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DESIGNING MENTAL HEALTH DELIVERY SYSTEMS: DESCRIBING THE RELATIONSHIP BETWEEN SYSTEM COMPONENTS

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Abstract

A challenging area of healthcare delivery in the UK is mental health. There is a growing need to improve outcomes of care. This research is part of an ongoing study that brings Design and Systems Engineering approaches into mental health service design. The focus is on how to understand and describe the architecture of delivery systems. Results from earlier stages of the work, looking at the identification of system components, have been reported previously. In this paper, we report the findings from empirical work on understanding the nature of the relationships between system components.

Keywords: healthcare design, systems engineering (SE), service oriented design, mental health

1. Introduction

Services, especially healthcare services, have not been considered candidates for the application of engineering knowledge for a long time. However, so much has changed since the second half of the last century and at present services have assumed a new meaning and increasingly recognised as requiring transdisciplinary attention, if innovative services that meet the users' needs are to be effectively designed and delivered (Spath et al., 2008; Stauss et al., 2008).

Service science is gaining recognition as a scientific discipline (Stauss et al., 2008) and service engineering is playing a key role (Spath et al., 2008). Service engineering can be understood as the technical discipline concerned with the systematic development and design of services using suitable models, methods, and tools (Bullinger et al., 2003; Spath et al., 2008).

Modern health service delivery presents challenges at several levels. In the United Kingdom, there is significant pressure at a national level to keep the cost of care delivery down (Appleby et al., 2014). At the same time the demand for better care is growing. At the local levels, some healthcare managers and providers struggle to design and deliver care that is consistently safe and of high quality in the face of growing co-morbidity and complexities in patient conditions (Ham et al., 2016).

These challenges in health service systems provide a significant opportunity for the application of service engineering or a systems engineering approach. The potential contributions that a systems engineering approach can make to healthcare has been recognised for over a decade (Reid et al., 2005). Despite this recognition, how to effectively reap the full benefits of the systems engineering approach in practice remains a more difficult question. This suggests that a better understanding of the processes, tools and methods for ensuring the design and delivery of healthcare services that meet the needs of patients is needed. A recent report released by the Royal Academy of Engineering in collaboration with the Royal College of Physicians and the Academy of Medical Sciences in the UK, has taken the lead in exploring how the systems engineering approach may be effectively contextualised and translated into

healthcare (Clarkson et al., 2017). The report summarised the essence of the systems engineering approach as it applies to health and care improvement as involving four distinct but overlapping aspects - People, Systems, Design and Risk. Of direct relevance to the work reported in this paper is the People and Systems aspects. How can we understand healthcare as a system?

The work reported in this paper is part of a bigger project - the DIAGRAMS research project going on in the Healthcare Design Research Group in the Engineering Department of the University of Cambridge. The aim of the DIAGRAMS project is to co-design a diagrammatic language for describing mental health delivery systems. The DIAGRAMS study was designed to involve four stages involving workshops with mental health service users and interviews with clinicians and managers at each stage. Details of the overall study design and methodology are provided in Section 5. The first stage of the study focussed on the identification of the key components of a typical mental health delivery service system. The results from the first stage of the work have been presented at a previous conference (Komashie et al., 2017).

This paper focuses on the second stage of the DIAGRAMS study and the aim is to understand the nature of the relationships between key components of the system, based on the stories and views of mental health service users and clinicians (and managers) and how these relationships may differ from previously hypothesised relationships.

The next section presents a brief background to the development of relevant research within the Cambridge Engineering Design Centre over more than a decade, seeking to understand healthcare delivery systems and how to describe or model them.

2. Background

The Cambridge Engineering Design Centre has been researching healthcare systems design and modelling approaches for several years. An earlier scoping study into the state of design and system-wide approaches in the National Health Service (NHS) in England found that the service was significantly out of step with other industries in the practice of design (Buckle et al., 2003; Clarkson et al., 2003). Subsequent work began to explore ways of making the wide range of design and systems modelling tools available to healthcare practitioners. This led to the development of a modelling tools selection framework for healthcare (Jun et al., 2009). At the same time significant work was carried out in understanding medical errors and improving risk assessment practices in healthcare (Ward and Clarkson, 2004; Ward et al., 2010; Card et al., 2012) and more recently in developing a deeper understanding of the healthcare domain from a systems perspective (Komashie et al., 2011; Jun et al., 2014; Komashie and Clarkson, 2016; Jun et al., 2017; Komashie et al., 2017). These strands of work around the design and systems approach to healthcare have culminated in a recent report that sets out a clear framework for a systems approach in health and care, through a number of workshops involving engineers and high profile health and care professionals (Clarkson et al., 2017). The main finding of the report is that an effective systems approach involves asking a series of questions that focus on four perspectives - People, Systems, Design and Risk.

