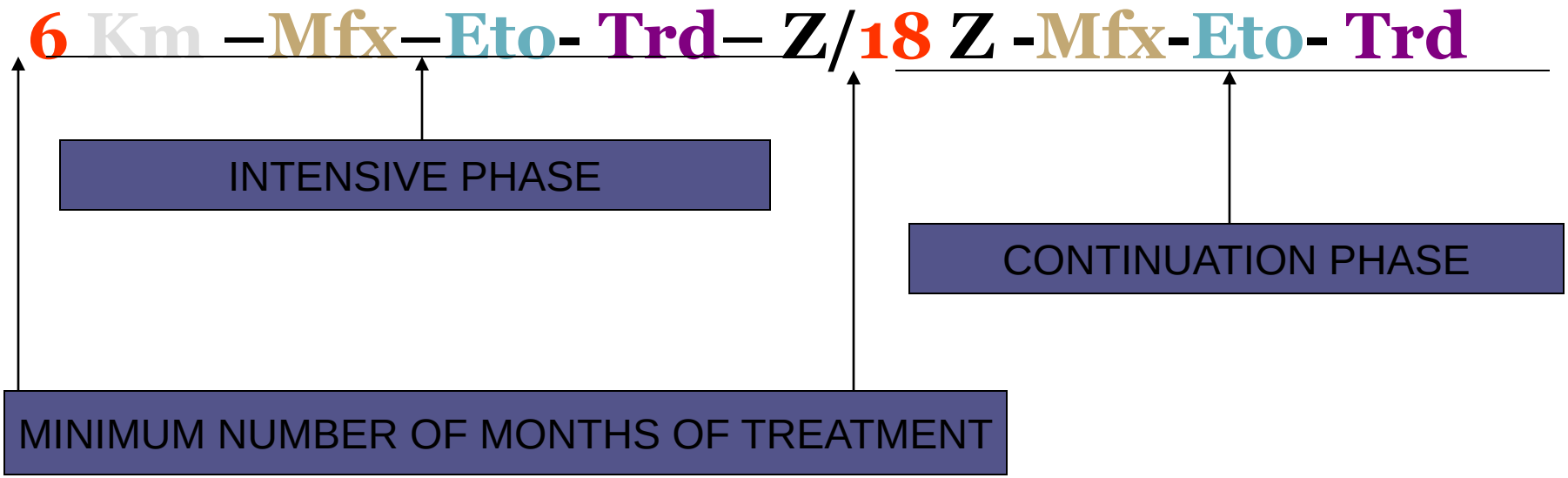
- Laboratory (NHLS): If TB culture negative, no DST will be done; if MDR-TB diagnosed, lab needs to do DST for injectable and fluoroquinolone without waiting for such a request

TREATING DR-TB

TB DRUGS GROUPING

Group	Anti-TB agents	Drugs
1	First-line oral	Isoniazid (H), Rifampicin (R), Ethambutol (E)and Pyrazinamide (Z)
2	Injectables	Streptomycin (S), Kanamycin (Km), Amikacin (Am), Capreomycin (Cm) and Viomycin (Vi)
3	Fluoroquinolones	Ofloxacin (Ofx), Levofloxacin (Lfx), Moxifloxacin (Mfx) and Gatifloxacin (Gfx)
4	Second-line oral bacteriostatic	Ethionamide (Eto), Protionamide (Pto), Cycloserine (Cs), Terizidone (T) p-aminosalicylic acid (PAS)
5	Antituberculosis agents with unclear efficacy	Clofazimine (Cfz), Amoxicillin/Clavulanate (Amx/Clv), **Thioacetazone, Imipenem, High-dose INH** Clarithromycin (Clr), Linezolid (Lzd)

MDR-TB regimen



Source: RSA MDR-TB Guidelines, 2011

Duration of treatment

- Duration of **Injectable** phase:

