

Mapping Health Facility Characteristics and Location in Rural Tanzania

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Background

Optimization of care-seeking for pregnancy, delivery, and child and maternal illness could reduce global maternal child mortality, especially in rural Africa. However, limited documentation of location, services, and staffing hamper facility strengthening initiatives and slow implementation projects.

Objectives:

1. Collect basic information to characterize health facilities in the districts of Misungwi and Kwimba.
2. Obtain GIS information of each health facility in the districts of Misungwi and Kwimba.

Methods

The mapping exercise was conducted in Misungwi and Kwimba districts. Research assistants collected basic facility information (i.e. number of deliveries, staffing, ownership) and GPS coordinates.

A. Questionnaire

- 32-question survey developed de novo
- Verbally administered to in-charge of each facility
- Data entered into REDCap; frequencies analyzed in SPSS

B. GPS data

- Garmin Oregon 650 GPS receivers used to geo-locate facilities and access routes, and to photograph delivery areas
- GPS waypoints and track logs incorporated into computer-based GIS; shapefiles produced and merged for facility locations and access routes
- QGIS plugin used to derive shapefile of locations of photographs via geotags



Results

A. Questionnaire

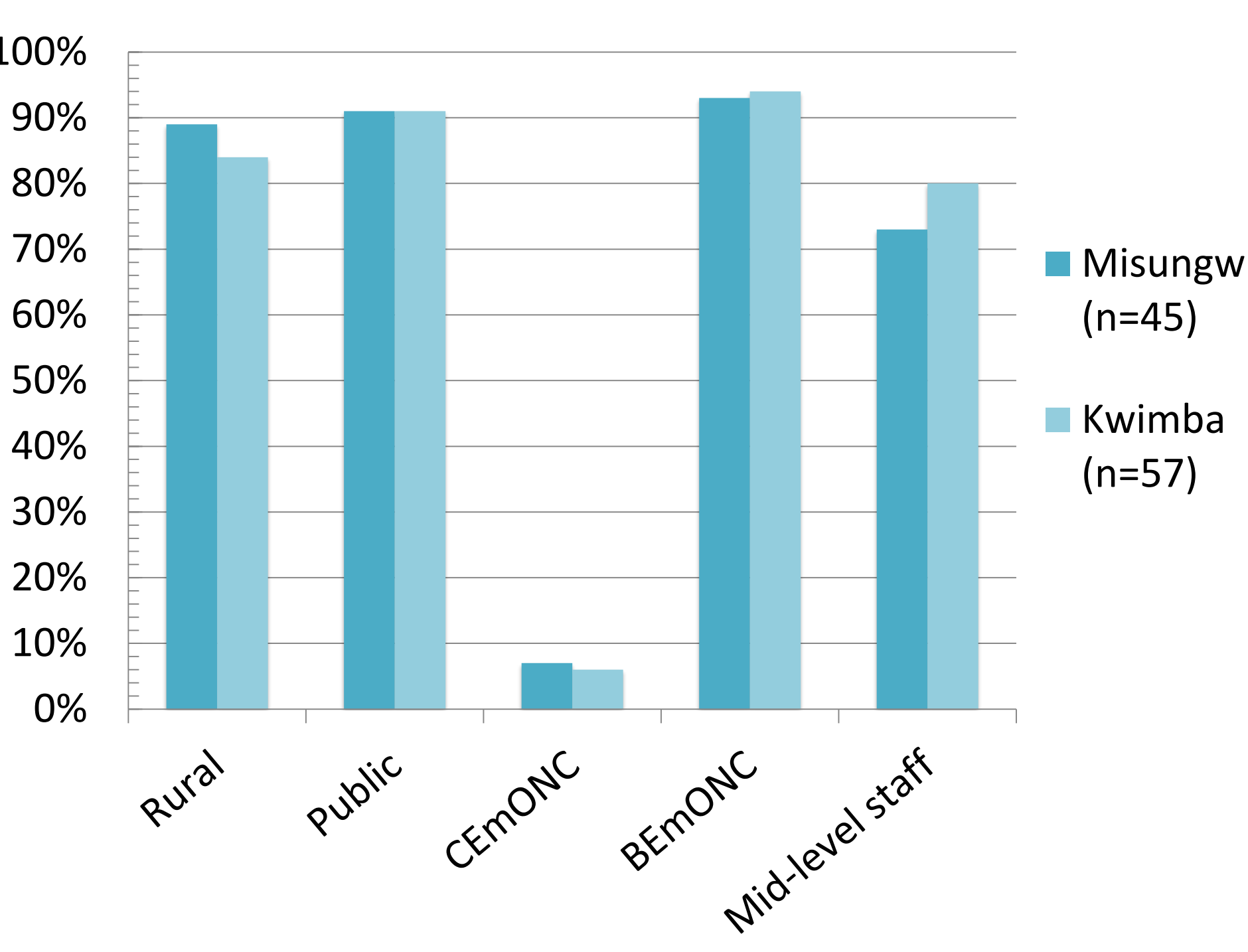
Over six days, 102 facilities were visited, including three previously unlisted facilities. Four percent were hospitals, 10% health centres (HCs) and 85% dispensaries (91% public, 9% private). Most facilities were rural (86%) or mixed (9%). Ninety percent reported delivery capacity; 6% offered advanced delivery services (i.e. C-sections, blood transfusions). 19,210 deliveries were reported in the preceding year (40% at hospitals, 19% at HCs, 41% at dispensaries); 46% of deliveries occurred at advanced delivery sites. Assigned staff included a total of 20 medical officers for a doctor to population ratio of 1:42,168. Other payroll staff included 95 clinical officers, 444 nurses, and 243 medical attendants. On day of survey, 50% of payroll staff were present; 22% of delivery-conducting sites lacked any mid-level health provider. Maps detailing precise location of all health facilities and road networks (including previously unknown roads) were produced and were linked to site photos, deliveries, and staffing information.