The work reported in this paper is under the People and Systems perspectives. This focuses on understanding the system of interest, the needs of all stakeholders and engendering a shared understanding between stakeholders by suitably describing the system elements, relationships and its performance. The development of appropriate system description has been the focus of the DIAGRAMS research project of which the current work is the second stage. The complete study design for the DIAGRAMS work is shown in Figure 4. The first stage of the research was reported in a previous paper (Komashie and Clarkson, 2016). This looked at the key component of a typical Mental Health delivery system and the strength of the association between them. In this paper, we explore the nature of the relationship between the different components in more detail as this understanding can affect the effectiveness of how the system is described or modelled. The background work and scientific context for the DIAGRAMS work has previously been reported (Komashie and Clarkson, 2016; Komashie et al., 2017). However, some appreciation of the nature of the challenge of diagramming healthcare delivery systems will help in seeing the value of the work presented in this paper and its contribution to the DIAGRAMS work.

3. The challenges of diagramming healthcare delivery systems

Diagrams are a great way of communicating ideas but they also have considerable challenges especially within a context where very little is specified. In a study on diagrams and gestures as external representations of thought, Tversky states that "external representations are selective; they schematize, including some information, omitting other information and often simplifying and exaggerating the information included" (Tversky, 2015).

In seeking to develop a way of describing a mental health delivery system with diagrams, one must deal with this characteristic of diagrammatic representations being highly selective and potentially incomplete in information presentation.

Take for instance a simple care delivery process involving a nurse, a syringe and a patient as shown in Figure 1 below. An immediate question might be "What do the directed arrows between the components mean?" The exact answer to this question may depend on the immediate context and purpose of the diagram. Again, Tversky conducted experiments on the production and comprehension of diagrams, concluding that geometric forms like lines, boxes and arrows carry context-dependent meanings (Tversky, 2015).

Figure 1. A simple healthcare process showing components

If it is known, however, that the purpose of the diagram is to communicate that "a nurse uses a syringe to inject a patient", then Figure 2 will be a more meaningful diagrammatic representation - A type of entity relationship diagram showing the entities or components of the process and the relationships between them.

Figure 2. A simple healthcare process showing components and relationships

It may be argued again whether Figure 2 is the only right way of communicating the message of a patient being injected by a nurse. Consider for instance the alternative representation of a *Patient injected with a Syringe by a Nurse*.

There are clearly several choices involved in how diagrams are drawn. It is therefore understandable that in other fields such as software engineering and systems engineering, significant work has been done in developing effective ways of diagramming systems.

Getting the descriptions of the relationships right in a diagrammatic representation of a care delivery system in a way that satisfies all stakeholders is challenging. Our research has captured a diversity of ways in which participants expressed the relationships between some system components. It will be impossible to design a representational system that satisfies all the different ways in which these relationships are expressed. However, we suggest that having the data on how actual service users and clinicians express these relationships is an important input to the development of such a diagramming framework.

4. Initial hypothesis

Based on several years of experience working with healthcare practitioners and building models of healthcare systems, the authors initially proposed that a useful representation of the key components of a care delivery system and the relationships between them, may be represented as in Figure 3. This representation, previously proposed in (Komashie and Clarkson, 2016), suggests that the key components of a care delivery system are the Conditions that the system is setup to address, the person or people with that condition, the goals of the person and those of the system, the processes for treating or managing the condition, the staff and carers who define and use those processes, the information they

need, the interventions they choose, the resources needed and the environment within which the system operations. The outcome of care is ultimately the result of the interaction between these components.

