

Title of the article: A communication-based model for describing patients' journeys in hospital accident and emergency departments

Abstract: A patient's journey refers to the series of events experienced by a patient in the process of receiving care. Most of the existing descriptions presuppose medical knowledge and may not capture a patient's experience because patients are often not well-informed on the medical aspects of care. This paper therefore proposes a communication-based model to describe journeys as series of socio-semiotic activities, which were identified by clause-by-clause linguistic analysis of authentic patient-practitioner communication. The description shows the practitioners' communicative workload was largely concerned with information rather than actions or procedures, and the doctors did most of the communicative work. This study also unpacks the communicative complexity within what would be considered as single steps from the medical point of view. The study reported in this paper serves as the basis of follow-up studies to correlate patients' experience described with the proposed model and the patients' levels of satisfaction and adherence, and to compare patients' journeys from different parts of the world described by the same model.

Keywords: patients' journeys
patients' experience
emergency department communication
patient-practitioner communication

1. Describing journeys from the patients' perspective

A patient's journey refers to the series of events experienced by a patient in the process of receiving care (Ben-Tovim, Dougherty, O'Connell, & McGrath, 2008). This paper proposes a model for describing patients' journeys based on the analysis of patient-practitioner communication. This model complements most of the existing descriptions that are based on medical knowledge and knowledge of the healthcare system but specifically aims at better representing how patients experience their journeys. This model was developed based on detailed linguistic analysis of real-life recordings of patient-practitioner communication to examine what authentic journeys are like. With genuine data as evidence, the model unpacks the communicative complexity in the steps of journey stated in existing descriptions. This study constitutes the first component of a research project to investigate the correlations between characteristics of patients' journeys described with the proposed model and patients' levels of satisfaction and claimed adherence. The proposed model also serves as the platform to compare patients' journeys from different parts of the world (Author, in prep-a).

A patient is often the only person who experiences the whole journey, which is made up of fragments of their interactions with different healthcare practitioners. The conception of patients' journeys has been shown to enhance the quality and efficiency of care (McGrath et al., 2008). Numerous proposals have been developed for describing patients' journeys (Pinder, Petchey, Shaw, & Carter, 2005) and most of them are based on medical knowledge and knowledge of the healthcare system. For example, Ben-Tovim et al. (2008) describe journeys in hospitals in terms of their units, such as 'division of surgery' and 'division of medicine'; Layton, Moss, and Morgan (1998) advocate protocol-driven and symptom-based description; and the British National Health Service (NHS) Modernisation Agency promotes a common patient journey through an emergency department (ED) as good practice of

controlling patient flow, which consists of medically defined steps such as “initial assessment”, “X ray”, “blood test” and “treatment” (Fletcher, Halsall, Huxham, & Worthington, 2007).

However, most of the patients do not have the knowledge of the different divisions in a hospital, and studies have found that it is fairly common for practitioners not to clarify to the patients their identities and the divisions or units they present; and most of the patients do not know well the medical procedures in their journeys and often need practitioners’ explanation (Slade et al., 2015). Existing descriptions of journeys may not capture patients’ experience of receiving care because patients usually are not as well-informed as practitioners on medical aspects of care. Patients most likely are “naïve” travelers of their own journeys and cannot see the journeys in the same way as practitioners. This also has implications on patient education. For instance, Figure 1 is a poster displayed at the ED of a public hospital in Hong Kong (the hospital where the data were collected for the present study). The poster is an attempt by the hospital to explain to the patients the journeys they should anticipate. However, this description also consists of steps that are generic and presuppose professional knowledge, which cast doubt on whether it would be helpful to the patients. For example, it is hard to differentiate the difference between the treatment in “Treatment” and “Observation & Treatment”, which are indicated as two different steps in the chart. To better educate patients, the chart should include information such as the practitioners they should expect to interact with and the information they should prepare to give at different steps of their journeys in the ED.

[Figure 1: Description of ED patient journey as information for patients]

With the development of patient-centered (Stewart, 2001) and relationship-centered care (Beach & Inui, 2006), it is important to have a systematic understanding of how journeys are

understood from the patients' perspective. The recognition of the patients' perspective has been proved to be significant in enhancing healthcare outcomes (Jagosh, Boudreau, Steinert, MacDonald, & Ingram, 2011). Thus observations of journeys that describe the patients' perspective can provide insights to improve the journey and lead to better patient outcomes. Trebble, Hansi, Hydes, Smith, and Baker (2010) attempted to incorporate patients' perspective with direct observation, informal interviews and patients' self-reports, but they admitted that these methods introduce too many variables to be controlled. For patients, the healthcare processes consist of mostly communicative events, describing journeys in terms of whom patients interact with, what is communicated, and the nature of the communication can better represent their experience in ED than descriptions based on medical knowledge. This paper therefore proposes a descriptive model of patients' journeys that is fundamentally based on the communication patients engage with the practitioners they encounter.

