HeLP: Health Literacy in Pharmacy project

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<th>Acronym</th>
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<td>ABS</td>
<td>Australian Bureau of Statistics</td>
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<tr>
<td>AHRQ</td>
<td>Agency for Healthcare Research and Quality</td>
</tr>
<tr>
<td>CALD</td>
<td>Culturally and Linguistically Diverse</td>
</tr>
<tr>
<td>CMI</td>
<td>Consumer Medicine Information</td>
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<td>NSW</td>
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</tr>
<tr>
<td>OSCE</td>
<td>Objective-structured clinical examination</td>
</tr>
<tr>
<td>PBS</td>
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</tr>
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<tr>
<td>RCT</td>
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<td>S2</td>
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<td>Technical and Further Education</td>
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The Pharmacy Guild of Australia manages the *Fifth Community Pharmacy Agreement* Research & Development which supports research and development in the area of pharmacy practice. The funded projects are undertaken by independent researchers and therefore, the views, hypotheses and subsequent findings of the research are not necessarily those of the Pharmacy Guild.
1. Introduction

Health literacy is defined by the World Health Organization as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health.” The concept of health literacy and its effect on the Quality Use of Medicines is relatively new to pharmacy practice, especially in Australia. Interventions to bridge the educational gap for practising pharmacists and pharmacy staff regarding health literacy communication techniques to use with consumers in Australia are non-existent, albeit very limited. This is despite the fact that up to 60% of Australians between the ages of 15 and 74 have limited health literacy.

1.1 Background to Health Literacy

Healthcare in Australia, and in particular, pharmacy, has over the past number of years, fostered the idea of patient-centred care, a process whereby consumers work hand-in-hand with healthcare professionals (HCPs) to make shared decisions regarding their health care and treatment. For consumers to be actively involved in this process, and achieve a certain level of self-empowerment in their health care journey, they must first be able to access, understand and use effectively both the information associated with their care, and the healthcare system.

This ability is termed ‘health literacy’. Health literacy is most adequately defined by the World Health Organization as “the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health” (Kanj and Mitic 2009). Health literacy influences many processes in the consumer’s journey through the healthcare system, including, specifically in the pharmacy context, the ability to understand medication labelling and directions. Those with limited health literacy may face problems associated with medication misadventure, and under utilise entitlements available through health insurers and the government.(Lindquist, Go et al.; Davis, Wolf et al. 2006; Mårtensson and Hensing 2011)

In 2006, the Australian Bureau of Statistics estimated that up to 60% of the Australian population aged between 15 and 74 years fell below the level of health literacy deemed the “minimum required for individuals to meet the complex demands of everyday life and work in the emerging knowledge-based economy”, or what will be termed in this report, limited health literacy (Australian Bureau of Statistics 2006). Those particularly vulnerable are older adult consumers and culturally and linguistically diverse (CALD) consumers (Fiscella, Franks et al. 2002; Wilson, Chen et al. 2005; Hawkins 2010). Given the complexity of the healthcare system, requiring one to understand prescription medication information, and recognise when to seek acute care and preventative medicine, inadequacies in consumers’ health literacy ability may result in poorer health outcomes.

On a larger scale, the effects of limited health literacy on the health care system and economy is significant. In the United States (US), the estimated cost associated with this problem is US$200 billion per annum (Vernon, Trujillo et al. 2007). In the absence of Australian estimates, we assume that the ‘cost per head’ of limited health literacy is similar locally.

The Australian Commission on Safety and Quality in Health Care has included health literacy into 16 of their National Safety and Quality Health Services Standards, recognising it as an important influence on consumer care and health outcomes (Australian Commission on Safety and Quality in Health Care 2012). In the pharmacy context, pharmacists, under the Pharmaceutical Society of Australia’s Code of Ethics, are required to “recognise
consumers who are particularly vulnerable and tailor the provision of care accordingly” (Pharmaceutical Society of Australia 2011). It can be argued that consumers with limited health literacy are ‘particularly vulnerable’, and pharmacists are required to pay particular attention to these consumers when providing care, and tailor information provision accordingly.

