HOSPITAL PHARMACY MANAGEMENT: AUSTRALIAN AND
INDONESIAN PERSPECTIVES

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BPharm

A thesis submitted in fulfilment of the requirements for the degree of
Master of Philosophy

THE UNIVERSITY OF
SYDNEY

Faculty of Pharmacy
The University of Sydney
2016
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Statement of Originality

The research presented in this thesis was carried out under the supervision of Professor Jo-anne Brien (Professor of Clinical Pharmacy (St Vincent's Hospital); Chair in Clinical Pharmacy (St Vincent's Hospital), The University of Sydney; Conjoint Professor of Medicine, University of New South Wales) and Professor Andrew McLachlan (Professor of Pharmacy (Aged Care), The University of Sydney; Program Director, NHMRC Centre for Research Excellence in Medicines and Ageing).

To the best of my knowledge and belief, the work presented in this thesis is original except as acknowledged in the text. Full acknowledgement has been made where the work of others have been cited or used. This thesis has not been submitted in part or in whole for the award of any other degree or diploma at any university or institution.

Vania Gones

March 2016
Acknowledgement

To Triune God, my Lord, as a Good Shepherd, my strength and fortress, and my refuge in all days of my life.

To my supervisors Jo-anne Brien and Andrew McLachlan, who encouraged me and gave their time and knowledge so generously.

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To Australia Awards Scholarship for financial support.

To my fiancé, friends, family, and colleagues who offered me invaluable support and advice along this journey.

Thank you.
Publications

The work described in this thesis has been presented as follows:

Peer-reviewed publications


Scientific presentations and published abstracts

2014  Gones V, Brien JE, McLachlan AJ. Hospital pharmacy management: an international perspective. Project plan oral presentation, Faculty of Pharmacy, University of Sydney, Australia. June 2014. Presented
Gones V, Brien JE, McLachlan AJ. Indonesian Hospital Pharmacists’ Roles and Responsibilities. Postgraduate Student Research Conference, Faculty of Pharmacy, University of Sydney, Australia. November 2015. Presented

Overview

The role of pharmacists in the healthcare sector is vital. In Indonesia, medicines accounted for 12 – 38% of hospitals’ expenses, and hospital pharmacy is the main department in the hospital charged with the responsibility to manage the safe, appropriate and judicious use of medicines. Many studies have investigated clinical and financial benefits of pharmacists and pharmaceutical services in hospitals. To assist authorised bodies in each country to establish relevant document and regulations, World Health Organization (WHO) and International Pharmaceutical Federation (FIP) have stipulated Good Pharmacy Practice (GPP) guidelines. Hospital pharmacy practice standards have also been ratified in many countries, and a global consensus was developed and called “The Basel Statements on the future of hospital pharmacists”. It reflects the importance of service provision by hospital pharmacy.

However, much variation of hospital type, ownership (private or public), and stage of regional development is common in Indonesia. With constant changes in healthcare industry, such as change of health systems, patients’ demography, or advancement of medical technology and science, many hospital pharmacies face challenges to meet the practice standards. For example, with the implementation of National Health Insurance scheme in Indonesia in early 2014, the medicines funding scheme was changed. Healthcare funding which was previously dominated by private health funds
has been reformed into public funding using case mix. In the old scheme, medicines costs were paid out-of-pocket by patients, or fully reimbursed by private or public health insurance bodies. In the new scheme, medication costs are paid as a package with other health costs. Hence, hospital pharmacy plays a vital role in managing medicines to improve efficiency and service quality as well as managing financial sustainability.

Management is an essential factor to ‘scale up’ service delivery to strengthening health systems and improving population health in low-middle income countries. Managers in the hospital sector are key health service managers especially in low income countries. Although the importance of management in hospital pharmacy is clear, it is common for many hospital pharmacists to overlook rather than value management practice. While there has been some research reported from developed countries, there is relatively little current research from developing countries. Research exploring hospital pharmacists’ experiences in hospital pharmacy management is critical to gain more understanding about current issues, and potential future application of management in hospital pharmacy. Therefore, the aims of the research described in this thesis were to explore Australian and Indonesian hospital pharmacists’ perceptions of their roles in hospital pharmacy management, challenges and enablers in managing hospital pharmacy, and vision for the future.
This research has adopted a qualitative approach using semi-structured interviews in two stages. Stage 1 explores the Australian hospital pharmacists’ and Stage 2 investigates Indonesian hospital pharmacists’ perceptions and experiences in hospital pharmacy management. The main focus of this research is on Stage 2, thus the results are presented in three chapters. However, Stage 1 provides an international perspective and commentary for the findings in Stage 2.

In **Chapter 1**, an overview of the literature regarding hospital pharmacy management, details of the Australia’s and Indonesia health systems, and hospital pharmacy activities in each country are summarised and discussed. It also includes a structured literature review to explore international perspectives on management aspects in hospital pharmacy. The results are presented and discussed in this chapter.

In **Chapter 2**, the Stage 1 of this research is presented comprising a qualitative study exploring the perceived roles, challenges, opportunities, and key factors in managing and optimising resources in Australian hospital pharmacy. The main themes identified from semi-structured interviews are summarised and discussed in this chapter.

In **Chapter 3**, the first part of Stage 2 of this research is documented. A qualitative study was conducted to explore perceived roles, challenges,
opportunities, and key factors in managing and optimising resources in Indonesian hospital pharmacy. This chapter focuses on Indonesian hospital pharmacists’ perceptions of roles, barriers and facilitators of roles, and attitudes toward current roles. The main themes identified from semi-structured interviews are summarised and discussed in this chapter.

In Chapter 4, the second part of Stage 2 is documented. This chapter focuses on Indonesian hospital pharmacists’ experiences and concerns in the management of hospital pharmacy. The main themes identified from semi-structured interviews are summarised and discussed in this chapter.

In Chapter 5, the last part of Stage 2 is documented. This chapter focuses on the views and perceptions of Indonesian hospital pharmacists related to the professions’ future direction and vision for hospital pharmacy practice. The main themes identified from semi-structured interviews are summarised and discussed in this chapter.

In Chapter 6, main findings of each project stage from each stage are compared and summarised. Future directions in this area are discussed in this chapter.
## Glossary of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ASHP</td>
<td>American Society of Health-System Pharmacists</td>
</tr>
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<td>DTC</td>
<td>Drug and Therapeutics Committee</td>
</tr>
<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
</tr>
<tr>
<td>FIP</td>
<td>International Pharmaceutical Federation</td>
</tr>
<tr>
<td>FTE</td>
<td>Full Time Equivalent</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GPP</td>
<td>Good Pharmacy Practice</td>
</tr>
<tr>
<td>HDI</td>
<td>Human Development Index</td>
</tr>
<tr>
<td>HREC</td>
<td>Human Research Ethics Committee</td>
</tr>
<tr>
<td>JKN</td>
<td>Jaminan Kesehatan Nasional [National Health Insurance] (in Indonesian)</td>
</tr>
<tr>
<td>NHS</td>
<td>National Health Service</td>
</tr>
<tr>
<td>NSW</td>
<td>New South Wales</td>
</tr>
<tr>
<td>REMS</td>
<td>Risk Evaluation and Mitigation Strategies</td>
</tr>
<tr>
<td>SHPA</td>
<td>Society of Hospital Pharmacists of Australia</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>US</td>
<td>United States of America</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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1. Hospital Pharmacy Management: an Overview of the literature

1.1. Hospital pharmacy

Many countries have standards for hospital pharmacy practice to guide hospitals and hospital pharmacists. For example, in the United States (US), the American Society of Health-System Pharmacists (ASHP) stipulates professional standards, such as minimum qualifications for Directors of Pharmacy, guidelines for medicines information, policy development, distribution roles, operation management, and research pharmacists’ roles (1). In Australia, hospital pharmacists perform clinical and distribution services, education, research, administration, and quality management (2). In Indonesia, hospital pharmacists manage inventory and its associated risks, provide clinical services, manage human resources, facility and equipment, develop and implement institutional drug policies, and manage quality (3). Although minimum standards have been ratified, the scope of services may vary from one hospital to another depending on the needs of the patients served by that institution (4).

The Pharmacy Department is an integral part of hospital-based health care and should be regarded as such. For example, if the pharmacy department is managed under ancillary services within the hospital’s organisational structure along with housekeeping, the pharmacy department is more likely
to be viewed as a service department (4). Alternatively, if the pharmacy department is under the clinical support or patient care division within the organisation, then pharmacy and the hospital’s pharmacists will be viewed as participants in direct patient care (4). In some hospitals, the pharmacy department is managed as a business or commercial division within the organisational structure along with other commercial services such as the florist or coffee shop. In these situations, pharmacy is an external service brought into the hospital to provide medicines and may not be directly involved in patient care. Different organisational structures can have a major impact on the ultimate role of hospital pharmacy.

1.1.1. Practice models

Across the globe, hospital pharmacy has implemented one of three broad types of practice models to varying degrees among different nations or within each country (5, 6). Firstly, the drug-distribution-centred model was the most commonly implemented in many hospitals (5-7). The drug-distribution-centred model is focused on distribution of medicines with limited clinical service provision. Secondly, the less common clinical-generalist model (5, 7) occurs when pharmacists manage all aspects of medication use, both clinical and distributive functions (5, 7). A less common clinical-specialist-centred model (6, 7) is one which separates pharmacists’ functions between clinical and distributive roles. Although current practice models in some countries still focus more on distributive roles, much activity has shifted toward clinical roles (6).
1.1.2. Resources

There are three essential resources in hospital pharmacy. Human capital is critical in hospital pharmacy (5, 6, 8), as shown across the globe. In many countries, the pharmacy workforce is predominately female (5). Workforce shortages are common (5), and working in hospital pharmacy is not a career preference for many pharmacists in some areas (6). Access to medicines information is also critical for service provision (5, 9), but the degree of access to relevant information may vary (5). Although most high Human Development Index (HDI)\(^1\) countries have at least one computer and access to the internet in every pharmacy department, many countries with low and medium HDI still have limited access to computers or internet for accessing information (5). Moreover, funding and the capacity to control the allocation of funds are of ‘utmost importance in maintaining an institution’s solvency’ and financial stability (4). For example, ten nations in the WHO African region consumed greater than one third of their nations’ healthcare resources for disease treatments (5), and the growth of pharmaceutical expenditure was similar to the growth of healthcare expenditures in the US (10). Managing limited resources remains a constant challenge for hospital pharmacy.

\(^1\) Human Development Index is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living.
1.2. Pharmacy management

Pharmacy practice has evolved from preparation and distribution of medicines to more patient-oriented, clinical pharmacy practice. Expansion of pharmacists’ roles was facilitated by better understanding of drug-related morbidity and mortality which could be prevented by pharmaceutical services (11). In the 1990s, contrasting opinions about what 'patient-oriented care' meant has impeded clarity about professional identification and role definition (11). A number of definitions of pharmaceutical care have been practiced across the globe (6). The philosophy, which emphasized clinical practice and quality of care, may have influenced many pharmacists to prioritise clinical rather than their managerial roles (12). However it might be considered that all hospital pharmacists are managers (4).

1.2.1. Definition of management

Management may refer to the act of 'managing', or a collective body which manages others. In Merriam-Webster dictionary, to manage is defined “to have control of, take care of, make decisions about, and direct something or someone” (13). Management is also defined as “a process which brings together resources and unites them in such a way that, collectively, they achieve goals or objectives in the most efficient manner possible” (14). The WHO outlined that effective management is one essential component required to 'scale up' the quantity and quality of health services and to improve population health (15).
In Fayol's classic management theory, there are four management activities (16). The first is planning, which is the 'purposeful efforts taken by an organisation to maximise its future success' (17). The next activity is organising or the 'arrangement and relationship of activities and resources necessary for the effective accomplishment of an objective' (16). The next step is leading, which involves 'bringing about purposeful action toward some desired objectives' (16). The final activity is 'controlling or review of the progress which has been made toward the objectives that have been set up in a plan' (16). Management activities should be performed in order, and are meant to be run as a cycle (Figure 1.1) (16).

Figure 1.1. The cycle of management activities

1.2.2. Pharmacy management in the Australian context

1.2.2.1. Australian health system

To understand how hospital pharmacy works in Australia, the national health system must be understood. As at 2016, the population of Australia was
estimated at 23.99 million (18). Australia’s healthcare system is a multi-faceted web of public and private providers, settings, participants and supporting mechanisms (19). The system is multi-tiered. For most people, the first point of contact to health services is through primary care, and they may then be referred to a specialist or a public hospital for other treatment options (19). In Australia, the state governments oversee the public hospital system (tertiary health healthcare); whereas the Commonwealth government is predominantly responsible for primary care. (19).

Private hospitals are mainly owned and managed by private organisations, either for-profit or not-for-profit non-government organisations (20). Private hospitals are mainly funded by private health insurance and out-of-pocket payments by patients (20). In 2013-14, there were 89,500 beds (2.5 beds/1,000 people), and 1,359 hospitals (59% are public) which are very diverse in size and types (20). In 2011-12, health expenditure in Australia was AU$140.2 billion (19), which was 9.4% of GDP or US$6,110 per capita (21, 22), and 40.4% was for hospital expenditure (19).

1.2.2.2. Management activities
Management of pharmacy services in Australian hospitals includes several defined activities. According to the SHPA Definitions of Hospital Pharmacy Services, hospital directors of pharmacy departments are responsible for pharmacy resources, such as human capital, money, pharmaceutical
materials, educational materials, assets, and revenue (2). Hospital pharmacy managers participate in strategic planning and hospital pharmacy policy development (2). In addition, the hospital pharmacy manages information, either computerised or paper-based (2). Hospital pharmacy manages risk and occupational health (2), and is also responsible for secretarial and administrative activities (2).

1.2.3. Pharmacy management in the Indonesian context

1.2.3.1. Indonesian health system

In 2014, Indonesia had a total population of 254.5 million (23). However, the population density ranged from <9 people/km2 (in West Papua) to >15,063 people/km2 (in Jakarta) (24). Around 80% of Indonesians live in Java and Sumatera Islands (25). Indonesia implemented a universal health insurance system, known as JKN, in 2014. This new health system was expected to reform health financing system in Indonesia, which had been dominated by privately funded health services. (26).

Healthcare services in Indonesia are divided into either primary healthcare centres or hospitals. All primary healthcare centres are funded and operated by the Indonesian and provincial governments (24). Public hospitals are funded and run by either the Indonesian or provincial governments, and may not be converted into private hospitals (27). Private hospitals are operated by for-profit non-governmental organisations (27). In 2013, there were 2,228
hospitals (70% public hospitals), and beds per head of population ranged from 0.65/1,000 people in West Nusa Tenggara to 2.95/1,000 in Jogjakarta (24). Health expenditure in Indonesia was 3.1% of GDP (US$107 per capita) (21, 22).

1.2.3.2. Management activities
Pharmacy management in Indonesian hospitals involves inventory and risk management. The pharmacy department is the sole manager of pharmaceuticals, medical devices, and consumables (3, 27). Inventory management includes drug selection, formulary development, drug-use forecast, drug procurement, production, storage, distribution, and control of pharmaceuticals, medical devices, and consumables (3). To manage inventory, administrative tasks include providing drug use and financial reports (3). Risk management includes identification, assessment, and follow-up on patient safety and occupational health (3).

1.2.4. Review of current literature
1.2.4.1. Literature search
To understand international perspectives on management aspects in hospital pharmacy, a review of literature was conducted. To be included in this review, references had to be relevant to hospital pharmacy, and include aspects of financial management, personnel management, leadership, information management, planning, and/or risk management.
Studies were identified by searching the following electronic databases: Medline via Ovid and International Pharmaceutical Abstracts. Search terms included “hospital pharmacy”, “financial management”, “personnel management”, “risk management”, “materials management”, “information management”, “time management”, and “organisation and administration” alone and in combination with each other. Hand searches of bibliographies of relevant articles and authors’ personal files were also performed.

Studies concerning clinical trials, customer relations, drug administration and utilization, health outcomes, medication and disease management, medication error and patient safety, medication risk, patient and pharmacists education, prescribing and dispensing were excluded. Studies which were not written in English and meetings abstracts were also excluded.

1.2.4.2. Results of literature search
The literature search yielded 513 articles published between 1963 and 2013. Based on the abstracts, articles were excluded from the review because they focused on customer relations, drug utilization, medication and disease management, medication error and patient safety, medication risk, non-hospital based, patient education, pharmacists education, prescribing and dispensing, meeting abstracts, non-English literature, health care outcomes or costs without changes, that changes occurred in short period of time, and
not accessible. The focus of the search was to identify primary research papers. However, only a limited number of primary research papers (n=4) were found. Therefore, further exploration to include grey literature revealed case reports, case studies, commentaries, conference proceedings, practical advice, and symposium material. There were other hand-searched articles included. The 35 articles reviewed were categorised according to the area in hospital pharmacy management: financial management, strategic management, inventory management, organisational structure and behaviour, personnel management, and risk management (Table 1.1).

Table 1.1. Articles included for review based on category, type of citations, author(s), published year, country of origin, and type of hospital settings

<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>Author</th>
<th>Year</th>
<th>Country</th>
<th>Type of hospital settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial management</td>
<td>Primary research article</td>
<td>Sloan, FA, K Whetten-Goldstein, and A Wilson</td>
<td>1997</td>
<td>US</td>
<td>Public hospitals For profit hospitals Voluntary hospitals</td>
</tr>
<tr>
<td></td>
<td>Primary research article</td>
<td>Krugman, M, et al</td>
<td>2002</td>
<td>US</td>
<td>Tertiary teaching hospital</td>
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<td></td>
<td>Case report</td>
<td>Kernich, CA and FA Creighton</td>
<td>2004</td>
<td>US</td>
<td>Tertiary academic hospital</td>
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<tr>
<td>Strategic management</td>
<td>Commentary</td>
<td>Grainger, H</td>
<td>1963</td>
<td>UK</td>
<td>N/A</td>
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<tr>
<td></td>
<td>Commentary</td>
<td>Buccerl, P and JA Baker</td>
<td>1978</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td></td>
<td>Case report</td>
<td>Kay, BG and DN Adelman</td>
<td>1979</td>
<td>US</td>
<td>Teaching hospital</td>
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<tr>
<td></td>
<td>Proceeding</td>
<td>Skolaut, MW</td>
<td>1980</td>
<td>US</td>
<td>N/A</td>
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<td></td>
<td>Commentary</td>
<td>Wilson, CN</td>
<td>1994</td>
<td>US</td>
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<td></td>
<td>Case report</td>
<td>Janning, SW JG Stevenson, and RT Smolarek</td>
<td>1996</td>
<td>US</td>
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<td>Case study</td>
<td>Crumb, DJ</td>
<td>2010</td>
<td>US</td>
<td>Community hospital</td>
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<td>Case study</td>
<td>Knoer, SJ, JD Pastor, 3rd, and PK Phelps</td>
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<td>Inventory management</td>
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<td>Raber, JH</td>
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<td>Organisational structure and behaviour</td>
<td>Commentary</td>
<td>Gayatonde, NS</td>
<td>1969 India</td>
<td>N/A</td>
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<td>Commentary</td>
<td>Gibson, J</td>
<td>1991 South Africa</td>
<td>Public hospitals</td>
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<td>Primary research article</td>
<td>Raehl, CL, CA Bond, and ME Pitterle</td>
<td>1992 US</td>
<td>Acute-care general medical or surgical hospitals (&gt; 50 beds)</td>
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<td>Scheider, PJ</td>
<td>1999 US</td>
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<td>Symposium</td>
<td>Wollenburg, K</td>
<td>2001 US</td>
<td>Independent pharmacy, hospital pharmacy, chain pharmacy</td>
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<td></td>
<td>Primary research article</td>
<td>Firzpatrick, RW and HF Boardman</td>
<td>2005 UK</td>
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<td></td>
<td>Commentary</td>
<td>Gallego, G, SJ Taylor, and JE Brien</td>
<td>2006 Australia</td>
<td>Public hospitals Private hospitals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary research article</td>
<td>Bond CA and Raehl CL</td>
<td>2007 US</td>
<td>Acute-care general, medical or surgical, paediatric hospitals (&gt; 50 beds)</td>
<td></td>
</tr>
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<td></td>
<td>Case report</td>
<td>Vora, S and T Cohen</td>
<td>2007 US</td>
<td>Combination of academic and community hospitals</td>
<td></td>
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<tr>
<td></td>
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<td>Bond, CA and CL Raehl</td>
<td>2008 US</td>
<td>Acute-care general, medical or surgical, pediatric hospitals (&gt; 50 beds)</td>
<td></td>
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<tr>
<td>Personnel management</td>
<td>Commentary</td>
<td>Fine, DJ</td>
<td>1985 US</td>
<td>N/D</td>
<td></td>
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<tr>
<td></td>
<td>Primary research article</td>
<td>Bond, CA, CL Raehl, and T Franke</td>
<td>1999 US</td>
<td>General, medical or surgical hospitals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practical advice</td>
<td>Davis, D.</td>
<td>2002 US</td>
<td>Community hospital</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary research article</td>
<td>Bond, CA, CL Raehl, and T Franke</td>
<td>2002 US</td>
<td>General, medical or surgical hospitals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary research article</td>
<td>Bond, CA, CL Raehl, and R Patry</td>
<td>2004 US</td>
<td>N/D</td>
<td></td>
</tr>
</tbody>
</table>
### Table

<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>Author</th>
<th>Year</th>
<th>Country</th>
<th>Type of hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Symposium</td>
<td>Shane, R</td>
<td>2009</td>
<td>US</td>
<td>Teaching hospital</td>
</tr>
<tr>
<td></td>
<td>Primary research</td>
<td>Garrett, T, B Stokes, J Brien</td>
<td>2013</td>
<td>Australia</td>
<td>Public hospitals</td>
</tr>
<tr>
<td>Primary research</td>
<td>Kahaleh, A and C. Gaither</td>
<td>2007</td>
<td>US</td>
<td>Teaching hospital and community hospital (public or private)</td>
<td></td>
</tr>
<tr>
<td>Primary research</td>
<td>Babigumira, JB, et al</td>
<td>2009</td>
<td>Uganda</td>
<td>Public hospitals</td>
<td></td>
</tr>
<tr>
<td>Case report</td>
<td>Krogh, P, J Ernster, and S Knoer</td>
<td>2012</td>
<td>US</td>
<td>Teaching hospitals</td>
<td></td>
</tr>
</tbody>
</table>

N/A: Not applicable; N/D: Not defined

### 1.2.4.3. Financial management

All the studies that were related to financial management originated in the US, since 1980s. This seems consistent with the described 'evolution' of US health care system which consisted of three stages. The first stage has been described as a “quality crisis” which occurred before World War II, the second stage was “access crisis” which emerged from 1960 to 1970, and the third stage was “cost crisis” which commenced from 1970 (28).

