Improving WASH Facilities: the case for Return on Investment (RoI) analysis

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1bn
Approximately 2.5 billion people live without improved sanitation, of which almost 1 billion people continue to defecate in the open.

1/3
Studies have estimated that improved sanitation can contribute to an approximate one third reduction in diarrhoeal diseases.

1/5
Sanitation remains a neglected issue with financial investments representing only 1/5 of the total water, sanitation and hygiene sector expenditure.

3–34
The World Health Organization estimates a rate of return of $3–34 for each $1 invested in water and sanitation, depending on the context and system adopted.
Economic benefits
Scoping necessary..

• Better patient care/outcomes inc. lives saved/DALYs
• Improve effectiveness of care eg. reduce infections, outbreaks
• Improve efficiency: lowers excessive LOS, reduces staffing, less medicines use (frees up already scarce hospital resources)
• Improves productivity, earnings & informal economy
• Educates the community on good sanitation practices; protects staff
• Prevents wider contamination..
• More ????+++
Health Economics

• An aid to decision-making
• Based on costs and outcomes
• Perspective is important (on whom the costs and benefits are expected to fall?)
• Audience influences methods
  • Cost-effectiveness (cost per change in actual outcome)
  • Cost-utility (cost per QALY)
  • Cost-benefit (monetary benefits – monetary costs)
Key information

• Toilets per health facility (if any!)
• Ratio of toilets to patients/staff
• % down-time (blockages, malfunctions, repair etc)
• Cleanliness/infectivity (cleaned per day)
• Provision of proximal alternative toilet arrangements (% usage)
• Clean running water (for hands and sewage disposal) & essential infrastructure
• Other sanitation measures

= DAYS OF EXPOSURE x NO. OF PATIENTS
Epidemiological data

• Background risks/rates of local disease
• Exposure (dose x time)
• RR in acquiring disease with compromised toilet/sanitation facilities
• Implications of hospital acquired infections (impacts)
Economic model

• Costs of care with improved sanitation/additional resources needed
• Costs of care without (projection)
• Compares the alternative scenarios
• Capital investment ($) in service improvement required (time-period)
• Additional maintenance p.a. required ($)
• Additional educational, training investments ($)

Calculates expected RoI/QALYS/DALYS/Disease avoided
An Economic Tool

• Capable of producing economic arguments for different situations
• Takes account of risk and uncertainty among key parameters
• Evidence-based and flexible to local/country conditions (data, epidemiology etc)
• Adaptable to local costs and outcomes
• Choice of time-horizon
• Interactive and user-friendly (e-tool ?)
Key research issues

• Data-set regarding the facilities, utilisation and infrastructure
• Costs of provision and maintenance
• An agreed scope of measurable benefits to define the returns
• Reliable epidemiological data by locality/region/country
• Understanding the effectiveness of interventions