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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.

1/5

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

Health Economics

1/3

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

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)

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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