### CAUSE OF DEATH PROFILES FOR DISTRICT HEALTH PLANNING –

### **EXPERIENCES FROM SOUTH AFRICA**

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### **BACKGROUND**

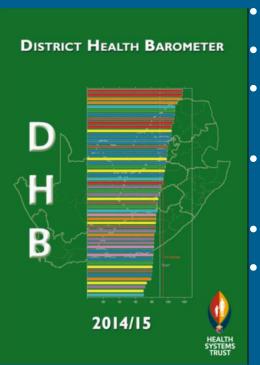
 CR&VS well established in South Africa but limited use of district level information

 Data quality issues with causes of death - including high proportion of ill-defined causes, misclassification of HIV related deaths and poor specification of external causes of injury deaths





### DISTRICT HEALTH BAROMETER

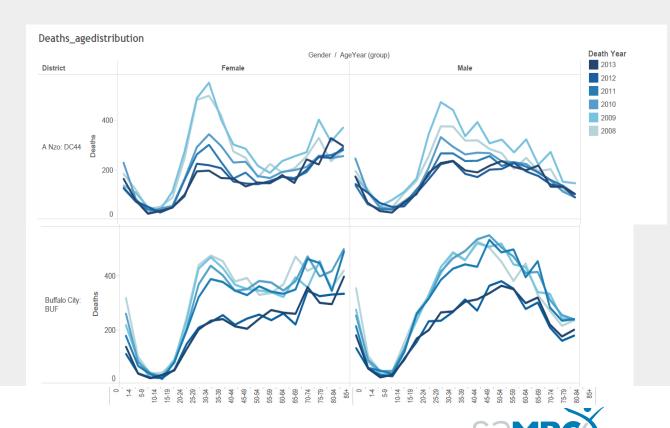


- DHB aims to facilitate bench-marking of the 52 districts
- Cause-of-death profiles recently added to DHB
- Unit record cause-of-death data with district codes obtained from Stats SA 2008-2013
- ICD codes aggregated to the SA National Burden of Disease (SA NBD) list of 140 conditions
- Basic data quality assessment undertaken
  - Data adjustments HIV pseudonyms added to HIV/AIDS, ill-defined signs and symptoms (ICD chapter XVII) and other 'garbage codes' redistributed proportionally, injuries codes aligned to profile prior to 2006 to enhance profile



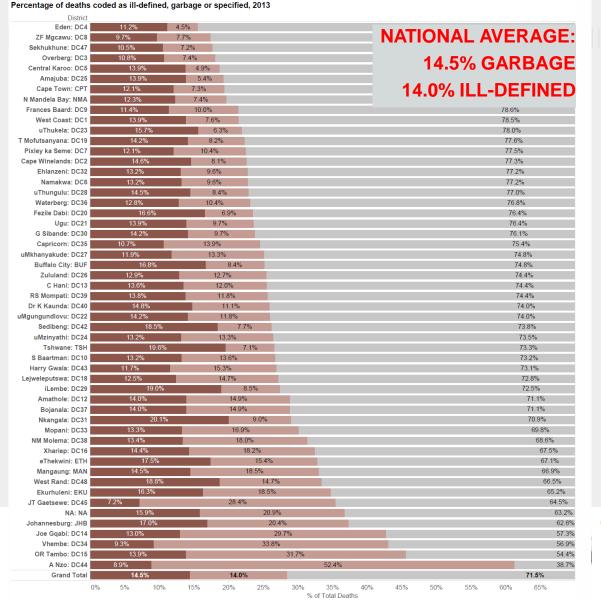


### QUALITY ASSESSMENT: TREND IN NUMBERS OF DEATHS BY AGE AND SEX





### PERCENTAGE OF DEATHS CODED AS ILL-DEFINED, GARBAGE OR SPECIFIED BY DISTRICT, 2013





### **DATA QUALITY ASSESSMENT**

 Revealed certain fluctuations in the cause-of-death data series that need further investigation

 Cause-of-death quality issues (high proportion of illdefined causes and garbage codes) vary across districts