Improving pharmacist and pharmacy staff education in relation to health literacy is essential in bridging the knowledge gap and improving consumer understanding of medicines and health information, in the effort to reduce medication misadventure with consumers, and limit preventable costs on the healthcare system.

A review of health literacy related literature demonstrated that specific interventions that may be wholly implemented in this project are not obvious. Equally there is not a simple screening tool to help identify patients with low levels of health literacy in the pharmacy setting. Therefore, regular health literacy screening in the pharmacy setting may present many barriers to effective implementation, and alternative approaches must instead be sought.

### 1.2 Summary of Proposal

This proposal was developed in response to a Request for Tender, and was prepared by a multi-disciplinary consortium of academics and professional leaders from around Australia. The scope of this project required design and planning input from diverse perspectives. The Consortium, led by Monash University, comprised The University of Queensland, The University of Sydney, Curtin University, The University of Technology Sydney and the Pharmaceutical Society of Australia (Victorian Branch). The depth and breadth of expertise in this Consortium provided the essential skills and knowledge that were required for successful execution of the project, including significant research experience, particularly with projects funded under previous Community Pharmacy Agreements, internationally recognised expertise in the field of health literacy, and depth of experience and skill in curriculum design, development and delivery.

This project has a solid foundation in the framework of themes for the 5CPA Research and Development Program. Naturally, the driving theme for this project on health literacy was the Quality Use of Medicines. Improved engagement of pharmacy staff with consumers and a consequent positive change in the way consumers use medicines and medicines resources has dramatic effects both for the individuals involved and the wider community, reducing the burden that arises from medication misadventure. This was also a collaborative project in many ways – a multi-faceted project team came together with expertise in a number of areas, including health literacy, pharmacy services and policy, educational design and delivery – and represented the health disciplines of pharmacy and medicine. The scope for stakeholder involvement was wide, and the project team actively sought input and participation from relevant stakeholders, including those listed in the tender as well as others that were identified in the iterative project process. The consumer focus of the project was reflected in the objectives – improving the engagement of consumers with pharmacy staff to improve health outcomes through enhanced communication processes. A particular focus was on groups where there may be a number of factors affecting health literacy including cultural and linguistic diversity (incorporating indigenous communities). Finally, this was intended to be a practical and meaningful project. The goal was the development of an educational package that could be delivered to pharmacists and pharmacy assistants across Australia to help them recognise the health literacy levels of customers and adopt appropriate communication strategies to suit these levels, contribute to their professional development, and enhance their interaction with consumers, with a consequent improvement in therapeutic outcomes.

### 1.3 Project Aims, Objectives and Hypotheses

The overall aim of the proposed research was to increase Australian community pharmacists’ and pharmacy staff members’ knowledge of health literacy, and ability to detect and respond to consumers’ health literacy issues. This was to be achieved through the delivery of an education package that used a variety of methods to help overcome communication barriers regardless of consumers’ perceived health literacy ability. The literature suggests that measurement of consumers’ health literacy is impractical in a healthcare setting such as
community pharmacy; thus, this project focussed instead on building capacity in community pharmacy to communicate and engage effectively with consumers to improve their use of medicines and healthcare resources.

The specific research objectives were:

**Objective 1:** To undertake a review of the literature relating to health literacy and health literacy educational interventions for healthcare professionals, specifically pharmacists.

**Objective 2:** To investigate how health literacy education is delivered in pharmacy curricula in English-speaking countries to inform the development of the educational package trialled in this study.

**Objective 3:** To design, develop and implement a multi-modal health literacy education package for community pharmacies in New South Wales, Victoria and Western Australia.

**Objective 4:** To measure the change in the health literacy friendliness of the pharmacy environment over the course of the trial.

**Objective 5:** To evaluate the impact of the package on pharmacists’ and pharmacy staff members’ knowledge and practice.

**Objective 6:** To identify motivational factors and attitudes of pharmacists that may influence the uptake and success of the health literacy educational package in the pharmacy and how these may change over time.

