Clinical microsystems and the use of "waste-glasses" to deliver care of higher patient value

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Introduction

Brief overview of our organization

- 118 000 patients in the county of Highland in Sweden, increasing elderly population
- 89 beds
- About 300 employees
- Patient focused organization
- Inpatient care based on "Patient Focused Care" (TCAB)
- Team based integrated inpatient care and outpatient care in 7 wards
- IT based patient administration system including patient documentation
- All employees have been educated in various quality improving methods which is implemented in the daily work
- ESTHER – A network between community services, hospital and primary care supporting process oriented health care
1996 – back to where it started…
The Esther project
How could this happen?
Results from the Esther project

- Hospital admissions fell from approximately 9,300 in 1998 to 7,300 in 2003
- Waiting times for referral appointments with neurologists decreased from 85 days in 2000 to 14 days in 2003.
- Waiting times for referral appointments with gastroenterologists fell from 48 days in 2000 to 14 days in 2003
Vision Esther

A durable and energetic network results in a more confident and independent Esther

Esther:
- Receives care in or close to her home
- See us as one care provider
- Has the same possibilities to receive care all over the region
- Knows where and who to turn to

Promises from care providers:
- All personnel are concerned and committed
- All personnel support each other to achieve the best for Esther
- Increase competence in the whole care chain
- Continuous improvement of quality

Patient Focused Care (TCAB)

- National staff survey ("Dialogen") 2004 revealed a stressful physical and psychological work environment
- Your care ("Din vård") started in 2005 – a network between the Medical departments in the county of Jönköping to design a patient focused care
- New design of the Medical clinic
- Influenced by Marianne Inde (Karlstad) och Henry Ford Hospital (Detroit, USA)
Working close to the patients!

The materials often used in each module must be easily accessible, in good order and well defined. Waste is eliminated!
Integration of in- and out patient care

• Every ward has its inpatient care integrated with the outpatient care
• This means an integration of the staff (nurses and assistent nurses)
• The cashier is located in each integrated ward
Medical Department, Highland Hospital
Eksjö, Sweden

Our team members

- Pierre Cherfan MD
- Roger Gunnarsson MD
- Marie Sjoebrink RN
- Camilla Strid MSN
- Jan Sverker RN

Start Autumn 2010

The Total Cost of Healthcare

\[
\text{The cost of value added activities} + \text{The cost of non-value added activities} = \text{The total cost of healthcare}
\]

Cost includes the space and materials necessary to perform activities
Aim 1 Improve quality and remove 1% of the operative costs during a 12 month period

Executive committee, leaders and co-workers:
- Identify waste elimination possibilities
- Organize project to increase value
- Create cost- and quality measurements
- Implement and achieve results (PDSA)

Aim 2 Create a structure for year 2 and beyond to fulfil aim 1 every year...

...while laying the tracks.

Management team of the clinic:
- Create a strategic compass
- Secure projects linking to compass
- Commitment for improvement work
- Evaluate and adjust regularly

Goal: A balanced budget by the end of 2012

Primary drivers
- Clinical quality
  - Coordination
  - Emergency Department
  - Readmissions
- Flow
  - New visits, revisits capacity– demand
  - Care at right level
  - End of life care
- AE – risks and deviations
- Staffing
  - Vacation planning
  - Sick leaves
  - Staffing working hours
- Services
  - Pharmacy and ADE
  - Discharge routines
- Miss match of service
  - Administrative routines
  - Cosmic - EMR
- Leadership and employeeship
  - Values
  - Information
  - Intranet development
  - Visualization of results – Dashboards

Secondary drivers
- Project
  - Extended “Coordinatorship” medicine operations
  - Reduce admmissions
  - Reduce readmissions
  - Reduce Acute visits
  - Increase waiting time >30 days for new 100%
  - Follow up visits in due time
  - Decrease patient canceled visits
  - Decrease pressure states
  - Decrease no of patients falling
  - Mortality – shorter LOS by 1/day exp.
  - Risk assessment in Quality registry 95%, recorded preventive plan 95% of
  - ED covered in palliative registry
  - Reduce admisions and readmissions in CDI
  - Increased care planning
  - Round transformation into a patient conference
  - Care processes mapping
  - Department and hospital wide coordination of recruitment and flexible staffing between units
  - Short term staffing by SMS mailings
  - Reduce medication errors in care transitions
  - Reduce inappropriate medications, inappropriate drug combinations and polypharmacy in the elderly population
  - Reduce antibiotic treatments
  - Information of stay in written text to the patient at discharge
  - Development of TCAB-concept
  - Update and implementation of care values and vision statement
  - Updates of results boards – visualization

