



Quality Improvement Team at Ridge: Representing Obstetrics, Anesthesiology, Ante-natal ward, Labor ward, Operating theatre, Post-natal ward

Dr. Srofeyoh and Dr. Owen reviewing c-section delay data

Reducing Maternal and Perinatal Mortality in Ghana by Improving Service Delivery Capacity: Introducing Systematic Quality Improvement Methodologies into the Greater Accra Health Region

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Kybele, Inc. is a 501(c)3 organization dedicated to improving safe childbirth and compassionate healthcare for pregnant women and newborns through medical education partnerships.

WHERE WE HAVE BEEN

KYBELE HISTORY Our Work at Ridge Hospital 2007 - 2011

- Since 2004, Kybele has conducted medical training in 9 countries.
- Kybele programs have enlisted **381 medical volunteers** from **67 institutions** in 10 countries worldwide from **28 different disciplines** including anesthesiologists, obstetricians, neonatologists, nurses, biomedical engineers, quality improvement and leadership experts.

Country	% Participants
Ghana	57%
Georgia/Armenia	13%
Romania	7%
Egypt	7%
Turkey	6%
Croatia	5%
Mongolia	2%
Brazil	3%



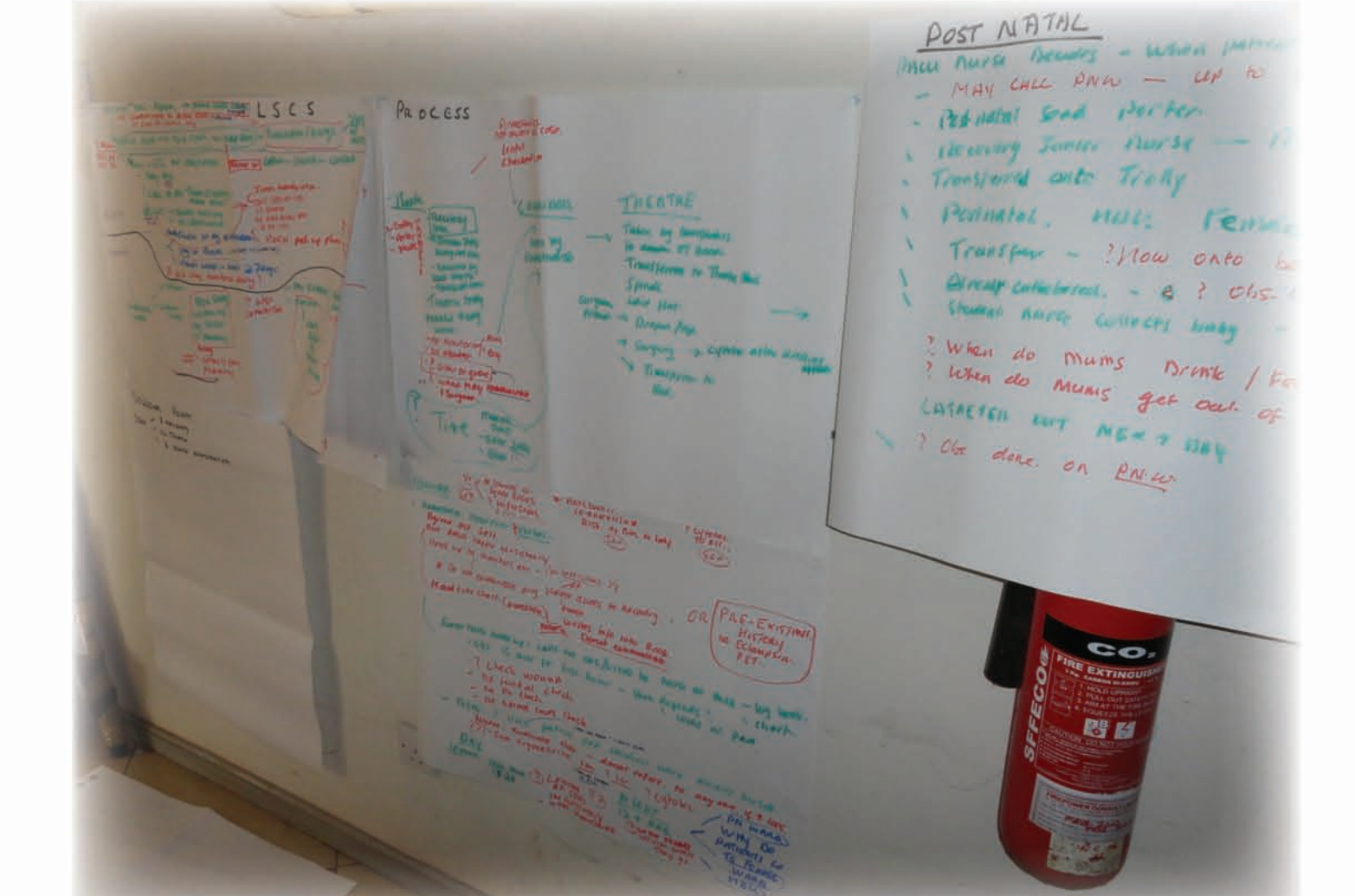
Dr. George Yankee, Ghana Health Minister with Dr. Medge Owen, Kybele



Overcrowding at Ridge. Waiting in line for triage.



