AFRICAN HEALTH PROFESSIONS

Regional Collaborative for Laboratory Technologists and Technicians

2nd Learning Session

Entebbe Uganda November 2016

PEPFAR

EMORY NELL HODGSON WOODRUFF SCHOOL OF NURSING

Commonwealth Nurses and Midwives Federation

ACKNOWLEDGEMENTS

This report was written by Jill Iliffe, Executive Secretary, Commonwealth Nurses and Midwives Federation, on behalf of the ARC faculty.
jill@commonwealthnurses.org

AFRICAN HEALTH PROFESSIONS REGIONAL COLLABORATIVE

PARTNERSHIP FOR EXCELLENCE IN AFRICA'S HEALTH WORKFORCE

Entebbe Uganda 2-4 November 2016

CONTENTS

LIST OF FIGURES

APPENDICES

LIST OF ABBREVIATIONS

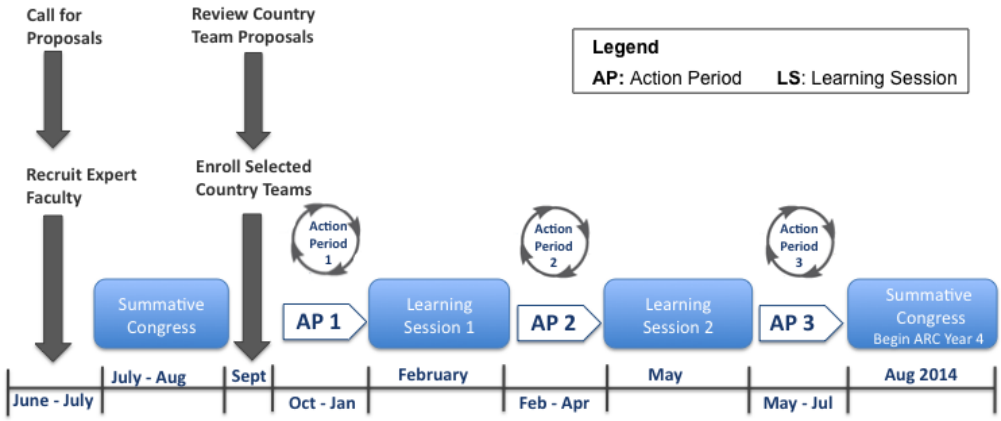
AIDS	Acquired Immune Deficiency Syndrome
ARC	African Health Professions Regulatory Collaborative
ART	Antiretroviral therapy
ARV	Antiretroviral
BPM	Business Process Mapping
CDC	USA Centers for Disease Control and Prevention, Atlanta, Georgia
CMM	Capability Maturity Model
CNMF	Commonwealth Nurses and Midwives Federation
CPHL	Central Public Health Laboratory (Uganda)
CQI	Continuous quality improvement
DMAIC	Define, measure, analyse, improve, control
DNA	Deoxyribonucleic Acid
EAC	Enhanced Adherence Counselling
ECSACON	East, Central and Southern Africa College of Nursing
ECSA-HC	East, Central and Southern Africa Health Community
HESIB	Health Economics, Systems and Integration Branch
HIV	Human Immunodeficiency Virus
HOP	Headquarters Operational Plan
ICAP	International Centre for AIDS Care and Treatment Programs
IHI	Institute for Healthcare Improvement
ILB	International Laboratory Branch CDC
LARC	African Regional Collaborative for Laboratory Technicians and Technologists
NSTRN	National Sample Transportation and Results Network
PDSA	Plan, do, study, act
PEPFAR	United States President's Emergency Plan for AIDS Relief
PSC	Patient support centre (Kenya)
QI	Quality improvement
TB	Tuberculosis
UNAIDS	United Nations and AIDS
US	United States of America
VL	Viral load
VLT	Viral load testing
VOC	Voice of community
WHO	World Health Organisation

1. EXECUTIVE SUMMARY

In 2011, the United States Centers for Disease Control and Prevention (CDC) under the US President's Emergency Plan for AIDS Relief (PEPFAR); Emory University's Lillian Carter Center for Global Health and Social Responsibility; the East, Central and Southern Africa Health Community (ECSA-HC), and the Commonwealth Nurses and Midwives Federation (CNMF) established a collaboration titled: *The African Health Professions Regulatory Collaborative* (ARC), which created an innovative south-to-south partnership to engage and build on the capacity of Africa's health professional regulatory leadership for nursing and midwifery. The aim of the collaborative was to improve health professional standards and practice in the region using local solutions and peer-based learning. The initial focus for the ARC initiative was on the seventeen countries in the east, central and southern Africa region: Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, South Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

The ARC conceptual framework was adapted from the Institute for Healthcare Improvement (IHI) Breakthrough Series© which is a short-term (6-15 month) learning system for breakthrough organisational change in which organisations learn from each other, as well as from recognised experts, about an area needing improvement. The structure of the IHI model is a series of alternating learning sessions and action periods (see figure 1).

Figure 1: IHI Breakthrough Improvement Model (adapted for ARC)



The objectives of ARC Phase 1 (2011-2015) were aimed at sustaining the scale-up of HIV services through strengthened nursing and midwifery regulatory frameworks and developing a sustained regional network of nursing and midwifery leaders to facilitate south-to-south exchange of best practices. Over the four years of ARC Phase 1 for east, central and southern Africa, 32 small grants were awarded for nursing and midwifery quality improvement projects. For more information about these projects, go to: http://africanregulatorycollaborative.com/ARC%20ECSA%20Grants.html.

In 2015, ARC West and Central was established involving three countries: Cameroon, Cote d'Ivoire, and the Democratic Republic of the Congo. For more information about ARC West and Central projects, go to: http://africanregulatorycollaborative.com/ARC%20WCA%20Grants.html.

In February 2016, ARC Phase II was launched with a focus on meeting the UNAIDS 90-90-90 goals that by 2020, 90% of all people living with HIV will know their HIV status; 90% of all people with diagnosed HIV infection will receive sustained ART; and 90% of all people receiving ART will have viral suppression. Through ARC Phase II, countries will conduct projects to identify bottlenecks at high HIV volume site and apply for quality improvement grants to address those bottlenecks.

Also in February 2016, an exciting extension of the African Regional Collaborative for Nurses and Midwives was launched. The new initiative, the African Regional Collaborative for Laboratory Technologists and Technicians (LARC), is aimed at improving communication between laboratory technologists and technicians, and nurses and midwives. Integral to achieving the UNAIDS 90-90-90 goals is identification and referral for viral load testing; efficient specimen collection and processing; timely and accurate testing; and result reporting and interpretation by clinicians leading to appropriate patient management.

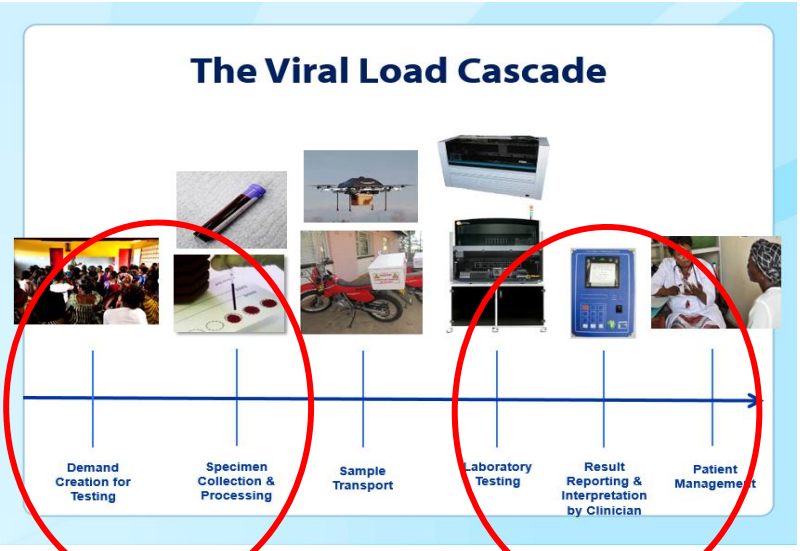
Laboratory services play a key role in the diagnoses and management of people living with HIV and AIDS. The WHO consolidated guidelines on the use of antiretroviral drugs for preventing and treating HIV infection recommend viral load testing as the preferred monitoring tool for diagnosis and confirmation of the failure of antiretroviral therapy. As countries move toward the 90-90-90 goals, HIV testing services will have to be expanded with high quality and accurate reporting of HIV status to ensure correct HIV results are given to all individuals.

Optimizing the use of HIV diagnostics (first '90'), accelerating access of HIV-infected adults, adolescents and children to ART (second '90'), and achieving and maintaining HIV viral load (VL) suppression (third '90') is necessary to control the HIV epidemic. To effectively achieve accurate HIV testing, treatment and viral load suppression scale-up targets, there needs to be continuous quality improvement (CQI) in laboratory systems, early diagnosis of HIV and TB, and timely linkage to treatment with a monitoring strategy to ensure that treatment is effective. Uptake of best practices, government commitment, strong leadership, and partnership development is also necessary.

The overall goal of the LARC initiative is to achieve and maintain HIV VL suppression (the 3rd 90) by:

- Increasing the uptake of VL testing by improving the elements in the viral load cascade.
- Improving health systems institutional capacity and inter-cadre effectiveness through team building, evidence based problem solving, and project feedback with progress documentation.

Figure 2: The Viral Load Cascade



Ellenberger D. *Viral Load presentation.* ARC Summative Congress Namibia February 2015

The International Laboratory Branch (ILB) Headquarters Operational Plan (HOP) of the CDC developed a project which adapts the highly successful, continuous quality improvement (CQI) problem-solving regional collaborative used by nurses and midwives (ARC) to the laboratory workforce.

More specifically, LARC will engage national teams of laboratory technologists and technicians and nursing and midwifery leaders from the six PEPFAR funded viral load countries: Kenya, Malawi, Mozambique, Swaziland, Tanzania, and Uganda, to identify and address health systems barriers that impede the integration of viral load testing within patient care, especially HIV care provided by mid-level providers (eg: nurses and midwives) who are responsible (through task sharing) for managing patient treatment on first-line of antiretroviral therapy (ART).

The LARC initiative will provide 12 month time limited grants to the targeted countries to work on projects to improve communication and understanding between these two critical groups of health professionals. The interventions developed by each country team will be supported by grants of up to US$10,000.The projects will be developed by the respective country collaborative (comprised of national laboratory technologists, technicians and nursing and midwifery leaders) and submitted by each team for project review conducted by Emory University.

The review and approval of these short-term projects will be managed by CDC (HESIB and ILB) together with Emory University staff. Each project intervention must address system impediments illustrated at either the end of the viral load cascade (see figure 2). LARC's evaluation will incorporate a Capability Maturity Model (CMM) designed specifically for assessing laboratory health systems improvement that has been used to assess the progress of the ARC initiative.

During the term of the projects there will be two LARC learning sessions that will allow country teams to report on their viral load health systems projects and share related successes and challenges with project implementation. The learning sessions are also designed to foster 'south-to-south' learning and provide expert technical sessions relative to the projects and capacity building of the country teams.

The inaugural LARC meeting was held in Johannesburg South Africa 18-19 February 2016. Representatives from Kenya, Malawi, Mozambique, Swaziland, Tanzania and Uganda attended the meeting. Representatives included the CDC laboratory adviser for each viral load country, laboratory technologists and technicians, nurses and midwives, members of the LARC and ARC faculty, and invited guests with technical expertise.

The 1st LARC learning session was held in Dar es Salaam, Tanzania 2-4 August 2016. Representatives from Kenya, Malawi, Mozambique, Swaziland, Tanzania and Uganda attended the meeting. Country teams included the CDC laboratory adviser for each viral load country, laboratory technologists and technicians, and nurses and midwives. Members of the LARC and ARC faculty, technical experts and invited guests were also present.

2. LARC YEAR 1 SECOND LEARNING SESSION

The 2nd LARC learning session was held in Entebbe, Uganda 2-4 November 2016. The objectives of the learning session were:

1. To present, inform and discuss the six LARC viral load activities being implemented by project teams in Kenya, Malawi, Mozambique, Swaziland, Tanzania and Uganda.
2. To incorporate health systems improvement methodologies in LARC country projects that can ensure successful outcomes.
3. To introduce a finalised LARC Capability Maturity Model (CMM) for benchmarking project activity.
4. To develop project action plans that cover the next six months.

Country teams from Kenya, Malawi, Mozambique, Swaziland, Tanzania and Uganda, comprising CDC laboratory advisers, laboratory technologists and technicians, and nurses and midwives attended as well as members of the LARC and ARC faculty, technical experts and invited guests. Highlights of the meeting were: presentations from each country team of the progress of their projects; a workshop on quality presented by Dr Barbara Chase McKinney; and the LARC capability maturity model evaluation tool presented by Dr Jimica Tchamako.

3. WELCOME AND GREETINGS

The meeting was officially opened by Professor Kenneth Hepburn, LARC and ARC Principal Investigator, Emory University. Professor Hepburn welcomed country teams, invited guests, technical experts, and LARC and ARC faculty members to the meeting and said that enhancing the communication and working relationships between laboratory and nursing and midwifery personnel, who make up the LARC dyad, is extremely important for achieving viral load suppression and the UNAIDS 90-90-90 goals. Professor Hepburn said he was looking forward with great interest to the country reports of their progress with their projects.

