

Implementation of evidence-based midwifery quality improvement (QI) practices (DBP and SSC) is clinically feasible at reasonable costs from the perspective of health facility. More knowledge is needed on barriers and drivers of cost-effective QI implementation of proven DCC practice in this and similar settings. From the funder's perspective, costs of implementation are higher and are majorly driven by capacity building program costs for the public health official (QI leader). These findings support collaborative financing strategies for future facility-based capacity building and midwife-led (MIDWIZE) QI initiatives and could inform resource mobilization in similar resource-constrained settings.

## Implementation of Evidenced-based midwifery practices under the Midwife-led Quality improvement framework in Nairobi, Kenya - Analysis of Costs and Intermediate Outcomes

**Background:** Poor quality of maternal health is associated with high maternal and neonatal mortality and morbidities in resource-constrained settings. Implementation of proven care practices of Dynamic birth positions(DBP), Skin to skin care (SSC) and Delayed cord clamping (DCC) are linked to better health outcomes, thus ,knowledge on implementation costs under a midwife-led team (MIDWIZE) initiative can future inform future Quality Improvement program planning and scale-up in resource-constrained areas.

### Methods-

#### Internet-based Capacity Building (CB) program with a Quality Improvement initiative

#### Pre-Post Implementation design

**1 PLAN**

- Internet-based Capacity-Building(CB) Program for public health officials -Kenya, Malawi, Ethiopia, Somali) (28participants)
- Trained on Change Theory, MIDWIZE model of care, cost-effectiveness, maternal Health outcomes and Evidence on Midwifery practices (DBP,SSC,DCC) Erlandsson et al 2021.
- Institutional Approval and local QI team formation.
- Of 28 participants ,1 QI leader acts as the Head Trainer for QI implementation in local hospital.

**2 DO ( IMPLEMENT < COLLECT DATA < MEASURE)**

12 week QI Implementation on Proven Midwifery practices in a Single peri-urban health center, in Nairobi, Kenya (18 midwives(Staff),6 Clinical Officers(Staff), 1 Head Trainer & 1 Doula/childbirth educator, 1 training assistant)



**Skin-to-Skin Care and Early Breastfeeding**

- Keeps the baby warm
- Reduces crying
- Improves mother-baby interaction
- Keeps the baby's blood sugar level stable
- Stimulates milk production

**Delayed Cord Clamping**

- Increases the level of haemoglobin for the baby.
- Protects against iron deficiency
- Improves long-termed mental and social development for the child



**Dynamic Birth Positions**

- Reduces pain
- Reduces perinatal tears
- Reduces risk for urine incontinence
- Increases mother's satisfaction with birth
- Helps the baby pass through the birth canal faster

