IFAKARA HEALTH INSTITUTE
research | training | services

LONDON SCHOOL of HYGIENE &TROPICAL MEDICINE

Using routine data to estimate implementation strength of maternal health programmes in the Tanzanian Sentinel Panel of Districts

Gregory Kabadi, PhD
LSHTM: Faculty of Infectious and Tropical Diseases (DES)
IHI: Sentinel Panel of Districts/Impact Evaluation TG
MOHSW: NCD Unit

Background

Program Implementation Strength
(programme intensity)

refers to “the quantity of a programme strategy that is carried out at the field/population level and incorporates some elements commonly considered as part of the quality of service delivery”.

Measuring the strength of implementation of community case management of childhood illness within the Catalytic Initiative to Save a Million Lives. Working Paper Version 27 August 2011

Background (Contd…)

Programme Implementation Strength (IS):

- Helps understand the impact of public health programmes
  - By revealing whether and how some programmes have (or do not have) an impact on populations
- Most programmes do not measure IS or don't report findings
- No standardized methodologies for measuring IS
- Requires an understanding of how programmes work and involves defining measurable concepts, identifying sources of programme data and close programme follow-up

Research Aim and Objective

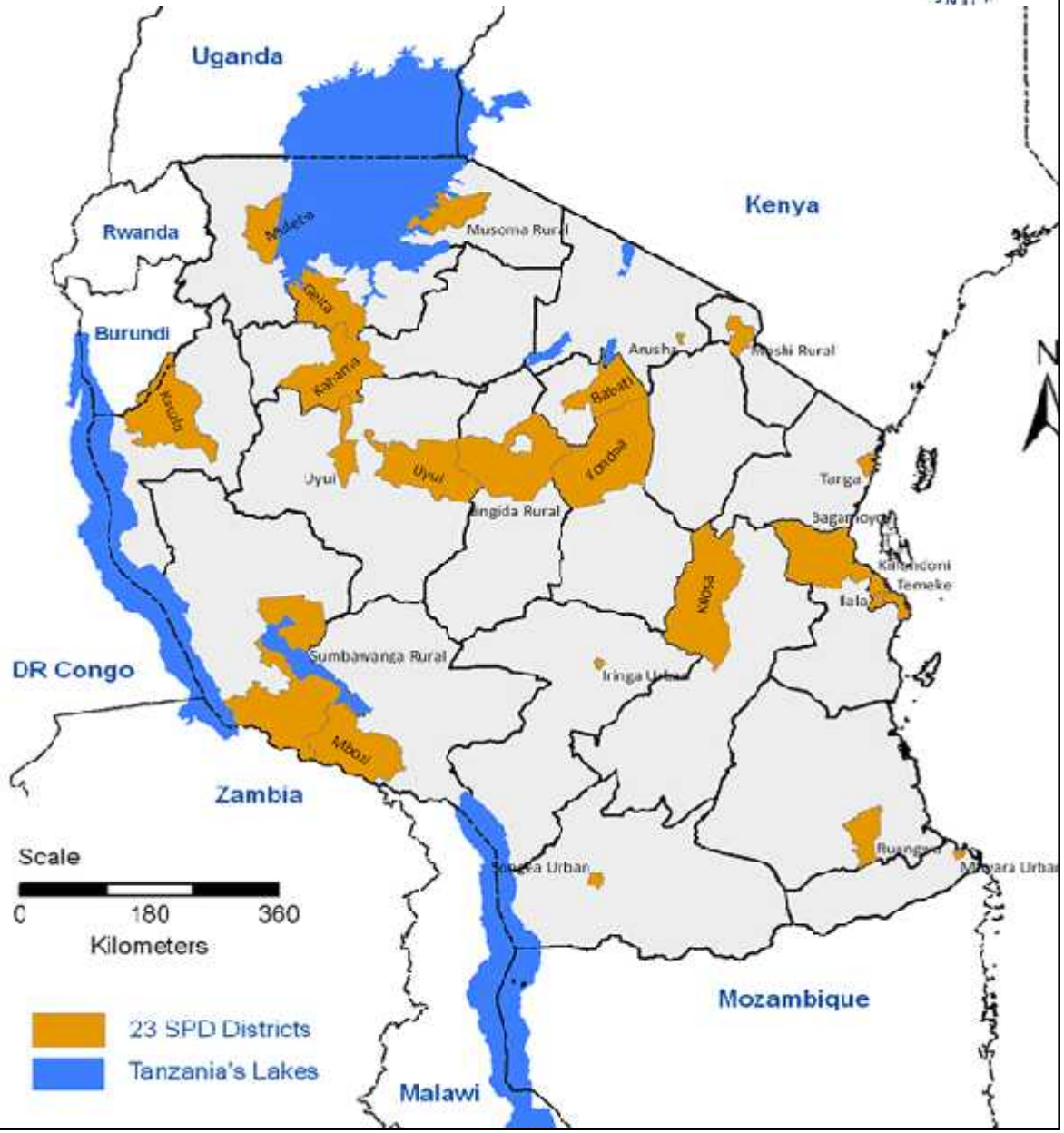
- Overall aim (PhD thesis) was to develop and test an approach for estimating IS for use in evaluating large-scale maternal health programmes in low- and middle-income countries.

