The contribution of social sciences to implementing METs

A hospital is not a human body
a MET is not a surgical procedure:
they are both social systems with people thinking and acting in ways we might not expect.

Resources download from:
http://homepage.mac.com/johnovr/FileSharing2.html

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Questions social sciences can help with

- Why are your MET call rates low – especially for some units?
- How best to spread a MET pilot to other units?
- What are the costs and savings of a MET team, compared to alternatives?
- How to address the cultural issues in implementing a MET?

Purpose

- For clinical practitioners, implementers, managers to:
  - Understand challenges in implementing METs
  - shape and speed implementation using social science research and theories
- For researchers to
  - Identify where social science research
    - could be of practical use
    - knowledge needed and potential
  - Add a social science research component to a clinical study or implementation

Session covers

- Overview
  - John Øvretveit, Karolinska Institutet, Stockholm.
- 11.35 METS and social science
  - Anna Johansson, Harvard Medical School & Beth Israel Deaconess Medical Center

11.55 Impact of adverse event on care givers

- Sue Scott, Office of Clinical Effectiveness, University of Missouri Healthcare s

Overview – How social sciences help implement and understand METs and failure to rescue

- Psychology, sociology, economics, organisational science, political science.
- Quantitative and qualitative research methods
- Experimental
- Survey
- Case study
- Detached or action research role
- Tools based on theories and research & "simplified versions" of research methods

Example

- Dr Marion Hicks given responsibility for implementing MET in the hospital
- 2 nurses and physician from critical care unit
- Taught MET call triggers, posters and call number

Practical Challenges

- Evidence disputed
- Training attendance
- Effective training
- Communicating trigger criteria
- Call rates
- Bypass traditional escalation steps
- Keeping responsible physician informed

Example

- Calls few, and variable between units – and declined

Then Mrs Petersen experienced a cardiac arrest & crash team too late

Case review found deterioration was gradual - arrest could have been predicted.

"when the nurse saw the indications, why didn't she call the MET team rather than delaying things?"

MERIT study

- 40% of patients with MET criteria had a MET call
- Variation between units in use of MET
- Vital signs not measured in 50% of patients before serious events

Questions

- To understand this (explain it) – what might social science have to say?
- To decide what to do next – which social science theories might help?.

The story continues….

- After work, drinks with junior doctors and nurse colleagues
- Verbal agreement – rumour senior physician angry
- Cuts across the hierarchical structure and culture
- Learned from social sciences
  - Implementation not linear & standardised
  - Context more influential than Dr Hicks leader actions: culture, & systems for communication and data gathering/analysis
  - Need political strategy as well as more professional project management

Why do different studies find different effectiveness of METs?

What social implementation research shows

- Different types of MET studied
- Differently implemented: triggers, agreements policies, training,
- Behaviour change depends on culture and context

Social science research shows

Evidence + Implementation + Context
= Safety

Proven change + effective implementation
+ supportive context
= higher quality

Illustration: Can you grow pineapples in Sweden - outside of a hothouse?

Seed

Gardener/planting & nurture

Climate / soil

Your change?

Change idea + Evidence 0-5? + Implementation actions 0-5? + Context 0-5? - Local - Wider

News – for some

There is a science of organisation behaviour and change which

- predicts what you are experiencing
- explains slow and patchy implementation
- helps plan more effective change and solutions

Next – some social science research into implementation and context supportive of change

Caution: but you have to adapt to apply locally

Think global, act local

Which context supportive of METs? Which implementation strategy?