Cost-effectiveness and cost-containment were identified as major issues for hospitals. Sloan, et al stated that the importance of cost-effectiveness was initiated by limited budget, and integration of health-financing system which shortened lengths of stay and affected drug selection process (29). In a quasi-experimental study conducted at a teaching hospital, Krugman, et al reported that educational materials to promote employees’ financial
awareness were beneficial to deliver cost-effective services (30). However, the authors also highlighted that among healthcare professionals who participated in the experiment, pharmacy staff showed the most significant improvement in financial knowledge (30). Furthermore, Kernich and Creighton reported a case study on management of specialty pharmaceuticals at a teaching hospital in the US (31). In the report, the authors demonstrated that standardised protocols, cooperation among all staff, and audits could be utilised to optimise the financial management of specialty pharmaceuticals (31).

1.2.4.4. Strategic management

Managing strategy was the primary focus of eight articles, with seven of the publications from the US and one from the United Kingdom (UK). Historically, hospital pharmacy planning activities resulted from changes in education, national health systems, and/or consumer demands. For example, before the provision of National Health Service (NHS) in the UK, pharmacists worked in dispensary and could be substituted by other professions (32). After the NHS, hospitals were granted much autonomy, and hospital pharmacists expanded their roles to drug formulation, influencing prescribers, and supervising pharmaceutical services (32). In 1979, Kay and Adelman reported a case study of a change management from a teaching hospital in the US (33). The authors outlined processes in changing the traditional dispensing system to 'a more efficient, patient-oriented, unit dose system,' and resulted in more supportive environment for clinical pharmacy service
provision (33). Additionally, Skolaut forecast fundamental changes in hospital pharmacists’ roles in the US towards clinical specialists to meet increasing consumer demands for excellence and affordability over 1980s (34). In 2010, Knoer et al reported a shift from baccalaureate-trained pharmacists to Doctor of Pharmacy (Pharm.D) in an affiliated university facilitated pharmacy practice model change at a hospital in the US (35). Those reports provide some insights of significant impacts of external environment to hospitals on pharmacy department.

Some techniques to assist hospital pharmacists in strategic management were also reported. In 1994, Wilson outlined ten key trends in healthcare industry to equip hospital pharmacists in development of survival strategy (Table 1.2) (36). Another tool used in one US hospital was lean process improvement technique (37). The main objective of lean technique was to improve efficiency and quality of pharmaceutical production and distribution processes by improvements of work flow and ‘visual control’ (37).

### Table 1.2. Ten key financial trends influencing hospital industry

<table>
<thead>
<tr>
<th>Key trends</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Decrease in hospital size and occupancy rates</td>
</tr>
<tr>
<td>2. Decrease in average length of stay</td>
</tr>
<tr>
<td>3. Increase in complexity of case mix</td>
</tr>
<tr>
<td>4. Increase in outpatient visits</td>
</tr>
<tr>
<td>5. Decrease in capital-related expenses</td>
</tr>
<tr>
<td>6. Decrease in financial leverage</td>
</tr>
<tr>
<td>7. Increase in debt service coverage</td>
</tr>
<tr>
<td>8. Decrease in net accounts receivable</td>
</tr>
<tr>
<td>9. Increase in staffing level</td>
</tr>
<tr>
<td>10. Increase in hospital profitability</td>
</tr>
</tbody>
</table>
However, some attitudes towards change management process were also reported previously. Bucceri and Baker proposed potential challenge in change implementation, which includes staff resistance and complaints (38). Knoer et al described how pharmacy members expressed their fear and confusion at role changes at a teaching hospital in the US (35). Nevertheless, the authors also reported such resistance and fear were manageable through mediation, engagement, and mentoring (35).

Some challenges in managing strategy in pharmacy departments have been reported. Government and pharmacists' associations were also recognised to enable the development of the professions, through research and development of guidelines and standards (32). However, disparity in institutional capacity to meet the national standards decreased the effectiveness of such standards (39, 40). For example, in 1960s, inability to hire pharmacists and inadequate education hampered potential development of hospital pharmacists’ roles outside dispensing and supplying medicine (32). In addition, personal characteristics – to be specific: interests, career aspiration, beliefs, passion, preferences, and commitment, were potential barriers or facilitators of change (35, 41).

1.2.4.5. Inventory management

There was only one citation which emphasized the importance of inventory management to improve medication safety. In 2007, the Food and Drug Administration (FDA) established Risk Evaluation and Mitigation Strategies
(REMS) which required complex administration and procedures for potentially problematic drugs (42). For example, Raber reported that droperidol (a drug with black box warning) required a pregnancy test, electrocardiograph, and opiate tolerance test prior to prescription (42). The author suggested medication risks to be integrated during formulary development by specific protocol and involvement of clinical pharmacy in formulary process (42).

1.2.4.6 Organisational structure and behaviour

Articles focused on organisational structure and behaviour were published from 1969 to 2008. Unlike other aspects of management highlighted in this literature review, these papers were published from four countries, and over a long time period. This may indicate that organisation of hospital pharmacy has been a more broadly canvassed area of study.

Some countries reported their hospital pharmacy practice model. In an earlier period (the 1960s), Gayatonde reported that the model of hospital pharmacy services in India was focused on drug supply and manufacture, and offered poor incentive to qualified persons (43). In 1989, Raehl, et al reported some US hospital characteristics which determined the extent of clinical pharmacy services (Table 1.3) (44). In 1991, in South African context, Gibson proposed organisational development to attain ‘a proclaimed, ideal future’ of hospital
pharmacists (45). The author also described that pyramidal organisations hindered pharmacists' participation, and job satisfaction (45).

Table 1.3. Five factors related to clinical pharmacy service provision in US hospitals

<table>
<thead>
<tr>
<th>Factor</th>
<th>Influence on service provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital size</td>
<td>Larger hospitals offered more clinical services</td>
</tr>
<tr>
<td>Affiliation with a university</td>
<td>Teaching hospitals offered more clinical services</td>
</tr>
<tr>
<td>Hospital ownership</td>
<td>Federal government hospitals offered more clinical services; the difference between non-profit or for-profit hospitals varied</td>
</tr>
<tr>
<td>Pharmacy drug delivery system</td>
<td>Decentralised pharmacy offered more clinical services</td>
</tr>
<tr>
<td>Director of Pharmacy's education</td>
<td>Pharmacy with directors with advanced pharmacy degree offered more clinical services</td>
</tr>
</tbody>
</table>

Some articles highlighted professional autonomy and positive impacts of hospital pharmacists. In a commentary published in 1999, Schneider highlighted potential clinical leadership opportunities for hospital pharmacists to improve medication safety, access to healthcare, and treatment outcomes (46). Bond et al conducted a national survey to investigate potential relationships between clinical pharmacy services, pharmacy staffing, and mortality rates (47). The result showed that an increase in the number of clinical pharmacists significantly increased outcomes for all variables, but an increase in pharmacy administrators increased mortality rates; however the number might not show how administrators directly affect the quality of care, but could represent how hospital pharmacies were organised (47).

Some authors also emphasized the implications of main organisations' structures on hospital pharmacies. Two studies in the UK reported that local
organisation and pharmacy directors' perceptions led to various extent of service provision (39, 40). Two studies pointed out the challenges in managing hospital pharmacy in different types of institutions under one authority. An incorporation of larger and smaller hospitals which shared the same resources and leadership were characterised by instability, conflicts, and lack of vision (48). A large network hospital also had different scope of services and priorities which were determined by the structure and philosophy of the organisation (41). In 2006, Gallego et al commented on potential impact of fragmented hospital funding system in Australia (49). In the system, public and private hospitals had different source of funds to supply medications, where private hospitals had quite flexible funds (49). The authors were also concerned about equity of access to medications, efficiency, and potential treatment outcomes in public hospitals (as opposed to private hospitals) (49).

1.2.4.7. Personnel management
The focus of two articles related to personnel management was how to develop the organisational structure to increase empowerment and loyalty of staff. Fine described that recent roles of the hospital pharmacist were of the 'drug resource manager, drug system manager, drug information manager, and drug therapy manager' (50). Fine also criticised the pyramidal structure of US hospitals which created a competition between pharmacy and other departments (50). In contrast, the author argued that matrix organisation would secure flexibility, horizontal communications, and emphasized
knowledge instead of power (50). Moreover, in 2007, Kahaleh and Gaither
found that pharmacists who worked in independent pharmacies had higher
level of perceived empowerment and greater loyalty compared to
pharmacists working under a structured organisation (51). Increase of access
to knowledge, opportunity, and support were recognised to influence
pharmacists’ loyalty and commitment to work (51).

Two studies presented how shortages of health care professionals were
managed. Davis reported that in 1993, a community hospital in the US was
short of pharmacists and nurses (52). By use of a computerised system and
hiring pharmacy technicians, pharmacists were assisted in preparation of
medications, so nurses and pharmacists could focus more on direct patient
care (52). However, pharmacy technicians had limited clinical expertise, so
the hospital hired ‘licensed practical nurses’ who could assist both nursing
and pharmacy departments (52). After the implementation of these changes,
time devoted to patient care increased, phone call frequency decreased, and
medication issues were solved promptly (52). Furthermore, in Uganda,
Babigumira et al carried out a cost-minimisation model to assess potential
task shifting in antiretroviral therapy monitoring from physicians to nurses and
pharmacists to increase access to health care (53). The result showed that
shifting therapy monitoring to nurses and pharmacy workers could save $11
million/year and 14.8% of physician full-time equivalent (FTE) in Uganda
(53).
A set of national surveys in the US conducted by Bond et al identified a relationship between hospital pharmacy staffing, clinical pharmacy services, cost of care, and mortality rates. In 1999, the authors reported that with an increase in the number of clinical pharmacists, drug costs decreased because of the associated clinical pharmacy services (54). In 2002, Bond et al surveyed clinical pharmacist staffing and factors related to staffing levels, where pharmacy leaders had a role in resource allocation (55). In 2004, Bond et al investigated the feasibility of and factors affecting the implementation of clinical pharmacy core set of services (56). The core set included ‘drug information, adverse drug reaction management, drug protocol management, medical rounds, and admission drug histories’ (57). It was projected that pharmacists’ competencies and availability would satisfy these demands. The pharmacy leadership in the US strongly supported the implementation of these services (56).

Although cost of care and quality of care may justify the services and staffing requirements, a recent study conducted by Krogh et al introduced the use of a productivity measurement tool to justify workload and working hours (58). The authors reported the use of an electronic census system increased accuracy of workload assessment, hence facilitated improved ‘staffing-to-demand model’ and contained labour costs (58).
1.2.4.8. Risk management

Two articles focused on medication safety as a risk management issue for hospital pharmacists. There were different approaches to manage risk. Pick et al managed safe use of medication by developing tools to examine a safety level for formulary candidate medications. In this study, potential risks of medicine could be identified in the formulary selection before they were used (59). Shane suggested collaboration of healthcare professionals, including pharmacists, to balance the FDA’s drug safety requirements and patients’ safety (60).

On the other hand, Garrett, et al emphasized the importance of a safety culture to manage medication safety (61). The authors reported safety culture was influenced by many factors, such as hospital type, professional group within pharmacy, and professional organisation affiliation. A survey conducted in public hospitals showed that staff in smaller hospitals reported very positive responses to team work, staffing levels, and management (61). Pharmacists that were affiliated with professional organisations showed very positive and supportive attitudes toward medication safety (61). However, pharmacy technicians demonstrated the lowest level of support for safety culture, particularly in new roles that were created to support clinical pharmacy activities (61).
1.2.5. Conclusion

From the review of the literature, it is apparent that management of hospital pharmacy has been a global interest of study. However, some aspects of hospital pharmacy management, such as strategic management, organisational culture and behaviour, and personnel management, seemed to receive more attention than the others. A limitation of this review is we only utilised two databases, many articles were grey literature, and many were more than five-years old. It is also apparent that the majority of publications were conducted in the context of developed countries, and little has been reported about developing countries. Hence, since the constantly changing healthcare industry may pose potential challenges particularly in low resource settings, exploration of management of hospital pharmacy in developed and developing countries may yield beneficial insights on current and future hospital pharmacy practice.

In the following chapters, exploration of hospital pharmacy management from the Australian and Indonesian perspectives are described.

1.3. References


3. Management of Hospital Pharmacy in Australia

Background: Management is a challenging yet essential area in strengthening a health system and improving population health. Nevertheless, it has appeared common for pharmacists to overlook or shun management practice, because business was perceived ‘ethically inconsistent’ and had nothing to do with pharmacists’ roles in community health and patient care.

Objective: The aims of this chapter were to Australian hospital pharmacists’ perceptions of their responsibilities, challenges and key factors in managing pharmacy, as well as to explore potential future development.

Methods: A qualitative study using semi-structured interviews and grounded-theory approach was conducted to describe the experience and perceptions of participants.

Results: Nine hospital pharmacists from New South Wales (NSW) hospitals in Australia were interviewed. Ideas about how hospital pharmacy should be managed are still debated. A number of issues of importance were raised by participants. Skills, leadership, and environment were endorsed as key factors. Professional career development and appreciation were required. Funds and pharmacists’ attitudes were reported as potential challenges in the future.
Conclusion: Many aspects of management skills are required. With constant tensions between professional autonomy and multidisciplinary environments, pharmacists may lack motivation. Leadership in pharmacy must be realised to foster accountable practice. Support from hospital executives, regulators, professional organisations, pharmacy educators, and other practitioners should be sought.
3.1. Introduction

Management is a challenging yet essential area in strengthening a health system and improving population health (1). Management is defined as “a process which brings together resources and unites them in such a way that, collectively, they achieve goals or objectives in the most efficient manner possible” (2). There may be different areas of management experience and skills that are relevant for hospital pharmacy managers. Financial management has been identified as being important for hospital pharmacy managers because of responsibilities in overseeing a hospital’s medicines formulary. The formulary typically involves a drug selection process based on cost-effectiveness and risk management (3). Personnel management is also a vital factor in the success of hospital pharmacy service delivery (4).

Nevertheless, it has appeared common for pharmacists to overlook or shun management practice, because business was perceived ‘ethically inconsistent’ and was perceived to have little to do with pharmacists’ roles in community health and patient care (5).

There may be different perspectives on the role of management for hospital pharmacists. Several ways to integrate management techniques into hospital pharmacy practice have been adopted (6-10). The use of a cost-effectiveness approach in managed-care services has been explored by Sloan et al (8). Using this approach, the authors outlined the utilisation of cost-effectiveness analysis to develop hospital formulary, but ‘lack of
information on hospitalised patients and costs, lack of independent sponsorship, and inadequate expertise’ were found to hinder its utilisation (8). Wilson proposed some key financial trends shaping hospital industry, such as ‘average length of stay, complexity of case mix, and outpatient use’ to equip hospital pharmacy managers to develop strategies in the constantly changing hospital environment (9). Moreover, the way an organisation is structured is also considered a critical aspect in the provision of hospital pharmaceutical services (6, 7). Furthermore, medication safety has been identified as an important management priority, especially in hospital pharmacy. Hence, management of risk is a key component of medication safety and an important role led by pharmacists in the hospital setting (10).

The major focus of this thesis is the development of hospital pharmacy management in Indonesian hospitals with an international perspective. In this chapter, perceived roles, challenges, opportunities, and key factors in managing and optimizing resources in Australian hospital pharmacy are described. Views on potential future development of hospital pharmacy are also explored. Qualitative research involving key informants in Australian hospital pharmacy was conducted for this purpose.
3.2. Objectives

This study aimed to explore Australian hospital pharmacists’ perceptions of their responsibilities, challenges and key factors in managing pharmacy, as well as to explore potential future development.

3.3. Methods

A qualitative study using an inductive approach was conducted to describe the experience and perceptions of participants in management of hospital pharmacy services. Given the aim of the study was to obtain description and interpretation of a phenomenon, qualitative approach was deemed appropriate. Face-to-face, semi-structured interviews were conducted between December 2014 and May 2015. Prior to commencement, the research was assessed and approved by the Human Research Ethics Committee of the University of Sydney (Project number 2014/680).

Initial key informants were recruited using a purposive and convenience sampling approach, using an invitation letter (Appendix 2.1) and consent form (Appendix 2.2). Given the aim and nature of this study was not to achieve a representative population, the purposive recruitment approach was deemed appropriate. An interview protocol (Appendix 2.3) was developed informed by the literature on hospital pharmacy management and three pilot interviews were undertaken to establish the face validity of the questions.
The interview guide is shown in Table 2.1 Interviews were audio-taped and field notes were taken. Audio-recordings were transcribed verbatim. Data were entered into NVivo qualitative data analysis Software; QSR International Pty Ltd. Version 11, 2015. During data collection period, each transcript was analysed for emerging themes, and coded using descriptive and focused coding (11).