1. **Check treatment initiation date**
2. **Determine conversion date (if patient converted)**
3. **Add 4 months to conversion date to calculate the last day of the injectable phase**
4. **Calculate duration from treatment initiation to the above (last day of injectable phase)**
5. **If the above is 6 months or more: it is acceptable and must be followed**

- **Total duration** of treatment:

1. Total duration of treatment: **add 18 months to date of TB culture conversion**

Sources: RSA MDR-TB Guidelines,2010

Cost of drugs to treat TB in KZN (2010): patient > 50 kg

Drug-susceptible TB	
Intensive phase	**R 67/month**
Continuation phase	**R 42/month**

Drug-Resistant TB	
MDR-TB	
Injectable phase	**R 1207/month**
Continuation phase	**R 968/month**
XDR-TB	
Injectable phase	**R 6654/month**
Continuation phase	**R 4263/month**

Cost drivers (2010)

Drug cost- 30 days per patient	
PAS 4 g bd	R 2358
Capreomycin 1 g 5x	R 2391
Moxifloxacin 400 mg dly	R 911
Hospitalization	
Cost per patient /day (Dr JS Moroka)	R 1800

Cost drivers

Drug cost- 30 days per patient	2010	2011
PAS 4 g bd	R 2358	-
Capreomycin 1 g 5x	R 2391	R 2487.3
Moxifloxacin 400 mg dly	R 911	R 108.3
Hospitalization		
Cost per patient /day (Dr JS Moroka)	R 1800	-

Cost of MDR-TB Drugs

Drug cost- 30 days per patient	2010	2011 (Tender HP01-2011TB)
Kanamycin 1 g vial		
Moxifloxacin (400 mg, 30 tablets)	Ofx was R 322, reduced to R 122 in April 2011	R 108.3
Ethionanide (250 mg, 84 tablets)		R 122
Terizidone (250 mg capsules- 100 caps)		R 641.82
Pyrazinamide (500 mg tablets, 84 tablets)		R 31.35
Total		R 903.47 I Kana/Amk

What are we doing differently?

- Use of standardized regimen for newly diagnosed MDR-TB patients
- Patients previously exposed to second line TB drugs get an individualized regimen which is an adjustment of our standardized regimen based on DST results and history of TB drug use
- Introduction of Moxifloxacin for all MDR-TB patients
- Injectable phase continues until conversion
- Ethambutol no longer used routinely