Authentic data of patient-practitioner communication recorded during patients' visits to an ED were utilized to develop the proposed model. While most of the existing descriptions of patients' journeys advocate preferred journeys from the practitioners' perspective, the use of authentic data in this study can show how journeys proceed in actual practice. This also responds to the call by Hunter and Segrott (2008) for more evidence-based description of journeys.

Journeys in EDs are particularly complex because of the complicated institutional setting (Slade et al., 2008, p. 290), which justifies the focus of this study to describe ED journeys. Diverse practitioners work as a multi-disciplinary team. This diversity means that the patient meets with practitioners of different professions who have separate concerns and goals. Thus, each interaction differs in focus and content. The complexity and diversity of these interactions are challenging for the naïve patient. Besides, the team of practitioners need to

tackle several patients simultaneously with a constant flow of admitted patients, their interactions with each patient are therefore fragmental and often interrupted. These challenges are intensified by practitioners' heavy workload due to the worldwide steep rise of public reliance on healthcare provided by EDs (Garcia, Bernstein, & Bush, 2010). Patients' journeys in EDs have attracted notable scholarly attention (for example, Ben-Tovim et al., 2008; Khanna, Boyle, Good, Bell, & Lind, 2017; Layton et al., 1998; M. Martin, Champion, Kinsman, & Masman, 2011; Yarmohammadian, Rezaei, Haghshenas, & Tavakoli, 2017). Slade, Manidis, et al. (2015) proposed the generic structure of emergency care by examining patient-practitioner spoken interactions in EDs in Australia. This description has captured the recursive nature of certain generic stages that serve as a risk management mechanism of information checking, but frequently causes frustration and anxiety to patients as often it is not explained why they have to repeat the same information. This generic structure has demonstrated that a communicative approach in describing patients' journeys can shed light on the opportunities and challenges to enhance care for better outcomes. However, this description is still formulated in terms of professional knowledge with headings such as "physical examination" and "diagnosis", an issue that has been problematized above.

The present study therefore extends previous work to develop a model of describing patients' journeys in communicative terms by systematic and detailed linguistic analysis of authentic patient-practitioner communication. The study is guided by the research questions: **How does a patient journey unfold when the focus is on the communication between the patients and the practitioners they encounter?** This study seeks to reveal characteristics of patients' journeys that are not obvious with other descriptive approaches.

2. Material and Method

Thanks to the practice of data sharing and cumulative research (Sieber, 1991), this study utilizes a set of data collected in a public hospital in Hong Kong (Slade, Chandler, et al., 2015). Observational and ethnographic data were collected by a research team, including the author, spending over 80 hours inside the ED. The observational data consist of audio recordings of authentic Chinese (Cantonese) verbal communications in ten patients' journeys with non-participant observation through patient shadowing after triage to disposition. The audio recordings were accompanied by field notes recording non-verbal communication and other relevant information. The participating patients were native Cantonese speakers, and they were in triage category three to avoid patients with immediate or imminent life-threatening conditions. They were selected by the triage nurse with convenient sampling and consent was obtained upon the completion of triage. Details of the ten patients are listed in Table 1. The age of the patients cannot be disclosed due to requirements on ethics, but all of the patients were in their 30s, except two patients – one who was in their 20s and the other in their 40s. The audio recordings were transcribed with de-identification and totaled 70,219 words. The observational data were complemented with ethnographic data on patients' and practitioners' perception of care in the ED collected through interviews and a questionnaire survey. The analysis of the ethnographic data has been reported in Slade, Chandler, et al. (2015); and the present study utilizes the observational data, i.e. the recordings of the patient-practitioner communication.

[Table 1: Details of the participating patients]

To address the research question, an analytical model was adopted to explore patient-practitioner communication in the ten patients' journeys. The model has been applied and tested in various institutional settings, such as in narrative discourse (Lam & Webster, 2009) and customer service encounters (Forey & Lam, 2011; Lam & Yu, 2013). With the proposed

model, patients' journeys are described as series of socio-semiotic activities, i.e. interactional and meaning-making activities of interpersonal communication (Matthiessen, Teruya, & Wu, 2008). As shown in Figure 2, there are eight primary types of socio-semiotic activities: reporting, expounding, exploring, sharing, recreating, recommending, enabling and doing (Halliday & Matthiessen, 2014, pp. 34-42). The notion of socio-semiotic activity is in line with register, i.e. functional variety of language (Halliday, McIntosh, & Stevens, 1964). The typological arrangement broadly covers all possible interactional phenomena and highlights how different types of activities relate to each other, instead of treating them as disjoint categories; and each type of activity can be related to lexical and grammatical features with readily available descriptions (such as Halliday & Matthiessen, 2014; J. R. Martin, Matthiessen, & Painter, 2010). The typology has also been applied in the analysis of communication in various healthcare settings (Matthiessen, 2013). With socio-semiotic activities serving as the "building blocks" of journeys, this model longitudinally and comprehensively records the socio-semiotic activities co-participated by patients and practitioners in the unfolding of the patients' journeys, rather than focusing on significant yet fragmental incidents of communicative behaviors happened during the patients' visits (cf. Lam, 2016).