- Five objectives, but specific to routine data was:

  - To assess utilisation and coverage of focused antenatal care (FANC) and emergency obstetric care programmes (EmOC) in 23 SPD districts using routine data (Jan 2010 – Dec 2011).

Study area and Methods

- Study area:
  - Sentinel Panel of Districts (IHI) urban=8; rural=15
- Methods:
  - Cross-sectional surveys (see Table next slide)
  - Used maternal health experts for weighting scales
  - Composite scores (Normalisation; PCA; Reliability; Sensitivity analysis)



IFAKARA HEALTH INSTITUTE
research | training | services

Indicators and Data Sources

Programme Component	Indicator/s	Source of Data
Health Workforce	Health worker/population ratio: (doctors, nurses and midwives including non-physician clinicians and lab technicians and pharmacists)	Official statistics from the Ministry of Health and Social Welfare; Population projections from NBS (2010 & 2011)
Essential Medicines	Availability of ANC tracer drugs: SP drugs, TT injections, Iron and/or Folic acid); Availability of EmOC tracer drugs – Oxytocin, Ergometrine and Magnesium Sulphate)	DHIS/SARA survey
Service Delivery	Number and distribution of health facilities per 10,000 population, the number and distribution of inpatient beds per 10,000 population, and number of first antenatal care visits per 10,000 population.	Households estimates from NBS; Number of health facilities in districts from DHIS database/SARA survey
Health Info System	Quarterly HMIS reporting rate – number and timeliness of HMIS data submitted to the district medical officer's office	DHIS database
Health Financing	District health expenditure on recurrent costs and health development	PMORALG
Leadership and Governance	Number of supportive supervision visits to health facilities	District sources, SARA & Research data

NBS=National Bureau of Statistics; SPD=Sentinel Panel of Districts; SARA= Service Availability and Readiness Assessment; PMORALG=Tanzanian Prime Minister's Office for Regional Administration and Local Government; ANC=Antenatal Care; SP=Sulfadoxine Pyrimethamine; TT=Tetanus Toxoid; DHIS=District Health Information System

Results

Utilisation and coverage of FANC services in the SPD (2010 & 2011)