	Rank	2008-10	2011-13
AD HICTED DEATHS	1	Diarrhoeal diseases (35.9%)	Diarrhoeal diseases (26.6%)
ADJUSTED DEATHS	2	Lower respiratory infections (15.4%)	Lower respiratory infections (16.4%)
	3	Protein-energy malnutrition (7.6%)	Protein-energy malnutrition (8.0%)
BY AGE GROUP,	<u>ب</u> 4	Tuberculosis (5.7%)	HIV/AIDS (7.3%)
DI AGE GROOF,	years	HIV/AIDS (5.0%)	Tuberculosis (5.9%)
	δ 6 7	Preterm birth complications (4.0%)	Preterm birth complications (3.7%)
OR TAMBO DISTRICT	8	Meningitis/encephalitis (3.0%) Septicaemia (2.1%)	Septicaemia (2.7%) Meningitis/encephalitis (2.6%)
OK IAMBO DISTRICT	9	Sepsis/other newborn infectious (1.9%)	Poisonings (including herbal) (2.6%)
	10	Drowning (1.7%)	Drowning (2.1%)
2008-10 VS 2011-13	1	Tuberculosis (14.9%)	Tuberculosis (15.8%)
2000-10 V3 2011-13	2	Road injuries (11.6%)	HIV/AIDS (10.8%)
	3	Lower respiratory infections (9.1%)	Drowning (8.9%)
	4	Diarrhoeal diseases (8.5%)	Diarrhoeal diseases (7.7%)
	<b>5-14</b> 5	HIV/AIDS (8.2%)	Road injuries (7.6%)
	<b>फ</b> 6	Meningitis/encephalitis (7.4%)	Lower respiratory infections (7.4%)
	7	Drowning (6.4%)	Meningitis/encephalitis (5.2%)
	8	Exposure to natural forces (3.6%)	Accidental threats to breathing (3.5%)
	9	Nephritis/nephrosis (2.3%)	Epilepsy (3.2%)
	10	Accidental threats to breathing (1.8%)	Other neurological conditions (3.0%)
	1 2	Tuberculosis (15.8%) HIV/AIDS (13.9%)	HIV/AIDS (15.7%) Interpersonal violence (13.7%)
	3	Interpersonal violence (9.8%)	Tuberculosis (13.4%)
	4	Road injuries (8.2%)	Accidental threats to breathing (6.8%)
		Accidental threats to breathing (5.8%)	Road injuries (6.5%)
	15-24 9 9	Diarrhoeal diseases (5.7%)	Mechanical forces (5.2%)
	7	Meningitis/encephalitis (4.6%)	Lower respiratory infections (4.0%)
	8	Mechanical forces (4.5%)	Meningitis/encephalitis (3.1%)
	9	Lower respiratory infections (4.3%)	Diarrhoeal diseases (2.7%)
	10	Nephritis/nephrosis (2.0%)	Drowning (2.6%)
	1	Tuberculosis (23.0%)	HIV/AIDS (27.4%)
	2	HIV/AIDS (21.9%)	Tuberculosis (20.1%)
	3	Lower respiratory infections (6.8%)	Lower respiratory infections (5.0%)
	4 5	Diarrhoeal diseases (6.7%)  Meningitis/encephalitis (3.6%)	Cerebrovascular disease (3.7%)  Diarrhoeal diseases (3.6%)
	5 6 5	Cerebrovascular disease (3.1%)	Road injuries (2.7%)
	7	Road injuries (2.4%)	Diabetes mellitus (2.3%)
	8	Interpersonal violence (1.9%)	Nephritis/nephrosis (2.2%)
	9	Diabetes mellitus (1.9%)	Interpersonal violence (2.2%)
	10	Mechanical forces (1.7%)	Mechanical forces (2.1%)
	1	Tuberculosis (12.6%)	Cerebrovascular disease (14.5%)
December	2	Cerebrovascular disease (12.5%)	Tuberculosis (11.5%)
Broadcause	3	Lower respiratory infections (7.6%)	Hypertensive heart disease (10.2%)
Injury	4	Hypertensive heart disease (7.0%)	Lower respiratory infections (6.7%)
NCD	5 6	Diabetes mellitus (4.9%)	Diabetes mellitus (5.9%)
INCD	O	COPD (4.9%)	COPD (4.0%)
HIV and TB	7	Diarrhoeal diseases (4.6%)	Oesophagus (3.7%)
Commercial and and	8 9	Asthma (4.1%) Oesophagus (3.7%)	Cardiomyopathy (3.6%) Diarrhoeal diseases (3.1%)
Comm_mat_peri_nut	10	Cardiomyopathy (3.3%)	Asthma (3.1%)
	10	Cardiomyopathy (3.370)	Asuma (5.170)

