Knowledge Sharing in Chinese Healthcare Referral Services: Identifying Barriers from a Literature Review

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Abstract
This paper reports on an ongoing research project, which aims to identify, explain and resolve knowledge sharing (KS) barriers in Chinese healthcare referral services. Specifically, this paper presents and discusses the critical literature review performed at the beginning of this project, which aimed to establish the theoretical basis for the empirical stages. The review included three types of documentation, namely: academic contributions, grey literature, and organisational and procedural documentation. 207 academic articles were systematically retrieved, selected and analysed. The grey literature review included national and regional policy and governance documentation. Procedural literature review included documents and guidelines from two hospitals and one community healthcare centre. Grey and procedural literature review was used to establish the process of referral whilst the academic literature review was used to identify potential KS barriers. The research findings point to 13 KS barriers, which emerged in five themes. This paper provides a perspective on the development of KS in Chinese hospitals and provides valuable implications for healthcare KS researchers and practitioners around the world.
Keywords: Chinese healthcare; Healthcare referral services; Knowledge sharing; Patient-centred healthcare; Patient knowledge
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1 Introduction

Despite the rapid economic growth in China, the current Chinese healthcare system fails to meet the population's basic needs (Gao, 2011). As reported by Yip and Hsiao (2009), there are generally three primary discontents voiced by the public: the increasing and very pronounced inequality in healthcare accessibility between urban and rural areas, paid and for many unaffordable access to healthcare, and social impoverishment due to substantial medical expenses (commonly known in Chinese as "kan bing nan, kan bing gui").

To resolve the problems, the Central Committee of the Communist Party of China and the State Council jointly announced a new wave of health reform in April 2009, which ambitiously aims to achieve universal provision of free or low-cost healthcare to the entire population by 2020 (Growth Policy Analysis, 2013; Le Deu et al., 2012). To ensure success, the Chinese government put forward a plan to increase annual spending from $357 billion in 2011 to $1 trillion in 2020 (Growth Policy Analysis, 2013).

One of the key objectives of healthcare reform is to implement and operationalise a nationwide referral service to connect local healthcare organisations with mainstream hospitals (Le Deu et al., 2012). Ideally, the referral service system would not only create efficient and seamless pathways to transfer patients to the most suitable healthcare facilities and specialists in a timely manner, but these pathways would also become effective knowledge sharing (KS) channels to connect individual healthcare professionals in primary, secondary and tertiary healthcare services (Yuan, 2012).

According to recent reports, the development of the referral system can be generally considered as rapid and steady (Zhao et al., 2010; Xu et al., 2012; Ma, 2013). In some major cities, such as Beijing, Shanghai, Guangzhou, Wuhan, Nanjing and Shenzhen, the referral system has been successfully implemented (Zhao, 2011; Ma, 2013).

In any case, healthcare referral services, as with all healthcare activities and procedures, must be practiced under a patient-centred healthcare framework, which the Chinese central government has defined and repetitively emphasised as the most essential principle for all healthcare professionals and organisations (Zhong, 2009). This framework demands that the patient's rights, benefits and requirements must be constantly ensured throughout patient referral processes.

Therefore, in the healthcare referral services, it is of paramount importance that professionals communicate and share knowledge with each other to look after patients' needs and benefits (Steward, 2001; Maizes et al., 2009). In truth, without effective and rich knowledge sharing (KS), healthcare referrals would merely be procedures for handing over patients from hospital to hospital, and this procedural approach would thus contradict the principles of patient-centred healthcare (Xie et al., 2011; Zhou and Nunes, 2012).

Nevertheless, it has been reported that KS might be largely neglected in practice. For instance, Zhang et al. (2011) investigated healthcare referral services in four Chinese cities: Wuhan, Enshi, Nanchang and Shenzhen. According to their findings, 56% of hospital doctors have never had any work-related communication with GPs, whilst 57% of GPs have never communicated with hospital doctors. Moreover, 61% of hospital doctors and 86% of GPs evaluated patient-centred communication as very poor (Zhang et al., 2011). Ouyang (2010) explains that hospitals and clinics are almost entirely isolated and have become individual information islands, on which the generation, storage and utilisation of knowledge are completely independent.