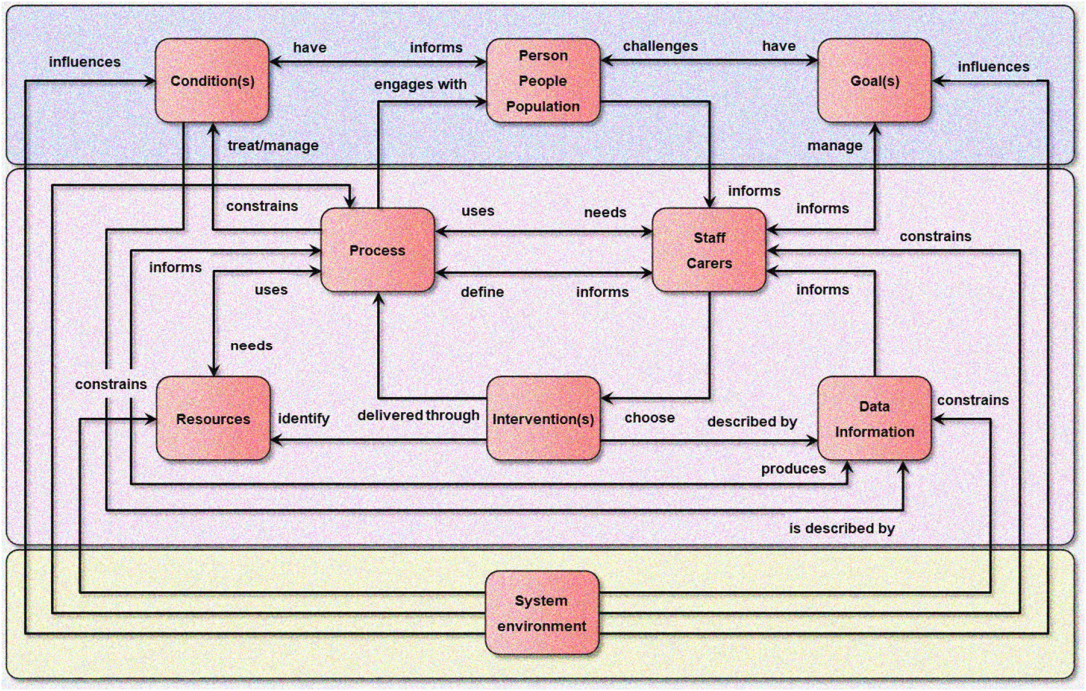

Figure 3. Initially proposed components and relationships

The representation was intended to be a simple way of helping stakeholders appreciate the interconnectedness of system components and also be able to use to representation to formulate meaningful statements to inform discussions leading to a shared understanding of system issues. For instance, from Figure 3, one may be able to see that a "*person or people have conditions and have goals*". Or that "*Staff/Carers choose interventions delivered through processes to treat or manage conditions whilst engaging with the person or people and managing their goals*". Understanding these components and relationships therefore can add great value for those responsible to designing and delivering healthcare.

It is therefore desirable to test this hypothetical representation with empirical observations and understanding. The results from the first stage of the DIAGRAMS study revealed that, within a mental health context, Figure 3 misses one key component - Family and friends (Komashie et al., 2017). This component is highlighted in the overall component matrix in Appendix B.

In this present paper, the aim is to understand the nature of the relationships between key components of the system, based on the stories and views of mental health service users and clinicians (and managers) and how these relationships may differ from the hypothesised relationships in Figure 3.

5. Research context, design and methodology

This research was conducted in a local National Health Service (NHS) Mental Health Trust in the East of England. The focus was on Adult Mental Health. Service User participants were between the ages of 16 and 65 and had experience of receiving care in the Trust. Clinician and Manger participants were included if they have experience providing care in the same Trust. Approvals for the research were received from the R&D department of the NHS Trust, the Health Research Authority (HRA) in England and the Cambridgeshire and Hertfordshire Research Ethics Committee (REC) under reference number 16/EE/0042. The study had a strong Patient and Public Involvement (PPI) in the form of a purposely setup Service User Advisory Group (SUAG). All the service user workshops were facilitated by a researcher and a SUAG member who has had experience of using the mental health service herself. All the face-to-face interviews were conducted by one researcher.

5.1. Research design

The study design shown in Figure 4 uses a semiological framework - Categorisation, syntactics, semantics and pragmatics - to provide a logical flow for the empirical work. Semiology is the study of how humans communicate using signs and symbolisms. Categorisation focuses on understanding categories within the reference domain. Syntactics focuses on the syntax within the signs, symbols or graphical objects and how they link together to communicate something meaningful. In this study, we have focused on understanding the nature of relationships between the components in the reference domain, for the syntactics stage, as reported in this paper. Semantics looks at how the categories within the reference domain, together with the relationships between them, can be represented with signs, symbols or graphical objects. Pragmatics deals with how one understands the reference reality from the representation involving the semantics and syntactics. This four stages are related as shown in Figure 4. The stage highlighted is the focus on the present paper.