[Figure 2: Typology of socio-semiotic activities]

According to the review by Ha, Anat, and Longnecker (2010), most of the work on healthcare communication analyze the content of communication and the relevant intention; and the most common method adopted is coding the content of communication with schemes such as Stiles' Verbal Response Mode coding system (Stiles, 1992). There are many studies that adopt discourse approach to investigate communicative issues in healthcare (for example, Lupton, 1992; Roberts & Sarangi, 2005; Sarangi & Roberts, 1999). This study adopts a bottom-

up approach to identify the socio-semiotic activities in patients' journeys in terms of concrete lexical and grammatical features of the patient-practitioner communication to ensure the explicitness and replicability of the analysis. Clause served as the analyzing unit as it is the smallest meaningful unit in meaning exchanges (Halliday, 1961). Each clause was coded with its transitivity structure (i.e. feature of the process, participant(s) and circumstance(s), Halliday & Matthiessen, 2014, p. 227), mood type (i.e. declarative, imperative, yes/no interrogative and WH- interrogative, Halliday & Matthiessen, 2014, pp. 139-150) and the corresponding speech function (i.e. statement, question, offer and command, Halliday & Matthiessen, 2014, p. 662). For the transitivity structure, the processes were also identified with the six primary types, i.e. material, behavioural, mental, verbal, relational and existential (Halliday & Matthiessen, 2006; 2014, pp. 213-217). The participants were categorized as concrete objects versus abstract entities; and for concrete objects, they were further differentiated into whether they were present in the immediate context of the communication. The circumstances were categorized in terms of referring to time, places and manner. The clausal analysis is illustrated in Table 2. The conversation happened during the patient Chris's initial consultation with the doctor.

[Table 2: Clausal analysis]

After all the clauses were coded with their lexicogrammatical features, I examined when clustering of features co-occurred with certain socio-semiotic activities. This is possible because of the realisational relationship between different strata of meaning, from situational context (i.e. the socio-semiotic activities in this case) through semantics to lexicogrammar (Halliday & Matthiessen, 2014, p.24-27). For instance, the clustering of question-&-answer pairs in Table 2, with the practitioner as the questioner and the patient as the answerer, can be correlated with the socio-semiotic activity of reporting, which is

concerned with exchanges of information on “the occurrence or existence of particular phenomena in some domain of experience by chronicling events, surveying places or inventorying entities” (Matthiessen, Teruya, & Lam, 2010, p. 181). In this case, Chris was reporting his medication history to the doctor. With the analysis of the ten patients’ journeys, patterns of clustering of the lexicogrammatical features were generalized to be correlated to the socio-semiotic activities, and the journeys were in turn described as series of socio-semiotic activities the patients co-participated in with the practitioners they encountered in the processes of receiving care in the ED.

3. Socio-semiotic activities identified in the patients’ journeys

The socio-semiotic activities of reporting, expounding, doing, recommending and enabling were found in all of the ten patients’ journeys analyzed with a clear division of labor between different healthcare professionals, which has been well recognized in the literature (Nancarrow & Borthwick, 2005). The analysis provides communicative details of the roles different healthcare professionals take in the unfolding of patients’ journeys. The reporting and expounding activities were concerned with information and they mostly involved the doctors in the journeys analyzed. The doing, recommending and enabling activities were concerned with goods-&-services. The doctors were also the major practitioners participated in the recommending and enabling activities. Only the doing activities involved a wider range of professionals, i.e. the doctors, the nurses, the specialists and the allied healthcare workers. Besides, the incidents of reporting activities outnumber other types of socio-semiotic activities in the journeys analyzed. Although there were only ten patients’ journeys analyzed, the analysis shows that patients’ journeys in ED are largely concerned with information, while actions and objects only occupy a small proportion of the journeys; and doctors are the ones that do most of the communicative work quantitatively and qualitatively. In the following

section, the exchanges of information in reporting and expounding activities will be discussed first.

3.1. *Communicating information in reporting and expounding activities*

In reporting activities, patients and practitioners exchange (i.e. giving and demanding) particular information relevant to the medical condition, with practitioners asking questions to demand reports from the patients. Referring to Figure 2, there are three sub-types of reporting activities, i.e. chronicling, surveying and inventorying, and were found in all of the ten journeys analyzed. Chronicling activities are concerned with past events relevant or leading to the medical conditions; and are associated with circumstances of time referring to the past. Extract 1 shows an example between Peter and the doctor chronicling how the bone fracture happened. The question-&-answer pairs indicate it was a reporting activity, and the circumstances referring to the past (underlined) further indicate it was of the chronicling subtype.

Extract 1: Chronicling Activity between Peter and the doctor

Doctor: 點樣整到㗎？

How did you get hurt?

Peter: 即係做野嗰陣時，開工嗰時整到㗎，即係有條骨斷。

While I was working, I got hurt when I was working, and a bone was broken.

