

Trusting The Record.

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Abstract

This paper contributes to the longstanding interest in documents and paperwork through an examination of everyday document work with patient records in a clinic. Based on an ethnographic study of a deliberate self harm clinic the paper goes beyond reflections on the 'affordances' of paper to consider the role document work plays in the development of trust in the routine social interactions of a working division of labour. Issues of trust are seen to play central roles within the complexities of organisational working and some consequent implications for the deployment and use of electronic medical record systems are considered.

Keywords: Trust, Paperwork, Affordances, Electronic Medical Records.

1. Introduction: research on the record

“When it is acknowledged that the medical record is interwoven with the structure of medical work in fundamental ways, that different medical record systems embody different notions of how work is organized, different modes of configuring patient bodies, and so forth, we are in a position to better understand and intervene upon the issues that are at stake.” [1]

There is a long history of research into record creation, record keeping and record use [2; 3; 4; 5]. This is hardly surprising, as documents and document work are often a principal locus for cooperative work and a motivation behind -- and one of prime candidates for -- the ‘computerisation’ and associated issues of what to automate and what to leave to human skill and ingenuity. Research on understanding records has taken different, though inter-linked, directions. First, there are those approaches that emphasise the organisational factors and reasons behind the varied activities of document work [6; 7; 2; 8]. Whether it is ‘good organisational reasons for bad clinical records’ or ‘bad organisational reasons for good clinical records’, the emphasis is on organisational aspects of record keeping and use; that is with the socially organised practices and reasoning associated with their routine, ‘workaday’ use. Second, a different but related tradition has generated a whole series of studies on the ‘affordances’ of paper [9]. This has involved rather more than a simple contrast with the overweening ambitions of the the myth of the paperless office, but incorporates an interest in how various affordances of paper, such as ‘awareness’, could be reproduced or represented

electronically. The continuing interest in fieldwork studies of documents and records [10] is a product of a developing interest in discovering just how paper documents and records are used in, and facilitate features of, organisational life.

This paper continues and extends this interest in records, their organisational justification and the various forms in which records can appear, through an ethnographic examination of record keeping, organisational change and issues of trust in a healthcare setting. 'Trust' here is both the specific expectation that another's actions will be beneficial rather than detrimental [11] and the generalised ability to "take for granted, to take under trust, a vast array of features of the social order"[6]. As records and record keeping proliferate, and as the technology and organisational culture changes -- with healthcare becoming increasingly distributed -- so issues of trust and related notions such as risk [11; 12; 13] have become ever more notable in healthcare settings. Kipnis (1996) for example [14], clearly links the nature of trust to the organization of work and the character of technology. As technology and work organisation changes so different problems of trust emerge. Our interest is in what mutual trust exists within the organisational system (the socio-technical system), how this trust (and culture) is achieved and supported (or undermined) by IT systems, and the extent that the overall dependable delivery of healthcare is reliant on this trust. A simple characterisation of this is why do people, doctors, nurses, patients trust the often less than pristine, and heavily and (allegedly) illegibly annotated pieces of paper of the medical record rather than the neat and orderly electronic medical record (EMR¹) on the screen? However, we are not presenting some kind of simplistic Luddite, technophobic analysis here in which technology is necessarily 'worse' than paper. A more complex characterisation seeks to understand in detail how and in what ways and in what precise circumstances artefacts such as records and the various representations they contain come to be trusted or trustable. What features of the record and the work that surrounds it and goes into its production, do we need to understand, capture and represent in order to maintain or develop trust?