Table 2.1. Topics covered during the interviews with Australian participants

<table>
<thead>
<tr>
<th>Interviews with director of pharmacy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Current duties, tasks, and functions performed by hospital pharmacy managers</td>
</tr>
<tr>
<td>• Current management of resources, safety, and policies in hospital pharmacy</td>
</tr>
<tr>
<td>• Perceived challenges and problems faced by hospital pharmacy manager in performing their duties</td>
</tr>
<tr>
<td>• Expectations for the future hospital pharmacy practice</td>
</tr>
<tr>
<td>• Possible solutions to identified challenges and threats</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interviews with early career pharmacists and supervisors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Current duties, tasks, and functions performed by hospital pharmacists</td>
</tr>
<tr>
<td>• Opinions about the implementation of policies, safety, and management of resources in hospital pharmacy</td>
</tr>
<tr>
<td>• Perceived challenges and threats faced by hospital pharmacists</td>
</tr>
<tr>
<td>• Expectations for the future development in hospital pharmacy practice</td>
</tr>
<tr>
<td>• Possible solutions to identified challenges and threats</td>
</tr>
</tbody>
</table>

3.4 Results

Nine hospital pharmacists from New South Wales (NSW) hospitals in Australia were interviewed. Out of nine interviews, eight were digitally recorded, and one was recorded with field notes. The interviews lasted between 30 and 46 minutes, with an average of 40 minutes. Table 2.2 shows the characteristics of participants.
Table 2.2. Characteristics of Australian participants

<table>
<thead>
<tr>
<th>Characteristics of pharmacists</th>
<th>n = 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, n (%)</td>
<td>7 (78)</td>
</tr>
<tr>
<td>Full-time employee, n (%)</td>
<td>8 (89)</td>
</tr>
<tr>
<td>Position, n (%)</td>
<td></td>
</tr>
<tr>
<td>Director of pharmacy</td>
<td>2 (22)</td>
</tr>
<tr>
<td>Deputy director of pharmacy</td>
<td>1 (11)</td>
</tr>
<tr>
<td>Manager</td>
<td>1 (11)</td>
</tr>
<tr>
<td>Senior pharmacist</td>
<td>3 (33)</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>2 (22)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics of institutions</th>
<th>n = 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location, n (%)</td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>5 (100)</td>
</tr>
<tr>
<td>Ownership, n (%)</td>
<td></td>
</tr>
<tr>
<td>Public hospital</td>
<td>4 (80)</td>
</tr>
<tr>
<td>Public mental health centre</td>
<td>1 (20)</td>
</tr>
<tr>
<td>Peer group classification, n (%)</td>
<td></td>
</tr>
<tr>
<td>Principal referral hospital</td>
<td>2 (40)</td>
</tr>
<tr>
<td>Medium hospital</td>
<td>1 (20)</td>
</tr>
<tr>
<td>Specialist women’s and children’s hospital</td>
<td>1 (20)</td>
</tr>
<tr>
<td>Specialist mental health centre</td>
<td>1 (20)</td>
</tr>
</tbody>
</table>

Four key themes relating to the aims of this study were identified:

“perceptions of current roles”, “opinions about current management of hospital pharmacy”, “essential elements in hospital pharmacy”, and “wishes and concerns about the future” are described below. Each of themes and subthemes is detailed below, with its respective quotes.

2.5.2. Perceptions of current roles

Participants outlined their roles and pressures. Different opinions about pharmaceutical care and patient-centred approaches in practice were
reported. Some participants expressed dissatisfaction in the hospital’s expectations of their performance. Misalignment between the institution’s aims and hospital pharmacists’ views on pharmacy practice was reported as a source of tension in current practice.

2.4.2.5. Different approaches to patient-centred care

Many participants described what it meant to be 'patient-centred'. To have direct interaction with patients and be involved in problem solving was an aspiration for some participants:

“My other responsibility is front line management. That's part of my role, so face to face contact to patients. I believe it is essential in my role even though I'm a manager, I know lot of patients. I feel that's important that they see who is involved in that area. So they can address any concerns, address any queries.” (A05)

Another participant expressed his preference for a prioritisation model in service provision as opposed to equal use of resources for every patient:

“I think like I said to you before, the general organisation is good if nothing goes wrong. It's not, it's all about equal access. [It’s about] making sure every patient gets all of the services. That's how it’s structured. It's all about equality, but it means that the patients that need the services the most don't always get most services. So, I would prefer a prioritisation model where the high risk patients, that must need it the
most, get the most attention, and ones who don't need the most, get less attention. But the way it's structured, everybody needs to come and get the same level of care which is good at a personal level like if people go the same hospital show them the same care as someone else, but it's not good at a resource management level because you've only got timely management resources and this person may take a lot of time, this person is very quick unless they want you to do equal things to work, and I feel it'll be better for the patients. The one who needs the most services in time had more services in time, and the one had less. And so I'll be in opinion that prioritising which patients receive what is really, really important. But in NSW, that's certainly not the way we work.” (A03)

Interestingly, one participant was upset about an adverse event of intravenous medication. The event was harmful and could have been prevented by oral medication. Hence, she reported what she believed as patient-centred care:

“I thought I was quite patient centred care until one of my friends came to hospital, she had an infection and she was cannulated multiple times and had a major bruise on her right wholeful (sic) arm. And when she could've been on oral antibiotic she didn't need to have the IV canullated in. And I thought, wow that really significantly, she's got this major bruise (showing arm) ... She just stayed in, putting in for the antibiotic. And I thought, my big campaign at the moment is IV to oral. I
thought, this really does make a difference to people. So sometimes you think that you're patient centred but really you can do more, and you don't realize it.” (A09)

2.4.2.5. High work load

Having a high work load as a hospital pharmacist was commonly described by participants. Participants expressed concern when they had to provide ward services to a large number of patients concurrently with their responsibility to provide dispensing services:

“If you've got 60 patient load and you only got half of day to do [all] wards, I think that's pretty unfair and even for the pharmacist making all the manufacturing sterile production by themselves and also do ICU, MAU, and a small ward. I think that's quite high load. Even if they're just the troubleshooter, so I can see other people are quite stretched, especially at the moment.” (A09)

A participant expressed her doubt when they were promoted to take a responsibility for a new role without having enough experience:

“I feel at the moment, because I've never been a preceptor of the intern before, because we usually have two interns and this year we have three. It's for me, a challenge. I was ready for challenge and the change, but it is a big challenge because I feel I'm responsible for these
three students. I don’t have past experience to kind of back it up on two of the other pharmacists who aren’t here today, but they have kind of work in that role before.” (A06)

One participant also expressed her dissatisfaction with some additional administrative duties. The duties were sometimes viewed as time-consuming and irrelevant to hospital pharmacists’ roles:

“The [mother organisation] often sends things that [my Director of Pharmacy] has to complete which are very time consuming and they are not necessarily, totally relevant to this particular department … They asked to fill out, go through the whole poisons list, and for every single drugs saying what we were doing about the safety of that drug. Getting very specific about [drugs].” (A02)

2.4.2.5. Tensions between hospital’s expectations and individual responsibilities

Participants reported there were some gaps between their workplaces’ expectations and their own objectives. Different priorities created tensions in delivery of services:

“As an individual practitioner what you want is not always the same as what the hospital wants. You want to look after all your patients the best way you can, the hospital doesn't really care about all the patients, they
care about the majority of patients, the minority to them is minority.”

(A03)

They described a 'priority gap' could be manifested in the amount of resources and support provided by the hospital, which led to considerable work pressure:

“If you have a number of vacancies, carrying those vacancies put a lot of strain on the existing staff, particularly filling weekend rosters and I'll just covering work on a day-to-day basis, and that's truly hard in pharmacy because we have to finish the work every day before we go home.” (A01)

In contrast, acquiring human resources was not regarded as the solution to provide ideal pharmaceutical care, but by closing the gap between what the hospitals wanted and what participants sought:

“You can hire additional 500 pharmacists tomorrow and the question will always be, “What's the priority?” ‘Cause there's so many things you can do. When it comes to patients' health, you could easily get 20 professionals looking after 1 patient, because there's so much to do. So you'll never going to be staffed well enough, you'll never going to do everything, but what's important is to know what the priorities are. And then you can at least allocate the appropriate of resources to that setting, and again with the most skilled staff for the cheapest amount.” (A03)
Interestingly, with increasing opportunities for senior roles within the hospital, some participants reported others having increased expectations for what they should do. Participants expressed this might not be their 'core business':

“Because I work in a hospital for 7.5 years, I've had a variety of roles including education and training and basically rotated to every clinical stream as a ward pharmacist. So people often ask me for antimicrobial advice, but also just general advice. So to do administrative things like payroll if I'm sitting in pharmacy so that distracts me from my core business. So I find sometimes I'm constantly being interrupted." (A09)

2.4.2. Opinions about current management of hospital pharmacy

A number of issues of importance were raised by study participants. Financial management was deemed highly important because the expenditure on medicines needed to be carefully managed by hospital pharmacy. Participants provided various responses to data management. Managing pharmaceuticals was also challenging. Managing people with limited resources was described as a challenge. Medication risk management was unanimously viewed as hospital pharmacists’ responsibility.
2.4.2.5. Financial management

Management of costs was reported by participants as a vital aspect of pharmacy management. Financial management was deemed very important because hospital pharmacy managed valuable material:

“We buy a lot of drugs and we try to get good prices of drugs so that we’re getting, uh, we handle that 50 million dollars with inventory of drugs per annum and it’s really important that we match those soundly and in compliance with key financial performance indicator. So, we do a lot of financial management work as well.” (A01)

In a different context, a participant questioned the value of budgeting in drug procurement:

“Our hospital hasn’t developed the drug budget because we can’t really see the value of doing that because if the main pressure of our expenditure is the kind of the patient we have, if we accept those patients we have to treat them.” (A04)

However, participants also acknowledged that cost-containment was a key financial contributor to the hospital because while there were large amounts of money involved, there was no revenue generated:

“In lots of ways our department spends a lot of money because we’re spending $20 million a year on drugs, plus the cost of running this
department, $3-4 million. So, lots of ways of costing, we’re important part of the hospital. We’re not generating funds like radiology or one of those other departments. Actually you’re getting money from some of the services that they provide.” (A04)

2.4.2.5. Information management

Discussing information management topic triggered various responses from participants. A participant rated documentation practice as ‘poor’ at particular hospital, but was worried that implementing improvements might require extensive paperwork and possibly affect quality of care of patients:

“Documentation is quite poor, and I do believe of that will improve in the future, but if any way if we turn to spend more time on it and that means less time with our patients and so your paperwork will probably double just so you can make sure everyone know what’s going on and happens for the medication safety initiatives or have good support from the top but the ongoing consequence of that is you have less patient care.” (A03)

The use of paper medication charts was either preferred (to electronic systems) or perceived impractical:

“I’ve always been brought up with the paper chart, like when I was still an intern I used that system, to me that’s very easy, straightforward and
run in front of me, like with the notes, so I really like the paper chart, I think that's really good.” (A03)

“Well I have to say I'm an advocate and I am happy with the idea of moving towards electronic management and I think that electronic management in general for patients, medications, is the way forward … I can really slack from the pharmacy … I can just look it in the monitor and see what your ward is up in and it's in real time so you're not having to chase paper chart.” (A07)

“I just like the fact that we're going to have a system that's very legible. We got to know who's prescribing, who's administering, who's dispensing, because it's all electronically, there's no handwriting.” (A04)

Moreover, use of computerized data management was generally valued, but one participant was not confident with the considerable effort to use the technology:

“[HISs] are labor intensive to both manage and to use, so that's the difficulty with that … I think there's challenges for us all because technology will offer us more opportunities for hospital pharmacists to be able to provide services beyond dispensing and dealing out with product. But, organisation of the technology costs a lot, so there would
be challenges for us in making sure it's not stuck in dispensary just
doing dispensing because it costs too much for the technologies to
replace the pharmacists.” (A01)

2.4.2.3. Inventory management

Unexpected shortage of pharmaceuticals was a concern expressed by
participants. Drug shortages agitated participants because this might limit
access to essential medicines and this might harm patients:

“Right now, I've got two drugs we're short. Look at this (showing her
notes) from my notes. ‘Shortages’ is the first word on my notes. Do you
read that? Yes, I have [problems with shortage]. I'm going through right
now. (Sigh) Obviously, my area of interest is antibiotics, but there are
multiple areas with drugs are short. But it's pretty critical because when
you don't have access on an antibiotic and you get someone get an
infection, that's pretty bad.” (A09)

The use of brands and marketing to influence prescribing was reported as a
concern in managing medications and the associated expenditure:

“Balancing the pressures from, you know, drug companies obviously try
to and develop their brand, and you whatever. It's obviously going to be
expensive and then people hear about it and doctors hear about it and
doctors want to use it, but we can't keep doing it for, you know, we
can't, the government can't afford to provide that for everyone. I think that's probably one of the biggest issues. It's just the actual cause of it, instead of the cost of drugs.” (A02)

2.4.2.5. Personnel management

Human resource management was reported as a key aspect of management in hospital pharmacy. Employment of well qualified staff and ongoing training were prioritised, although vacancies did occur:

“It's also very important to employ the right people. So, I'm very careful who I employ because it's very hard to get rid of people. I don't mean get rid of that but if people aren't performing, you must always employ the right people. And not just the person to do a job. So, I'm very careful if I'm not, at all concern of this person, may not be the right sort of this over here, then I'd rather leave the position unfilled and re-advertise. Because it's very important, because if we put a lot of effort into training someone, it takes a long time to get someone, whether it's a pharmacist or technician, off the street to working to the stage that we want. And that's a lot of time and effort we have put in our department.” (A04)

Participants expressed some dismay at hospitals' cost-containment strategies which could delay staff recruitment:
“The hospital is always trying to save money and sometimes money saving strategy to the recruitment as long as possible to save money.”

(A01)

A participant expressed her disappointment when losing a highly specialized staff member:

“I think that would be probably challenge in the area, losing, when you have such a specialized area and you lose staff who really specialized and really know a lot about an area, it can be really felt. So, that's probably one of the biggest changes. I think staff really impact on working place.” (A07)

The participants reported their concerns, as managers, regarding balancing the sense of fulfillment for their own staff with the levels of achievement of the organisation:

“We are all in the workplace to do what the hospital wants us to do and people got their own personal development and career aspirations, so getting people to understand the balance of what the organisation expects them to do to us and then for us to give something back to them and managing those expectations is challenging sometimes.”

(A01)
2.4.2.5. Risk management

Participants expressed concerns regarding potential risks associated with medication management. They were concerned about mismatch between wards’ requests and what pharmacists deemed as efficient and safe:

“The wards might often try and say, “Oh we want this, we want that,” they think they’re using a lot of it. But if it's, we have to think of the costs, the safety, so for instance we don't want potassium ampules on a particular ward or on the wards that doesn't know the cost, safety and sort of usage.” (A02)

A participant was also concerned with limiting drug supply to wards because it could put patients at risk in an emergency situation:

“Obviously the risk of taking out imprest means people who need it timely first dose of antibiotic like in a septic patient might have easy access to it, after hours especially.” (A09)

The lack of engagement of patients in the approach to medication safety was reported as a major challenge in medication safety management in Australia:

“[Medication safety] is everyone’s responsibility, the nurses’ responsibility, the doctors’ responsibility, it’s the patients' responsibility and the thing that most possible struggle within Australia is really
getting the patients responsible and more involved in that task. So, consumer engagement is really important, but rarely happens.” (A03)

There was support for in the way in which incidents were managed, as a part of a practice improvement program:

“Yeah there was an incident that happened on one of the wards to do with antibiotics that a nurse told me about and I asked her to put it in IIMS and then she was worried the person would get in trouble. But I said we’re pharmacy, we don’t blame people, we try to look out how can we improve, like we’d never look at it, we don’t get offended by people putting incidents in.” (A09)

2.4.3. Essential elements in hospital pharmacy

Perceived key factors in hospital pharmacy management and practice were reported. The necessity for a specific skill set for hospital pharmacists was emphasized. The importance of leadership was highlighted. Finally, changes in current system to improve patient safety, data management, and service quality were expected.
2.4.3.1. Competencies

Participants described what they needed to know, to be able to work as hospital pharmacists. Awareness of roles was reported as a fundamental element to define what was required of hospital pharmacists:

“The basis [to develop our procedures] is knowing the business. So, we have to know what your role is in this institution. So, in this institution I supposed, as in many hospital pharmacies, you have a certain group of medication that you're dealing with and a certain population. So, it means area I would have, say, guidelines to the types of patients, the types of drugs that can be developed.” (A05)

Relevant hands-on experience in community pharmacy was also deemed essential if junior pharmacists decided to enter hospital work:

“*I think a lot of people going into pharmacy should [have hands on experience in community pharmacy] because that's where the majority of the work here. I think it gives people real insights as students or maybe they can work as pharmacy assistant or just be in touch with the community pharmacy before they take on pharmacy, I think it's good experience.*” (A07)

In early career years, regular duties were regarded as routine; this experience in various roles was highly appreciated by participants:
“I guess with pharmacy you can be quite, Monday to Friday you're in dispensary, be it outpatient or inpatient, but here I've been given the opportunity to act in senior role. I have a whole different array of wards, you know, from geriatric to adolescent so variety I think is good, not the same thing every day.” (A07)

2.4.3.2. Leadership

To have effective leadership was identified as an important issue in managing hospital pharmacy. Participants identified the importance of trust between managers and pharmacy staff:

“Umm, well, I think [one key element is] awareness. So being aware of what the duties of all the staff really are, and then being fair about that. (Thinking) I supposed, openness and (sigh) being consistent, so ideally having everybody aware of, sometimes people might complain, “Oh I've got 4 hours in the dispensary and that person only gets one!” But if everybody's aware that person got other duties as well, and may be a more complicated ward, making sure that everybody realizes that sort of things. Also making people feel that they can come to you and talk about any problems they have.” (A02)

A leader was also expected to influence people, particularly in a changing environment:
“You need to engage people because they're the ones prescribing it, you can't just change it on paper because no one will follow it … you're not like the policemen or the dictator that tells people you must prescribed this because this was in the guideline, we found it really effective from them to change from the inside out.” (A09)

It was essential for a hospital pharmacy leader to be involved and be a role model for others:

“I usually try and attend those meetings because I think that’s important for me to be a good role model for continuing professional development and to be involved and to hear the research presentations or the clinical presentations or the things that may be discussed at our clinical meetings, and for me to be up to date with clinical things as well as management things.”

2.4.3.3. Organisational behaviour

Supportive organisational culture and behaviour were perceived key factors in success. Some participants expressed dissatisfaction with current organisational cultures, and changes sought changes:

“I think that we as a department here will really need to change the way we do things. At the moment things are quite segmented, but I feel that
there’s a lot of changes can be made that will make us more efficient.
And we’ll reduce the level of stress on pharmacists.” (A06)

Bureaucratic environments vexed participants because it was deemed as a hindrance to change:

“I guess like within the health care institutions, cause there’s always multiple level of hierarchy, people I have to go through, if there’s something that I think needs to be changed, policy, procedure-wide, those changes can take 6 months to actually happen coz it’s got to be approved by 70 different people above.” (A03)

Participants had strong expectations of high quality, safe, and appropriate care provided by hospital:

“My expectations which I feel extremely strongly firm, I’ve had two friends in hospital, and saying things first hand. Is it okay to be patient centred? Not just bureaucratic. And my expectations would be high quality but also safe, appropriate and quality care … Bureaucratic is just doing things because paperwork says so.” (A09)

Interestingly, one participant who was working in a small hospital expressed contentment because in working with a relatively small subset of medications
she felt she had a comprehensive knowledge of those medicines, and was thus more confident:

“I have to say having worked here in my 3rd year I feel quite confident with medications and definitely it's a small sub set of medications so you don't need to see larger sub set of medications.” (A07)

2.4.3.4. Rigid system
Supportive hospital environment to support pharmacy practice was described. Reflection on international experiences in hospital pharmacy practice identified some areas of new interest, for example, benefits associated with the application of barcode scanning:

“America’s been through [barcode scanning]. It was until the FDA required the manufacturers provide barcode of that detail, that they really start to utilize a lot of this medication safety equipment. So, that’s something that we need to move towards, but that’s going to be a journey. And it's probably a whole of nation thing that we have to do.” (A04)

An evidence-based approach to implementation of new services was described as being expected to avoid bias and emotional attachment in decision making:
“Data is always good. That's where orders, feedback to come back, literature reviews, just try to keep it not emotionally attached, don't take things like, "We always do that, that's always fine." Just show them the data and say, "Look, in last 6 months you have these many patients, you'll see this, and the current literature supports this. And you just keep everything as aim as biased for it as possible. And use a lot of data and I think data speaks for itself. Usually it's much easier. But if you don't have data, I think it's just a bit of a classic opinions throughout the time.” (A03)

Concerns over observed mismatched expectations between patients and the government funding schemes was reported, indicating that clear and patient-centred policy was desirable to participants:

“Managing patients' expectations as well can be challenging. Sometimes the underpinning policies that we have to work with about providing medications is difficult for patients to understand and they're not always good policy, sometimes there's difficulties between the state and the commonwealth about how they want to manage the drugs and there's a bit of cost-shifting and patients can't understand.” (A01)
2.4.4. Vision and concerns for the future

Participants reported their vision and concerns for the future of hospital pharmacy. Participants had a strong view on the need for professional career development and appreciation of their expertise within the hospital sector. However, participants also projected perceived future challenges, such as insufficient funds. Furthermore, participants provided a range of perspectives about the future, for example excitement of future technology and staff’s resistance to change.