The hypotheses that were tested in this research were:

- The health literacy education package will improve Australian community pharmacists’ and pharmacy staff members’ practice in relation to using Universal Precautions for all consumers, regardless of their perceived health literacy abilities.

- The method of delivery, being face-to-face and electronic, will show similar rates of success in regards to implementation.

- The attitudes and motivations of pharmacists and pharmacy staff in regards to health literacy will be influenced by the implementation and ongoing use of the package.

- The health literacy of the pharmacy environment will change to be more conducive to acknowledging health literacy as a barrier to information provision.

## 2. Methodology Overview

The following report represents a summary of all stages of the study. Full details of all methods, results and discussion can be found in the Full Final Report.

This project was undertaken from October 2011 to February 2014, and involved the contribution of health literacy and pharmacy practice experts from around Australia, including Monash University, Curtin University, The University of Sydney, University of Technology Sydney, The University of Queensland and the Pharmaceutical Society of Australia.

The first phase of the project was a review of literature to November 2011, relating to health literacy in pharmacy practice. Twenty-two original research articles and five reviews were identified as suitable for inclusion in the literature review from 5,182 possibly-relevant articles. The review concluded that health literacy has demonstrated relationships in a number of pharmacy-related contexts, yet research directly in community pharmacy is relatively rare, and effects in this context are less clear-cut. Even less common are interventions with pharmacy staff, rather than consumers. A ‘grey-literature’ search was conducted to collect possibly-relevant...
health literacy resources including videos, online courses, presentations and manuals. Forty-two resources were collected and reviewed, with the majority deemed unsuitable for informing either the content or format of the educational package.

To supplement the literature reviews, an international survey of pharmacy academics was conducted to collect information regarding methods in which health literacy is taught to students, as well as the content included in pharmacy curricula. The survey, distributed online, demonstrated a low response rate of 10%. Available data indicated that small-group learning was viewed as the most popular form of teaching in this area, and that oral-based assessment is the most prevalent form of evaluation.

2.1 Development of Package

The proposal in response to the RFT described a Train-the-Trainer approach in which one pharmacist from each pharmacy would complete training and then deliver the educational package to their staff in their own pharmacy. The Train-the-Trainer would be offered both face to face and electronically to test if it worked in either or both contexts to inform final delivery.

An adult learning approach is the foundation for this educational package. Staff will be learning with and from each other and drawing on their own experiences and observations to give meaning and relevance to theory being presented. As described, a step-wise approach will be taken, building knowledge and skill, allowing time for these to be consolidated before moving on to the next step. In many clinical settings this approach to adult learning is used and often described using Miller’s Pyramid (Miller 1990).

This model identifies the process of building knowledge from a basic remembering of it through to an understanding (the knowledge or cognitive aspect) and then once these steps have been completed and the learning consolidated, moving on to the behavioural/skills aspects where practical application of the knowledge is first shown and then done by the student. This process, whether known by name or not, is familiar to many who have had clinical learning in the workplace and for those who have not, it is a sensible and accessible process. It indicates that learning does not have to happen in a single event so may be less intimidating to those who have not done much formal learning for some time, especially some of the pharmacy assistants. At the behavioural end of the pyramid, it is not only the trainer who will develop the higher levels of skill but the reflective and practice nature of the modules means that eventually all staff will participate at this level. This gradual building of knowledge and skills occurs in an active learning environment using interaction between participants to explore issues, practice skills and enhance understanding and knowledge. Structured reflections on a staff member’s own experiences in a number of contexts helps build the understanding and relevance to themselves. Group discussions then share the experiences of others further consolidating meaning. As skills and strategies are explored they are demonstrated in videos and then put into action in a safe environment through role-plays and other forms of interaction before moving on to the pharmacy and its consumers. Once back in the pharmacy further reflection is required to consider and review implementation of skills and changes that may be made to make communication more effective. Much reflection occurs both within sessions and between them to consider both previous experience and then the effect behavioural change has on current service delivery. The overall package is a shared learning experience rather than a taught one. Participants learn with and from each other and then have the capacity to give on-going support and feedback to each other back in the pharmacy setting.