2. Notions of trust

There are a number of different theoretical approaches which have been taken to the study of trust, from Axelrod's calculative model[15], through to Luhmann's processual model [12; 16]. Luhmann's approach to the 'elusive notion' of trust starts by looking at the problem of

¹ Also referred to as the electronic patient record (EPR) and electronic health record (EHR). These terms are used sometimes to distinguish between the record of periodic care held by a single provider (EPR) and the fully integrated record of the patient's complete medical history (EHR) (Royal College of GPs 2000).

conceptualising trust. He argues that because trust has been theoretically 'ignored' then conceptual clarification has not been particularly attended to. He also argues that empirical work has muddied the conceptual waters by confusing trust with other issues, e.g., positive/negative attitudes, confidence, alienation, solidarity, participation -- the issues it gets interchanged with being dependent on the setting being studied. Luhmann's central point is that all approaches fail to pay attention to the *social process of trust production*, i.e., they leave unspecified "the social mechanisms which generate trust" (1990:95). Rather than emphasising what trust does, investigations of how trust is achieved, how it can be seen in action, is needed. Our study takes on board Luhmann's recommendation to look at trust accomplishment as a social process.

The idea of trust is manifested in organisational life in a number of different ways. So, for example, the emerging notion of the 'audit culture' [17] embraces a particular form of 'trust' - in making actions accountable, warrantable and punishable. Although a comparatively recent perspective the notion of audit culture can be seen as an extension of some of the ideas of Yates and 'control through communication' [8]. In this view, new communication genres - documents, records, memos and their storage technologies - developed as a product of organisational needs and available technologies. Older customs of form and style gave way in the face of a desire to make documents more efficient to create and use. Systematic management represented an attempt to impose standardised procedures on routing managerial work through 'method' or 'system'. This involved a careful definition of duties and responsibilities coupled with standardised procedures; a specific way of gathering, handling, analysing and transmitting information whereby 'system' became the means by which information became trustable. However, the view explored in this paper is, as Garfinkel suggests [6], that trust is more than the notion of audit, but is woven into the very fabric of everyday organisational life -- the workaday world -- as part of the 'taken for granted' moral order.

Our interest is in how trust is accomplished as a mundane feature of everyday life. This includes how it is accomplished in everyday medical work, in particular work with and around medical records; and how trust can be viewed as a product of work on the record, and incorporated in various ways into the record. The features we are interested in include a consideration of how, and in what ways, the organisation of the record creates and sustains certain 'trustable' features as a recognisable sedimentation of activity, as a record of activity and actions. Another feature relevant to an analysis of medical records concerns trust and habit -- the 'taken for granted' nature of social life. This includes the notion of physical

location: the trust that records will be in their usual place and the need to account for any departures from the norm. These ‘trustable’ features of records come from, and reinforce, the way they are embedded in a moral order. As Zimmerman [7] writes: “The taken for granted use of documents ... is largely dependent on an ordered world -- the ordered world of organizations, and the ordered world of society at large.”

3. Document work in healthcare settings: The toxicology ward

The setting for our study is the toxicology ward within a large Edinburgh hospital. The aim was to subject work within the ward, and in particular document work, to close empirical investigation. The method used, ethnomethodologically-informed ethnography [18], observes in detail everyday working practices and seeks to explicate the numerous, situated ways in which those practices are actually achieved, and the things that such an achievement turns upon.² As Garfinkel [6] suggests “... *we are doing studies of how persons, as parties to ordinary arrangements, use the features of the arrangements to make for members the visible organised activities happen.*” with an especial interest in how medical records enter in this process. We are particularly concerned with how documents get worked up and enter into everyday work as trustable, reliable artefacts.

The toxicology ward is a specialised inpatient service that allows for joint medical and psychiatric assessment of patients who typically have been referred from A&E following a suspected self-harm incident. Patients admitted may already be users of other psychiatric or health services. The psychiatric assessment team (PAT) is usually only able to make a brief psychiatric assessment themselves and depend heavily on the medical history that other health professionals might be able to provide. Typically a patient’s GP will be consulted, and most highly prized is a ‘fuller’ psychiatric history that might be available if a patient has been assessed as an inpatient in a psychiatric hospital.