This paper reports on an ongoing research project, funded by the National Natural Science Foundation of China done in collaboration between the School of Information Management of the Wuhan University and the iSchool in The University of Sheffield. This project aims to identify KS barriers in the newly implemented referral system in the Chinese Healthcare System and devise strategies to mitigate these barriers. This paper specifically focuses on the first stage of this research project and reports on the first theoretical propositions emerging from a three tiered literature review process that is described below. It is expected that the propositions put forward in this paper will form a robust theorectical basis for the next steps in this project, namely an exploratory qualitative empirical study based on multiple case-studies.

2 Definition of the Background for the Study

2.1 Healthcare Referral Service

With the growing complexities of the modern healthcare environment, an effective referral service system is a necessary and indispensable foundation for ensuring and advancing the quality of healthcare services, not just in the West (Bal et al., 2007) but also in China, where the national healthcare system accounts for the provision of basic and advanced medical care to 1.3 billion people, i.e., one-sixth of the world's population.

An effective healthcare referral service system is critically important in China, as it generates close relationships between all levels in a pyramid-shaped national healthcare system structure and helps to ensure people who receive the best possible healthcare services close to home. Moreover, this system assists in making cost-effective use of hospitals and primary healthcare services (WHO, 2013). UNFPA (2005) adds that diseases that are presented to health professionals are hugely diverse, ranging from the most common everyday ailments to the most complex and life-threatening illnesses or diseases. Thus, healthcare referral services are the most effective method for serving a given population's needs.

According to WHO (2013), a healthcare referral is "a process in which a health worker at one level of the health system, having insufficient resources (drugs, equipment, skills) to manage a clinical condition, seeks the assistance of a better or differently resourced facility at the same or higher level to assist in, or take over the management of, the client's case". According to UNFPA (2005), a referral usually occurs for the following reasons:

- When a patient is treated but demonstrates no improvement;
- When a doctor/GP is unsure about his/her diagnosis and would like a specialist's opinion;
- When the treatment facilities are unavailable at the primary care level (e.g., X-ray or laboratory facilities);
- When the illness to be treated requires referral to a higher level for inpatient specialist care;
- When a patient asks for a referral to a higher-level facility.

In any case, despite evident benefits and advantages, all types of healthcare work must be performed, maintained and facilitated by continuous communication and KS between health service providers (Maizes et al., 2009).

2.2 Patient-Centred Knowledge Sharing

The patient-centred healthcare approach requires healthcare providers to continuously interact and share knowledge with one another (Van Beveren, 2003; Delva et al., 2008; Maizes et al., 2009) to "reconcile their differences and their sometimes opposing views" (D'Amour and Oandasan, 2005). Knowledge

sharing (KS) is an effective strategy for building competitive advantages for all types of organisations (McEvily, 2000). In the healthcare sector, it is universally agreed that appropriate KS processes, based on good practices of knowledge creation, storage, transfer and utilisation, are fundamental to the resolution of daily medical problems that challenge healthcare professionals, and, more importantly, KS can dramatically improve the quality of healthcare services (Abidi, 2007; Nicolini et al., 2008).

KS can be simply understood as behaviours that make knowledge available to others (Ipe, 2004). In the healthcare environment, KS is defined as follows:

> "Healthcare knowledge sharing can be characterised as the explication and dissemination of context-sensitive healthcare knowledge by and for healthcare stakeholders through a collaborative communication medium to advance the knowledge quotient of the participating healthcare stakeholders" (Abidi, 2007: 69).

According to this definition, healthcare professionals need to share the following three types of patient knowledge through healthcare referral services (Zhou and Nunes, 2012):

- Technical knowledge includes the identification of patient conditions and problems, reasons and objectives for patient care, patient background, treatment agreement strategy, and explicit patient requirements and needs (Smith, 1996).
- Ethical and emotional knowledge is about ethically dealing with patients' feelings, emotions, and psychological statuses; approaches to communicating with, persuading and managing individual patients; and maintaining trusting and collaborative professional-patient relationships (Fennessy and Burstein, 2007).
- Social and behavioural knowledge concerns anticipating how others will behave and the perception of patients' implicit requirements, behaviours and reactions, and expectations (Fennessy and Burstein, 2007).

