The Evidence-based Organisation

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7.1. CREATING THE CONTEXT FOR AN EVIDENCE-BASED ORGANIZATION
Types of knowledge

- Tacit knowledge
  - Practical and subjective
  - Created by clinicians, patients and managers
  - Locally applicable, traditionally low value
- Explicit knowledge
  - Theoretical and objective
  - Created by researchers
  - Generalizable, traditionally highly valuable
Knowledge from experience

- **Experience**
  - Valuable form of knowledge
    - Organizational performance ↑
  - Learning from adverse event
    - 850,000 adverse events in NHS hospital sectors
    - Cost of over £2 billion
    - Half of adverse event: Preventable
    - Report from Expert Group on Learning from Adverse Events in the NHS
      - How it is possible for an organization to learn from adverse events as well as from the literature
The learning organization

- 5 disciplines
  - Personal mastery
    - The discipline of deepening one’s personal vision and objectivity
  - Making mental models
    - What the organization is, what it stands for, and how it works
  - Building shared visions
    - Vision of the leader → vision for everyone
  - Team learning
    - The collective intelligence of a team > the sum of the individual intelligence
  - System thinking
    - Individual elements → a coherent set of activities
Hypertext organization

Taylor
- Concept of the organization as machine
- Such as families, brain and neural network

Knowledge-creating organization
- Each individuals belongs to a team
- The organization is in the process of undertaking several projects
- A leader is assigned to each project
- Each individual usually works on more than one projects
The knowledge-rich organization

- Capacity to provide knowledge when and where it is needed
- Managing tacit knowledge
  - Central filling systems, newsletters, notice board, team briefing and communication strategies
  - Web technologies
The evidence–based knowledge–rich learning organization

- The creating and use of knowledge is valued and the availability of knowledge is assured.
- There is a commitment to knowledge management to ensure that systems and skills for finding, appraising, and using evidence are developed and supported.
- Both tacit and explicit knowledge are readily available when and where needed.
7.2. AN EVIDENCE-BASED HEALTH SERVICE
Key components of an evidence-based health service

- Healthcare organizations designed with the capability to generate, and the flexibility to incorporate, evidence

- Healthcare professional who, as individuals and team, are able to find, appraise, and use knowledge from research as evidence

- Culture ↔ System ↔ Structure
7.3. CULTURE
The evidence–based chief executive

- Chief executive → evidence–based decision making
  - To search for evidence, alone if necessary
  - To appraise evidence, having participated in a critical appraisal skills workshop
  - To store important evidence in a way that allows it to be retrieved using a computer
  - To use evidence to make decisions
  - To help those individuals accountable to the chief executive to develop evidence management skills and to change the system for which they are responsible such that can be incorporated into decision–making
Evidence–based management

- Decisions about clinical service
  - A paucity of evidence on the effectiveness, or cost–effectiveness, of different management arrangements

- Cost pressure generated by the cumulation of many small change
  - Ensuring that a scientific approach is taken to all aspects of the work of a health service provider
7.4. SYSTEM
The ‘evidence centre’
- Access to the World Wide Web
- Subscription to the most relevant source of data, such as MEDLINE and The Cochrane Library
- A limited number of appropriate books and journal
- Arrangements in place for obtaining documents, or copies thereof
- Personnel who can manage these resources and promote their use

The National electronic Library for Health
- To provide easy access to best current knowledge
- To improve health and health care, clinical practice, and patient choice
Systems that promote the use of evidence

- Evidence-based clinical audit (Fig 7.2)
  - Can be done in two ways
    - By ensuring that evidence of effectiveness or safety for the intervention subject to audit is of good quality
    - By ensuring that the standards applied with the audit process are scientific and based on the best evidence available
Training for evidence-based decision-making

- Strategies to develop the skills of all personnel in evidence-base decision making
  - Search for evidence
  - Appraise evidence
  - Store and retrieve evidence
  - Use evidence
Two reasons for the responsibility of the professional and the educational establishments

- The professions and the educational establishments are considered to have been too slow in promoting evidence-based clinical practice
- It has been recognized that the development of systems and of individuals are inter-related
Interventions under review for effectiveness

