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# A formal evaluation of the

# Springboard Improvement Science and Leadership Programme

# conducted at Nyahururu, Nanyuki and Kwale Health Facilities, Kenya

# between April 2015 and March 2017

**Summary**

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**Background**

Theassociation between Nanyuki Teaching & Referral Hospital (Kenya) and Torbay Hospital (UK) began in 2008 with an orthopaedic trauma project delivered in February 2009. Subsequently, Torbay and South Devon NHS Foundation Trust formalised a partnership with Laikipia County health facilities through the Tropical Health & Education Trust (THET) and local recognition grew of the need to improve the whole system by developing quality improvement and leadership skills. This work attracted six THET/UKAid grants between 2012 and 2017. One product of the partnership work is the **Springboard Programme**.

**The ‘Springboard’ Programme[[1]](#footnote-1)**

The Springboard programme is guided by the Kenya Quality Model for Health (KQMH) and facilitates learning of improvement science tools and techniques and development of leadership skills for people in healthcare in both front-line and leadership positions, with the aim of improving health care quality.

At the start of the programme, participants prioritise their own local issues where quality improvement is required, and the programme guides them through a process which empowers them to solve the problems for themselves. Once learned, the generic skills can be applied to more problems.

Springboard was first delivered for Nanyuki Teaching & Referral Hospital in April 2015 and has also been delivered for Nyahururu County & Referral Hospital. A modified course has been delivered at Kwale Eye Centre, a charity-funded facility in Kwale County. Other attendees included staff from Laikipia County Government, Rumuruti Sub-County Hospital, Kenyatta National Hospital, Kisumu County Hospital, Kisumu County Government, Jacaranda Health, Centre for Health Solutions (CHS), Red Cross, UK health facilities, one physician from the USA and one independent health advisor.

The Springboard Programme normallycomprisestwo courses, each lasting five days. The **Foundation** course focuses mainly on quality improvement skills, using methodologies drawn from the IHI Model for Improvement and ‘Lean’ (Toyota). It enables theory to be learned and applied through actually establishing improvement projects. Participants learn how to use the A3 structured problem-solving and continuous improvement approach, and the plan-do-study-act (PDSA) cycle for rapid cycle improvement.

The **Advanced** course follows 3-6 months later and focuses predominantly on leadership skills, including leadership styles, motivation, effective listening, delegation, giving feedback, leading change, creating effective teams, and managing conflict. Participants develop their projects further using these skills, and learn basic coaching skills to enable them to support others to undertake new improvement projects.

From April 2015 to March 2017, the following courses were delivered to 110 individuals (843 training days):

* 5 full Foundation (included some participants from other facilities)
* 2 bespoke Foundation courses (1 for ED participants from Nanyuki & Nyahururu, 1 for Kwale Eye Centre)
* 1 refresher course (for Nanyuki)
* 4 Advanced courses (one combined for participants from all 3 facilities involved)

Participants were from many disciplines including doctors, nurses, clinical officers, physiotherapists, occupational therapists and administrators and most had leadership and managerial responsibilities at unit, department or facility level.

As a result of the partnership, there have also been visits to the UK by Kenyan staff. The Medical Superintendent of Nyahururu Hospital and the Chief Officer of Health from Laikipia County Government attended a 5-day Institute for Healthcare Improvement (IHI) Patient Safety Officer Training Course run in the UK in May 2016. Three Kenyan staff (2 nurses and one Clinical Officer) attended the International Forum on Quality & Safety in Healthcare in the UK in April 2017, at which two of them had had posters accepted. In addition, Kenyan leaders have worked as facilitators for the Springboard programme in other hospitals. The partnership has developed a very close working relationship with the Ministry of Health (MOH) for Laikipia County, ensuring close alignment with local and national health strategies, such as the KQMH.