Among the three types of patient knowledge, technical knowledge is usually explicitly recorded in patient records and is easier to share using information systems and delivering patient records and any other relevant documents (either electronic or paper-based records). On the other hand, ethical and emotional knowledge and the social and behavioural knowledge consist of individual professionals' experiences and perceptions, which they accumulate by dealing and interacting with individual patients. Therefore, when compared with technical knowledge, these two types of tacit patient knowledge are more difficult to share, and sharing them is invaluable for patient-centred practice (Zhou and Nunes, 2012). Therefore, in patient referral and transfer processes, it is critical for healthcare professionals to communicate and adequately share all three types of patient knowledge. This is particularly problematic in China at the moment and is the crucial issue behind the rationale that generated the research project presented in this paper.

3 Review Methods and Processes

According to the main aim of this study, which is to identify and explain barriers to patient-centred KS between healthcare professionals in Chinese healthcare referral services, the following research question has been formulated to drive the literature review:

> What barriers hinder and prevent patient-centred KS between healthcare professionals in Chinese healthcare referral services?

In order to contextualize the study, both in theory and in practice as well as being able to formulate initial propositions, a critical literature review was undertaken. This review was structured into a three tier process that included a survey of theoretical contributions, a survey of grey literature and a review of procedural documentation. Because of the very large, varied and at times complex nature of the Chinese Healthcare system, it was decided to restrict the study to the province of Hubei. Please note Hubei is in itself a very large context, including in excess of 58 million inhabitants and 17 large cities of which Wuhan is the capital with 10 million people. However, and in consultation with medical practitioners in the province, it was established that referral practices in Hubei are very homogeneous and therefore the province is a suitable and manageable unit of analysis.

3.1 Academic Literature Review

The academic literature review was carried out in three stages. In the first stage, the concepts and theories relating to health referrals and KS were reviewed to provide a theoretical basis and lens for the literature analysis. At this stage, it was confirmed that Chinese healthcare referral services have often been discussed in Chinese newspapers, academic journal articles and dissertations, though rarely in their

English counterparts. This confirmation led to the decision to focus on Chinese literature and to select three major Chinese academic databases for research: CNKI, Wanfang, and CQVIP.

In stage two, the three Chinese academic databases were systematically searched in February 2014, using the search strategy presented below:

1. referra*
2. knowledge
3. information
4. management
5. communicat*
6. sharing
7. transfer
8. #2 OR #3
9. #4 OR #5 OR #6 OR #7
10. #8 AND #9
11. #1 AND #10
12. TIME=2000-2014

It is necessary to highlight that the search was performed in Chinese. The search terms were translated into English to be report them in this paper. Overall, the database search retrieved 948 articles: 693 articles from CNKI, 95 from Wanfang and 160 from CQVIP. After the titles and abstracts had been reviewed and repetitive articles had been manually excluded, 207 articles were included for the final literature analysis.

Stage three focused on the literature analysis. The analysis adopted a thematic analysis approach, as proposed by King and Horrocks (2010). The thematic analysis can be simply understood as a systematic approach of coding and representing qualitative data (Chen et al., 2011). Data in this study refer to the articles retrieved from the literature search. Coding represents the processes of identifying and interpreting KS barriers in the articles. Representation means the production of a theoretical narrative that summarises identified individual KS barriers and organises them in a meaningful and useful manner.

Moreover, provided by Lin et al. (2008), a KS barrier framework has been adopted as an a priori thematic framework to orient and structure the literature analysis. This framework consists of 15 barriers in five categories:

- Knowledge source barriers, which include the knowledge source wanting to maintain his prestige, the knowledge source wanting to maintain his competence, and a lack of trust in the knowledge source.
- Knowledge receiver barriers, which include the knowledge receiver lacking absorptive capacity, the knowledge receiver lacking a positive attitude, and the NIH syndrome.
- Knowledge transfer barriers, which include the tacit nature of medical knowledge, the complex nature of medical knowledge, the difficulty of standardizing medical knowledge, and knowledge that lacks evidence.
- Organisational context barriers, which include the lack of rewards and incentives toward knowledge sharing and the lack of leadership to promote knowledge sharing.
- Knowledge flow context barriers, which include the lack of sufficient knowledge-sharing mechanisms and knowledge sources/knowledge receivers not knowing the other end of knowledge sharing.

Furthermore, apart from its relevance to this literature review from a theoretical perspective, Lin et al. (2008)'s framework is chosen for two main reasons: (1) this framework was developed in Taiwan, which has a very similar social structure and culture to mainland China; and (2) this framework has been used in a number of healthcare KS research studies in different countries and has been proven as valid and effective.