- Use research and theories and adapt to your situation
- Continual review and refinement using feedback and political strategy

- Next slides help with social science theories for implementation and building a supportive context

Supportive organisational context – gen

- Senior management - strategy
  - Connect MET to organisational strategy and other changes
  - Business case
- Middle management – helps with their concerns
- Other leaders
- Rationale and tension for the change
- Change culture and attitudes
- Change saturation

Supportive external context - gen

- Customer pressure
- Political pressure
- Economic pressure
- Regulatory requirements
- Financial incentives
- Other external pressures

Review clinical-change theories (Grol et al 2007)

A Ten-Stage Model for Planning Change: Possible Barriers to Change and Possible Strategies and Interventions

Stage	Possible Barriers to Change	Possible Strategies and Interventions
Awareness		
1. Awareness of innovation	Not familiar, does not read literature, no contact with colleagues	Distribute brief messages via all types of channels; approach key figures and networks
2. Interest, involvement	No sense of urgency; does not see it as relevant	Attention-catching brochure; personal approach and explanation; confrontation regarding performance
Insight		
1. Understanding	No knowledge, information too complex or too extensive	Good instruction materials, concise messages; information based on problems in practice; regular repetition of message
2. Insight into own routines	No insight, overestimation of own performance	Simple methods of audit and feedback on performance; comparisons of data with peers
Acceptance		
1. Positive attitude	Sees disadvantages, doubt about value or developers, not attracted to change	Adapt innovation to wishes of target group, with local discussion and consensus; discuss resistance; provide good scientific arguments; involve key individuals as opinion leaders
2. Decision to change	Doubt about feasibility, success, and own efficacy	Have peers demonstrate feasibility; detect bottlenecks, seek solutions, and propose feasible objectives for change
Action		
1. Actual adoption, tryout	Not starting, no time, lack of skills, does not fit into fixed routines	Extra resources, support, training in skills, redevelopment of care processes, temporary support or consultants, information materials for patients
2. Confirmation of value	Insufficient success, negative reactions of others	Devise plan with feasible objectives for change, inventory of bottlenecks, and finding solutions
Maintenance		
1. New practice integrated into routines	Relapse, forgetting	Monitoring, feedback, and reminder systems; integration in routine care plans and local protocols
2. New practice embedded in organization	No support, no budget	Provide resources, support from top management, organizational measures, reward payment for certain tasks

(Grol et al 2007)

Theory	Hypotheses Derived from Theory on Changing Practice	Possible Interventions (Applied to Hand Hygiene and Diabetes Examples)
Individual professionals		
Cognitive theories	Implementation of change needs to take into account professionals' decision processes, and they need good information and methods to support their decisions in practice.	Provide convincing and timely information to professionals on desired care, and support their decision making on hand hygiene routines or diabetes management.
Educational theories	Implementation of change should be linked to professionals' needs and motivation; intrinsic motivation is crucial; people change on basis of experienced problems in practice.	Involve professionals in finding solutions for the problem; define personal targets for improvement as well as individual "learning plans" related to desired performance.
Motivational theories	Implementation of change needs to focus on attitudes, perceived social norms, and experienced control related to desired performance.	Convince professionals of importance of better hand hygiene or diabetes care; show that they can do it and that others find it important that they do it.
Social context		
Theories of communication	Importance of the source of innovation (credibility), the framing and rehearsal of messages, and the characteristics of the messages' recipient.	Develop very convincing message, have credible persons present and adapt message to receiver's competence and motivation.
Social learning theory	Changing performance takes place through demonstration and modeling and through reinforcement by others.	Have hand hygiene or best practices in diabetes care modeled by "leaders" and desired routines reinforced by respected peers.
Social network and influence theories	Change demands local adaptation of innovations and use of local networks and opinion leaders in dissemination, including identifying innovators and key persons in the social network.	Study the interaction in the team, determine the opinion leaders and use these to improve infection control or diabetes management.
Theories related to teamwork	More effective teams are better able to make necessary changes to improve care because they share goals and are able to share knowledge.	Create teams in which roles are defined and people encourage one another to work on the common goal of fewer infections or complications in diabetes patients.
Theories of professional development	Professional loyalty, pride and consensus, and "reinvention" of change proposal by professional body are important.	Use professional pride and define professional standards for the desired performance.
Theories of leadership	Involvement and commitment of leaders and (top) management in change process are important.	Have top management or informal leaders initiate activities and provide continuous support aimed at changing routines in diabetes care or hand hygiene.

