

Experimenting with Lean in Public Health facilities

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16/10/2008

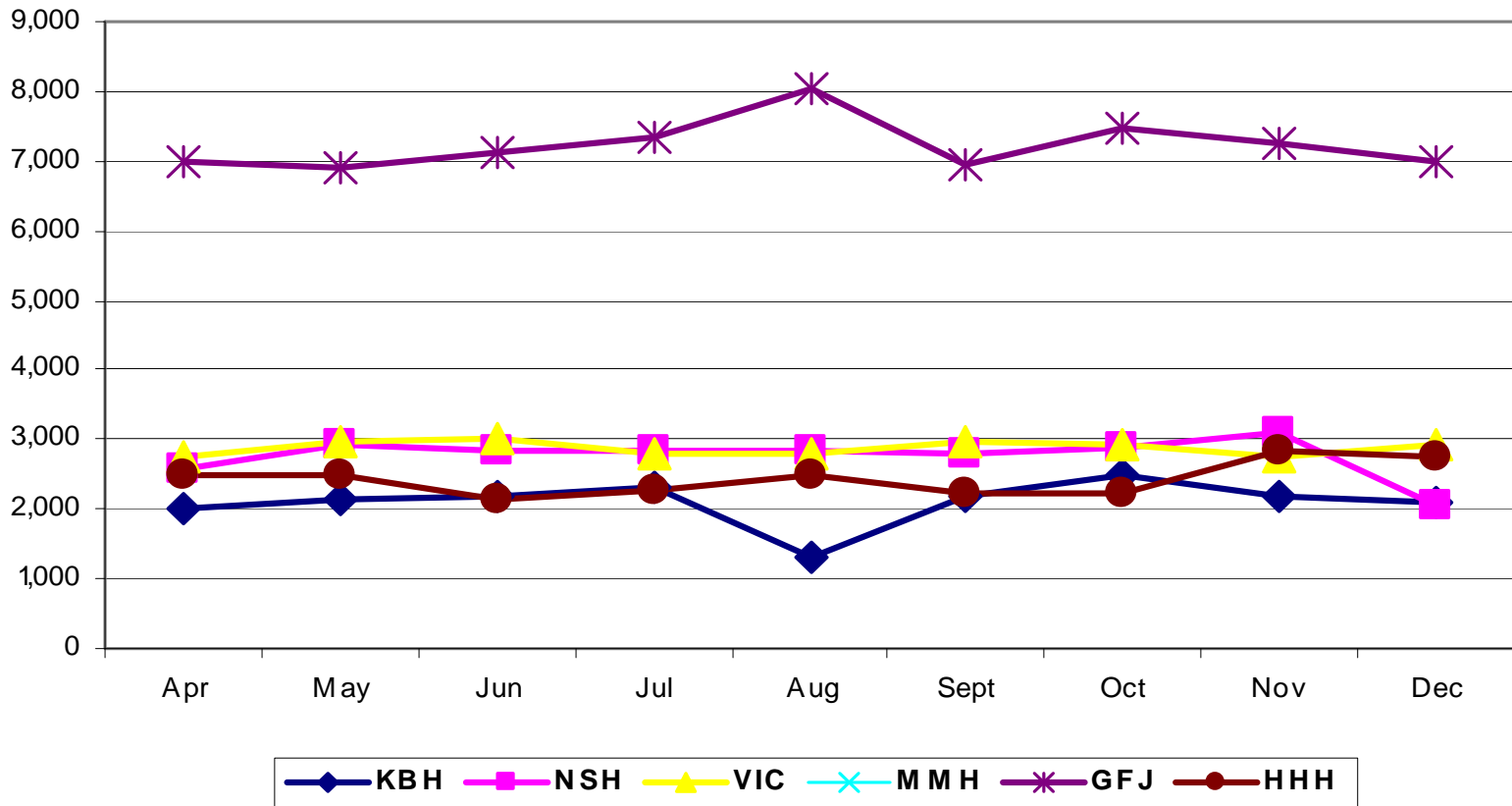
Context

- Quadruple burden of disease – poverty related illness, chronic diseases of lifestyle, injuries and HIV / AIDS
- Under-resourced public health facilities
- Demand – supply mismatch



Casualty / Trauma

Total Casualty/Trauma for the Metro Hospitals Jan - Dec 06



Phase 1 – exposure to lean

- Research by MBA students at the hospital in early 2007
- Best Practice Workshop in August 2007

Objective

- To improve services to the community in an under-resourced setting, while not increasing staff workload.

