RESPIRATORY NURSE SPECIALIST

Team

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About Bolton and The Royal Bolton Hospital (RBH) NHS Foundation Trust

- Bolton is a Northern industrial town with a population of 270,000
- The Trust is a medium size District General hospital, with approximately 700 beds, 3,200 staff and a turnover of £170m
- It is one of the busiest Emergency Departments in the northwest. It has a catchment area of 310,000, this includes patients from across our borders, ie Wigan, Salford and Bury
  - 6% of all Patients attending Accident and Emergency are respiratory
  - 78% Respiratory Related Hospital spells are emergencies
  - 2008/09 RBH had 5,855 spells for Respiratory diseases or 25,000 bed days
- 12% of the population are from an ethnic minority (>18% childhood population)
- There are significant levels of deprivation and inequality
- Reflected in health status high mortality
- 21% of all deaths in Bolton are related to respiratory disease
The Trust began its Lean journey in 2005.

It has developed and continues to refine Bolton Improving Care System (BICS) based on Lean Methodology.

BICS team consist of:
- Head of Lean transformation
- 5 Senior Facilitators
- Senior Manager from a clinical division as an Affiliate
- Affiliate as a Trainee facilitator from Non-clinical division
- Educational programme BICS Academy Lead from the Senior Facilitators
- Academy Coordinator

Staff Engagement:
- 79% completed Green Training or Rapid Improvement Events

Fracture Neck of Femur:
- Over 6,179 bed days saved
- HSMR reduced by 45%

27% Length of Stay for Non-elective patients

20% savings in time due to improved start times in theatres

- 46% reduction in Mortality Rates from 2005 to Sept 2009 (using 2008-2009 baseline)

18 Week referral to treatment
- Achieved as early adopter December 07

Increased Activity:
- 63% increase in elective spells*
- 24% increase in Daycase activity for “trolley” of 33 procedures*
Initially the Trust has major concerns over patient safety, staff working in a pressured environment, not being able to deliver high quality care all of the time leading to poor staff morale, high mortality (death rates), poor patient experience and poor Trust reputation. Using BICS methodology detailed data analysis using the Lean tool Quality Framework Deployment (QFD) identified areas causing capacity problems which were related to high volume pathways in respiratory and general medical patients with complex care needs. This led to the Chief Executive Officer (CEO) and Executive directors via the Lean tool of Policy Deployment mandating the main focus of improvement work to be on the Urgent Care pathway

- **Respiratory Service:**
  - Respiratory Improvement has been in place since April 2009, this improvement work took place on the inpatient wards. Results include:
    - In-patient Mortality Reduced by 10-20%
    - Increased patient discharges (turnover up 25%)
    - Patient readmissions reduce from 9.5% to 8.5%
    - Length of stay (time patient in hospital to discharge) reduced from 8.9 to 6.9 days

However, Concerns remain in that
- Respiratory disease make up 25-30% of non-elective medical admissions (emergency admissions) with high admission rates for asthma
- Higher than expected death rate (SMR) for Chronic Obstructive Pulmonary Disease, (COPD), Pneumonia
- High prevalence of COPD, Tuberculosis (TB), Lung Cancer
- Increasing demand for services/screening

- Hence this leads to the work for the Respiratory Specialist Nurses
Reason for Action / Context
Scene set in previous slide- Context relates to Respiratory Nurse Specialists ways of working. Using A3 Thinking in April 2010 to support and complement the previous improvement work, the Respiratory Nurse Specialist. (RNS) commenced their BICS journey. RNS support patients with Asthma, COPD, (provide early supported discharge), Lung Cancer, TB, Long term Oxygen Therapy, and deliver Pulmonary Rehabilitation along with Nurse Led clinics. The RNS are valued members of the Multidisciplinary team providing holistic and timely care to patients with airway disease. This meant other respiratory conditions – including pneumonia were not having equitable access to specialist skills. However, these well defined roles are traditional in nature and working patterns. This improvement work is focussing on how the RNS can support the patient’s journey, provide timely and effective access to specialist respiratory skills, by shaping new and sustainable ways of working.