(Grol et al 2007)

Theory	Hypotheses Derived from Theory on Changing Practice	Possible Interventions (Applied to Hand Hygiene and Diabetes Examples)
Organizational context		
Theory of innovative organizations	Implementation should take into account the type of organization; decentralized decision making (teams) about innovation is important.	Create broad coalitions of clinicians from different wards to change the systems for infection control or diabetes care; increase responsibilities for the wards.
Theory of quality management	Improvement is a continuous cyclic process, with plans for change continually adapted on the basis of previous experience; organization-wide measures are aimed at improving culture, collaboration, customer focus, and processes.	Reorganize work processes around diabetes care or infection control; develop primary care or hospital-wide system for optimal diabetes care or for prevention of infections; monitor progress and continually adapt plans for change on the basis of data.
Theories of integrated care	Change multidisciplinary care processes and collaboration instead of individual decision making.	Analyze and redesign the work processes related to diabetes care or hand hygiene, and make these more effective and efficient.
Complexity theory	Focus on system as a whole, find patterns in behavior (attractors) and link change plan to these, and test and improve the plan.	See infection control or diabetes management as a system with many agents; find patterns/attractors; define crucial (minimum) specifications for change; and test them.
Organizational learning theory	The creation or availability of conditions in the organization for continuous learning at all levels can lead to successful changes.	Offer continuous learning and exchange of information about diabetes management and better hygiene at all levels of the organization.
Theories of organizational culture	Changes in the culture can stimulate changes in performance, particularly a culture of teamwork, flexibility, and external orientation.	Work on improving the general culture in the hospital or at the wards, in which infection control and integrated care for diabetes patients are seen as priorities.
Political and economic context		
Reimbursement theories	Attractive rewards and (financial) incentives can influence the volume of specific activities.	Reward the decrease of infections or achievement of diabetes care targets with nonmaterial or material/financial incentives (extra budget, staff, sabbatical leaves).
Theory of contracting	Contractual arrangements can guide professional and organizational performance.	Provide contractual arrangements of purchasers and care providers related to diabetes control or meeting of infection targets.

Relevant Concepts

- Hierarchy: tasks delegated, decision making levels.
- Routine and emergency: clear roles and decision making delegated to responsible leader in the situation
- Work division & Specialisation: departments, professions.
  - *= need for coordination and communication to combine inputs*
  - *= the "in-between" safety problems. Between shifts, professions, departments, services.*
- Socialisation
- Identity & self image
- Culture
- Innovation, Spread, Sustaining change

Why is implementation difficult? cuts across established tribal hierarchy *in addition* to all other challenges of change

People have to change what they do

- New learning: recognise critical signs & know when to call MET & when not to
- Make decision: do nothing, call more senior person, or call MET?
- Perform new behaviour of calling
  - Fear of breaking custom and norms greater than fear of patient deterioration not being responded to

'Readiness to Change' Theory

- Behaviour change through 5 stages:
  - **Pre-contemplation**
  - **Contemplation**
  - **Preparation**
  - **Action**
  - **Maintenance**
  - **(Relapse)** X

Knowledge and attitude change

Emotional process Development of skills

Restructuring environment, social support and reward systems

Altering attitudes & beliefs

Transtheoretical model, Prochaska & DiClemente 1994

Evidence from change implementation & innovation research

- Long gestation
- Timing & alignment important (change coping)
- Adapt/reinvent for local situation & ownership
- Success criteria change
- Trialing prototypes and revising important
- Plans are sketches not detailed

Evidence from change implementation & innovation research

- Setbacks common
- Frequent reviews and mid-course correction
- Personalities are important
- Make independent of personalities - people come and go
- But also find and work through opinion-leaders
- Decide your actions according to stage of change
  - start, develop , sustain
- Work on formal and informal aspects of organisation
- Often dependent on relations with other organisations