2.4.4.1. Career development

Strong opinions about the future of hospital pharmacy practice were reported. A proactive attitude was thought to open up career opportunities:

“Sometimes to have career development, I think you really need to carve your own way. So, I think that you have to look for opportunities. You kind of have to make a niche.” (A07)

In addition, there were optimistic attitudes regarding future opportunities and roles:

“We’re very lucky in hospital pharmacy. Community pharmacy has a lot of issues with the price for. They’re underpaid, skills are not being utilized. Hospital pharmacists are the opposite. We get paid very well, and the amount of positions in hospital pharmacy is increasing every
year … it feels to me that pharmacist are going to have a greater role high up in regards to project management, policy directives.” (A03)

However, to take up greater roles in the future, there were expectations for pharmacists to contribute in different areas in health care:

“I think hospital pharmacists need to be a bit more outward looking as well and to get jobs doing other things in health, so that people at high levels in the health system have a better understanding about the potential contribution that hospital pharmacists can make.” (A01)

For senior pharmacists who were considering their retirement, they considered the legacy they would leave behind:

“[My future direction is] retirement. (Laughing) I’m easy on that one. I just want to make sure that I leave, there’s a suitable legacy, that I leave a legacy and one of the legacy I hope is just to be able to communicate to most of the, not only with people responsible in the hospital, but also with the patients. I just want to make sure that our staff, especially our juniors, get the opportunities to take on that to extend their role.” (A05)
2.4.4.2. Professional appreciation

Participants were concerned for the future of their profession. A participant expressed concern over professional identity hospital pharmacists ought to establish in the future:

“Our role has always been expanding and it’s becoming very clear to a lot of people that pharmacists are very good use of resource, we can do a lot of things. And that’s what makes the future of hospital pharmacy very bright, but the question has always been, “Is there anyone cheaper who could also do the job?” That’s always going to be, I guess, the challenge that pharmacist’s going to face, to say not only the best but no one else can do this.” (A03)

Furthermore, without stimulating environments and appropriate remuneration, potential successors might leave their roles:

“Here’s a lot more opportunities for pharmacists these days to do different things. If we can’t provide people with a good environment and appropriate umm (paused) remuneration, the leaders that we want to get will come to other things.” (A01)

Additionally, lack of career progression opportunities to higher positions concerned participants:
“Some people will say to you that it's very hard to move up in the hospital pharmacy, it's not because there's a lack of direction, it's just because people need to retire or people need to move on for you to get those jobs.” (A03)

2.4.4.3. Not enough funds

Access to funds in the future was worrying for participants. Uncertainty with financial viability in the future was felt by participants:

“There's not enough money in the system to be able to deliver those things. There's less people paying taxes so the money constraints are gonna get higher. A lot more health is being privatized. People want to make money out of privatized health. So that's more challenging because it will cost more as well. And that's the constraint will become more about public health will be central private system, and that's gonna cost a lot more money." (A01)

The feasibility of expanding services was questioned in an uncertain financial future:

“We have lot more expansion that we can do, but we're limited by the health systems in terms of, I'm not generating resources to pay for my own activities. A lot of my activities are in terms of safety, providing a quality. They're not generating funds.” (A04)
2.4.4.4. Different attitudes toward changes

There was diversity in attitudes towards potential future development of hospital pharmacy. Some participants were enthusiastic to participate in change, particularly in information management:

“The dispensing software is coming. I know it's coming. And it paired to do with our resource which is medical record. So once our medical records have gone electronic, so that is the next phase. So, once i-Soft develop the outpatient and I believe it's coming.” (A05)

However, another participant reported her doubt because of previous experience of staff being resistant to change:

“It is not easy to change procedures, especially with staff who may be less keen to take up changes.” (A08)

2.5. Discussion

As outlined in the preamble, this paper aimed to explore Australian hospital pharmacists’ perceptions of their responsibilities, challenges and key factors in managing pharmacy, as well as to explore potential future development. Hence we explored key informants’ experiences and opinions within this qualitative study. Our findings suggest that there are constant tensions between what hospital pharmacists wish to achieve and what the institutions might expect them to achieve in their roles as hospital pharmacy managers.
There may be tensions based on a mismatch between hospital pharmacists’ underlying values and perceptions and the hospital expectations for hospital pharmacy service. As a result, work dissatisfaction and frustration may occur and were described in this study.

2.5.2. Perceptions of current roles

It appears that although participants described the wish to be ‘patient-centred’ in their approach, there was ambivalence regarding how to be patient-centred in their practice. Some participants believed that being patient-centred was to have direct involvement in patients’ medication management. Other participants believed that patient-centred care was to provide services to selected, highly prioritised patients. Another participant suggested patient-centred care as a non-bureaucratic, safe and appropriate care. The literature has shown that there are different perspectives on this and therefore this is not surprising in this context (12, 13). Although it deemed beneficial to seek a “well-defined identity and a clearly articulated purpose” of a profession (12), those equivocal ideas still appear seem relevant and challenging to define a clear definition of pharmacists’ responsibilities.

Furthermore, those equivocal ideas of pharmacists’ ideal roles are sometimes mismatched with hospitals’ expectations. Participants often described feeling high pressure at work, with little support from the hospital
executive. Work dissatisfaction in this situation may not be surprising. (7).
However, even lack of staff shortages, without clear definition of pharmacists’ roles and aims may lead to frustration and tension in the workplace.
Moreover, this study suggests that prioritisation may be key to optimising limited resources in increasing demand of care. This suggests that management is inseparable from pharmacy practice. However, pharmacy management may not be a clear focus for many students and practitioners because there is a perception that pharmacist is a clinical purist (5). Setting management apart from pharmacy practice may lead to limitations in achieving patient-centred care. The understandings by hospital staff about “patient-centred” care may merit further study.

2.5.2. Opinions about current management of hospital pharmacy
Our study suggests that our participants endorsed their roles to include managerial responsibilities. The following areas of management were acknowledged by participants as hospital pharmacists’ responsibilities: financial, information, inventory, personnel, and risk management.
Pharmacists’ managerial responsibilities are pictured comprehensively in the national competency framework (14). This framework integrates pharmacist accreditation, training, and education in Australia.

However, there are conflicting opinions about how a hospital pharmacy should be supported technically. For example, some participants were very
enthusiastic with electronic systems, but some others preferred paper-based documentation. Such opinions were rooted in participants’ own experiences, beliefs, and appraisal of the benefits and efforts of a particular management activity. Furthermore, as reported by Hodnette, underlying beliefs about something can also play a significant role in the ultimate success or failure of the information system and facility itself (15). Our findings also suggest that hospital pharmacists perceive that they lacking influence on the management of the pharmacy. Terms such as “insufficient funds”, “shortages”, “understaffed”, “lack of consumer engagement” indicate some external, perhaps inevitable, and uncontrollable pressures on pharmacists’ managerial responsibilities. The findings also suggest that pharmacists might be excluded from certain decision making processes.

WHO recommends hospitals to establish a multidisciplinary team – known as Drug and Therapeutics Committee (DTC), to develop the hospital formulary, review medication use, and develop policies related to use of medicines in hospital (16). In Australian hospitals, pharmacists are part of DTC stakeholders (17). It may be beneficial if pharmacists can have deeper involvement in DTC, thus DTC roles may not be limited only to pharmaceutical use, but also to how pharmacy is managed. More understanding about potential DTC roles in pharmacy management may be explored further. While this is routine in Australian hospitals, this experience may vary internationally.
2.5.3. Essential elements in hospital pharmacy

The results suggest that participants were aware that hospital pharmacy is a part of a larger entity – the hospital, thus both hospital pharmacists and hospital setting had to have particular characteristics. To deliver optimal pharmacy operations, both the profession and the environment should be conducive. As professionals, pharmacists have considerable autonomy to provide care for patients (18). Pharmacists’ competencies and pharmacy leadership were recognised by participants as essential factors in the hospital environment.

Nevertheless, when pharmacists are employed by hospitals, the degree of autonomy varies according to the culture, behaviour, and type of the organisation (5). Consequently, it is not surprising that participants were not happy with particular organisational structures and cultures, described as 'segmented', 'hierarchical', or 'bureaucratic'. In a different context, participants valued their involvement in development programs, specialisation and small-sized organisations, and valued their opportunities for evidence-based and accountable practice. It suggests that professional autonomy may increase in a small and specialised teams where the members of the team share similar values and promote accountable practice. The result also supports previous study finding that, although in multidisciplinary teamwork professional autonomy was reduced and was influenced by members’ attitudes, it led to an increase in professional accountability toward the multidisciplinary team goals. (19). Further
investigation about hospital pharmacy autonomy and teamwork quality may merit considerable understanding of educators, researchers, practitioners, hospital executives, and policy makers about defining pharmacists’ roles in hospital environment.

2.5.4. Visions and concerns for the future

Many expressed their wishes and concerns for pharmacy leadership. Participants wished for zealous pharmacists to emerge and forge their way to leadership in the health system. A desire for a greater role in, and contribution to, the health system was strong, albeit their expressed concerns about unsupportive environments for future leaders. For example, having fewer leadership positions for hospital pharmacists, less recognition of the pharmacy profession, less financial support, and resistance to change, which were reported by participants, may limit pharmacists' interest in staying in the profession. Furthermore, it may hamper hospital pharmacy development in the future.

Succession planning was also wished for and was recognised as important to prepare future leaders. This result enriches a study conducted by White in 2005, where the researcher investigated a potential crisis in pharmacy leadership in the US. The writer of that report recommended some actions to prepare individuals and professional organisations, where succession planning was emphasized (20). This observation suggests a necessity for
Australian practitioners and professional organisations to become proactive in succession planning and developing a supportive environment for a viable profession.

In Chapters 3 – 5, Stage 2 of this research exploring hospital pharmacy management in the Indonesian context are described.

2.6. References


3. Indonesian Hospital Pharmacists’ Roles

Background: The importance of the rational use of resources and avoidance of wastage in pharmaceutical management have been national concerns in developing countries, such as Indonesia. With a strategic role to apply and promote pharmaceutical care and rational use of medicines, hospital pharmacists have a strong potential to improve efficiency in healthcare.

Objective: The aims of this study were to explore Indonesian hospital pharmacists’ perceptions of their roles, barriers and enablers of such roles, and to describe potential relationships among practice philosophies, practice models, and pharmacists’ attitudes.

Methods: Qualitative research was undertaken involving semi-structured interviews. Constructivist grounded theory was adopted to generate key themes.

Results: A total of 31 pharmacists were interviewed. Hospital pharmacists deemed themselves as medicine experts who were responsible for clinical service provision, but described that existing distributive and administrative roles were predominant. A range of attitudes toward managerial roles was expressed, with majority of participants expressing frustration. Both the external environment and factors internal to the hospitals were highly influential on their ability to achieve their clinical and administrative roles. A
model linking perceptions of roles, attitudes and practice models was
developed.

Conclusion: Indonesian hospital pharmacists believed that pharmaceutical
care was essential for patient-oriented care. However, multiple interpretations
of 'patient-oriented' and 'pharmaceutical care' were described. This was
reflected in varying extent to which pharmacists accepted or 'refused' roles
and responsibilities. Indonesian hospital pharmacy may face significant
challenges and/or develop different pharmacy services for the future.
3.1. Introduction

Rational use of medicines has been a major concern across the globe and WHO has estimated that up to half of medicines prescribed are appropriate (1). Inappropriate prescription of medicines reduces the quality of care and efficiency in health care (2). Rational use of resources and avoidance of wastage in pharmaceutical management in public healthcare settings have been identified as national concerns in Indonesia (3). In Indonesia, around 70% of hospitals are governmental hospitals (4). Less is known about efficiency data in private hospitals. Furthermore, in this country hospital care services accounted for 60% of total healthcare expenditure (3). Therefore, hospital pharmacists have a strategic role to apply pharmaceutical care and rational use of medicines in this setting to improve efficiency in healthcare.

In 2007, the FIP conducted worldwide surveys to explore hospital pharmacy practice. The results suggested that practice models were implemented to varying degrees, and access to essential resources was diverse among participating countries (5). A meta-analysis showed that hospital pharmacies lacked clear definitions of pharmaceutical care across the globe (6). Although diversity was shown, hospital pharmacy leaders outlined a consensus vision of hospital pharmacy practice, known as the Basel Statements (7). Hospital pharmacists are expected to take roles to ensure responsible use of medicines, to achieve timely and efficient access, in collaboration with other health professionals (8).
However, the role of hospital pharmacists may vary across the world. In developed countries pharmacists’ responsibilities have shifted from drug-distribution roles to a focus on more clinical, patient-oriented care (6), but in many low-middle income countries, hospital pharmacists predominantly performed managerial functions (5). These changes were influenced by country-specific factors. For instance, in the US, medicine distribution roles have been taken over by pharmaceutical automation, so pharmacists have been able to expand their roles to be more clinical (8). Patient-oriented care, also known as ‘pharmaceutical care’, has different interpretations and implementation across the globe (6).

In 2014, Indonesia reformed the national health insurance system, changing health service delivery (9). These changes may lead to some potential threats or opportunities for redefining the role of the hospital pharmacist in Indonesia. There are apparent differences between developed and developing countries, in terms of capacity, challenges, and demands for pharmacy services.

3.2. Objective

This study aimed to explore Indonesian hospital pharmacists’ perceptions of their current roles, barriers and facilitators to perform such roles; and potential relationships among practice philosophies, practice models, and pharmacists’ attitudes.
3.3. Methods

An inductive, qualitative approach was adopted to conduct this study. Given the aim of this study was not to generalise the findings, but rather to gather a holistic understanding the phenomenon and issues, a qualitative research approach was deemed appropriate. There are several characteristics of qualitative research which fit the purpose of this study, such as it focuses on learning the meaning held by participants about a particular issue, where data is collected in the participants’ work context and natural setting (10).

3.3.1. Participants

Purposive and convenience sampling of participants from five provinces in Indonesia (DKI Jakarta, East Java, South Sumatera, Riau, and Banten) was undertaken. A purposive approach was utilised to identify and interview key informants from hospitals, government, and the professional pharmacists’ association in Indonesia (Indonesian Hospital Pharmacy Interest Group, of the Indonesian Pharmacists Association). Initially key informants were invited with an invitation letter (Appendix 3.1) and a consent form (Appendix 3.2), then a snowballing technique was adopted to recruit subsequent participants. Interviews were conducted between February and April 2015.
3.3.2. Data collection

Key topics were explored using an interview guide that consisted of open-ended questions (Table 3.1). To design the interview guide, we consulted the existing literature about hospital pharmacy management (11), and piloted the interview questions. The interview guide (Appendix 3.3) was designed with questions for hospital pharmacy managers and early career pharmacists, to include different perspectives in hospital pharmacy management, as experienced by participants. Interviews were conducted in places and times convenient for participants. Participants provided informed consent and interviews were digitally audio-taped and extensive field notes were taken by the researcher. For participants who did not wish to be recorded only field notes were taken. The interviews were conducted by VG.

Table 3.1. Topics covered in semi-structured interviews with Indonesian participants

<table>
<thead>
<tr>
<th>Interviews with Directors of Pharmacy:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Current duties, tasks, and functions performed by hospital pharmacy managers</td>
</tr>
<tr>
<td>• Current management of resources, safety, and policies in hospital pharmacy</td>
</tr>
<tr>
<td>• Perceived challenges and problems faced by hospital pharmacy manager in performing their duties</td>
</tr>
<tr>
<td>• Expectations for the future hospital pharmacy practice</td>
</tr>
<tr>
<td>• Possible solutions to identified challenges and threats</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interviews with early career pharmacists and supervisors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Current duties, tasks, and functions performed by hospital pharmacists</td>
</tr>
<tr>
<td>• Opinions about the implementation of policies, safety, and management of resources in hospital pharmacy</td>
</tr>
<tr>
<td>• Perceived challenges and threats faced by hospital pharmacists</td>
</tr>
<tr>
<td>• Expectations for the future development in hospital pharmacy practice</td>
</tr>
</tbody>
</table>
### Possible solutions to identified challenges and threats

- Interviews with members of the government and professional association
- Development of standard of practice and its implementation
- Perception of ideal hospital pharmacists’ roles
- Opinions about current hospital pharmacy practice
- Perceived key elements in managing hospital pharmacy
- Future expectations and perceived challenges in hospital pharmacy

### 3.3.3. Data analysis

The interviews were transcribed verbatim. During the data collection period, each transcript was analyzed for emerging themes. This technique was used to summarise emerging issues and also identify issues that needed further probing in subsequent interviews in order to gain comprehensive data. In this study saturation was considered to have been reached when no new themes emerged in three consecutive interviews. Analysis was performed in a constructivist grounded theory approach (10). Given the purpose of this study was to explore participants’ perceptions of their roles, constructivist approach was regarded as appropriate because it explores important topics highlighted by participants. Identification of themes was performed using holistic coding, descriptive coding, and pattern of codes was identified with focused coding (12).
3.3.4. HREC Approval

This research was approved by the Human Research Ethics Committee of the University of Sydney (Project number 2014/680).

3.4. Results

A total of 28 hospital pharmacists, 2 pharmacists from government bodies and 1 pharmacist from professional body were interviewed between February and April 2015. Out of 31 interviews, 24 interviews were audio-taped, and 7 interviews were recorded only with field notes. One interview was conducted with multiple participants because they were able to present at the same time and place during the interview. Two interviews were conducted by telephone. The interviews lasted between 15 minutes and 80 minutes, with an average of 45 minutes. Table 3.2 shows the characteristics of participants.

