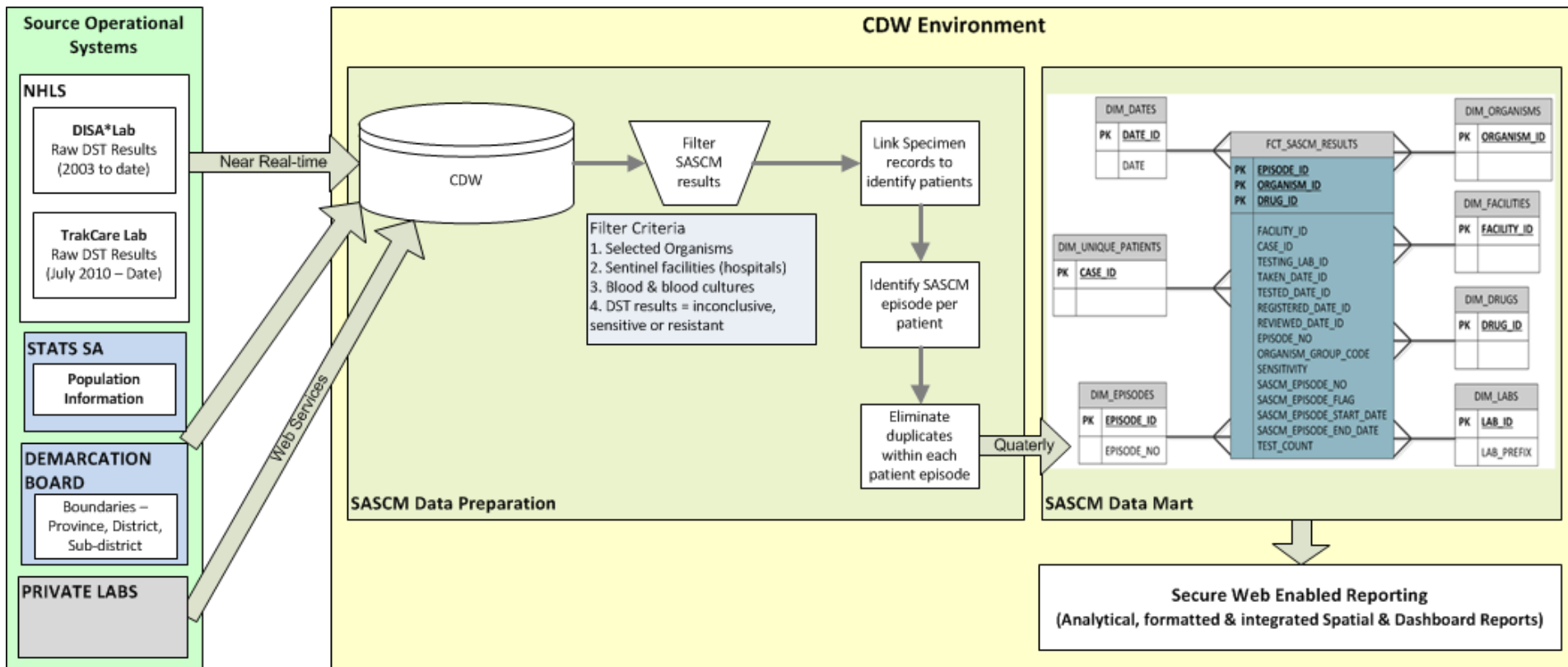


Data Warehouse – Surveillance Support

Sue Candy



Data Flows Supporting SASCM Reporting



**NATIONAL HEALTH
LABORATORY SERVICE**



CDW Capabilities

- Process +/- 300 million raw data records per month
- Record linking – specimens to patients
- Surveillance alerts for select organisms (since 2007) – SMS & eMail
- Daily HAI Reporting to the Western Cape
- Daily Malaria suspect list
- Weekly suspect lists to Provincial coordinators:
 - EID, TB GeneXpert, MDR/XDR
- Data feeds to NICD for Measles, Germs SA, Hepatitis, etc
- Data preparation for NCR coding database (including Lancet data)
- Reporting - analytical, formatted, integrated spatial & dashboard reporting is available



CCMT M&E Reporting



CCMT M&E Dashboard

An online only, fully interactive CCMT M&E Dashboard.



☐ CCMT M&E - National

A summarised downloadable, printable PDF version of the CCMT M&E Dashboard. This is run at a national level.



☐ CCMT M&E - Provincial

A summarised downloadable, printable PDF version of the CCMT M&E Dashboard. This is run at a province level.



Metric Information

Metric library, including complete details around metrics, descriptions, impact, calculation and review considerations.



ARV Analytics Dashboard

An online only, fully interactive specimen level ARV Analytics Dashboard.



☐ CD4 by Province

A summarised downloadable, printable PDF version of the ARV Analytics Dashboard. It is run for CD4 at a provincial level.



☐ VL by Province

A summarised downloadable, printable PDF version of the ARV Analytics Dashboard. It is run for VL at a provincial level.