Lessons from SS research: How to start and speed implementation

- Adapt to adopt
  - Local implementers and those affected decide details of MET and of implementation
  - Don't implement but facilitate co-creation
  - How much adaptation leads to loss of effectiveness?
- Political force field mapping
- Diffusion of innovation
  - Characteristics predicting spread; Early adopter areas.
- Change management theories.
- Teamwork
- Costing

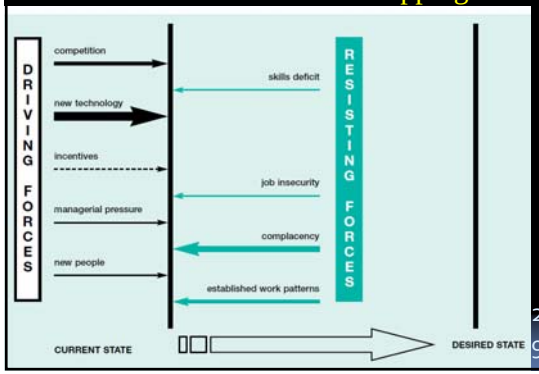
Costing tool tested in Stockholm (routine data)

KI Economics study proposes and used:

Cost, Spend, Save model:

- Cost of problem (failure to rescue)
- Spend for 50% solution
  - (rescue 50% of previous predictable arrests – cardiac & respiratory)
  - Training, RRT, & other items
- Save at 1,2,3yr & Time to break even on solution investment

Political force field mapping



Assess context: Sexton IHI Climate assessment

	A Disagree Strongly	B Disagree Slightly	C Neutral	D Agree Slightly	E Agree Strongly
1. The culture of this clinical area makes it easy to learn from the mistakes of others.					
2. Medical errors are handled appropriately in this clinical area.					
3. The senior leaders in my hospital listen to me and care about my concerns.					
4. The physician and nurse leaders in my areas listen to me and care about my concerns.					
5. Leadership is driving us to be a safety-centered institution.					
6. My suggestions about safety would be acted upon if I expressed them to management.					
7. Management/leadership does not knowingly compromise safety concerns for productivity.					
8. I am encouraged by my colleagues to report any safety concerns I may have.					
9. I know the proper channels to direct questions regarding patient safety.					
10. I receive appropriate feedback about my performance.					
11. I would feel safe being treated here as a patient.					
12. Briefing personnel before the start of a shift (i.e., to plan for possible contingencies) is an important part of safety.					
13. Briefings are common here.					
14. I am satisfied with the availability of clinical leadership (please respond to all three):					
Physician					
Nursing					
Pharmacy					
15. This institution is doing more for patient safety now, than it did one year ago.					
16. I believe that most adverse events occur as a result of multiple system failures, and are not attributable to one individual's actions.					
17. The personnel in this clinical area take responsibility for patient safety.					
18. Personnel frequently disregard rules or guidelines that are established for this clinical area.					
19. Patient safety is constantly reinforced as the priority in this clinical area.					

Change management theories & evidence

- Iles & Southerland 2001, Download from
- www.sdo.lshtm.ac.uk

Concluding points

- Hospitals are not human bodies and RRTs are not surgery
- Both are complex changing social systems
- Social sciences can help understand
  - How to detect and respond to deteriorating patients
  - Responses of some units to RRT
- And predict, plan and implement RRT
- Tools are based on theories – some not tested or relevant
- Skillfully chose and adapt Soc Sci theory and tools to your setting and type of RRT

Conclusions

1. This was new or surprising, for me…
2. This might help me
3. I need to find out more about

RESOURCES FROM: "MET" folder at web site
http://homepage.mac.com/johnovr/FileSharing2.html

Health warning: unskilled generalisation can seriously damage your implementation success

Example:

- Theory of diffusion of innovation
- applied to RRT in one hospital may guide attention to

But not in another

- Much depends on local culture, politics, resources
- You have to judge skillfully the relevance of theory and adapt to your situation
- Little guidance on how to do so

Score your organisation on these to target action for implementing RRT

- Change readiness:
  - Do people want and expect change?
- Change coping:
  - How able are people individually and collectively to cope with one or more changes?
- Change capacity
  - Organisational or external expertise, facilitation, resources to help make changes.