<table>
<thead>
<tr>
<th>Characteristics of pharmacist participants</th>
<th>n = 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, n (%)</td>
<td>25 (81)</td>
</tr>
<tr>
<td>Full-time employee, n (%)</td>
<td>31 (100)</td>
</tr>
<tr>
<td>Position, n (%)</td>
<td></td>
</tr>
<tr>
<td>Director of Pharmacy</td>
<td>10 (32)</td>
</tr>
<tr>
<td>Deputy Director of Pharmacy</td>
<td>2 (6)</td>
</tr>
<tr>
<td>Supervisor</td>
<td>10 (32)</td>
</tr>
<tr>
<td>Pharmacist or clinical pharmacist</td>
<td>4 (13)</td>
</tr>
<tr>
<td>Other (logistician, head of clinical department, director of pharmaceutical directorate, member of pharmacy council, secretary of professional body)</td>
<td>5 (16)</td>
</tr>
<tr>
<td>Characteristics of institutions</td>
<td>n = 21</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td><strong>Province, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Banten</td>
<td>1 (5)</td>
</tr>
<tr>
<td>East Java</td>
<td>5 (24)</td>
</tr>
<tr>
<td>DKI Jakarta</td>
<td>9 (42)</td>
</tr>
<tr>
<td>Riau</td>
<td>1 (5)</td>
</tr>
<tr>
<td>South Sumatera</td>
<td>5 (24)</td>
</tr>
<tr>
<td><strong>Ownership, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Government body</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Public hospital</td>
<td>8 (38)</td>
</tr>
<tr>
<td>Private hospital</td>
<td>8 (37)</td>
</tr>
<tr>
<td>Private non-profit hospital</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Professional body</td>
<td>1 (5)</td>
</tr>
<tr>
<td><strong>Hospital class, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Class A&lt;sup&gt;a&lt;/sup&gt;</td>
<td>7 (33)</td>
</tr>
<tr>
<td>Class B&lt;sup&gt;b&lt;/sup&gt;</td>
<td>9 (43)</td>
</tr>
<tr>
<td>Class C&lt;sup&gt;c&lt;/sup&gt;</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Non-hospital</td>
<td>3 (14)</td>
</tr>
<tr>
<td><strong>Types, n (%)</strong></td>
<td></td>
</tr>
<tr>
<td>General hospital</td>
<td>9 (43)</td>
</tr>
<tr>
<td>Provincial general hospital</td>
<td>4 (18)</td>
</tr>
<tr>
<td>General hospital centre</td>
<td>1 (5)</td>
</tr>
<tr>
<td>National general hospital centre</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Cancer hospital</td>
<td>2 (10)</td>
</tr>
<tr>
<td>Mental health hospital</td>
<td>1 (5)</td>
</tr>
<tr>
<td>Non-hospital</td>
<td>3 (14)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Referring to hospitals with adequate facility and resources for at least four basic specialisations (internal medicine, paediatric, surgery, and obstetrics and gynaecology), five ancillary services, 12 other specialisations, and 13 sub-specialisations

<sup>b</sup> Referring to hospitals with adequate facility and resources for at least four basic specialisations, four ancillary services, eight other specialisations, and two sub-specialisations

<sup>c</sup> Referring to hospitals with adequate facility and resources for at least four basic specialisations and four ancillary services
Four key themes relating to the aims of this study were identified: “current hospital pharmacists’ roles”, “hospital pharmacists’ managerial roles”, “barriers to perform hospital pharmacists’ roles”, and “enabling factors to perform hospital pharmacists’ roles”. Each of these themes and subthemes are discussed in detail below. A model linking perceptions of roles, attitudes and practice models was also developed.

3.4.1. Current hospital pharmacists’ roles

The study respondents reported details of their roles in hospital pharmacy. The majority of participants described their belief that hospital pharmacists had to prioritise clinical services for their patients:

“I will prioritise my patients, so clinical services are considered as more important than administrative tasks.” (P3)

Participants also positioned themselves as medicine experts:

“When it comes to drug interaction, pharmacists know better than doctors, so they should be glad when we share information on that … When I talk with [my staff] and explain everything they end up willing to sacrifice their personal needs and agree to work overtime.” (P15)
Furthermore, participants perceived that the hospital pharmacist is a part of a multidisciplinary team:

“*I am also communicating regularly with doctors, nurses, other pharmacists, and other people in the hospital; I am not surprised to meet people. Because I sometimes accepted phone calls from unknown people asking me about medicine information, then I would help them too.*”  (P22)

Some respondents reported that while they performed both drug distribution and clinical roles, administrative roles would be predominant:

“*[My clinical pharmacist] focuses more on administrative tasks. So I see her roles are not explored deeply.*” (P8)

However, some participants reported a separation of clinical and drug distribution responsibilities:

“I explained that [shortages] are not my responsibility as a ward pharmacist .... Shortage of medicines is purchasing department’s responsibility.” (P1)
3.4.2. Hospital pharmacists’ managerial roles

When asked about management topics, participants’ responses varied. Many participants defined management as inventory management. Most participants emphasized their responsibilities for operational management. Essentially, few respondents expressed the importance of managing pharmaceuticals and revenue:

“Management of tens of percent of hospital money is here. If this is not managed well; drugs are expired, unused, wasted … I still believe that hospital pharmacy is hospital’s main source of money. We can’t avoid that fact. As long as I can be efficient, I will do it. For private hospital, this is still major source of revenue.” (P7)

Many participants reported their responsibilities for service provision:

“I will look through [depots’] compliance with hospital accreditation standards, especially in regards to storage condition, UDD implementation, or other activities.” (P5)

There were also few participants who reported strategic roles and actions in managing hospital pharmacies:

“I am also the secretary for Pharmacy and Therapeutic Committee. As a secretary, I have to put the committee in motion and have to sort out
new drug proposals … I plan and do strategic programs that aim to achieve the vision and mission of this hospital.” (P31)

Numerous participants perceived managerial roles as burdensome, and expressed intentions to leave managerial roles in the future:

“I am planning to return to geriatric and palliative care unit as a clinical pharmacist because I won’t have any burden and managerial responsibility for my subordinates’ welfare.” (P31)

3.4.3. Barriers to perform key hospital pharmacists’ roles

Some impediments to performing professional roles were reported. Firstly, poor career rewards seemed to be associated with a loss of enthusiasm in hospital pharmacy:

“In this hospital, I can’t level up my career. Pharmacists can only get up to level nine. Even though they work until 100 years, they will still be there.” (P6)

In addition to that, the presence of ‘office politics’ concerned some participants:

"There have been cases where the bold ones were victimised … You want to do the right thing, but the majority around you don’t, so you’ll
end up taking a beating ... I took an oath, I only want to serve patients
to the best of my ability, but when I am faced with politics even though I
know the right thing to do I can’t do it because of other considerations.
So it is very difficult." (P24)

The current Indonesian health system and regulations were deemed as
‘external hindrances’ and were highlighted by some participants:

“I think our government’s regulations have the most significant
influence. If we don’t have that many options for treatment, we can
focus more on drugs’ effects. It will solve so many problems here. We
only need to talk about how many of this drug I need to supply, but not
supply 3 boxes of brand A and 2 boxes of brand B of the same active
ingredients.” (P7)

“We control the items because there’s a change in Indonesians’
insurance system. Before this, whatever we gave to patients would be
reimbursed [by the government]. Now, whatever we give to patients, we
will only receive this certain amount of money.” (P7)
3.4.4. Enabling factors to perform hospital pharmacists’ roles

All participants reported some enablers for hospital pharmacists. Hospital accreditation was believed to bring a positive influence on the culture of work:

“I feel that there is a change in regards to the centre of the hospital. In the past, doctors are centre of attention in hospital, but now especially after hospital accreditation, it became patient-centred.” (P5)

Some participants also highlighted the need for managerial skills:

“Managerial skills are important. It’s not limited to personnel management only, but it also includes logistic management. If we don’t know about that, we can’t manage a satellite properly. We don’t know how to identify slow moving, dead stock. Those drugs are not ours, but they are our responsibilities. We have to know them. Even we need to concern about billing and administration … Managerial skill I mentioned before also includes time management. We have so much work to do, if I can’t manage my time well, I will feel burdened.” (P22)

Furthermore, some management supporting tools, such as dispensing equipment, computerised systems and strategic management tools, were also reported to assist their roles:

“Tubes are used for emergency purposes, where we must supply drugs in less than 15 minutes.” (P8)
“I am happy because [our information system] is web-based; so if there’s any problem when I’m home, I can access it. That’s very helpful for us as a supervisor.” (P22)

“We have a quinquennial strategic plan that we develop using balanced scorecard. The strategic plan then will be our reference in developing hospital pharmacy’s strategic plan … We also establish the strategic plan based on stakeholders’ expectations and future directions. After that, we will set our vision and missions, and perform SWOT analysis, after that I will make a strategy map.” (P31)

3.4.5. Relationships among philosophies, practice models, and pharmacists’ attitudes

A model of relationships among participants’ philosophies of care, current hospital pharmacy practice models, and participants’ attitudes was sought. The philosophy was based on what the participant valued in his/her roles and practice. The practice models were divided into two categories, where the participants were clinical pharmacy specialists or generalists. The attitudes were those expressed by participants when reporting their roles. The model is shown in Figure 3.1.
3.5. Discussion

The findings of the present study suggest that all respondents adopted a philosophy of pharmaceutical care to some degree. The philosophy was reflected in the National Standard of Practice, which defines that pharmaceutical care is “a direct and responsible provision of pharmaceuticals for the purpose of achieving definite outcomes and improve a patient’s quality of life” (13). The definition aligns with Hepler and Strand’s definition of pharmaceutical care (9). However, different interpretations of patient-oriented care were described by our participants. The participants reported
philosophies and perceptions of care that seemed to determine their attitudes towards their roles in hospital pharmacy.

Different perceptions of patient-oriented care also seemed to vary among participants. In a specialist-centred model of practice, clinical function is separated from managerial function, and this appeared to create a fragmented culture. Few participants believed that management was an essential role for patient-oriented care. Some participants viewed direct clinical service provision to patients as valuable patient-oriented care, whereas non-clinical, managerial functions were seen as menial inventory tasks. Hence, they would prioritise clinical services, but refused to take the responsibility when drug shortages occurred. This is consistent with the Standard of Practice, which defines clinical pharmacy services as '…direct pharmacists’ provision to improve therapy outcome…', and separately defines management as 'inventory and risk management, with limited expansion to personnel and capital management' (13). There seems a lack of connection between clinical provision and management.

Whilst current philosophy adopted by Indonesian hospital pharmacists was to ‘achieve definite outcomes and improve a patient’s quality of life’, the clinical-specialist-centred model looked promising to actualise hospital pharmacists’ stated goals. Additionally, given the described avoidance of, and frustration
with managerial responsibilities, exacerbated by poor financial reward, it may be that there will be pharmacist shortages in the future.

The study showed that pharmacists with patient-oriented care roles were focused on the pharmacists’ perspectives (as opposed to the patients). Different interpretation of what 'patient-oriented care' means has also been reported previously. Mil et al. compared various definitions of pharmaceutical care in the literature and outlined the limitations of a patient’s role in the definition of patient-oriented care (14). In addition, definition of 'outcome' has also caused confusion (14). These authors recommended for each country, there needed to be incorporation of the culture, language, and healthcare practice when defining the term (14). This is a major challenge when a country adopts a philosophical definition from a different context, which is reflected in the national standard for health care. In the Indonesian context, pharmaceutical care is an integral part of hospital care to provide clinical services, and efficacious and affordable pharmaceuticals (13). However, the definition emphasizes processes in pharmaceutical services but without a clear definition of ‘definite health outcomes’ and ‘a patient’s quality of life’. As a result, practice models may vary significantly in hospitals across Indonesia.

Although it seems that current definition of pharmaceutical care is adequate to describe current practice, the study participants reported the impact of external and internal forces on their roles in hospital pharmacy. Some
external factors, such as changes in health insurance system and regulations, threatened hospital pharmacists' ability to provide cost-effective and accessible medicines. For example, the current insurance system used a case-mix approach, which means a hospital is funded according to defined disease categories, and hospital is expected to deliver optimal medication management with finite funds. Another example, written in the hospital accreditation standard, is that pharmacists are expected to manage medication therapy to conform to relevant laws and regulations (15), even if resources are limited.

Internal resources also influenced hospital pharmacists’ ability to provide services. Many supportive management tools assisted pharmacists in their managerial roles. For example, use of a computerised system reduced errors (16, 17), and improved service speed (16). However, the implementation of advanced technology was thought to increase costs (18). It may be very challenging to implement new technology across low-middle income countries such as Indonesia, particularly in rural areas. Therefore, a re-definition of pharmaceutical care to match more with Indonesian context may be valuable for the profession and patients.

In the next chapter, the challenges in hospital pharmacy management were explored to provide profound understanding of the Indonesian hospital pharmacists’ concerns over their managerial roles.
3.6. References


4. Concerns in Indonesian Hospital Pharmacy Management

Background: Management is an essential factor to strengthening health systems and improving health in low-middle income countries, particularly in relatively poorly resourced setting. In Indonesia, pharmacy is an integral part of a hospital setting of care, and provision of good management practice may be challenging.

Objective: To explore Indonesian hospital pharmacists’ experiences and concerns in the management of hospital pharmacy.

Methods: Qualitative research was undertaken involving semi-structured interviews. Constructivist grounded theory was adopted to generate key themes.

Results: A total of 31 pharmacists were interviewed. Planning of hospital pharmacy was challenging, and the managerial activity was sometimes absent. Most participants reported their main focus in pharmacy management was operational issues, such as human resource and service management issues. To work in multidisciplinary areas of health care was challenging and lacking in support. Most participants proposed health-system improvements and leadership to manage issues in hospital pharmacy management.
Conclusion: Indonesian hospital pharmacists worked in constant tensions between finite resources and increasing demands. However, current pharmacy management activities focused on operational issues, with a lack of strategic planning. Much room for improvements in health-system and leadership is clear. Further study about the gaps between planning and operation may yield better understanding of this issue.
4.1. Introduction

The Republic of Indonesia (Indonesia) is an archipelago country located in South East Asia, comprising 34 provinces with more than 17,000 islands (Fig 4.1) (1). Indonesia is spread over 1.9 million square kilometers and in 2015 has a population of more than 252 million (2, 3). Indonesia also includes people from a wide variety ethnic groups, and more than 700 linguistic backgrounds (3). Indonesia is considered by the World Bank to be a lower middle income country (4).

Figure 4.1. Map of Indonesia

WHO states that management is an essential factor to scale up service delivery to strengthening health systems and improving population health in low-middle income countries (5). In this context, management is defined as a
process which brings together resources and unites them in such a way that, collectively, they achieve goals or objectives in the most efficient manner possible (6). In classical management theory proposed by Fayol, there are five management functions that all managers perform: plan, organise, command, coordinate, and control (7). Managers in the hospital sector are key health service managers especially in low income countries (8). In Indonesia, pharmacy is an integral part of a hospital setting of care, and all pharmaceutical products and services are usually managed by a sole pharmacy department within the hospital (9). However, it is common for many hospital pharmacists to overlook and shun rather than value management practice, because it is perceived as unaligned with and contrary to pharmacists’ clinical roles in community health (10). Furthermore, with constant changes in the health industry and the relatively poor resource for the health setting in low income countries, pharmacy managers have constant challenges to provide good management practice.

A number of studies have investigated management perspectives in the setting of hospital pharmacy practice. Bond et al, investigated the associations among hospital characteristics, staffing levels, and mortality rates in the US (11). Harrison explored the extent and quality of strategic planning in institutional pharmacies, and the potential influences from pharmacy directors (12). Sloan et al, examined the use of cost-effectiveness analyses in hospital formulary decision making processes (13). Although much study has explored and proposed the benefits of human resources,
financial and strategic planning and management, very little is known about issues in managing hospital pharmacy in developing countries. The previous chapter explored the Indonesian hospital pharmacists’ perceptions of roles, and revealed that managerial roles were often ignored. Therefore, this chapter focuses on participants’ experiences in managing hospital pharmacy.

4.2. Objective

The aim of this study was to explore Indonesian hospital pharmacists’ experiences and concerns in the management of hospital pharmacy.

4.3. Methods

The methods for Stage 2 of the study are outlined in Chapter 3.

4.4. Results

The number of participants of Stage 2, and their characteristics are outlined in Chapter 3 (Table 3.2). In this chapter, four key themes relating to the focus of the topic were identified: “issues in planning”, “issues in operations management”, “organisational culture”, and “proposed solutions” are described below. Each of these themes and subthemes is discussed in detail below with relevant quotes from participants.
4.4.1. Issues in planning

Participants reported their opinions about problems related to planning activities in the hospital pharmacy sector. The nature and effect of the external environment was reported. The degree of planning deficiency was expressed. The impact of an absence of planning was also reported.

4.4.3.3. Threats and opportunities for hospital pharmacy

Participants acknowledged the significant impact of the external environment on hospital pharmacy planning and activities. Fluctuating trends in the pattern of diseases and treatment was common:

“Patients’ condition in wards is fluctuating. Sometimes we’ve got emergency situation, and in that case, nurses will request so many things. We need to be ready.” (P16)

Increasing demands of providing quality care for patients was also reported:

“We’re also faced with constant change in patient awareness; in the past patients were not so informed in medicine, but now people are smart so we need to keep upgrading our staff, train them non-stop.” (P15)
Interestingly, most participants from outside of Java reported geographical constraints in managing access to pharmaceuticals:

“Concerning logistics, since we’re in a marginal area, the common problem is running out of certain drugs. Recently we ran out of epinephrine, which is a big problem since it’s a life-saving drug.” (P14)

4.4.1.2. The magnitude of planning issues

Ineffective planning at the departmental level was reported as impacting on hospital pharmacy practice. Inconsistent planning behaviour at the hospital level especially affected inventory management in hospital pharmacy and had an impact on access to medicines needed in a timely manner:

“The problem is flexible cycle for deadlines. They may ask us to finish the plan tomorrow. Sometimes I have to develop their understanding that we should have a rigid schedule. Sometimes we can’t predict it. Unexpectedly I can be asked to submit my budget tomorrow. Do they think it’s easy to plan for drug budget?” (P30)

Lack of thoughtful planning at the national level was also reported by many participants, reflected in the inadequacy of a national formulary, poor monitoring system, and insufficient pharmacy education:

“We are supposed to have 100% compliance rate with our hospital formulary. But, the results are not 100%, especially for inpatient
because there are only around 900 items in national formulary for
publicly funded patients. This hospital is a type A hospital, that means
we are handling complex diseases, but not all medicines are listed in
the national formulary.” (P5)

“My opinion is (laughs) that the government itself has questionable
integrity. It’s not consistent; writing strict regulations but not doing any
monitoring.” (P24)

 “[My daily work] gets me to learn management, so I think it’s a shame I
didn’t get this kind of subject when I was in college.” (P24)

4.4.1.3. Lack of strategic planning
Pharmacists also reported their concerns on the absence of strategic
planning in this sector. The lack of a strategic approach blurred the vision of
the pharmacy department, and sometimes distorted its focus:

“When we have decided our goal that we want to be a holistic cancer
hospital. Then we can decide what kind of doctors we should recruit,
what kind of drugs we should supply, how qualified our nurses should
be, how we promote our hospital, and what ancillary services we need
… But if we don’t have it, we don’t know where we are going. It’s not as
bad as not knowing what to do when I come to work today, but at least
we need a clear plan of what we do for the future … when we are working on accreditation, sometimes there’s a doctor came up with a potential business plan. Then pharmacy had to work on it too, which is, I don’t see any relevance with accreditation or this hospital characteristics. So it’s a distraction because I don’t think it’s our goal.” (P8)

Without effective resource planning, basic services in hospital pharmacy were impeded:

“The government has not even complied with their regulation. Have they prepared budget for [hiring more pharmacists]? [I'm not sure] because I can’t even have ideal pharmacy room at the moment … Although [clinical pharmacy, therapeutic drug monitoring, etc.] are listed in the standards of hospital pharmacy practice, I do not wish to do grandiose things like them (at the moment).” (P17)

Very often pharmacists were not involved in decision-making processes, which resulted in more challenges in medication and service management:

“I think the major constraint is the hospital executives. I told you before that this is a non-profit hospital so that we don’t know anything about money. When I plan to purchase medicines this much, they can reject that without giving me awareness, they don’t tell me. This hospital is
owned by nuns, so they put a nun to handle purchasing. The nun is also a pharmacist, so it looks like I have two superintendents. I want to go left, but the one who has money wants to go right. So far I don’t feel it’s burdensome, but I feel that my idea can’t be innovative.” (P10)

4.4.2. Issues in operations management

Managing operational activities in pharmacy was perceived as problematic by all participants. Challenges in people management were emphasized by many participants. Problems related to service management were also described.