The 4 Projects

1. Patients waiting in Casualty while beds are empty in wards
2. Poor utilisation/productivity in Trauma/Emergency Theatre
3. **Long lead times & poor flow of patients in TOP Theatre**
4. **Missing files at Reception resulting in duplication of files**

Project : The File Seekers



The Countermeasures

- Do 5S in filing area
- Make files easier to file & retrieve



The Countermeasures

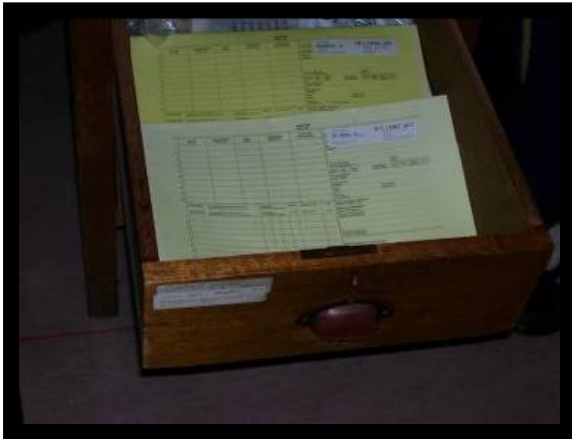
- Improve interview process to avoid duplicate files
- Enhance environment for patient and clerk



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NAAM/ IGAMA / NAME	
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ID NO./ ISAZISI	
HUIS ADRES/ IDILESI / HOME ADDRESS	
GEBOORTE DATUM/ UMHLA WOKZALWA / DATE OF BIRTH	

The Countermeasures

- Policy: No files in temporary storage (drawers, cupboards)
- Policy: File moves with patient (*They can read it while idle!*)
- Computer print-out of non-returned files
- One-stop point at exit to check that files have been returned



The Results

Objective	Measure	Before Kaizen	After Kaizen
REDUCE MISSING FILES	NUMBER OF MISSING FILES RETURNED (OPD)	28 OUT OF 77 MISSING (36% MISSING)	15 OUT 77 MISSING (19% MISSING = 46% IMPROVEMENT)
REDUCE TIME TO RETRIEVE FILE	TIME TO FIND 5 FILES	5MIN	3.5MIN (30% IMPROVEMENT)
REDUCE DUPLICATE FILES	NO MEASUREMENT, BUT IMPROVED INTERVIEW PROCESS EXPECTED TO SENSITISE CLERKS TO IMPROVE ACCURACY OF DETAILS ENTERED AND CROSS CHECKING		

Follow up to this by own staff...

Objective	Measure	After BPW on 3rd August 2007	After Kaizen on 1st October 2007
Reduce missing files to 5%	Number of missing files per day (Except admissions)	15 out of 77 missing (19% missing)	5 out of 103 missing (4.85% missing) 67% improvement
Reduce time to issue patient file to less than 4 minutes	Time to find and issue file	3.5 Minutes	4.0 Minutes A slowdown of 0.5 minute

Further follow up.....

Objective	Measure	After BPW on 3rd August 2007	After Kaizen on 1st October 2007	After Kaizen on 11 th October 2007
Reduce missing files to 5%	Number of missing files per day (Except admissions)	15 out of 77 missing (19% missing)	5 out of 103 missing (4.85% missing) 67% improvement	0 out of 199 files missing (100% improvement)
Reduce time to issue patient file to less than 4 minutes	Time to find and issue file	3.5 Minutes	4.0 Minutes A slowdown of 0.5 minute	3 Minutes and 36 seconds 24 seconds improvement

Project : Improved Flow through the Termination of Pregnancies Theatre



Scope & Objectives

Scope

- Average 300 TOPs/month (30/day)
- Facility planned for 42 TOPs/month (8/day)
- Mon -Tue: Counseling
- Wed – Fri: Procedures

Objectives

- Reduce lead time for patients
- Improve dignity of patients during process

The Problem

- All patients arrive at 07h00, procedures performed to 18h00
- Patients “batched” to handle high volumes
- Some patients arrive unannounced – disrupts flow
- Long waiting times under uncomfortable conditions
- Lack of privacy & dignity for patients

Finding and Analysis

1. Demand/Activity

- Demand led service (demand = activity)
- Variation between days (range 3 – 40)
- Average 23 patients/day
- Plan 30 patients/day (Takt time: 12 minutes)