The toxicology patient record epitomizes the traditional, much criticized, departmentally-oriented, paper-based record. It consists of a number of components that accumulate over the course of the treatment and subsequent disposal of a patient:

The Pink Sheet: created in A&E by the admitting doctor and contains a brief typed summary of the patient’s presentation. It is used in conjunction with the morning handover to initially orient members of the psychiatric team to the patient’s presentation. Team members sometimes use the pink sheet for note taking during their assessment of the patient and during phone calls to other professionals.

² The investigation was based upon twelve months ethnographic fieldwork. Interviews and discussions with members were recorded and notes made of activities observed and artefacts employed -- e.g., clinicians’ notes, patient records, and referral letters.

Toxicology in-patient record: the 'unitary record' for admitted patients. It contains information gleaned from the admitting nurse's assessment, medical clerking and psychiatric assessment. PAT members often use this as a source of contact information for next of kin, support workers etc. It incorporates a description of the nature and circumstances of the episode of self-harm, and as such may be used by team members to familiarise themselves with the patient's presentation.

Initial Psychosocial Assessment Form: completed by the admitting nurse for the patient in his/her charge. The aim of this form is to provide a means of determining whether a patient can be safely discharged if the patients requests to 'self discharge' at times when psychiatric expertise is not close at hand.

Handwritten progress notes: detail the ongoing care of the patient and will include a summary of the circumstances of the overdose written by the admitting nurse, details of the PAT member's assessment, of contacts made with other professionals and of the disposal.

Discharge/Referral Letter: produced when the patient is discharged (referred) to another hospital. The circumstances of the presentation, details of the PAT member's assessment and details of the disposal are recorded here. They are written for the benefit of the GP (doctor) who will be responsible for the patient's care following discharge (referral). They also serve as a record of the admission for team members and are consulted should the patient be admitted again.

A number of other paper forms may also be incorporated into the record. These are largely concerned with the monitoring of the patient, details of their treatment and nursing care, and may be of interest to the PAT, for example, to judge the severity of the self-harm incident. After disposal, the patient record is amalgamated with the central hospital record keeping system.

4. The organisation and use of the record

The medical records in the toxicology ward can be considered at different levels of aggregation. Together, as a collection, record folders for each patient are kept in a purpose built trolley that typically follows the cycle of activity within the ward. During the morning ward round (usually held between 8.30 and 9.00am) it is wheeled from bed to bed and each of the record folders are accessed in turn. At the 9.00am meeting two handovers are given to the PAT. Typically the consultant toxicologist runs through the medical status of each of the patients, and a nurse gives a 'psychosocial' handover. The records trolley is wheeled into the ward at the beginning of this meeting, allowing sequential access to the records as each patient is discussed. A nurse produces each of the records in turn, referring to the progress notes to give a brief synopsis of salient factors of each presentation. Sometimes the records are only accessed if some point is raised that requires clarification. Other nurses may make reference to ad-hoc notes that they have made on pieces of paper or in small notebooks.

At this point, the character of the use of records changes. The sequential structures of the activities thus far described lend themselves to a similar sequential or turn-wise access to the notes. At the end of the morning meeting the patients are allocated to team members for assessment, who then avail themselves of the relevant notes. Team members will typically read through these notes prior to seeing the patient. They will also retrieve and examine previous discharge letters from the files kept in the doctors' room. The records are consulted

and updated during the ongoing process of assessment and often not immediately returned to the records trolley. Instead they may be left on the work surfaces in an apparently disordered fashion and subsequently returned to by the attending team member or sought by others involved in the patient's care. After the assessment is complete it is the nurses who make the final entries in the notes when the patient is discharged. This is typically done at the nurses' station in the ward. The pages comprising the completed notes are removed from the record folder and placed in the wire basket on top of the filing cabinet in the doctors' room and collected routinely by the secretaries. Thus there is a tie between the location of the records as a collection, and the particular activities carried out on the ward³, and variations in the organisation of the records as a collection depending on the activity.