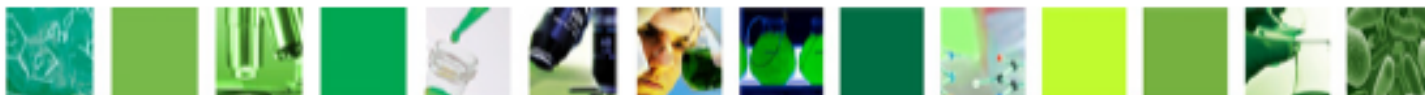
☐ CD4 by District

A summarised downloadable, printable PDF version of the ARV Analytics Dashboard. It is run for CD4 at a district level.



☐ VL by District

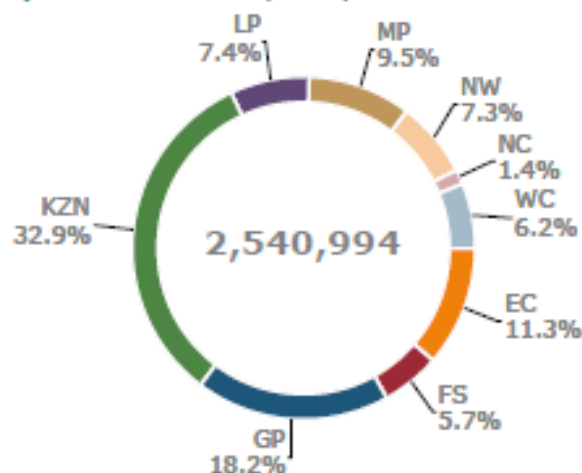
A summarised downloadable, printable PDF version of the ARV Analytics Dashboard. It is run for VL at a district level.



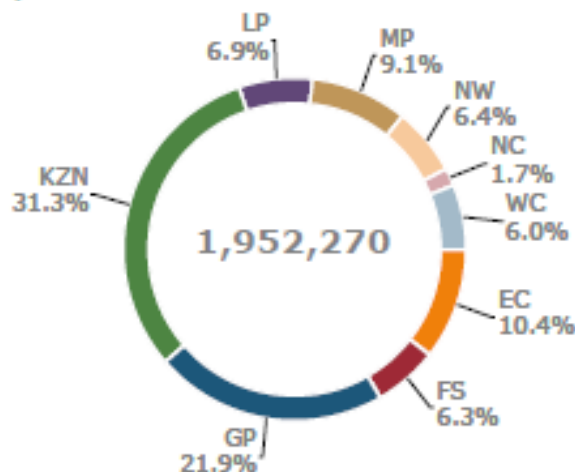
Summary indicators for CCMT M&E in SA

Period: from Q1 2012 to Q1 2014

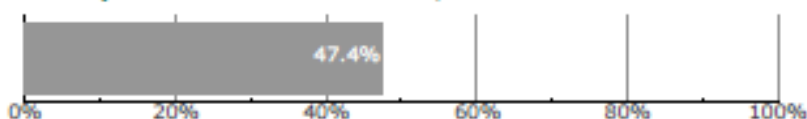
People on treatment (DHIS)



People with a VL test done in the last 12 months



% People with CD4 tests done, with a CD4 count \leq 350 cells/mm³



% People with CD4 tests done, with a CD4 count \leq 200 cells/mm³



% People with CD4 tests done, with a CD4 count \leq 100 cells/mm³



% People in care and on ART with a VL \leq 1000 copies/ml



% Children < 5 years infected by vertical transmission



% HIV+ people in care and on ART, who have a VL done at least annually

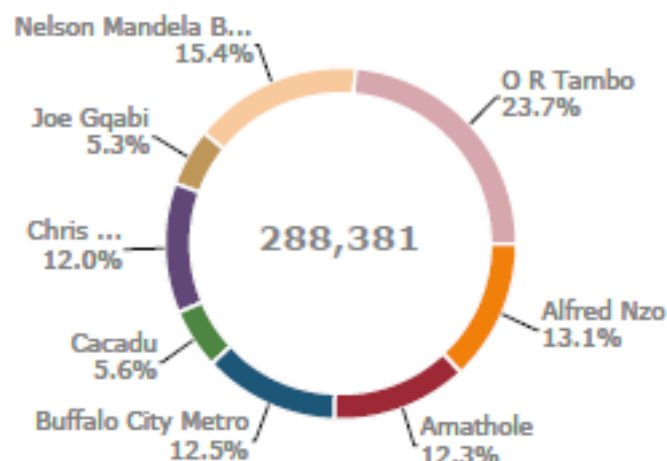


EC - Eastern Cape, FS - Free State, GP - Gauteng, KZN - KwaZulu Natal, LP - Limpopo, MP - Mpumalanga, NW - North West, NC - Northern Cape, WC - Western Cape