Doctor: 骨斷㗎？

A bone was broken?

Peter: 唔係，即係裂㗎。

No, it cracked.

Doctor: 裂㗎。做咩工㗎你？

Cracked. What is your occupation?

Peter: 做地盤囉。

Construction worker.

Doctor: 做地盤。點樣整到㗎？

Construction worker. How did you get hurt?

Peter: 即係做嘢個條.. 個條通打埋㗎，就想避。即係一擦，成個成個個重心一咩落去，
呢三條骨呢，就就折咗落去，咁就有一條呢係.. 裂咗嘅。

That is when I was working, and that rod... that rod hit me, and I wanted to escape. It scratched me,
and the whole center of gravity banged on them... those three bones were then broken down, and
this one... cracked.

Surveying activities are concerned with the medical conditions, such as wound, damage and area of pain. Surveying activities are associated with participants of clauses that refer to concrete objects – mostly body parts – that were immediately present. Extract 2 is an example of surveying Iris's heart, tongue, arms and legs (underlined), which obviously were immediately present when the communication occurred. Inventorying activities are concerned with other information relevant to the medical condition, such as medical history and medication situation. Inventorying activities are associated with participants of clauses that refer to abstract entities, or concrete objects that were not immediately present. The extract in Table 2 is an example of inventorying activity, in which “medicine prescribed by your doctor”, “the injection” and “the diabetes injection” were concrete objects that were not immediately present.

Extract 2: Surveying Activity between Iris and the doctor

Doctor: 呢幾日有冇心口唔舒服呀？

Have you felt uncomfortable on your chest these days?

Iris: 唔... 但係呢排呢，即係個心呢就好興咁樣囉。

Mmm... but recently, I feel the heart is like heated.

Doctor: 但係冇話痛個咁嘅嘢住個咁嘅嘢有嘅？

But you don't feel pain or stuck no?

Iris: 冇！翳住有。心興同埋翳住。同埋呢條脷呢，好似好擰住咁樣囉。

No! I do feel stuck. The heart feels heated and stuck. And this tongue, it's like irritated.

Doctor: 手腳有冇唔舒服？有冇話一邊手冇力？

Do arms and legs feel uncomfortable? Would one arm feels losing strength?

Iris: 冇。但係而家呢隻腳又唔知係咪坐得嗰架頭先十字車耐呢，而家腳好痺囉。

No. But now this leg I wonder if it was because I was sitting on the ambulance for too long,
now the leg feels numb.

While particular information is exchanged in reporting activities, in expounding activities, patients and practitioners exchange information of “general classes of phenomena in some domain of experience in theoretical terms” (Halliday & Matthiessen, 2014, p. 93). Referring to Figure 2, there are two subtypes of expounding activities, but only explaining ones were found in the journeys analyzed. Contrasting with reporting activities, it is mostly the practitioners who expound medical knowledge and knowledge of the healthcare system through explaining the medical know-how that is relevant to the medical conditions. Explaining activities are associated with the abundance of relational processes, which serve to identify entities or characterize their features (Halliday & Matthiessen, 2014, pp. 259-263). Extract 3 is an example of explaining activity, in which the doctor talked about the features of the pacemaker (underlined).

Extract 3: Explaining Activity between Kenny and the doctor

Kenny: 可能呢度個起博器呀喺度。

Maybe here the pacemaker is here.

Doctor: 佢唔怕嘅，啲金屬都好硬吓。佢如果有鬆呢咁呀冇問題㗎啦。

For that you don't need to worry, the metal is very hard. If there's no loosening part
there is no problem.

Kenny: 冇咩嘛？我唔知，我自己慌亂。我，你知道我幾驚。

No, right? I don't know, I'm worried. Me, you know how afraid I am.

Doctor: 咁我地做咗心電圖呢都驗過，嗰個 .. 嗰個訊號都好正常。

So, we have done the electrocardiogram and checked, that... that signal is normal.

Kenny: 好正常？我驚嘅 ..

Normal? I'm only afraid...

In the ten patients' journeys analyzed, there was only one fragmental incident when the patient was the one explaining, which is shown in Extract 4. Here James explained why he wanted to know the situation of his heart as soon as possible by providing a piece of information, i.e. the feature of his job being laborious (underlined). His ability to expound may be due to the fact that he was an experienced and well-informed patient – he brought a log-book recording all previous consultations and he admitted, in the post-journey interview, his rich experience of being a patient with chronic heart problem – and this is a feature unique from the other patients. It would require a larger dataset to investigate whether patients' ability to expound can be related to how experienced and informed they are, but this incident may suggest such possibility.

Extract 4: Explaining Activity between James and the doctor

James: 會唔會做嗰個 .. 即係我覆診嗰個超聲波。

Will [you] do that one... that ultrasound when I have the follow-up consultation.

Doctor: 超聲波呀？超聲波嗰啲就有呀，一定係 .. 一定係內科嗰度。

Ultrasound? We don't have ultrasound and that sort, it must be... must be at internal medicine.