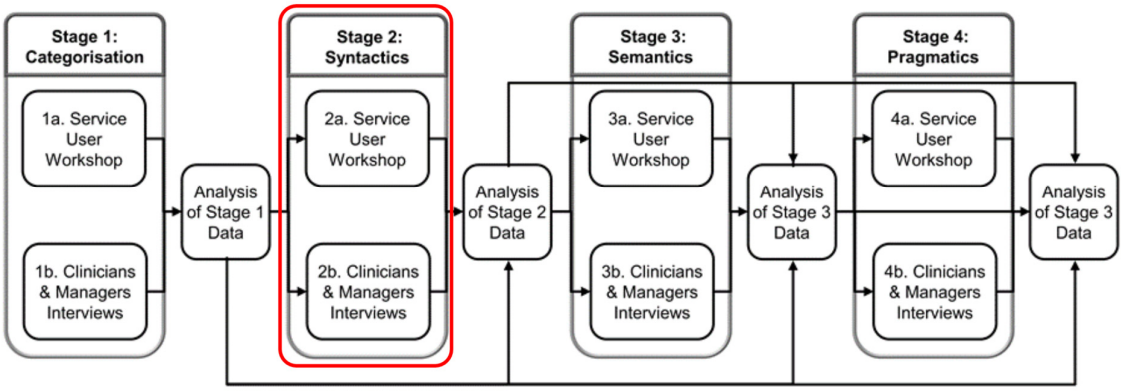

Figure 4. Research design showing syntactic stage reported in this paper

5.2. Research methodology

The DIAGRAMS research employed a qualitative exploratory design using focus group (Kitzinger, 1994, 1995) and semi-structured interview (Britten, 1995) methodologies. The study was originally designed to use focus groups only but due to the extreme difficulty in finding a good number of clinicians and managers available at the same time, the research protocol was modified to include face-to-face interviews only for the clinicians and managers. Due to the exploratory nature of the study, this modification was not considered to have a significant impact on the result. The semi-structured interview approach was chosen to ensure that the face-to-face interviews were as close as possible, in content, to the focus groups. And, since "focus groups are a form of interview" (Kitzinger, 1995) the two methods were complementary.

The first stage of the research (Categorisation) focused on the identification of system components from participant stories (Komashie et al., 2017). The second stage (Syntactics), reported in this paper focused on understanding the nature of the relationships between system components and how such relationships are expressed by participants. The Service User workshop involved six (6) participants and five (5) face-to-face interviews were conducted with clinicians and managers for this stage of the study. Each workshop and interview was recorded and transcribed fully.

The content of the workshop and interviews had two parts: first, there was a focus on participants telling stories of their experiences of receiving care (for service users) or providing care (for clinicians or managers). The focus of these stories was on observing how relationships between system components are expressed.

Secondly, description of relationships were elicited from participants through an activity involving cards. Participants were given A5-sized cards with names of system elements and space for describing the relationship between the elements in up to five (5) ways. An example of a completed card is shown in Figure 5 below. This example shows five (5) different ways in which a clinician participant describes

the relationship between a Service User and a General Practitioner (GP). Each participant completed about 15 to 20 of these cards representing different relationship including the reverse relationships.

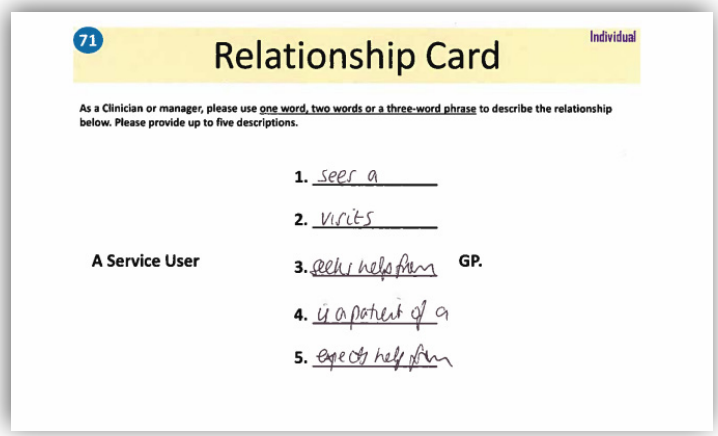

Figure 5. A sample relationship card used in workshop and interviews

6. Data analysis

The general approach to the analysis of data is similar to that employed in the first stage of the research (Komashie et al., 2017) - qualitative and exploratory. Transcripts of all workshop and interview data and the result of card-based activities were all imported into the ATLAS Software package which was the main tool for the qualitative analysis. The general plan for coding the data is as follows:
The first stage of analysis was the identification of "quotations" which represent a meaningful portion of a participant's narrative. An example of a quotation is as follows:

> *"I mean in my case I had a full-scale breakdown and it resulted in a suicide attempt and then from what I can really remember is having to see this room full of psychiatrists which* ***was really intimidating*** *and then they* ***made decisions*** *about medications which* ***made me worse****, and then they wanted to take me to hospital but I sort of refused and I wanted to* ***stay with*** *mum and dad." - A Service User participant*