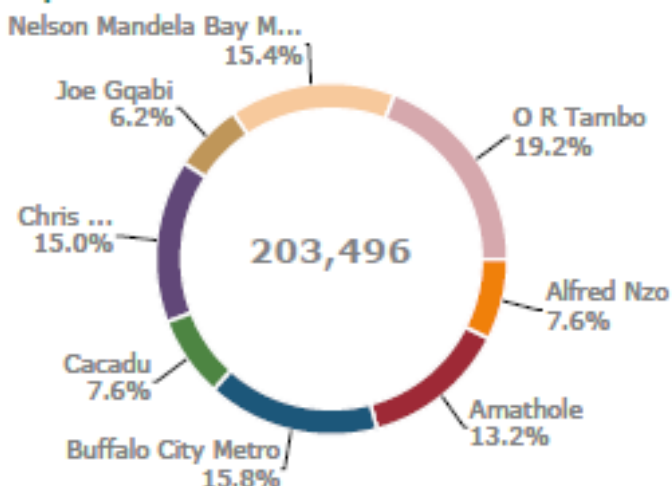
Summary indicators for CCMT M&E in Eastern Cape (EC)

Period: from Q1 2012 to Q1 2014

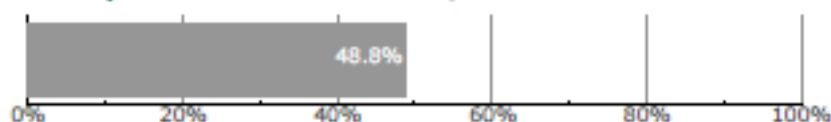
People on treatment (DHIS)



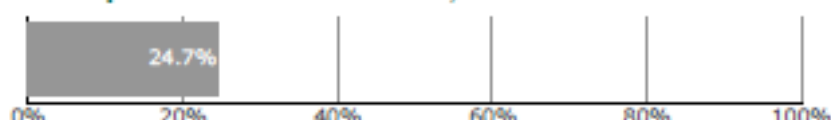
People with a VL test done in the last 12 months



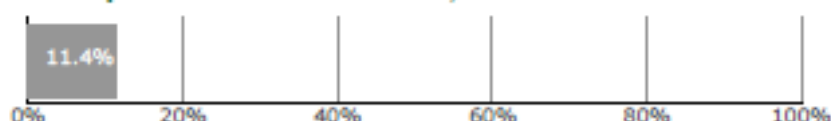
% People with CD4 tests done, with a CD4 count ≤ 350 cells/mm³



% People with CD4 tests done, with a CD4 count ≤ 200 cells/mm³



% People with CD4 tests done, with a CD4 count ≤ 100 cells/mm³



% People in care and on ART with a VL ≤ 1000 copies/ml



% Children < 5 years infected by vertical transmission



% HIV+ people in care and on ART, who have a VL done at least annually

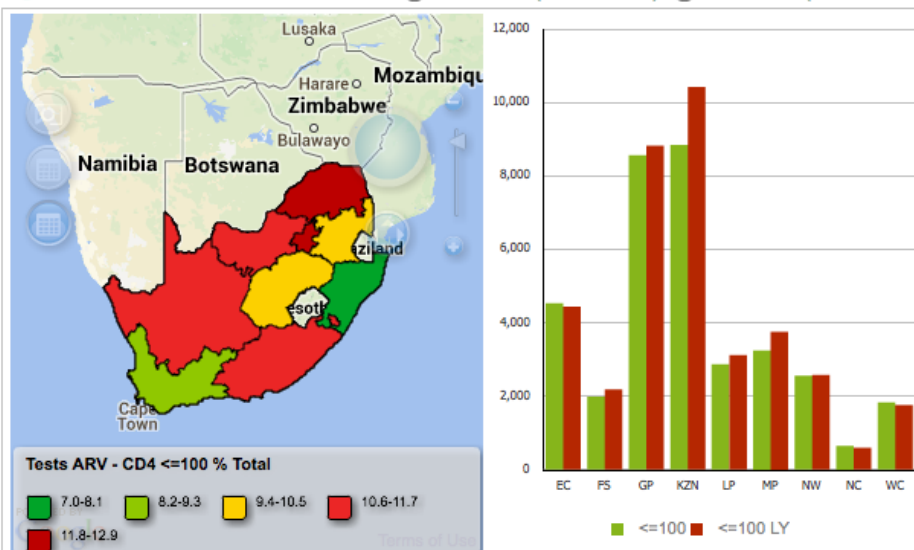


Year: 2014 Quarter: Q1 2014 Month: Jan 2014 Age Range: All Ages

National Provincial NHI

CD4

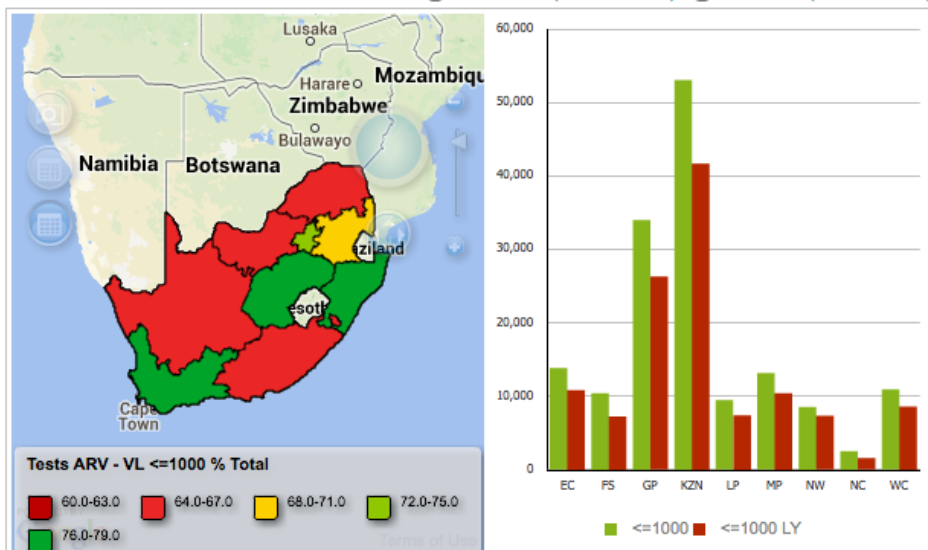
CD4 <= 100 (as % of Total) CD4 <= 350 (as % of Total)



