AfPP
The Association for Perioperative Practice

50 years of leading Perioperative Excellence

June 2014
AfPP York Residential

Looking back...  
...moving forward

August 2014
About AfPP

AfPP was founded in 1964 as the National Association of Theatre Nurses (NATN) by Daisy Ayris - a passionate ambassador for excellence in patient care, she saw the merit of bringing together like minded clinicians to collectively improve patient care and received an MBE in recognition of her work.

AfPP continues her legacy by supporting members to be the best at what they do.
Our Vision and Mission for the Future:

Our Vision is:
“To Lead Perioperative Excellence”

Our Mission is:
“To improve patient care through constantly developing the leading standards for perioperative practice and practitioners”
Professor Judith Tanner

Daisy Ayris Lecture
sponsored by Ethicon

50 years of infection prevention in the OR

Chair of Clinical Nursing Research, De Montfort University
Patients experience of SSI

• 3 Hospitals in the East Midlands

• Interviews with patients with SSI following cardiothoracic, orthopaedic, colorectal or C. Section
Participants

17 participants

• 4 orthopaedic, 3 cardiac, 2 C section, 8 colorectal

• 1 superficial, 16 deep/organ space

• 9 retired, 2 maternity leave, 6 in work
Patients’ awareness of SSIs

9/17 patients did not know they had an SSI
Patients’ awareness of SSIs

9/17 patients did not know they had an SSI

“I didn’t realise I had an infection. When I got your letter to take part [in the study], I thought where is the infection. There may have been one but [the hospital] didn’t tell me about it.” Participant 10
Staff downplayed existence of SSIs

“When the nurse told me about the infection, she said it’s nothing to worry about, it’s not MRSA.” Participant 14
Causes of SSIs
Causes of SSIs

- Sleeping on my back
Causes of SSIs

- Sleeping on my back
- Not wearing maternity pants
Causes of SSIs

- Sleeping on my back
- Not wearing maternity pants
- Not keeping my wound clean (*deep SSI*)
Causes of SSIs

- Sleeping on my back
- Not wearing maternity pants
- Not keeping my wound clean (deep SSI)
- Unlucky
- Must be just me
- 1 participant - germs in the OR
Patients’ experience

“I can’t cope, I can’t cope. I just can’t do this.”

Participant 5
Patients’ experience

“I can’t cope, I can’t cope. I just can’t do this.”
Participant 5

“There was a stage when I just wanted to die.”
Participant 13
Patients’ experience

“I can’t cope, I can’t cope. I just can’t do this.”                  Participant 5

“There was a stage when I just wanted to die.”                  Participant 13

“I was in utter despair.”                                        Participant 1
Lack of support post discharge

“It’s frightening when you come home and there is nobody.” Participant 13

“You don’t know who to ring. I didn’t know what to do.” Participant 5
Financial cost to the patient

“My husband had to get a second job or we wouldn’t have been able to pay the mortgage”

Participant 5
Conclusion

SSIs do not have a high profile
‘.... a lack of decent data.’

Public Accounts Committee 2009
## National SSI Surveillance Programme SSI rates (%)

<table>
<thead>
<tr>
<th>Category</th>
<th>2008 – 2013 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysterectomy</td>
<td>1.5</td>
</tr>
<tr>
<td>Hip</td>
<td>0.7</td>
</tr>
<tr>
<td>CABG</td>
<td>4.4</td>
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<td>Vascular</td>
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<tr>
<td>Small bowel</td>
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</tr>
<tr>
<td>Large bowel</td>
<td>10.6</td>
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</table>
Colorectal SSI rates published studies

- National SSI Surveillance HPA 2008-2013 10.6%
- Tanner - JHI 2009 27%
- Petrosillo - BMC Infect Diseases 2008 19%
- Wick - Dis Colon Rectum 2008 20%
- Dariouche - NEJM 2010 22%
- Smith - Ann Surg 2004 26%
Aim

To audit SSI definitions and data collection methods used by hospital trusts in England
Method

• National survey 2012
• Postal plus online option
• Named contact at all 156 Trusts in England
• Reminder after 2 weeks
• Prize draw £25 Amazon vouchers x10
Responses

- 106/156 Trusts responded
## Variations in follow up

<table>
<thead>
<tr>
<th>Follow up</th>
<th>No. of Trusts</th>
</tr>
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<tbody>
<tr>
<td>In-patient data only</td>
<td>10/106</td>
</tr>
<tr>
<td>In-patient and readmission only</td>
<td>23/106</td>
</tr>
<tr>
<td>In-patient, readmission and post discharge</td>
<td>67/106</td>
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</table>
# Reporting SSI data

<table>
<thead>
<tr>
<th>TF</th>
<th>Mandatory procedures (85 hospitals)</th>
<th>Non mandatory procedures (52 hospitals)</th>
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<tbody>
<tr>
<td>In patient only data</td>
<td>8.2%</td>
<td></td>
</tr>
<tr>
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<td>26%</td>
<td></td>
</tr>
<tr>
<td>In patient, readmission and post discharge data</td>
<td>66%</td>
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### Reporting SSI data

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<td>1.9%</td>
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<tr>
<td>In patient and readmission data only</td>
<td>26%</td>
<td>15%</td>
</tr>
<tr>
<td>In patient, readmission and post discharge data</td>
<td>66%</td>
<td>83%</td>
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</tbody>
</table>
Variations in PDS

Out patient clinic 10
Patient questionnaire only 17
Phone call only 16
Questionnaire + call 15
Call + PCT info 8
Questionnaire + PCT info 7
Patient questionnaire response rates