**3 STUDY & ACT**

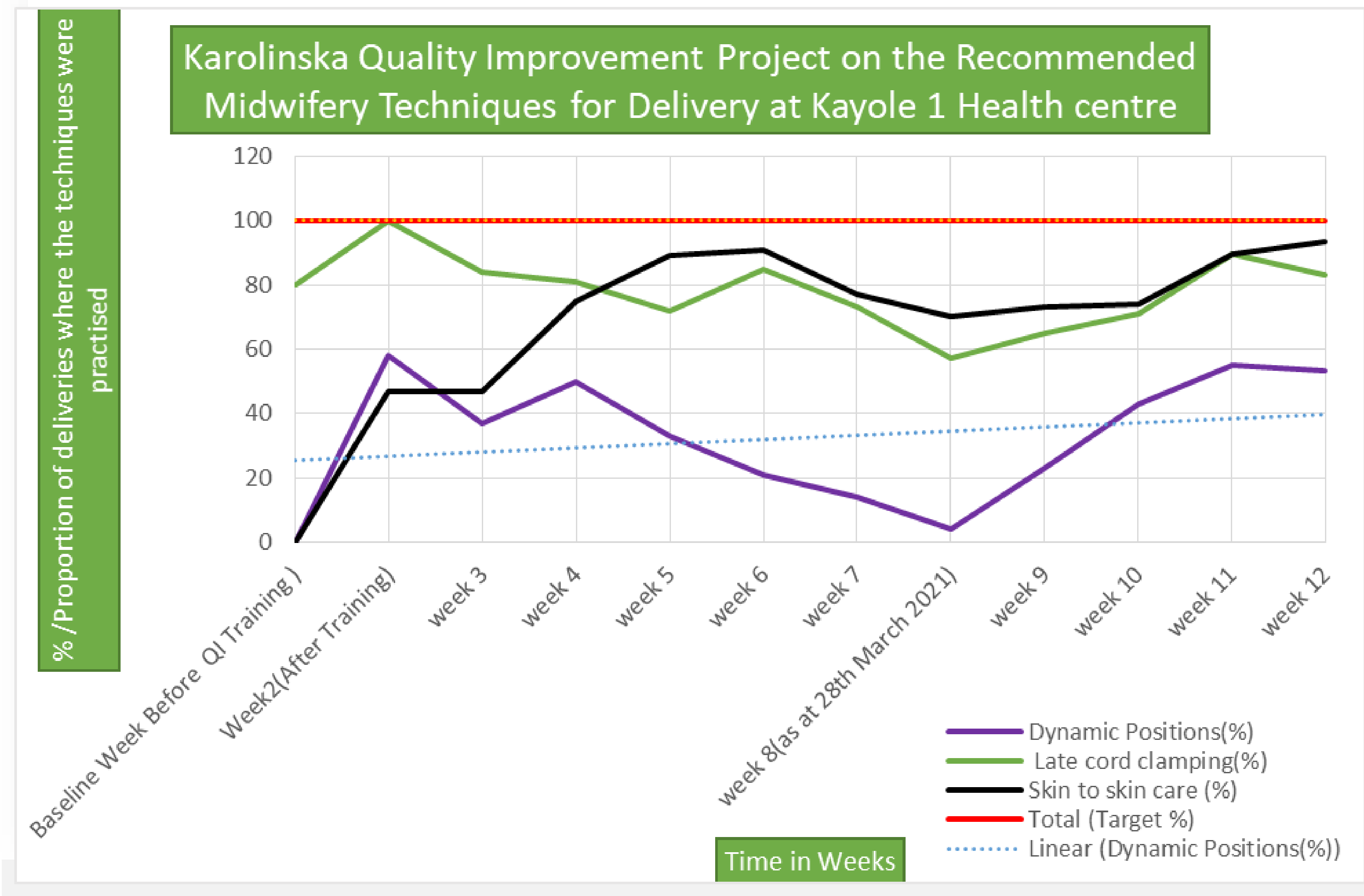
**INTERMEDIATE OUTCOMES**

- Adoption of DBP(36%),SSC(79%),DCC(0%) practices
  - linked to better clinical and costs savings outcomes in literature (SSC-EBF, DCC-IDA in infants ass with cognitive productivity losses, DBP- reduces operative delivery risk, CS , 2<sup>nd</sup> stage of labor, pain)

**COSTS ANALYSIS (Scenarios)**

- Assumption: Half of Total QI Costs invested in DBP, a quarter of costs to SCC and a quarter to DCC.**
- Scenario 1-Facility Perspective(a)
  - Staff-Time costs(Average Staff's hourly pay \* total participation time in hours, based on job administrative data and workshop registers)
- Scenario 2-Facility Perspective(b)
  - Staff-Time costs + Trainer's facilitation costs (material, transport & participation lunch allowance (from KI program funding budget) + Hired Trainer's and assistants service time costs (trainer hourly costs \* training time in hours-attendance registers)
- Scenario 3-Program/Funder Perspective-
  - Staff-time-costs + Total program costs(both for CB and QI implementation facilitation) for the head trainer/QI leader (from KI program funding budget)

### Results 1-Intermediate outcomes



### Results 2-Costs Drivers & Per outcome

	Major Cost Drivers	DBP adoption N=111 (\$ per Outcome)	SSC adoption N=242 (\$ per Outcome)	DCC-Effect=no change
<b>Scenario 1</b>	Midwife's-Time-costs- 72%	\$258 USD at (\$2.3 USD per DBP adoption)	\$129 USD at (\$0.5 USD per SSC adoption)	\$129 USD incurred (without change in DCC practice)
<b>Scenario 2</b>	Trainer's Facilitation costs(Material, transport, lunch allowances, training aider )-55%	\$667.5 USD at (\$6.0 USD per DBP adoption)	\$333.8 USD (\$1.4 USD per SSC adoption)	\$333.8 USD incurred(no change in DCC practice)
<b>Scenario 3</b>	C.B program costs per trainee(QI Trainer/Leader)- 94%	\$4274 USD at (\$38.5 USD per DBP adoption)	\$2137USD at (\$8.8 USD per SSC adoption)	\$2137 USD (no change-in DCC practice)

**Limitation:** A partial economic evaluation with a relatively short period of time for baseline assessment and observation bias in data collection methods for intermediate outcomes. **Recommendation:** In future research, applying more robust full economic evaluation methods and measurement of clinical maternal health outcomes will provide more knowledge on the opportunity costs, costs savings and effectiveness of the proven midwifery-led practices and implementation strategies.