James: 唔。

Mmm.

Doctor: 咁樣。係囉。

That's it. Yeah.

James: 因為我想盡快知。因為 我番工我都會體力 .. 勞動 .. 驚有時 ..

Because I want to know as soon as possible. Because my work is laborious... I'm afraid sometimes...

Doctor: 係囉。

Yeah.

The nature of exchange of information in reporting and expounding activities confirms the established view that patient-doctor relationships are asymmetrical (Pilnick & Dingwall, 2011). Asking questions has been recognized as a major resource of such asymmetry (Ten Have, 1991), and in the analysis, the doctors' questions were the key identifying feature of reporting activities. Meanwhile, the patients were found rarely asking questions in the journeys analyzed, further reinforcing such asymmetry. Apart from asking questions, the analysis shows that the asymmetry was also reflected in the nature of the information exchanged. The prevalence of reporting activities means that a lot of particular information relevant to the medical condition was provided by patients in reporting activities; and the information provided by the practitioners, in expounding activities, were of general classes of phenomena as medical knowledge or knowledge of the healthcare system. This difference between patients' quotidian information and doctor's specialized knowledge (cf. Hasan, 1999, p. 297) contributes to the different institutional roles of patients and doctors in the ED and healthcare setting.

3.2 Communicating goods-&-services in doing, recommending and enabling activities

While reporting and expounding activities are concerned with information, doing, recommending and enabling activities are of the exchange of goods-&-services. Doing activities consist of physical actions that are presumably cooperative behaviors (Matthiessen et al., 2010, pp. 84-85) of medical procedures or physical examination. They are associated with abundance of material processes of doing-&-happening (Halliday & Matthiessen, 2014, pp. 224-244). Both of the subtypes, i.e. collaborating and directing, were found in the journeys analyzed. Collaborating activities are medical procedures carried out in the immediate context and are associated with practitioners' direct commands that were

undertaken by the patients immediately. Extract 5 is an example of collaborating activity when the nurse did the electrocardiogram with Eric. The direct commands (underlined) were immediately undertaken by Eric with actions, which were captured by the observer's field notes. Eric did not speak at all, showing actions are primary to this type of activity and language is only optional to facilitate the actions. The patients in the journeys analyzed were found to be highly cooperative in the collaborating activities, undertaking all the practitioners' commands. Together with the very unequal verbal involvement in the communication, the undertaken commands in collaborating activities extend the notion of asymmetry of patient-doctor relationships to be applicable to patient-practitioner relationships in general. However, such asymmetry in collaborating activities seems to enhance the efficiency in conducting the examination or medical procedures by saving time for any negotiation of the patients' actions demanded by the practitioners.

Extract 5: Collaborating Activity between Eric and the nurse

Nurse: 而家幫你做心電圖，揭開件衫到心口呀。放鬆個人。

Now I will do electrocardiogram for you, pull your shirt up to the chest. Relax your body.

(Eric pulled his shirt up and lied down on the bed.)

Nurse: 好啦，得啦，okay，有少少凍呀，不過做幾分鐘。

That's right, that's done, okay, it will be a bit cold, but we will do it for a few minutes.

(The nurse applied gel to the stickers and put them on Eric's chest.)

Nurse: 你唔好郁住喎吓？

You don't move for the moment okay?

(Eric lied down still for 38 seconds, and then the nurse gave him some tissue paper.)

Nurse: 俾個紙巾你吓。

Give you some tissue paper.

Nurse: 先生。可以起身喇，慢慢。

Mister. You can sit up, slowly.

(Eric sat up.)

Nurse: 抹乾淨着番好衫呀。

Wipe it clean and you can put on your shirt.

(Eric wiped his chest with the tissue paper and pulled down his shirt.)

In directing activities, practitioners describe the steps patients need to take at a later time in the journey. Similar to collaborating activities, directing are associated with practitioners' direct commands; but these commands were undertaken by the patients when they completed the interaction with a practitioner instead of immediately after the commands were issued. As shown in Extract 6, the doctor issued commands (underlined) asking Dave to sit at a particular place. Dave made minimal responses to acknowledge the commands, and took the actions as demanded only after the doctor finished talking and ended the interaction with Dave. Directing activities are important to the patients as they are the only occasions when patients are told explicitly what to do for the next step of their journeys.

Extract 6: Directing Activity between Dave and the doctor

Doctor: 咁你慢慢坐番喺三十號房個度先。

So, you sit down slowly at Room 30 first.

Dave: 唔。

Mmm...

Doctor: 一陣間 .. 諗會安排你留醫個度嘎嘞。

In a while... will make arrangement for your admission.

Dave: 好啊。

Okay.

Doctor: 好呀，你過去坐呀。

Okay, you go and sit down.

Dave: 好啊，唔該晒。

Okay, thanks very much.

(Dave went to the door of Room 30 and set down.)

