

MAKING A BUSINESS CASE

1994 – THE FINANCE DIRECTOR VIEW



Postulates

NW England Communicable Disease Task Force (1995)

- Cleaning budgets were being targeted to make savings and infection control teams were worried
- No solid evidence base, but we were able to show
 - Environmental contamination by human pathogens
 - They persist in the environment
 - A significant route to the patient can be demonstrated
 - A useful level of decontamination of the environment can be achieved

Outsourcing cleaning increases MRSA?

- Linked data on MRSA bloodstream infections/100,000 bed-days with patient and staff cleanliness surveys in 126 English hospitals (2010-2014)
 - Toffolutti V., et al (2016) Soc Sci Med 174: 64-69
- Findings - outsourcing cleaning associated with:
 - greater incidence of MRSA (2.28 vs. 1.48 $p=0.05$)
 - worse patient perceptions of cleanliness of rooms ($p=0.03$) and bathrooms ($p=0.03$)
 - worse staff perceptions of availability of handwashing facilities ($p<0.001$)
 - fewer cleaning staff per hospital bed
- On the plus side (for the Director of Finance only)
 - associated with lower economic costs (£236/bed/year)
 - without additional costs associated with treatment of HCAs



Organisational Management views of IPC

- Old school
 - I am forced to have an infection control team
 - It is just a cost centre
- Modern
 - I am still forced to have an IPC programme but luckily no law or regulation says how much I have to spend on it
 - Ok, so reduced HCAI is better for society, but what does it mean for me and my budgets?
- Last three years
 - Where would we be without them (optimistic view)

Impact of HCAI on Organisational Business Plans

- Critical is the list of organisational priorities – can you influence the business plans of others?
- Misconceptions must be dispelled
 - the fallacy that the incidence of HAI in most institutions is insignificant
 - the erroneous belief that additional cost of HAIs is largely offset by reimbursement, making cost savings associated with reduction of HAIs not worth the investment
 - the misperception that HAIs are an expected outcome of treating an older, sicker patient population with escalating use of invasive procedures

What really is a business case?

- A well thought out and constructed undecipherable collection of   and emotive suggestions that manipulate the management into providing the money for what we believe is needed

Pleeeeeeease....

Making the Business Case

- When looking to make a change, you have to start with two absolutes
 - Improving quality always reduces cost
 - Reducing cost will almost never improve quality (and will need evidence of this)



- Failure to comprehend BOTH compromises both organisational and clinical outcomes

SHEA GUIDELINE

Raising Standards While Watching the Bottom Line: Making a Business Case for Infection Control

TABLE 1. Representative Reports of Attributable Costs and Excess Length of Stay (LOS) Associated With Various Hospital-Acquired Infections

| Infection type | Attributable costs, mean (range), 2005 US\$ | Excess LOS, mean (range), days | Reports |
|-------------------------|--|-----------------------------------|----------|
| VAP | 22,875 (9,986-54,503) | 9.6 (7.4-11.5) | [19-23] |
| Catheter-related BSI | 18,432 (3,592-34,410) | 12 (4.5-19.6) | [24-26] |
| CABG-associated SSI | 17,944 (7,874-26,668) | 25.7 (20-35) | [27-30] |
| Catheter-associated UTI | 1,257 (804-1,710) | ... | [31, 32] |

NOTE. BSI, bloodstream infection; CABG, coronary artery bypass graft surgery; SSI, surgical site infection; UTI, urinary tract infection; VAP, ventilator-associated pneumonia.

Why make one? – Three reasons

- Altruism
 - Preventing suffering and death is a necessary and laudable goal but doesn't pay the bills
- Realism
 - Unless you all win the lotto your team will not work for free
- Pragmatism
 - You need resources to carry out an effective infection control program
- A business case exists if whoever invests in the intervention makes a return on investment in a reasonable time frame.
 - This can be through profit, reduction in losses (financial, human or reputational) or cost avoidance

SHEA GUIDELINE

Raising Standards While Watching the Bottom Line: Making a Business Case for Infection Control