Whilst the psychiatric assessment team are going about their work the location of a record may not be obvious 'at a glance' as they are no longer formally organised in the records trolley, nor is the identification mark on the spine easily visible. Members wishing to access a particular folder may have to search for it by searching the room or by asking. The work of discovering a particular record folder often results in learning more than simply the record's location. This enquiry may also reveal which team member has responsibility for the patient, and whereabouts they are in terms of the patient's trajectory thereby orientating the nurse to the current state of play with a particular patient⁴. In the following example, concerning a patient who has taken a suspected overdose, the location of the notes is held accountable in terms of the stage of work activities on the ward:

(Extract from field notes)

A nurse enters the doctor's room carrying a cardiogram trace and is apparently looking for something.

Nurse: "I'm looking for the notes for bed 1, but they don't seem to be here, so I'll go away again."

.. Later, when the nurse is again in the doctors' room I ask if she had found the notes for bed 1 that she was looking for earlier.

Nurse: "It was on the desk [at the nurses' station] -- I don't know why it was on the desk"

PLN: "Bed 1 -- I put it on the desk ... going to find out what's happening with her" says that he was interrupted on his way to seeing the patient.

Nurse: "She's had an ECG and it's plum normal."

³ These activities are not always as neatly temporally organised as portrayed, nor does the beginning of a later activity depend on the successful completion of an earlier one. On such occasions, as might be expected, there is a disruption because the usual depended-on arrangement of artefacts is not present. For example, on one occasion when the ward round was 'late' such that the members of the psychiatric team had already begun their work, nurses came into the doctors' room at intervals asking for appropriate folders in a obviously hurried fashion.

⁴ People and place names that appear in the fieldwork transcripts have been anonymised. The following is a generic 'cast' list: CP - Consultant psychiatrist; JHO - Junior house officer; MSHO - Medical senior house officer; PSHO - Psychiatrist senior house officer; PLN - Psychiatric liaison nurse.

The nurse did not expect to find the folder at the nurses' station during the current state of play on the ward, and the PLN owns up to having left them there, accounting for their being 'out of place'. At the same time the exchange provides an opportunity for an update on the patient's current state. A similar opportunity for developing awareness may arise with 'newcomers', allowing members to orientate themselves to each other's involvement. The dispersed nature of the records as a collection and the possession by particular members of individual records at particular times often leads to connections being made between those seeking the records and those who may be aware of their whereabouts. This provides opportunities for those involved in the patient's care to engage in articulation work thereby co-ordinating their activities. The record as a central focus of activity entails bringing members involved in different activities associated with the patient into alignment. This is illustrated by the complaints that arise if the formal channels for coordination are not attended to:

(Extract from field notes)

(One of the patients who was assessed yesterday is still on the ward. On the whiteboard it says that the patient needs to be seen by social work prior to being discharged. Just prior to leaving the ward a PAT member had indicated to the nurse that the patient had seen a social worker.)

Nurse: "But it doesn't say whether she's seen a social worker" (referring to the patient's notes) -- "This does your head in" -- "This is the only thing I hate in this place, nobody tells you anything."

In this example, details of the patient's encounter with the social worker are ambiguous, and referring to the progress notes does not clarify the situation. These criticisms of the assessment team's communication attend to their compliance with the formal mechanisms for conveying this information.

One way of reading these complaints is that they attend not only to a troublesome omission, but also give an indication of the value placed on nursing and nursing activity. The obligations and rituals associated with the keeping and sharing of records allow members to demonstrate a regard for each other's work and to maintain the impression of the work as a collaborative, team effort, carried out by members with notionally different statuses. Records and recording practices then are used as resources for maintaining relations or 'trust' between members, what Goffman terms 'ritual supplies' [19]. In the following section we will consider how this is afforded through the sharing of records.

