Between a national programme a local hard place – a mental health case study in soft systems methodology

Inderjit Patel

This paper summarises a study undertaken as part of an MSc Health Informatics Degree, to analyse data and information flows within a National Health Service Mental Health Trust in the United Kingdom using soft systems methodology (SSM). Case studies of this type are rare in the mental health informatics field, especially those using a soft systems approach.

Methodology
Checkland’s (1981) Soft Systems methodology was chosen for its demonstrated ability to model complex and fuzzy situations, when there is a perception that the national programme has prioritised “hard” systems thinking. Data was collected through a postal survey, participant interviews and contextualised through a literature review.

Findings
The use of SSM reinforced the view that the national IT programme is based on a “hard” systems view and does not take local factors (which are related to ‘soft systems’ thinking) into account. The study also found administrative staff to be a crucial link between clinicians and information departments and highlighted the need for a joined-up information strategy and integrated systems. Information needs to be relevant to clinicians for it to be used to support evidence-based decisions.

Introduction
A key goal of the Information for Health strategy (DoH, 1998) is the need for health and social care agencies to work closer together and share information when they plan and deliver services. The NHS Plan (DoH, 2000) emphasises that integrating information is the key to achieving a ‘single’ or ‘whole’ system centred on the individual. As NHS services are modernised, using information to support patients and evidence-based practice is becoming more important. This study explores the role of information in an NHS mental health trust in the UK.

Soft Systems Methodology (SSM) - An Overview

SSM attempts to understand a given organisation holistically by analysing the structure of organisations as a whole and from many viewpoints. Checkland and Scholes (1990) have applied this methodology at the community level in the NHS. The model is organised into seven distinct stages, which are summarised in Figure 1.

Figure 1
Stages of SSM, adapted from Macias-Chapula (1992)
SSM Stage 1 - Background and description of the problem situation

Surrey and Borders Partnership NHS Trust (SaBPT) was formed on 1 April 2005, by the merger of three NHS Mental Health Trusts. The three separate Trusts (pre-merger) historically used numerous electronic and manual clinical systems to collect and analyse data for activities such as statistical reports, audits and research, which are still in use and contain inconsistent and incomplete data (CHI, 2004a; 2004b; 2004c). This poses huge challenges for Information and Performance personnel when they compile reports for various statutory bodies and internal teams.

Literature search findings

- Lack of access to information/advice hinders successful management of cases (Fakhury & Wright 2000, Pollock et al 2004);
- Standards are necessary to measure performance and progress, which promotes improvements (Donabedian 1988, Rea & Rea 2002);
- There is a need for joint-up care and I.T. systems (Warner & Hoadley 2004, Rees et al 2004);
- To analyse an organisation holistically, many viewpoints need to be explored and communicated (Wells 1995, Stokes & Lewin 2003);
- Soft Systems Methodology (Checkland 1981) accepts there are multiple viewpoints in a given situation and has been employed successfully in the NHS (Summers 2006).

SSM Stage 2 – Problem situation expressed through rich pictures.
Responses from the survey centred on the following functions within the organisation which formed the main entities of the two ‘rich pictures’ produced:

- IM&T;
- Services;
- Communications network.

The following themes emerged from the questionnaires:

- Communication and information flows between services and the IM&T department;
- Activities that data is currently used for;
- How staff can be encouraged to use data within their services.

The two ‘rich pictures’ were constructed around these themes and the relationships between them.

Figure 2
Rich Picture showing practitioners views of data

Figure 2 shows the ‘rich picture’ constructed from the responses that practitioners gave in their questionnaires.

Figure 3
Rich Picture showing non-practitioners views of data
Figure 3 shows the ‘rich picture’ constructed from the responses of non-practitioners. Rich pictures were presented to the interview participants before they were interviewed. These following themes emerged:

- Non-practitioners are generally more familiar with the role of information than practitioners;
- Practitioners have a limited awareness of the types of data available to them;
- Non-clinical support staff act as the link between practitioners and the Information Department;
- Practitioners would like more support when working with data and information.

SSM Stage 3 – Forming the Root Definition comprising the CATWOE criteria

Smyth and Checkland (1976) concluded that adequate root definitions should have five elements explicitly which are described by the mnemonic CATWOE, as described in Figure 4 and includes the elements identified in this study.

