Best Care...Always! Campaign

Global Forum on Bacterial Infection

*New Delhi ; October 4, 2011*

Dr Gary Kantor
A loose coalition of stakeholders can initiate / sustain system strengthening for patient safety.

The process began with antibiotic stewardship, and was driven by a private funder, hospitals and professionals.

We are exploring new ways of **building will**, generating and sharing **ideas** and filling the **execution** gap

….changing the system.
Global Epidemic of Harm in Hospitals

Adverse events in 9 – 18% of admissions

~ 50% preventable

2.5 – 7.5% are fatal

NEJM Nov 25, 2010

Qual Safety in Health Care 2008;17:216-223
Preventable Harm: 1 in 3 Hospital Patients

n=795
3 hospitals

#1. procedures
#2. medications
#3. infection

<table>
<thead>
<tr>
<th>Severity of adverse event</th>
<th>IHI Global Trigger Tool</th>
<th>AHRQ Patient Safety Indicators</th>
<th>Hospital voluntary reporting system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temporary harm, required intervention</td>
<td>204</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Temporary harm, required prolonged hospitalization</td>
<td>124</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Permanent patient harm</td>
<td>8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Required life-saving intervention</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Patient death</td>
<td>4</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>354</td>
<td>35</td>
<td>4</td>
</tr>
</tbody>
</table>

Voluntary reports are 1% of events

Health Affairs, 30, no.4 (2011): 581-589
Hospital-Acquired Infection

• World
  – 1.4 million patients affected / day

• Developed countries
  – Hospital incidence up to 10%
  – USA: 100,000 deaths

• Developing countries
  – 3 x higher
  – S Africa 9.7% prevalence; 28.6% ICU

A Duse. SA-HISC study (unpublished)
Allegranzi B; Lancet 2010:61458

JAMA 2009;301(12):1285-1287
Lancet 2008;372(9651):1719-1720
The table shows the rates of catheter-related bloodstream infections (CLABSI) from baseline to 18 months of follow-up. The median rate of infection was ZERO!!

CLABSI rates ↓ by 66%
Better than 90% of US ICUs
1,500 lives and $$$ saved
Sustained > 3 years

Pronovost P. NEJM Dec 2006
### Ventilator-associated pneumonia prevention

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Level of Evidence</th>
<th>Impact on Patient Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilator-associated pneumonia</td>
<td>II-2</td>
<td>30% increase in mortality</td>
</tr>
<tr>
<td>45° bed tilting</td>
<td>I</td>
<td>70% reduction in ventilator-associated pneumonia</td>
</tr>
<tr>
<td>H2 blockers or PPIs</td>
<td>I</td>
<td>50% reduction in upper gastrointestinal bleed</td>
</tr>
<tr>
<td>DVT prophylaxis</td>
<td>I</td>
<td>50% reduction in DVT</td>
</tr>
<tr>
<td>Sedation vacation</td>
<td>I</td>
<td>2-day reduction in mechanical ventilation</td>
</tr>
</tbody>
</table>

### Core measure/safety goal

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Level of Evidence</th>
<th>Impact on Patient Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLABSI Bundle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**EVIDENCE**

- Daily goals sheet
- Unit-based safety program

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**Checklists**

- maximal barrier precautions
- chlorhexidine skin antisepsis
- optimal catheter site selection
- daily review of line necessity

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**CLABSI Bundle**

- Pronovost P. NEJM Dec 2006

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**References**

- Pronovost P. NEJM Dec 2006

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CAUTI

+ Antibiotic Stewardship

CLABSI

SSI

VAP
from evidence-based medicine to Evidence-based IMPLEMENTATION

Subject Matter Knowledge

“what”

“where”

“how”

Improvement Science

Effective changes that lead to an improvement
202 Hospitals enrolled

at least 1 intervention
“The Method for Improvement”
= the Scientific Method

Not protocols
Not “recipes”
AIMS

Decrease CLABSI to 0 or 300 patient days between by June 2010

1° DRIVERS

Reliable identification of a CLABSI

Reliable implementation of the insertion bundle

Reliable implementation of the maintenance bundle

Improve safety culture through multidisciplinary team working and communication

2° DRIVERS

Reliable Definition – CLABSI

Reliable data collection process – infections & device days

Insertion bundle (HII)

Line insertion documented in notes

Reliable data collection

Maintenance bundle (HII)

Reliable data collection

Clinical leadership rounding to view lines

Bundles known by staff

HAI surveillance data and bundle compliance shared with staff

95% compliance with insertion bundle and each element of bundle

95% compliance with maintenance bundle and each element of bundle
30% reduction in antibiotic overuse