4.4.3.3. Human resource management issues

People management was a prominent challenge reported by participants in hospital pharmacy management. A poor financial remuneration structure could not stimulate ownership and participation by hospital pharmacy staff:

“*My staff also don’t think the annual increase is significant. The manager involved me when calculating salary increase; we have a grading system to justify the increase: A, B, C, and D. Staff with A’s will get the highest increase, although not too much; and those with D’s aren’t getting an increase. In average, pharmacy staff get an increase of IDR 100-200 thousand (around USD7.5 to USD15 per month); and they’re not impressed with this.*” (P14)
In a concerning admission, participants also reported poor safety protection at work:

“In medication safety [in my ward], we have one isolation room; which is the problem. In tropical infection, there are so many illnesses, for instance diphtheria, pneumonia, MRSA, so all are tropical infection and needs to be admitted to isolation room. But since we only have 1 room, if there are more than 1 patient that are suffering from those diseases, they’ll get mixed up with other patients who are only admitted for dengue fever or diarrhea. It implies to us, to nurses.” (P1)

Another interesting concern reported by a participant was the feminization of pharmacy department staff profile, which sometimes led to unexpected absence at work due to family issues or health status:

“Our pharmacy’s side, we’ve had many new staff, so I have to teach them everything; because most of these new recruits are fresh graduates with zero working experience. It’s difficult to find experienced human resources in (this city) so we just take what’s available, we can’t be too selective; considering we’re in need of manpower. Also, generally people with experience are married, with a child, or expecting a child; and most of them are women. It’s difficult to find male applicants, especially in (this city) … Like I mentioned earlier, even if we can recruit 3 people, five could get pregnant, and we’re back where we started. I haven’t got pregnant yet (laughs) but I know how it’s like.
During the first trimester they would get ill all the time, some even get admitted. Just recently we had 3 staff admitted during pregnancy. So our work hasn’t been effective.” (P14)

4.4.3.3. Service management issues

Another considerable challenge reported by participants is managing service. Participants described being frustrated in attempting to deliver timely pharmacy services because participants reported that the health industry was very dynamic, and there were finite resources available:

“The one problem I still can’t solve is how to reduce waiting time, because we’re still stuck … Even if we get more people we’d always be in shortage of staff because the number of patients keep increasing, staff get sick all the time, and the pneumatic tube keeps failing. Nothing can be done, we’re stuck.” (P14)

The application of computerised information systems was commonly reported by participants hoping to assist in delivering timely services, but these systems were also reported as being the source of other problems:

“We have insufficient Hospital Information System (HIS) here to increase our working speed. The system requires so much time to load [databases], the stock level are not update, too many processes [to do one task]. We need a long time just to work on one script.” (P4)
4.4.3. Organisational culture

The study respondents expressed emotional responses when asked about the challenges of working in hospital. Difficulties in working with other health professionals were also highlighted. A lack of appreciation from other people was also reported. Participants also described their attitudes towards work culture.

4.4.3.1. Working in multidisciplinary areas of health care

Most participants reported frustrations when working in the hospital environment. It was common to separate functions between clinical and inventory practice, which in turn created a segmented and blaming culture:

“There’s no aligned mindset between [inventory] management and [clinical] services ... Sometimes we think that, “Oh this is her work; that is his responsibility.”” (P2)

Working with medical staff colleagues was also reported to be very challenging because participants perceived that doctors were not willing to work with pharmacists as a team:

“We are actually supposed to circulate new drug’s proposal form to medical staff, but because it usually took us a long time [to get it back], we finally reviewed our 2014 data, and we created a list of medicines where the doctors only need to tick on each medicine they want. Even
though we have made it easy like that, we still have no return. I think that’s because contract doctors here do not have any sense of belonging and they don’t want to comply with the formulary.” (P3)

Although a Drug and Therapeutics Committee was established in the hospital, participants expressed their frustration because doctors were reluctant to be involved in this role:

“Nobody came to DTC meeting. Although there are representative from whatever, representatives from this department, they didn’t come as if they tried to wash their hands of the dirt, and then said, “That’s up to you, pharmacy, whether you want to supply it or not.” That’s the ending, it’s really stressful. They didn’t feel it was their decision.” (P10)

When improvement programs were implemented by hospital executives, it was common to have resistant staff who were unwilling to leave their ‘comfort zone’:

“There were many changes with hospital executives etc. Perhaps for people who were resistant to change, they didn’t feel comfortable with it. With new regulations, perhaps not everyone was willing to change, especially when there were many changes at a same time.” (P8)
4.4.3.2. Insufficient support

In general, participants perceived that pharmacists received a lack of recognition and appreciation in the hospital setting. One participant shared their bitterness when conversing with a pharmacy owner who preferred to recruit pharmacist assistants rather than pharmacists:

“I’ve conferred with business people, they told me it’s better for them to have more pharmacy technicians than to have more pharmacists. If we’re talking about drugstores, it’s best to have more assistant pharmacy technicians than more pharmacists. That’s Indonesia for you.” (P24)

It was also challenging to motivate pharmacy staff to work to at their best because there was not enough appreciation of their work:

“I demand [my staff] to work to the best of their abilities, but on the other hand they are not being properly appreciated for their work. Appreciation either in the form of money or intangible ones like gatherings and the likes.” (P24)

Continuing learning support was also acknowledged by participants as an importance aspect of professional development but this was still inadequately provided:
“Our position is not like doctors. We don’t receive many support for training … hospital has seen pharmacy good enough and has complied with standards, so what does pharmacy want to learn?” (P8)

Interestingly, in a public hospital context, non-civil servant respondents reported employment discrimination in terms of appreciation, compared to those who were civil servant workers:

“We have similar entitlement [among all pharmacists], but with different amount (between civil servants and [hospital] staff) … (Laughs and a bit hesitate to answer) There’s a big gap, quite big, almost 1:2-3 times.” (P16)

4.4.3.3. Pharmacists’ responses

As a result of this level of frustration in hospital pharmacy, respondents had various responses, most of them became pessimistic. Some participants believed there was a lack of relevance of written regulation to practice:

“For accreditation, even if we do not counsel the patients, we’ll ask their signatures. So patients consented that they have been counselled, but it’s actually not happening. Is it wrong? It is. But that’s what we need to do for accreditation, we must have proper documentation.” (P21)

Some also believed that existing system was poor in monitoring, which led to abundant paperwork, rather than direct implementation:
“Now, I don’t always report this [expired drugs’] list, I just keep it as my record. When the management asks for it I give it to them. Now once they see the record suddenly all the regulations come out of nowhere, like they make up all these rules in a day. Basically my unit has to pay for all the expired drugs ... If I report [expired drugs], that would be like I’m surrendering myself to the police. When they do inspections I never tell them anything except what they ask. I’m being bad because I’m tired of them.” (P11)

Moreover, some even seemed to lose hope about the professional identity as pharmacists:

“We know in Indonesia not all hospitals are accredited, sometimes near accreditation periods everyone is panicking to make deadlines ... When you want instant results, you copy-paste from others. This is problematic. It makes our jobs in the operational sections difficult, and it also makes us lose hope toward the ideals.” (P24)

4.4.4. Proposed solutions

Although managing hospital pharmacy was regarded as problematic, many participants proposed potential solutions for their problems. Promotion of leadership was a key suggestion and governmental support through regulation was also expected.
4.4.4.1. Leadership in hospital pharmacy

Good hospital leaders were identified as a key solution by participants. They believed that a good leader ought to establish and maintain consistency in actions:

“We need a strong motivation because what’s important [is not the start but] the consistency.” (P22)

Participants also expected much support from hospital leaders to help them work optimally:

“No matter how good the pharmacy is, no matter how qualified the pharmacists are, without executives’ support we can do nothing.” (P7)

A participant even reported the need for replacement of hospital executives who were unsuited to the strategic role required in this setting:

“Even if all those hopes are fulfilled, I’m still not sure if things will get better; because first of all I think without reconstructing the board of directors, the people upstairs, without refreshing the management, things will stay the same. They will solve problems the same way they’re doing it now.” (P11)
4.4.4.2. Regulations to support practice

There was much dissatisfaction with current pharmaceutical policy, and participants recommended the need for improvement in the relevant regulations. One important aspect in the current regulatory framework was the expectation participants had that the government should strictly regulate medicine prices and distribution in the market:

“*I see that our main problem is with government’s regulation of drugs in market … Without that, we –practitioners– won’t be empowered.*” (P7)

4.5. Discussion

The findings of this study highlight current issues in the management of hospital pharmacy in Indonesia. Figure 4.2 shows current management functions and influential factors in Indonesian hospital pharmacy derived from the participants in this study. Although the results suggest that hospital pharmacists expressed their concerns over issues in planning and operational management, they identified that their current management functions focused heavily on operational issues. The results also indicate a gap between planning and operational management roles, because monitoring and feedback were reported to be minimal or absent. These concerns were a source of frustration for the study participant and were thought to limit improvements in the health system.
### Figure 4.2. Relationships among factors influencing hospital pharmacy management in Indonesia

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<tr>
<th>EXTERNAL FACTORS</th>
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<td><strong>OPPORTUNITIES</strong></td>
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- Functions are minimal to absent
- Functions are present

#### 4.5.1. Issues in planning

The results of this study suggest that external factors—such as changes in national health system, disease trends, patients’ demographic characteristics, or surrounding geographical factors—were inevitable and affected their institutions. These factors could threaten hospital services, but also could provide more opportunities for development. Yet, many participants expressed concern that the organisations failed to adapt to the changing environments. There may be opportunities missed if there is a failure to plan strategically. Literature suggests that strategic planning is the most crucial function in management because it maximises an organisation’s future success (14). Planning is useful in the process of strategy development and implementation (15). Therefore, failure to plan strategically could mean that hospital pharmacy would be limited to deal only with daily operational problems, without opportunity to solve underlying problems.
Few respondents reported their concerns over the absence of management and planning skills and its implications on service provision. This may indicate that pharmacists were not commonly involved in planning activities, even the fundamental responsibility of inventory planning. This result also mirrors a lack of knowledge and training in pharmacy management among hospital pharmacists. Harrison suggested that with little knowledge of strategic planning, pharmacy directors did not implement, or partially implemented strategic planning in hospitals (12). However, in this study, lack of awareness in the importance of managerial skills was shown not only by the Directors of Pharmacy, but by the majority of participants. This is not surprising given that the Indonesian pharmacy curriculum is heavily biased towards pharmaceutics, pharmacognosy, and laboratory work (16). Although most universities have offered concentrated curriculum into pharmacy practice and scientific aspects of pharmacy, pharmacy management is a very small part (if at all) in the pharmacy undergraduate curriculum (17). This is consistent with the results of this study, and reflects not only local but also potentially a national issue. Lack of awareness at national level may be explained by a perception that strategic planning has lack of impact on service provision (12). Little has been reported about the utilisation of strategic planning in different types of hospitals within Indonesia. Therefore, exploration of the topic could merit further study.
4.5.2. Issues in operation management

The present results reveal that there were tensions between the finite health resources and increased demands for pharmacy services. The most challenging aspect in operational management was human resource management. The results propose that pharmacy staff were not happy with the poor appreciation of their roles and contribution in hospitals, and they had become demotivated and disengaged. Consequently, managers faced more difficulty with managing operations. This result was not unexpected because recognition or support was found as one significant predictor of job satisfaction (18, 19). Moreover, job satisfaction has a major influence on workplace performance. Therefore, factors contributing to job satisfaction should be fostered to maximise job performance. Nevertheless, little is known about work satisfaction in Indonesian hospital pharmacy and its related factors. Research on such topic may offer benefits for improvements in hospital pharmacy service.

Another interesting finding from this study is that a participant felt that the feminisation of hospital pharmacy was associated with workplace shortages. It is a consistent finding in pharmacy, as for some other health professions, that women are highly represented in the workforce (20). The feminisation, however, challenges hospital pharmacy managers to manage service provision, particularly during essential staff profile changes during staff pregnancy and childbearing commitments. One respondent even emphasized that feminization is a constant condition in pharmacy, which
would keep challenging hospital pharmacy and needed to be better managed with appropriate workforce planning in hospital pharmacy.

Computerised systems were also commonly reported to be expected to simplify and support timely service provision. This result is not unexpected as many studies have focused on the benefits of computerised systems, ranging from electronic prescription (21, 22) to utilization of barcode systems for inventory control (23). In brief, hospital information systems may contribute to high-quality, and efficient patient-centred care (24). However, some hospital information systems were reported to pose undesirable problems and elongated service time. This could be explained due to a mismatch between the ideal design and practice reality.

Heeks highlighted the subjectivity of an information system, with consideration of ‘institutional objectives and values, activities, human skills, organisational structure, and technical infrastructure’ (25). Further research in this area could yield better understanding, and facilitate implementation of future electronic systems.

4.5.3. Organisational culture
The findings of this study indicate that Indonesian hospitals were dominated by medical staff. Doctors were reported by hospital pharmacist participants
as the most 'difficult' professionals to work with in a team. Chang et al, also found the similar results in a Taiwan hospital (26). Doctors were generally the decision-makers and had higher income than other professions in the hospitals, which created a sense of difference between doctors and nurses (26). Although salary disparities between Indonesian doctors and pharmacists were not a focus for this study, similar reasons may be applicable (27).

Despite the role expansion of pharmacists in many countries, the profession is still not well recognised in Indonesia. The respondents in this study explained that a pharmacy owner preferred to hire support staff rather than pharmacists, or to engage nurses in managing medication imprest stock rather than stationing pharmacists in wards. This suggested that hospital pharmacists were not recognised as having a specific role, and were lacking a niche because they could be replaced by other health professionals. Indonesian pharmacists work not only in healthcare settings, but also in pharmaceutical industries and in the distribution facilities (28). To prepare pharmacy students for various workplaces, Indonesian undergraduate pharmacy curricula offer a diverse range of courses (17). The education and training of pharmacists for future roles, including those within hospital management is fundamental and to the development of the profession in this area (29).
4.5.4. Proposed solutions

This study found that respondents had high expectations for effective leadership and regulation. This finding suggested that current hospital settings in Indonesia widely practice transactional leadership. Transactional leadership occurs when leader, possessing clear authority, motivates by reward or punishment (30). This is not surprising because of the hierarchical nature of professional relationships in healthcare settings (30).

However, the effectiveness of transactional leadership in a changing environment such as the healthcare sector is questionable. Firstly, transactional leadership may curb leadership potential in each pharmacist because changes must be initiated from higher positions. In the healthcare industry where people are highly skilled and are used to working in a particular way, staff may tend to be more resistant to change (30). Secondly, an emphasis on regulation may retain staff ownership and commitment to work. A study conducted in Taiwan also suggested that laying too much emphasis on rules might cause the decline of subordinates’ identification within the organisation (31). Some literature suggested transformational leadership which occurs when a leader inspires people to follow them through vision, passion, and enthusiasm (30). Another study suggested a combination between transactional and transformational leadership may be applied in different contexts (31). Research which explores effective leadership styles in Indonesian hospital context may provide more understanding.
4.6. References


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5. The Future of Hospital Pharmacy in Indonesia

Background: In Indonesia, medicines accounted for 12–38% of hospitals’ expenses and the environment has been in constant changes. At a global level, a consensus of the future of hospital pharmacy has been published. However, little is known about the potential future development and challenges in developing countries.

Objective: To explore views and perceptions of Indonesian hospital pharmacists related to the profession’s future direction and vision for hospital pharmacy practice.

Methods: Qualitative research was undertaken involving semi-structured interviews. Constructivist grounded theory was adopted to generate key themes.

Results: A total of 31 pharmacists were interviewed. The majority of participants expected more active involvement in medication use management, where clinical and managerial roles were separated. In contrast, some participants endorsed the importance of pharmacy management. Characteristics of supportive regulations and systems were reported, and many reflected on other countries’ experiences. Transformational leadership style in hospital pharmacy was also deemed appropriate for current situation.
Conclusion: Indonesian hospital pharmacists wished for a greater recognition of and contribution to the profession. Changes in health system and strong leadership were highly expected. However, with different opinions about hospital pharmacists’ professional identity, the future of hospital pharmacy in Indonesia still faces potential challenges.
5.1. Introduction

Pharmacy has a unique position in the hospital sector. Hospital pharmacists manage drug distribution systems and conduct a wide range of clinical activities (1). In addition to managing systems, hospital pharmacists are responsible for resource management, financial control, and the safe and appropriate use of medicines in the hospital (2). In Indonesia, medicines accounted for between 12 – 38% of hospitals expenses in 2012 (3) and hospital pharmacy was expected to be actively involved in inventory management and medication use (4).

In brief, hospital pharmacy is a complex intersection between quality and cost of care. There is involvement of management and service delivery, balancing the expectations of hospital managers and patients, and all of these factors underpin the several different expectations held of hospital pharmacists.

Changes in health care environments have led to hospital pharmacy quickly adapting to health system needs and drivers. Hospital pharmacy has to maintain access and safety of medication use (5). However, development of hospital pharmacy may be constrained by a number of factors. Matsoso outlined potential future challenges for hospital pharmacy (Table 5.1) (6). Although much evidence about benefits from several expanded roles of pharmacists has been reported at the international level, the impact of these data on decision-makers is unclear (6). Inequity in access to supports for
hospital pharmacy services such as information and technology, workforce and finance, education and clinical pharmacy activities have been reported to hinder hospital pharmacy development (7).

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<td>Task shifting in pharmacy profession</td>
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<td>Limited resources at hospital pharmacy</td>
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<td>Development initiatives are narrowly driven</td>
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<td>Poor communication between different players to achieve definite patient outcomes</td>
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<td>Lack of coherence of approaches, especially at the national level</td>
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An international consensus over the future vision of hospital pharmacy practice has been achieved between hospital pharmacy leaders. The consensus is known as the “FIP Basel Statements” (8). These are based on statements related to the medicine management cycle, medicine use and monitoring, organisation of hospital pharmacy, and personnel management (8). International and national guidelines have been published to provide a basis for evaluation and goal setting in hospital pharmacy (2). However, little is known about the actual vision and ideal future of hospital pharmacy in the context of the Indonesian health care system or in other developing countries.
5.2. Objective

The aim of this study was to explore views and perceptions of Indonesian hospital pharmacists, specifically about the future direction of the profession and vision for hospital pharmacy practice.

5.3. Methods

The methods for Stage 2 of the study are outlined in Chapter 3.

5.4. Results

The number of participants of Stage 2, and their characteristics are outlined in Table 3.2. In this chapter, two key themes relating to the future of hospital pharmacy were identified: ‘future directions’ and ‘external environment’ are described below. The first theme was categorised into four subthemes: personal qualities, contribution, roles, and recognition. The latter was categorised into three subthemes: regulation, system, and leadership. Each of the themes and sub themes is detailed below with relevant quotes from participants.

5.4.1. Future directions

Hospital pharmacists reported expectations for the future of their profession. They outlined some strengths a hospital pharmacist should have. All
participants expressed their wish to have more active involvement in medication use and management regardless of their hospital practice settings. Furthermore, ideas about possible future roles of hospital pharmacists were described. Despite existing challenges to the profession, hospital pharmacists demonstrated their eagerness to make significant contribution to health care services.