Figure 1. Miller’s Pyramid
Package content

Following from the outcomes of the literature review and a review of the grey literature and other resources the evidence was that a Universal Precautions approach should be taken. Simply put, this means engaging with a consumer assuming they have limited Health Literacy unless there are indications otherwise (demonstrated in general by the consumer’s engagement). This was approved by the project advisory panel and then became the main focus of the package. Three of the four sessions in Module 2 (Basic health literacy skills in primary care) were designed to provide strategies, techniques and resources for taking a Universal Precautions approach to consumer counselling and information provision. This also included detecting signals that consumers are engaged and understand the information provided to them. This then means that the usual, traditional, communication skills and strategies are applied. The package is not designed as a general communication in pharmacy activity so refers staff to use other resources to enhance those general communication skills.

A further enhancement to the package from the completed literature reviews was the identification and consequent inclusion of information and resources on the pharmacy as a health literacy friendly environment. This helped change the environment in a number of ways to support consumers with limited health literacy. Reference group input provided recommendations for relevant specific aspects to be enhanced and existing materials to be endorsed or amended. This included:

- **Module 3**
  - A focus on the use of interpreters and directing pharmacy staff to resources for specific communities
  - Recommendations for cultural competence training were encouraged beyond the practical skills in each module
  - Simple engagement strategies added that could be important to indigenous people, such as making sure there is space to join the conversation if more than one person attends, that all are acknowledged and greeted and that conversations are inclusive and recognise the potential wider participation in discussions by others from the community.

- **Module 4**
  - There has been a move to brief “tool box” learning sessions which are short focussed education that could be provided to their staff would fit in well, especially as it could be broken into smaller chunks.
  - Emphasis in the module is on health literacy related strategies to help reduce risk of medication errors
  - Presenting strategies that may improve residents, families and staff comfort in asking questions

- **Module 5**
  - Considered a useful enhancement to preparing children for a future as a consumer.
  - It was recognised that changing the overall Health Literacy starts at a young age
multimedia development

review of available multimedia resources did not produce anything suitable for use in this package. it was either aimed at different healthcare settings (predominantly nursing and medicine), countries with divergent health systems from ours or were culturally or socially inappropriate. given these factors, a series of short video vignettes and still images were produced as part of the project. this enabled us to have specific examples of health literacy issues being discussed shown in an australian context. this allowed for a more meaningful description of signals for limited health literacy using both verbal descriptions as well as visual images, demonstrating strategies and skills for improved engagement, showing varied approaches to the same scenario to stimulate discussion, etc. green screen technology (i.e. the filming activity against a plain green backdrop which can then be replaced digitally with any image) was employed to streamline the process and allowed for a range of pharmacy images to be used as the setting for various scenarios. once the aspects of the package that would benefit from video enhancement were identified, scripts were written by project team and staff and reviewed by other pharmacists, interns and students and the video vignettes produced for incorporation into the relevant module.

train-the-trainer

the train-the-trainer element of the package contains the entire set of educational package materials described as well as a short presentation to introduce the nature of the educational package, how it is structured and what it involves, as well as how to deliver the package in-pharmacy to the staff. to enhance this, a trainer guide has been produced that walks the trainer through the process of delivery on a slide by slide basis. each page of the guide has the information for a single slide including:

the exact content of the slide
• The aim or purpose of the slide
• Trainer notes on effective delivery, for example, some questions to stimulate discussion in group activity, extra examples if needed to make certain points, etc.
• Space for the trainer’s own notes

Emphasis in the Train-the-trainer sessions is on:
• Guiding the learning, rather than teach it
• Trainers will be trained in the techniques, knowledge and skills around Health Literacy to pass this to staff
• Learning will come from reflection, observation, and explanation by the trainer

The trainer guide is used in the Train-the-Trainer component as the template for delivery of the package and supports the activities in both formats.

