‘THE WICKED PROBLEM’

Dr Emma Redfern
Overview

- Impact of crowding on ED safety
- How was the ED checklist designed?
- How was it implemented?
- Results at University Hospitals Bristol
- National incident reporting
- Local spread
- Results at other ED’s
- The challenges to implementation
- Top Tips
The headlines

NHS 'trolley waits': Five-fold increase in patients waiting more than four hours for bed

Mum's horror as man dies on trolley at Great Western Hospital

THIRD WORLD A&E

Three patients die at Worcestershire hospital amid NHS winter crisis

Worst NHS week in 15 years: Elderly patient dies after a 33hr wait on a trolley as besieged A&Es shut their doors 82 times leaving nurses in tears and now the Red Cross warns of a humanitarian crisis.

A&E staffing 'at crisis level' as hospitals continue to miss waitin times

Crisis: Call 999

We won't let you in

Pressure on emergency departments hits record levels
The WickED problem = crowding

- When the demand exceeds operational capacity
- Extra makeshift capacity
- Traditional nurse : patient ratios exceeded
- Workforce crisis- reliance on bank and agency
- High levels of clinical incidents including serious incidents
Contributors

- 4 hour target
- Increasing ED attendances – 21 million attendances in 2014
- Exit block
- Frail and elderly population
Clinical impact

• Clinically significant delay in
  • Diagnosis
  • Investigation
  • Treatment

• Particularly the case for patients with time critical conditions such as stroke, heart attack and sepsis
3 long winters of ‘its not our fault’
Gruesome ‘where's wally’
Emergency Department
Review of clinical incidents

- Omissions in basic care are common
- Human factors overwhelmed
- Agency/ward nurses-paramedics have not been told what we expect them to do
- (so unsurprisingly they don’t do it)
Safety checklist

• Time-based framework of task that maintains basic care and quality during periods of crowding
• Resilient to fluctuation in skill mix
Introduce safety checklist

• Design checklist with ED doctors/nurses
• Ask the patients what’s important
• Successful application for Health Foundation funding
• Many PDSA cycles
• Initially put everything in…. Then took most out
What does it comprise of?

- Focused on hourly themes
  
  Vital signs, NEWS, pain scoring

- Frontloading of investigations

- Promotion of care pathways

- Early identification of required referrals onto specialist teams
<table>
<thead>
<tr>
<th>Action</th>
<th>Note</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complete intake form</td>
<td></td>
<td></td>
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<tr>
<td>2. Verify patient’s ID</td>
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<tr>
<td>3. Obtain consent and medical history</td>
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<tr>
<td>4. Perform physical examination</td>
<td></td>
<td></td>
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<tr>
<td>5. Administer medications</td>
<td></td>
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<tr>
<td>6. Monitor patient’s vital signs</td>
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<tr>
<td>7. Document all findings</td>
<td></td>
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</tr>
</tbody>
</table>

**Emergency Department Safety Checklist**

**Date:**

**Time:**

**Other notes:**
How was it implemented?

- Checklist pilot trial
- Checklist roll out
- Reformation of ED Safety Checklist Team
- Collection of multi-sourced feedback
What problems did we face?

- Fluctuating enthusiasm from a large team
- Timing
- Correlation between checklist uptake and department acuity
- Varying attitudes from different staff groups
- Data collection
Some people don’t like change

Innovators (2.5%) are risk takers who have the resources and desire to try new things, even if they fail.

Early Adopters (13.5%) are selective about which technologies they start using. They are considered the “one to check in with” for new information and reduce others’ uncertainty about a new technology by adopting it.

Early Majority (34%) take their time before adopting a new idea. They are willing to embrace a new technology as long as they understand how it fits with their lives.

Late Majority (34%) adopt in reaction to peer pressure, emerging norms, or economic necessity. Most of the uncertainty around an idea must be resolved before they adopt.

Laggards (16%) are traditional and make decisions based on past experience. They are often economically unable to take risks on new ideas.