5. The sharing of records

The patient record contains a heterogeneous series of paper documents associated with the patient's current admission. Each of these documents has a particular sort of modularity and stands in relation to the other components of the record and the disciplines that attend to them in particular sorts of ways. The progress notes, for example, organise temporally hand written

accounts of the work performed with the patient. These essentially narrate the patient's sojourn from the perspectives of members involved in the patient's care at different times, and contain scene setting, plot development and resolution. The toxicology inpatient assessment form codifies parts of the assessment (by employing devices such as labelled fields, tick boxes, lists of actions and the like) and is organised chronologically, detailing the admission by the nursing staff, the medical clerking of the patient, some components of the patient's ongoing medical care, the psychiatric assessment, and the discharge procedure. In addition, there are a number of documents that are incorporated into the record by the simple expedient of hole punching them and placing them in the file. These are varied; they may be materials created within the hospital (blood test results printed out from the results computer, cardiogram traces etc) or materials created elsewhere (suicide notes, letters faxed from other hospitals etc).

A problem arises when two or more members wish to access the same record simultaneously. With a paper based recording system there is notionally only one physically located record, seemingly implying that access would have to be sequentially organised. However, there are three main ways that members improvise simultaneous access to the record. First, members may access the record in ways that do not disturb others using it. Second, the record may be split into component parts such that members may continue to work simultaneously. Third, components of the record may be duplicated.

Negotiating access requires diplomacy and tact, and involves more than simple deferment and precedence based on the relative status of members, for example:

(Extract from field notes)

A PSPR and the student go to see the student's patient. The student had given the PSPR a presentation before completing writing in the notes. When they return to the doctors' room the PSPR sorts out a booklet about depression from a box of booklets produced by HEBs and asks the student if he will give it to the patient. When the student returns she asks him to finish writing in the patient's notes, saying that she will "just add a bit at the end". The student sits down at the table opposite where the SPR is sitting and writes in the patient's record folder on the progress notes, referring to a ring-bound small (>A5) notebook. The PSPR begins writing on a fresh sheet of progress notes.

In this example, the PSPR and the student independently make their contributions to the single record by writing on separate progress sheet pages. Further, by carefully turning the pages of the record the PSPR is able to effect simultaneous access to the record while the student continues to write. Rather than commandeering the record as her status would allow, the PSPR contrives ways of accessing the record that leaves the student's own access undisturbed. Without making too much of a simple interaction what is also going on here - and it is clearly one of the 'affordances' of a paper record as well as fundamental to notions of 'professional trust' - is what Goodwin [20] refers to as 'professional vision'. "Discursive

practices are used by members of a profession to shape events in the domains subject to their professional scrutiny. The shaping process creates the objects of knowledge that become the insignia of a profession's craft..." (Goodwin 1994: 606). It is through such routine, everyday document work and its associated annotation, coding, highlighting and so on that 'participants build and contest *professional vision*, which consists of socially organised ways of seeing and understanding events'; an accredited way of seeing within a professional discipline.

Examining such shared use of records also facilitates an understanding of what it means for groups, defined by their different expertise and responsibilities, to work together 'as a team'. That as part of their mundane interactions there is an implicit acknowledgement that one individual's area of work is another's legitimate concern. It is commonly expressed that there are elements of each other's work (the nurses, the medics, the psychiatrists) that may be of shared significance. For example, although the medics may be primarily concerned with a patient's physical well being, a psychiatrist may wish to know if an overdose has had a detrimental physical effect so this may be used as a material warning to the patient about repeating this course of action. In their management and monitoring of patients, nurses may need to know about possible medical complications, or possible problems that a patient's psychiatric condition or character might pose. A psychiatric assessment may be directly relevant to medics to the extent that it suggests the likely compliance to a proposed therapy. There are, of course, a whole host of other such examples. But it is often the case that talk between specialities involves more than a simple exchange of such simple details, rather a more complex account of the reasoning or judgement is also supplied. For example:

(Extract from field notes)

A nurse comes into the doctor's room:

PJHO (talking to the nurse): "He's going to the <local psychiatric hospital>" (The PSHO gets up from the computer where he was typing a transfer letter and writes <psychiatric hospital name> on the whiteboard in the 'psych outcome' column).

PJHO: "He's agreed to go in but he's detainable so if he changes his mind then..." (mimes locking a door).