**Evaluation of Springboard**

An evaluation of the impact of the Springboard quality improvement and leadership training on healthcare in three health facilities in Kenya (Nanyuki, Nyahururu and Kwale) was undertaken by Christine Musee of Kenyatta Hospital between Nov 2016 and March 2017, using self-administered questionnaires, key informant interviews and focus groups. The study involved 59 respondents, all of whom had undertaken the Foundation programme and 20 of whom had taken part in the Advanced programme. The research aimed to find out the effect of the Springboard programme on individuals, teams and health facilities, what had happened with participants’ projects and the factors influencing the success of the projects.

The research identified that the overall training satisfaction level was 89.7% (knowledge - 91.5% and skills - 87.3%), with perceived project usefulness to self and to patients at 88.4% and 95.7% respectively. 98.3% of respondents reported being able to share/disseminate information from the programme through on the job training for others. Enabling factors for this were management and leadership support, recognition of the need to involve all the staff and patients, and the realisation that small changes can have huge impacts on health care and improved patient outcomes.

**The Improvement Projects**

The improvement projects were an integral part of the programme**.** Multidisciplinary teams undertook fourteen projects: four in Nanyuki, nine in Nyahururu and one in Kwale. Factors associated with project success included teamwork, attitude, team leadership support, hospital leadership availability and support, availability of resources, appropriate knowledge and skills, conducive work environment, communication, duty/responsibility allocation, participative decision making, being given an opportunity to create or innovate and change management. Of these, teamwork, hospital leadership and attitude were statistically significant. Where projects were less successful, hurdles identified included staff shortage, lack of resources, lack of appropriate knowledge and skills, uninvolved leadership and too much paperwork.

At Nanyuki, project outcomes included:

* increasing hand washing from 30-50% to 80%
* ensuring labelling of patients to identify them accurately for treatment and increase safety
* reducing the time taken in paediatric drug rounds from 4 to 2 hours and increasing accuracy of drug doses. This project was presented at the International Forum on Quality & Safety in Healthcare.

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| ‘*the nurses have more confidence in paediatric drug dose calculations and we are happy with our cheap innovation which has impacted greatly on our professional care and our paediatric population is getting accurate drug dosages…it is feels great; we are happy*’ |

At Nyahururu, project outcomes included:

* improvements in the triage process for the Emergency (Casualty) Department
* reducing the number of injectable medicines by replacing them with oral doses from 90% to 30%;
* reducing the numbers of days of administration of antibiotics

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| *‘…there is no quality when you are injecting a patient indefinitely. This is unprofessional. Although some patients and some relatives prefer injections, professionally, we know the health and financial implications and our people cannot afford it. In fact many get waivers…’* |

* reducing the length of time patients waited for unavailable laboratory tests;
* reducing starving time for adult surgical patients from over 28 hours to 4-6 hours.

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| *‘…the rains almost beat us due to lack of some cheap resources but stakeholder meetings managed to iron things out. We now have sugar and tea leaves and every morning when elective surgeries are scheduled, someone is allocated the task to make and serve black tea to our preoperative patients. This is success that we didn’t have…’*  *‘…Although we are not yet there, we are continuing. We intend to divide our elective surgery schedule so that we have a morning and an afternoon list and endeavour to stick to the pre-set schedule. This way we anticipate further success. We intend to move until we get to ideal anaesthetic protocol recommendations…*’ |

* reducing waiting time in the physiotherapy department from over an hour to 15-20 minutes;

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| *‘…the place is more beautiful, you cannot compare with what we had before and some of the junk we were keeping none of us can tell what we were keeping it for. Patient flow has been streamlined. Waiting time has definitely improved from hours to minutes but we have a challenge on market days. We have more non-scheduled clients coming in the morning so that they can pass through the market after their clinic….Initially physiotherapists were always complaining of staff shortage but now I heard them say that reorganization has helped and they are not getting as tired as before…’*’*…the place is better.* |

* Reducing contamination of door handles and reducing infection rates;
* Reducing fasting time for paediatric surgical patients from 12 hours to 6 hours on solids and 4 hours on fluids;
* Reduction of cannulation time from an average of 40 minutes on month 1 to an average of 10 minutes on month 3.