Bryce Ryan & Neal Gross (1943)
Challenges to implementation

• ‘Another piece of paper’ – less writing, incorporate into notes
• ‘I do all this already – prescriptive, insulting’ – baseline data review often reveals ‘significant gaps’ in basic care provision
• ‘I don’t have time to do this’ – ED checklist cuts down free text writing, more time with patient
• ‘tickbox exercise’ – completion allows demonstration of good basic care and any gaps easy to see
How did we maintain our results?

- Introduction of CQuin
- Staff group specific, multi source feedback
- Shop floor champions
- Senior support
- SWAS involvement
- Continued indicator audit
- Shift from monthly to daily uptake auditing
No incidents of failure to recognise deterioration
Statistically significant – at UHB

<table>
<thead>
<tr>
<th>Metric</th>
<th>Mean proportion before</th>
<th>Mean proportion after</th>
<th>Mean difference (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain – score and appropriate triage category</td>
<td>84.23%</td>
<td>90.45%</td>
<td>6.22% (4.00%, 8.44%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Pain – analgesia within time limits</td>
<td>74.72%</td>
<td>83.57%</td>
<td>8.85% (6.11%, 11.58%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Chest Pain – ECG in 10 minutes of arrival</td>
<td>81.88%</td>
<td>87.64%</td>
<td>5.76% (3.33%, 8.19%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Stroke – Hourly observations</td>
<td>89.15%</td>
<td>97.33%</td>
<td>8.18% (6.66%, 9.70%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Stroke – Pathway completed</td>
<td>85.92%</td>
<td>97.36%</td>
<td>11.44% (9.81%, 13.07%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Stroke – CT in 1 hour</td>
<td>94.08%</td>
<td>99.21%</td>
<td>5.13% (4.09%, 6.17%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Fractured neck of femur (NOF) – X-ray within 30 minutes</td>
<td>93.50%</td>
<td>96.17%</td>
<td>2.67% (1.44%, 3.90%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Fractured neck of femur (NOF) – Pathway completed</td>
<td>92.45%</td>
<td>97.47%</td>
<td>5.02% (3.65%, 6.39%)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Sepsis – Pathway completed</td>
<td>93.00%</td>
<td>95.06%</td>
<td>2.06% (0.65%, 3.46%)</td>
<td>0.018</td>
</tr>
<tr>
<td>Mental health risk – Risk Assessment Matrix (RAM) completion</td>
<td>96.92%</td>
<td>99.64%</td>
<td>2.72% (0.95%, 3.60%)</td>
<td>0.130</td>
</tr>
<tr>
<td>Early Warning Score (EWS) – Hourly observations including EWS</td>
<td>50.69%</td>
<td>82.11%</td>
<td>25.2% (22.2%, 28.1%)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>
Is this an isolated problem?

- 23,000 clinical incidents reported in ED every 6 months
- 2015-18% of deaths mention crowding as a contributory factor
- 2016 - 34% of deaths mention crowding as contributory factor
83 year old lady, arrived 00:26, abdo pain and vomiting
Nursed in corridor as very busy
NEWS 3, obs recorded every 1-2 hours but not calculated correctly
At 07:15 BP 166 / 92, resp rate 23, sPO2 95% in air, pulse 85 and alert
NEWS recorded as 3 but this is incomplete
At **08:35** patient deteriorated BP 74 / 52 temp 34.3 resp rate 24 pulse 53, sPO2 95%, only responsive to pain. NEWS 12, lactate 12.7 suspected bowel perforation secondary to obstruction

- Discussed with senior Dr

- resus for iV fluids, antibiotics and then CT

- DNACPR order to be discussed with relatives
- Patient died before imaging was possible
• ‘Grading is difficult - as the ED situation stands this is extremely likely to recur. However, as we have had another near miss this morning I feel that the current situation merits a high level of likelihood on the grading matrix’
Adoption and spread