Nurse: "He was really doing my head in when I was talking to him just there" ... "What do you think is going on there?"

PJHO: "There's talk about it being first presentation bipolar ... "

Nurse: "It's interesting."

PJHO: "I've sort of half written my transfer letter" (Gesturing to the computer.)

Nurse: "I'll have to have a read of that later."

Nurse: "It was nice what <CP's name> said about my assessment."

PJHO: "It's good to have as much information as possible."

Nurse: "I sometimes think that I gabble too much – I'm not very good at condensing things."

PJHO: "No, no."

Nurse: "I think that I write too much – but if the patient's said it then you have to write it down."

The nurse's enquiry "what do you think is going on there" is treated as a legitimate question by the PJHO who answers in technical way: "first presentation bi-polar" with the implicit assumption that this will be understood. The nurse further signals her interest by

suggesting that she will “have to read” the transfer letter. The nurse then goes on to reveal that the CP had praised the “assessment” that she had written following the patient’s admission, indicating that the nurses record keeping had useful psychiatric relevancies. Social relations within the ward are then reproduced moment by moment as an integral part of the doing of the work itself - through the fulfillment of record keeping obligations, the etiquette of access to shared records and spaces, and through the recognition that the work of others is ones own legitimate concern.

Such paper records are one of the ways in which the interdependencies within a division of labour are achieved. Records are not detached commentaries on activities but integral features of them. Records have a procedural implicativeness for the actions of organisationally relevant others because they represent organisational events and, consequently are tied to the production and the performance of organisational activities. Documents are typically part of transformation processes by which one set of actions initiates another set and are often ‘glosses’ of the work that goes into their production. It is in knowing what the record represents which provides for its use within the setting concerned. ‘Knowing what the document represents’ means knowing about the work that produced it, what it means within *this* activity, within *this* organisation and how it might be used. What documents mean, what they refer to, what they might indicate, what they constitute, what they are, has everything to do with their place within some organisational setting and its activities. Documents are organisational objects and, as such, represent and display organisational activities.

6. The affordances of paper: Documents and the routine accomplishment of trust

This account of routine work in the ward with the grossly observable amounts of paperwork, and the various orientations to it documented by the fieldwork, raise important questions about the role of documents in work activities. Our specific interest in this paper is in documents/records as ‘trustable’ artefacts; how this trust is an accomplishment of various forms of organizational work; how such features of the record as its ‘trustability’ enter into and are a part of everyday work with documents and patients.

In the toxicology ward, the dominant mode of information recording is paper-based. This mediates the work of members in many ways. DSH staff exploit the affordances of paper to keep themselves informed of the status of specific cases, for example, the location of a patient’s notes provides clues as to the progress of the case. Information bearing artefacts are kept at a number of locations, and generally close to their principal users. The location of a portable record may act as an implicit cue as to who has responsibility for a particular case

and the current stage in the patient's management. For example, the observation that a member of the PAT has the record and is currently writing in it -- supports the inference that the PAT member is actively involved in dealing with the patient and has completed her assessment). Furthermore, where there is a transfer in, or assignment of responsibility for patients, this is often accompanied by the transfer of an appropriate piece of paper. Through their public character, paper artefacts provide the knowledgeable member with status information that can be 'read off' from the environment without undue -- or even conscious effort -- but merely through 'peripherally attending' to the surroundings.