## ADJUSTED DEATHS BY AGE GROUP, BUFFALO CITY 2008-10 VS 2011-13

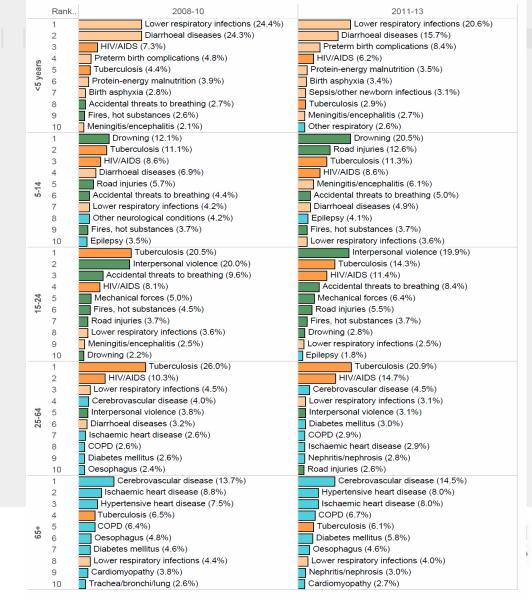
**Broadcause** 

Injury

NCD

HIV and TB

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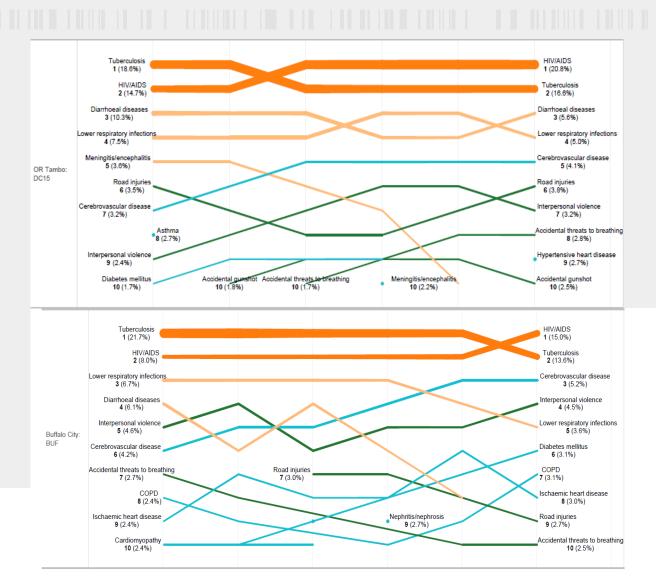


PROPORTIONAL
DISTRIBUTION OF
PREMATURE
MORTALITY BASED
ON YEARS OF LIFE
LOST (YLLS) BY
BROAD CAUSE
GROUP BY DISTRICT,
2013



### Percentage of YLLs by broad cause, by district, 2013 Overberg: DC3 9.5% 17.6% 54.2% 18.7% 10.6% 18.3% 51.0% 20.1% Namakwa: DC8 19.1% 50.6% 19.3% Cape Town: CPT 9.6% 22.3% 48.8% 19.4% Central Karoo: DC6 8.8% 23.4% 51.8% 16.0% Cape Winelands: DC2 11.7% 21.8% 12.8% Eden: DC4 West Coast: DC1 11.0% 22.7% 16.3% 11,1% 28.6% 44,6% 15.7% Buffalo City: BUF 29.3% N Mandela Bay: NMA 11.8% 47.0% 11.9% 19,6% 46,0% 11.5% Tchwane: TSH 20.7% 22.7% 43.1% 13.6% Johannesburg: JHB 8 Baartman: DC10 11.9% 32.5% 42.0% 13.6% 17.2% 28.4% 40.8% 13.6% Ptxley ka Seme: DC7 Amathole: DC12 29.7% 38.8% 15.2% 21.1% 25.39 40.8% 12.8% Xharlep: DC18 29.2% 40.7% 12.8% 17.3% Umgungundlovu: DC22 20.2% 26.5% 41.1% 12.1% Mangaung: MAN 28.6% ZF Mgoawu: DC8 18.2% 36.2% 16.9% 23.8% 23.3% 37.3% 15.5% West Rand: DC48 18.3% 29.2% 38.5% 14.0% eThekwini: ETH 24.7% 11.7% Fezile Dabi: DC20 27.1% 21.7% 37.5% 13.7% Sedibeng: DC42 17,4% 31.9% C Hant: DC13 37,1% 13.6% 19,7% 37,4% 13.0% Frances Baard: DC9 29.9% Nkangala: DC31 25.4% 26.3% 15.6% 12.0% Bojanala: DC37 26.3% 25.6% 36.19 Ekurhuleni: EKU 24.3% 27.9% 35.6% 12.1% Dr K Kaunda: DC40 20.4% 32.0% 36.2% 11.4% Joe Ggabl: DC14 19.6% 32.9% 35,1% 12.4% OR Tambo: DC16 16,3% 37.4% 29.9% 16.3% Caprioom: DC36 30,1% 23.8% 35.3% 10.7% Lelweleputzwa: DC18 30.3% 23.8% 32,7% 13.2% 18.8% 35.8% 31.3% 14.1% Ugu: DC21 Waterberg: DC38 27.8% 27.8% 32.8% 11.5% 31.1% 24.9% 33.9% 10.1% Vhembe: DC34 27.9% 28.2% 33.2% 10.7% T Mofutsanvana: DC19 32.5% 24.9% 34,2% 8.4% NM Molema: DC38 23,4% 34.0% 29.7% 12.9% Uthukela: DC23 21.9% 35.8% 10.2% Harry Gwala: DC43 Amajuba: DC26 24.3% 33.5% 10,4% 35.4% Uthungulu: DC28 22.9% 29.4% 12.3% Lembe: DC29 19.6% 38.9% 28.0% 13.4% Umzinyathi: DC24 27,4% 32.2% 27.5% 12.9% 32.0% 28.0% 13.0% G 8lbande: DC30 Sekhukhune: DC47 34.5% 25.6% 29.5% 10,4% 37.5% 22.8% 31,4% Mopani: DC33 8.3% 34.5% 29.0% Ehlanzeni: DC32 25.9% 10.6% 17.5% 43.5% 27.4% 11.5% Umkhanyakude: DC27 27.8% A Nzo: DC44 24.6% 37.1% 10.5% 29.8% 28.5% 8.3% R8 Mompatt: DC39 33,4% JT Gaetsewe: DC46 26.6% 38.4% 24.6% 10.4% 23.9% 41.5% 10.6% Zululand: DC28 45%