Ms Patricia Riley, Team Lead from the CDC Atlanta International Laboratory Branch also welcomed members of LARC country teams to the meeting. The LARC initiative, Ms Riley said, while small, was a critically important project. This second learning session, Ms Riley said, is an opportunity for countries to report on the progress of their projects. Ms Riley reminded participants that the focus of the projects was improving quality of care and Dr Barbara McKinney Chase was conducting a full day workshop on quality to support countries with their projects. Dr Jimica Tchamako is presenting the LARC evaluation tool for the initiative based on a Capability Maturity Model (CMM) and as part of the presentation, countries will be mapping their status against the tool. Ms Riley said the learning session is a time to share with and learn from each other and emphasised that the personnel from the ILB are available to country teams to assist. Ms Riley concluded by introducing Ms Nancy Ruto who organises the LARC and ARC meetings (travel logistics, transport, reimbursements) and Ms Jill Iliffe (CNMF) who is the meeting transcriber, photographer and maintains the LARC and ARC website.

Mr Alphonce Kalula, Senior Project Officer from ECSACON and a member of the LARC and ARC faculty then facilitated the introductions of members of each country team as well as the introductions of the LARC and ARC faculty members, invited guests, and technical experts.

4. OPENING REMARKS

Dr Steven Wiersma, Country Director, CDC Uganda

Dr Wiersma said it was a pleasure to be able to join the 2nd learning session of LARC which aims to support viral scale up across sub-Saharan Africa. Dr Wiersa said the world is looking to ensure that by 2020, 90% of all people living with HIV know their HIV status; 90% of all people diagnosed with HIV are receiving sustained ARV treatment; and 90% of all people receiving ARV treatment are virally suppressed. Viral load testing is critical in ensuring good treatment outcomes and survival. Dr Wiersma said he could not emphasise enough how important these LARC learning sessions are in supporting countries fast-track the third '90'.

Dr Wiersma said CDC and other US government agencies, with support from PEPFAR, are working with several sub-Saharan countries to move away from the traditional CD4 cell counts for monitoring clinical response to ART and to the contemporary viral load monitoring because of its earlier and more accurate detection of treatment failure.

Always an early adapter, Dr Wiersma said Uganda is one of the seven countries that adhered to the 2013 World Health Organization (WHO) recommendations and embraced viral load (VL) testing as a national monitoring strategy for patients on ART. Uganda adopted a centralized VL testing strategy at the Central Public Health Laboratories (CPHL) in Kampala, where samples come through the National Sample Transportation and Results Network (NSTRN) through 100 'hubs' from over 1,600 facilities. In 2016, a total of 585,236 individuals accessed VL testing out of the target 800,000 individuals (73% VL coverage).

Dr Wiersma said he was happy to see that the learning session will provide a forum for each of the six LARC countries to present their VL projects and receive technical assistance from the ILB staff and health systems experts. Dr Wiersma said that the US government, host country African governments, and other development partners have committed resources to support countries to develop and effectively implement interventions to ensure viral load scale up. However, viral load testing coverage in 2015 remained below target levels because of challenges in specimen transportation, training gaps, logistical challenges, and financial constraints. Country commitment and effective partnerships are essential to address the financial, operational, technical, and policy challenges of the rising demand for viral load monitoring. The LARC learning session and related dialogue will provide an opportunity for all stakeholders to reflect on the current challenges and forge a way forward. Findings have shown that patients with confirmed virologic failure on first-line ART are not being appropriately switched to second-line ART. We should be mindful of such issues, Dr Wiersma said, as we roll out VL to ensure that we do not end at simple access but improve lives. We need to think outside the box. Be creative. Sharing experiences and lessons from country projects will be critical.

In closing, Dr Wiersma said, it is important to note there is no single agency or organization that has the capacity to achieve and maintain HIV viral load suppression. We need more partnerships and collaborations, he said, between governments, communities and the private sector to consolidate the gains and advance epidemic control. Dr Wiersma invited participants to join him in saluting the CDC ILB and Emory University for the LARC initiative and wished participants fruitful deliberations.

5. SESSION ONE: COUNTRY PRESENTATIONS – PROJECT PROGRESS

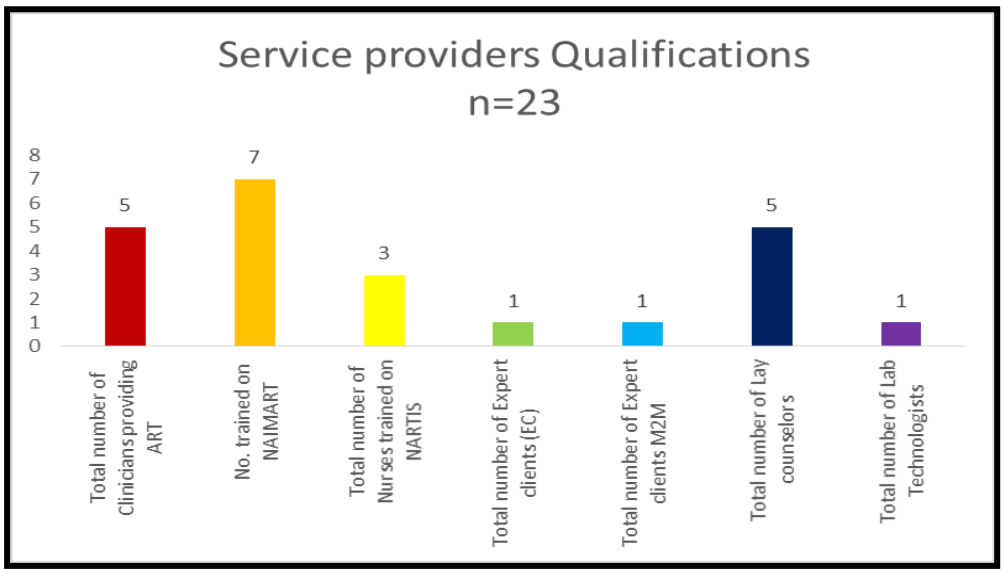
KENYA

Back row: Barack Odindo, Winnie Shena, Ernest Makokha
Front row: Linet John; Nancy Bowen; Rose Kuria

The Kenya project report was presented by Ms Winnie Shena from the National Nursing Association of Kenya. The title of the Kenya project is: *Improving results reporting and management in the HIV viral load cascade in Kenya.* The key objective of the Kenya project is to improve HIV viral load results reporting and management by 50% at Homa Bay County Referral Hospital by June 2017. Homa Bay Hospital has 300 beds; 20 doctors; 130 nurses; 21 laboratory technicians; 7,103 patients on ART; and 1,500 specimens collected for VL testing each month.

The Kenya team identified delayed results reporting which jeopardised patient treatment at the hospital's Patient Support Centre (PSC) and also at the laboratory. The qualifications of staff, including volunteer staff, present in the facility was documented (see figure 3 p.11).

Figure 3: Service provider qualifications



The summary of the Kenya project is outlined in figure 4.

Figure 4: Kenya Project Summary

What are we trying to accomplish?	How will we know if a change is an improvement?	What change will we make that will result in an improvement?
Overarching Goal Efficient HIV Viral load results management	**AIM Statement** To reduce delay of HIV VL results for patients on ART from baseline by 50% by end of project period (June 2017). **Metric** Number of patients on ART with hard copy results in chart (N) **----------** Total Number of Patients on ART sampled(D)	**Your Intervention** ▪ Documented the problem. ▪ Identified the bottle neck barriers. ▪ Design an intervention to mitigate the problem. ▪ Involve the patterns to support the intervention

The Kenya team were asked to develop an 'elevator speech' for thir project in order to convey the key concepts clearly and succinctly. Their 'elevator speech' follows below:

This project is about: *ensuring timely documentation of the patients' VL results in their file.*
As a result of this project: *clinicians will be able to appropriatelty manage patients' on ART.*
The project is important because we are concerned about: *Patients' confidence in ART management at the Homa Bay County Referral Hospital and also that the absence of VL test results in patient files will lead to ineffective viral load suppression.*
Success will be measured by showing improvement in: *VL documentation in the patients' charts; and ultimate VL suppression of patients on ART*.
What we need from you is: *IT investments to enable rapid delivery of VL results.*

In October 2016, the team collected baseline data to measure subsequent improvements using a convenience sample of 250 patients' files, randomly selected, to document the presence or absence of VL test results. The baseline was measured by dividing the number of patients on ART with hard copy results in their chart by the total number of patients on ART sampled. Data will be reviewed each three months to measure change from the baseline.

Preliminary results (baseline) showed that in 91% of patients' files there was no VL test result (n=229). In 4% of patients' files a hard copy of the VL test results was present (n=10); and in 5% of patients' files (n=13), the test result was recorded however the hard copy of the test result was missing. An action plan was developed documenting interventions until the end of the project in June 2017 (see diagram 5).

Figure 5: Kenya Action Plan

Action Item	By whom?	By When?
Data abstraction from 250 patient files randomly selected	LARC team members	20.10.2016
Review and analyse preliminary data	LARC Nairobi team	31.10.2016
Design an intervention Continue with data collection	LARC Team	31.12.2016
Implement project interventions based on the identification of the bottle necks:	LARC Team	November 2016 June 2017

The challenges for the Kenya team were geographical distances to the facility site and between team members making face to face meetings difficult; delays in communication between team members and also between team members and the study site; and competing priorities for team members. The use of digital communication tools was seen as a mitigating strategy to the communication difficulties. The lessons learned were the significance of timeliness in reviewing documents; the power of partnerships in program execution; and the value of networking and information sharing.

MALAWI

Reuben Mwenda; Isaac Chauwa; Thokozire Lipato; Geoffrey Chipungu; Mathias Sinjani

The Malawi project report was presented by Mr Isaac Chauwa, monitoring and evaluation specialist. The broad objective of the Malawi project is demand creation: to increase access to quality VLT services at Mitundu Community Hospital of eligible ART clients from 38% to 80% by September 2017 through a strengthened identification process of eligible clients.

Mr Chauwa explained that the Malawi project is supplementary to other already existing interventions such as the VL national scale-up plan 2015-2018; sample collection and preparation project being conducted by Lighthouse; sample transportation project through Bikers for Health; and development of a VL data system. Mr Chauwa shared with other country teams Malawi's baseline metric and target metric as outlined in figure 6.

Figure 6: Malawi baseline and target metric

Indicator	Baseline	Target
Number of adults and pediatrics current on ART.	5000	5500
Proportion of ART clients accessing VLT	38%	80%
Number of VL samples collected per week	40	84
Percent of ART clients with at least 95% adherence	95%	100%
VL sample rejection rate	10%	<1%

The summary of the Malawi project is outlined in figure 7.

Figure 7: Malawi Project Summary

What are we trying to accomplish?	How will we know if a change is an improvement?	What change will we make that will result in an improvement?
Overarching Goal ▪ VLT Demand creation	**AIM Statement** ▪ Increase access of eligible ART clients to VLT services at Mitundu Community Hospital from 38% to 80% through awareness and demand creation by September 2017. **Metric** Number of clients accessing VL testing **----------** Number of all eligible ART clients	**Your Intervention** ▪ VLT awareness creation resulting increased demand for VLT

The Malawi team were asked to develop an 'elevator speech' for thir project in order to convey the key concepts clearly and succinctly. Their 'elevator speech' follows below:

This project is about: *increasing awareness of VL testing access for PLHIV in order to create demand for testing.*
As a result of this project: *there will be an increase in the proportion of clients on ART accessing VLT.*
The project is important because we are concerned about: *the fact that there is low VLT access for eligible ART clients.*
Success will be measured by showing improvement in: *the number of VL samples collected each week and the proportion of eligible clients accessing VLT*.
What we need from you is: *Technical and financial support.*

So far, the Malawi team have conducted a launch of the project. They have reviewed available SOPs in relation to sample collection, sample storage and packaging, sample transportation, receiving results and results interpretation. They have identified relevant support groups and civil society organisations and identified expert clients, that is, ART patients with good adherence who can support the project aims and objectives. Other in-country programs are supporting VL sample collection (Lighthouse), and sample transportation (Riders for Health) while this project is supporting demand creation. Challenges faced by the Malawi team include inadequate funding for support groups which are only active with project funding.

MOZAMBIQUE

Asina de Oliveira; Lucia Muamdo; Laura Williamo Simbine

The Mozambique project report was presented by Ms Lucia Muamdo, CDC Laboratory Adviser Mozambique. The aim of the Mozambique project was to increase the percentage of viral load tests ordered from 0%-30% (short term aim) and from 30%-80% by the end of the project (long term aim). The project is based at the Bagamoio Health Centre which has 6,914 patients in treatment. The demand for VL testing in Bagamoio is low with only one clinician trained in VL monitoring. Health facility staff attending patients with HIV are not trained in VL monitoring. The action plan for the Mozambique project is outlined in figures 8 and 9.

Figure 8: Mozambique Action Plan 1

Activities: Create demand by clinicians
Harmonize the trainig tool for all clinicians *Harmonizacao do treinamento ferramentas para todos os clinicos*
Update MCH data collection tool *Actualizaca do material de colecta de dados*
Develop/ modify new data collections tool for clinicians *Desevolver/modificar novo material para a colecta de dados a todos clinicos*
Train all clinicians *Treinar todos clinicos*
Implement training and data colletion tool *Implementar treinamento e ferramenta de coleta de dados*
Implement assessement *Implementar avaliacao*
Meeting With clinicians (evaluation) *Encontro com os clinicos (evaliacao)*
Follow up *Acompanhamento*

Figure 9: Mozambique Action Plan 2

Activities: Increase demand by empowering the patient
Meet with CDC to develop advertisement material *Reunião com CDC para desenvolver material publicitário*
Monitor data collection tool *Monitorar a ferramenta de coleta de dados*
Train all Clinicians to deliver education *Treinamento de todos clinicos da devulgacao da educacao*
Conduct educational sessions for TB, Prevention, and parent´s education *Conduzir sessões educacionais para TB, Prevenção e Educação de Pais*
Implement assessement *Implementar avaliação*
Meet With clinicians (evaluation) *Encontro clínicos (avaliação)*
Follow up *Acompanhamento*
Implement assessement *Implementar avaliação*

The challenges faced by the Mozambique team included lack of time to implement the project; implementing multiple tasks at the same time; and a lack of human resources requiring work outside of normal working hours. The team felt that communication between clinicians and laboratories had improved and all involved had gained a better understanding of the laboratory workflow.