One important aspect of the current inpatient record, which reflects yet another of paper's affordances, is its capacity to support the historical reading of the unfolding of details about the patient's presentation. For example, the details of the severity of the overdose given by the patient on admission at A&E may be different to the account given to the admitting nurse, which may be different again to the account given at interview by a PAT member. Furthermore, details of the overdose may be at odds with blood tests - e.g., a patient may have indicated that they have taken a large overdose, but no trace of the drug is found when it is tested for. PAT members are sensitive to such changes in the patient's story, and the record as it stands - through paper's affordances for non-destructive amendment, ad-hoc notes and various forms of marginalia - provides a good account of such changes. Passing through the organisation, documents gather additions that make plain who has handled the document, and what action has been taken as a result. In such cases the document can be seen as a 'stratified trace' of the activities of the organisation and can be interrogated to this effect by those with practical knowledge of the organisation itself. Such a system generates an order suitable for co-ordinating tasks across a complex division of labour, by making socially available the allocation of tasks. The fact that this co-ordination of tasks is socially accountable enables those with practical, contextual knowledge of the workplace readily to 'gear into' the progress of these co-ordinated tasks, and adjust their working patterns accordingly. The use of documents and the accompanying informal interaction can then be seen as integral elements in the generation of the orderliness of activities.

The emphasis on paper, as it is in so many other organisations, is closely linked to the need for an audit trail and to questions of accountability should these arise. Records, despite their 'seen but unnoticed' status, are normatively regulated, they enter into the moral order where their status as trustable, if negotiable, artefacts is important. The 'completeness' of the paper record enables it to act as an audit trail; providing an outline, rationalisation and justification for administrative decisions. This trail is valuable not simply for the attribution of blame but

through its 'procedural implicativeness' - highlighting some of the ways in which documents are deeply ingrained within working practices. Documents are 'shared objects' and for those who know how to use them can constitute a means of making the activities of the organisation accountable and available in various ways.

7. Document Work in DSH: Implications for the EMR

" .. those, seemingly individual, yet socially organised practices, are relevant to the success of the system and to the design of technologies to support everyday work." [2]

The electronic medical record (EMR) [21;22] has been presented as a means to provide timely and location-independent access to comprehensive, integrated patient data. Supporters of the EMR have pointed to apparent shortcomings of the traditional paper-based medical record, suggesting not only is paper inferior as a record-keeping medium, but it also encourages various 'undesirable' record-keeping practices. Paper-based records are criticised for being hard to access, poorly organised, incomplete, inaccurate, hard to read, lacking consistency in format and use of terminology [23]. The EMR is consequently seen as providing the conditions for the imposition of greater discipline and structure on record-keeping practices and it has also become a major factor in the drive for the standardisation of medical record formats. This standardisation is, in turn, expected to lead to better treatment and the realisation of 'joined-up', 'seamless' healthcare.

Our fieldwork data points to a number of trust issues - related to the way that record use is a fundamental aspect of the moral order of the working division of labour - that may be relevant to the introduction of the electronic records. There are implications both for the collection and recording of patient information, as well as for the access and use of information by others. This, in turn impacts on both the need for a detailed picture of the patient, and the need for less specific, status and awareness information.

The character of the patient information acquisition process is both distributed and peripatetic: contributions are made at different times and locations within the ward. The distribution of acquisition tasks between staff follows a regular pattern, but there is some flexibility in its execution, as shown, for example, by the way that members may sometimes amend information recorded by another and acquisition and reference to patient information is often concurrent. The paper records are physically moved around so staff have a patient's record to hand when they do their interviews. It is this peripatetic aspect of information gathering that presents the major obstacle to the integration of electronic records with work procedures. Without similarly mobile and easy to use input devices, it is inevitable that information gathering will remain paper-based, at least in 'frontline' work. A more general

question that needs to be addressed is the potential impact of the loss of the various paper affordances that we have documented here. In the context of the earlier discussion, the loss of paper would amount to a virtual disappearance of the evidence of work from the activity space. In practice, we believe that this is unlikely to happen. Given the problems of data input referred to earlier, and members ease with paper and its affordances, it may be that the EMR will find use initially as a parallel system of patient record keeping, serving ends similar to the existing GP letter and patient admission archives.