Recommending activities involve a course of actions either promoting it for the good of the speaker or advising it for the good of the addressee (Matthiessen et al., 2010, pp. 198-199). Because of the distinct roles of the practitioners as the providers of care and patients as the recipients of care in the ED environment, only advising activities were found in the journeys analyzed. Advising activities are concerned with the actions that will be taken by the practitioners onto the patients as the course of treatment conducted within the patients' journeys. They are associated with offers made by the practitioners, which is shown in Extract 7. In the extract, the doctor offered various medical procedures to be taken (solid-underlined). In the journeys analyzed, the advising activities showed arguably minimal negotiation of treatment: the doctors only occasionally checked if the patients agreed, such as the doctor's final turn in Extract 7, and the patients were by-and-large agreeable. The doctors' offers were formulated as descriptions of what actions the practitioners would carry out, and the patients were not agentive. These may reflect the passive role of the patients in the unfolding of their journeys, which possibly undermined their role as one of the agencies of care (Coulter & Ellins, 2007).

Extract 7: Advising Activity between Mark, his son and the doctor

Doctor: 轉頭呢要幫你吊個鹽水，要幫你打個針。佢幾點幫你打過針嚟？大概都係都係八九點咁上吓呀？

In a while we will have a drip for you and have an injection for you. What time did they have an injection for you? Around eight or nine o'clock, right?

Son: 十點到啦。

Around ten.

Doctor: 十點到。都得嘅，我地可以幫你打嘅。即係盡量去幫你減輕個種痛呀，因為一路痛住痛住先想嘅嘅咋嘛。

Around ten. That's okay, we can do the injection for you. That's trying to help you reducing that kind of pain, because keep having pain makes you want to vomit.

Mark: 好呀好呀。

That's great that's great.

Doctor: 咁呢就啲血又要驗呀咁樣，好嘛？

So, the blood needs to be tested, okay?

Mark: 好呀。

Okay.

Enabling activities allow people to undertake some form of actions in the future, and there are two subtypes, i.e. instructing and regulating (Matthiessen et al., 2010, pp. 87-88). In the journeys analyzed, they were the doctors' advice (not to be confused with the advising activities discussed above) on patients' care plan, such as medication, beyond the patients' journeys. Since patients can make their own choice in whether to adhere, only instructing activities were found in the journeys analyzed. This type of activity is associated with practitioners' commands to the patients that would not be undertaken at all in their journeys. As shown in Extract 8, the doctor advised Mandy how to drink water with several commands when she got home (single-underlined). Similar to recommending activities, the doctors had minimal negotiation of the care plan with the patients in instructing activities.

Extract 8: Instructing Activity between Mandy and the Doctor

Doctor: 拿，你返到去都係，誒 .. 一般我地會建議飲多兩啖水。

So, when you go back, mmm... usually we will suggest drinking more water.

Mandy: 嗯。

Okay.

Doctor: 不過唔好一次飲太多。一次過飲太多個胃都未抽完呢，佢裝到滿晒好快又會嘔呀。

But don't drink too much at once. Drinking too much at once, the stomach hasn't pumped it all, and it will quickly fill up and will vomit again.

Mandy: 唔。

Mmm.

Doctor: 所以你就住就住，每次飲兩啖就抖吓，飲兩啖吓，真係急，大便可以去，通常會鬆啲，不過我額外加個藥幫吓你手，好嘛？

So, you drink with caution, have a few sips every time and take a rest, have a few sips, and when really feel the urge that you can empty your bowel, usually it will be softer, but I will add another medicine to help you, is that okay?

Mandy: 個藥係食咩？止痛嘅？

What medicine is that? Painkiller?

Doctor: 啱個藥呢就幫你減輕啲痛同埋作嘔感覺，佢同時減輕少少腸道蠕動，等你有咁辛苦。

This medicine helps you ease your pain and the feeling of vomiting, and at the same time reduce the movement of the intestine, so you will feel less uncomfortable.

Mandy: 哦。

Okay.

Doctor: 慢慢呢，你就算，可能去多兩次大便都好，慢慢佢會靜止落嚟嘅。

Slowly, even if you empty your bowel more times, slowly it will calm down.

3.3 The complexity of steps in patients' journeys

Table 3 summarizes the generalized lexicogrammatical features of the socio-semiotic activities identified in the ten patients' journeys analyzed. Recreating, sharing and exploring activities were not included in the present discussion as they were only found in the communication between the patients and the shadowing researchers. As shown in the table, each socio-semiotic activity is associated with distinct features generalized from the clause-by-clause analysis. However, as natural occurring communication without careful planning beforehand, these activities were not disjointed from each other in the actual unfolding of the patients' journeys. Fragments of features of one socio-semiotic activity could be found within a socio-semiotic activity of another type. For example, in the advising activity in Extract

7, in the doctor's second turn, there was a fragment of expounding of the general phenomenon "having pain makes one wants to vomit" (dotted-underlined), which justifies the recommended action of having the injection; in Extract 8, after the instructing activity, there was a fragment of advising "I will add another medicine to help you" (double-underlined), followed by an expounding activity, with which the clauses of relational processes are indicated by dotted underlines.