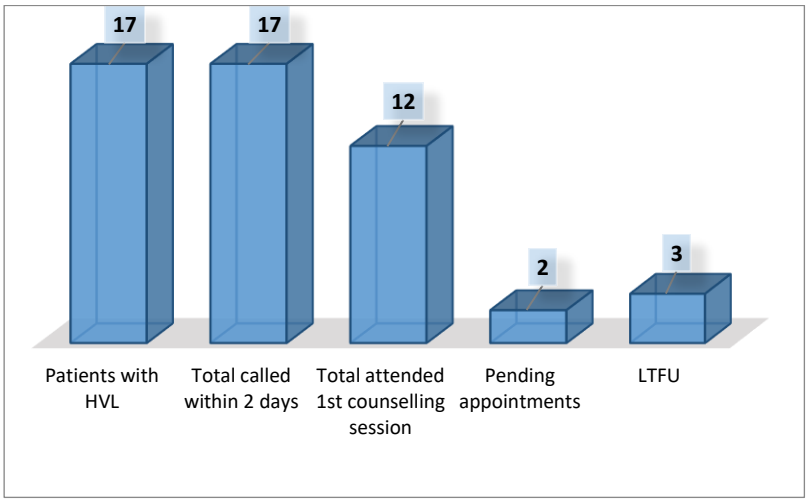
SWAZILAND

Back row: Nokulunga Dlamini; Sindisiwe Dlamini; Gladys Thebisile Khumalo
Front row: Glory Msibi; Dan Gama; Sehlephi Kuhlese-Dlamini

The Swaziland project report was presented by Ms Sehlephi Kuhlese-Dlamini from ICAP Swaziland. The focus of the Swaziland project, based at Motshane Clinic, is on results reporting and interpretation leading to quality patient management.

The Swaziland team had noted that the results of patients with high viral load were not handled with urgency and patients were not being called for follow-up in a timely manner. They aimed to increase the percentage of high viral load patients with documented appointment and timely clinical follow-up from 12% to 80% by 30 January 2017.

Figure 10: Motshane Clinic results 26 July to 13 October 2016



The summary of the Swaziland project is outlined in figure 11.

Figure 11: Swaziland Project Summary

What are we trying to accomplish?	How will we know if a change is an improvement?	What change will we make that will result in an improvement?
Overarching Goal: Improve the care and management for patients with high HIV viral load, specifically addressing the result reporting/clinician interpretation step of the viral load cascade	**AIM Statement** Increase the percentage of high viral load patients with documented appointment and timely clinical follow-up from the baseline 12% to 80% by 30 January 2017 **Metric** Number of patients who met the high VL follow-up criteria. --- Number of patients with high VL	**Your Intervention** High viral load results log with actions to be carried out within 2 days once the HVL result has been identified (results review by clinician, calling of patient to set up appointment for adherence counselling)

The Swaziland team were asked to develop an 'elevator speech' for thir project in order to convey the key concepts clearly and succinctly. Their 'elevator speech' follows below:

This project is about: *improving the clinical process for managing patients with high viral load results.*
As a result of this project: *patients with high VL will be identified and scheduled for appropriate follow-up within 2 days of results receipt in facility.*
The project is important because: *Utilisation of viral load results will improve the health status of patients by suppressing high viral load and it will maximise the efforts and financial inputs of the Swaziland MOH and its multiple partners.*

Success will be measured by showing improvement in: *the percentage of patients with high viral load who are scheduled in a timely manner for appointment and provided appropriate clinical management.*
What we need from you is: *resources to train health care workers so that processes are standardized and national systems are improved.*

The Swaziland team demonstrated with the photographs below how the process of filing patient viral load test results improved as a results of the project.

Figure 12: Filing of patient viral load test results before and after intervention

BEFORE **AFTER**


Challenges experienced by the Swaziland team were that multiple versions of chronic care files were in use and old versions were inappropriate. There was also no system for tracking patients in the national ART network. The team considered that understanding process flow is of key importance and that interventions should be piloted before implementation. They also emphasised the importance of version control and training when new versions of documents are introduced.

TANZANIA

Back row: Michael Mwasekaga; Victor Muchunguzi; Paul Magesa
Front Row: Samwel Ligmas; Anyelwise Kabuje

The Tanzania project report was presented by Mr Ligmas Samel, Registered Nurse at the Tanzania Ministry of Health, Community Development, Gender, Elderly and Children. The Tanzania project was focused on the results reporting step in the viral load cascade and aimed to assess and improve viral load results reporting and interpretation by clinicians. The Tanzania project was based at the Mkuranga District Hospital. The Tanzania team had identified that high viral load results are not acted on with appropriate timely follow up action. Baseline data was obtained by reviewing 171 patient files. Sixty six patients had high viral load results (viral copies > 1,000). Twenty three of sixty six patients (35%) had documented enhanced adherence counselling (EAC) visits. The Tanzania team aimed to increase the percentage of high VL patients with a documented return visit from 35% to 70% by 31st January 2017 and to 100% by 30th June 2017. The summary of the Tanzania project is outlined in figure 13.

Figure 13: Tanzania Project Summary

What are we trying to accomplish?	How will we know if a change is an improvement?	What change will we make that will result in an improvement?
Overarching Goal Impacting HIV+ patients management by assuring patients with high Viral Load (VL) receive timely enhanced adherence counselling	**AIM Statement** Increase percentage of high VL patients with a documented return visit from 35% to 70% by 31st January 2017 and to 100% by 30th June 2017 **Metric** Number of high VL patients with documented EAC return visit --- All patient with high VL results per month	**Intervention** ▪ Flagging files to highlight patient with high viral load ▪ Call/notify patients with high VL to return for EAC within 2 weeks

The Tanzania team were asked to develop an 'elevator speech' for thir project in order to convey the key concepts clearly and succinctly. Their 'elevator speech' follows below:

This project is about: *impacting HIV and patient management by ensuring that patients with high viral load results receive timely Enhanced Adherence Counselling (EAC).*
As a result of this project: *patients will achieve HIV viral suppression.*
The project is important to: *achieve in country HIV epidemic control and achieve the 90:90:90 HIV and AIDS goals by 2020.*
Success will be measured by showing improvement in: *the percentage of HIV patients with high Viral Load attending timely EAC.*
What we need from you is: *technical support and commitment.*

Challenges for the Tanzania team included difficulties for all the team to meet together face to face. They learned that regular communication with the study site is essential and that you must go to the site to see what is actually occuring. Having a dedicated phlebotomy work station for VL patients was seen as good practice.

UGANDA

Back row: Samuel Wasike; Judith Nanyonjo; Harriet Nambozo; Cuthbert Agolor; Irene Atuhairwe; Mary Naluguza; Chris Okiira **Front row:** Martin Zziwa; Catherine Odeke; Florence Tugumisirize; Shaban Mugerwa

The Uganda project report was presented by Ms Nanyonjo Judith Namirimu, Senior Nursing Officer, Masaka Regional Referral Hospital. The Tanzania team had identified low documentation and utilisation of VL results in the Masaka region ART sites. They aimed to increase documentation of viral load results in patient files and utilization of results in patient management to 100% by June 2017. Baseline data was collected from 18 facilities (scaled down from the original 24 facilities). Baseline data measured the proportion of files with documented viral load results; and the proportion of files with evidence of results utilization. A mid-term and end-term measurement of data will be compared with the baseline data to demonstrate quality improvement as a result of the intervention.

Figure 14: Uganda Project Summary

What are we trying to accomplish?	How will we know if a change is an improvement?	What change will we make that will result in an improvement?
Goal To achieve viral suppression for 90% of all ART clients in Masaka region **OBJECTIVES** ▪ To improve the percentage of VL test results accurately documented in patient files by January 2017 ▪ To increase the percentage of eligible patients managed using the VL test results by January 2017	**AIM Statement** Improve documentation and utilization of viral load results in patient management to 100% by January 2017 **Metric** Number of patients with an accurately documented VL result/total number of patient files with VL test result ---------- Number of patients managed according to VL result/total number of patients with VL test result	**Intervention** ▪ Mentor HWs on results utilization ensuring that VL results are documented on the next attended appointment following results receipt. ▪ Flag patient files using different colors of stickers according to VL eligibility and results ▪ Develop and use clients flow chart based on the VL eligibility criteria. ▪ Document that VL testing has been requested, sample collected, test done and results returned to facility. ▪ Stamp returned results showing date received at facility ▪ Develop and use VL results utilization flow chart based on the VL suppression ▪ Ensure that the received patient result is subsequently documented on the patient ART card preferably on the next appointment date when the patient attends in person. ▪ Track result utilization on the patient file and write summary of decision taken

The Uganda team were asked to develop an 'elevator speech' for thir project in order to convey the key concepts clearly and succinctly. Their 'elevator speech' follows below:

This project is about: *improving documentation and utilization of viral load results in management of patients on ART in Masaka Region.*
As a result of this project: *patients on ART will be monitored better to achieve viral suppression in 90% of patients on ART, thus reducing the incidence of new HIV infections, ill health and HIV related deaths, improve quality of life and increase productivity.*
The project is important because: *of the low level of VL results reporting and documentation in patient files despite improved access to VL tests; low utilization of VL results for patient management at health facilities; and delayed clinical response to unsuppressed VL results.*
Success will be measured by showing improvement in: *timely documentation of VL results in the relevant HMIS tools following receipt at facilities; and increased utilization of VL results by clinicians in making treatment decisions.*
What we need from you is: *support in capacity building of front line health workers, such as nurses, laboratory personnel, and other clinicians in VL results utilization.*

Action items for the Uganda team included:

- Mentoring health workers on results utilization ensuring that VL results are documented at the next attended appointment following results receipt.
- Flagging patient files using different coloured stickers according to VL eligibility and results.
- Developing and using flow charts based on VL eligibility criteria.
- Documenting that VL testing has been requested, sample collected, test done and results returned to facility.
- Stamping returned results showing date received at facility.
- Developing and using VL results utilization flow chart based on the VL suppression.
- Ensuring that the received patient result is subsequently documented on the patient ART card preferably at the next appointment date when the patient attends in person.
- Tracking result utilization on the patient file and writing a summary of the decision taken.

Challenges experienced by the Uganda team were difficulty in accessing data from private facilities who often have different goals from national goals and heavy workloads at facilities with competing priorities. Strategies to overcome the challenges include discussion with private facilities with a view to harmonizing their program goals with national objectives; use of official introduction letters; and encouraging task sharing at facilities to more evenly distribute workloads. The Uganda team concluded that monitoring patients on ART using VL is feasible in resource limited settings and that it is possible to implement QI activities within the available resources. The key is involvement of front-line health workers in project planning for QI projects.

6. SESSION TWO: QUALITY WORKSHOP – *Becoming a 'quality ninja'*

Dr Barbara Chase McKinney, Consultant, Emory University, CDC Atlanta

Dr McKinney said the focus of her presentation is on how to create an improvement culture where team members understand and use practical quality improvement (QI) tools in order to successfully complete their current LARC project and to embed continuous process improvement in the way work is conducted in the future. Dr McKinney said 'improvement' needs to be embedded into the DNA of every health worker. To illustrate quality improvement, Dr McKinney said she wanted to conduct an emergency room simulation where 3-4 teams of participants would treat as many 'patients' as possible in five minutes.

Tables would represent work stations. Patients would be represented by paper sheets. Care progress would be represented by coloured dots. Patients must be cared for in sequence to assure proper and equitable care and cannot by-pass any process or be cared for out of order. Patients must be escorted by 'transport' from the waiting room and between all processes. When care has been completed, 'transport' must be called to move the patient to the next process. Participants were divided into three teams. The six work stations were: pre-registration; triage; registration; treatment; discharge; and quality check. One person from each team acted as 'transport' and another as 'quality assurance' to check the care provided to each patient. Another person from the team drew a 'spaghetti' map of the route the transport person took for each patient.

Teams were given careful instructions by their team leaders: Katy Yao, David Cross, and Muadi Mukenge and felt fairly confident at the beginning of the exercise.