The framework of Lin et al. (2008) has been used to drive coding practices. The framework's KS barriers were transformed into codes, which were then used to examine, label and categorise valuable data segments that were identified in the review articles. However, instead of just deductively verifying the original KS barriers, the codes were used at the beginning of the literature analysis and then were inducted, re-contextualised and adapted throughout the analysis.

For instance, the "knowledge source wants to maintain his prestige" barrier was not represented in the literature analysis and was thus discarded. In contrast, the "tacit nature of medical knowledge" barrier was identified as a KS barrier, but it had a different definition. According to the analysis, tacit knowledge was almost entirely neglected in practice. Therefore, this barrier was redefined as the "neglect of tacit patient knowledge in current practice". In addition, several new KS barriers emerged and were

open coded in the analysis, such as “financial conflicts between healthcare organisations” and “patient records as ineffective KS tools”.

3.2 Grey Literature Review

The grey literature consulted National and Hubei policy, regulatory and governance documentation. The main source of information for National documentation was the web repository for the National Health and Family Planning Commission of the People's Republic of China. The documents selected and included in this literature review are shown in Table 1.

Document	Origin and Publisher	Date
The State Council of the Communist Party of China’s Opinions on Deepening the Reform of the Medical and Healthcare System	The Central Committee of the Communist Party of China; The State Council	2009
A Guidance on the Construction of Regional Health Information Platform on the Basis of the Implementation of Health Records	The Central Committee of the Communist Party of China; The State Council	2009
Standards on Healthcare Referral of 8 Common Diseases Patients for Surgery and Rehabilitation	National Health and Family Planning Commission of China	2013
Policies on Community Healthcare Works	National Health and Family Planning Commission of China	2008

Table 1. Relevant National documentation

On the other hand, Hubei specific information was obtained from the Health and Family Planning Commission of the Hubei Province web site and resulted in a second set of documents presented in Table 2.

Document	Origin and Publisher	Date
Management Standards and Regulations on Two-way Healthcare referral services in Healthcare Organisations in Hubei Province	Health and Family Planning Commission of Hubei Province	2013
Guiding Suggestions on the Collaboration of Urban and Rural Healthcare Organisations	Health and Family Planning Commission of Hubei Province	2014

Table 2. Relevant Hubei provincial documentation

3.3 Organisational and Procedural Documentation Review

In order to understand the reality of practice of the referral system advocated in theory and policy, two hospitals and a community hospital (healthcare centre) were consulted. The researchers obtained access to regulatory and guidance documentation that fully define how the referral system was put in to practice and is operating at the moment. The documents presented in Table 3 were included in the literature review.

Document	Origin and Publisher	Date
Guidelines and Standards on Healthcare Referral Management	Tongji Hospital, Wuhan	2013
Regulations on Healthcare Referral and Healthcare Insurance Management	Xiangyang Central Hospital, Xiangyang	2013
In-hospital and Inter-hospital Patient Referral Flow Arrangement and Diagrams	Xiangyang Municipal Huimin Hospital, Xiangyang	2013

Table 3. Organisational and procedural documentation reviewed

4 Critical Review Findings

4.1 The Referral System in Hubei

The review of the grey literature as well as the organisational and procedural documentation enabled a good understanding of the operation of the healthcare referral system in the province of Hubei. This understanding is expressed in the healthcare referral procedural diagram presented in Figure 1.