[Table 3: Generalized Lexicogrammatical Features of the socio-semiotic activities]

Figure 3 is a schematic representation of the ten patients' journeys analyzed in this study. While most of the existing work describe journeys' length in terms of time, this figure displays the length of the journeys in terms of "communicative load" – the length of the bars in the figure corresponds to the number of clauses uttered – which does not necessarily correspond to the actual time the patients stayed in the ED. This description allows an alternative view of the practitioners' workload of treating patients. This description also unpacks the communicative complexity that is not obvious in descriptions that are in medical terms. Medical procedures such as "consultation" and "treatment" are often described as single units in medical literature and in practice because each procedure fulfill a particular medical purpose. For example, what is stated as "initial assessment" in the ED patient journey advocated by NHS Modernisation Agency (Fletcher et al., 2007), which corresponds to "consultation" in the description in Figure 1, is a combination of chronicling events, surveying medical conditions, inventorying medical history and medication situation, explaining medical knowledge and collaborating in physical examinations; "Treatment" consists of collaborating in medical procedures, advising as the negotiation of treatment plan and explaining to justify treatment and medication proposals. These show that what is being considered as one step from the medical point of view can be several activities in communicative terms.

[Figure 3: Patients journeys described in communicative terms]

4. Towards a communication-based conception of patients' journeys

This paper has presented a model to describe patients' journeys in ED by systematic linguistic analysis of authentic patient-practitioner communication. With this communication-based approach, the analysis has revealed several characteristics of patients' journeys that would not be obvious from the medical viewpoint, informing how journeys in EDs can be optimized. First, the analysis shows that the exchange of information occupied a large proportion of the journeys, which indicates journeys can be further streamlined by examining their information logistics (Sandkuhl, 2007). Second, this study has identified the communicative details of the asymmetry of patient-practitioner relationship and patients' passive role in the negotiation of treatment and care plan. Third, the analysis has shown the communication complexity within what would be stated in existing medical descriptions as single steps, to better represents patients' experience as naïve travelers of their journeys.

The present study is largely qualitative with detailed analysis of the ten patients' journeys, with which the sample size constrains any quantitative analysis with statistical significance. Nonetheless, this study has demonstrated how communication-based research can enrich our understanding of the processes and procedures involved in the delivery of care which are at present understood mostly in medical terms. The study can inform future mixed-methods or quantitative work that includes more patients' journeys for a communication-based conception of patients' journeys.

As the initial component of a research project to examine patients' satisfaction and claimed adherence to treatment, the present study serves as the basis for future research that correlates the relevant characteristics of the described patients' journeys with patients' perception of the care they received as recorded in the post-journey interviews. This next

study investigates how the communicative features of patients' journeys impact on patients' outcomes (Author, in prep-b). This conception of patients' journeys also serves as a platform for the comparison of journeys in different contexts. The Cantonese data analyzed in this study exemplify journeys in the Chinese context, which are related with similar work on data collected in Australian for cultural comparison (Author, in prep-a).

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A & E Consultation Flow Chart