No	Study district	Residence	Expected number of live births		Percentage antenatal care coverage		Percentage tetanus toxoid utilization coverage		Percentage HIV/AIDS testing coverage		District Score
			2010	2011	2010	2011	2010	2011	2010	2011	
1	Arusha Urban	Urban	14,246	14,312	174%	177%	144%	71%	126%	105%	133%
2	Ilala	Urban	28,376	28,036	213%	218%	106%	107%	107%	129%	147%
3	Iringa Urban	Urban	5,999	6,090	100%	116%	45%	56%	92%	72%	80%
4	Kinondoni	Urban	48,620	48,009	113%	117%	57%	24%	78%	31%	70%
5	Mtwara Urban	Urban	4,818	4,874	51%	48%	59%	65%	78%	84%	64%
6	Songea Urban	Urban	6,903	6,995	201%	122%	98%	57%	142%	87%	118%
7	Tanga Urban	Urban	11,746	11,739	130%	135%	67%	21%	70%	33%	76%
8	Temeke	Urban	34,230	33,793	136%	172%	95%	81%	103%	67%	109%
9	Babati	Rural	16,026	16,258	75%	74%	50%	41%	59%	64%	61%
10	Bagamoyo	Rural	10,913	10,897	91%	80%	60%	37%	79%	65%	69%
11	Geita	Rural	33,644	33,786	134%	146%	62%	70%	54%	27%	82%
12	Kahama	Rural	32,036	32,591	122%	104%	87%	67%	44%	23%	75%
13	Kasulu	Rural	24,811	25,108	92%	119%	58%	78%	17%	55%	70%
14	Kilosa	Rural	23,107	23,056	115%	35%	74%	17%	58%	37%	56%
15	Kondoa	Rural	19,627	19,521	83%	82%	54%	58%	60%	14%	58%
16	Mbozi	Rural	26,028	26,188	123%	113%	57%	40%	65%	82%	80%
17	Moshi Rural	Rural	18,160	18,032	39%	46%	34%	67%	19%	48%	42%
18	Muleba	Rural	18,697	18,908	127%	130%	72%	70%	45%	46%	82%
19	Musoma Rural	Rural	16,505	25,704	67%	50%	92%	63%	59%	35%	61%
20	Ruangwa	Rural	5,777	5,746	76%	68%	65%	64%	62%	61%	66%
21	Singida Rural	Rural	19,135	19,106	87%	70%	44%	37%	54%	45%	56%
22	Sumbawanga Rural	Rural	18,981	19,184	143%	103%	125%	67%	50%	10%	83%
23	Uyui	Rural	13,856	13,925	117%	118%	103%	106%	92%	61%	99%
Urban Districts			Mean (Median)		140% (133%)	138% (128%)	84% (81%)	60% (61%)	100% (97%)	76% (78%)	100% (95%)
Rural Districts			Mean (Median)		99% (92%)	89% (82%)	69% (62%)	59% (64%)	54% (58%)	45% (46%)	67% (69%)
Overall			Mean (95% CI) (Median)		113% (95% 132%) (115%)	106% (86% 126%)	74% (63% 86%)	59% (48% 70%) (64%)	70% (57% 85%)	56% (37% 67%) (55%)	80% (68% 90%) (75%)
2-sample Wilcoxon rank-sum test for H_0; urban=rural			P-value		0.061	0.02	0.302	0.838	<0.001	0.01	0.0201

Source: DHIS database

Coverage of EmOC services in the SPD (2010 & 2011)