TABLE 3. Costs and Outcomes That May Be Included When Examining the Economic Impact of an Infection Control Intervention From Various Perspectives

| Cost or outcome | Perspective | | |
|----------------------------|-------------|-------|----------|
| | Societal | Payer | Hospital |
| Hospitalization costs | | | |
| Antibiotics | X | X | X |
| Excess length of stay | X | X | X |
| Intensive care stay | X | X | X |
| Intervention costs | | | |
| Test Costs | X | | X |
| Gown and glove | X | | X |
| Nurse and physician time | X | | X |
| Isolation room | X | | X |
| Outpatient costs | | | |
| Physician visits | X | X | |
| Antibiotics | X | X | |
| Home health visits | X | X | |
| Rehabilitation center stay | X | X | |
| Patient costs and outcomes | | | |
| Mortality | X | | |
| Morbidity | X | | |
| Infections | X | | |
| Lost wages | X | | |
| Travel expenses | X | | |

Changing the perception of IPC

- Your value to the organisation is based on how well HAIs are prevented and controlled
 - BIG Problem: the better you do, the more invisible you are and the less they may think they need you
- However, public demand for accountability for patient safety has increased, giving an advantage of leverage as they expect best practices



Why is it needed?

- Response to new regulations or guidelines affecting the organisation
 - penalties for non-compliance
- To keep up with competitors
- To address a specific problem in the organisation
- To increase efficiency
- To reduce costs
 - Good to have a business case for something that will save money to produce at a time when you are submitting one that will need investment

Making a case

- A business case exists if the intervention shows a financial return on investment through hospital 'profit', loss reduction, or cost avoidance in a reasonable time frame
- Comparing the cost of an infection prevention and control program or intervention to the benefits, lowering rates of HAI and preventing harm and deaths is the best method for justifying the investment in prevention efforts
 - But they have to have some data
 - And we have to have some evidence that the intervention will be effective

Convincing the Directors

- Convince your administration that "we" have a problem
 - Data, data, data, data, data and more data
 - Convince them that the 'we' includes them
 - Make sure that the problem does not sit with IPC, but that you are the 'repair' team
- You may need to drip feed this over a period of time

Possible steps to take

- Accurately and comprehensively identify key organisational issues and where best to direct efforts
 - focus on more prevalent infections, locations where endemic infection rates are particularly high, or locations where surveillance and prevention efforts have been sporadic or lacking
- Focus executive team's attention on the number of infections avoided and IPC interventions that have been successful in the past
- Identify a patient group (e.g., intensive care patients), the infection prevented, and all reasonable strategies that might prevent that type of infection

Clinical Priorities

- Develop clinical practice that have potential to decrease HAIs based on
 - supporting scientific evidence that the recommended practice is effective, practical, and urgent
 - recognised gaps in current practice implementation (full versus partial implementation)
 - “bundling” or implementation of several practices at the same time to ensure the effectiveness of the action plan
- But also consider the financial impact of infections

Costs of Infections

- Costs in the US system
 - Zimlichman E et al. (2013) Health care-associated infections: a meta-analysis of costs and financial impact on the US health care system. JAMA Intern Med 173: 2039–2046
 - CLABSI \$45,814
 - VAP \$40,144
 - SSI \$20,785

Orthopaedics

- Revision Total Hip replacement reported to be £21,937
 - Kallala RF, et al. Financial analysis of revision knee surgery based on NHS tariffs and hospital costs: does it pay to provide a revision service? Bone Joint J 2015;97-B:197e201
- Revision Total Knee Replacement estimated at £30,011
 - Vanhegan I et al A financial analysis of revision hip arthroplasty: the economic burden in relation to the national tariff. J Bone Joint Surg Br 2012;94:619e623
- This was only the cost of the revision itself, not all the treatment before this decision was made
- Infection rate 1.5% - 500 TKR per year - £225,000
 - Infection rate 1% - £150,000

Cost of CPE

Otter JA, et al Clinical Microbiology and Infection (2016)

- 10-month outbreak (40 patients)
 - cost €1.1m over 10 months (range €0.9-1.4m), comprising €312,000 of actual expenditure, and €822,000 (range €631,000-€1.1m) in opportunity cost
 - Refurbishment €153,000
 - Screening €94,000 + €61,000 nursing opportunity
 - Contact precautions €73,000
 - Anti-infectives €54,000 (18 patients)
 - HPV €42,000
 - Ward and bay closures €6,000 (not opportunity cost)
 - Opportunity cost was €76,995
- Does loss of opportunity cost hurt an organisation?