急症室診治流程表

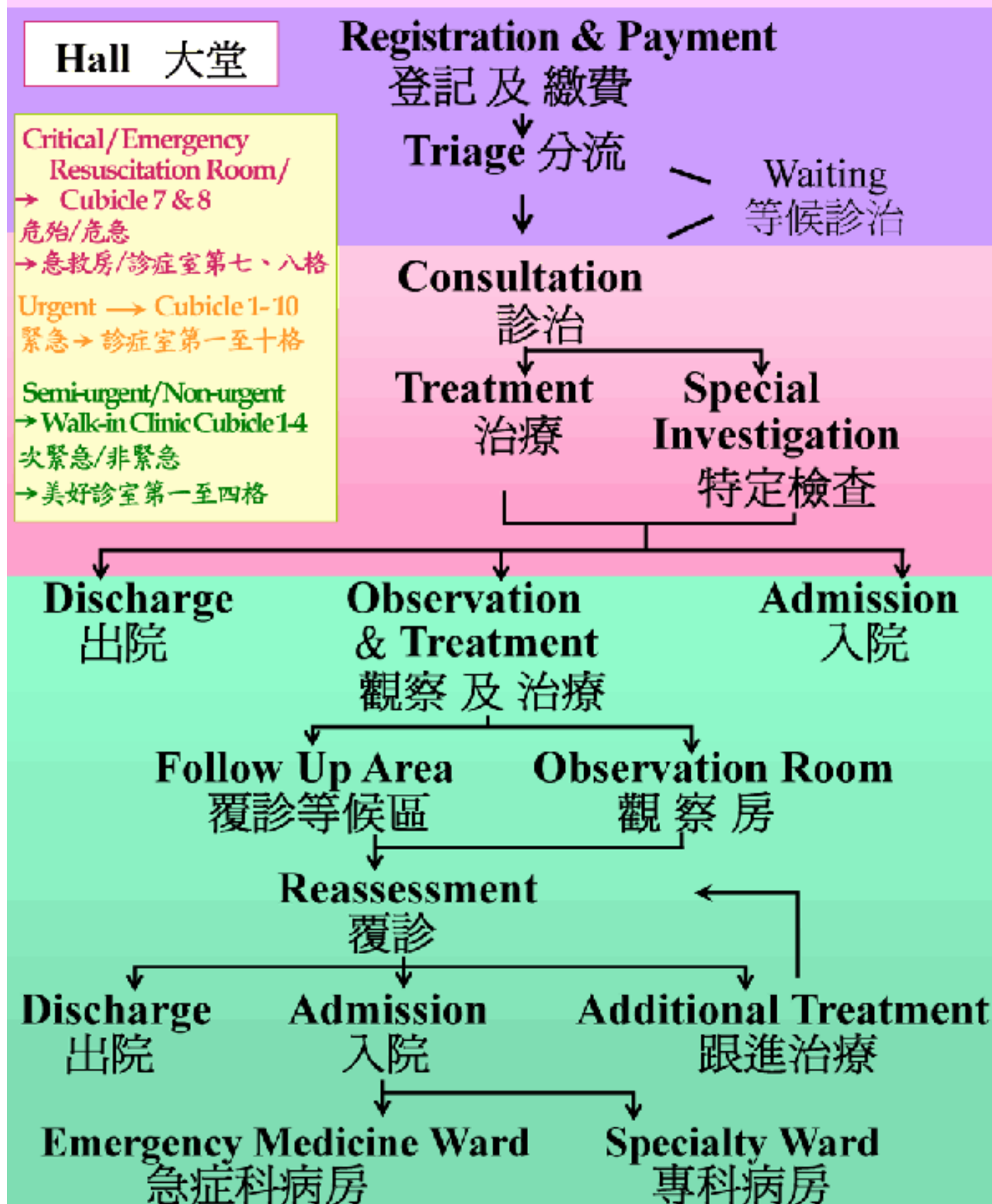


Figure 2



Figure 3

[illegible]

Table 1: Details of the participating patients

Pseudo Name	Gender	Total time in ED	Presenting Concern
Peter	male	1 hour	chest pain due to bone fracture at the chest
Iris	female	51 minutes	chest pain, dizziness and panic disorder
Chris	male	2 hours 10 minutes	chest pain, accompanied by a relative
James	male	3 hours 5 minutes	chest pain
Kenny	male	1 hour 40 minutes	chest pain, accompanied by a relative
Eric	male	2 hours 51 minutes	chest pain, accompanied by wife
Dave	male	3 hours 20 minutes	chest pain
Jane	female	4 hours 15 minutes	chest pain and continuous vomiting, accompanied by husband
Mark	male	1 hour 15 minutes	enterogastritis, accompanied by son
Mandy	female	3 hours 8 minutes	enterogastritis

Table 2: Clausal analysis

Speaker	Clause	Transitivity Structure			Mood Type	Speech Function
		Process	Participant(s)	Circum-stance(s)		
Doctor	你一日嘔幾次呀 How many times have you vomited in a day?	material “to vomit”	“you”	“a day” (frequency)	WH-interrogative	question
Chris	兩次到啦 Around twice.			“around twice” (frequency)	declarative	statement
Doctor	你醫生開俾你嗰啲藥 有冇食㗎 Have you taken the medicine prescribed by your doctor?	material “to take”	“you”, “medicine prescribed by your doctor” (concrete, non-present)		yes/no interrogative	question
Chris	有食 I have taken.	material “to take”			declarative	statement
Doctor	你有無打齊針㗎 Have you had all the injection?	material “to do”	“you”, “the injection” (concrete, non-present)	“all” (extent)	yes/no interrogative	question
Chris	打咩針 What injection?	material “to have”	“injection” (concrete, non-present)		WH-interrogative	question
Doctor	打啲糖尿針呀 The diabetes injection.	material “to have”	“the diabetes injection” (concrete, non-present)		declarative	statement
Chris	打齊 I have had all.	material “to have”	“I”	“all” (extent)	declarative	statement

Table 3: Generalized Lexicogrammatical features of the socio-semiotic activities

Type	Subtype	Generalized Lexicogrammatical Features
Reporting		question-answer pairs: practitioner as questioner, patient as answerer
	Chronicling	circumstances of time referring to the past
	Surveying	participants of clauses that refer to concrete objects – mostly body parts – that were immediately present
	Inventorying	participants of clauses that refer to abstract entities or concrete objects that were not immediately present
Expounding	Explaining	abundance of relational processes in clauses uttered by practitioners
Doing		abundance of material processes
	Collaborating	practitioners' direct commands that were undertaken by patients immediately
	Directing	practitioners' direct commands undertaken by patients at a later time within their journeys
Recommending	Advising	offers made by practitioners
Enabling	Instructing	practitioners' commands that would not be undertaken at all by patients in their journeys