Secondly, we identify, within each "quotation", any description of relationships (or interaction) between system elements (e.g. A Psychiatrist e*xamines* a Service User) that emerge and assign codes to them. Codes from narrative "quotations" were developed to highlight the system components involved and the phrases used to describe their relationship. For example, the following codes were developed from the quotation above: *Resource (Medication)-SU* - ***Made me worse****; Staff-Resource(Medication)* - ***Made decisions on****; Staff-SU* - ***Take to hospital****; SU-Staff* - ***Intimidated by****; SU-Family/Friend* - ***Stay with***. Medication has been categorise as Resource component as it is necessary in order for psychiatrist to function effectively (Komashie et al., 2017).
The above two-step process was similarly applied to the outcome from the card-based activity. Each card was equivalent to a "quotation" and each description provided is the basis for a code. Hence each card had as many codes as the descriptions on it. For example, the card sample shown in Figure 4 above has five codes: *Staff-RCards-SU-External Agency(GP)* - ***sees a****; Staff-RCards-SU-External Agency(GP)* - ***visits****; Staff-RCards-SU-External Agency(GP)* - ***seeks help from****; Staff-RCards-SU-External Agency(GP)* - ***is a patient of a****; Staff-RCards-SU-External Agency(GP)* - ***expects help from***. The format of these codes need further clarification. Take for instance the code "*Staff-RCards-SU-External Agency(GP) - sees a".* The *Staff-RCards* part of the code means the code comes from a staff interview and is a response to a relationship card. Similarly, codes that came out relationship cards in a service user workshop start with *SU-RCards.* The *SU-External Agency(GP)* part of the code represents the system components in the captured relationship - SU for Service Users, and GP (General Practitioners) are categorised as External Agency because they are external to the Mental Health system that is the focus of the study.

This approach to analysing the data makes it possible to explore the codes in several different ways but for this paper, we focus on presenting representative descriptions for each of the relationships between components where data was obtained and compare these to a previously hypothesised representations of system components and relationship descriptions in the fashion of entity relationship diagrams.

7. Results

The results at this stage of the research are entirely qualitative and in the form of several different phrases with which service users (i.e. mental health patients) and clinicians (including psychologists, psychiatrist and service managers) have described the relationships between various components of the system. These components were identified in stage 1 and reported previously (Komashie et al., 2017). Ten key system components were identified - Staff/Carers, Processes, External Agencies, Person/Group, Resources, Interventions, Data/Information, Conditions, Family/Friends and Goals.

As described in the study design section, data gathering involving service users took place in a workshop or focus group setting whilst clinicians were involved in a semi-structured interview. These two independent sources were combined in the analysis and the results presented here are what the two perspectives, together, reveal.

A full list of descriptions of the relationship between service users (patients) and conditions captured as codes from the data is shown in Appendix A. A complete matrix showing descriptions where relationships were identified from the empirical data are shown in Appendix B. Note that each cell in the matrix only shows a sample of codes that broadly represent the expressed relationships if not all of them. In most cases, as in Appendix A, there are many more expressions of the relationships between two components identified. Figure 6 shows a snapshot from the complete matrix. The relationships between components are intended to be red from row to column. For example "Conditions" (in row) *Can affect* "Person/People" (in column) or "Person/People" (in row) *Could have* "Conditions" (in column).

All the relationship descriptions provided in Figure 6 (and Appendix B) were derived from the empirical data. The cells with no texts indicate relationships that were not identified within the data. Dark green cells, for example "Conditions" row and "Person/People" column, represent relationships that were captured in the initial hypothesis.

	Person/ People	Conditions	Interventions	Processes
Person/ People		• Could have • Can be defined by • Can develop • Has	• Can benefit from • Can rarely access • May wish to use • Will resist	• Wait for • Require treatment in • Can be referred to • May need a
Conditions	• Can affect • Is a diagnosis for • Should not define • To be explained to			• Eligible criteria for • Is common in • Is seen in
Interventions	• Can benefit • Helps • Is recommended for • Is demanded by			
Processes	• May be suitable for • Be appropriate for • May benefit • Is inaccessible for	• Supports people with • Treats people with • Understands		

Figure 6. A snapshot from the matrix of descriptions of the relationships identified from the qualitative data

Each non-green cell with texts (e.g. Interventions (row) and Person/People (column) in Figure 6) indicates an empirically identified relationship that has not been previously captured in the initial hypothesis. Conversely, each green cells without a text represents a relationship captured in the initial

hypothesis but which was not identified from the empirical data. However, it may be seen from Figure 6 that if the hypothesised relationships are mirrored, then more of the empirically identified relationships may have been covered as indicated by the additional bright green cells.
In summary, the results show four things:

1. The data obtained from service users and clinicians, together, reveal several different ways of describing the relationship between a pair of components. However, the descriptions predominantly indicate some activity or action that connects most component pairs.
2. There are relationships identified in the empirical data that were not previously captured in the initial hypothesis.
3. There are some relationships in the initial hypothesis that were not identified in the empirical data.
4. The sense of how relationships were expressed in the empirical data was similar to the way they were conceptualised in the initial hypothesis - in the form of entity relationships. An important difference is in some of the words used in the empirical relationships. It appears that some words used in descriptions such as, surfer, hate, stress as may be seen in the a few of the codes in Appendix A may reflect the unit mental health context.

8. Discussions

The aim of this study was to understand the nature of the relationships between the key components of a mental health service delivery system from the perspectives of mental health service users and clinicians. The results show that there is significant diversity in the way in which the relationships between components are expressed, however, most of the descriptions may be considered as actions from one component to another. It was also found that a previous hypothesis of how these components may be related, shown in Figure 3 and previously reported in (Komashie and Clarkson, 2016), differs from the empirical results in some areas but captures the activity nature of the relationships identified from the empirical data.
Regarding the differences in the number of relationships between the hypothesised representation of Figure 3 and the empirical results in Appendix B a number of explanations may be given. (1) the number of the relationships specified in Figure 3 are unidirectional. It is not unreasonable to mirror each of those relationships. A mirroring of all the relationships in Figure 3 will be equivalent to all the green cells (both dark and bright green) in the matrix of Appendix B illustrated by the snapshot in Figure 6. (2) it may be noted that in putting Figure 3 together it was considered that relationships between components may be direct or indirect. For instance, no direct relationship was indicated between "Staff/Carers" and "Conditions" in Figure 3 because it was considered that "Staff/Carers" *use* or *define* "Processes" to *Treat/Manage* "Conditions". Similarly, there is no direct relationship defined between "Staff/Carers" and "Resources" because again it was considered that "Staff/Carers" *use* or *define* "Processes" that *Need* "Resources". The consideration of indirect relationships had the advantage of reducing the number of relationships that has to be defined, as showing all relationships will complicate the diagram, making it less accessible.
The observation that even within the mental health context a system maybe conceptualised as involving components (or entities) with actions happening between them is consistent with work by Ross on Structured Analysis (SA) several decades ago (Ross, 1977). Ross built the entire SA language from the fundamental idea that all of space-time may be reduced to "things" and "happenings", in other words nouns and verbs. Ross's work and its subsequent development together with other works into the UML and SysML languages are too complicated to be attractive to healthcare practitioners. This is the main motivation for the DIAGRAMS research project which involves the current work. It is only by better understanding the domain of healthcare and the requirements for systems description can a more applicable and easily accessible systems description approach be formulated.
It must be noted, however, that this study has some limitations. First of all there are several stakeholders within healthcare whose perspectives may add to the understanding of the delivery system. For instance, policy makers, commissioners (those who pay for care) and higher levels of management. This study has only involved service users and clinicians hence has limited perspectives. However, this limitation has been considered in the workshops and interviews by using prompts that encouraged participants to

think about their experiences and the implications as broadly as possible hence the effects of the missing perspectives may have been minimised.

9. Conclusions

Haven looked at the qualitative data from our stage two workshop and interviews, the following conclusions can be drawn in the interim:

1. That our initial hypothesis about the nature of the relationships between the components is consistent with the findings. The exact wordings differ but the majority of the relationships we identify from the data are described as actions happening to the components. This is also consistent with work by Douglas Ross on the Structured Analysis (SA) language. It is an interesting result that even within mental health care delivery, a system may be conceptualised as entities (or components) and relationships as in software or systems engineering.
2. There are, however, important differences in some words used which require attention in the development of a final diagrammatic framework for mental health systems. Some words used in the descriptions identified from the data had emotional contents. For instance a service user described relationship with a condition with the word "hate". Further analysis or study may be required to understand how to incorporate emotional content into a diagrammatic description in this particular context.
3. Although this work has focused on mental health service systems, it may be possible that the understanding obtained through this work with regards to the relationship between system components may be application in other healthcare domains with similar key components. Further research will, however, be required for a proper generalisation of the results.
4. There are other interesting questions that arise from these observations but which space will not allow to be treated in this paper but will be explored further in the DIAGRAMS work. For instance, is a single diagrammatic representation enough? If not what combination of representations, together, present a more complete view of the delivery system? What level of abstraction is appropriate for different stakeholders?