Each trainer was provided with:
• PowerPoint presentations to show the rest of the staff for each training session
• A trainer’s guide to go with the PowerPoint (cheat sheet)
• Participant notes – hand-outs for staff which focused on key issues
• Short quizzes to evaluate learning and for CPD
• Extra readings and links to resources for extended learning

Face-to-face Train-the-trainer

This training was designed to be delivered flexibly as a single session or a series of smaller sessions. In total the training took approximately 4-5 hours. It may be delivered by one or two facilitators. If using two facilitators, it is to be delivered with one taking the lead in teaching the health literacy elements (i.e. delivering the content itself, modelling the process) while the other provides the Train-the-Trainer element (i.e. how to deliver the content).

Electronic Train-the-trainer

This element was produced as a series of videos for the introduction to the package and then one for each module. In the video for each module, the visual element was the PowerPoint slides for that module while the audio consisted of voiceovers. Two distinct voices (one male and one female voice) were used to distinguish between the two aspects: one voice for the Health Literacy education itself, and the other voice the “how to deliver it” aspect. The electronic training package, with pauses for activities, was designed to take 4-5 hours to complete. One advantage of this package is that the trainer can review materials as often as needed and certainly immediately before delivering their own training to give them more confidence with the process.

2.2 Study Design

For this project, a randomised controlled trial method was used to evaluate the efficacy of the health literacy educational package (intervention) in community pharmacies in New South Wales, Victoria and Western Australia. Block randomisation into groups of three was used to randomise recruited pharmacies into one of three groups:

Group 1 A face-to-face group (intervention). Pharmacies were recruited from metropolitan and regional areas of Victoria, New South Wales and Western Australia, and were provided with face-to-face training using the health literacy educational package.
Group 2 An electronic group (intervention). Pharmacies were also recruited from metropolitan and regional areas of Victoria, New South Wales and Western Australia, and were provided with electronic training using the developed health literacy educational package.

Group 3 A control group. Pharmacies were also recruited from metropolitan and regional areas of Victoria, New South Wales and Western Australia, and were not provided with the health literacy training package (to be provided following completion of the project). This is to occur beginning June 2014 and continue throughout July 2014. Final approval for the refined package had not been provided at the time of publishing of this report, and therefore control group pharmacies had not been provided with training.

For both Groups 1 and 2, a ‘train-the-trainer’ approach was adopted, as a means to disseminate knowledge and skills efficiently to pharmacy staff. This approach was based on one or two key staff members from each pharmacy receiving training and guidelines for then training their remaining staff. Face-to-face group pharmacies were provided with the education package and initial train-the-trainer component in a workshop delivered by project team members at various locations deemed convenient for participants and instructors. A second key staff member from each pharmacy was welcome to attend, with a view to a second person available to train other staff, and to foster enthusiasm for the learning experience. Electronic group pharmacies were supplied the education package in-person or via mail in the form of a USB drive and trainer manual.

Pharmacies were instructed to train their remaining staff in the core modules (Module 1 and Module 2) by 30th November 2013, and if time permitted, to also complete Modules 3, 4 and 5. Pharmacists were offered 25 CPD points for completion and delivery of all five modules of the educational package, and 10 points if they completed only core modules 1 and 2.

A total of 77 pharmacies from New South Wales, Victoria and Western Australia initially consented to being involved in the project. The sample represented a mix of both metropolitan and rural pharmacies, the latter of which was required to be PhARIA 3 or above, as instructed by the Pharmacy Guild of Australia. Pharmacies were of a range of types and sizes, including banner groups and independent ownership. Table 1 provides a breakdown of the pharmacies by state and location.

**Table 1 Location of recruited pharmacies at beginning of the project**

<table>
<thead>
<tr>
<th>State</th>
<th>NSW</th>
<th>Victoria</th>
<th>WA</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Metropolitan</td>
<td>19</td>
<td>21</td>
<td>20</td>
<td>60</td>
</tr>
<tr>
<td>Rural*</td>
<td>4</td>
<td>4</td>
<td>9</td>
<td>17</td>
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<tr>
<td>Total</td>
<td>23</td>
<td>25</td>
<td>29</td>
<td>77</td>
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</tbody>
</table>

*Rural was defined as being in a location deemed PhARIA 3 or above in 2010.