DECENTRALIZATION OF MDR-TB SERVICES

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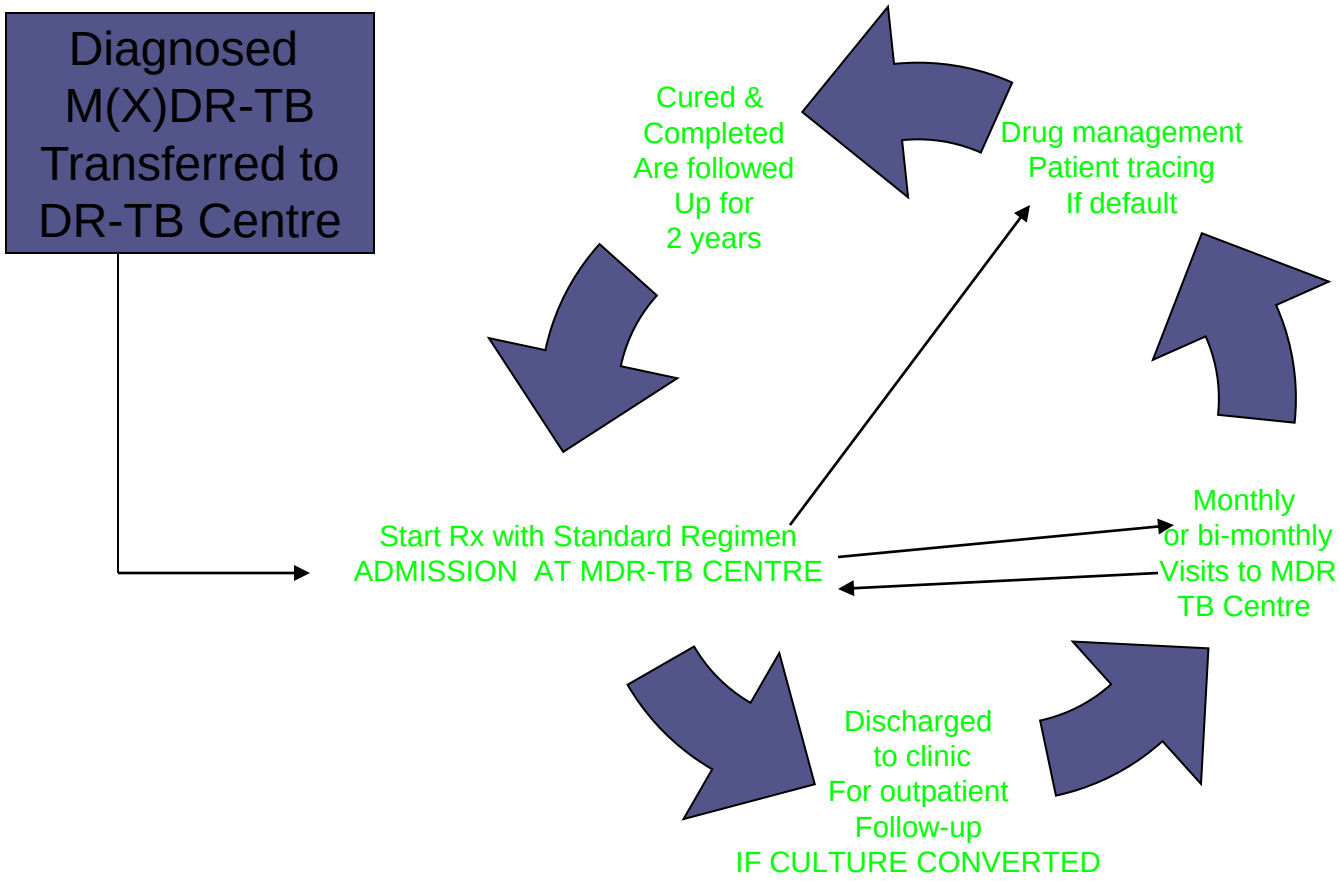
M(X)DR-TB care



Issues

- Nearly half of diagnosed cases are not started on treatment
- 1-2 months of waiting for admission, sometimes more
- Long distance of transportation for admission and follow up
- Negative impact on social and economic status of the individual and family due to a long stay in hospital
- Risk of transmission in hospital due to inadequate implementation of infection control measures
- Non-uniformity in current, sporadic efforts of decentralized management
- Poor outcome of DR-TB cases