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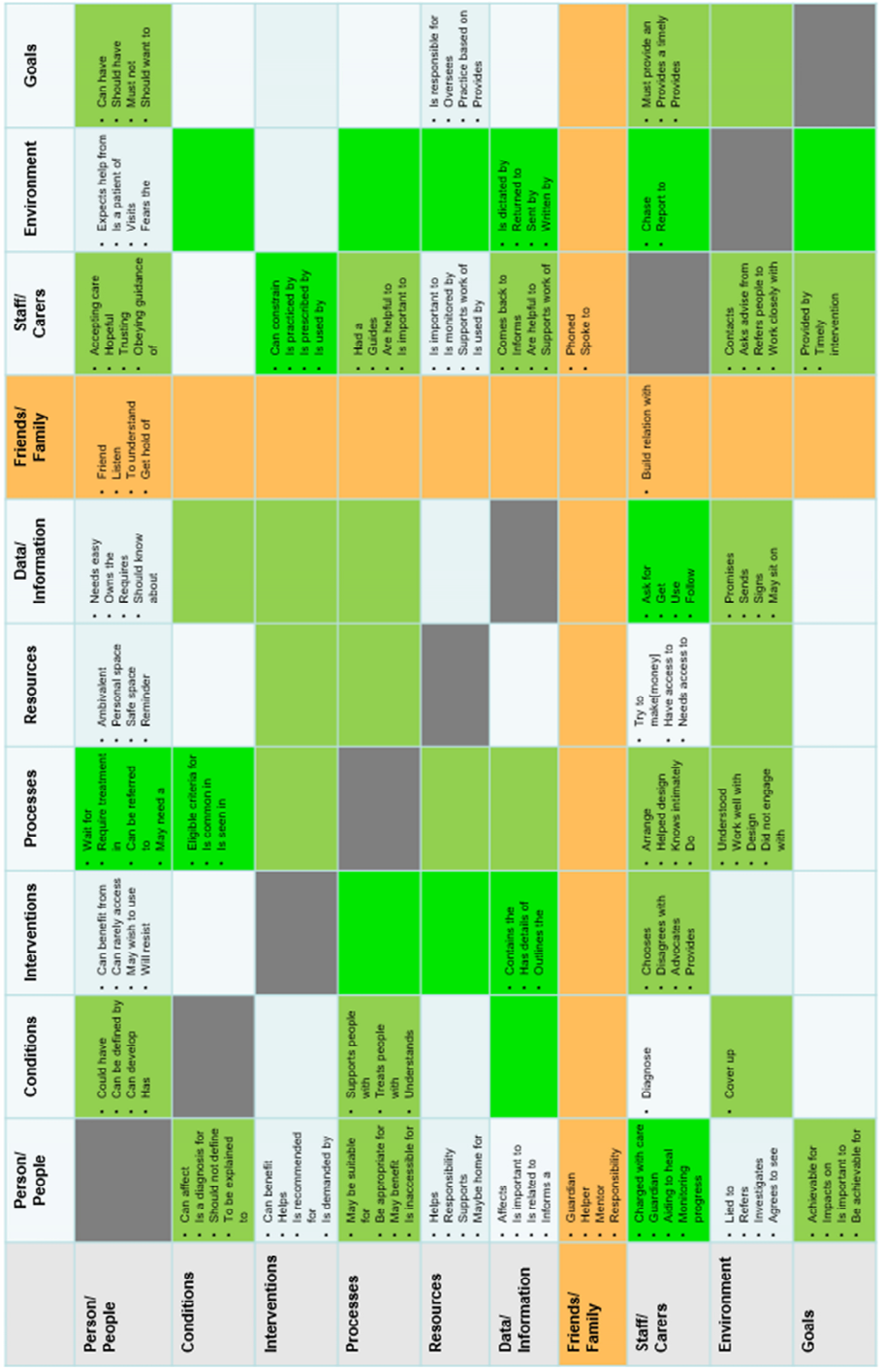
Appendix A: Results showing various descriptions of the relationship between Service User and Condition

As described in Sections 4 and 5, the content of each workshop and interview had two parts - stories and card exercises. The table below shows the complete description of relations from both stories and card exercises for a pair of system components - *Service User and Condition* presented in both ways.