Figure 4
The CATWOE mnemonic

<table>
<thead>
<tr>
<th>C</th>
<th>Customers:</th>
<th>Who receives the benefits of the system?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Actors:</td>
<td>Who implements the system?</td>
</tr>
</tbody>
</table>

Practitioners and support staff in the mental health trust
**Staff in the mental health trust**

T - Transformation process: Who implements the system?

Modernising mental health in line with the mental health national service framework

W - Weltanschauung: The world view or value system espoused

Working towards more efficient and cost effective healthcare through better integration

O - Owners: Who controls the system?

Surrey & Borders Partnership Trust

E - Environmental constraints: What affects the system?

A patient’s journey through a multi-agency environment, where currently, information exists in silos and is not joined-up.

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**The Root Definition as formed from the CATWOE.**

“An **integrated** process, supported by an **integrated** electronic care record, which is **accurate and timely** and **available to all appropriate staff** at the **point of care** delivery.”

The themes that emerged from this definition are:

1. An integrated process and record;
2. Accurate and timely;
3. Available to all appropriate staff;
4. Point of care.

**SSM Stage 4-Constructing a conceptual model**

Conceptual models are purposeful activity systems that are built according to the world view of the CATWOE. Underwood (1996) stated that these are designed to be the ‘ideal’ systems to do the desired job. It links the main findings from:

- The literature review;
- The survey data;
- The interview transcripts;
- The root definition.

The conceptual model shown in Figure 5 has been formed around the following themes from the root definition to create the ‘ideal world’ view:

- An integrated process and record;
• Accurate and timely;
• Available to all appropriate staff;
• Point of care;
• Policy & context.

Figure 5
The Conceptual Model

The inner circle illustrates the links between the activities that occur when a patient/client is admitted to the mental health trust. This is an ‘ideal world’ view and all the activities should be highly connected and work as a whole as shown in the diagram. In order for the ‘inner circle’ activities to function effectively the processes shown outside the ‘inner circle’ need to be in place. This will present a truly integrated system. The electronic care record, when fully implemented, will be the key enabler so that all the relevant health and social care agencies will be able to work together.

SSM Stage 5 - A comparison of the conceptual model with the rich pictures

The conceptual model in Figure 5 displays the client’s complete journey in and around the mental health trust and shows where the IM&T initiatives (such as on data quality) relate to this journey. This model provides the strategic input into the activities that are taking place. The arrows represent how information should be flowing between the activities and are quite distinct.
The ‘rich pictures’ however show ‘snap-shots’ of the client’s journey in the Trust from the perspectives of two groups of staff. These illustrate that the two groups of staff supporting the client view the flows of information in different ways. These two views are not consistent with each other and provide personal experiences and opinions of how information is being used in practice.

SSM Stage 6 – Visibility of potential solutions

The knowledge found from undertaking this research was of a highly localised nature. The following list of recommendations has been provided to the Trust and the H.I.S.

- Clinical information systems across the Trust should be integrated, thus reinforcing one of the recommendations made by Wanless (2004).
- An integrated information strategy would ensure that the role of information has higher priority.
- Consistent or uniform standards to improve the quality of data.
- Information management personnel should have an input in the Trust’s induction programme.
- Clinicians should be given more support to help them use data to make evidence-based decisions.
- The need for greater inter-agency working should be reinforced and promoted so that services can be tailored to clients needs.
- Harnessing the IT skills of administrative personnel.

SSM Stage 7 – Plan of action and areas for further research identified.

- Data/information gap analysis.
- Promoting the use of data for research:
- Comparative study follow-up:
- The quality of current data:
- Managing the change process:

Discussion

This local study takes place in the context of a national programme for information technology, which has been criticised for its lack of “clinical engagement”. (Department of Health, 2006; House of Commons Committee of Public Accounts, 2007). It provides evidence of significant disconnection between IT and clinical staff at a more local level. It also reinforces the concept that the national IT programme is based on ‘hard’ systems view of services and that unless local practitioner needs can be recognised and accommodated, the systems may not be regarded as “fit for purpose” by end users with significant negative consequences for the whole system.

References


Nurse Education Today, Volume 24, Issue 1, Pages 47-54