		Total		<= 100					
Province		Current	LY	Current	LY	Delta	%	% LY	
Eastern Cape	EC	39,438	37,253	4,528	4,435	93	11.5	11.9	↑
Free State	FS	19,182	19,471	1,987	2,185	(198)	10.4	11.2	↓
Gauteng	GP	69,460	68,753	8,559	8,818	(259)	12.3	12.8	↓
KwaZulu-Natal	KZN	114,919	108,538	8,843	10,417	(1,574)	7.7	9.6	↓
Limpopo	LP	22,973	23,829	2,867	3,115	(248)	12.5	13.1	↓
Mpumalanga	MP	31,248	31,239	3,248	3,755	(507)	10.4	12.0	↓
North West	NW	22,982	23,443	2,559	2,578	(19)	11.1	11.0	↓
Northern Cape	NC	6,121	5,873	650	596	54	10.6	10.1	↑
Western Cape	WC	20,603	20,173	1,831	1,756	75	8.9	8.7	↑
Total		346,926	338,572	35,072	37,655	(2,583)	10.1	11.1	

VL

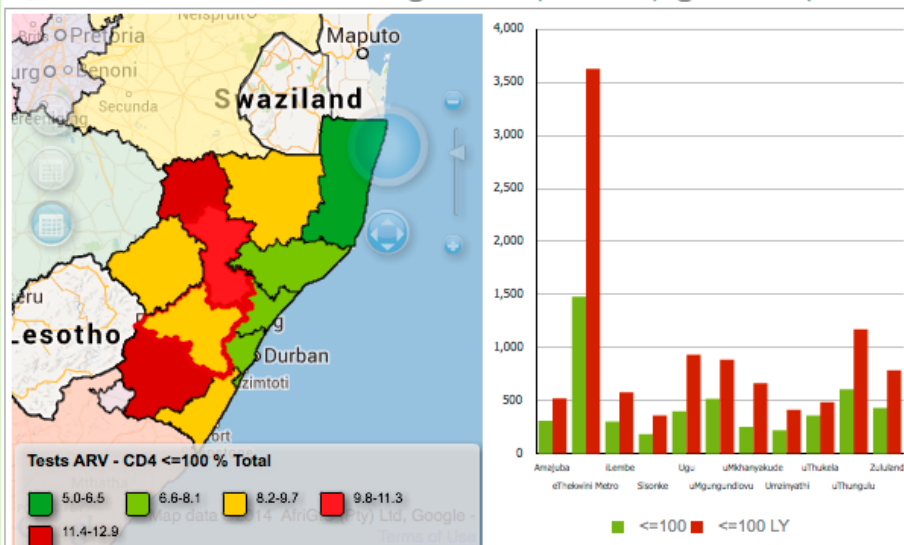
VL <= 1000 (as % of Total) VL > 1000 (as % of Total)



		Total		<= 1000					
Province		Current	LY	Current	LY	Delta	%	% LY	
Eastern Cape	EC	21,110	16,089	13,824	10,843	2,981	65.5	67.4	↑
Free State	FS	13,413	9,584	10,425	7,254	3,171	77.7	75.7	↑
Gauteng	GP	46,043	34,751	33,996	26,269	7,727	73.8	75.6	↑
KwaZulu-Natal	KZN	66,736	53,167	53,052	41,687	11,365	79.5	78.4	↑
Limpopo	LP	14,061	10,375	9,465	7,401	2,064	67.3	71.3	↑
Mpumalanga	MP	18,253	13,772	13,142	10,420	2,722	72.0	75.7	↑
North West	NW	13,298	11,116	8,552	7,317	1,235	64.3	65.8	↑
Northern Cape	NC	3,791	2,606	2,528	1,555	973	66.7	59.7	↑
Western Cape	WC	13,891	10,864	10,920	8,611	2,309	78.6	79.3	↑
Total		210,596	162,324	155,904	121,357	34,547	74.0	74.8	