5.4.1.1. Desirable pharmacists’ qualities

Many participants reflected on the intrinsic qualities a hospital pharmacist ought to have. Profession zeal was deemed critical for hospital pharmacists to motivate themselves in an inter-professional and patient-centred practice environment:

“We need zealous pharmacists who keep increasing their competencies so they can collaborate with other healthcare professionals and can contribute positively in patients’ therapy.” (P20)

When responding about working in such environment, hospital pharmacists expected themselves to do it with compassion; and such attitude was only possible if they worked with passion:

 “[A hospital pharmacist needs to be] care with everything, to [work] environment, to patients. Concomitantly, this is not a cliché and not a
“philosophy class, but it is an important factor … People should work according to their passions.” (P23)

Additionally, standardised competencies ratified by a professional association were needed; and in some areas, specialisation was preferred:

“I also wish we could have a pharmacy council … I hope for a council. So we can have certification from council, not by professional association. And then standard for graduates. For surgeons, their standards are determined by their council. So they will be examined before they are graduated.” (P21)

“Ideally, if pharmacists want to work in hospital pharmacy, they should intensify their comprehension to a specialised level.” (P20)

5.4.1.2. Active involvement in medication management

All participants expressed their wishes to work in close proximity with patients. Despite the fact that hospital pharmacists were not always present at all points in medication use and management, the participants emphasized their desire to be recognised as part of the healthcare team:

“I want pharmacists to not become a separate entity with medicines. Likewise doctors with ECG, CT scan, MRI results. Nobody is able to
As a result, hospital pharmacists wished to be physically present in wards, particularly in critical areas, such as intensive care and emergency department:

“Pharmacists have to be in ED, ICU, and operating theatre.” (P4)

Interestingly, some respondents were aware of their collaborative roles, despite making a ‘one-man-show’ in medication management and use:

“I also don’t want pharmacists to be arrogant and ostentatious, but at least they can have an effect at the right moment. So when doctors fail to remember, they should remind them.” (P10)

5.4.1.3. Separation between clinical and managerial roles

When the term ‘management’ was asked to participants, most of them regarded management as ‘supply-chain management’. Contradictory views about hospital pharmacists’ roles in the future were reported by participants. Although pharmacists realised their inseparable function in medication management and use, majority preferred to focus on clinical roles; and delegating the managerial roles to another person:
“I would rather have someone else hold the managerial position so I can focus on the clinical pharmacy unit.” (P11)

Only a few participants were willing to delegate clinical roles to other pharmacists and take managerial responsibility, particularly in inventory management:

“How good it is to have someone managing medication use, like a clinical pharmacist who has data of which patients receive which drugs. So he can cooperate with me, I know the trend or adjustment in current therapy. And I can control the stock level.” (P22)

The notion of being responsible for hospital pharmacy management was deserted, and only very few participants emphasized the importance of a good pharmacy management to support hospital pharmacists’ clinical roles:

“Management of tens of percentage of hospital money is here. If this is not managed well, if drugs are expired, unused, wasted; if we have unmanaged return drugs, I can say until we have good management practice, then we can have good clinical pharmacy practice. If we want to divide the roles, that’s fine, but we need to improve the management first.” (P7)
5.4.1.4. Greater recognition

All participants wished for acknowledgement from other people in the hospital. Although in existing practice hospital pharmacists were involved mainly in inventory management, recognition from doctors to collaborate in medicine use was expected:

“I want to improve collaboration with doctors, I hope we can do ward rounds together and they perceive us as partners (rather than submissive colleagues).” (P13)

Furthermore, appreciation from management executives was also anticipated so that pharmacists could access more resources for their work:

“I wish that hospital executives do not only demand us to do UDD or clinical pharmacy services in all wards, but they do not fulfill our staff needs.” (P16)

The opportunity for higher positions was deemed as recognition for early career hospital pharmacists:

“In that hospital, the director of pharmacy was reshuffled every two years. I was also surprised, at my age a pharmacist could be a director of pharmacy.” (P23)
Interestingly, a hospital might also wish to make more contribution in regional, national, or international level:

“As a referral hospital, our target is to go international, and to contribute in regional level, at least in South East Asia.” (P31)

5.4.2. External environment

In this study, external environment was defined as the surrounding conditions in which hospital pharmacy or hospital pharmacist operates. Hence, the subtheme consisted of perceived ideal regulations, system, and leadership.

5.4.2.1. Strict regulations

All respondents highlighted an urgency to uphold regulations. Although national standards and policies have been authorised, a lack of implementation by hospital pharmacists was reported:

“There’s policy, there’s legislation, there’s regulation, but no evaluation; so? It’s the same thing all over again. Thus, actually this small organisation of mine represents a larger entity: this nation. That’s my opinion. If the government would come down and firmly uphold the regulation, no one would dare look for loopholes.” (P24)
At a local level, hospital formulary was considered as the underpinning guide to medication use and management, thus conformity to formulary was essential in pharmacy management:

“What is it in a good pharmacy? There’s conformity to hospital formulary … Once the pharmacy management is performed neatly, we have clear drug selection criteria, efficient, proper drug distribution; that means we are efficient.” (P7)

Organisational management of staff with close monitoring was also considered important in maintaining pharmacy integrity and transparency:

“Purchasing isn’t under pharmacy, although it’s run by a pharmacy technician. It’s a different department … This is necessary to prevent pharmacy staffs from cutting deals with distributors; so we have a whole division supervising us.” (P14)

5.4.2.2. Efficient system

All participants reported their wishes for an ideal system. Having sufficient facilities and equipment, and hospital-specific workflow were identified as essential for service provision:

“Different facilities have different infrastructures and instruments, so each should have a unique flow of service provisions.” (P24)
Computerised hospital information systems were expected to be throughout the whole hospital to support pharmacy management and improve medication safety:

“If we can have automatic update [in online system], if every change in formulary affects our master data, it will reduce error.” (P22)

Expectations to be equivalent to other countries were commonly reported by participants. For example, a system was considered ideal or efficient if it facilitated data management and simplified inventory management:

“From what I have seen in big hospitals in Malaysia, they have centralised pharmacy. They don’t have a satellite in each unit. Technicians go to wards every morning, they will record medication orders, match them with medical records, and they will return back to pharmacy to dispense the orders. I think that’s ideal.” (P21)

5.4.2.3. Strong leadership

Many emphasized their wishes for powerful leaders. Leaders were recognised as mediators who bridged different parties and views, and were key persons in a hospital:
“It is imperative for a facility to have a leader that joins hands with the staff, so that departments aren’t partitioned into A block, B block, C block, like what I feel we’re having here.” (P24)

Leaders were also characterised by their ability to develop and convey vision:

“They need to refresh the management, bring in competent individuals or those with a vision.” (P11)

Moreover, leaders were also expected to encourage and guide their subordinates, instead of only setting targets:

“For me the most important factor is to have a leader who doesn’t dictate you, give you target to meet; but one who motivates you.” (P15)

5.5. Discussion

The findings of this study may suggest that hospital pharmacists had low level of satisfaction with current practice. However, our results showed that they had aspirations for substantial improvements in their profession and environment.
5.5.1. Future directions

Despite the expansion of pharmacists’ roles to be more clinical, hospital pharmacists were thought to also need zeal, compassion, and particular skill sets. Reforming zeal has been shown by pioneer pharmacists who made significant changes in pharmacy practice in the US (9). The same zeal was also sought in these discussions, so there might be improvements for the future of Indonesian hospital pharmacy practice.

Hospital pharmacists have always worked closely with doctors, nurses, managers, other hospital staff, and patients (10). Collegiality is required to enable pharmacists to work with colleagues and across departments and disciplines. Furthermore, hospital-specific skills and in-depth knowledge were perceived as essential.

Practice standards and competencies for Indonesian pharmacists have been ratified by the professional association (11). However, some felt that the standard was insufficient because it is aimed for all pharmacists who worked in all settings. This may be considered differently by those working in generalist or specialist roles.

It was clear that hospital pharmacists wished to be involved in every step of medication management and use. In many publications, pharmacists’ clinical roles were emphasized (12-15), and were influenced by the worldview of
hospital pharmacists (16, 17). Hospital pharmacists perceived themselves as medication experts who could take the responsibilities for patients’ medication. Given much research has reported positive outcome of pharmacists’ involvement in medication use, including reduced mortality rates (18) and cost-containment (19); it is not surprising that many respondents wished to be present physically at all points in the medication use cycle.

The term of ‘management’ has been perceived negatively by many people in this study (20, 21). Management roles in hospital pharmacy were perceived to be limited to inventory management by most respondents. There was a common perception that pharmacy practice and management did not align (20). In the findings, the perception was common, especially among early career hospital pharmacists.

Contrastingly, few pharmacists emphasized the importance of good management practice to support clinical pharmacy. These paradoxical ideas of ideal hospital pharmacists’ roles indicated internal future challenges for the future of Indonesian hospital pharmacy practice.

That pharmacists expected recognition and appreciation from colleagues was clear (22, 23). The respondents to this study also expressed the wish to have partnership with doctors in medication management and use. Empowerment
from hospital executives, and opportunities for attaining higher positions was also desired.

In a strategy to implement change management in a tertiary care hospital, education for hospital administration was provided to support the implementation of pharmaceutical care (24). Pharmacists seek job enrichment, recognition, or reward for their professional performance (25).

5.5.2. External environment

Hospital pharmacists expected compliance with professional standards. Most participants expressed their wish to have regular monitoring on the implementation of regulations. This result confirms previous studies about the value of research and audit mechanism in identification of gaps between standards and implementation, and in development strategy of hospital pharmacy (17, 26).

A good formulary system was also deemed essential by our participants because when a hospital had a strong formulary system, clinical services could be supported. Many guidelines and standards highlighted the importance of formulary to guide medicines procurement and selection process (8), to ensure drug availability (4, 27, 28), to optimise limited
resources in medicine use (29), to promote safe, rational, and cost-effective use of medicines (28), and to support advanced medication (4).

Many respondents were also aware of the importance of transparency in pharmaceutical procurement. WHO also published operational principles for good pharmaceutical procurement which outlined separation of responsibilities between offices, committees, or individuals; and regular monitoring to achieve efficient and transparent management (29). However, poor procurement practices were reported as still common (30).

Some participants were aware of different capacity of each facility to perform pharmaceutical services. Although national standards provide guides for hospital pharmacy managers to operate their department, adjustments in work flows and service provisions are still required (30). Expectations for simplification of documentation and access to drug and therapeutic information through networks were also expressed by participants. This wish is not surprising because of the many benefits of information technology in many aspects of pharmaceutical services, such as reduction of medication errors (31), simplification of tasks and process (32), perpetual monitoring (33), and an increase in data accuracy (32). Some hospital pharmacists also reported their ideal pharmaceutical distribution strategy, and very often they referred to other countries as models.
All participants expressed their wishes for strong hospital leadership.

Leadership is defined as the process of influence in which one person is able to enlist the aid and support of others in accomplishing a common task (34). In hospital, services are always complex because they are delivered by collaboration involving many technical and health professionals (35). Leaders were also expected to have particular competencies, such as long-range strategic thinking, people development, flexibility, and ability to change (36). Participants also described their expectations to be engaged in service provision and target management. They wished to have a transformational and democratic leader rather than a laissez-faire and autocratic one (34).

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6. Conclusions

6.1. Summary of main findings

Previous research has highlighted beneficial relationships between pharmacy management and organisational structure with improvement of service provision, management of total costs of care, and reduction in mortality rates. However, current trends in the roles of hospital pharmacists have shifted towards clinical pharmacy practice, and many pharmacists tend to overlook, and undervalue the importance of management practice in hospital pharmacy.

A systematic review of hospital pharmacy management at international level is presented in Chapter 1 of this thesis and the findings indicate good evidence of the benefit of effective management of hospital pharmacy. This is particularly in a dynamic healthcare environment, where it may be associated with cost-efficiency, improved medication safety, and supportive work environments. However, some aspects of pharmacy management, such as human resource management, have received more attention than the other aspects of management. Moreover, the majority of studies were conducted in developed countries, and relatively little is known about pharmacy management and its impact in developing countries.
To gain more understanding about current issues, and potential future application of hospital pharmacy management in developing countries, an inductive, qualitative study with semi-structured interviews were conducted and reported in Chapters 3 – 5. A preliminary study conducted in a developed country (Australia) was also deemed beneficial and was reported in Chapter 2.

The first stage of this research explored Australian hospital pharmacists’ perceptions in hospital pharmacy management. Australia was chosen for its proximity to researchers’ location. The findings highlighted the importance of pharmacy management skills in this setting. However, ideas about how hospital pharmacy should be managed are still debated. There remains a tension between professional autonomy and multidisciplinary environments. Pharmacists may lack motivation to pursue and develop excellence in pharmacy management as a prioritised professional role. To foster accountable practice in management, leadership in pharmacy must be realised. Support from hospital executives, regulators, professional organisations, pharmacy educators, and other practitioners should be sought.

The second stage of the research reported in this thesis explored Indonesian hospital pharmacists’ perceptions of their current roles, experiences and concerns in the management of hospital pharmacy, and future direction and
vision for hospital pharmacy practice. Firstly, the Indonesian hospital pharmacists reported that pharmaceutical care was essential for patient-oriented care. However, multiple interpretations of 'patient-oriented' and 'pharmaceutical care' were found among pharmacist participants. This was reflected in varying extent to which pharmacists accepted or 'refused' roles and responsibilities in clinical services, management and leadership. Secondly, the Indonesian hospital pharmacists reported that they worked in constant tensions between finite resources and increasing demands. However, current pharmacy management activities focused on operational issues, with a lack of strategic planning. Much room for improvement in health-system and leadership is clear. Finally, the Indonesian hospital pharmacists reported their desire for a greater professional recognition for their contribution to patient care and the healthcare sector overall. Changes in health system and strong leadership were highly desirable features reported by study participants.

In summary, both Indonesian and Australian hospital pharmacists have different ideas of patient-centred care, with different approaches to its applications. Australian hospital pharmacists are more receptive to managerial responsibilities. This may be because in the Australian health system, public hospital pharmacy is not an income-generating unit (as opposed to the current Indonesian health system). To improve healthcare services, strategic allocation of resources is essential. In contrast, the majority of Indonesian hospital pharmacists reject managerial roles
(associated with inventory tasks). Those tasks are deemed bureaucratic, frustrating, lacking in professional autonomy, and as not having any contribution in improvement of healthcare. Hence, they expect the managerial roles to be taken over by systems (such as regulations or computerised systems). Much focus was given to manage daily operations, and little to plan strategically. Indonesian hospital pharmacists could benefit from their managerial opportunities in current national health system which focused much on resource efficiency. Furthermore, Australian hospital pharmacists tend to initiate changes. On the other hand, Indonesian hospital pharmacists wished for a top-down approach to initiate change. The culture of organisations may be the chief influencing factor of those attitudes. Hence, Indonesian hospital pharmacists may benefit from taking over leadership positions in healthcare facility.

6.2. Implications for practice

The research shows there is potential benefit in high quality hospital pharmacy management in improvement of health care. The findings of this research highlighted potential gaps in ideas about patient-centred care and management among practitioners. The gaps are likely to hinder hospital pharmacists’ contribution to welfare of their communities. Different perceptions of ideal hospital pharmacy practice and service provisions also suggested potential challenges for development.
In Indonesia, there appeared to be room for improvement, particularly in planning and leadership activities. Unsupportive hospital environments and lack of recognition suggested potential threats towards the future. Given the constant changes in national health system and regulations, with different capacities to provide resources throughout the vast country, hospital pharmacy may face significant challenges and/or develop different pharmacy services. In low-resource settings, such as in some hospitals in Indonesia, strategic planning may equip hospital pharmacy managers to improve service provision, allocation of resources, and work environment. Application of transformational leadership may foster supportive work environment and collaboration among health professionals.

6.3. Limitations of the research

As a qualitative study, the findings of the present study may not represent the perceptions of all hospital pharmacists in Australia or Indonesia. One important limitation of this study is the relatively small number of participants relative to whole population of pharmacists in hospital practice.

In the first stage, participants were recruited from one metropolitan city in Australia. However, the aim of this stage was to provide an international perspective for the second stage. We have consulted key informants in the practice field, ranging from early-career pharmacists to Directors of
Pharmacy. Further work may include other areas of practice and geographical regions to gain deeper understanding about this topic.

In the second stage, participants were recruited only from western regions in Indonesia. However, the necessity to gather diverse characteristics of participants is recognised, so data were sought from various types of pharmacists in multiple settings and provinces in Indonesia. Therefore, this research was able to capture widely-held perceptions and attitudes of hospital pharmacists which is likely to reflect the broader profession. Participants have contributed valuable information until saturation has been reached. During the data analysis process, emerging codes and themes were discussed with other researchers.

6.4. Recommendations for future work

The research described in this thesis highlighted underlying philosophies of care in hospital pharmacy and its implications on practice. There appears to be room for consumer engagement in this practice model. Potential applications of leadership and pharmacy management to improve medication safety, practice collaboration, and to develop pharmacy practice are also shown.
To prepare for this future, further research activity may focus on the following areas:

1. Patient-centred care from the patients’ and other professions’ perspectives. It will be valuable to develop a strong basis for the pharmaceutical care philosophy.

2. Hospital pharmacy autonomy and teamwork quality. Understanding of these may benefit educators, researchers, practitioners, hospital executives, and policy makers about defining pharmacists’ roles in hospital environment.

3. Utilisation of strategic planning by hospital pharmacy managers, and factors specific for different type of hospitals that provide opportunities and challenge hospital pharmacy practice. This will facilitate strategy formulation to optimise hospital pharmacy contribution in responsible use of medicines and medical devices.

4. Work satisfaction in hospital pharmacy and its related factors. Research on such topics may offer benefits for improvements in hospital pharmacy service.

5. Drug and Therapeutics Committee (and other collaborative groups) contribution to hospital pharmacy management, and potential hospital pharmacists’ involvement. It may be valuable to explore different approaches to improving management of hospital medication use through interprofessional and collaborative processes.
6. Localised information systems, with consideration of institutional characteristics. Further research in this area could yield better understanding, and facilitate implementation of future electronic systems in hospitals.

7. Effective leadership styles in the context of different hospitals or organisations. This may assist development of a strong basis in competencies building and professional leadership in hospital pharmacy.
APPENDIX 2.1. AUSTRALIAN PARTICIPANT INFORMATION SHEET
The Future of Management of Hospital Pharmacy Services

PARTICIPANT INFORMATION STATEMENT

(1) What is this study about?

You are invited to take part in a research study about hospital pharmacy management. Past studies have shown that changes in national healthcare systems influenced the management of hospital pharmacy. Standards of Practice, and international and local guidelines have been utilised to assist managers to support delivery of health services.

The purpose of the study is to explore the aspects of potential future issues in hospital pharmacy. The study also aims to identify the pressures, challenges, and opportunities in managing and optimizing resources in hospital pharmacy.

You have been invited to participate in this study because you are identified as a senior hospital pharmacy manager/ key opinion leader/ potential future leader in hospital pharmacy. This Participant Information Statement tells you about the research study. Knowing what is involved will help you decide if you want to take part in the study. Please read this sheet carefully and ask questions about anything that you don’t understand or want to know more about.

Participation in this research study is voluntary. So it’s up to you whether you wish to take part or not.

By giving consent to take part in this study you are telling us that you:

✓ Understand what you have read
✓ Agree to take part in the research study as outlined below
✓ Agree to the use of your personal information as described.

You will be given a copy of this Participant Information Statement to keep.
(2) **Who is running the study?**

The study is being carried out by the following researchers:

- Professor Jo-anne Brien, Professor of Clinical Pharmacy, St. Vincent’s Hospital at the University of Sydney
- Professor Andrew McLachlan, Professor of Pharmacy (Aged Care)
- Vania Gones, Master of Philosophy candidate, Faculty of Pharmacy, University of Sydney.

Vania Gones is conducting this study as the basis for the degree of Master of Philosophy (Pharmacy) at The University of Sydney. This will take place under the supervision of Professor Jo-anne Brien and Professor Andrew McLachlan.

**What will the study involve for me?**

- If you are willing to participate in this study, you will have a face-to-face interview with the researcher at the time and place that suits you. If you are unable to meet the researchers in person, you may prefer to have a phone interview at the time that suits you.
- The interview will be recorded with an audio-recorder, but the recording can be stopped at any time if you do not wish to be recorded.
- You will be asked questions related to:
  a. Your perceptions of and opinions about current and future challenges and important factors in managing hospital pharmacy.
  b. Your perceptions of and opinions about the current and future hospital pharmacy service provision.
  c. Your opinions about future changes in the healthcare system and its impact on hospital pharmacy management.
  d. Your perceptions of the healthcare systems in Australia.

(3) **How much of my time will the study take?**

The interview, either face-to-face or by phone will take approximately 30-60 minutes.