Optimal antibiotic use in 80% of patients

Stable / decreased antibiotic resistance

AIMS

$1^0$ DRIVERS

Prescriber access to knowledge and data

Periodic review for cessation, route, reason for treatment

Prompt initiation, for defined reasons

CHANGE CONCEPTS

↑ availability of first dose

Separate AB prescribing from other Rx

Day 3 and Day 7 review

Info on how to Rx

Info on what it costs

INTERVENTIONS

Antibiotic ward stock

Antibiotic form

AB Bundles

Clinical pharmacist review

Path lab hotline

Resistance reports

Cost reports

SSI bundle

CAUTI bundle

CLABSI bundle

VAP bundle

*Interventions already associated with the BCA campaign

Prevention of hospital-acquired infection

*Prevent SSI, CLABSI, VAP and CAUTI

≥ prevention of hospital-acquired infection

Always!
<table>
<thead>
<tr>
<th>OUTCOME MEASURE</th>
<th>1(^{0}) PROCESS MEASURE</th>
<th>2(^{0}) PROCESS MEASURE</th>
</tr>
</thead>
</table>
| % with compliance to all bundles ("optimal use")  | % receiving timely antibiotics for prevention or treatment – first antibiotic prescribed during hospital course | % compliance with each Inception bundle element:  
1. <2 hrs from order → admin (treatment)  
2. Prophylaxis within 1 hr of incision   |
|                                                     | % overall compliance with Day 3 Bundle for the first antibiotic prescribed during hospital course | % compliance with each Maintenance bundle element:  
1. Treatment not prophylaxis  
2. State antibiotic indication or stop  
3. Culture(s) ordered or done  
4. Reassess drug choice |
|                                                     | % overall compliance with Day 7 Bundle for the first antibiotic prescribed during hospital course | % compliance with each Maintenance bundle element:  
1. Stopped or re-ordered  
2. Conversion from IV to oral or N/A |
IDEAS

Expert and Planning Group formed

Learning session 1

Repeated improvement cycles:

Learning session 2

Repeated improvement cycles:

Learning session 3

18 -24 months

Mentoring and support
CLABSI - Infection Rates Per 1000 Central Line Days
Life Healthcare Group - Oct 2008 to Sept 2010

- Reporting system and training on BCA in all acute hospitals
- Cross functional workshops in ICU's to implement bundle compliance actions and increase involvement of Unit Managers

n=41 hospitals
Central Line Associated Blood Stream Infections - CLABSI

**Central Line Associated Blood Stream Infections - Bundle Compliance and Infection Rate**

Mar 09 - Aug 10

**n=41 hospitals**
If hair is removed, it is only done with clippers or dipilatory cream.

Antibiotics are given within an hour of incision.

Glucose is maintained above 4 and below 8 after the initial post operative assessment in ICU.

The patient's temperature is maintained at >36.5 and <37.2 after the initial post operative assessment in ICU.
# Central Line Associated Bloodstream Infections

**Neurosurgery ICU - Steve Biko Academic Hospital - Pretoria**

## Month: April - July 2010

<table>
<thead>
<tr>
<th>Date of Infections</th>
<th>Days Between Infections</th>
<th>Data Element</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Apr</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>14-Apr</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15-Apr</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>26-Apr</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>26-Apr</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>26-Apr</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>7-May</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>8-May</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>11-May</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>22-May</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>26-May</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>1-Jun</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>10-Jun</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>18-Jun</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>24-Jun</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>1-Jul</td>
<td>2</td>
<td>16</td>
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<tr>
<td>6-Jun</td>
<td>6</td>
<td>17</td>
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<td>14-Jun</td>
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<td>18</td>
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<td>21-Jul</td>
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<td>19</td>
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<td>29-Jul</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>31-Jul</td>
<td>9</td>
<td>21</td>
</tr>
<tr>
<td>1-Aug</td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>8-Aug</td>
<td>11</td>
<td>23</td>
</tr>
<tr>
<td>15-Aug</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>22-Aug</td>
<td>4</td>
<td>25</td>
</tr>
<tr>
<td>29-Aug</td>
<td>14</td>
<td>26</td>
</tr>
<tr>
<td>23-Sep</td>
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<td>27</td>
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<tr>
<td>7-Sep</td>
<td>17</td>
<td>28</td>
</tr>
<tr>
<td>28-Sep</td>
<td>4</td>
<td>29</td>
</tr>
<tr>
<td>2-Oct</td>
<td>4</td>
<td>30</td>
</tr>
</tbody>
</table>

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**Days Between Infection**

*Infections 3 days after admission*

*Started with CLABSI Bundle*

*Possible contaminant*
Visual Measurement
At the same time every day the Unit manager counts devices in use in the ward.

**MEDICLINIC**

**Solving the Denominator Problem**
The Best Care...Always! (BCA) campaign is an initiative supporting South(ern) African healthcare organisations as they implement specific, internationally recognised, evidence-based interventions that enhance patient safety and constitute current best practice in hospital care.