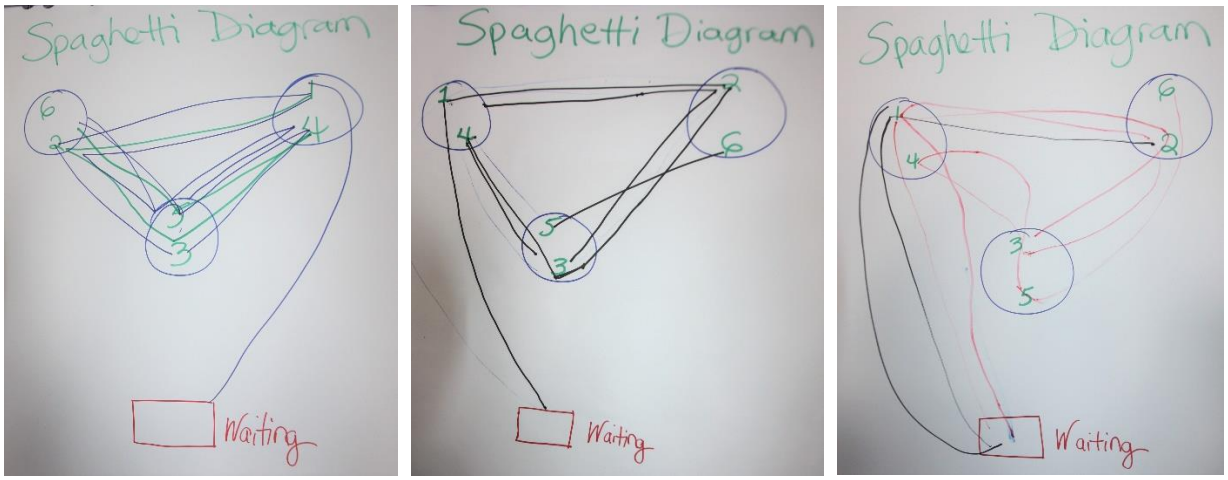
For the next five minutes chaos reigned as teams tried to get as many patients through the system as possible in the time allocated.

At the end of the exercise, teams were asked how many patients completed all six work stations. Only one patient completed all six work stations for two teams while three patients completed all six work stations for the third team.

An important lesson was learned when the 'quality check' people explained that the quality measure was that the dots had to be completely inside the circle on the patient sheet which meant that many 'patients' could not be counted because they failed the quality check. Team members realised that if they knew what the quality measure was at the beginning of the exercise, they would have made sure that they met the quality requirement.

The spaghetti diagrams below graphically represented the chaos that team members experienced during the exercise.

Figure 15: Spaghetti diagrams



OVERARCHING PRINCIPLES

Following the exercise and debriefing, Dr McKinney explained that the guiding principles for quality assurance are to:

- Focus on **processes** to increase the productivity of work
- Focus on the needs of the **users**
- Use **data** to improve services
- Use **teams** to improve quality
- Improve **communication**

(a) Processes

A process is a series of actions or steps taken in order to achieve a particular end; a sequence of procedures to convert inputs into outputs.

Figure 16: Process - a series of steps to convert inputs into outputs

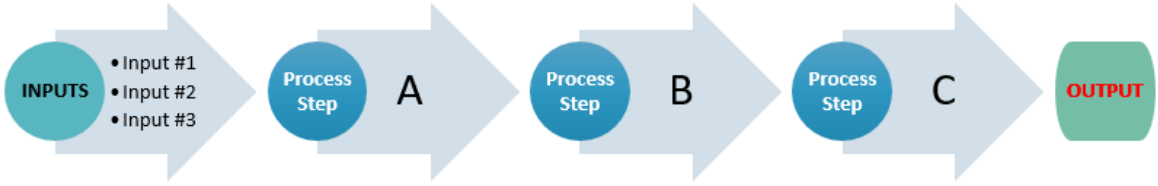
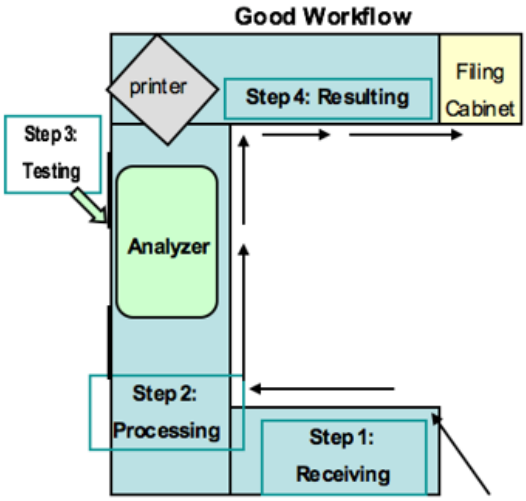


Figure 17: Effective work flow



Dr McKinney quoted Mr W. Edwards Deming (1900-1993) who said that "the first step in any organisation is to draw a flow chart (process map) to show how each component depends on others. Then everyone can understand what their job is. If people do not see the process, they cannot improve it". Dr McKinney shared a diagram which demonstrated an effective workflow. Participants were instructed in their country teams to draw a process map of the emergency room activity just completed showing all steps and how it could be re-designed and improved.


Uganda


Malawi


Swaziland


Mozambique


Tanzania


Kenya

(b) Change management

Dr McKinney referred to a book titled, *Switch: how to change things when change is hard* by Chip Heath and Dan Heath and recommended the book which suggests the following key processes to manage change effectively:

1. Direct the Rider
   - Follow the bright spots,
   - Script the critical moves, and
   - Point to the destination.

2. Motivate the elephant
   - Find the feeling,
   - Shrink the change, and
   - Grow your people.

3. Shape the path
   - Tweak the environment,
   - Build habits, and
   - Rally the herd.

Dr McKinney referred participants to a 2016 article by Dr Kedar Mate from the Institute of Healthcare Improvement titled, *Tips for sustaining your hard won achievements* (available for download from the website of the African Regional Collaborative http://africanregulatorycollaborative.com/LARC-Meeting-Entebbe2016.html). Dr Mate suggests that change does not happen by accident. A system has to make a conscious choice to be high performing and to maintain that improved level of performance.

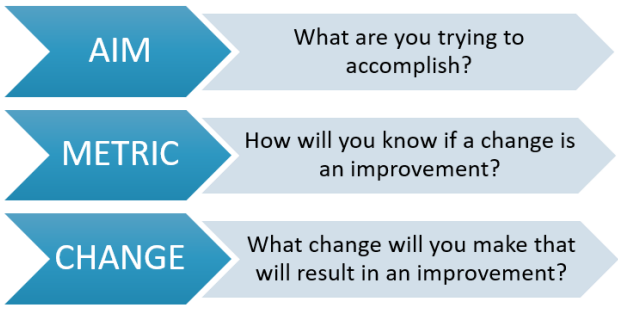
(c) Data: 'what gets measured, gets fixed'

Dr McKinney said that the reason data is collected is to establish a factual basis for making decisions. 'I think the problem is …' versus 'The data indicates the problem is …'; data driven decisions rather than opinion driven decisions. Objective data is needed to make sound decisions. However, Dr McKinney emphasised, it is important to measure what matters.

- Data that aligns with strategic goals,
- Data that is available and valid,
- Data with an available benchmark or comparison.

Dr McKinney said that the model for improvement was based on three questions: What are you trying to accomplish; How will you know if a change is an improvement; and What change will you make that will results in an improvement.

Figure 18: Model for improvement



Dr McKinney referred again to the emergency department simulation from earlier in her presentation to select measures for inputs and outputs.

- Inputs: patients, supplies, staff, physical environment,
- Outputs: number of patients treated, patient satisfaction,
- Process steps: time taken, quality of step.

Other things that can be measured are: time, defects (errors), scores (eg customer satisfaction), compliance, cost, number of patients, percentages etc. Dr McKinney said it is important to be transparent and display data prominently and act on the information.

(d) Quality improvement teams

Dr McKinney suggested that the ideal number of members for a team is 6-8. The composition of a team is critically important. Teams need a champion or a sponsor; a team leader; a content expert; a data manager; a QI expert or coach; front line tem members; and a manager of the front line team members. Each team member should be assigned a role, and they and the rest of the team be clear about that role. Guidelines for the team include the project outline and scope of the project. Ideally, teams should meet weekly to begin with, then bi-weekly, and then monthly when things stabilise. Dr McKinney said it is a good idea to meet at the same day and time each week at the same location. Teams need to commit themselves to work together for timeline of the project.

Dr McKinney provided country teams with a quality improvement tool which teams worked together to complete. Dr McKinney asked country teams to pay particular attention to identifying the roles and responsibilities of each team member and placing their name beside their respective roles.

Figure 19: Quality improvement project outline

QUALITY IMPROVEMENT PROJECT OUTLINE		
TEAM		
ROLE	**RESPONSIBILITY**	**NAME**
Champion/Sponsor		
Team Leader		
Data Manager		
QI Expert / Coach		
Front Line Team Member/s		
Manager Front Line Team Member/s		
THREE QUESTIONS		
THE THREE QUESTIONS	**DEVELOP**	**YOUR ANSWERS**
What are you trying to accomplish?	**AIM**	
How will you know if a change is an improvement?	**METRIC**	
What change will you make that will result in an improvement?	**CHANGE**	

OVERARCHING TOOLS AND METHODS

Dr McKinney shared with participants a range of quality improvement tools for successful project implementation.

(a) Eliminating waste

- Lean thinking / Waste walk
- Six Sigma / Variation
- FS

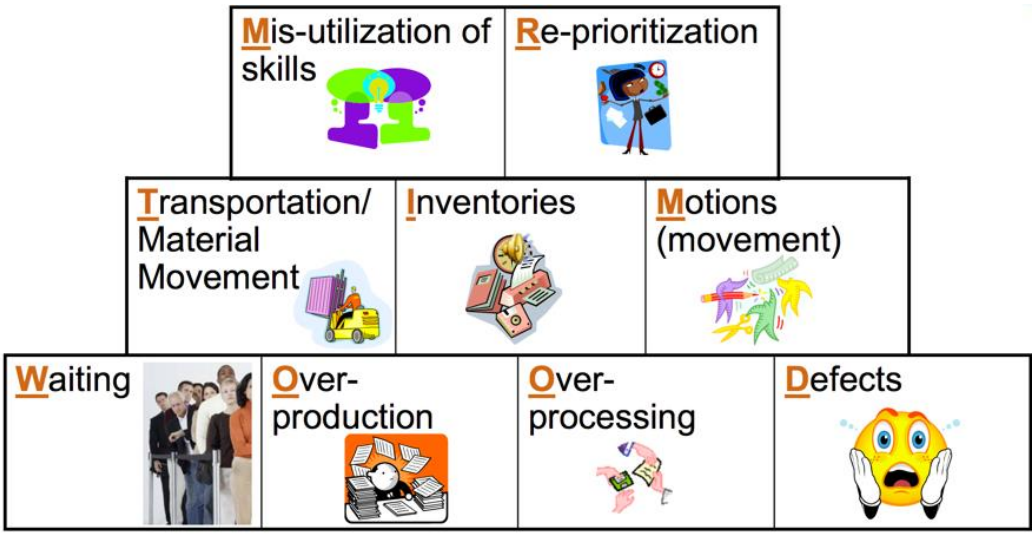
Lean thinking: the purpose of 'lean thinking' is to slim down processes by eliminating waste, variation, and imbalance. Lean works in all industries, all functions, anywhere there is an activity.

The difference in 'lean' and Six Sigma is primarily in the focus. The elimination of waste with lean is fairly similar to the reduction of variation in Six Sigma. However, lean focuses on improving workflow to ensure that non-value-adding aspects are removed from the value stream. Lean efforts help make sure that we are doing the right things. Six sigma initiatives help make sure we are doing the right things right.

The principles of lean thinking are to:

1. Define value from perspective of the end customer.
2. Identify the value stream(s) and highlight waste.
3. Understand what drives the waste.
4. Eliminate all the waste that can be done.
5. Make the remaining value-creating steps flow.
6. Pursue perfection.

Figure 20: Types of waste (Mr Tim Wood)



Elimination of waste, Dr McKinney said, starts with identification of waste. Anything that does not add value is classified as waste. Identification of waste may require a change in thinking. Revisit the why's of every process step. Is it really necessary? Some activities and process outputs seem necessary to meet internal standards, but are they necessary to the external customer?

M: Mis-utilization of skills - not taking advantage of people's expertise; improvement ideas not listened to or acted upon; under-utilizing capabilities; delegating tasks with inadequate training.

R: Reprioritization - stat orders, phone calls, trouble shooting, emails, IM pop ups.

T: Transport - moving people, products and information; moving patient records or films to another area; going to get signatures.

I: Inventory - storing parts, pieces, documentation ahead of requirements; pharmacy stock, laboratory supplies, office supplies.

M: Motion - bending, turning, reaching, lifting; searching for patients; searching for medications; searching for charts; searching for files; moving patients for testing.

W: Waiting - for parts, information, instructions, equipment; waiting for bed assignments, discharge, and approvals.

O: Over production - making more than is IMMEDIATELY required; medication given early to suit staff schedules; testing ahead of time to suit laboratory schedules; making extra copies.

O: Over processing - tighter tolerances or higher grade materials than are necessary; multiple bed moves; extra paperwork; excessive reviews or analysis; creating reports no one uses or reads; use of outdated forms.

D: Defects - rework, scrap, incorrect documentation; medication errors; improper diagnosis; patient complaints; data entry error; pricing error; mislabeled specimen.

Figure 21: Waste Walk

Dr McKinney invited country teams to take a 'waste walk' using the emergency department simulation exercise. A waste walk, Dr McKinney said, is an opportunity to look at your process with a completely different perspective; observing the process while at the same time documenting any examples or occurrences of the nine types of waste just reviewed. Waste identified was added to a flip chart using post-it notes.

Dr McKinney said process flow and layout are at the heart of lean manufacturing (refer to figure 16 p.23). In all cases, arrange the process steps in a natural flow order, link process steps to minimize cycle time and travel distance, eliminate crossover points, and simulate a continuous flow process by putting internal customers and suppliers next to each other.

Moving from current state to future state involves eliminating unnecessary steps; combining steps when practical; re-arranging steps for a better sequence; simplifying necessary steps; working out ideas with others; and creating a new, future state, process map. Dr McKinney encouraged participants to review their process maps using 'lean' principles so the process map demonstrated effective work flow.