(4) **Do I have to be in the study? Can I withdraw from the study once I’ve started?**

Being in this study is completely voluntary and you do not have to take part. Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at the University of Sydney.

If you decide to take part in the study and then change your mind later, you are free to withdraw at any time. You can do this by contacting Vania Gones at vania.gones@sydney.edu.au.

You are free to stop the interview at any time. Unless you say that you want us to keep them, any recordings will be erased and the information you have provided will not be included in the study results. You may also refuse to answer any questions that you do not wish to answer during the interview.
(5) Are there any risks or costs associated with being in the study?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

(6) Are there any benefits associated with being in the study?

We cannot guarantee or promise that you will receive any direct benefits from being in the study.

(7) What will happen to information about me that is collected during the study?

Your interview will be recorded by an audio-recorder and it will be transcribed verbatim by a researcher. Your interviewer will also take notes during interview. The transcription will be analysed by researchers to identify the topics. The results will be used for journal publications, conference presentations, and for development of a nation-wide survey.

By providing your consent, you are agreeing to us collecting personal information about you for the purposes of this research study. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

Your information will be stored securely and your identity/information will only be disclosed with your permission, except as required by law. Study findings may be published, but you will not be identified in these publications unless you agree to this using the tick box on the consent form.

(8) Can I tell other people about the study?

Yes, you are welcome to tell other hospital pharmacists about the study.

(9) What if I would like further information about the study?

When you have read this information, Vania Gones will be available to discuss it with you further and answer any questions you may have. If you would like to know more at any stage during the study, please feel free to contact Vania Gones, as a researcher at vania.gones@sydney.edu.au.

(10) Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can tell us that you wish to receive feedback by ticking the relevant box on the consent form. This feedback will be in the form of a one-page summary. You will receive this feedback after the study is finished.

(11) What if I have a complaint or any concerns about the study?

Research involving humans in Australia is reviewed by an independent group of people called a Human Research Ethics Committee (HREC). The ethical aspects of this study have been approved by the HREC of the University of Sydney with project number...
2014/680. As part of this process, we have agreed to carry out the study according to the National Statement on Ethical Conduct in Human Research (2007). This statement has been developed to protect people who agree to take part in research studies.

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the university using the details outlined below. Please quote the study title and protocol number.

The Manager, Ethics Administration, University of Sydney:
- **Telephone:** +61 2 8627 8176
- **Email:** ro.humanethics@sydney.edu.au
- **Fax:** +61 2 8627 8177 (Facsimile)

*This information sheet is for you to keep*
APPENDIX 2.2. AUSTRALIAN PARTICIPANT

CONSENT FORM
The Future of Management of Hospital Pharmacy Services

PARTICIPANT CONSENT FORM

I, ................................................................................... [PRINT NAME], agree to take part in this research study.

In giving my consent I state that:

✓ I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.

✓ I have read the Participant Information Statement and have been able to discuss my involvement in the study with the researchers if I wished to do so.

✓ The researchers have answered any questions that I had about the study and I am happy with the answers.

✓ I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the University of Sydney now or in the future.

✓ I understand that I can withdraw from the study at any time.

✓ I understand that I may stop the interview at any time if I do not wish to continue, and that unless I indicate otherwise any recordings will then be erased and the information provided will not be included in the study. I also understand that I may refuse to answer any questions I don’t wish to answer.

✓ I understand that personal information about me that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to.
I understand that information about me will only be told to others with my permission, except as required by law.

✓ I understand that the results of this study may be published, but these publications will not contain my name or any identifiable information about me unless I consent to being identified using the “Yes” checkbox below.

☐ Yes, I am happy to be identified.

☐ No, I don’t want to be identified. Please keep my identity anonymous.

I consent to:

- Audio-recording
  - YES ☐ NO ☐
- Being contacted about future studies
  - YES ☐ NO ☐

Would you like to receive feedback about the overall results of this study?

- YES ☐ NO ☐

If you answered YES, please indicate your preferred form of feedback and address:

☐ Postal: ________________________________

______________________________

☐ Email: ______________________________

Signature

PRINT name

Date
APPENDIX 2.3. INTERVIEW GUIDE FOR AUSTRALIAN PARTICIPANTS
The Future of Management of Hospital Pharmacy Services

Interview Guide

Questions for Hospital Pharmacy Managers

1. How is your current hospital management like?
   a. What is a typical day of work for you?
   b. Whom do you report to?
   c. What is the culture of work in your hospital?
   d. What sort of issues that you have on a daily basis?

2. How is the current pharmacy management like?
   a. What are the services and products that are provided and managed by your department?
   b. What kind of tools that you use in your department to run the services? What do you like about it? What do you dislike about it? How do you think it can be improved?
   c. As a manager, how do you develop local policy directives?
   d. What is the basis in developing the policy?
   e. What kind of financial support required in managing the department?
   f. How does budgeting take place in the department?
   g. How do you plan staffing requirements in your department?
h. What sort of opportunities do you provide about continuing education, career progression for your staff?

i. What are current policies in handling medication safety?

j. What are 3-4 perceived key elements to successfully manage hospital pharmacy?

3. **What are the perceived challenges in managing hospital pharmacy?**
   a. What was the major change that took place in the past which challenged you to successfully manage the department?
   b. Are there any issues that you perceive in doing as challenges in managing your department?

4. **What is the potential future development of hospital pharmacy?**
   a. What do you say as the future hospital pharmacy?
   b. What is your expectation of it?
   c. What is your future direction?
   d. How do you think it will affect your work?
   e. How do you think the pharmacy professional adapt to it?
Questions for Interns/ Early career pharmacists

1. What is your current work like?
   a. What is a typical day of work for you?
   b. Whom do you report to?
   c. What is the culture of work in your department?
   d. What sort of issues that you have on a daily basis?

2. How is current pharmacy management like?
   a. What is local policy directive in your department like? How is the implementation of the policy?
   b. How does budgeting take place in your department?
   c. Do you think that your department has adequate staff?
   d. What opportunity is available in your department to career development?
   e. In providing pharmacy services, which are sometimes high-risk, how is the general procedure for handling the medication safety? Do you feel that sufficient?
   f. What is the medication management system that you use to do your day-to-day work? What do you like about it? What do you dislike about it? What is your expectation from it? How do you think it can be improved?
   g. What are 3-4 key elements to successfully perform your work?

3. What are the perceived challenges in working in hospital pharmacy?
   a. Was there any changes in the past in your department that challenged your day-to-day work?
   b. Are there any other issues that you perceived as challenges as working as a pharmacist in the hospital?

4. What do you think the future of hospital pharmacy will be?
   a. What is your future direction?
   b. What do you think will change or needs to be changed?
   c. How do you think it will affect your day-to-day practice?
   d. How do you think you will adapt to it?
Apa maksud dari penelitian ini?


Tujuan dari penelitian ini adalah untuk mengeksplorasi potensi perkembangan farmasi rumah sakit di masa depan. Penelitian ini juga bertujuan untuk mengidentifikasi hambatan, tantangan, dan kesempatan dalam mengelola dan mengoptimalkan sumber daya yang tersedia di farmasi rumah sakit.

Anda diundang sebagai peserta dalam penelitian ini karena Anda merupakan kepala instalasi farmasi rumah sakit/ pemuka dalam farmasi rumah sakit/ calon pemimpin instalasi farmasi rumah sakit. Pernyataan Informasi Peserta ini memberikan gambaran mengenai penelitian yang akan dilakukan. Mohon Anda membaca dokumen ini dan bertanya apabila ada hal-hal yang kurang dipahami atau hendak diketahui lebih lanjut.

Berpartisipasi dalam penelitian ini bersifat sukarela dan tanpa paksaan. Keputusan untuk berpartisipasi/tidak dalam penelitian ini sepenuhnya merupakan keputusan Anda.
Dengan memberikan persetujuan berpartisipasi, Anda menyatakan bahwa Anda telah:

- Memahami informasi yang telah disampaikan
- Menyetujui untuk berpartisipasi dalam penelitian yang dimaksud oleh pernyataan ini
- Menyetujui untuk memberikan informasi pribadi sebagaimana dijelaskan di dalam pernyataan ini

Anda akan diberikan salinan Lembar Penjelasan ini sebagai pegangan.

(2) **Siapa yang menjalankan penelitian ini?**

Penelitian ini dilakukan oleh:

- Professor Jo-anne Brien, Professor Farmasi Klinik, *St. Vincent’s Hospital, University of Sydney*
- Professor Andrew McLachlan, Professor Farmasi, *University of Sydney*
- Retnosari Andrajati, Pengajar, Departemen Farmakologi dan Farmasi Klinik, Fakultas Farmasi Universitas Indonesia
- Vania Gones, kandidat *Master of Philosophy, Faculty of Pharmacy University of Sydney*

Vania Gones melakukan penelitian ini sebagai syarat pendidikan *Master of Philosophy* (Pharmacy) di *University of Sydney*. Penelitian ini dilakukan di bawah bimbingan Professor Jo-anne Brien, Professor Andrew McLachlan, dan Retnosari Andrajati.

**Sejauh apa keterlibatan saya dalam penelitian ini?**

- Jika Anda bersedia untuk berpartisipasi dalam penelitian ini, Anda akan diwawancara oleh peneliti pada waktu dan tempat yang telah disepakati. Jika Anda tidak dapat bertemu oleh peneliti secara langsung, Anda boleh memilih untuk melakukan wawancara melalui telepon.
- Wawancara akan direkam dengan perekam suara, tetapi rekaman dapat dihentikan sewaktu-waktu jika Anda menolak untuk diwawancara.
- Anda akan diwawancara mengenai:
  a. Pandangan dan pendapat Anda mengenai hambatan dan tantangan, serta faktor-faktor yang berpengaruh dalam mengelola farmasi rumah sakit.
  b. Pandangan dan pendapat Anda mengenai ketentuan dan pengelolaan pelayanan farmasi di rumah sakit saat ini dan di masa depan.
  c. Pendapat Anda mengenai perubahan sistem kesehatan di masa depan dan dampaknya terhadap manajemen farmasi rumah sakit.
  d. Pandangan Anda mengenai sistem pelayanan kesehatan, khususnya pelayanan farmasi di Indonesia.

(3) **Berapa lama waktu yang akan saya sediakan untuk penelitian ini?**

Wawancara tersebut, baik tatap muka maupun melalui telepon, akan dilakukan selama 30-60 menit.
4. **Apakah saya boleh menarik diri dari penelitian setelah berpartisipasi?**

Berpartisipasi dalam penelitian ini bersifat sukarela dan tanpa paksaan. Keputusan Anda untuk berpartisipasi atau tidak berpartisipasi tidak akan mempengaruhi hubungan Anda dengan peneliti maupun dengan pihak lain di *University of Sydney*.

Jika Anda bersedia untuk berpartisipasi, namun ingin menarik diri dari penelitian ini, Anda dapat memutuskan untuk berhenti kapan pun dengan menghubungi Vania Gones di vania.gones@sydney.edu.au.

Anda juga berhak untuk menghentikan wawancara kapan pun. Semua bentuk rekaman dan informasi yang telah diberikan tidak akan disajikan dalam hasil penelitian, kecuali Anda menyatakan lain. Anda juga dapat menolak untuk menjawab pertanyaan yang kurang berkenan selama wawancara berlangsung.

5. **Apakah saya akan mengeluarkan biaya atau mendapat resiko dengan berpartisipasi?**

Selain dari waktu yang diperlukan selama wawancara, tidak ada resiko atau biaya untuk berpartisipasi dalam penelitian ini.

6. **Apakah keuntungan dengan menjadi peserta?**

Kami tidak dapat menjamin atau menjanjikan Anda akan menerima keuntungan langsung berpartisipasi dalam penelitian ini.

7. **Apa yang akan dilakukan kepada informasi yang telah saya berikan selama penelitian?**


Ketika Anda menyetujui untuk berpartisipasi, maka Anda menyatakan telah bersedia untuk memberikan informasi pribadi untuk tujuan penelitian ini. Data pribadi Anda hanya akan digunakan untuk tujuan yang telah disampaikan di dalam Lembar Penjelasan ini, kecuali Anda menyatakan lain.

Data pribadi Anda akan disimpan dengan aman, dan akses kepada data/identitas Anda hanya akan diberikan melalui persetujuan Anda, terkecuali jika dipersyaratkan oleh hukum. Hasil penelitian akan dipublikasikan, tetapi identitas Anda akan bersifat anonim, kecuali jika Anda menyatakan lain (dan telah mencentang kotak terkait di Lembar Persetujuan).
Dapatkah saya menyebarkan informasi mengenai penelitian ini?

Ya, Anda dapat menyebarkan informasi mengenai penelitian ini kepada apoteker lain yang bekerja di rumah sakit.

Apa yang harus saya lakukan jika saya memerlukan informasi tambahan terkait penelitian ini?

Jika Anda ingin berdiskusi lebih lanjut mengenai penelitian ini, silahakan menghubungi Vania Gones (peneliti) melalui vania.gones@sydney.edu.au atau 0821 2298 6469.

Apakah saya akan diinformasikan hasil penelitian ini?


Bagaimana jika saya memiliki keluhan atau perhatian khusus tentang penelitian ini?


Apabila Anda memiliki saran atau keluhan atas penelitian ini, silahkan menyampaikan saran/keluhan Anda ke Ikatan Apoteker Indonesia di:

- Email: sekretariat@ikatanapotekerindonesia.net
- Telepon: 021 567 1800 atau 021 5696 2581

Maupun ke universitas melalui kontak yang tercantum di bawah ini. Harap cantumkan judul dan nomor penelitian.

Manager, Ethics Administration, University of Sydney:

- Telepon: +61 2 8627 8176
- Email: ro.humanethics@sydney.edu.au
- Fax: +61 2 8627 8177

Lembar Penjelasan ini untuk disimpan oleh Anda
APPENDIX 3.2. INDONESIAN PARTICIPANT

CONSENT FORM
LEMBAR PERSETUJUAN

Saya, ................................................................. [CANTUMKAN NAMA], setuju untuk menjadi responden dalam penelitian ini.

Dengan menandatangani formulir ini, saya menyatakan bahwa:

✓ Saya telah memahami tujuan dari penelitian ini, apa yang diharapkan dari saya, serta resiko dan keuntungan yang akan saya terima.

✓ Saya telah membaca Pernyataan Informasi Peserta dan telah berdiskusi tentang partisipasi saya dalam penelitian ini dengan peneliti.

✓ Peneliti telah menjawab pertanyaan-pertanyaan yang saya ajukan dan jawaban telah dapat saya terima dengan baik.

✓ Saya paham bahwa berpartisipasi dalam penelitian ini bersifat sukarela dan tanpa paksaan. Keputusan saya untuk berpartisipasi tidak akan mempengaruhi hubungan saya dengan peneliti atau dengan siapa pun di University of Sydney.

✓ Saya paham bahwa saya dapat menarik diri dari penelitian ini kapan pun.

✓ Saya paham bahwa saya dapat menghentikan wawancara kapan pun, dan kecuali saya menyatakan lain, maka seluruh rekaman akan dihapus dan informasi yang telah saya berikan tidak akan disajikan di dalam hasil penelitian. Saya juga paham bahwa saya berhak menolak pertanyaan yang kurang berkenan.
✓ Saya paham bahwa data pribadi saya akan disimpan dengan aman dan hanya akan digunakan sesuai persetujuan saya. Saya paham bahwa data pribadi saya tidak akan disampaikan kepada pihak mana pun, kecuali ketika dipersyaratkan oleh hukum.

✓ Saya paham bahwa hasil penelitian ini dapat dipublikasikan, tetapi identitas saya akan bersifat rahasia, kecuali saya menyatakan bersedia mencentumkan identitas pribadi saya di dalam publikasi dengan mencantumkan kotak “Ya” di bawah ini.

☐ Ya, saya bersedia agar identitas saya dicantumkan.

☐ Tidak, saya tidak bersedia identitas saya dicantumkan. Mohon tetap menjaga kerahasiaan identitas pribadi saya.

Saya telah menyetujui untuk:

- Direkam dengan perekam suara ☐ YA ☐ TIDAK

- Dihubungi kembali untuk penelitian berikutnya ☐ YA ☐ TIDAK

Apakah Anda ingin memperoleh hasil keseluruhan penelitian ini?

☐ YA ☐ TIDAK

Jika Anda menjawab YA, silahkan memilih bentuk penyampaian hasil penelitian dan alamat yang dimaksud:

☐ Alamat pos: ______________________________________________________

___________________________________________________

☐ Alamat email: ___________________________________________________

................................................................

Tanda Tangan

..................................................................................

[NAMA LENGKAP]

.................................................................

Tanggal
APPENDIX 3.3. INTERVIEW GUIDE FOR
INDONESIAN PARTICIPANTS
The Future of Management of Hospital Pharmacy Services
Interview Guide

Questions for Hospital Pharmacy Managers

1. How is your current hospital management like?
   a. What is a typical day of work for you?
   b. Whom do you report to?
   c. What is the culture of work in your hospital?
   d. What sort of issues that you have on a daily basis?

2. How is the current pharmacy management like?
   a. What are the services and products that are provided and managed by your department?
   b. What kind of tools that you use in your department to run the services? What do you like about it? What do you dislike about it? How do you think it can be improved?
   c. As a manager, how do you develop local policy directives?
   d. What is the basis in developing the policy?
   e. What kind of financial support required in managing the department?
   f. How does budgeting take place in the department?
   g. How do you plan staffing requirements in your department?
h. What sort of opportunities do you provide about continuing education, career progression for your staff?

i. What are current policies in handling medication safety?

j. What are 3-4 perceived key elements to successfully manage hospital pharmacy?

3. **What are the perceived challenges in managing hospital pharmacy?**
   a. What was the major change that took place in the past which challenged you to successfully manage the department?
   b. Are there any issues that you perceive in doing as challenges in managing your department?

4. **What is the potential future development of hospital pharmacy?**
   a. What do you say as the future hospital pharmacy?
   b. What is your expectation of it?
   c. What is your future direction?
   d. How do you think it will affect your work?
   e. How do you think the pharmacy professional adapt to it?
Questions for Interns/ Early career pharmacists

1. What is your current work like?
   a. What is a typical day of work for you?
   b. Whom do you report to?
   c. What is the culture of work in your department?
   d. What sort of issues that you have on a daily basis?

2. How is current pharmacy management like?
   a. What is local policy directive in your department like? How is the implementation of the policy?
   b. How does budgeting take place in your department?
   c. Do you think that your department has adequate staff?
   d. What opportunity is available in your department to career development?
   e. In providing pharmacy services, which are sometimes high-risk, how is the general procedure for handling the medication safety? Do you feel that sufficient?
   f. What is the medication management system that you use to do your day-to-day work? What do you like about it? What do you dislike about it? What is your expectation from it? How do you think it can be improved?
   g. What are 3-4 key elements to successfully perform your work?

3. What are the perceived challenges in working in hospital pharmacy?
   a. Was there any changes in the past in your department that challenged your day-to-day work?
   b. Are there any other issues that you perceived as challenges as working as a pharmacist in the hospital?

4. What do you think the future of hospital pharmacy will be?
   a. What is your future direction?
   b. What do you think will change or needs to be changed?
   c. How do you think it will affect your day-to-day practice?
   d. How do you think you will adapt to it?
Questions for members of the Indonesian government and professional association

1. What do you think about current hospital pharmacy practice?
   a. What are hospital pharmacists’ roles and functions in your opinion?
   b. What do you think as key factors in management of hospital pharmacy?
   c. What are common issues in management of hospital pharmacy?

2. How do you think about current health system and regulations?
   a. What do you think about current standard of hospital pharmacy practice?
   b. What is the basis in the development of the standard?
   c. What are the indicators to assess hospital pharmacy performance?
   d. With current changes in the national health system, what changes are significant to hospital pharmacy?

3. What is your expectations for the future?
   a. What is your future direction?
   b. What do you think will change or needs to be changed?
   c. How do you think it will affect hospital pharmacists’ day-to-day practice?
   d. How do you think they will adapt to it?