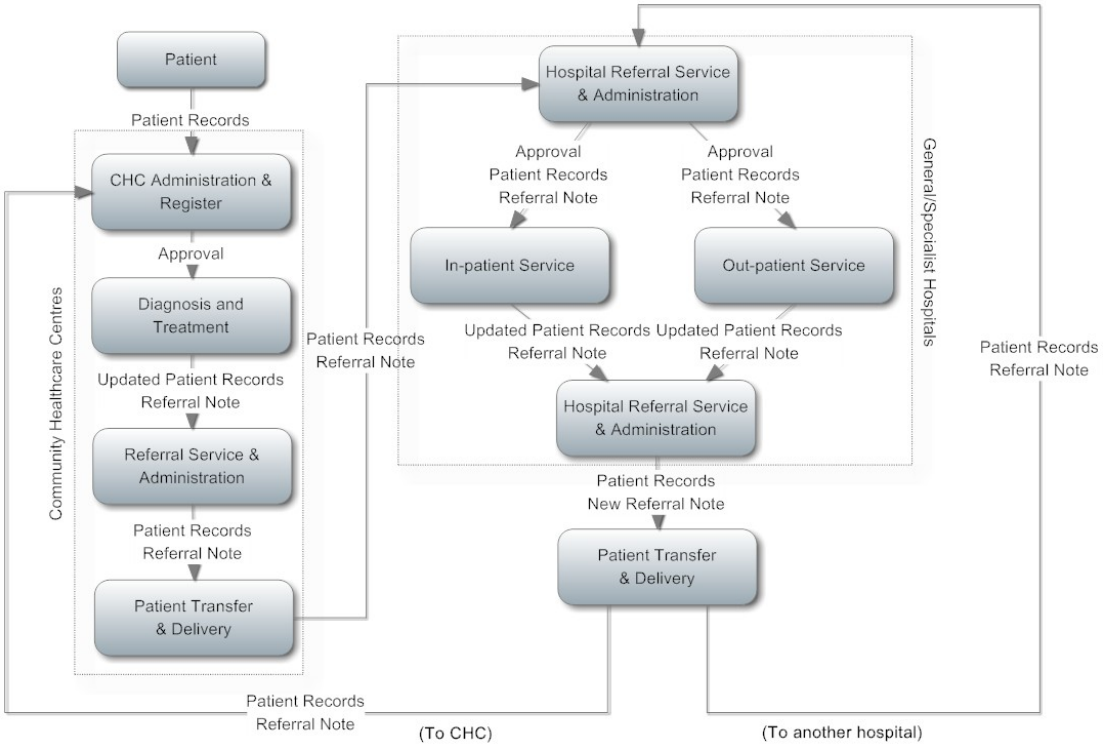

Figure 1. Healthcare Referral Procedural Diagram

As shown in Figure 1, a patient is initially admitted and treated by GPs at a Community Healthcare Centres (CHC). If the patient is diagnosed to require treatment in a general or specialist hospital, the CHC Referral Service and/or Administration Services of the community centre contact the receiving hospitals and arrange necessary procedures and paperwork for patient transfer and delivery.

At the receiving hospital, a referral patient is initially received and admitted by the Hospital Referral Administrative Services. The patient is then assigned to either further investigation of their condition or directly to specific treatment services, depending on the information received from the referring healthcare centre. After the treatment, if the patient's major health problems have been resolved or effectively controlled, the patient is referred back to the CHC for recovery and rehabilitation treatments. On the other hand, if the problems of the patient have not been resolved, the patient is considered to be referred to another and a perceived more appropriate hospital.

However, this model can be considered as overly mechanistic and prune to administrative errors. Some of the processes are clearly not reflecting with the reality of practice or the involvement of adequately trained medical staff. Furthermore the system can be very inflexible, as shown in the diagram, since patients do not have direct access to hospitals and can only be referred to a hospital after, receiving examination and treatment by GPs at CHC. Confirming this statement, Zheng et al. (2010) point out that, in reality, patients will do anything in their power to circumvent the system and get direct access to the hospitals and that 80% of patients would prefer to visit a hospital in the first instance, rather than a CHC. This reflects both a distrust in GPs and in the technical capacities of CHCs. These statements, patient perceptions and the referral process itself require further empirical study and verification. This will be done in the next stages of this research. Nonetheless, the diagram in Figure 1 was used for the purpose of formulating the initial theoretical proposition and identifying potential KS barriers with the help of the review of academic literature.

The literature analysis found that KS is crucial and an indispensable foundation for the provision of high quality patient-centred healthcare referral services (Chen et al., 2009; Liu et al., 2009; Zhu and

Zhao, 2009; Song et al. 2010; and Xie et al., 2011). However, as revealed in the analysis and despite the universal recognition of the value of KS, KS is almost entirely neglected in real Chinese healthcare referral practices, and there are substantial barriers that hinder and prevent the sharing of patient knowledge.