Six Sigma: Six sigma was introduced by Motorola in mid 1980s. It is different from Lean as it seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimizing variability in processes. As defects and variability are reduced, the overall performance improves and the needs of the customer (or patient) are better satisfied. A six sigma process is one in which 99.99966% of the products manufactured or services provided are statistically expected to be free of defects (3.4 defects per million opportunities).

5S: sort, set in order, shine, standardise, and sustain
Sorting through and getting rid of unneeded items (waste); setting what is left in order so it can be seen and reached; making the area clean and shiny; creating ways to do this in a standardised way going forward (taking the guess work out); and finally, creating a driving force to make sure the work is sustained.

Figure 22: 5S

Figure 23: 5S level of excellence audit sheet

Area:_____. ***5S Level of Excellence Audit Sheet*** Date:_____.

Level	Sort — Identify & eliminate what is not needed
1	Necessary and unnecessary items are mixed together in the work area
2	Necessary and unnecessary items are separated (boxes, supplies,equipment)
3	All unnecessary items have been removed from the work area (no broken items)
4	Documented method to maintain work area free of unnecessary items.
5	Unnecessary items are immediately visible and triggers a planned response with root cause analysis and corrective action demonstrated over at least 3 months.

Level of Excellence 1 2 3 4 5 | Comments

Level	Set in Order — A place for everything and everything in its place
1	Equipment room shows no sign of organization. Items are randomly located.
2	Designated location established for all items as needed.
3	Visual Controls are in place so that items that are missing or out of place are immediately noticed (Task Board, color, outlines, labels, numbers, etc). Visuals make items' "home" location obvious.
4	Documented method of visual sweep to identify items out of place or exceeding quantity limits.
5	Items are either in use or in their designated location at all times, demonstrated over 3 months or more.

Level of Excellence 1 2 3 4 5 | Comments

Level	Shine — An effective, organized environment
1	Supplies and equipment are dirty and/or disorganized.
2	Equipment room is cleaned on a regularly scheduled basis.
3	Visual Controls are in place. Room is cleaned daily. Procedures are in place to communicate improvement ideas and maintenance needs.
4	Equipment and supplies are obviously clean. Can see evidence that Improvement Ideas and Maintenance tasks are followed up on in a timely manner.
5	Abnormal is immediately visible and triggers a planned response with root cause analysis and corrective action, demonstrated over 3 months or more.

Level of Excellence 1 2 3 4 5 | Comments

Level	Standardize — Develop standards and stick to them
1	No attempt is being made to document or improve current processes.
2	Current process is known, but not documented.
3	Current state is documented as Standard Work performed the same by all employees.
4	Future state is documented. Implementation plan is actively worked. Area metrics are linked to company metrics and are clearly displayed.
5	Improvements are based on data and tracked for actual results, demonstrated over 3 months or more.

Level of Excellence 1 2 3 4 5 | Comments

Level	Sustain — 5S is a way of life
1	Minimal attention is spent on 5S.
2	5S is a scheduled event.
3	5S practices are evaluated on a regular basis.
4	Documented methods have been put into place to ensure adherence to 5S. Current/historical 5S levels are posted.
5	Employees continually seek improvement opportunities, and the significant level of engagement is visible to outsiders. Exceptional 5S levels in other categories have been sutained for 3 months or more.

Level of Excellence 1 2 3 4 5 | Comments

AREA FOCAL'S NAME:_____ **TOTAL 5S LEVEL:**_____

File: _5S_Audit.xls 5S Facilitator Handout 17 2/14/2013

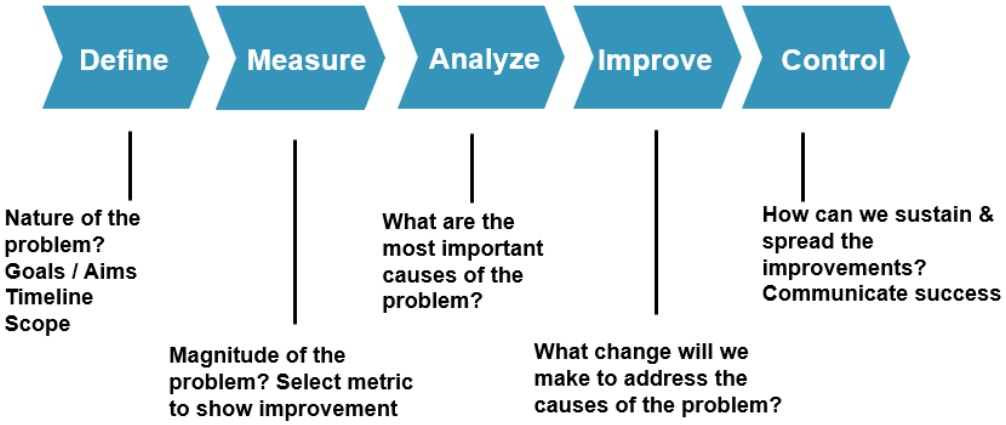
(b) Improving quality: DMAIC framework

The DMAIC framework is a useful model for improvement. DMIAC (define, measure, analyse, improve, and control).

- Define: determine specifically the nature of the problem (defects, waste, variation, etc) and identify project scope, goals, resources, and timeline.
- Measure: confirm the current state performance, how bad is the problem, what are some potential causes.

- Analyse: are their causes that influence the problem more than others, looking beyond just the symptoms.
- Improve: eliminate or reduce defects, waste, variability, confirm changes have actually improved process.
- Control: Who is the project owner? What is you control plan? How are you going to communicate? What lessons have been learned?

Figure 24: DMAIC framework



- **Define the problem:** determine specifically the nature of the problem (defects, waste, variation, etc) and identify project scope, goals, resources, timeline.
- **Measure the process**: confirm the current state performance, how bad is the problem, what are some potential causes.
- **Analyze process**: Are there causes that influence the problem more than others, looking beyond just the symptoms.
- **Improve the process:** eliminate or reduce defects, waste, variability, confirm changes have actually improved process.
- **Control the process**: make sure that the fixes we make stick long term, develop plan for operational handoff, project closure.

Figure 25: Using the DMAIC framework

DMAIC		
PHASE	**KEY COMPONENTS**	**PROJECT DETAILS**
Define	Gap: Aim with Timeline:	
Measure	Baseline Measure: Data Source: Sample Size:	
Analyze	Contributing Factors:	
Improve	Intervention: Re-measure (Graphical Display):	
Control	Project Owner: Control Plan: Communication: Lessons Learned:	
Accomplishments:		

Country teams were provided with a project checklist which they can use to make sure they covered all aspects of define, measure, analyse, improve and control.

1. **Define**

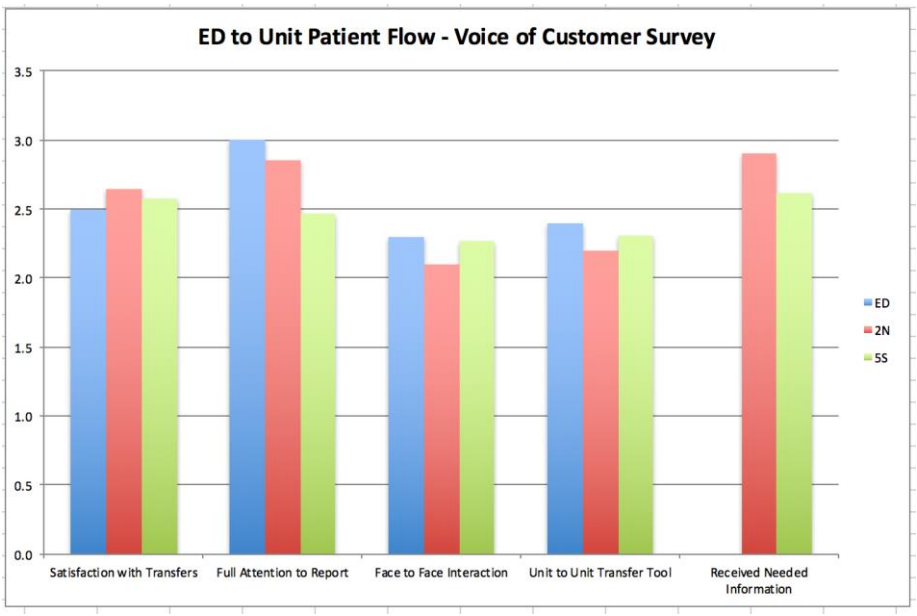
   Objectives: What is the nature of the problem or gap? Outline your project. Answer the 'three questions' - What are you trying to accomplish (your aim)? How will you know if a change is an improvement (your metric)? What change will you make that will result in an improvement (your change)? - Develop an aim statement and metrics. Gain support and buy-in.
   Tools: Process mapping; project outline (aim statement and metric); elevator speech; stakeholder analysis; communication plan; voice of customer.

   Aim statement (do what by when):
   Improve (increase, decrease) _____ (metric) from _____ to ____ by _____ (date).
   Country teams were asked to develop an aim statement for the emergency department simulation.

   Country teams were also asked to develop an elevator speech for the emergency department simulation.
   This project is about: …… As a result of these efforts: ……..……..
   It is important because we are concerned about: ……..…… ……..……
   Success will be measured by showing improvement in: …….. ……..
   What we need from you: ……..

   Dr McKinney said the 'voice of the customer' (VOC) is very powerful when 'selling' the project to government officials. Who are your customers? What are they saying about the project? Do they share your aim? Are they happy with your proposed strategies? How can they help?

Figure 26: Voice of Customer Survey



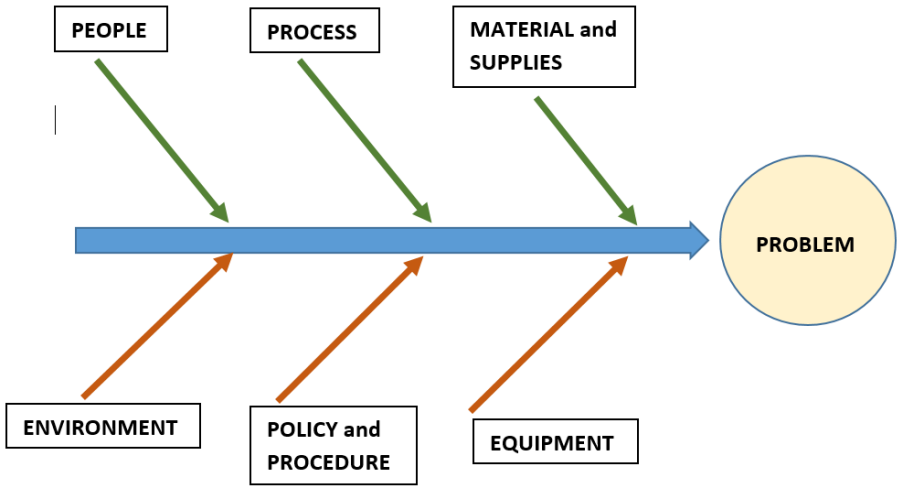
2. **Measure**

   Objectives: Select a meaningful metric; determine which metric will best evaluate your problem and be most useful to show improvement; determine the magnitude of the problem; develop a data collection plan
   Tools: Observation, data collection, display tools, check lists, histograms, data collection plan.

3. **Analyse**

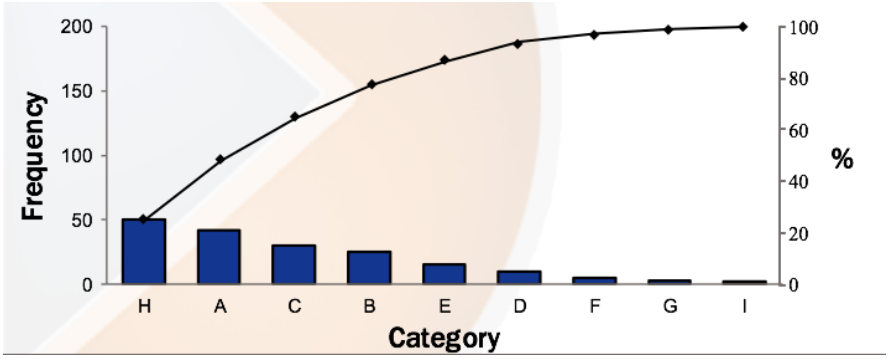
   Objectives: Identify the root cause/s, update aim statement if necessary.
   Tools: Root cause analysis, Fishbone, Cause and Effect, Ishikawa Diagram, 5-whys, Pareto Diagram.

Figure 27: Fishbone Diagram



A Pareto diagram will help to focus efforts on the problems that offer the greatest potential for improvement by showing their relative frequency or size in a descending bar graph. A Pareto diagram will help determine a place to start, identify the primary cause of the problem, and monitor progress of an implementation plan.

Figure 28: Pareto Chart

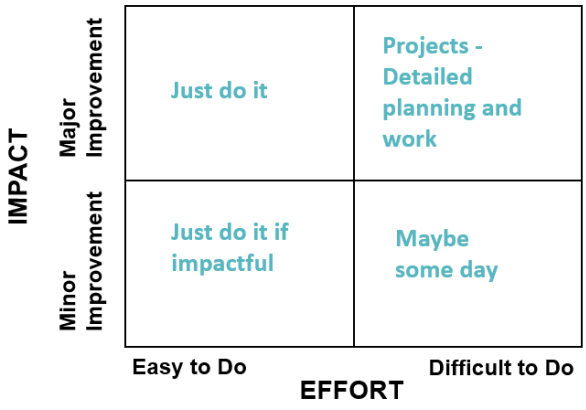


4. Improve

Objectives: Test changes, confirm cause and effect, confirm effectiveness of solutions, plan for full implementation and spread.