Did not include

- Decontamination & cleaning apart from HPV
 - Absorbed by contractor
 - underestimates substantial costs that would be associated with the environmental interventions in hospitals who have an in-house service
- Socioeconomic costs
- Long-term CPE Carriage
- Litigation
- Reputation
 - Important for income-generating specialties, inc. private patients

Never waste a crisis – and keep your eyes open

- If you have an outbreak and a business case in preparation, can it help?
- If you have an outbreak and you have a business case that might have helped and was turned down, get this into the minutes of the outbreak meeting
 - It might make it into the action plan
- Keep an eye on new guidelines
 - Get involved in consultations so that you can prepare your organisation for what is coming
- Use impending inspections and reports from inspections (especially other people's)

Cost-effectiveness of interventions

- Clippers cheapest because risk of SSI lower
- Razors most expensive option as ↑ risk of SSI

| Hair removal method | QALYs gained | No. of SSIs | Costs of hair removal | Costs of treating SSI | Total costs |
|---------------------|--------------|-------------|-----------------------|-----------------------|-------------|
| Electric clipper | 618.79 | 55 | £2,516 | £190,610 | £193,126 |
| Depilatory cream | 618.60 | 57 | £2,250 | £198,311 | £200,561 |
| No preparation | 617.86 | 65 | £0 | £227,699 | £227,699 |
| Razors | 615.35 | 94 | £530 | £328,355 | £328,865 |

Cost-effectiveness of reducing HAP

- Determine incidence of non-ventilator HA Pneumonia and the effectiveness of basic oral nursing care versus usual care
 - Rate of HAP/100 patient days decreased from 0.49 to 0.3 (38.8%)
 - Number of cases of HAP reduced by 37% during the 12-month intervention period
 - Avoidance of HAP cases resulted in an estimated 8 lives saved, \$1.72 million cost avoided, and 500 extra hospital days averted
 - Extra cost for therapeutic oral care equipment was \$117,600 during the 12-month intervention period – 93% ROI
 - Soft bristle and suction toothbrushes

Use realistic figures

- Survey of 37 Australian Chief Executive Officers' (CEOs) willingness to pay (WTP) to release bed days in their hospitals, both generally and using specific cases
 - Page, K., et al (2017) BMC Health Serv Res 17(1): 137
 - Willing to pay a marginal rate of \$216 for a ward bed day and \$436 for an Intensive Care Unit (ICU) bed day
 - Estimates are significantly lower (four times for ward beds and seven times for ICU beds) than the traditional accounting costs often used
- Interviews - what were the CEOs interested in?
 - importance of national funding and targets
 - their associated incentive structures
 - Desire to focus on quality outcomes and aversion to discuss bed days as an economic resource

Know the target audience

- Managing Director and Financial Director are primarily interested in increased income or cost reduction, in addition to improved environmental performance and corporate reputation
 - the overall cost of the project and how it is financed
 - the timescale required to gain a return on investment
 - the project timescales and potential disruption to the business
 - potential loss of productivity during implementation if affected
 - the impact on internal resources
 - opportunities and necessity for staff training
 - potential benefits related to customer perception and reputation

SHEA Guidance for a Business Case

<https://doi.org/10.1086/521852>

- Frame the problem + create hypothesis about solutions
- Create interest by meeting with key stakeholders
- Determine local costs of intervention, costs that can be avoided by reducing HAI, and attributable and variable costs
- Calculate financial impact and other health benefits
- Communicate the possibilities of the business case
- Prospectively collect cost and outcome data if you can

The steps

- Describe a problem (e.g. CLABSI)
 - Look for possible solution (e.g. coated catheters vs “bundle”)
 - Do a full economic evaluation estimating the costs of CLABSI in your hospital (including extra LOS) and the costs of the intervention
 - Benefit is reduction of costs AND gain of revenue (e.g. shorter LOS)
- But - first use basic IPC – than start on the “gadgets”
 - You will have to show that you have already done what you can with the available resources (and you may not be able to)

Making the argument

- It's not always about the money
 - Safe care = better care
 - Cornerstone in preserving the antibiotics we do have left
 - Stimulate general preventive measures e.g. flu-shot
 - Engage in visible actions e.g. hand hygiene action that get picked-up by press, so positive PR
 - Always worth letting the press know about local activities, they may have a slow week and continuing press coverage of activity does make it more difficult to then refuse a bid
 - Educate not only HCWs, but patients and the public
 - Is there an environmental benefit? Sustainability angle?