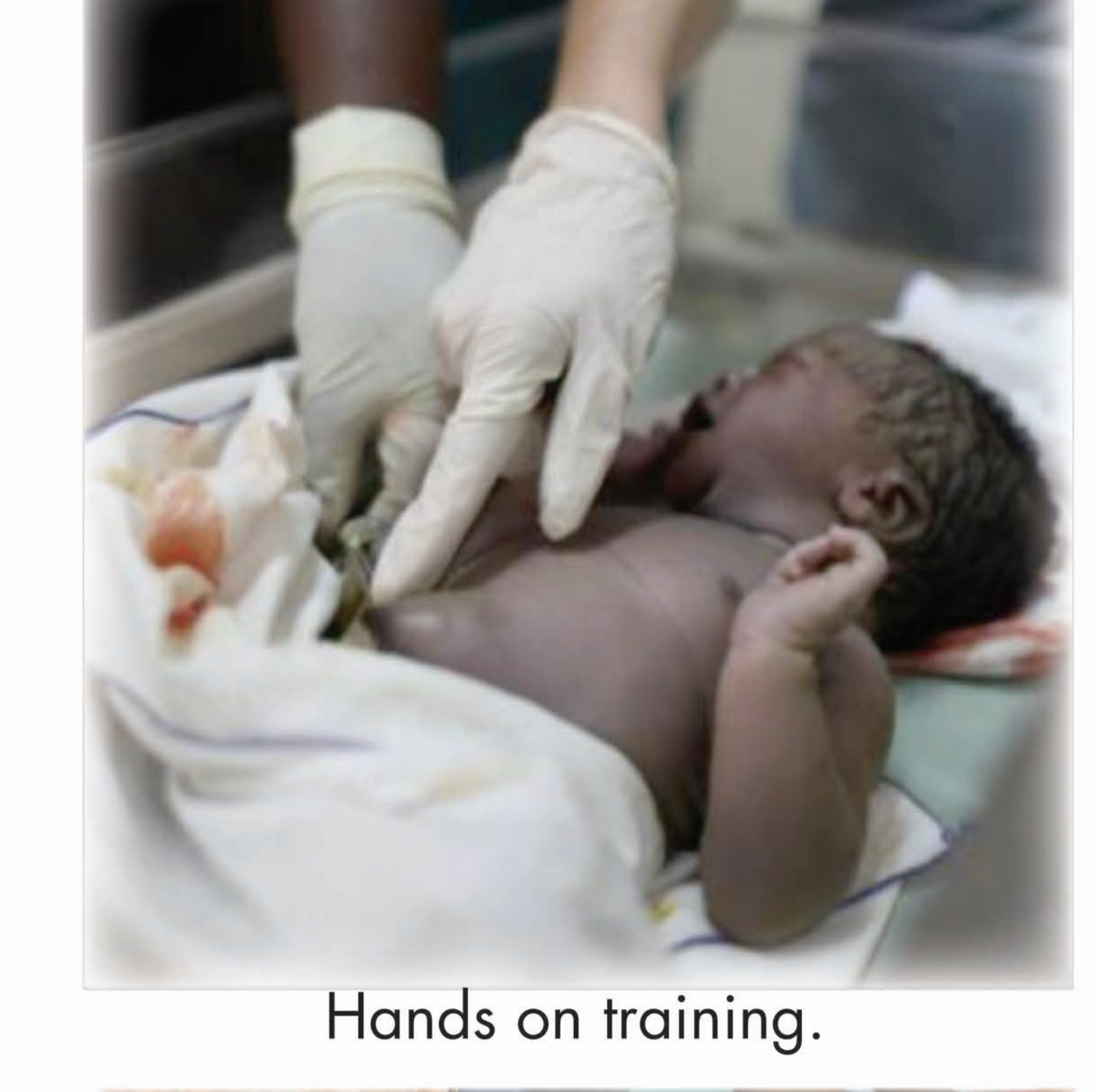
Theatre holding room. Waiting in line for cesarean section.



Process mapping.



Observing neonatal resuscitation.



Hands on training.



Kybele personnel teaching bag-mask ventilation.

REFERENCE:
 Emmanuel Srofeyoh, Thomas Ivester, Cyril Engmann, Adeyemi Olufolabi, Laurel Bookman, Medge Owen.
Advancing obstetric and neonatal care in a regional hospital in Ghana via continuous quality improvement.
 International Journal of Gynecology and Obstetrics 116 (2012) 17-21.