The discussion so far has been concerned with how, and to what extent, the EMR will fit in with existing work practices and generate the same elements of trust. However, this is unlikely to be the only factor informing EMR deployment. Given that the EMR is able to satisfy the goal of providing an active and effective infrastructure for the sharing of patient information between departments, then it is likely that there will be numerous opportunities for modifying existing work practices, perhaps in quite radical ways. One obvious candidate for innovation would be those practices that seem to be primarily designed to support the communication of information between ward staff. Examples might include: patient admission, and the subsequent patient handover at the morning meeting. However, a closer examination reveals aspects of these practices that may be adversely affected. We draw attention here to the fact that while members' work practices clearly show all the signs of attending to predictable, formalised and repeatable procedures, at the same time members' practices also display elements of unpredictable, improvised and situated activity. It is just these kinds of activities that maintain the trustable status of the patient record. In particular, we suggest that the latter may have a bearing on the collective capacity of Ward 1a staff to maintain the robustness of patient information gathering and recording, in that these improvised activities are often concerned with 'checking things' and 'looking out for each other.' As Berg [24] notes; "The tool does not become the ideal-typed, central decision maker or rational pathway it was proposed to be .. does not do away with the ad hoc, heterogeneous work .. This is not a deplorable and preventable outcome of the 'corrupting' processes of getting a tool to work: it is the only way for tools to work in the first place.... it requires that the tools become part and parcel of local work routines. It requires, thus, a further localization of the tool: a moving away from its ideal-typed universality and uniformity." (p 152) The point we would make is that it is precisely these ad hoc interventions of local routines that trade upon, reinforce and modify the trust status of, for example, the medical record.

Existing patient admission procedures involve the concurrent physical handover of the patient, and of information relating to the patient's admission in the form of the pink and blue

sheets. This naturally provides the opportunity not only for the transfer of information about the patient, but also for the checking of its accuracy by the admitting nurse. Faced with the simultaneous arrival of the patient on the one hand, and the documentation on the other, the admitting nurse may quickly spot – and perhaps take steps to correct -- any basic inaccuracies in the latter. With the deployment of the EMR, future admission procedures might reasonably be expected to dispense with the handover of paper: Ward nurses will be able to access the information recorded at A&E directly through the nurses' station EMR terminal. While this may seem to exemplify the ways in which the EMR can streamline and improve information-handling procedures, we suggest that, in as much as this will decouple the arrival of patient and patient information, it may undermine the robustness and reliability of the process.

Quoting Berg [24] again: " .. instead of focusing on either the tool or the work practice .. it is their interrelation that is central. This implies focusing on their historical co-evolution and on their interlocking in current practices". While information gathering and sharing is central to the work of the DSH unit, their accomplishment has little to do with the formal structure or content of the patient record. Instead, various features of the mundane interactional competences of those involved are routinely observed to play an important part in the work, such as knowing how to preface, repair, produce formulations, tell stories, develop scenarios and so on. The formulations, the accounts surrounding the medical record, are put forward to propose particular views of 'how things are' and 'how they came to be that way'. They incorporate instances of the working up of a sense of shared experience that draws upon assumed sets of common-sense, taken for granted, trustable understandings about 'how we do this kind of work'; and 'how we resolve this position'.

What we are proposing is that the design of medical record systems should become more entwined with the awesome complexities of organisational working. This poses interesting and challenging issues for systems designers. The 'design problem' becomes not so much concerned with the relatively simple creation of new technical artefacts or the 'computerization' and replacement of work practices but with cogent CSCW issues - the effective integration of computer systems with existing and developing localised work practises. This thereby effectively takes the 'design problem' beyond the design phase to implementation and deployment, where users must try and apply any new system to their work practise. Although it is commonly suggested that in order to make systems 'work', actual working practices have to be 'disciplined', to be genuinely useful systems such as the EMR need to be adapted to local circumstances. As IT systems and artefacts penetrate more and more into people's working lives, the 'design problem' is not so much concerned with the

creation of new technical artefacts as it is with their effective configuration and integration with work practices. For technologies like the EMR to succeed, systems design and development methodologies must actively support these user-led processes of adaptation and, elsewhere [25], we report on our experiences of putting just such a user-led methodology into practice within the DSH clinic.

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