2. Batching

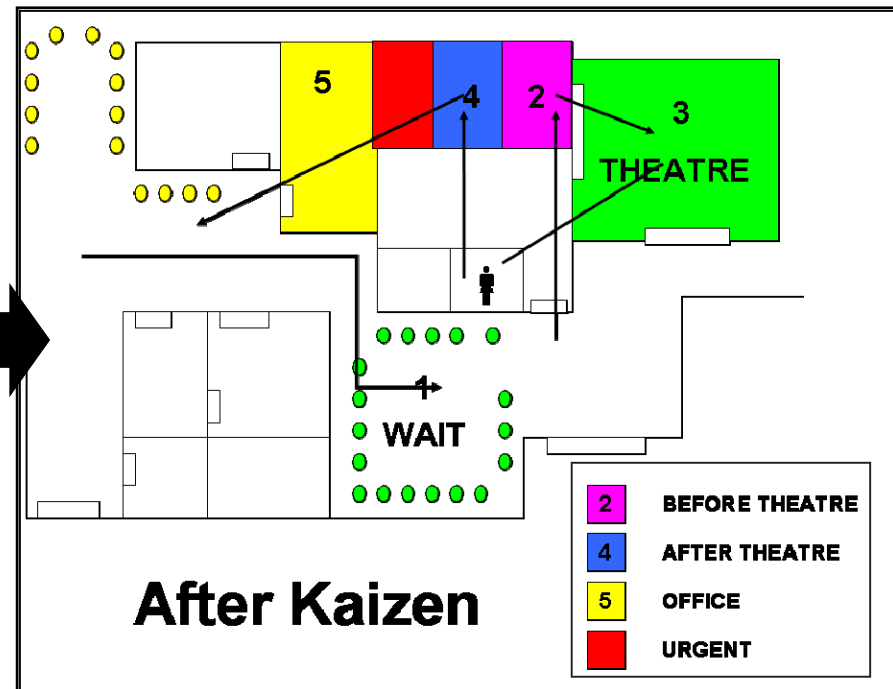
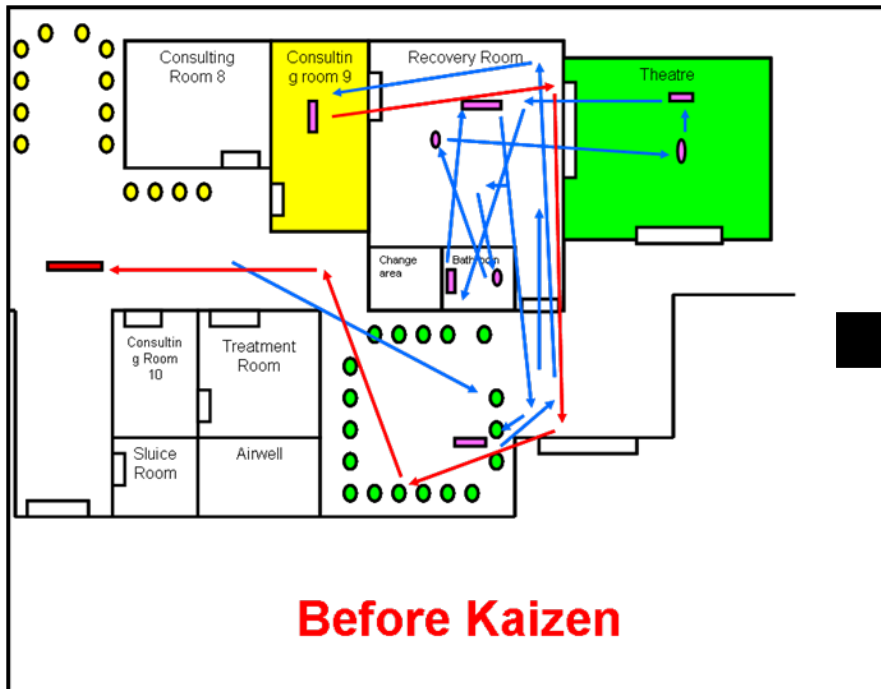
- All patients booked to arrive at 07h30 (30 patients)
- Pre-op counselling/briefing (15)
- Wait exposed (15)
- Procedure (1)
- Wait for family planning (10)
- Family planning & discharge (1)

3. Patient Flow

- Large number of patient moves
- Single area for pre-op, post-op recovery, medical emergencies
- Few signs and poor quality (hand written, falling off wall)
- **Patients are confused and lost (anxiety provoking)**
- Patients interrupt staff