4.2 Knowledge Source Barriers

During healthcare referral practices, healthcare professionals, who initiate referrals, are viewed as the knowledge sources. It is critically important that the knowledge source is well prepared and willing to share all necessary knowledge with professionals on the referral-receiving end. Nevertheless, the literature analysis has identified two KS barriers in this category:

- *Difficulties in sharing knowledge to meet receiving professionals' needs* - When referring a patient, it is of great importance to share knowledge that the receiving healthcare professionals can immediately internalise and utilise. Ideally, through KS, the receiving party can immediately obtain insightful understandings about the patient's background, medical history, current conditions, and medical procedures that have previously been performed (Yan, 2009). However, in real healthcare referrals, KS is far from ideal. The analysis revealed that KS is in fact particularly ineffective, as receiving healthcare professionals often find that the knowledge that the referral-initiating party shares is "of very little use" (Chen, 2011). Du and Long (2008) report that this process is particularly problematic when a healthcare referral requires interdisciplinary specialists at both ends.
- *Overwhelmingly high workload* - Lack of time has been widely identified and reported as a KS barrier. According to the literature retrieved in this study, this barrier is probably most severe in the Chinese healthcare environment. As reported by Yuan (2012), a paediatrician needs to receive and treat a high number of outpatients, usually between 60 and 80 every day, and spend no more than 5 minutes with each patient. Therefore, healthcare professionals usually prioritise resolving patient problems over spending time on KS (Zhang et al., 2012).

4.3 Knowledge Receiver Barriers

On the referral-receiving side, healthcare professionals act as the knowledge receivers and need to evaluate and assimilate the knowledge received before they can perform a new round of patient diagnosis and treatment. However, the literature analysis highlighted two KS barriers in this theme:

- *Inability to absorb knowledge received (lack of absorptive capacity)* - Healthcare professionals have very different educational backgrounds and various degrees of experience in practicing medicine. Therefore, a healthcare professional might not always be able to completely absorb the knowledge received (Li, 2008). In interdisciplinary healthcare referrals, this barrier is even more evident and severe (Dai, 2007; Cai et al., 2008).
- *Lack of mutual trust* - Wang (2007) notes that healthcare professionals on the knowledge receiving end always manifest a lack of trust in the knowledge and relevant test results that other professionals produce and share. The literature analysis points to two reasons for this distrust: first, a referral-receiving healthcare professional usually distrusts and discards the personal understanding, interpretations and perceptions that fellow professionals at the CHC share; second, healthcare specialists at higher level hospitals always question test results and other types of evidence that GPs or professionals at lower level hospitals provide, as "the test equipment are not as advanced" and thus they must "re-do all tests on patient" (Wang, 2007; Zhang, 2012; Wang et al. 2013). Therefore, due to lack of trust, KS becomes particularly difficult and can be observed as not entirely necessary and neglected in practice.

4.4 Communication Barriers

The literature analysis identified clear evidence showing that KS in Chinese healthcare referral services is highly limited and hindered by ineffective and inadequate communication channels. The analysis identified four particular barriers in this theme:

- *Perceptions of patient records as ineffective KS tools* - Patient records are formal documents, which include nearly all relevant information about a patient and thus could be the most important and effective KS tool. However, as revealed in the literature analysis, patient records might not always be useful and effective because the majority of Chinese hospitals still use paper-based, hand-written patient records, which are very difficult to preserve over a long period of time; it is also almost impossible to ensure that all information is properly recorded and updated (Liu et al, 2009; Zeng and Li, 2011). Moreover, different hospitals frequently use very different forms of

paper-based patient records, which have been developed in accordance with their own perspectives (Zeng and Li, 2011). Therefore, patient records can hardly be evaluated as effective KS tools.

