

Supplement for: Management Training as a Contextual Determinant of Service Readiness in a Longitudinal Study of a System-Level Audit and Feedback Program in Mozambique

Table 1: overview of study survey instruments

Instrument Name	Description	Unit	Target group	Data collection	Design
1. Health facility management effectiveness survey: <i>Health facility manager</i>	Captures facility-level information about management procedures from Health facility managers	Facility	Head of facility managers	Four rounds (2018-2022)	<i>Same survey conducted in different rounds among health facility managers at the time of the data collection visit</i>
2. Service Availability and Readiness Assessment	Captures facility readiness to provide various health services. For this study we selected the basic obstetric and neonatal service.	Facility	Health facility manager	Three rounds (2019-2022)	Same survey conducted among participating facilities. Only rounds 2-4 had data collection for the obstetric and neonatal service.

Table 2: Data collection rounds and timeline

Data collection round	Date of first record	Date of last record	Surveys collected
Round 1	8/9/2019	5/7/2020	Health facility manager and basic OB and neo SARA survey
Round 2	8/12/2020	3/4/2021	Health facility manager and basic OB and neo SARA survey
Round 3	8/3/2021	2/22/2022	Health facility manager and basic OB and neo SARA survey

Table 3: Domains included in the Health Service Delivery Indicators in this study

Domain	Items	Total Items
Barrier to Facility Full Functionality	Barrier to facility full functionality	1

Supervision by Central Team	Supervisor visits, Supervision mentorship areas, Last supervisor visit details, Issues raised during supervision, Equipment, infrastructure, and supplies	20
Time Management	Days and hours worked per week, Time spent on different activities, Supervising patient flow, Supervising clinical staff, Task distribution, Administrative tasks, Equipment and medicine checks, Patient treatment, Relationship management	12
Management Practices	Medicine ordering and receipt times, Absences of health workers, Performance evaluation meetings, Factors influencing performance opinions, External supervisor evaluations, Performance assessment impact on salary/incentives, Stock breakages, Medicine ordering frequency	14
Experience	Years in health sector, Years as head of unit, Previous experience as head of a health unit, Official management training received, Experience as a director/manager outside health sector	8
Community Participation	Existence of Health Management Committee, Number of committee members, Meeting frequency, Community representative participation, Minutes availability, Use of overhead funds for various items	12
Patient Feedback	Formal mechanisms for obtaining patient feedback, Most common patient complaints, Changes made due to patient feedback	8

Table 4: SARA tracer indicators for basic obstetric and neonatal service readiness used in this study(n=67)

Domain	Items	Total Items
Basic Amenities	Energy available, Water available, Working toilets, Working private toilet	4

Routine Practices	Administration of oxytocin injection, Immediate and exclusive breastfeeding, Hygienic cord care, Thermal protection	4
Obstetric Signal	Parenteral administration of antibiotics, Parenteral administration of oxytocic, Parenteral administration of magnesium sulphate, Assisted vaginal delivery, Removal of retained products after delivery	5
Newborn Signal	Neonatal resuscitation, Cesarean section, Blood transfusion, Antibiotics for preterm or prolonged PROM, Corticosteroids in preterm labor, Kangaroo mother care, Injectable antibiotics for neonatal sepsis	7
Staff and Guidelines	Guidelines for essential childbirth care, Essential Birth Care checklists/job aids, National guideline on Essential Care for newborns, Staff trained in newborn resuscitation in the last two years, Staff trained in essential childbirth care	5
Equipment	Ambulance vehicles in operation, Electric autoclave (pressure & moist heat), Wood autoclave, Gas autoclave, Examination light, Delivery pack, Cord clamp, Episiotomy scissors, Scissors/blade to cut cord, Structure material with needle, Needle holder, Manual vacuum extractor, Vacuum aspirator or D&C kit, Disposable latex gloves, Blank partograph, Delivery bed, Newborn bag and mask (term babies), Newborn bag and mask (pre-term babies), Electric suction pump, Suction catheter, Suction bulb (single use), Suction bulb (sterilizable multi-use), Speculum, Infant weighing scale, Blood pressure apparatus	24
Medicines and Commodities	Antibiotic eye ointment for newborn, Gentamicin injection, Ampicillin powder for injection, Hydralazine injection, Metronidazole injection, Azithromycin cap/tab or oral liquid, Cefixime cap/tab, Benzathine benzylpenicillin powder for injection, Nifedipine cap/tab, Metildopa tablets, Calcium gluconate injection, Magnesium sulphate injectable, Skin disinfectant, Intravenous solution with infusion set, Sodium chloride injectable solution, Dexamethasone injection, Oxytocin injection, Oxytocin stored in cold storage	18

Table 5: Regression analysis results comparing unadjusted and adjusted model

<i>Predictors</i>	service readiness (unadjusted)			service readiness (adjusted)		
	<i>Estimates</i>	<i>CI</i>	<i>p</i>	<i>Estimates</i>	<i>CI</i>	<i>p</i>
Intercept	70.00	64.87 – 75.13	<0.001	64.78	56.55 – 73.02	<0.001
Round 2	-3.55	-7.30 – 0.21	0.064	-4.53	-8.86 – -0.20	0.041
Round 3	-5.43	-9.12 – -1.73	0.004	-6.75	-11.07 – -2.43	0.002
Intervention (IDEAs)	0.69	-5.40 – 6.77	0.824	1.14	-4.86 – 7.13	0.708
mgmtTrainingPrior: Yes	-2.13	-8.12 – 3.86	0.484	-2.65	-9.29 – 3.99	0.431
Interaction: Intervention (IDEAs) X mgmtTrainingPrior: Yes	9.52	0.18 – 18.85	0.046	11.11	0.69 – 21.52	0.037
Semi-annual district health management team (DHMT) supervisions				-0.23	-0.65 – 0.20	0.291
DHMT supervision for non-clinical administrative supervisions				2.97	-2.50 – 8.45	0.284
Average years of experience in the health sector				0.25	-0.03 – 0.53	0.085
Average years of experience as a manager in the facility				0.58	-0.43 – 1.59	0.258

Table 6: VIF analysis results

Predictor	GVIF	Df	GVIF ^{1/(2*Df)}
as.factor(round)	1.321663	2	1.072211
Intervention (IDEAs)	1.230781	1	1.169572
mgmtTrainingPrior	1.95026	1	1.35592
Semi-annual DHMT supervisions	1.107535	1	1.086109
DHMT supervision for non-clinical administrative supervisions	1.161209	1	1.069028

Average years of experience in the health sector	1.12885	1	1.053514
Average years of experience as a manager in the facility	1.060425	1	1.190976
Interaction: Intervention (IDEAs) X mgmtTrainingPrior: Yes	2.089364	1	1.344178