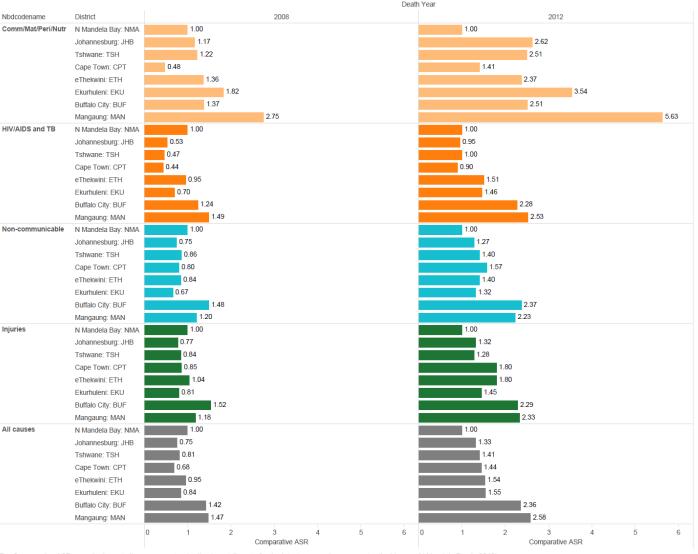
**TREND IN PREMATURE MORTALITY BASED ON** YEARS OF LIFE **LOST (YLLS)** BY CAUSE, **OR TAMBO AND BUFFALO** CITY



Comm\_mat\_peri\_nut YLLs HIV and TB YLLs PERCENT-**AGE OF YLLS BY BROAD** CAUSE BY DISTRICT, 2013 NCD YLLs Injury YLLs

# EXPLORATORY COMPARISON OF AGESTANDARDISED MORTALITY RATES FOR METRO AREAS





The Comparative ASR uses the lowest all cause age-standardised mortality rate for the latest year as the comparator (in this case N Mandela Bay in 2012).

## **CHALLENGES**

- Analysis has been restricted to profiles
  - Mortality rates cannot be calculated without district level completeness assessment
  - Robust population estimates are needed at district level
- Cause of death profiles are likely inaccurate
  - HIV under-represented, injuries may be wrong, cardiovascular causes may be inaccurate

- Published with warnings to interpret cautiously
  - Likely ignored





### **CONCLUSION**

- Important to make the available data useful and create a demand
- Considerable efforts are needed to improve cause of death statistics

- improve medical certification
- geographical coding of place of residence and place of death
- quality of injury causes
- stability in data system
- CRVS must be supported by demographic capacity
  - more demographic analysis of available data sources is needed to estimate completeness of registration at district level
  - and develop consistent population estimates