CD4

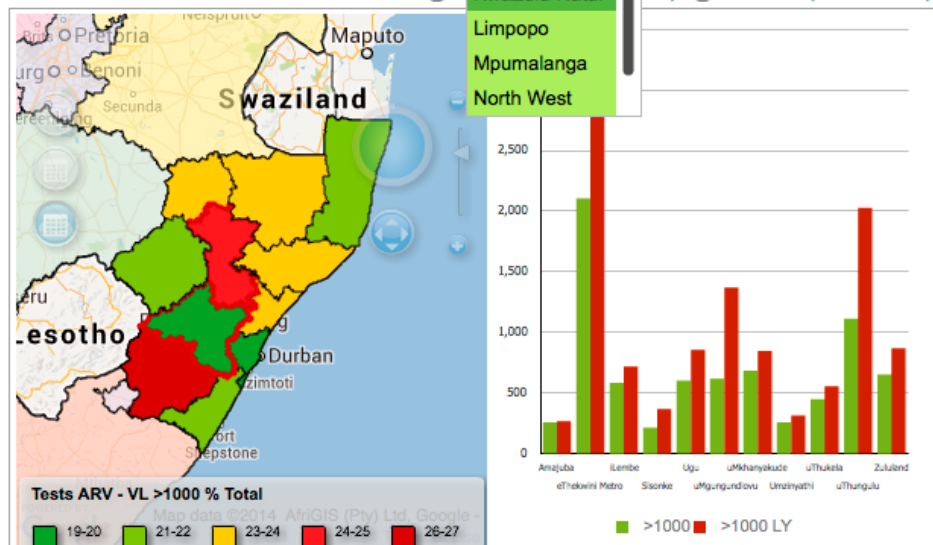
CD4 <= 350 (as % of Total) CD4 <= 100 (as % of Total)



KwaZulu-Natal		Total		<= 100		<= 100		Delta		% % LY		
District	Current	LY	Current	LY	Delta	%	% LY					
Amajuba	2,637	4,542	310	520	(210)	11.8	11.4					↓
eThekweni Metro	19,427	36,265	1,480	3,624	(2,144)	7.6	10.0					↓
iLembe	4,099	6,899	303	577	(274)	7.4	8.4					↓
Sisonke	1,535	3,449	186	361	(175)	12.1	10.5					↓
Ugu	4,693	9,090	400	931	(531)	8.5	10.2					↓
uMgungundlovu	6,225	11,162	518	887	(369)	8.3	7.9					↓
uMkhanyakude	4,738	7,144	252	663	(411)	5.3	9.3					↓
Umkhanyakude	2,039	3,320	222	412	(190)	10.9	12.4					↓
uThukela	4,120	5,299	359	485	(126)	8.7	9.2					↓
uThungulu	8,067	12,738	608	1,170	(562)	7.5	9.2					↓
Zululand	4,983	8,630	431	787	(356)	8.6	9.1					↓
Total	62,563	108,538	5,069	10,417	(5,348)	8.1	9.6					

VL

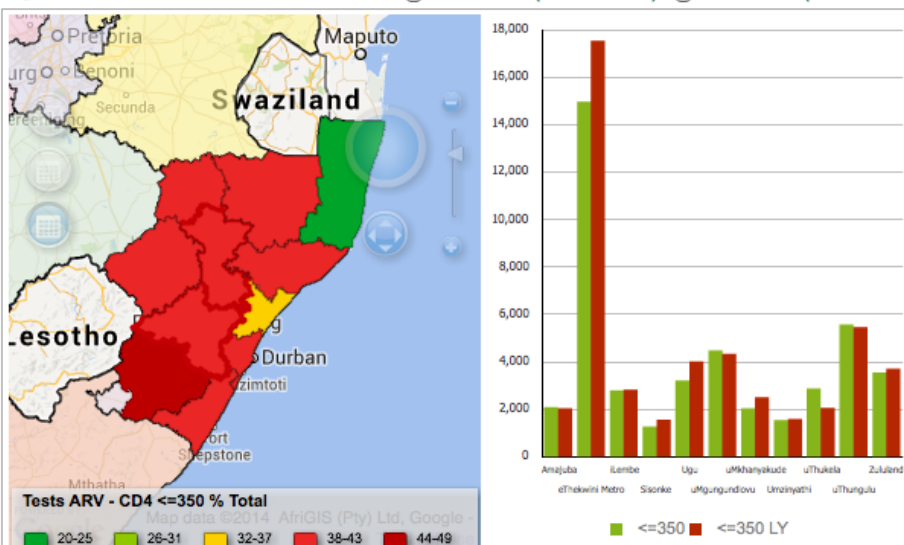
VL > 1000 (as % of Total) VL > 1000 LY (as % of Total)



KwaZulu-Natal		Total		> 1000		> 1000		Delta		% % LY		
District	Current	LY	Current	LY	Delta	%	% LY					
Amajuba	1,076	1,570	257	269	(12)	23.9	17.1					↓
eThekweni Metro	10,253	18,591	2,103	3,289	(1,186)	20.5	17.7					↓
iLembe	2,438	2,872	585	718	(133)	24.0	25.0					↓
Sisonke	795	1,602	215	368	(153)	27.0	23.0					↓
Ugu	2,765	4,142	602	856	(254)	21.8	20.7					↓
uMgungundlovu	3,123	6,823	619	1,370	(751)	19.8	20.1					↓
uMkhanyakude	3,183	3,641	684	847	(163)	21.5	23.3					↓
Umkhanyakude	1,033	1,335	259	315	(56)	25.1	23.6					↓
uThukela	2,068	2,636	448	556	(108)	21.7	21.1					↓
uThungulu	4,652	6,711	1,112	2,025	(913)	23.9	30.2					↓
Zululand	2,747	3,244	654	867	(213)	23.8	26.7					↓
Total	34,133	53,167	7,538	11,480	(3,942)	22.1	21.6					

