Good Infection Control is Cost-Effective

Nicholas Graves
Some Economics

Some Evidence
Resources for Health Care are Scarce

And Must Be used Wisely
“1/3 of medical spending is for services that do not improve health”

Elliot Fisher

“Millions of Americans get tests, drugs and operations that won’t make them better, may cause harm and cost billions”

Atul Gawande

“When cardiologists left the hospital patients outcomes improved”

Anupam Jena
Resources for Health Care are Scarce

Highest value services
Lowest possible costs
Identical challenge for prevention and control of infectious diseases
Not a Cinderella service

Budgets are meagre and precious

Currently under-funded

Emerging threats
Some Economics

Some Evidence
Silver Platinum Carbon

CH/SSD (external)

CH-SSD (internal)

Minocycline and Rifampicin

Markov model used for the evaluation.
For next 1000 catheters placed
15 infections prevented
32.8 ICU bed days released
$130,289 saved
1.64 QALYS gained

Missing important information on antimicrobial resistance
Compare the costs and health benefits of strategies that reduce risk of deep infection following total hip arthroplasty in NHS hospitals
736 studies found and 12 met inclusion criteria

123,788 cases of THR

Mean pt. age between 64 and 74

Follow up periods less one year to eight years
A Network of Evidence

T1. No systemic antibiotics + plain cement + conventional ventilation

T2. Systemic Antibiotics + plain cement + conventional ventilation

T3. No systemic antibiotics + plain cement + laminar airflow

T4. Systemic antibiotics + plain cement + laminar airflow

T5. No systemic antibiotics + antibiotic-impregnated cement + conventional ventilation

T6. Systemic antibiotics + antibiotic-impregnated cement + conventional ventilation

T7. Systemic antibiotic + antibiotic-impregnated cement + laminar airflow

T8. Systemic antibiotics + antibiotic-impregnated cement + conventional ventilation + body exhaust suit

T9. Systemic antibiotics + antibiotic-impregnated cement + laminar ventilation + body exhaust suit

<table>
<thead>
<tr>
<th>odds ratio</th>
<th>95% credible interval</th>
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<tbody>
<tr>
<td>T1</td>
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<td>T2</td>
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<tr>
<td>T3</td>
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<td>T9</td>
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<td>T7 vs. T6</td>
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For a 1000 primary hips that get infected
Choosing T7 over T6
12 fewer QALYs and £1,007,000 extra cost

Laminar Airflow is costly & harmful

Very difficult to change services
The Australian National Hand Hygiene Initiative

BEFORE

2009 = 63.5%

AFTER

2014 = 80.3%
Common Definitions & Audit

Training & Accreditation

Good information & support

Strong Clinical Leadership

Federal Endorsement
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<thead>
<tr>
<th>State/Territory</th>
<th>Hospitals</th>
<th>Beds</th>
<th>Admissions</th>
<th>Starting rates (10,000 bed days)</th>
<th>Reduction in Rates (%)</th>
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<td>Total</td>
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<td>24,482</td>
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Policy makers did not like this study
Summary

Use Scarce Resources Wisely

Good infection control is cost-effective

Strive for rational decision making

\textit{information is often missing}

\textit{change is difficult to achieve}

\textit{policy makers are not only motivated by evidence}
Thank you for listening