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- Guiding principles
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- Articles in the Medical Chronicle provide more background on the work we do.
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Not just infections
Not just bundles

garyk@discovery.co.za
Everyone in healthcare has 2 jobs

1. Doing the work
2. Improving the work!
All improvement requires change (though not all change is an improvement)

Changing:

- How and why we measure
- Methods (of improvement)
- Our sense of responsibility
- Leadership
- Organisations and culture
- The Health industry
# How and why we measure

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>International data</td>
<td>Our data</td>
</tr>
<tr>
<td>Counts</td>
<td>Rates</td>
</tr>
<tr>
<td>Bar graphs</td>
<td>Run charts (over time)</td>
</tr>
<tr>
<td>Data for head office / ministry</td>
<td>Measurement for frontline staff</td>
</tr>
<tr>
<td>Individual measures</td>
<td>Measures across systems</td>
</tr>
</tbody>
</table>

Modified from: D van den Bergh, Netcare Hospital Group
“Run Chart”

Rules for identifying non-random signals

Rule 1: Shift

Rule 2: Trend
## How we improve

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit and inspection (QA)</td>
<td>PDSA cycles</td>
</tr>
<tr>
<td>Checklists for checking</td>
<td>Checklists as aids</td>
</tr>
<tr>
<td>Writing more protocols</td>
<td>Focused interventions</td>
</tr>
<tr>
<td>“Spray and pray”</td>
<td>Improving critical elements one a time</td>
</tr>
</tbody>
</table>

*Modified from: D van den Bergh, Netcare Hospital Group*
## Taking Responsibility

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>“it doesn’t happen here”</td>
<td>Knowing the facts</td>
</tr>
<tr>
<td>“we already do that”</td>
<td>Acknowledging we may not</td>
</tr>
<tr>
<td>Can’t do</td>
<td>“if they can so can we”</td>
</tr>
<tr>
<td>Accept the inevitable</td>
<td>Persistence</td>
</tr>
<tr>
<td>Victim of limitations</td>
<td>Building skills</td>
</tr>
</tbody>
</table>

*Modified from: D van den Bergh, Netcare Hospital Group*
Clinicians

Skeptical and critical

“this might work”

“worth trying”

“how can we support you”

“I would like to initiate”
## Leadership

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>It’s up to the doctors</td>
<td>Active involvement of senior leadership</td>
</tr>
<tr>
<td>It’s up to the nurses</td>
<td>“Exco”</td>
</tr>
<tr>
<td>It’s up to the Infection Prevention Practitioners</td>
<td></td>
</tr>
<tr>
<td>It’s up to the Infection Control Committee</td>
<td></td>
</tr>
</tbody>
</table>

*Modified from: D van den Bergh, Netcare Hospital Group*
The Culture

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blaming and punishing</td>
<td>Learning and curious</td>
</tr>
<tr>
<td>Who (people)</td>
<td>Why (system)</td>
</tr>
<tr>
<td>Helping</td>
<td>Capacitating (mentors)</td>
</tr>
</tbody>
</table>

Modified from: D van den Bergh, Netcare Hospital Group
# Health Sector

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competition</td>
<td>Collaboration</td>
</tr>
<tr>
<td>Secrets</td>
<td>Sharing</td>
</tr>
<tr>
<td>Private vs public</td>
<td>Interconnected systems</td>
</tr>
<tr>
<td></td>
<td>Public learns from Private</td>
</tr>
<tr>
<td></td>
<td>Private learns from Public</td>
</tr>
<tr>
<td></td>
<td>Public-private partnership</td>
</tr>
</tbody>
</table>

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## Antibiotic Stewardship

<table>
<thead>
<tr>
<th>OLD</th>
<th>NEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passive observers</td>
<td>Actively seeking solutions</td>
</tr>
<tr>
<td>No interventions</td>
<td>Identifying opportunities</td>
</tr>
<tr>
<td>No measures</td>
<td>First level utilisation data</td>
</tr>
<tr>
<td>Defensiveness</td>
<td>Working together to deal with it</td>
</tr>
<tr>
<td>Pilots</td>
<td>Multiple sites testing change</td>
</tr>
</tbody>
</table>

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---

**NEW**

Leading Best Care ... Always!
The Changing View of Quality

We are perfect!

Get rid of the bad apples

NO ACTION

REACTION

Quality Assurance

“Standards”

M&M

Incident reporting

SafeCare

BASIC HEALTHCARE STANDARDS

www.bestcare.org.za
The Changing View of Quality

We are perfect!

Get rid of the bad apples

System thinking

INACTION

REACTION

“Quality Assurance”

“Standards”

M&M

Incident reporting

“Quality”
Safe
Effective
Timely
Equitable
Patient-centred
Efficient

PRO-ACTION

Quality Improvement

Improvement Science

Dashboard of Quality Measures
Improvement Science and Knowledge Systems Combine to Produce Improvement

Generalisable scientific evidence

“control context”

Plans for change

Patients get “recommended care” ~ 50% of the time
standardisation, forcing functions, education, etc

Particular context

“local processes, habits, traditions”

Execution

“drivers of change”

High performance (measured)

“include time”

Qual Saf Health Care 2007;16:2–3

Patients get “recommended care” ~ 50% of the time

“control context”

Plans for change

Particular context

Execution

High performance (measured)

“include time”