- *Perceptions of referral notes as ineffective KS tools* - Another document that was identified as controversial during the literature analysis was the referral note. A referral-initiating professional produces a referral note, which is issued specifically for the referral-receiving professionals to deliver essential and important knowledge about a particular patient (Ding et al., 2012; Zeng and Li, 2011). Nevertheless, according to Huang (2013), a referral note is just a piece of 210 mm by 297 mm (A4) paper, on which only very generic information is recorded, such as patient personal information, a short description of conditions and applied treatment. Therefore, a referral note has very limited KS capacity.
- *Absence of referral information systems* - Referral information systems are one of the most widely discussed topics in the literature. Numerous researchers (e.g., Guo et al., 2010; Xu et al., 2012; Zhou et al., 2011; Yan et al., 2012; Ma, 2013) believe that referral information systems, supported by appropriate databases and computer mediated communication tools, can effectively enable and facilitate KS in healthcare referrals. However, at the moment, even though almost all hospitals in China are developing some type of hospital information system (HIS), the developments mainly focus on HIS implementation and operation within the individual hospitals. There is genuinely a lack of concern for the establishment and development of inter-hospital connectivity and inter-organisational communication channels for KS (Cao and He, 2011).
- *Absence of communicating HIS between hospitals and CHCs* - Since the current development of HIS concentrates on insular and specific hospital solutions, there is a lack of communication between the different partners in the referral system (Zhou et al., 2011). Different electronic record formats, database systems and even understandings of core information requirements, makes digital communication virtually impossible (Chen and Tang, 2008; Cao and He, 2011; Sheng et al., 2012). Therefore, the referral system is proven to be entirely paper-based.
- *Lack of mutual acquaintance between healthcare professionals* – In a Chinese environment and according to Chinese culture, spontaneous and active KS requires already-established professional or informal relationships between referral-initiating and referral-receiving healthcare professionals (Zhang et al., 2011). Zhang et al. (2011) claim that KS can be ignored if mutual acquaintance does not exist between the two parties. In practice these acquaintances and relationships might not always exist. As asserted by Li and Jin (2007), there are very limited conditions and environments for hospital specialists and GPs from community clinics to establish mutual acquaintances and create either formal or informal relationships to enable effective KS.

4.5 KS Context Barriers

As reflected in the literature review, the context of healthcare organisations and China's general healthcare environment are not really conducive for KS. Two KS barriers emerged within this theme:

- *Financial conflicts between healthcare organisations* - Since the implementation of the "Market Economy Policy", the Chinese central government no longer financially supports all healthcare organisations. Instead, hospitals and clinics are required to obtain their financial income almost solely from the provision of health services and patient charges (Ouyang, 2010). Therefore, it has been reported that some hospitals refuse to transfer patients to other facilities, even when a referral will clearly benefit the patient (Wang, 2007; Chen, 2008; Xie et al., 2011). There are clear financial conflicts between healthcare organisations, which results in individual healthcare professionals' unethical behaviour and triggers an unwillingness to participate in healthcare referrals and KS.
- *Lack of explicit and pragmatic KS requirements* - Despite a wide recognition of the central and valuable role of KS in healthcare referral services, Gao et al. (2010) assert that KS is almost entirely neglected in practice, as there are no specific, explicit and pragmatic requirements to guide, regulate and assess KS processes and behaviours. Moreover, Zheng et al. (2011) claim that hospital management, government healthcare administrations and agencies, and individual patients should closely supervise and evaluate KS to ensure its effective implementation and operation.

4.6 Knowledge Transfer Barrier

As discussed previously in this paper, it is critical for healthcare professionals to adequately and efficiently exchange explicit knowledge (i.e., technical knowledge) and tacit knowledge (i.e., ethical and

emotional knowledge and social and behavioural knowledge). As revealed in the analysis, sharing explicit knowledge is relatively easy, as this type of knowledge can be easily conveyed through patient records and referral notes. On the other hand, without appropriate KS mechanisms and channels, sharing tacit knowledge can be particularly difficult and was identified as a KS barrier in the literature analysis:

- *Neglect of tacit patient knowledge in current practices* - As reported in the literature review, sharing tacit knowledge has been almost completely ignored in Chinese hospitals' current knowledge management strategies (Cao, 2007; Yan, 2009). Fan and Liu (2013) concluded that healthcare professionals in Chinese hospitals are simply not motivated or ready to share tacit knowledge, as the existing KS strategies, mechanisms and tools are developed to only focus on capturing, storing, transmitting and utilising explicit knowledge.
- *Absence of managerial attention* – To compound the problem above, managers do not seem to value, motivate, acknowledge or reward efficient KS, therefore further demotivation and discouraging KS practices (Yang, 2009; Gan and Gao, 2011; Zheng et al., 2011).

5 Discussion and Representation of the Research Findings

The research findings were synthesized and represented through the conceptual model presented in Figure 2. This model represents not only the barriers identified above, but also relationships among these barriers.