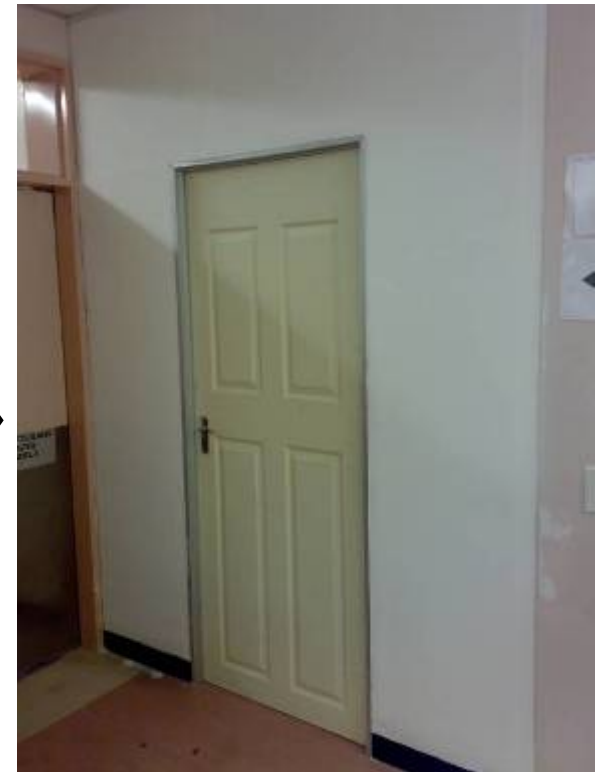
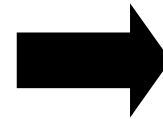
Countermeasures for Flow

- 5S in waiting area
- Divide into 3 areas: Pre-op, post-op & emergency
- Clear identification
- Converted store room into change room
- Simplified flow



Countermeasures for Lead Time & Dignity

- Family planning individually instead of batches of 10
=> reduce post-op waiting time from 90 min to 30 min
- Provide painkiller and anti-inflammatory pre-op



The Results

Objective	Measure-ments	Before Kaizen	Target	Actual (After Kaizen)
Reduce lead time	Pre-op area to discharge (average time)	172 min	120 min (-30%)	91 min (-47%)
Improve dignity	Number patients waiting in group (exposed)	15	10 (-33%)	4 (-60%)
Improve dignity	Time in pre-op area - i.e. exposed (maximum & average time)	Max: 137 min Ave: 78 min	Max: 96 min (-30%) Ave: 55 min (-30%)	Max: 50 min (-65%) Ave: 32 min (-40%)

Lessons learned from this phase

- Improved service delivery
 - Improved dignity
 - Empowered staff members
-
- Minimal additional expenditure – total of R50 733.00

Phase 2 - using Lean tools for quick wins

- Khayelitsha
- Mitchells Plain
- Delft
- Michael Mapongwana
- Hanover Park
- Kraaifontein

What is the problem?

- Patients spend an average of 300 minutes inside the health facility – 220 of these minutes are spent waiting.
- Most of the waiting is done at reception and pharmacy

Objective

- Reduce lead time in reception and pharmacy by more than 50%

Results from a sample CHC

- Waiting time reduced in reception from 65 minutes to 25 minutes.
- Waiting time reduced in pharmacy from 70 minutes to 27 minutes
- “Defaulter” rate reduced from 40% to 17%
- Total spent in a “Lean” way – R10.5 million

Phase 3 – The future - Lean as a long term QI strategy

- Build internal lean capacity so as to reduce reliance on consultants
- Ensure sustainability by establishing project teams with ownership of the lean processes embedded within the team.
- Create a culture of improved service delivery through the philosophy of lean throughout the organization.

What were we searching for?

- A management system based on respect for people and society.
- A system that could help us use untapped potential in order to address unmet need.
- A system that would allow us to join the process steps in a way that reduces error.

What is needed to sustain improvements?

- Management commitment
- Worker involvement, with volunteer “champions”
- Ongoing training
- Reward system
- Insistence on standards and standardization, with strong supervision

Stages in lean

- **Denial** – “We know our system best. It cannot be improved. There is nothing wrong with our service!”
- **Anger** – “Our situation here is head office’s fault! Now you want us to do this! We won’t do it!”
- **Bargaining** – “We’ll try it, but we guarantee it won’t work! First give us more staff, more resources, more....., then maybe it will work.”
- **Depression** – “Why bother trying. There is no point. Things will never get better here.”
- **Acceptance** – “What a wonderful idea WE had! We told you it will work.”