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| *‘…this project saves about 20 or more minutes of my minutes per patient…now… if I have at least 3 patients per day, which is a common occurrence this translates to 60 minutes…about one hour’* |

At Kwale, the project was aimed at improving communications and signage at the Clinic.

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| ‘*…we feel we have developed much and we have achieved more than we anticipated. We have been holding departmental meetings. People who were very silent previously have opened up…’*  ‘*…has opened up to a more open culture of communication…the team when faced by a challenge do not just hand challenges to me anymore but hand in challenges and a number of possible solutions. People are more willing to take responsibility. They look at colleagues as friends and there is bonding and members feel supported by colleagues and leadership…*’  . ‘…*we are at 100% in signage and have now planned to go an extra mile and signage more areas*’  *‘We share information freely and politely. Supportive environment, teamwork, positive attitude, involvement of everyone have helped us to succeed…*’ |

## Factors that influenced the success of QI projects included (% = respondents mentioning this factor):

* Quality of teamwork (67.2%)
* Attitude (31%)
* Team leadership (29.3%)
* Hospital management (24.1%)
* Resources (22.8%)
* Skills (15.8%)
* Knowledge (14%)

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| *‘...teamwork and leadership are critical in quality improvement,...excellent information received during Springboard training and a conducive work atmosphere for sharing of knowledge, ... communication and teamwork is the key thing, ...willingness to try something different, ...the project was excellent and visionary, ...the training acted as an eye opener, ...participative decision making with my bosses, ...communication was good, ...the atmosphere to be innovative and creative, …Springboard training is very useful and beneficial to the institution.’* |

**Learning from the Evaluation**

The evaluation highlighted the importance of a number of aspects of the Springboard Programme including:

* respondents’ satisfaction index regarding project usefulness to themselves was 88.4% and to patients was 95.7%. The average perceived success rate of the teams’ projects was 75%. The overall satisfaction index of the Springboard training was 89.7%. Similarly, the satisfaction index of the respondents based on the knowledge that was received was 91.5%; while for the skills gained through the training satisfaction index was 87.3%;
* participation in the programme by leaders from different professions in the same organization created a critical mass of people who had been through the same learning experience and could support each other in progressing quality improvement projects and broke down barriers between clinicians and managers;
* the quality improvement teams in all three sites were multidisciplinary, resulting in addressing disparities, improving respect, better communication, professional growth and addressing patients’ needs more promptly owing to diversity in experience, knowledge, skills and better teamwork;
* 98.3% of programme participants could apply both knowledge and skills learned during training;
* the integration of an improvement project with training enabled practical application of learning to achieve significant improvements for patients and staff;
* the participation of senior hospital leaders in Springboard and their subsequent visibility and availability to support the QI projects enabled progress;
* the Springboard programme focused on the use of practical service improvement measures rather than longer term morbidity and mortality outcome measures, together with a monitoring and evaluation process;
* statistically significant factors associated with project success included teamwork (cohesion, synergy, sharing responsibilities, team leadership support), hospital leadership/management support and availability, and staff attitude. Other factors reported as begin associated with project success included availability of resources, appropriate knowledge and skills, conducive work environment, communication, clear allocation of responsibilities, participative decision making, and opportunities to create or innovate.;
* aspects highlighted as causing QI project hurdles included staff shortages, lack of resources, lack of appropriate knowledge and skills, uninvolved leadership, too much paperwork.