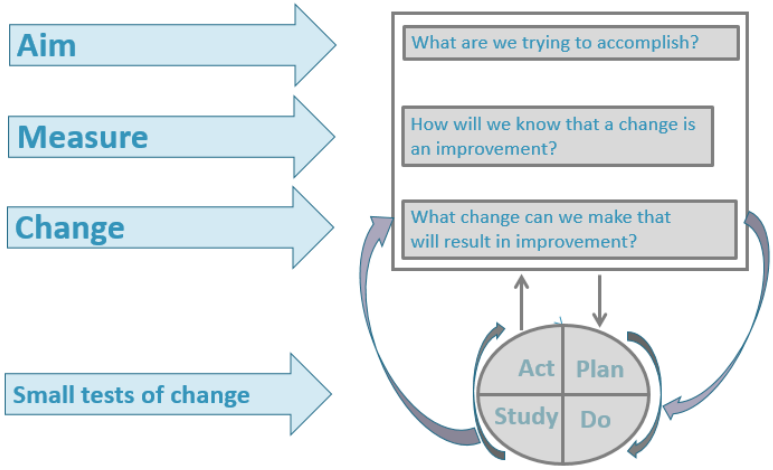
Tools: Brainstorming, affinity diagram, impact effort grid, Rapid test of change (PDSA – plan, do, study, act), implementation plan, 5S exercise, visual management, future state map.

Figure 29: Impact Effort Grid - a tool for prioritising opportunities



An 'Impact Effort' grid can be used to prioritise opportunities. Some may be easy to do and result in a major improvement so they should be done immediately. Some may be easy to do but only result in a minor improvement so they should only be done if they have an impact. Others may be difficult to do but have a major impact so worth doing but they will require development of a project and detailed planning and work. Then there will be others that are difficult to do and only result in a minor improvement so they will not be a priority.

Figure 30: IHI Model for improvement



A test of change alters a step in a process and evaluates the impact of that alteration. PDSA's don't result in success or failure, they generate learning.

Plan; develop an action plan to run the cycle; predict the expected result - the who, what, where, and when; keep it simple, only one change at a time, one shift, one day, etc.
Do: perform the action plan.
Study: evaluate the change, and whether it performed as predicted.
Act: Reflect on what happened and use the learning to begin planning for the next test of change.

Plan

- State the objective of the cycle, what are we trying to accomplish?
- Make predictions
- Generate solutions
- Develop the plan to carry out the cycle (who, what, where, when)

Do

- Test the change
- Document problems and unexpected observations
- Analyse the data

Study

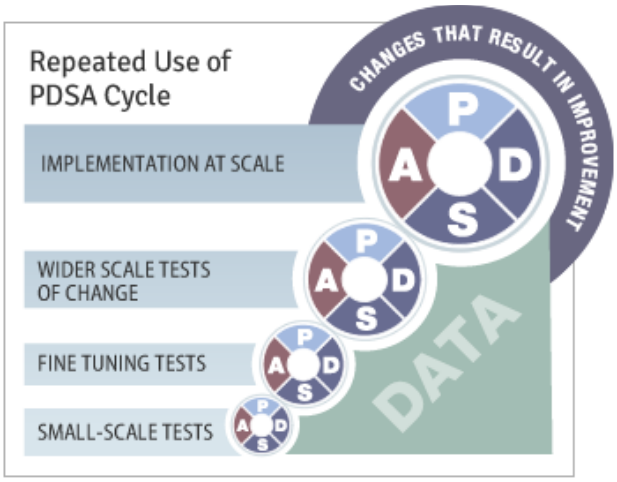
- Complete the analysis
- Compare the data to predictions
- Summarize learning's

Act

- Make changes to the process
- Standardize the process
- Select the next cycle
- What change can we make that will result in improvement?

The PDSA cycle is not done once only. From small scale tests, tests are fine-tuned, wider scale tests of change are undertaken and then implementation at scale.

Figure 31: Repeated use of PDSA cycle



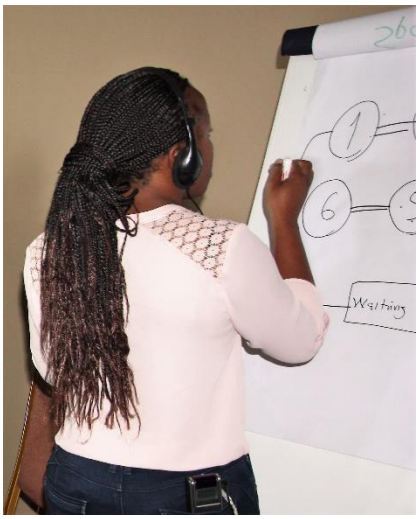
5. Control

Objectives: Document the project, show results, ensure sustainability of the project, spread improvement.
Tools: Project closure documentation, control plan, audit, performance dashboard.

The key lessons, Dr McKinney said, are:

- Leadership and the culture of the organisation,
- QI expertise and mentorship,
- Having an aim and setting a goal,
- Having an action plan,
- Collecting data and having an informatics facilitator,
- Team engagement – if the team can see the process it will engage all members of the team in improving the process.

Dr McKinney then invited participants to form the same teams they had before and repeat the emergency department simulation. For the repeat exercise, they could discuss in their teams how they wanted to conduct the exercise, the layout of their emergency department, and the personnel they would use. The repeat exercise was characterised by calm instead of chaos with team members feeling in control of the situation and their environment. More patients were processed through the system for all teams and the quality of outcomes was markedly improved. Even the spaghetti diagram demonstrated that lessons had been learned.




7. SESSION THREE: REVIEW OF PROJECT REPORTING AND MONITORING

Dr Muadi Mukenge, ARC and LARC Project Manager, Emory University

Dr Mukenge reviewed with country teams the reporting process for their projects, explaining that there are three reporting periods: one for each action period. The first action period is the period from when the contract is signed until the first learning session. The second action period is between the first learning session and the second learning session; and the third action period is between the second learning session and the following Summative Congress. Dr Mukenge explained that both a narrative report and a financial report are required but that templates are provided for reporting purposes. Dr Mukenge stressed the importance of reporting, not just for accountability to donors, but also to make work known, to highlight successes and share lessons learned.

The template for the narrative report, Dr Mukenge advised, asks a range of questions, including:

- the activities conducted during the action period against each project objective,
- a description of any products produced,
- a list of meetings held of the country dyad, a dyad plus, technical working group meetings, or stakeholder meetings,
- a record of any collaboration with another country team either to receive assistance or support or to provide assistance or support,
- any tools or survey instruments used during the action period and where they were sourced from and whether tools were shared with another country, and
- any activities undertaken by the team as a team that were not part of the LARC project (eg an application for another project).

The narrative report also asks country teams to rate, on a five point scale from very strong to very weak, the level of teamwork within the dyad giving examples; the teams experiences of building relationships between their respective organisations; the teams experiences of building relationships with other organisations in the country; and their opportunities for networking with like organisations in other countries. The last part of the narrative report asks country teams to list any challenges or barriers encountered and what they did to address or overcome them. There is also an opportunity to request technical assistance or support from the ARC Faculty.

The financial reporting template asks country teams to list their actual expenditure during the action period against each objective as outlined in their budget. There is also an opportunity to highlight any budget variances or ask for budget adjustments. Professor Hepburn reminded countries that members of the ARC Faculty are available to assist or answer any questions.

8. SESSION FOUR: COUNTRY ACTION PLANNING

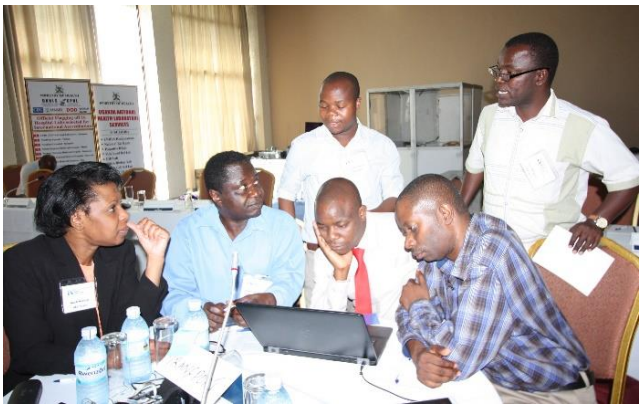
Breakout by country teams

The breakout by country teams gives countries the opportunity to spend time together to plan their strategies for the next action period. All country teams experience difficulties in meeting face to face due to routine work demands and other priorities. The breakout session is a valuable time for them to prepare for the next action period. Countries also have the opportunity to work with a LARC faculty member for support and advice. During the breakout session, countries reviewed, and if necessary, revised their aim statement, their process map and their action plans to include clearly defined roles and responsibilities within the team. Following the work in teams, countries shared with each other in a plenary, the actions they planned to successfully complete their projects, any changes they had made, and the rationale for the change.

Kenya

Uganda

Malawi



Tanzania

Mozambique

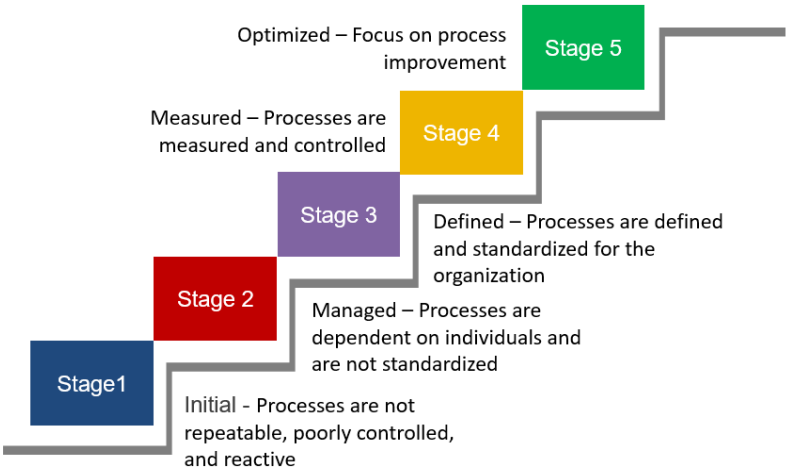
Swaziland

9. SESSION SIX: LARC EVALUATION – CAPABILITY MATURITY MODEL

Dr Jimica Tchamako, Public Health Informatics Institute

Dr Tchamako reminded participants that the Capability Maturity Model (CMM) was being used as the evaluation framework for LARC. The Capability Maturity Model (CMM) was developed by Carnegie-Mellon University Software Engineering Institute in 1987. The model introduced a process for assessing software capability through a structured, sequential manner, describing the maturation of each function according to a linear scale of increasing capability. The model can be adapted to evaluate an organisation's capability (or the capability of a regional initiative).

Figure 32: Five stages of the Capability Maturity Model



Dr Tchamako explained that the core functions for the LARC CMM evaluation framework are based on the Viral Load Cascade:

- Demand creation for testing,
- Specimen collection and processing,
- Laboratory testing,
- Results reporting,
- Results interpretation and patient management.

The first step in developing a CMM evaluation framework for LARC was to establish the core functions in which capability is required; identify the essential functions; and describe sequential stages of maturity for each function.

Progression is step-wise and linear with characteristics that define each stage. Progress from one stage to the next reflects a meaningful improvement in a key function and sets a clear path of achieving maturational goals. Progress from one stage to another however cannot take place until all elements in the previous stage have been met.

Dr Tchamako explained that the tool has gone through a consultation and validation process and is now being presented to countries as the final evaluation tool. Dr Tchamako provided country teams with a copy of the finalised tool and went through the stages and criteria of each core function.