Percent total deliveries per annum

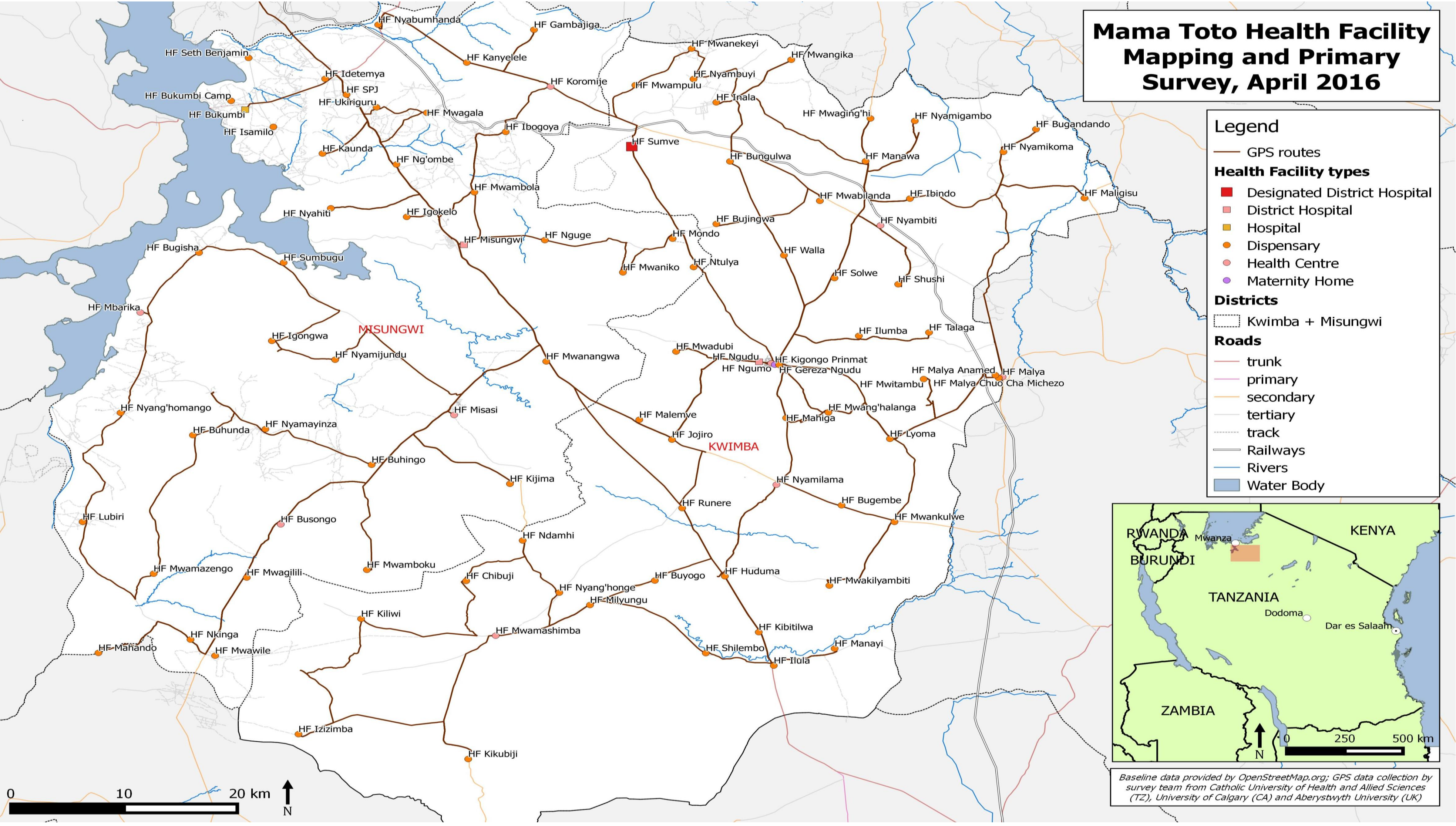
		Misungwi		Kwimba	
	n	Total del / year (n=9662)		Total del / year (n=9548)	
CeMOnC sites	3	47%	3	45%	
BE MOnC sites	41	52%	45	55%	
Health Centre	3	6%	4	19%	
Dispensary	38	46%	40	36%	
100+ deliveries	22	35%	13	23%	
25-99 deliveries	15	11%	18	12%	
0-24 deliveries	1	< 1%	9	1%	

C/BE MOnC = Comprehensive/Basic Emergency Obstetric and Newborn Care

Key facility characteristics



B. GPS data - Health Facilities in Misungwi and Kwimba



Conclusion

- A brief mapping exercise combined technical and practical information, yielding creation of a useful database and functional maps
- Visual representation of MNCH services was well received by project and health planners
- A relatively small investment will enable higher quality of data collection and ease of project planning



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