- Audit and feedback
- Printed educational materials
- Opinion leaders
- Educational outreach
- The extended role of the pharmacist
- Nursing care planning
- Computerized drug information and dosage
- Reminders
- Guidelines and protocols
- Patients penalties
- Mass media strategies
- Conferences, seminars and training attachment
Systems that consume and use evidence

- Systems that should be more evidence based
  - Drugs and therapeutics decisions-making
    - Good sources of information for the costs, safety, and effectiveness of new drugs
  - Equipment purchasing
    - Less evidence available
    - RCTs of new equipment is difficult
Systems for managing innovation

- 100 innovations a year in one journal alone

- Two types of innovation
  - New knowledge
    - Not assimilated into clinical practice rapidly or systematically
  - New technology
    - May enter directly into the service without evaluation
7.5. STRUCTURE
Creating a team for managing knowledge

- Table 7.4 The clinical development directorate: activities and roles
  - These disparate elements are now being combined into directorates of clinical effectiveness
Getting research into purchasing and practice

- The Getting research into purchasing and practice (GRiPP) Project
  - To take evidence about interventions and drive them into practice

- Promoting Action in Clinical Effectiveness
  - Emphasized on action learning (Box 7.6)
  - Aim
    - To determine how health authorities could use research evidence to improve health when commissioning services for the local population
7.6. EVIDENCE-BASED PRIMARY CARE
PRIMARY CARE

- Care to which a patient can gain access directly
- Primary medical care, community nursing care, and mental health and learning disability services that are delivered to people at home
Primary care

- Important differences between the provision of primary care and that of hospital-based care
  - No. sites for healthcare provision
    - 250 ↔ 3–4
  - No. work sites for individual professionals
    - 100–200 ↔ 1–2
  - No clinical decisions
    - 30 million ↔ 10 million
  - Health problems seen by professionals
    - Wide spectrum ↔ Narrow spectrum
  - Site of decision–making about patients
    - Primary care premises; patients’ home ↔ Hospital
  - Access to a library/support
    - Difficult ↔ Available
The nature of the supporting evidence for interventions undertaken in general practices

<table>
<thead>
<tr>
<th>Nature of substantiating evidence for intervention</th>
<th>No. consultations (N=101)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interventions substantiated by evidence from RCTs</td>
<td>31</td>
</tr>
<tr>
<td>Interventions substantiated by convincing non-experimental evidence</td>
<td>51</td>
</tr>
<tr>
<td>Interventions without substantial evidence</td>
<td>19</td>
</tr>
</tbody>
</table>
Improving access: promoting finding

Ease of access to information
- Phone / fax / Wide Area Network / Internet
- Access to information can be promoted by
  - Offering primary care professionals reference management software
  - Providing information in various media

Provision of relevant information
- MEDLINE and EMBASE
- The Cochrane Library
Need for, and accessibility, different types of clinical information in primary care

<table>
<thead>
<tr>
<th>Type of clinical information</th>
<th>Frequency of need</th>
<th>Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence-based guidelines</td>
<td>++++</td>
<td>+</td>
</tr>
<tr>
<td>Written abstract of the systematic review on which the guideline is based</td>
<td>+++</td>
<td>++</td>
</tr>
<tr>
<td>Data from the systematic review</td>
<td>++</td>
<td>+++</td>
</tr>
<tr>
<td>Primary research on which the systematic review is based</td>
<td>+</td>
<td>++++</td>
</tr>
</tbody>
</table>
7.7. EVIDENCE-BASED PURCHASING AND COMMISSIONING
PURCHASING HEALTHCARE

- Separate that from function of providing health care
- This separation enable purchaser to focus on how best to use finite resources with respect to
  - Particular groups of patients
  - Particular disease, such as heart disease
  - Particular interventions, such as hip replacement
The aim of paying for health services for different groups of people with different disease is to maximise the value obtained from the resources available by ensuring that:

- The resources are allocated to the groups in proportions that maximise value
- The healthcare professional achieve maximum value from the resource allocated to the group
Advantage of being able to focus on a discrete population (1)