Figure 33: Demand Creation for Testing

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Clinicians unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ Community leaders/CSOs unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ Clients unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ No standard operating procedures for viral load testing and education	☐ Increased awareness of VL testing in clinicians, however minimal information is shared with clients ☐ Clinicians occasionally order viral load testing for clients ☐ Community leaders/CSOs have an increased awareness of viral load testing and its role in ART monitoring ☐ Clients have an increased awareness of viral load testing and its role in ART monitoring ☐ Standard operating procedures for viral load testing and education are in development	☐ Clinicians routinely educate clients about viral load testing and its benefits ☐ Clinicians routinely order viral load testing in-line with national guidelines ☐ Community leaders/CSOs play an active role in educating their community about knowing their viral load status ☐ Clients are aware of and actively seek viral load testing ☐ Viral load testing and education standard operating procedures are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for clinician use of viral load testing and education of clients ☐ All stakeholders (e.g., clinicians, client groups, community leaders, etc.) play active role in community education about VL testing and promote campaigns for all individuals to know their VL	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of demand creation for viral load testing

Figure 34: Specimen Collection and Processing

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ No client access to viral load testing/specimen collection ☐ No standard supply chain system for specimen collection commodities (e.g., DBS bundles) so supplies limit ability to collect specimens ☐ Clinicians/personnel not trained to complete specimen requisition forms ☐ No standard operating procedures for appropriate viral load specimen collection and preparation	☐ Viral load specimens are collected occasionally and only on certain days, limiting client access to testing and increasing burden for clients to return for VL sample collection ☐ Increased capacity for supply chain system for specimen collection commodities, however not standardized ☐ Increased awareness in clinicians/personnel for properly completing requisition forms ☐ Standard operating procedures for appropriate viral load specimen collection and preparation are in development	☐ Viral load specimens are collected routinely with few barriers for clients ☐ Standardized supply chain system for specimen collection commodities ☐ Clinicians/personnel complete specimen requisition forms accurately and completely ☐ Viral load specimen collection and preparation standard operating procedures are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for specimen and collection preparation ☐ All stakeholders (e.g., clinicians, personnel, clients, etc.) play active role in appropriate viral load specimen collection and preparation to facilitate clients to know their VL	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of specimen collection and preparation

Figure 35: Laboratory Testing

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Inadequate lab infrastructure for viral load testing (i.e. space/storage/ equipment/reagents/kits for viral load testing) ☐ Laboratory staff are not properly trained nor competent to test viral load specimens ☐ Laboratory has little or no capacity for viral load testing ☐ No standard operating procedures or competency standards for laboratory viral load testing	☐ Improved laboratory infrastructure, however, laboratory is only able to receive and test viral load specimens occasionally or must refer to another laboratory ☐ Laboratory staff are trained, however, competencies are minimal ☐ Laboratory is has minimal capacity and viral load testing is occasionally completed in a timely manner ☐ Standard operating procedures and competency standards for laboratory viral load testing are in development	☐ Laboratory is able to regularly receive and test viral load specimens in timely manner ☐ Laboratory has appropriately trained and competent staff ☐ Laboratory is working at capacity and viral load testing is completed in a timely manner ☐ Laboratory viral load testing standard operating procedures and competency standards are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for viral load specimen testing	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of laboratory viral load specimen testing

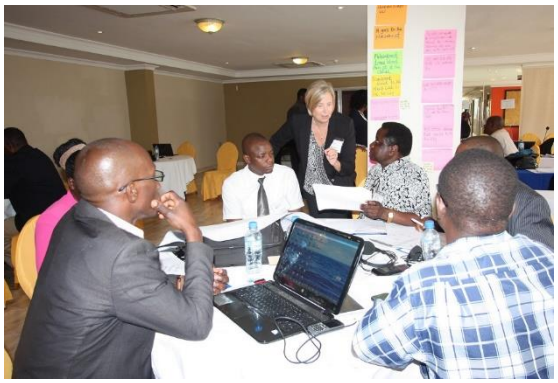
Figure 36: Results Reporting

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Results are not received in a timely manner at the clinic from the laboratory ☐ Results are not recorded in the client's chart in a timely manner ☐ No standard operating procedures for results reporting and documenting results in the client's chart	☐ Results are occasionally received in a timely manner by the clinic from the laboratory ☐ Results are occasionally recorded in the client's chart in a timely manner but often not returned to clients ☐ Standard operating procedures for results reporting and documenting results in the client's chart are in development	☐ Results are regularly received by the clinic in a timely manner from the laboratory ☐ Results are regularly recorded in the client's chart in a timely manner and returned to the client regularly ☐ Results reporting and chart documentation standard operating procedures are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for results reporting ☐ Clinic ensures a facility-based person is accountable for timely recording of VL results in client charts and notification of clients with VL>1000 to return to clinic prior to scheduled appointment	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process for results reporting

Figure 37: Results Interpretation and Patient Management

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Viral load results are difficult to read and interpret and requires laboratory assistance ☐ Clinicians are not properly trained to interpret viral load results ☐ Clinicians are uncomfortable integrating viral load results into ART care ☐ Clients do not understand their viral load results ☐ Clinicians have no backup person to call to discuss difficult cases or clients who require 2nd line treatment ☐ No standard operating procedures for result interpretation and client management	☐ Viral load results are occasionally readable and interpretable and requires minimal laboratory assistance ☐ Increased awareness of result interpretation by clinicians ☐ Few clinicians are comfortable integrating viral load results into ART care ☐ Clients have a limited understanding of their viral load results ☐ Intermittent availability of consultation for 2nd line treatment ☐ Standard operating procedures for result interpretation and client management are in development	☐ Viral load results are consistently readable and interpretable by clinicians ☐ Clinicians are adequately trained in viral load result interpretation ☐ Clinicians regularly discuss VL results with clients ☐ Clients understand their viral load results and can repeat their understanding back to the clinician ☐ Standardized system in which all providers have a designated POC/referral system in place to consult for management of VL results and switch to 2nd line ☐ Result interpretation and client management standard operating procedures are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for client management ☐ All stakeholders (e.g., clinicians, personnel, clients, etc.) play active role in client management and their viral load ☐ Clinic has ability to identify missed opportunities for ensuring VL results are integrated with client management	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of client management

Following the presentation of the LARC CMM, countries broke into their teams to map their project progress on the CMM against the essential functions in each stage of the core function their project was addressing. All of the essential functions must be met for a country to move to the next stage in the core function even though some of the essentials functions of the next stage may be met. Countries were asked to map themselves as they were in August 2016, and as they are now in November 2016.



Tanzania

Uganda

Malawi

Mozambique

Swaziland

Kenya

Following the mapping process, in which countries needed to reach consensus on where they were on the CMM, they presented their decisions to the rest of the group. Country teams were represented by: Winnie Shena (Kenya); Mathias Sinjani (Malawi); Glory Msibi and Sindisiwe Dlamini (Swaziland; Luciana Muamdo (Mozambique); and Paul Magesa and Anyelwise Kabuje (Tanzania).

Winnie Shena (Kenya)

Mathias Sinjani (Malawi)

Glory Msibi and Sindisiwe Dlamini (Swaziland)

Luciana Muamdo (Mozambique) Paul Magesa and Anyelwise Kabuje (Tanzania)

KENYA: Results reporting

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Results are not received in a timely manner at the clinic from the laboratory ☐ Results are not recorded in the client's chart in a timely manner ☐ No standard operating procedures for results reporting and documenting results in the client's chart **AUG/NOV 2016**	☐ Results are occasionally received in a timely manner by the clinic from the laboratory ☐ Results are occasionally recorded in the client's chart in a timely manner but often not returned to clients ☐ Standard operating procedures for results reporting and documenting results in the client's chart are in development	☐ Results are regularly received by the clinic in a timely manner from the laboratory ☐ Results are regularly recorded in the client's chart in a timely manner and returned to the client regularly ☐ Results reporting and chart documentation standard operating procedures are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for results reporting ☐ Clinic ensures a facility-based person is accountable for timely recording of VL results in client charts and notification of clients with VL>1000 to return to clinic prior to scheduled appointment	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process for results reporting

MALAWI: Demand creation for testing

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Clinicians unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ Community leaders/CSOs unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ Clients unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ No standard operating procedures for viral load testing and education **AUGUST/NOVEMBER**	☐ Increased awareness of VL testing in clinicians, however minimal information is shared with clients ☐ Clinicians occasionally order viral load testing for clients ☐ Community leaders/CSOs have an increased awareness of viral load testing and its role in ART monitoring ☐ Clients have an increased awareness of viral load testing and its role in ART monitoring ☐ Standard operating procedures for viral load testing and education are in development	☐ Clinicians routinely educate clients about viral load testing and its benefits ☐ Clinicians routinely order viral load testing in-line with national guidelines ☐ Community leaders/CSOs play an active role in educating their community about knowing their viral load status ☐ Clients are aware of and actively seek viral load testing ☐ Viral load testing and education standard operating procedures are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for clinician use of viral load testing and education of clients ☐ All stakeholders (e.g., clinicians, client groups, community leaders, etc.) play active role in community education about VL testing and promote campaigns for all individuals to know their VL	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of demand creation for viral load testing

MOZAMBIQUE: Demand creation for testing

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Clinicians unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ Community leaders/CSOs unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ Clients unaware of access to viral load testing and have not been educated on its role in ART monitoring ☐ No standard operating procedures for viral load testing and education **AUGUST 2016**	☐ Increased awareness of VL testing in clinicians, however minimal information is shared with clients ☐ Clinicians occasionally order viral load testing for clients ☐ Community leaders/CSOs have an increased awareness of viral load testing and its role in ART monitoring ☐ Clients have an increased awareness of viral load testing and its role in ART monitoring ☐ Standard operating procedures for viral load testing and education are in development **NOVEMBER 2016**	☐ Clinicians routinely educate clients about viral load testing and its benefits ☐ Clinicians routinely order viral load testing in-line with national guidelines ☐ Community leaders/CSOs play an active role in educating their community about knowing their viral load status ☐ Clients are aware of and actively seek viral load testing ☐ Viral load testing and education standard operating procedures are established and implemented across the organization	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for clinician use of viral load testing and education of clients ☐ All stakeholders (e.g., clinicians, client groups, community leaders, etc.) play active role in community education about VL testing and promote campaigns for all individuals to know their VL	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of demand creation for viral load testing

SWAZILAND: Results interpretation and patient management

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Viral load results are difficult to read and interpret and requires laboratory assistance ☐ Clinicians are not properly trained to interpret viral load results ☐ Clinicians are uncomfortable integrating viral load results into ART care ☐ Clients do not understand their viral load results ☐ Clinicians have no backup person to call to discuss difficult cases or clients who require 2nd line treatment ☐ No standard operating procedures for result interpretation and client management	☐ Viral load results are occasionally readable and interpretable and requires minimal laboratory assistance ☐ Increased awareness of result interpretation by clinicians ☐ Few clinicians are comfortable integrating viral load results into ART care ☐ Clients have a limited understanding of their viral load results ☐ Intermittent availability of consultation for 2nd line treatment ☐ Standard operating procedures for result interpretation and client management are in development **AUGUST 2016**	☐ Viral load results are consistently readable and interpretable by clinicians ☐ Clinicians are adequately trained in viral load result interpretation ☐ Clinicians regularly discuss VL results with clients ☐ Clients understand their viral load results and can repeat their understanding back to the clinician ☐ Standardized system in which all providers have a designated POC/referral system in place to consult for management of VL results and switch to 2nd line ☐ Result interpretation and client management standard operating procedures are established and implemented across the organization **NOVEMBER 2016**	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for client management ☐ All stakeholders (e.g., clinicians, personnel, clients, etc.) play active role in client management and their viral load ☐ Clinic has ability to identify missed opportunities for ensuring VL results are integrated with client management **NOVEMBER 2016**	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of client management

TANZANIA: Results reporting

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Results are not received in a timely manner at the clinic from the laboratory ☐ Results are not recorded in the client's chart in a timely manner ☐ No standard operating procedures for results reporting and documenting results in the client's chart **AUGUST 2016**	☐ Results are occasionally received in a timely manner by the clinic from the laboratory ☐ Results are occasionally recorded in the client's chart in a timely manner but often not returned to clients ☐ Standard operating procedures for results reporting and documenting results in the client's chart are in development **NOVEMBER 2016**	☐ Results are regularly received by the clinic in a timely manner from the laboratory ☐ Results are regularly recorded in the client's chart in a timely manner and returned to the client regularly ☐ Results reporting and chart documentation standard operating procedures are established and implemented across the organization **NOVEMBER 2016**	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for results reporting ☐ Clinic ensures a facility-based person is accountable for timely recording of VL results in client charts and notification of clients with VL>1000 to return to clinic prior to scheduled appointment	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process for results reporting

UGANDA: Results interpretation and patient management

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
☐ Viral load results are difficult to read and interpret and requires laboratory assistance ☐ Clinicians are not properly trained to interpret viral load results ☐ Clinicians are uncomfortable integrating viral load results into ART care ☐ Clients do not understand their viral load results ☐ Clinicians have no backup person to call to discuss difficult cases or clients who require 2nd line treatment ☐ No standard operating procedures for result interpretation and client management **AUGUST 2016**	☐ Viral load results are occasionally readable and interpretable and requires minimal laboratory assistance ☐ Increased awareness of result interpretation by clinicians ☐ Few clinicians are comfortable integrating viral load results into ART care ☐ Clients have a limited understanding of their viral load results ☐ Intermittent availability of consultation for 2nd line treatment ☐ Standard operating procedures for result interpretation and client management are in development **AUGUST 2016**	☐ Viral load results are consistently readable and interpretable by clinicians ☐ Clinicians are adequately trained in viral load result interpretation ☐ Clinicians regularly discuss VL results with clients ☐ Clients understand their viral load results and can repeat their understanding back to the clinician ☐ Standardized system in which all providers have a designated POC/referral system in place to consult for management of VL results and switch to 2nd line ☐ Result interpretation and client management standard operating procedures are established and implemented across the organization **NOVEMBER 2016**	☐ Organization reviews routinely collected program data to measure performance in relation to standard operating procedures and national guidelines for client management ☐ All stakeholders (e.g. clinicians, personnel, clients, etc.) play active role in client management and their viral load ☐ Clinic has ability to identify missed opportunities for ensuring VL results are integrated with client management **NOVEMBER 2016**	☐ Organization uses rigorous evaluation procedures and findings to demonstrate effectiveness and improve the process of client management

10. CLOSING COMMENTS

Ms Patricia Riley, Team Lead, International Laboratory Branch, CDC

In her closing comments, Ms Patricia Riley shared with country teams the context around the LARC initiative. Looking at the big picture and trends in health care and the health workforce, Ms Riley said that the health workforce is central for the provision of high quality and cost effective care. Health workforce innovation is happening: new workers and new roles, task sharing, and engagement of the non-regulated health workforce. Ms Riley said expanding the roles and scope of practice of nursing is critical for health care transformation. This has implications for professional pre-service education for both nursing and laboratory personnel.

Driving forces impacting on the health workforce were a growing and ageing population, and the unsustainable and rising cost of health care. Whereas health care incentives in the past rewarded complex medical interventions for caring for the ill, Ms Riley said there is a refocus on rewarding interventions and services that keep people healthy; switching from a fee for service to 'value based' reimbursement and a reorientation to 'health ageing' and facilitating meaningful lives. There is a growing importance, Ms Riley said, on the social determinants of health and a population health focus for investment.