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# Conclusions

The conclusions of the evaluation highlighted that:

* Springboard QI and Leadership training is welcomed and valued by hospital based staff as being of practical benefit in improving both hospital services and patients’ experiences;
* The integration of leadership development and quality improvement tools and techniques training is preferred to them being taught separately as standalones;
* The Springboard style of bringing multidisciplinary teams to train and drive QI collectively while complementing and supplementing each other’s strengths and weaknesses, stands out as being unique and appropriate to create strong cohesive QI teams at health facility level;
* The participant-identified and owned QI projects started during the Springboard programme set a realistic pace, with small incremental wins that encouraged hospital staff, and improved the quality of health care without necessarily requiring big financial investments in a resource-constrained economy. The teams’ perceived satisfaction index regarding their projects’ usefulness to themselves was 88.4% and to the patients was 95.7% respectively. The average success rate of the teams’ projects was 75%.
* The simple, affordable projects encouraged the QI teams as they quickly picked the ‘low lying fruits.’ These in turn encouraged more QI projects to be undertaken, eventually turning around institutions to provide safe and responsive quality health care
* Springboard QI training resulted in increased health care team happiness, which impacted positively on the attitude and morale of staff and on the health services afforded to patients, improving their experiences.
* Springboard QI training has creating wide-ranging collaborations and partnerships including the Ministry of Health, county hospitals, private hospitals and county governments, who have met in different forums to discuss QI issues.
* Springboard participants have disseminated their experiences in different forums including the GRASPIT/QI conference in Nairobi (November 2016), the Tanzania THET Partnership meeting (March 2017), the International Forum on Quality & Safety in Healthcare in London (April 2017), the 5th African Forum on Human Resources for Health (Kampala April 2017) *and the WHO 4th International Forum on Human Resources for Health (Dublin 2017)- since this evaluation took place.*
* The participants’ overall satisfaction index with the Springboard training was 89.7%. Similarly, the satisfaction index of the respondents based on the knowledge received was 91.5%; while for the skills gained through the training satisfaction index was 87.3%.

## The Future[[2]](#footnote-2)

To maintain impetus and progress in developing leadership and quality improvement skills, plans for the future include:

* Training local trainers in all facilities where the programme is delivered
* potential roll-out of the Springboard training to all Kenya’s 47 counties since it has proven capacity to improve health systems and consequently patient outcomes
* Strengthening of monitoring and evaluation structures to promote better utilisation of resources.
* The principles and tools for quality improvement to be incorporated in the health care training institutions’ curricula so that quality in health care is included in basic training to instill early QI discipline
* The focus on starting with smaller projects that result in quick wins encourages members to come up with incrementally larger health care projects. Springboard should continue this focus so it eventually translates to an overhaul of patient health care and its outcomes, as well as health care environment and working conditions.
* Mentoring and coaching relationships and collaborations and partnerships need to be established to support the sustainability of quality improvement so it becomes an integral part of health service provision (as per KQMH)
* Provision of quality improvement training and leadership development offers a means of motivating staff and can lead to improved working environments, more effective multidisciplinary working, highly performing teams and recognition to help motivate staff.

**Appendix 1**

**Participants in Springboard Programmes and Details of Health Facilities as at October 2017**

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| **Health Facility** | **Participants in programme:**  **F: Foundation**  **A: Advanced** | | **Health Facility information in October 2017** |
|  | **F** | **A** |  |
| Nanyuki County Referral Hospital | 26 | 14 | * serves 160,000 people * provides orthopaedic/trauma, paediatrics, ENT, obstetrics/gynaecology, ophthalmology and dental specialties * has an imaging department with X-ray and ultrasound capability and laboratories * one operating theatre and a smaller emergency theatre * accident/emergency medicine department (open some hours) |
| Nyahururu County Referral Hospital  (incl Rumuruti Sub-Co Hosp) | 43 | 22 | * serves population of 2 million in three counties: Nakuru, Baringo, and Laikipia (500 patients daily) * provides outpatient, obstetrics and gynaecology, surgery, medicine and paediatric departments * has an imaging department with X-ray and ultrasound capability and laboratories * Accident/emergency medicine department open 24hrs |
| Kwale Eye Centre  (Charity) | 12 | 4 | * specialist eye services centre founded by UK trained ophthalmologist, Dr Helen Roberts * clinic based and outreach services offered * since 1993, 72,000 new patients registered; over 320,000 patients treated; over 30,000 eye operations performed * training centre for University of Nairobi |
| Laikipia County Government | 8 | 4 | * development of local health policy, implementation of national policy and provision of health services in Laikipia County through 5 hospitals, 8 public health centres and 54 public dispensaries |
| Other | 22 | 7 | * from Rumuruti Sub-County Hospital, Kisumu County Hospital, Kisumu County Government, Kenyatta National Hospital Nairobi, Jacaranda, CHS, UK, US, Red Cross |
| **Total** | **111** | **51** |  |