Population needs assessment

- Health need used in evidence-based purchasing is a health problem for which there is an intervention about which there is strong evidence, based on good-quality research, that it does more good than harm

- Estimation of the frequency of various health problems in a population

- The appraisal of the evidence for the beneficial and harmful effects of the intervention used to treat each health problem
- Advantage of being able to focus on a discrete population (2)
  - Purchasers as the broader role of health ‘commissioner’ are able to integrate the health services that are purchased with a broad range of public health measures to prevent disease, promote health, and reduce inequalities in a defined population
A disease management system

- Consist of all those services and interventions to improve the health of individuals with a particular disease or a group of disease
- Use of guidelines
- Manage care
- Possible to make an evidence-based decision about the balance of expenditure primary and secondary care for a particular disease (Not as a whole)
- Comparison health outcomes from investment in different disease management system
  - Require studies of safety, effectiveness, and cost (e.g. QALY)
Resource allocation within a single disease management system

- Problems in reallocate resources within a disease management system based on evidence
  - Increased expenditure in budget A(Drug) is required before there can be savings in budget B(inpatient budget)
  - The potential saving may appear to be large when calculated nationally, but for an individual hospital the actual reduction in the amount of resources used may not be sufficient
Resource allocation within a single disease management system

- Possible for health ‘commissioners’ to promote investment in disease management system by focusing on specific points on the primary/secondary care interface.
- Evidence-based cost containment or cutting (Fig 7.6)
Managing innovation

Ways in managing the introduction of innovation

- **Starting starting right**
  - Those innovations that do more good than harm, and which are affordable, are introduced at a defined standard of quality

- **Starting stopping**
  - Those innovations that do more harm than good but have already entered the service are no longer offered

- **Stopping starting**
  - Those innovations that do more harm than good are not introduced

- **Promoting trials**
  - Innovations of unknown effect are investigated during trials

- **Slowing starting**
  - Those innovations that require training and infrastructure are introduced in a planned way
Evidence-based insurance

- systems paying for healthcare
  - Insurance
  - Taxation
- Insurance company in past
  - Paid for all the costs of treatments
Evidence-based insurance

- ‘Benefit language’ in the plan insurance company
  - Coverage categories
    - Describing the services that will be covered
  - Patient responsibilities
    - The contribution the member may have to make to the cost of care
  - Coverage criteria
    - The insurance companies fine-tune the categories of services covered, and seek to balance cost control with the range of services
Coverage criteria

- The intervention is used for a medical condition
- There is sufficient evidence to draw conclusion about the intervention’s effects on health outcomes
- The evidence demonstrates that the intervention can be expected to produce its intended effects on health outcomes
- The intervention’s expected beneficial effects on health outcomes outweigh its expected harmful effects
- The intervention is the most cost-effective method available to address the medical condition
Sufficient evidence

- RCTs
- Systematic reviews of trials
- Convincing non-experimental evidence (e.g. for supporting the decision to drain an abscess)
‘Black belt’ decision-making

- Detailed flow chart for describing a framework for more complex decision-making (Fig 3.7)
The limits of structural reform

- Structural reform as measure to control the increasing healthcare expenditure
- Key components of structural reform (Box 7.10)
  - Imposition of a limit to the amount of GNP or public health expenditure allocated to health services
  - Separation of functions of purchasing (or commissioning) and providing care
  - Introduction of managed care
  - Shift to insurance-based funding of care
The limits of structural reform

- Can control the introduction of expensive innovation (e.g. breast cancer screening)
  - By instructing providers that there will be no reimbursement for such a service
- The appropriate levers in the systems
  - Centralization of services
  - Improving patient satisfaction (waiting time ↓)
  - Increasing productivity
  - Enabling decisions to be made in a more open and explicit way
The limits of structural reform

- A large number of small change
  - A thousand healthcare professionals change their practice in many small way
- A small number of big change
  - Structural reform / Resource allocation
- Both is needed for obtaining maximum value from the resources invested in healthcare
THANK YOU
FOR YOUR ATTENTION