- All of the improvement links to the Trust True North Goals (Long term strategic objectives and constancy of purpose). The True Norths are highlighted A-D below.
  - **A) Improving Health** - Improving timely treatment for patients with respiratory conditions Hospital Mortality rate, though improving was still variable, as more patients than expected were dying.
  - **B) Best Possible Care** - Improving access to specialist skills, baseline time on wards was 26.25 hours per week by RNS
  - **C. Value for Money** - Reducing non value activity(NVA), 15 hours a week was spent on handover and other NVA activity
  - **D. Joy and Pride in work** - Providing more equitable service to all respiratory patients, only airway disease patients- COPD, Asthma and Long term Oxygen therapy had RNS input.

- This improvement work is in 2 parts – April – May Setting up the mobile cell for ward work
- November – Improving the Base function cell - and Home Visits
Higher measures will contribute towards:

Increase in equity and spread of service, providing quality care. Improved communication.

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**Hospital Standardised Mortality**

- Jan-10: 119.7
- Feb-10: 102.2
- Mar-10: 73.9
- Apr-10: 78.9
- May-10: 130

**Time on Wards**

- Current system: 26.25

**Non Value activity**

- Hours on Wards
  - Jan-10: 119.7
  - Feb-10: 102.2
  - Mar-10: 73.9
  - Apr-10: 78.9
  - May-10: 130

**Conditions having input by Specialist Nurses**

- COPD
- Asthma
- Lung Disease
- Interstitial Lung Disease
- Bronchiectasis
- Pneumonia

**Value for Money**

- **Non Value activity**
  - Handovers:
    - 0
    - 5
    - 10
    - 15
    - 20

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Understanding the Process

- Detail analysis of current end to end process – (Value Stream Mapping)
- RNS, including identification of wastes and root cause of problems in current process – (Ishikawa)
- RNS limited in the type of patients and also where patients are seen. Traditional working practices
- No clear referral system (how patients are notified to RNS)
- No clarity around the roles of the RNS
- 40% of the time spent on respiratory inpatient wards assessing patient for early discharge to be supported at home – Duplication
- 26.5 Hours per week on the wards
- Variability in how individual team members worked – Defects – lack of Standard work
- Over 15 hours a week was spent on Handover in the office – Standard Work
- Lack of co-ordination around how home visits were planned and carried out. Disjointed arrangements for all types of visits such as home reviews, education visits, oxygen visits. Lack of Standard work
- Skills and knowledge though a core understanding, was more in silos around airway disease.

Example Spaghetti Diagram

Hospital at Home Visit – 28 mile
Oxygen Visit – 18 miles
Education Visits – 23 miles
Nebuliser Visit – 11
Total of 80 miles (1 day)
What do our clients want from a service

Kano Model used to identify from patients what do they want from a service

- Basic (‘unspoken’) Contact in hours
- Performer Contact out of hours
- Delighter (‘unspoken’) Straight to Respiratory Ward
- Straight to Respiratory Ward, Management Plan
- Access ‘Listen To’ Right Medication @ Right Time

Frustrating—‘Having to explain to junior doctors when breathless, ‘history taking’
## Implementing the Solution

<table>
<thead>
<tr>
<th>Solution Idea</th>
<th>Linked to True North Goals</th>
<th>Ease</th>
<th>Impact</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Extramed to locate and identify, support referral to specialist Nurses, Expand the concept of ‘BART’ redefine Team</td>
<td>A,B,C,D</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Team widen current scope to see all ‘respiratory patients’</td>
<td>A, B,C,D</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Education of Staff Respiratory Specialist Nurses, to support expanding scope of patients being seen, Weekly – Monthly Structured training sessions. Support by Respiratory Consultants – Review staffs personal Development plans – new skills and knowledge</td>
<td>A,B,C,D</td>
<td>∆</td>
<td>0</td>
<td>0 / ∆</td>
</tr>
<tr>
<td>Implementation of Care Bundles, revise assessment tool, Oxygen Guidelines</td>
<td>A,C,D</td>
<td>∆</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Focus on both ends of patient journey early intervention and support for early discharge. Input more into non respiratory areas to help achieve rapid assessment and timely treatment Reduce time on Respiratory Wards – as specialist skills are present.</td>
<td>A,B,C,D</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Implement Base Cell, designed, using 6S, Visual Management, Standard Work, Flow</td>
<td>A,B,C,D</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Test out Concept in May as a Rapid Experiment – Detail plan to be agreed with all stakeholders, along with Communication Strategy, Face to face discussions with key areas such as Accident and Emergency Department</td>
<td>A,B,C,D</td>
<td>∆</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Key**