- Local CQUIN to embed post Health foundation
- West of England Academic Health Science Network agreed to support funding for roll out of checklist in 6 local EDs
- National roll out
As the only bodies that connect NHS and academic organisations, the third sector and industry, we are catalysts that create the right conditions to facilitate change across whole health and social care economies, with a clear focus on improving outcomes for citizens.
<table>
<thead>
<tr>
<th>PHYSIOLOGICAL PARAMETERS</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiration Rate</td>
<td>≤8</td>
<td>9 - 11</td>
<td>12 - 20</td>
<td>21 - 24</td>
<td>≥25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxygen Satuations</td>
<td>≤91</td>
<td>92 - 93</td>
<td>94 - 95</td>
<td>≥96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any Supplemental Oxygen</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>≤35.0</td>
<td>35.1 - 36.0</td>
<td>36.1 - 38.0</td>
<td>38.1 - 39.0</td>
<td>≥39.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systolic BP</td>
<td>≤90</td>
<td>91 - 100</td>
<td>101 - 110</td>
<td>111 - 219</td>
<td>≥220</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Rate</td>
<td>≤40</td>
<td>41 - 50</td>
<td>51 - 90</td>
<td>91 - 110</td>
<td>111 - 130</td>
<td>≥131</td>
<td></td>
</tr>
<tr>
<td>Level of Consciousness</td>
<td>A</td>
<td>V, P, or U</td>
<td></td>
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</table>

*The NEWS calculation sheet is based on the Royal College of Physicians National Early Warning Score (NEWS), which was developed and endorsed by the Royal College of Physicians, Royal College of Nursing, National Clinical Forum and NHS England.*
Checklists are like toothbrushes, everyone wants one, but no one wants anyone elses......
# Emergency Department Safety Checklist 1-4 Hours

**Great Western NHS Hospitals**

**NHS Foundation Trust**

**Date**  
**Time booked in at reception**

<table>
<thead>
<tr>
<th>Action</th>
<th>Time</th>
<th>U1</th>
<th>U2</th>
<th>U3</th>
<th>NA</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>Initial Assessment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Name of Staff</td>
</tr>
<tr>
<td>Full blood count &amp; NERD recorded (at least 24 hours)</td>
<td></td>
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<td></td>
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<td>Name of Staff</td>
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<tr>
<td>Blood glucose over 6 mmol/L</td>
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<td></td>
<td>Name of Staff</td>
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<tr>
<td>Oxygen saturation at 90%</td>
<td></td>
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<td>Name of Staff</td>
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<tr>
<td>Body temperature recorded</td>
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<td>Name of Staff</td>
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<tr>
<td>Pain score assessed &amp; documented</td>
<td></td>
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<td></td>
<td></td>
<td>Name of Staff</td>
</tr>
<tr>
<td>Patient's next of kin recorded</td>
<td></td>
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<td></td>
<td>Name of Staff</td>
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<tr>
<td>History of allergies recorded</td>
<td></td>
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<td></td>
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<td>Name of Staff</td>
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</tr>
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</table>

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**Weston Area Health NHS Trust**

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NEWS on admission to ED

**NEWScore on admission to ED**

![Graph showing NEWS score trends over time across different hospitals and regions.](image)

- **Great Western Hospitals**
- **Cheltenham**
- **Weston**
- **NBT**
- **UHB**
- **Gloucestershire**
- **Average**
- **Red (49%)**
- **Green (80%)**
Pain score at triage

![Painscore at Triage](image-url)
Evaluation

- National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care West (NIHR CLAHRC West)
  - Quantitative evaluation of KPI’s and outcome data
  - Qualitative evaluation – ethnographic study of two participating sites
  - To be published 2018
Top tips

• Able to demonstrate easily the reliable provision of good basic care
• Make the ED checklist bespoke to local needs – review incidents and complaints
• Engagement of lead shop floor nurses
• If possible incorporate early into main ‘body’ of notes
• Real time audit and feedback
• Collaborative approach if possible (ask the AHSN)
• Easy process to explain to agency staff/ nurses from other wards