"We give the patient the best possible care and treatment in a safe and secure environment, right and effectively every time"
### Vision och values

The waste identification tool  
(Emergency ward admissions)

<table>
<thead>
<tr>
<th>Patient ID</th>
<th>Waste ID</th>
<th>Emergency waived</th>
<th>Unnecessary waived</th>
<th>X-ray</th>
<th>Unnecessary waived tests</th>
<th>Open care</th>
<th>Patient wrong clinic</th>
<th>Unnecessary acute visit</th>
<th>Unnecessary admission</th>
<th>Flow delay</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>
Medical clinic Eksjö
Number of occupied beds in % 2010-2012

Waste measure
– is right patient, in right bed at right time?

Sammanslagen mätning över bedömt slutenvårdsbehov

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste</td>
<td>38</td>
<td>135</td>
<td>135</td>
<td>8</td>
<td>11</td>
<td>6</td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>
Learned from the waste registration

• **External processes**
  - new collaborators in "vårdvalet" (several new health care center)
  - Revitalisation of "coordinator ship" (tour out to all the health care center to update this function)
  - expanded possibilities to consult a specialist on the phone
  - cooperation and care planning - ESHTER

• **Internal processes**
  - clarification of patient flow at emergency ward
  - more structured medical and social planning
  - improved transition between care personnel
  - poor decision (and documentation) of treatment intensity/level
  - improvement possibilities for patient participation and self-care
  - the round as a planning conference for highest patient value and smoothest patient flow

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The transition of the ward round from a “parade” to a round table consultation

“Today every one in the staff knows what is going to happened the coming day”

Economics

In tests the time needed for the ward round was decreased with approximately 8 minutes.

Upscaled to a Department level this equals 300-400 000 dollars a year of savings.

2012-03-02  Also see www.lj.se/ronden
Titel: Vad pratar du om? (tänk SBA)

1. Bakgrund
Varför pratar du om detta?

2. Nuvarande situation
Hur ser det ut idag?
Visa visuellt med bilder, diagram, grafer, ritningar, kartor etc.

3. Mål
Vilket resultat vill du nå?
Var nystart, vilja på?

4. Analys
Vad är grundorsaken till problemet/-en?
Välj en enkel problem-analys modell (t.ex. Folksten, 5 varför) för att påvisa orsak-verknings sambandet

5. Plan
Vilket stöd och vilka resurser kommer att krävas för genomförandet?
Vem är ansvarig för vad och när?
Vilka indikatorer finns för framgång?

6. Uppföljning
Nästa kvar? Nu framtida mål?
Se pågående PGSA.

Nylaga
Planer

Antal

Nuläge

Nyläge

Planera

Rund

Rekommenderade förbättringar
Hur kan SBA förbättras för att nå framgång?
Hur kan SBA förbättras för att nå framgång?

Social care planning team

Palliative care/care level

Readmissions

Emergency department

Coordination
Learning from tests of change

This has changed in the way we work?

• Increased focus on patient needs
• Team collaboration has improved
• Cost consciousness linked to quality has been clarified
• Development of new core values which will facilitate the pursuit of goals and visions
• Acceptance for continued improvement
• Consensus on common resources

Have outcomes changed?

– There are a lot of ongoing projects in different phases, the completed projects has shown positive results.
– Measurements to validate the improvements continue in the projects
Barriers & Breakthroughs

Breakthroughs
- Acceptance and support from senior managements and employees
- Regain of the values and visions/ESTHER ideas
- Good overview of structure and work progress (driver diagram)
- Waste identification tool boosted improvement work
- Support from the statistics so that we can find our readmissions

Barriers
- Difficulties to save the dark green dollars without lay off employees, reduce beds and still maintain high quality in care
- Time