CD4

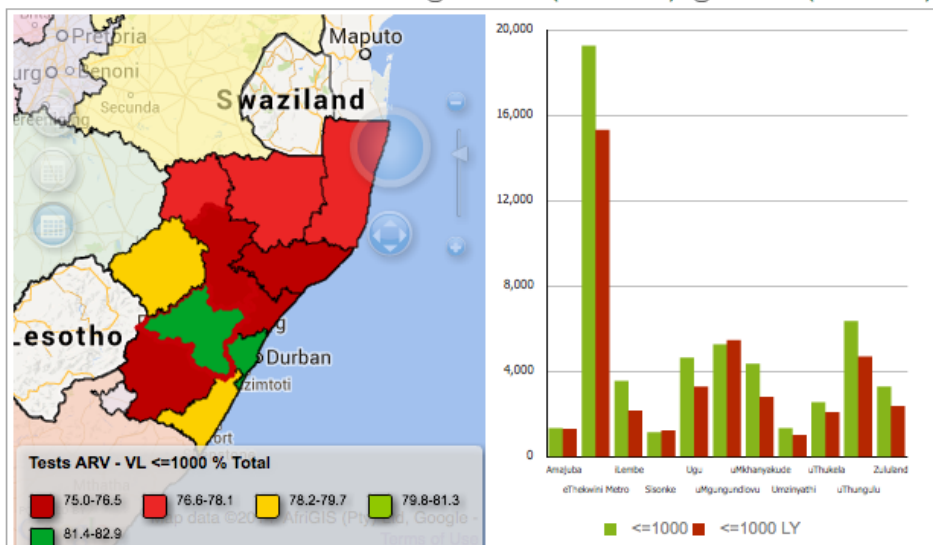
CD4 <= 350 (as % of Total) CD4 <= 100 (as % of Total)



KwaZulu-Natal		Total		<= 350					
District	Current	LY	Current	LY	Delta	%	% LY		
Amajuba	4,781	4,542	2,082	2,044	38	43.5	45.0	↑	
eThekweni Metro	38,091	36,265	14,964	17,530	(2,566)	39.3	48.3	↓	
iLembe	7,639	6,899	2,797	2,820	(23)	36.6	40.9	↓	
Sisonke	2,779	3,449	1,261	1,553	(292)	45.4	45.0	↓	
Ugu	8,212	9,090	3,216	4,012	(796)	39.2	44.1	↓	
uMgungundlovu	11,350	11,162	4,482	4,330	152	39.5	38.8	↑	
uMkhanyakude	8,233	7,144	2,042	2,505	(463)	24.8	35.1	↓	
Umzinyathi	3,755	3,320	1,545	1,591	(46)	41.1	47.9	↓	
uThukela	6,963	5,299	2,868	2,051	817	41.2	38.7	↑	
uThungulu	14,174	12,738	5,568	5,461	107	39.3	42.9	↑	
Zululand	8,942	8,630	3,551	3,707	(156)	39.7	43.0	↓	

VL

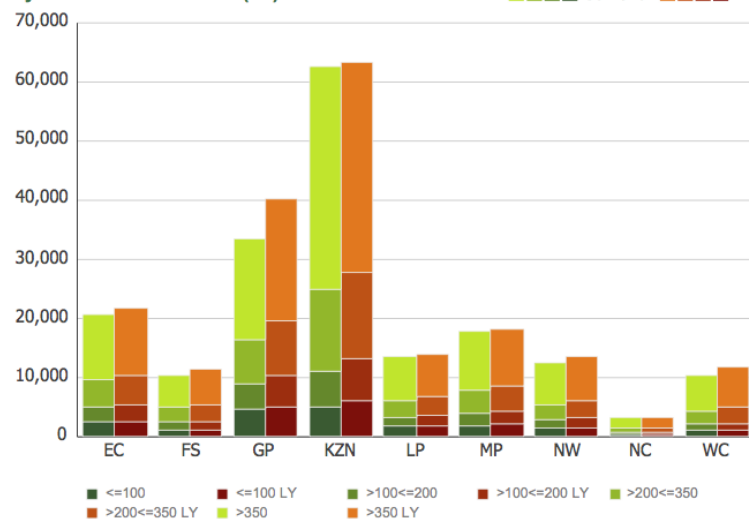
VL <= 1000 (as % of Total) VL > 1000 (as % of Total)