No	Study District	1) Availability of EmOC Service (Signal Functions Scores)										# HFs	Av LB	Av HFD	Av CS	2) Av IDR	CSR	3) CSR	District Score
		AB	UT	AC	AVD	MRP	RRP	NR	CS	BT	Avrg								
1	Arusha Urban	86%	93%	79%	100%	100%	100%	100%	50%	50%	84%	62	14,279	13,277	2,908	93%	20%	100%	92%
2	Ilala	91%	88%	79%	91%	88%	88%	91%	21%	18%	73%	175	28,206	32,993	2,710	117%	10%	100%	97%
3	Iringa Urban	100%	91%	80%	100%	91%	91%	91%	18%	9%	75%	28	6,045	7,910	1,453	131%	24%	100%	102%
4	Kinondoni	90%	67%	54%	68%	67%	67%	59%	42%	39%	61%	190	48,314	37,249	4,329	77%	9%	100%	79%
5	Mtwara Urban	70%	60%	56%	67%	50%	50%	56%	11%	11%	48%	20	4,846	4,382	727	90%	15%	100%	79%
6	Songea Urban	100%	91%	100%	100%	100%	100%	45%	9%	9%	73%	31	6,949	9,429	1,464	136%	21%	100%	103%
7	Tanga Urban	100%	91%	91%	96%	95%	96%	91%	30%	32%	80%	56	11,743	7,297	889	62%	8%	100%	81%
8	Temeke	74%	84%	74%	89%	100%	100%	95%	21%	21%	73%	148	31,012	25,219	725	74%	2%	43%	63%
9	Babati	100%	100%	97%	100%	92%	92%	83%	11%	8%	76%	45	15,142	5,214	638	32%	4%	79%	62%
10	Bagamoyo	96%	75%	81%	100%	88%	88%	84%	4%	2%	69%	66	10,905	4,387	277	40%	3%	51%	53%
11	Geita	70%	19%	16%	96%	35%	35%	87%	6%	2%	41%	73	33,715	17,719	596	53%	2%	35%	43%
12	Kahama	96%	100%	66%	78%	86%	86%	80%	4%	0%	67%	71	32,314	12,060	863	37%	3%	55%	53%
13	Kasulu	87%	84%	42%	81%	77%	77%	52%	6%	6%	57%	81	24,959	12,934	821	52%	3%	66%	58%
14	Kilosa	100%	96%	96%	96%	100%	100%	100%	2%	2%	77%	77	23,082	6,892	514	30%	2%	52%	53%
15	Kondoa	96%	75%	10%	100%	92%	92%	89%	2%	2%	53%	73	19,574	8,048	608	41%	3%	62%	52%
16	Mbozi	63%	43%	46%	84%	68%	68%	33%	4%	4%	46%	77	25,108	12,384	528	47%	2%	40%	45%
17	Moshi Rural	100%	100%	58%	97%	77%	77%	82%	11%	11%	68%	75	18,096	4,092	460	23%	3%	51%	47%
18	Muleba	84%	100%	22%	97%	100%	100%	81%	11%	11%	67%	42	18,802	11,910	813	63%	4%	86%	72%
19	Musoma Rural	98%	98%	34%	90%	85%	85%	33%	2%	2%	59%	63	21,104	5,642	73	27%	0%	7%	31%
20	Ruangwa	67%	70%	22%	89%	100%	100%	81%	4%	4%	60%	33	5,761	2,860	168	50%	3%	58%	56%
21	Singida Rural	100%	100%	93%	100%	15%	15%	38%	5%	5%	52%	63	10,121	5,461	307	29%	2%	32%	38%
22	Sumbawanga Rural	96%	72%	14%	91%	81%	81%	85%	2%	6%	59%	118	19,083	10,822	514	57%	3%	52%	56%
23	Uyui	100%	100%	100%	100%	61%	61%	92%	0%	0%	68%	39	13,890	3,062	514	22%	3%	52%	47%
	Urban Districts, Mean	89%	83%	76%	89%	86%	86%	78%	25%	24%	71%	89	19,799	17,219	1,901	98%	14%	93%	87%
	Rural Districts, Mean	90%	82%	53%	93%	77%	77%	68%	5%	5%	61%	66	20,177	8,232	411	40%	3%	52%	51%
	Overall, Mean	90%	83%	61%	92%	80%	80%	72%	12%	11%	65%	74	19,872	11,358	929	60%	6%	66%	64%

AB= parenteral administration of antibiotics, UT=administration of uterotonic drugs, AC=parenteral administration of anticonvulsants, AVD= assisted vaginal delivery, MRP=manual removal of the placenta, RRP=removal of retained products, NR=basic neonatal resuscitation, CS= Caesarean Section, BT=blood transfusion, HFs=Health facilities; Av LB–Average number of live births; Av HFD–Average number of Health Facility Deliveries; AV CS–Average number of Caesarean sections; Av IDR–Average Institutional Delivery Rates; CSR= Caesarean Section Rate;

IFAKARA HEALTH INSTITUTE
research | training | services

Conclusion

- High coverage of first ANC visits
  - Excellent opportunity for promoting counseling services and in improving *repeat* visits
- Still low coverage of EmOC services
  - Rural districts relatively worse than urban districts
  - Priority in sustained stocking of essential drugs and supplies
- Overall: scaling maternal health programmes requires that all six building blocks operate to their optimum capacity
- Way forward:
  - Improve quality of routine data
  - RMCHN scorecard a good start but needs equity indicator/s
  - Districts can use IS for accountability and in improving RMNCH

Thank You

See more in my PhD thesis at:

http://researchonline.lsthm.ac.uk/2124344/

IFAKARA HEALTH INSTITUTE
research | training | services