Using Lean 5 S to Begin Quality Improvement in Tanzania

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Tanzania

- Population - 45 million (80% rural)
- Geography
  - Largest city – Dar Es Salaam
  - Capital - Dodoma
  - Mountains, plains, highlands, tropical
  - Slightly larger than TX + OK or twice size of CA
- Language
  - Tribal, Swahili, English
- Religion
  - Christian, Muslim, Indigenous
Tanzania

• Economy & Commerce
  – Dar is a major seaport for East Africa
  – Agriculture
    • Half national income; employment for 80%
  – Tourism
    • National Parks & Game Reserves
    • Mt. Kilimanjaro
  – Mining
Tanzania

- Typical household
  - 20% connected to grid (higher in urban areas)
  - 80% own their house
  - 33% within 1km of potable water
  - 39% below poverty level
  - Mean monthly income 50,000Tsh ($32 USD)
Tanzania

- Health
  - Life expectancy – 53
  - Leading cause of death for children – malaria
  - Leading cause of death for adults – vehicle accidents
  - AIDS/HIV prevalence – 6%
- Public health challenges
  - Safe water: 45% use unprotected water source
  - TB
Health Care in Tanzania

- Physician/1000 people = 0.02 (US=2.3)
- The average distance to a hospital is 21 km
- No fees for maternal and child, over 60, specific medical conditions (e.g., HIV/TC)
- Cost of delivery at government facility = 6268 TZS (4.20 USD)
- Maternal mortality rate/100,000 births = 790
Health Care in Tanzania

• Seven levels of Providers
• Village Health
  – Preventive services in homes
  – 1-2 village health workers
• Dispensary Services (2450)
  – Serve 6,000 to 10,000 people; supervise village health posts
Health Care in Tanzania

• Health Centre Services (409)
  – Serve 50,000 people (one administrative division)

• District Hospitals (55)
  – Usually contracted with religious affiliated hospitals

• Regional Hospitals (23)
  – Additional services / specialists in various fields
Tanzania

30 Regions
Health Care in Tanzania

• Referral/Consultant Hospitals (4)
  – Muhimbili National Hospital - eastern zone
  – Kilimanjaro Christian Medical Centre - northern zone
  – Bugando Hospital - western zone
  – Mbeya Hospital – southern highlands

• Treatment Abroad
  • Sent for treatment due to lack of in-country facilities/equipment
Abbott Fund

- Philanthropic Foundation
- Public-Private Partnership with Government of Tanzania (2001)
  - Building / modernizing new laboratories at 23 regional-level hospitals
  - Modernize Muhimbili National hospital ED, Outpatient Center, Laboratory
Quality Improvement in Tanzania

• Ministry of Health (MoHSW)initiative began in 2008
• Entry to Continuous Quality Improvement (CQI)through 5-S principles
• Basic systematic approach to productivity, quality and safety improvement
• Roll out to 31 Regional and District hospitals through 2011
Singida Region Tanzania

• Rural region
• Arid, windy, hot
• Population – about 600,000
• Singida Town
  – Lonely Planet description: Singida is way off the beaten track, and there's really little reason to visit
  – Economic - agriculture, producer of sunflower oil
Singida town
Singida Regional Hospital
What is Lean?

• A set of principles & tools for transforming large, complex processes to improve work flow, eliminate waste and deliver customer value faster

• 5S is a Lean tool
Five S

A visually oriented system for organizing the workplace to minimize the waste of time.
5 - S Poster in Laboratory
5S makes you a good health center leader You will be able to provide better patient care
5-S Principles
English - Kiswahili

- Sort = Sasambua
- Set = Seti
- Shine = Safisha
- Standardize = Sanifisha
- Sustain = Shikilia
Sort

Remove everything from the workplace, that is not needed for current work.

When you Sort, you leave only the bare essentials.

When in doubt, throw it out.
Sort

• Sasambua
  – Inventory
    • What is needed
    • What isn’t needed
      – Red dots / green dots
    • Storeroom Lab areas
      – Discard expired supplies / reagents
      – Discard machines that are not operational / can’t be repaired
Storeroom in old laboratory

Most chemicals are not used and expired
Chemical Storage in supply room
Equipment storage
Non functioning microscopes (red stickers)
More chemicals
Storage for room temp reagents, supplies

hCG, glucose meter/strips
Cotton, Methylated spirits
Expired Reagents
Expired Reagents

Expired Feb 2009    Found in refrigerator October 2009
Incubator
Non-functioning - needs repair
Set in Order

• Set in Order (Straighten, Store)
• Everything has a place; everything in its place
• Make it easy to know where everything goes
  – Visual cues
  – Tape / templates / stencils / shadow / labels

Arrange needed items for ease of use!
Set, Straighten

• Seti
  – Hakuna taka taka maabara mpya
    • No junk in the new lab
  – Put everything in its place
    • Limited storage in old lab for daily supplies
    • Labeled storage in new lab
  – Visual cues for ordering
  – Records
Visual Cues - Shadowing
New lab storage area - 2009