- **0**: Easy/High/Cheap
- **△**: Medium
- **X**: Hard/low/expensive
Visual Management

RNS Ward / Base Cell

How visits are organised

1 Piece Flow

Standard work

Agreed best way of working

Pre-6S Score
12.5%

Post Score
93 – 100%

Clear standard work, for pulling specialist skills/also pulling patients to the right ward

How are we doing at a glance?
Where are staff located

Pull

Visual Management
Confirmed state – Maintaining the benefits

**a** Improved Health AQ, Respiratory HSMR

Hospital Standardised Mortality Rate

- Mortality rates rebased in September

**b** Best Possible Care Time on Ward

- Baseline
- Sustainment

**c** Value for Money

- Improvements noted in New ways of working

**d** Joy and Pride Equitable Service

- Patients Seen by RNS (New ways of working)

**Actions if measure not on target:**

- All Targets met and superceded. All work to continue with the new ways of working
Financial and Quality Benefit

- The change in the service has had no increase in cost-it has been cost neutral.
- Time savings in relation to handover has been equated to £42,000
- Improved communication and reduction in duplication
- Staff have developed new skills, confidence has increased, prior to change, 71% of RNS were unsure if they had sufficient skills/knowledge to undertake the change in practice, after 90 days, and training plan implemented, 80% Agree, and 20% were still unsure.
- Nurse-led discharge has now increased to 75% of patients being discharged outside of respiratory wards

- RNS were also asked prior to implementation if they agreed the new way of working would benefit patients
- 14% maybe, 29% agreed, 57% strongly agreed.
- Post 90 day implementation – 100% Strongly Agree, Patients have benefited
- 34.5% increase in Home Visits, measured from Baseline July 09 to Jan. 10 Post change July 10 to Jan 11
- New coordinated way of visit mileage baseline data-for Aug to Oct 2010 post change Nov-Jan has demonstrated a 25% reduction in mileage = £368.88
Replicate

• The redesign of the Respiratory Nurse Specialist, and changes made could be done within any team. This model is now being adjusted for the Cardiac Specialist Nurses. The proven sequence of implementation were followed:

• Understanding Value from the customer’s point of view (voice of the customer)- This was done- as to what do patients want and also how will the change align to trust strategic vision (policy deployment)

• Understand the Value stream (Value Stream Mapping) and how value is delivered, deep understanding of the current process- and designing and agreeing the future state

• Flow, the redesign to improve the value adding steps in the process, process is becoming more reliable, as seen by mortality rates.

• Perfection this is about the Team owning the process and continuing to improve the process.
Summary

• Redesign of the Respiratory Nurse Specialists (RNS) started in April 2010 using Bolton Improving Care. The RNS practice was traditional in that it was disease based. This meant mainly patients with airway disease such as asthma and Chronic Obstructive Pulmonary Disease has RNS input, while patients with other respiratory condition, had little or no RNS input. Complimentary to previous improvements carried out on the inpatient ward, this improvement has strengthened the end to end process from admission to discharge.

• The redesign included the implementation of two cells, Mobile ward cell and the base cell inclusive of Hospital at home. Change included RNS covering the entire hospital, seeing patients early in their journey ensuring patients were receiving right treatment and where possible transferred to the Respiratory wards for specialist input. The RNS service is a 7 day service. Access to early intervention has led to timely treatment, continuity of care, facilitated early Nurse-led discharge, and support at home by RNS, hospital at home. The new practice has enhanced relationships not only between the RNS and Consultants in Respiratory Medicine, but also with staff throughout the hospital. The work has been thoroughly supported by the Respiratory Consultants, wider respiratory team, and multidisciplinary team.

• Benefits have been not only financial but has demonstrated increased safety and quality in care. This is noted in decreasing death rate being consistently under 100, which is showing reliability in the process. Saving Lives and delivering a quality service is priceless. Service delivery is more equitable. Staff confidence has grown along with their skills and knowledge.

• Continuous improvement is now within the RNS culture and the wider respiratory team.