Making the case

- Data gathered for the infection prevention and control committee should also be shared with people who decide how resources are allocated
- Discuss which interventions require minimal or no financial investment (e.g., standardisation of work processes, compliance with checklists, teamwork, communication, collaborative efforts) and which are cost-effective

Providing a solution (or solutions)

- What has the team done to carefully research options to identify the best solution?
- Have there been internal meetings to identify the solution and an implementation plan or is this just your idea?
 - Have the relevant departments within the organisation been consulted?
 - And what do they think! They have to be on board
- Can you get someone from finance department to help you write the case?
 - Financial assumptions etc
- Has a third party independently reviewed the proposal?
 - Can be useful, especially if a health economist

Return on Investment

- Possibly the greatest opportunity to demonstrate a positive return on investment in infection prevention and control is by decreasing patients' hospital length of stay and improving productivity
 - releasing beds to new patients, increasing volume, revenue, and reimbursement
- Also
 - avoidance of regulatory concerns and fines for lack of progress in decreasing HAI
 - enhancement of the image by reducing the threat of outbreaks, resistant pathogens, employee injuries from bloodborne pathogens, HAI disclosures, sentinel events, and legal claims

List financial benefits

- Increased throughput and income
- Lower overall costs through savings on non-treatment and management of HCAs
- What about the time to 'Return on Investment'?
 - How long will it take to gain additional income or reduce costs to the level of the initial investment?
 - For example, if the project costs £50,000 and the saving from the new intervention is 3 less C. difficile at £5,000 per annum, then the payback period for the investment is 3 years 4 months
 - what is the expected the additional benefits to be gained beyond the payback period (how long will the equipment last and will it become obsolete?)

Cost/Benefit analysis

- Clearly communicate the different costs and benefits that will be achieved by the different solutions identified
- Must also allow for the 'do nothing' option to be analysed as this may actually create further inefficiencies in the longer term leading to increased costs
 - In IPC 'do nothing' often means you will go backwards so may increase costs not be cost-neutral
- Consider sensitivity analysis
 - Show what will happen if the intervention is more or less effective than the assumption and the effect on return on investment

Watch for Resistors and Constipators

Saint et al, Joint Commission Journal Quality and Safety 2009 35(5)

- Two types of person impede HCAI activities
 - Active Resistors - hospital personnel who vigorously and openly oppose changes in practice; increase the difficulty of implementing new methods to prevent infection
 - Data can help as can a Champion in the specialty
 - Organizational Constipators - mid- to high level executives who prevent or delay actions without active resistance, thereby acting as covert barriers to change by increasing the work required to implement evidence based practice
 - Involve them early on to get their opinion

Business cases are not just for products

- Are you lonely?
- Would you like to do more?
- Are there things you know that you should be doing but you're not?
- Take a good look at what you do, what you think that you should do, what you would like to do
 - And then put the responsibility onto those who will ultimately be accountable

Supporting the IPC Team Resource

- The program must be the organisation's program
 - You have to get them to own it, which means they must help to write it
- List each activity that you might undertake and put a resource to it
 - Education – 0.5 WTE
 - Alert organism surveillance – 1.5 WTE
 - SSI surveillance – 0.5 WTE
 - ITU Surveillance – 0.5 WTE
 - Admin and management – 1 WTE
 - Audit – 1 WTE
- But you have 3 WTE

= 5WTE

- Asked by the management
- 30 beds, occupancy 59-86%
- Used UV dots to determine thoroughness (80%)
- Used mean time to achieve this (19 minutes)
- Calculated WTE required to clean at this level
 - 2 WTE per unit (Previously 1)
- “Over to you”
 - Caluwaerts, A et al, (2021) ARIC 10(1): P175



Concluding

- If you do not ask you do not get
- You may be able to influence another department to write the business case for an intervention that they will be carrying out
- You will get better at it – build on success
- If you are successful – shout loudly about it as often as you can
 - Imperative to show what has occurred after an intervention
 - Once HAIs become low, rate of savings return lessens
 - Administrators/Managers may think of cutting budget
 - Use these data to show what could happen without a continued program