**Appendix 2: Complete list of projects started during the Springboard Programme**

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| **Ref** | **Project Title** | **Project aim statement** |
| **QI KP 1** | Improved handwashing (NTRH) | Reduction in nosocomial infection through improved handwashing practice in Nanyuki Hospital |
| **QI KP 2** | Safer prescribing in paediatrics (NTRH) | Safer prescribing of drugs in Paediatrics to ensure drugs are correctly calculated, administered and given on time with shorter drug rounds, thereby saving nursing time. |
| **QI KP 3** | Patient identification (NTRH) | Introduction of patient labels for 100% of inpatients and all newborn babies in Nanyuki Hospital |
| **QI KP 4** | Improved Triage in the ED (NTRH) | To improve triage for patients attending emergency services at Nanyuki Teaching & Referral Hospital |
| **QI KP 5** | Improved Triage in the ED (NCRH) | To improve triage for patients attending emergency services at Nyahururu County & Referral Hospital |
| **QI KP 6** | Reduced waiting for lab tests (NCRH) | Reduction in the numbers of patients waiting for lab tests which are not available at the hospital that day at Nyahururu County & Referral Hospital |
| **QI KP 7** | Reducing unnecessary parenteral Injections in in-patients (NCRH) | Reduction in the overprescribing of injections for inpatients (esp antibiotics) at Nyahururu County & Referral Hospital |
| **QI KP 8** | Reducing unnecessary Injections in the OPD (NCRH) | Reduction in unnecessary injections in the outpatient department at Nyahururu County & Referral Hospital |
| **QI KP 9** | Communication at Kwale Eye Centre (KEC) | Inadequate communication amongst staff at Kwale Eye Centre is compromising optimum running of the Centre. |
| **QI KP 10** | Reducing fasting times before surgery in adults (NCRH) | Adult patients often wait a long time for surgery resulting in them suffering excessive fasting times (food & drink). |
| **QI KP 11** | Reducing delays in service delivery in outpatients at NCRH (patients get lost) | Patients get lost in the hospital resulting in delays connecting with people involved in their care. |
| **QI KP 12** | Reducing cross infection in the Female Ward at NCRH | Many patients, visitors and staff pass through one particular door on the Female ward which is therefore contaminated and repsonsible for cross infection. |
| **QI KP 13** | Reducing excessive fasting times for children before surgery in NTRH | Children often wait a long time for surgery resulting in them suffering long fasting times (for food & drink) |
| **QI KP 14** | Reducing waiting time to treatment on the Male ward in NTRH. | Patients' treatment is often delayed because time is wasted finding the necessary equipment to establish an iv cannula. |
| **QI KP 15** | Ensuring access to resuscitation equipment in Nyahurur Hosital | Essential equipment is sometimes not available to resuscitate adults, children & neonates and this has resulted in unnecessary deaths |
| **QI KP 16** | Reducing waiting times in the OPD/Casualty Dept at Nyahururu Hospital | Patients wait for excessive lengths of time which sometimes results in deterioration or failure to access care at all on the day of attendance. |

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**All the willing and lively participants in the programme for their engagement in and encouragement for Springboard and for proving that you can learn, do some very serious work and have fun at the same time!**

1. **Springboard** was conceived by Dr Simon Knowles and was designed and delivered by experts in Quality Improvement and Leadership drawn from the UK NHS. It continues to develop with guidance from Kenyan colleagues. Faculty delivering Springboard is now known as q4a (quality for all) [www.q4a.global](http://www.q4a.global) . [↑](#footnote-ref-1)
2. **All future activities are funding- dependent.** [↑](#footnote-ref-2)