Transforming Healthcare Communications
OUR MISSION
To transform healthcare communication, making the lives of the entire team and patients better.
1921
Detroit Police Department used first pager like system

1949
Pager patented

1950
First time pager used in a hospital (New York City)

1952
Pager adopted widely in NHS

1992
First smartphone - computer in pocket

2011
WhatsApp first used in NHS

2014
75% clinicians admit using WhatsApp

2017
Use widespread, 90% estimated
I spend 2.5 hours of my 11.5 hour shift trying to get in touch with the right person, paging, through switchboard or even physically finding them

Nurse, West Suffolk Hospital
Outdated & Workaround Communication Methods

Secure, Reliable, Auditable, Informed Communication
Ward Nurse Contacting Junior Doctor to Discharge Patient

**Current State**

- **27 steps**
- **5 wait periods**

**Medic Bleep Future State**

- **13 steps**
- **1 wait period**

**Start 9-10am**

- Mr JK (patient) is in F3 ward, Bed 3
- Morning Board Round decision: JK to go home

**After Morning Board Round**

- Nurse starts to review her patients for discharge

**Pharmacist sends a message to query the Doctor**

**Nurse waits for a response by phone at workstation**

**Nurse continues her workflow: she continues review of other patients**

**Doctor bleeps the Ward Doctor**

**Care Coordinator gets involved**

**No response 30 mins later; Nurse bleeps Doctor again**

**Doctor is bleeped again**

**Doctor is contacted by Bed Manager: a bed is urgently needed**

**Nurse bleeps Pharmacist to chase TTO**

**Pharmacist bleeps ward Doctor**

**Nurse sends a message to Pharmacist explaining the urgency**

**Dispensing Pharmacist reviews TTO & realises the Doctor has made an medication error**

**TTOs ready. Pharmacist notifies Porter who collects medication & brings it to F3 ward.**

**Patient is given medication & discharged from F3 ward. Bed is available.**

**Finish 3-4pm**

**Start 1-2pm**

- Patient is given medication & discharged from F3 ward. Bed is available.

**TTOs sent to Pharmacy via E-Care system for dispensing**

**Dispensing Pharmacist is notified of the change as E-Care is a real-time digital system**

**Doctor understands problem and corrects the prescription on E-Care**

**Doctor replies to Pharmacist bleep 20 mins later (as with patient)**

**Dispensing Pharmacist reviews TTO & realises the Doctor has made a medication error**

**Pharmacist is notified of the change as E-Care is a real-time digital system**

**TTOs ready. Pharmacist notifies Porter who collects medication & brings it to F3 ward.**

**Patient is given medication & discharged from F3 ward. Bed is available.**

**Finish 1-2pm**

**Start 9-10am**

- Mr JK (patient) is in F3 ward, Bed 3
- Morning Board Round decision: JK to go home

**Pharmacist sends a message to query the Doctor**

**Nurse sends a message on Med bleep**

**Nurse waits for a response by phone at workstation**

**Nurse continues her workflow as message has been read**

**Nurse bleeps Pharmacist to chase TTO**

**Pharmacist bleeps ward Doctor**

**Doctor bleeps the Ward Doctor**

**Care Coordinator gets involved**

**No response 30 mins later; Nurse bleeps Doctor again**

**Doctor is bleeped again**

**Doctor is contacted by Bed Manager: a bed is urgently needed**

**TTO is sent to Pharmacy via E-Care system for dispensing**

**Dispensing Pharmacist reviews TTO & realises the Doctor has made an medication error**

**No response 30 mins later: Nurse bleeps Doctor again**

**Doctor sends message to Nurse to inform the TTO and discharge letter are done**

**Nurse sends message to Doctor explaining the urgency**

**Dispensing Pharmacist reviews TTO & realises the Doctor has made a mediation error**

**TTOs ready. Pharmacist notifies Porter who collects medication & brings it to F3 ward.**

**Patient is given medication & discharged from F3 ward. Bed is available.**

**Finish 3-4pm**
Pilot Programme Feedback Video

https://vimeo.com/241887670/password

Password: modemedia
Nurse and Doctor Medic Bleep Time Savings

Methodology:
1. Conduct a Welch Two Sample t-test on distributions.
2. Reduction in task mean duration statistically significant ($p < 0.05$) for TTO & Patient Review categories.
3. To quantify time saving: 75% confidence interval of difference in distribution mean and conservatively took lowest value.