WHERE WE ARE NOW

QI PILOT PROGRAM Our Work at Ridge Hospital 2011 - 2012

NEW CHALLENGES

- 50% increase in patient volume
- 6-fold increase in complex admissions
- Rapid increase in #CS (CS rate 29-36%)
- Median wait for emergency CS = 4 hrs
- Persistent delays in key obstetric processes
- Need for a sustainable approach to address OPERATIONAL ISSUES

NEW SOLUTIONS

Reducing C-Section Delays at Ridge Hospital

A Pilot Quality Improvement Collaborative (Ridge/Kybele)

- Greater focus on building staff capability around quality improvement
- Greater focus on efficiency and throughput

OBJECTIVE: Reduce delays in emergency and elective C-sections using a QI approach

METHOD:

- Document the entire process
- Collect delay data
- Identify causes for delay
- Develop a change model for action
- Design new solutions
- Monitor results

TEAM: Doctors, nurses and anesthesiologists from all key steps of the process connected through collaborative software ("Wiggio")

STAYING CONNECTED

Utilizing Wiggio Collaborative Software

THEORY OF CHANGE MODEL

PROJECT LIST

ACTIVITY	PRIORITY	TEAM RESPONSIBLE FOR DESIGN
Process for clearing elective backlogs in Female ward	Immediate	Dr. Srof, Dr. Buntungu
Process for improved communications between theater and wards	Immediate	Clarice, Helen, Susie, Ruth
Process for creating, prioritizing and sending elective CS list to the theater	Immediate	Clarice, Helen
Process for management of supplies and drugs (including emergency drugs) in the wards (female and labor)	Immediate	Female ward nurse supervisor, Susie, Pharmacy Head
Process for management of supplies and drugs (including emergency drugs) in the theater	Short Term	Jacob, Pharmacy Head, Ruth
Process for discharge of patients from recovery room to post natal care	Immediate	Recovery room supervisor and Post-natal ward supervisor
Process for hiring extra orderlies in theater to provide backup when orderlies are sick or on leave	Short Term	Helen, Dr. Srof, management
Process for ensuring that preventive maintenance on theater equipment is done on time	Longer term	Jacob, Helen, Ruth

SAMPLE RESULTS

Comparison of Post Anesthesia Recovery Room Times

Median time in Recovery Room:
 Before=313 min
 After=150 min

WHERE WE ARE GOING

QI SCALE PROGRAM Our Work in the Greater Accra Region 2012 - 2013

Greater Accra Region of Ghana

In 2011 Ridge Hospital Received 5,577 Referrals from 132 institutions.

OUR OPPORTUNITY

Building on our Experience

- Case fatality rates for serious risk conditions have significantly decreased at Ridge Hospital.
- Throughput and efficiency at Ridge are being addressed.
- Poor delivery processes in the HEALTH SYSTEM are still major barriers to further reductions in maternal and neonatal mortality.

Metric	Value
Number of maternal deaths at Ridge Hospital in 2011	36
% of maternal deaths attributable to poor delivery processes	50-80
Number of avoidable deaths that can be eliminated through system process improvements at Ridge	18-29
Maternal Mortality Rate (MMR) at Ridge in 2011	380
Our potential target MMR at Ridge by 2013	74-192
Millennium Development Goals Target for Ghana by 2015	185
Number of maternal deaths in the Greater Accra Region in 2011	242
Number of avoidable deaths that can be eliminated through system process improvements in the Greater Accra Region	121-194

OUR PROPOSED PROJECT

Building Systemic QI Capability in Greater Accra

Reducing Waste for Survival

Creating a Lean Health System

- Lean is a philosophy that considers the expenditure of resources for any goal other than the creation of value for the patient to be wasteful, and thus a target for elimination.

Cost Savings = EXPECT DELAYS + Waste

Reduced Mortality = EXPECT DELAYS + Waste

RESEARCH DESIGN

- Matched for volume and acuity levels
- Implement common processes in all sites
- Build Lean capability in intervention sites
- Implement two sequential improvement projects
- Use learning network for coaching and mentoring

Compare Outcome, Output & Organizational Measures

- Avoidable deaths
- Delays
- Untimely referrals
- Leadership engagement
- Staff motivation
- Problem solving capability

OUR APPROACH

Building Lean Capability

Patient and Mortality Trends

Ridge Regional Hospital

Pre-eclampsia and Hemorrhage - related maternal deaths

Year	Total Deliveries	Pre-eclampsia Prevalence	Case Fatality Rate
2007	6049	~4%	~10%
2008	7465	~4%	~10%
2009	8230	~4%	~10%
2010	8133	~4%	~10%
2011	9357	~4%	~10%

65% reduction in mortality from pre-eclampsia
 89% reduction in mortality from hemorrhage

OUTCOMES: Reduction in still birth

Year	Total Deliveries	Ridge Still Birth	Ridge Still Birth/1000
2007	6049	55	9.0
2008	7465	40	5.4
2009	8230	48	5.8
2010	8133	45	5.5
2011	9357	40	4.3

52% drop in still birth



The new maternity operating theatre at Ridge.

PARADIGM SHIFT FOR OBSTETRIC STAFF OF GHS

FROM THINKING THAT MATERNAL AND NEONATAL DEATHS ARE TO BE EXPECTED

TO BELIEVING THEY HAVE THE TOOLS AND POWER TO ELIMINATE ALL AVOIDABLE DEATHS FROM POOR SERVICE DELIVERY