<table>
<thead>
<tr>
<th>Project</th>
<th>Projected Savings Goal</th>
<th>Savings to Date December 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Coordination</td>
<td>Increased contacts on the ED 20%</td>
<td>$5 Target is not reached</td>
</tr>
<tr>
<td>2. ED</td>
<td>Waiting time ED &lt;4 h (clinical results money, 64075 $ if 100% reached results)</td>
<td>25735 $ (175 000svkr) Target is partly reached</td>
</tr>
<tr>
<td>3. Readmissions</td>
<td>Increase 20%</td>
<td>78097 $ (531 060 svkr) Target is not reached yet</td>
</tr>
<tr>
<td>4. Palliative care/Care level</td>
<td>Registration to the national register of palliative care to 85%</td>
<td>Target is reached</td>
</tr>
<tr>
<td>5. Round</td>
<td>Start time for the team</td>
<td>$3 (ongoing measure)</td>
</tr>
<tr>
<td>6. Social care planning (measure the length of hospitalization and the cost for the municipality for the extra days at hospital)</td>
<td>Planing with the team &gt;60%</td>
<td>6029 $ (41 000 svkr)</td>
</tr>
<tr>
<td>7. Care process mapping</td>
<td>Number of maps</td>
<td>2 (finished)</td>
</tr>
<tr>
<td>8. Staffing</td>
<td>Reduce employees overtime and saved vacation days</td>
<td>1611 (41 000 svkr)</td>
</tr>
<tr>
<td>9. Pharmacy (recently started)</td>
<td>Increase medication errors 50%</td>
<td>$5</td>
</tr>
<tr>
<td>10. Discharge routines</td>
<td>In written, to 50% of the patients (reduce readmissions)</td>
<td>$5 Target is not reached</td>
</tr>
<tr>
<td>11. Values</td>
<td>Increased staff and customer satisfaction</td>
<td>$5 (ongoing measure)</td>
</tr>
<tr>
<td>12. Intranet development</td>
<td>Staffs use</td>
<td>$5 (ongoing measure)</td>
</tr>
<tr>
<td>13. Dashboards</td>
<td>Up date</td>
<td>$5</td>
</tr>
<tr>
<td>14. Risk assessment fall prevention</td>
<td>Reduce fall with 30% 2012</td>
<td>$5 (ongoing measure)</td>
</tr>
<tr>
<td>15. Future of the medical department (recently started)</td>
<td></td>
<td>$5</td>
</tr>
<tr>
<td>Total (DATE)</td>
<td></td>
<td>109861 $</td>
</tr>
</tbody>
</table>
It has become a core belief in U.S. health care that improving clinical quality will reduce health care costs."

"Yet true bottom-line savings from improved clinical quality rarely materialize, and costs continue to climb."

Why??

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<table>
<thead>
<tr>
<th>Cost Layer</th>
<th>Effects of Reduction in Use</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layer 1: truly variable costs of patient care</td>
<td>The item is not consumed, does not need to be replaced, and is available for later use.</td>
<td>Supplies, medications</td>
</tr>
<tr>
<td>Layer 2: semivariable costs of patient care</td>
<td>The item is not consumed, but the ability to repurpose the item is limited by time. Costs of providing the service may be reduced with sufficient reduction in volume.</td>
<td>Direct hourly nursing, respiratory therapists, physical therapists</td>
</tr>
<tr>
<td>Layer 3: semifixed costs of patient care</td>
<td>The item is not consumed, but the obligation to continue to pay for the item does not change.</td>
<td>Equipment, operating room time, physician salaries, ancillary services</td>
</tr>
<tr>
<td>Layer 4: fixed costs not associated with patient care</td>
<td>Resource consumption is not altered in the short run, but may be altered in the next operating cycle.</td>
<td>Billing, organizational overhead, finance</td>
</tr>
</tbody>
</table>

"This fixed-cost dilemma leaves most health care costs insensitive to changes in volume and utilization, so clinical quality improvements typically create additional capacity rather than bottom-line savings."
The total QUALITY of given healthcare

\[
\text{Medical QUALITY of value added activities} + \text{The WASTED Medical QUALITY of NON-value added activities} = \text{The total medical QUALITY delivered to patients}
\]

Next steps

• Review readmissions
• Reduce inappropriate medications, inappropriate drug combinations and multi-pharmacy in the elderly population
• Reduce antibiotics use
• Reduce admissions and readmissions because of clostridie difficile infections
• Consider every re-employment
• Care processes mapping!
Care process mapping

- Patients focus and patients need – the patients way in the care process
- Focus on patients BEFORE and AFTER the clinic admission
- Resource effectiveness – to use our resources as efficiently as possible
- Flow effectiveness – focus on patients need
- Patients lead times

The process of Heartfailure
Do the medical right thing will:

…produce the best patient care!
…bring the highest patient value!
…will be most cost effective!!

Conclusions

ESTHER- our first lean project, included care process mapping.
Time changes, and the quality improvement work with it.
WASTE elimination is one way to improve quality.
Focus on quality improvement-and cost will follow!
Reflections?

Medical Quality Improvement by Waste elimination and Care Process Mapping does NOT happen by accident!

There is No Silver Bullet
Thank you for listening!

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