Midwifery and Pharmacy:
Not enough data was collected to be statistically significant.

Nurse

**Nurse Time Savings:**
1. 10 minutes per TTO
2. 11 minutes per Patient Review
3. Drug round time saving is not statistically significant

**Daily time saving per nurse, per shift:**
- 21 minutes (95%), 56 minutes (75%)

Doctor

**Doctor Time Savings:**
1. 6 minutes per Patient Review (8 reviews a day)
2. Clinical Documentation time saving is not statistically significant

**Daily time saving per doctor, per shift:**
- 48 minutes (95%), 80 minutes (75%)
How likely are you to recommend Medic Bleep to a colleague or friend?
Scale: 1 (not likely) - 10 (extremely likely)

Average Score 8.7
Impact of using Medic Bleep

**Patients**
- I can escalate care earlier
- I can see more patients
- I have more time with patients

**Service**
- Less distraction in workflow
- TTOs are completed more quickly

**Staff**
- I can prioritise work better
- It is helpful to have communication in a written form
- I spend less time waiting by a phone

**Patients**
- I can prioritise work better
- It is helpful to have communication in a written form
- I spend less time waiting by a phone

**Service**
- Less distraction in workflow
- TTOs are completed more quickly

**Staff**
- I can prioritise work better
- It is helpful to have communication in a written form
- I spend less time waiting by a phone
Impact of using Medic Bleep

Video Testimonials

https://vimeo.com/241913334/password

Password: modemedia
Impact of Medic Bleep on Nursing Time

Free up nursing capacity by **2,536 12 hour shifts per annum**

<table>
<thead>
<tr>
<th>Annual events</th>
<th>Hours spent</th>
<th>Equivalent Nurse shifts / 12hr shift</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pager messages sent /day: 2000</td>
<td>730,000</td>
<td>608</td>
</tr>
<tr>
<td>40 seconds to start dialling and receive response</td>
<td>7,300</td>
<td></td>
</tr>
<tr>
<td>Invalid pager messages: 10-13%</td>
<td>73,000</td>
<td>101</td>
</tr>
<tr>
<td>60 seconds to send and realise incorrect number and resend to correct number / go to switchboard</td>
<td>1,008</td>
<td></td>
</tr>
<tr>
<td>Internal calls (ward &amp; switchboard) unanswered: 32% of 840,000</td>
<td>268,800</td>
<td></td>
</tr>
<tr>
<td>21 seconds on average to answer calls</td>
<td>1,583</td>
<td></td>
</tr>
<tr>
<td>Internal calls to find correct number / pager: 23% of 1,800,000</td>
<td>414,000</td>
<td></td>
</tr>
<tr>
<td>21 seconds to answer calls (switchboard)</td>
<td>3,567</td>
<td></td>
</tr>
<tr>
<td>40 seconds to search on WOW</td>
<td>298</td>
<td></td>
</tr>
</tbody>
</table>

Efficiencies enabled by Medic Bleep time saving equivalent: **1398 shifts**

<table>
<thead>
<tr>
<th>Time spent paging equivalent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>608 shifts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time spent sending invalid pager messages equivalent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>101 shifts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time spent on unanswered calls equivalent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>298 shifts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time spent on finding correct number / pager equivalent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>298 shifts</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Minutes saved / 12hr shift</th>
<th>Hours wasted / nurse per year 47 weeks working</th>
<th>No. Nursing &amp; Midwifery staff</th>
<th>Hours wasted / year total</th>
<th>Equivalent Nurse shifts / 12hr shift</th>
</tr>
</thead>
<tbody>
<tr>
<td>95% Confidence Interval</td>
<td>21</td>
<td>49</td>
<td>941</td>
<td>30,432 assuming 33% supernumerary</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,536 taking assumptions into account</td>
</tr>
</tbody>
</table>