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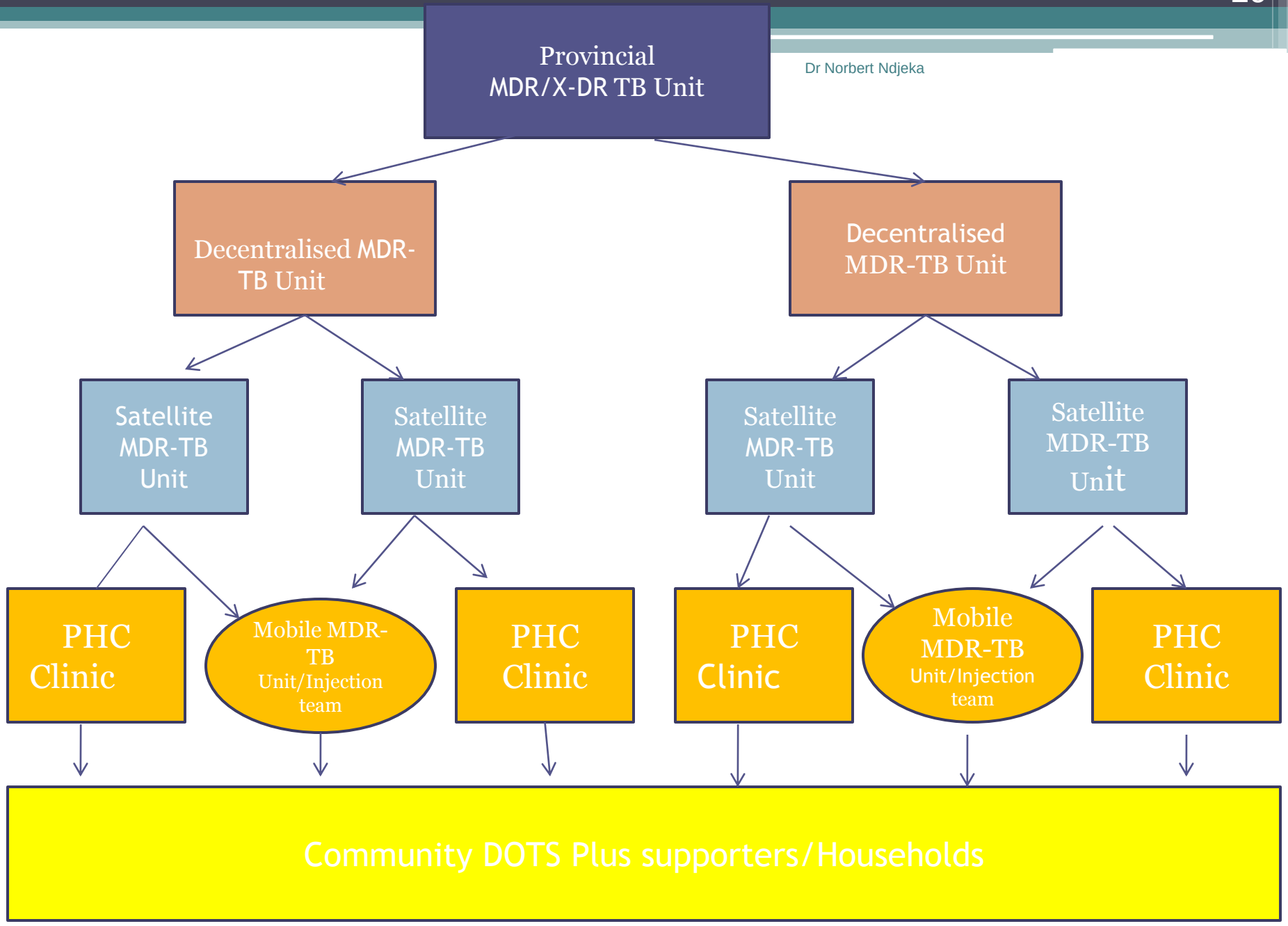

What do we want to do?

- Start all smear microscopy negative (TB culture positive) MDR-TB patients on outpatient treatment (30 %)
- All smear positive patients are to be admitted until they get 2 negative TB smear microscopy (2 months admission)
- Patients who refuse admission but are willing to take MDR-TB medication may not be denied treatment
- Very sick MDR-TB (patients with extensive resistance patterns, pulmonary cavitations, MDR-TB re-treatments), XDR-TB patients need to be admitted until they achieve TB culture conversion

CONCLUSION

WHAT ARE WE DOING TO ADDRESS THE CHALLENGES

- Intensified case findings
- Early diagnosis: by increasing access to new quick & effective diagnosis such as geneExpert, Line Probe Assay
- Early treatment through community-based treatment, hospitalization and decentralization and de-institutionalization of MDR-TB care
- Adequate application of STOP TB STRATEGY to ensure that those started on treatment finish
- Improve TB Infection Control

THANK YOU!