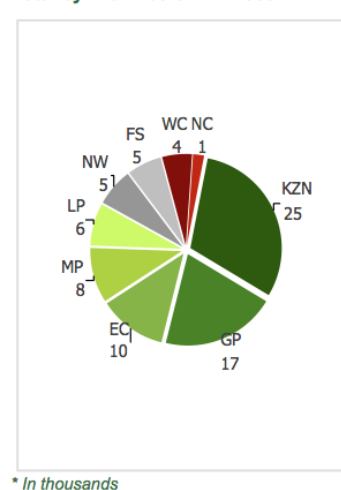
KwaZulu-Natal		Total		<= 1000					
District	Current	LY	Current	LY	Delta	%	% LY		
Amajuba	1,736	1,570	1,337	1,301	36	77.0	82.9	↑	
eThekweni Metro	23,345	18,591	19,244	15,302	3,942	82.4	82.3	↑	
iLembe	4,654	2,872	3,555	2,154	1,401	76.4	75.0	↑	
Sisonke	1,520	1,602	1,146	1,234	(88)	75.4	77.0	↓	
Ugu	5,822	4,142	4,630	3,286	1,344	79.5	79.3	↑	
uMgungundlovu	6,371	6,823	5,258	5,453	(195)	82.5	79.9	↓	
uMkhanyakude	5,586	3,641	4,355	2,794	1,561	78.0	76.7	↑	
Umzinyathi	1,751	1,335	1,332	1,020	312	76.1	76.4	↑	
uThukela	3,243	2,636	2,556	2,080	476	78.8	78.9	↑	
uThungulu	8,432	6,711	6,353	4,686	1,667	75.3	69.8	↑	
Zululand	4,276	3,244	3,286	2,377	909	76.8	73.3	↑	

CD4 Testing in SA for the Month of Jan 2014 vs Jan 2013

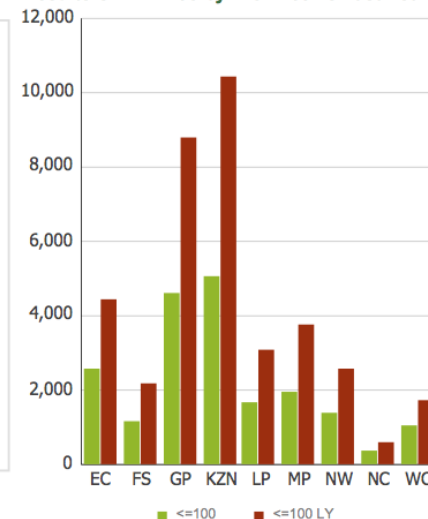
By Province vs Last Year (LY)



Total by Province CD4 <= 350*



Results CD4 <= 100 by Province vs Last Year (LY)



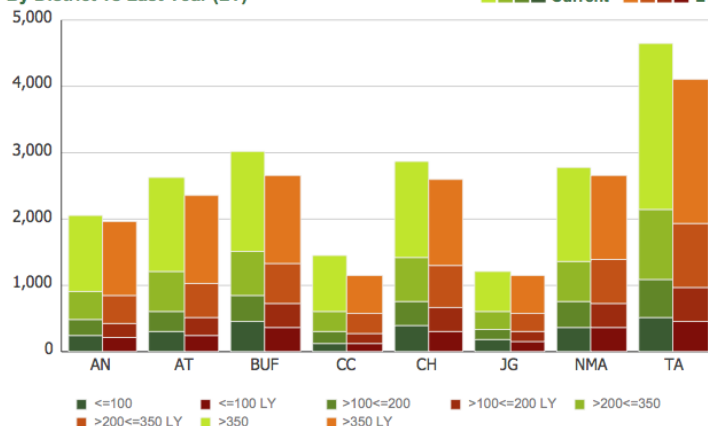
Results by Range by Province vs Last Year (LY)

		Total		<= 100			> 100 <= 200			> 200 <= 350			> 350			YTD	
Province		Current	LY	Current	%	LY	% LY	Current	%	LY	% LY	Current	%	LY	% LY	Current	LY
Eastern Cape	EC	20,659	37,253	2,579	12.5	4,435	11.9	2,604	12.6	4,811	12.9	4,558	22.1	8,598	23.1	10,918	52.8
Free State	FS	10,548	19,471	1,165	11.0	2,185	11.2	1,310	12.4	2,462	12.6	2,472	23.4	4,766	24.5	5,601	53.1
Gauteng	GP	33,613	68,753	4,593	13.7	8,818	12.8	4,341	12.9	8,927	13.0	7,617	22.7	16,078	23.4	17,062	50.8
KwaZulu-Natal	KZN	62,563	108,538	5,069	8.1	10,417	9.6	6,191	9.9	12,060	11.1	13,530	21.6	25,127	23.2	37,773	60.4
Limpopo	LP	13,436	23,829	1,702	12.7	3,115	13.1	1,623	12.1	3,110	13.1	2,820	21.0	5,623	23.6	7,291	54.3
Mpumalanga	MP	17,722	31,239	1,972	11.1	3,755	12.0	1,998	11.3	3,780	12.1	3,924	22.1	6,973	22.3	9,828	55.5
North West	NW	12,491	23,443	1,398	11.2	2,578	11.0	1,448	11.6	2,755	11.8	2,633	21.1	5,270	22.5	7,012	56.1
Northern Cape	NC	3,343	5,873	371	11.1	596	10.1	395	11.8	701	11.9	720	21.5	1,297	22.1	1,857	55.5
Western Cape	WC	10,223	20,173	1,036	10.1	1,756	8.7	1,110	10.9	2,141	10.6	2,232	21.8	4,699	23.3	5,845	57.2
Total		184,598	338,572	19,885	10.8	37,655	11.1	21,020	11.4	40,747	12.0	40,506	21.9	78,431	23.2	103,187	55.9