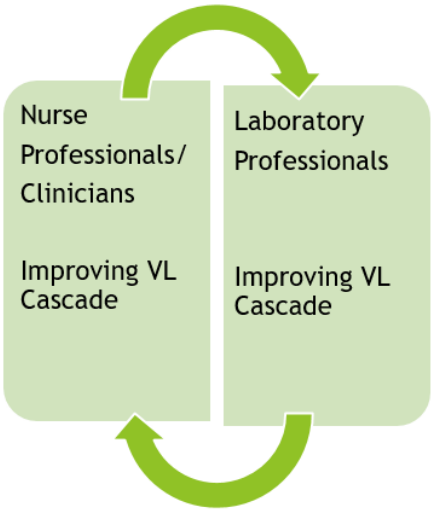
The implication for the health workforce is pressure to make the best use of the workforce we have with an emphasis on team work and collaborative practice as well as the need to integrate health and social services. The health workforce is also impacted by delivery system transformation: the pressure to do more with less; transformation driven by public policies but also by health care providers, the paying community, and patients. In this environment, there are incentives to make better use of the health workforce: collaborative practice, education, new categories of support personnel, reassessing professional scopes of practice, and better and increased use of technology.

However there are potential barriers to health workforce innovation. Regulatory legislation may be resistant to change; professional opposition to change; restrictive funding or financial reimbursement; organisational or professional cultural mindset; education and training which is rooted in 'the way we always do it', and the absence of credible research. Ms Riley said that in a changing environment for the health workforce, there is an imperative for human resources for health and health system research and a great opportunity for health professions to lead in improving health and health care and a challenge to education to keep up with innovations, particularly in preparing nurses and midwives for additional roles in primary health care practice. Of course this requires funding to support health workforce innovations.

LARC sits within this dynamic health care environment. LARC is a hybrid initiative: a mix of the Institute for Healthcare Improvement model (the IHI cycle of learning sessions and action periods) and the Capability Maturity Model (CMM). It features a unique dyad of laboratory personnel and nurses and midwives. Ms Riley stressed the critical importance of work in the third action period for the evaluation of LARC providing the evidence to argue for continuation of the initiative.

The LARC evaluation tool, is based on the CMM, which has been validated by the LARC country teams and the CDC leadership in Atlanta. Does this type of approach work? Does team work collaboration that uses Business Process Mapping result in improved functionality of the African health care system? Does this initiative maximise larger PEPFAR investments such as viral load scale-up? Does this approach maximise health? These are questions that will be asked and must be answered.

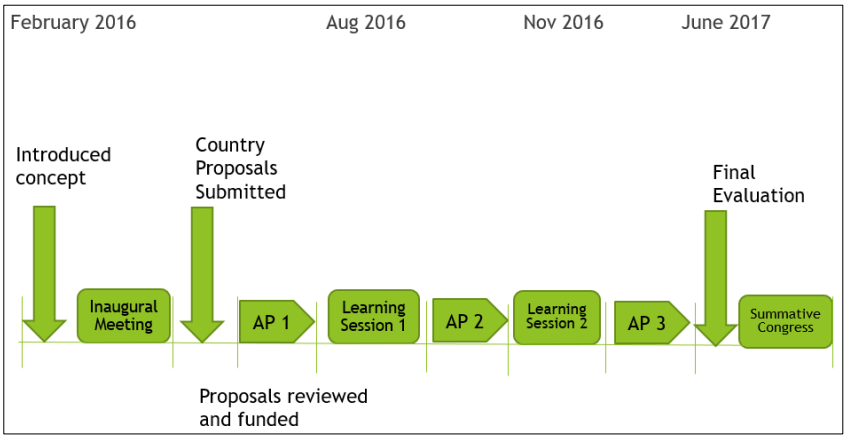
Figure 38: Laboratory/Nurse Dyad



An integral component of the LARC initiative is the dyad. What do we mean by dyad, Ms Riley asked? Dyad refers to two things or groups of people with a common nature or background. Dyad communication means the inter-relationship between two groups involving mutual ideas, thoughts, behaviour, or ideals. Communication between two strangers that does not continue afterward or does not have a lasting after effect, cannot be termed as dyadic communication. This is critical to the LARC initiative and needs to be considered by all country teams: the laboratory personnel-nurse, midwife teams dedicated to addressing health system bottlenecks in the viral load cascade.

Ms Riley reminded country teams of the LARC timelines and advised that the third action period had been extended to June 2017 which gave countries a longer period in which to finalise their projects.

Figure 39: LARC timeline



In conclusion, Ms Riley thanked the expert health system consultants, Dr Barbara McKinney and Dr Jimica Tchamako, the LARC faculty from Emory University, the Commonwealth Nurses and Midwives Federation, ECSACON, the LARC secretariat in Nairobi, and the LARC country teams.

LARC Faculty: Nixon Masinde, Nancy Ruto, Alphonce Kalula, Kenneth Hepburn, Barbara McKinney, Muadi Mukenge, Katy Yao, Agnes Waudo, Patricia Riley, Jimica Tchamako, Jill Iliffe, David Cross.

African HEALTH PROFESSIONS Regional Collaborative
FOR LABORATORY TECHNOLOGISTS & TECHNICIANS

Laboratory African Regional Collaborative (LARC)
Second Learning Session
Entebbe, Uganda Protea Hotel
2-4 November 2016

Supporting viral load scale up across sub-Saharan Africa

Overarching Meeting Goal:

- To achieve and maintain HIV VL suppression (the third 90) by:
  - Increasing the uptake of VL testing by improving the elements in the viral load cascade.
  - Improving health systems institutional capacity and inter-cadre effectiveness through team building, evidenced-based problem-solving, and progress feedback with progress documentation.

Meeting Objectives: The objectives for this Learning Session are:

1. To present, inform, and discuss the six LARC Viral Load (VL) activities being implemented by project teams in Kenya, Malawi, Mozambique, Swaziland, Tanzania, and Uganda.
2. To incorporate health systems improvement methodologies in LARC country projects that can ensure successful outcomes.
3. To introduce a finalised LARC Capability Maturity Model (CMM) for benchmarking project activity.
4. To develop project action plans that covers the next six months.

****

DAY 1 – Wednesday November 2

8.30 - 9:30 am
Official Greetings

- Opening remarks: Dr Kenneth Hepburn, ARC and LARC Principal Investigator, Emory University
- Official greeting: Dr Steven Wiersma, CDC Uganda Country Director
- Introduction of guests and the six team delgations: Alphonce Kalula, Senior Program Officer, ECSACON

9:30 – 10.30 am
Country Team Presentations
Kenya

10.30 – 11.00 am
Refreshment break

11.00 am – 12 midday
Country Team Presentations
Malawi

12.00 midday – 1.00 pm
Lunch, Group and team photographs

1.00 – 3.00 pm
Country Team Presentations
Mozambique, Swaziland

3.00 – 3.30 pm
Refreshment break

3.30 – 5.30 pm
Country Team Presentations
Tanzania, Uganda

5.30 – 6.00 pm
Evaluation

****

DAY 2 – Thursday November 3

8.30 – 10.00 am
Becoming a 'quality ninja' workshop
Dr Barbara McKinney

10.00 – 10.30 am
Refreshment break

10:30 am – 12 midday
Becoming a 'quality ninja' workshop (… cont)
Dr Barbara McKinney

12:00 midday – 1:00 pm
Lunch

1:00 – 2.30 pm
Becoming a 'quality ninja' workshop (… cont)
Dr Barbara McKinney

2.30 – 3.00 pm
Refreshment break

3:00 – 4.00 pm
Becoming a 'quality ninja' workshop (… cont)
Dr Barbara McKinney

4:00 – 4.30 pm
Review of LARC project and budget reporting
Dr Muadi Mukenge, LARC project manager, Emory University

4:30 – 5.00 pm
Evaluation

****

Day 3 – November 4

8.30 – 9.30 am
Country Action Plans

9.30 – 10.00 am
Country team report out

10.00 – 10.30 am
Refreshment break

10.30 am – 12.30 pm
Capability Maturity Model
Dr Jamica Tchamako, Public Health Informatics Institute

12:30 pm to 1.30 pm
Lunch

1.30 – 3.00 pm
Team self-assessment on CMM
Dr Jamica Tchamako, Public Health Informatics Institute

3.00 – 3.30 pm
Refreshment break

3.30 -4.30 pm
Team reports on CMM
Dr Jamica Tchamako, Public Health Informatics Institute

4.30 – 5.00 pm
Closing remarks
Ms Patricia Riley, Team Lead, ILB, CDC

5.00 – 5.30 pm
Evaluation

****

AFRICAN HEALTH PROFESSIONS REGIONAL COLLABORATIVE

PARTNERSHIP FOR EXCELLENCE IN AFRICA'S HEALTH WORKFORCE

Dar es Salaam, Tanzania 2-4 August 2016

LIST OF ATTENDEES

Mr Ernest MAKOKHA	CDC Kenya, Senior Laboratory Advisor	Kenya
Mr Barack ODINDO	Laboratory Technologist in Charge Homa Bay County Referral Hospital	Kenya
Ms Linet Atieno JOHN	Deputy Nursing Officer in Charge Homa Bay County Referral Hospital	Kenya
Ms Nancy BOWEN	Laboratory Technologist, Head National HIV Reference Laboratory	Kenya
Ms Rose Wangechi KURIA	Acting Director Nursing Services Ministry of Health	Kenya
Ms Winnie SHENA	President, National Nurses Association	Kenya
Mr Geoffrey Akuzike CHIPUNGU	CDC Malawi, Laboratory Advisor	Malawi
Mr Isaac CHAUWA	Monitoring and Evaluation Specialist	Malawi
Mr Reuben MWENDA	Deputy Director of Health Technical Support Services (Diagnostics)	Malawi
Mr Mathias SINJANI	Laboratory Technician	Malawi
Mrs Thokozire Tendai LIPATO	Acting Registrar, Nurses and Midwives Council	Malawi
Ms Lucia MUAMDO	CDC Laboratory Advisor	Mozambique
Ms Asina de OLIVEIRA	Head of Midwives, Bagamoio Health Centre	Mozambique
Ms Laura Williamo SIMBINE	Head of Laboratory, Bagamoio Health Centre	Mozambique
Ms Luciana KOHATSU	Laboratory Advisor CDC	Mozambique
Mr Dan GAMA	Laboratory Practitioner CDC	Swaziland
Ms Sehlephi Millicent DLAMINI	Senior Laboratory Advisor (ICAP)	Swaziland
Ms Sindisiwe Susan Zinhle DLAMINI	Chief Laboratory Technologist Ministry of Health	Swaziland

Ms Glory MSIBI	Registrar, Swaziland Nursing Council	Swaziland
Mrs Gladys Thembisile KHUMALO	Chief Nursing Officer Ministry of Health	Swaziland
Mr Michael MWASEKAGA	CDC Tanzania, Laboratory Advisor	Tanzania
Mr Simon Samwel LIGMAS	Senior Nurse Ministry of Health and Social Welfare	Tanzania
Mr Victor MUCHUNGUZI	Deputy Manager, National Health Laboratory	Tanzania
Mr Paul Magesa MASHAURI	The President, Tanzania National Nurses Association	Tanzania
Mr Anyelwisge KABUJE	Coordinator, National HVL Laboratory	Tanzania
Ms Florence TUGUMISIRIZE	Masaka Regional Referral Hospital	Uganda
Ms Catherine Betty ODEKE	Acting Commissioner Health Services-Nursing, Ministry of Health and Social Welfare	Uganda
Ms Harriet NAMBOZO	Laboratory Manager, Masaka Regional Referral Hospital	Uganda
Mr Martin ZZIWA	Central Public Health Laboratories, Ministry of Health	Uganda
Ms Judith NANYONJO	Masaka Regional Referral Hospital	Uganda
Mr Samwel WASIKE	CDC	Uganda
Ms Mary NALUGUZA	CDC	Uganda
Mr Chris OKIIRA	Data Management Officer, Central Public Health Laboratories	Uganda
Mr Charles KIYAGA	National EID-VL Coordinator	Uganda
Mr Bonaventure AHAISIBWE	Seed Global Health	Uganda
Ms Irene ATUHAIRWE	PEACECORPS	Uganda
Mr Cuthbert AGOLOR	Program Officer, Care and Treatment	Uganda
Ms Patricia RILEY	Lead, Health Systems and Program Integration Team, ILB CDC Atlanta	ARC Faculty
Dr Shaban MUGERWA	Senior Medical Officer	Uganda
Professor Kenneth HEPBURN	ARC and LARC Principal Investigator, Emory University	ARC Faculty
Mr David CROSS	International Lab Branch, CDC Atlanta	ARC Faculty
Ms Muadi MUKENGE	ARC Project Director, Emory University	ARC Faculty

Ms Jill ILIFFE	Executive Secretary, Commonwealth Nurses and Midwives Federation	ARC Faculty
Mr Alphonce KALULA	Senior Program Officer ECSACON	ARC Faculty
Ms Agnes WAUDO	Director, ARC Secretariat	ARC Faculty
Ms Nancy RUTO	ARC Events Coordinator	ARC Faculty
Mr Nixon MASINDE	ARC Project Technical Assistant	ARC Faculty
Dr Steven WIERSMA	Country Director	CDC Uganda
Dr Katy YAO	Public Health Educator, International Laboratory Branch	CDC Atlanta
Dr Barbara McKINNEY	Consultant	CDC Atlanta and Emory University
Dr Jimica TCHAMAKO	Consultant	Public Health Informatics Institute