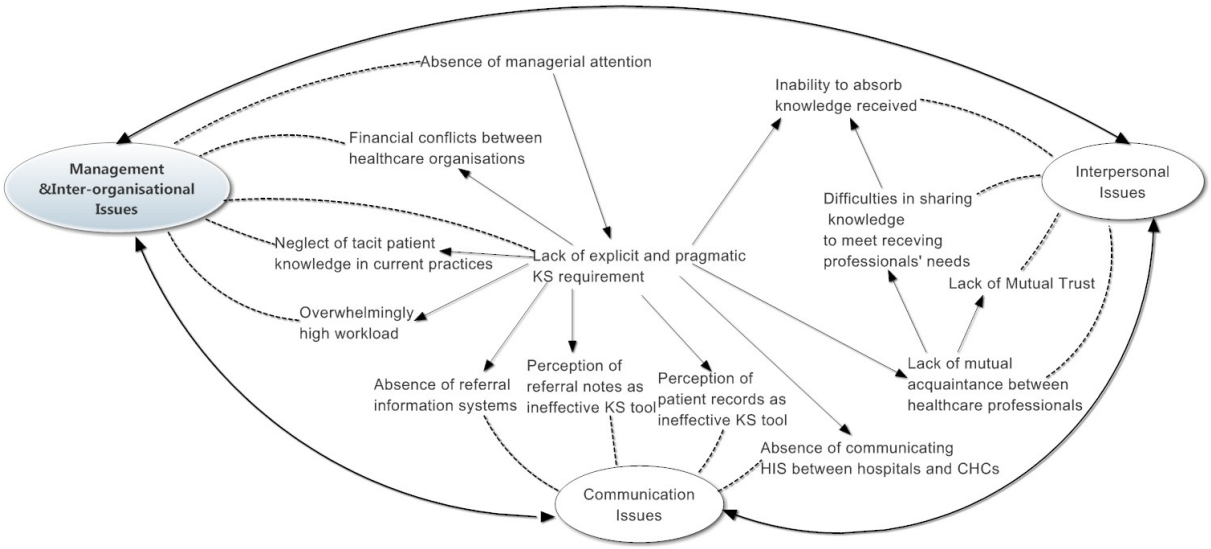

Figure 2. A Model of Emerging KS Barriers, Relationships and Themes

In Figure 2, there are three types of relationships. First, the solid single-arrow lines represent the cause-consequence relationships between individual KS barriers. Secondly, the dotted lines demonstrate the relationships between the barriers and the emerging categories. Finally, the bold double-headed arrows show the relationships between three emerging categories, which are presented in oval shapes.

As shown in Figure 2, the identified KS barriers are interconnected, and some of them are mutually influential. It is important to note that two barriers emerged as central in the cause-consequence networks: *lack of explicit and pragmatic KS requirements* and *lack of mutual acquaintance between healthcare professionals*. It is also important to note that these two barriers are very specifically representative of the cultural context of the Chinese Healthcare system. This finding indicates that these two barriers need to be particularly addressed and resolved if KS is to be improve in practice.

Moreover, three main theoretical themes emerged: management and inter-organisational issues, communication issues, and interpersonal issues. The research findings indicate that these three categories are mutually influential. Moreover, management and inter-organisational issues also emerged as central themes in the emerging theory.

The next steps in this research are to validate and confirm both conceptual model proposed and the barriers identified. The emerging KS barriers, relationships and categories require further validation, development and explanation. An exploratory approach will be used so that a theory can be

systematically developed using empirical data collected in the field. The barriers, relationships and categories that emerged in the literature review will be employed as a priori theoretical propositions and used to guide the design of data collection tools and as the starting points for the analysis.

6 Conclusions

This paper presents a literature review that aims to identify barriers to KS in the Chinese healthcare referral services. Since, the whole of the Chinese context would be far too complex to be studied in one project alone, this research focused on one province - Hubei. The paper established and defined the process of referral in Hubei and the used academic literature to anticipate and identify potential barriers in this referral process. Findings show that despite clear political requirements and universal awareness of the importance of KS, its implementation in the context of the referral process in the Chinese healthcare system proved to be highly problematic.

Through a systematic review and analysis of 207 academic articles, this study established valuable insights into the KS problems and has developed a theoretical basis for further research. However, at this stage, it is premature to generate specific management suggestions and develop practical solutions. Further investigations and explorations will be undertaken in the scope of the project reported here in order to verify, validate and expand the early theoretical propositions discussed in this paper.

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