- Pager messages sent /day: 2000
- Invalid pager messages: 10-13%
- Internal calls (ward & switchboard) unanswered: 32% of 840,000
- Internal calls to find correct number / pager: 23% of 1,800,000
- Minutes saved / 12hr shift: 21
- Hours wasted / nurse per year 47 weeks working: 49
- No. Nursing & Midwifery staff: 941
- Hours wasted / year total: 30,432 assuming 33% supernumerary
- Equivalent Nurse shifts / 12hr shift: 2,536 taking assumptions into account
Impact of Medic Bleep on Doctors Time

Free up F1 and SHO Doctor capacity by **2,543** 8 hour shifts per annum

<table>
<thead>
<tr>
<th></th>
<th>Minutes saved / 8hr shift</th>
<th>Hours wasted / Doctor per year 47 weeks working</th>
<th>No. Nursing &amp; Midwifery staff</th>
<th>Hours wasted / year total</th>
<th>Equivalent Doctor shifts / 8hr shift</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>95% Confidence Interval</strong></td>
<td>48</td>
<td>113</td>
<td>180 F1 &amp; SHO (assumed)</td>
<td>20,340</td>
<td>2,543</td>
</tr>
<tr>
<td><strong>75% Confidence Interval</strong></td>
<td>80</td>
<td>188</td>
<td>180 F1 &amp; SHO (assumed)</td>
<td>33,840</td>
<td>4,230</td>
</tr>
</tbody>
</table>
Conceptual Model of the Outcomes of Communication in Hospitals

Hospital Communication Quality

Efficiency of Resource Utilisation
- Doctor Time
- Nurse Time

Effectiveness of Core Operations
- Length of Stay
- Medical Errors

Quality of Work Life
- Stress

Service Quality
- Job Satisfaction
- Patient Experience
Financial Savings

For a typical 400 bed District General Hospital

2% operational efficiency in length of stay

£ 4,500,000 to £ 9,000,000 annual saving
Sir David Behan CBE
CEO CQC

“In CQC we are very clear that innovation through technology has an important role to play in improving the quality and safety of care. Thank you for undertaking to keep us briefed of your progress.”

Dr. Keith McNeil
Former CCIO NHS England

“I wish I had thought of this.”
Secure communication

NHS Information Governance Compliant
- NHS IG Toolkit compliant
- Information Commissioner’s Office accredited
- ISO 27001 accredited

Verified Healthcare Professionals
- Automated authorisation of healthcare professionals with GMC, NMC, GDC and GPC registrations.

Admin, Management and Wider Team Use
- Authorisation of allied healthcare professionals, management and administration users with NHS email addresses.
<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Text and Audio Messaging</strong></td>
<td>Industry standard end-to-end encryption of text and audio messages.</td>
</tr>
<tr>
<td><strong>Audio Calls</strong></td>
<td>Initiate calls from a message thread or user profile.</td>
</tr>
<tr>
<td><strong>Secure Attachments</strong></td>
<td>Send photos, pdfs and other common file types.</td>
</tr>
</tbody>
</table>
Team communication

**Group Messaging**
Multi-disciplinary team communication and decision making

**Patient Information Tab**
Real-time clinical patient information shared securely
Trust Directory
Availability Status
On Call Setting

• Instant contact with colleagues – no more waiting around for ‘bleeps’ to be answered, calling switchboard, phone ping-pong
Multiple Platforms

- Android
- iOS
- Desktop
Notifications

• Secure alerts for sent messages and missed calls
Delivery Confirmation

- Know when a message has been read and received

Audit Trail

- Document communications for legal purposes and future reference

Dr Wills, I was wondering if you could take a look at this X-ray for me please.

Anil could you please take bloods on him?

15:06

Read: Sandeep Bansal, Yat Li, Anil Agarwal
Further Features

Screenshot Protection / Audit

Photo and Document Protection

GEO Fencing

Search by role, email, name
Trends & Reporting

• Track usage trends e.g. professionals with the heaviest workloads
• Identify which patients need most care

Admin Control Panel

• Easily add or remove users and locums from your Trust
Broadcast Messaging and Disaster Management