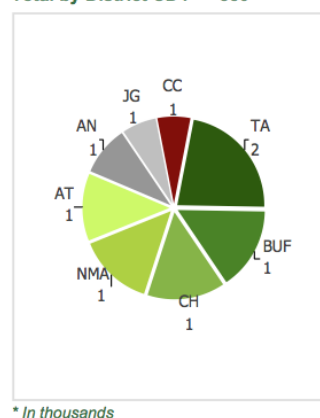
CD4 is represented as cells x 10⁶ per ml

CD4 Testing in Eastern Cape for the Month of Jan 2014 vs Jan 2013

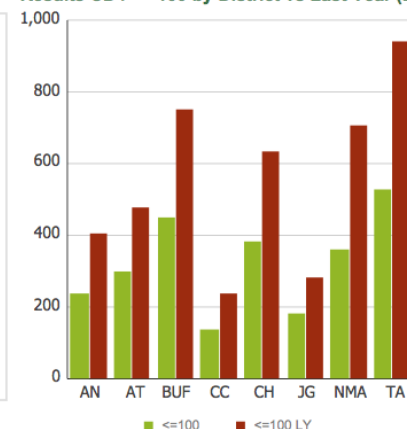
By District vs Last Year (LY)



Total by District CD4 <= 350*



Results CD4 <= 100 by District vs Last Year (LY)



Results by Range by District vs Last Year (LY)

		Total		<= 100				> 100 <= 200				> 200 <= 350				> 350				Year to Date	
District		Current	LY	Current	%	LY	% LY	Current	%	LY	% LY	Current	%	LY	% LY	Current	%	LY	% LY	Current	LY
Alfred Nzo	AN	2,058	3,900	236	11.5	404	10.4	258	12.5	462	11.8	409	19.9	833	21.4	1,155	56.1	2,201	56.4	2,058	3,900
Amathole	AT	2,637	4,701	297	11.3	480	10.2	319	12.1	535	11.4	581	22.0	1,021	21.7	1,440	54.6	2,665	56.7	2,637	4,701
Buffalo City Metro	BUF	3,011	5,314	451	15.0	753	14.2	393	13.1	695	13.1	653	21.7	1,197	22.5	1,514	50.3	2,669	50.2	3,011	5,314
Cacadu	CC	1,443	2,328	139	9.6	239	10.3	162	11.2	313	13.4	297	20.6	588	25.3	845	58.6	1,188	51.0	1,443	2,328
Chris Hani	CH	2,855	5,206	384	13.5	634	12.2	387	13.6	720	13.8	643	22.5	1,218	23.4	1,441	50.5	2,634	50.6	2,855	5,206
Joe Gqabi	JG	1,217	2,294	184	15.1	281	12.2	147	12.1	308	13.4	290	23.8	538	23.5	596	49.0	1,167	50.9	1,217	2,294
Nelson Mandela Bay Metro	NMA	2,781	5,318	360	12.9	704	13.2	390	14.0	755	14.2	609	21.9	1,317	24.8	1,422	51.1	2,542	47.8	2,781	5,318
O R Tambo	TA	4,657	8,192	528	11.3	940	11.5	548	11.8	1,023	12.5	1,076	23.1	1,886	23.0	2,505	53.8	4,343	53.0	4,657	8,192
Total		20,659	37,253	2,579	12.5	4,435	11.9	2,604	12.6	4,811	12.9	4,558	22.1	8,598	23.1	10,918	52.8	19,409	52.1	20,659	37,253

CD4 is represented as cells x 10⁶ per ml



A single AMR Surveillance Repository

Potential challenges

- Acquisition (mechanics) of private data
- Merging private data with public data
 - Granularity of information i.e. level of detail
 - Agreement re: inclusion:
 - Specimen type
 - Pathogens
 - Drugs
 - Mapping of codes relating to tests, facilities, pathogens, drugs, etc



Opportunities offered by CDW

Infrastructure

- Specialist big data analytics server
- Specialist analytical and geospatial reporting software
- Reports available securely on-line

Short Term Opportunities

- Have data for +/- 80% of the population
- Expand case based reporting as done for SASCM to broader surveillance reporting e.g. ESKAPE, GERMS SA, Measles etc



Opportunities cont....

Medium Term

- Some clinical information is captured in an unstructured way in the LIS. Investigate the usefulness of this information
- Inclusion of additionally captured clinical data – discussions with Measles group
- Inclusion of private information



Way forward

- Decision re: hosting of single repository
- Define reporting requirements – standardise & agree:
 - Sentinel sites
 - Organisms
 - Antibiotics
- Framework for data sharing & necessary agreements
 - Public/Private
- Formation of a working group to drive implementation