	"Service User-Condition" Relationship Codes	"Conditions-Service User" Relationship Codes
Codes from Stories	• SU-Condition - Could have • SU-Condition - Diagnosed as • SU-Condition - Escalated • SU-Condition - Had • SU-Condition - Had Diagnosis of • SU-Condition - Has • SU-Condition - Has got • SU-Condition - Have • SU-Condition - With	
Codes from Relation Cards	• Staff-RCards-SU-Condition - Can be defined • Staff-RCards-SU-Condition - Can develop • Staff-RCards-SU-Condition - Can have a diagnosis of • Staff-RCards-SU-Condition - Can live with • Staff-RCards-SU-Condition - Can suffer from • Staff-RCards-SU-Condition - Could have difficulty accepting diagnosis of • Staff-RCards-SU-Condition - Has a diagnosis of • Staff-RCards-SU-Condition - Outlook can be affected by • Staff-RCards-SU-Condition - Should be able to deal with • Staff-RCards-SU-Condition - Should be supported to manage • SU-RCards-I-SU-Condition - ??? • SU-RCards-I-SU-Condition - Gets help with • SU-RCards-I-SU-Condition - Has • SU-RCards-I-SU-Condition - Hates • SU-RCards-I-SU-Condition - Is treated for • SU-RCards-I-SU-Condition - Lives with • SU-RCards-I-SU-Condition - May have • SU-RCards-I-SU-Condition - May never get • SU-RCards-I-SU-Condition - Might live with • SU-RCards-I-SU-Condition - Needs help for • SU-RCards-I-SU-Condition - Recognise signs • SU-RCards-I-SU-Condition - Recognise stress • SU-RCards-I-SU-Condition - Regular reviews mental health or GP • SU-RCards-I-SU-Condition - Struggles with • SU-RCards-I-SU-Condition - Take medication regularly • SU-RCards-I-SU-Condition - Takes pills for	• Staff-RCards-Condition-SU - Affects the view of • Staff-RCards-Condition-SU - Can affect • Staff-RCards-Condition-SU - Can affect relationships • Staff-RCards-Condition-SU - Is a diagnosis for • Staff-RCards-Condition-SU - Should not define • SU-RCards-I-Condition-SU - Medication explained • SU-RCards-I-Condition-SU - To be explained to • SU-RCards-I-Condition-SU - To see a professional on a regular basis • SU-RCards-I-Condition-SU - You need to accept this condition

Appendix B: The full matrix of system components and representative descriptions of each relationship where there was empirical data

All the green cells represent initially hypothesised relationships.



	Person/ People	Conditions	Interventions	Processes	Resources	Data/ Information	Friends/ Family	Staff/ Carers	Environment	Goals
Person/ People		• Could have • Can be defined by • Can develop • Has	• Can benefit from • Can rarely access • May wish to use • Will resist	• Wait for • Require treatment in • Can be referred to • May need a	• Ambivalent • Personal space • Safe space • Reminder	• Needs easy • Owns the • Requires • Should know about	• Friend • Listen • To understand • Get hold of	• Accepting care • Hopeful • Trusting • Obeying guidance of	• Expects help from • Is a patient of • Visits • Fears the	• Can have • Should have • Must not • Should want to
Conditions	• Can affect • Is a diagnosis for • Should not define • To be explained to			• Eligible criteria for • Is common in • Is seen in				• Can constrain • Is practiced by • Is prescribed by • Is used by		
Interventions	• Can benefit • Helps • Is recommended for • Is demanded by							• Had a • Guides • Are helpful to • Is important to		
Processes	• May be suitable for • Be appropriate for • May benefit • Is inaccessible for	• Supports people with • Treats people with • Understands						• Is important to • Is monitored by • Supports work of • Is used by		• Is responsible for • Oversees • Practice based on • Provides
Resources	• Helps • Responsibility • Supports • Maybe home for							• Comes back to • Informs • Are helpful to • Supports work of	• Is dictated by • Returned to • Sent by • Written by	
Data/ Information	• Affects • Is important to • Is related to • Informs a	• Contains the • Has details of • Outlines the						• Phoned • Spoke to		
Friends/ Family	• Guardian • Helper • Mentor • Responsibility									
Staff/ Carers	• Charged with care • Guardian • Aiding to heal • Monitoring progress	• Diagnose	• Chooses • Disagrees with • Advocates • Provides	• Arrange • Helped design • Knows intimately • Do	• Try to make[money] • Have access to • Needs access to	• Ask for • Get • Use • Follow	• Build relation with		• Chase • Report to	• Must provide an • Provides a timely • Provides
Environment	• Lied to • Refers • Investigates • Agrees to see	• Cover up		• Understood • Work well with • Design • Did not engage with		• Promises • Sends • Signs • May sit on		• Contacts • Asks advise from • Refers people to • Work closely with		
Goals	• Achievable for • Impacts on • Is important to • Be achievable for							• Provided by • Timely intervention		

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