- 10% - 5 hospitals
- 20% - 3 hospitals
- 30% - 1 hospital
- 40% - 3 hospitals
- 50% - 7 hospitals
- 60% - 6 hospitals
- 70% - 7 hospitals
- 80% - 5 hospitals
- 90% - 3 hospitals
- 100% - 1 hospital
Variations in definitions

10% - did not use HPA SSI definition
10% - did not report superficial infection
30 Trusts did not send all data to HPA
30 Trusts did not send all data to HPA

- Did not send post discharge data
- Only sent mandatory data
- Sent only 3 months data from continuous data
High quality post discharge surveillance SSI rates

HPA Knee SSI rate 2010/2011 - 0.6%
# High quality post discharge surveillance

## SSI rates

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<td>Knee 2010</td>
<td>3.4% (6 trusts)</td>
</tr>
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<td>Knee 2011</td>
<td>3.5% (13 trusts)</td>
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HPA Knee SSI rate 2010/2011 - 0.6%
## National SSI Surveillance Programme SSI rates (%)

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Conclusion

SSIs are massively underestimated
Care bundle to prevent SSI

- Stop smoking
- Nutritional supplements
- Normothermia
- Antibiotic prophylaxis
- Pre-op body washing
- Surveillance feedback
- Glucose control
- Good nutrition
- Hair removal
- Skin prep solution
- Screening and decolonisation
Risk factors for SSI patient factors

Diabetes
Smoking
Poor nutrition
Alcoholism
Chronic renal failure
Jaundice
Poor physical condition
Previous radiotherapy or chemotherapy
Risk factors for SSI surgical

Surgical classification
Skin preparation
Site, duration and complexity of surgery
Presence of suture or foreign body
Suturing quality
Pre-existing local or systemic infection
Prophylactic antibiotics
Haematoma
Mechanical stress on wound
Risk factors for SSI anaesthesia

Tissue perfusion
Hypovolaemia
Hypothermia
Concentration of inspired oxygen
Pain
Blood transfusion

SSI reduction

Care Bundle

SSI 16% reduced to 9%

SSI 14% reduced to 5%

Geubels et al. Reduced risk of surgical site infection through surveillance in a network. International Journal for Quality in Health Care 2006 18 2 127-133
SSI 4.3% reduced to 1.8%
Care Bundle - UHL

- Large bowel surgery
- 6 months (plus follow up)
- DH High Impact Interventions
- Commercial support
- Project nurse
High Impact Interventions

- MRSA screening and decontamination
- Pre-operative washing
- Appropriate hair removal
- Surgical skin preparation
- Antimicrobial prophylaxis
- Normothermia
- Impregnated incise drapes
- Supplemental oxygen
- Glucose control
Findings

Complete data sets - colorectal 166 patients
SSIs pre and post

<table>
<thead>
<tr>
<th></th>
<th>Baseline (127)</th>
<th>Cohort (166)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No SSIs</td>
<td>76%</td>
<td>72%</td>
</tr>
<tr>
<td>Superficial SSIs</td>
<td>9%</td>
<td>17%</td>
</tr>
<tr>
<td>Deep SSIs</td>
<td>15%</td>
<td>11%</td>
</tr>
<tr>
<td>Total SSIs</td>
<td>24%</td>
<td>28%</td>
</tr>
</tbody>
</table>
## Compliance with Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Baseline</th>
<th>Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRSA screening and decontamination</td>
<td>88%</td>
<td>89%</td>
</tr>
<tr>
<td>Pre-op wash</td>
<td>63%</td>
<td>63%</td>
</tr>
<tr>
<td>Approp. hair removal</td>
<td>Not recorded</td>
<td>100%</td>
</tr>
<tr>
<td>Approp. antibiotic prophylaxis</td>
<td>75%</td>
<td>73%</td>
</tr>
<tr>
<td>Skin prep 2% CHG</td>
<td>Not used</td>
<td>63%</td>
</tr>
<tr>
<td>Normothermia</td>
<td>23%</td>
<td>35%</td>
</tr>
<tr>
<td>Iodine incise drapes</td>
<td>Not recorded</td>
<td>100%</td>
</tr>
<tr>
<td>Supplemental oxygen</td>
<td>Not recorded</td>
<td>100%</td>
</tr>
<tr>
<td>Glucose for diabetics</td>
<td>98%</td>
<td>95%</td>
</tr>
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</table>
## Colorectal patients

<table>
<thead>
<tr>
<th>Number of bundle interventions</th>
<th>No. of Pts (166)</th>
<th>Overall SSI (46)</th>
<th>Sup. SSI (28)</th>
<th>Deep SSI (18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0 (0%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>0 (0%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>1 (2%)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>25</td>
<td>1 (2%)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>46</td>
<td>14 (30%)</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>52</td>
<td>18 (39%)</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>9</td>
<td>32</td>
<td>12 (26%)</td>
<td>5</td>
<td>7</td>
</tr>
</tbody>
</table>
Care bundles to reduce SSIs
Conclusion

Compliance with interventions to reduce SSI is poor
“The antibiotic apocalypse”
Treatment ➔ Prevention
Are we ready?
More research needed (NICE guidelines 2008, 2013)

Risk factors
- Nasal decontamination
- Disposable drapes gowns
- Supplemental O2
- Periop blood glucose
- Wound irrigation
- Mechanical bowel prep

Skin prep
- Gloving
- Wound closure
- Wound dressings