Change readiness factors

Organisational factors

- **culture**:
- **Leadership**:
- **Preparation, planning and execution**
- **Governance**:
- **Incentives for change**
- **Ability to innovate**

Project factors

- **Reach**:
- **Process**:
- **Knowledge**
- **Criticality of supplier**

(Greenhalgh et al, 2005; Gustafson et al, 2003, SDO Hyde09)

Teams

Table 3 Attributes of well-functioning clinical teams

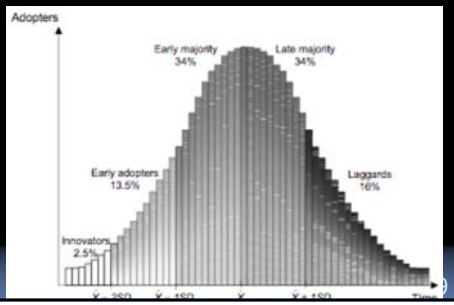
Common purpose and vision related to delivering high-quality patient care
Open and clear communication with transparency of processes
Participative leadership and balanced participation by all members
Defined roles and tasks with adequate levels of autonomy, skill, time and support to enable productive work
Mutual respect, collaboration and cooperation
Agreed methods of negotiation and conflict resolution
Effective decision-making based on objective data and opinion
Valued diversity with respect for differing professional roles and aspirations
Cohesiveness and regular meetings of all team members
Recognition and reward for individual contributions and group successes

Diffusion of innovation

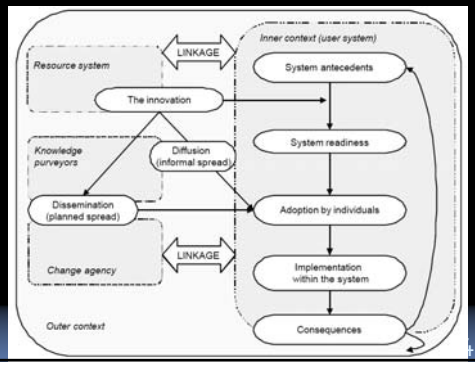
Score these characteristics predicting spread

- Relative advantage **(1-5)**
  - perceived as better
- Compatibility **(1-5)**
  - consistent with values, & needs of adopters
- Complexity **(1-5)**
  - difficult to understand and use.
- Trialability **(1-5)**
  - experimented with on a limited basis.
- Observability **(1-5)**
  - results of an innovation are visible to others.

Which units in the hospitals adopt fastest – and why?



Spread model Greenhalgh 2004 How to Spread Good Ideas, SDO



Change Achievement Success Index (CASI)

The higher the score the greater the chances of a change being achieved.

Four parts – questions – score 1-5

- 1) The immediate management of the change, skills, resources and authority.
- 2) The nature of the change complexity and time-scale.
- 3) Factors within the organisation
- 4)Environmental pressures the change needs to respond to

http://homepage.mac.com/johnovr/FileSharing2.html

Change readiness assessment tool – also culture and climate tools

Precontemplative stage
The programme or area in which I work functions well and does not have any aspects which need changing
There's nothing that I really need to change about the way I do my job to be more efficient
Contemplative stage
I've been thinking that I might want to help change something about the programme or area in which I work
Preparatory stage
I plan to be involved in changing the programme or area in which I work
Action stage
I am working hard to help improve aspects of the programme or area in which I work
Maintenance stage
We are trying to make sure we keep changes/improvements my programme/area has made

Based on Prochaska *et al.'s (1994) theory*

References

- Cunningham et al 2002 Readiness for organizational change: A longitudinal study of workplace, psychological and behavioural correlates, Journal of Occupational and Organizational Psychology (2002), 75, 377–392