Over the period of the project, a total of 14 pharmacies withdrew, three from NSW, two from Victoria, and nine from Western Australia. Reasons for withdrawals, where given, predominantly related to workload and staffing changes.

The block randomisation into face-to-face delivery, electronic delivery, and the deferred (control) group resulted in the distribution reported in Table 2.
Table 2 Allocation of pharmacies to exposure and control groups

<table>
<thead>
<tr>
<th>State</th>
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<th>Victoria</th>
<th>WA</th>
<th>Total</th>
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<tbody>
<tr>
<td>Face-to-face</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Electronic</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>26</td>
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<tr>
<td>Deferred (control)</td>
<td>7</td>
<td>8</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23</strong></td>
<td><strong>25</strong></td>
<td><strong>29</strong></td>
<td><strong>77</strong></td>
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2.3 Evaluation Framework

The objective of the evaluation was to determine whether the education package had an effect on the practice behaviours and attitudes of pharmacists and pharmacy staff relating to health literacy, and their use of particular communication and engagement techniques with pharmacy consumers. Five methods to evaluate the effectiveness and usability of the educational package were selected:

**Method 1:** A questionnaire was developed to evaluate the impact the educational program had on the organisational and environmental aspects of the pharmacy, and how these may have changed over the period of the training. The questionnaire was completed by the pharmacist in-charge or manager before and after the educational intervention.

**Method 2:** A survey tool was developed to identify the impact of the educational package on pharmacists’ and pharmacy staff members’ use of health literacy communication techniques, specifically Universal Precautions, with consumers. Consumers were invited by a research officer to take part in the study in-store after consulting with a pharmacist or pharmacy staff member, and were asked a series of questions by the research officer relating to their demographics, personal health status, and the consultation with the pharmacist or pharmacy staff member. Disparities between consumer recall and researcher observations were documented. This was conducted both before any training was conducted with pharmacists and pharmacy staff members, and following the completion of training. These consumer questionnaires were also conducted in Group 3 pharmacies, those that did not receive any training during the project.

**Method 3:** Questionnaires were developed to evaluate the impact of the health literacy educational package on the attitudes and motivations of pharmacists and pharmacy assistants in Group 1 and 2 who undertook the program before and after training, and how these changed following completion of the program compared to those in Group 3.

**Method 4:** Use of simulated patients (mystery shoppers) to assess health literacy interventions. All pharmacies were visited by two simulated patients twice during the study period: prior to receiving the health literacy educational package and following the completion of the in-house training component. The simulated patients were a mix of both professional actors and lay members of the public. Following delivery of case vignettes (specifically developed for this study) in the pharmacy, the simulated patient completed a data collection tool.

**Method 5:** Focus groups and telephone interviews with pharmacists and pharmacy assistants involved in the study were conducted with the aim to validate, add to, and refine the education package before wider dissemination to pharmacies in the future.
3. **Results and Key Findings**

3.1. **Organisational and environmental survey**

“It was taking that whole program that you’d given us, and just giving us a platform for conversation, and that came across in so many different ways” (Pharmacist 1, focus group 1)

Health literacy is a multi-dimensional concept that involves not only the health professional and the consumer, but also the environment and organisational health literacy friendliness of the pharmacy. To allow for effective use of the services offered by the pharmacy to the consumer, the pharmacy must ensure the environment allows for ease of navigation. The aim of this survey was to measure the changes in both the environment and organisational structure of the pharmacy before and after the intervention.

A total of 43 surveys were returned from the lead pharmacists in each pharmacy before health literacy training was implemented. Following the training period, 23 post-intervention surveys were returned. Scoring for this survey ranged from 1 to 3. A mean score of between 1.00 and 1.99 indicated that the pharmacy did not appear to be undertaking the particular item within the domain. A mean score of 2.00 to 2.99 indicated that the pharmacy is undertaking the item to some extent, but could make some improvements in the area, while a score of 3.00 indicated that the pharmacy is undertaking the item well.

Table 3 shows the breakdown of results for each domain before and after training.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Face-to-face (mean)</th>
<th>Electronic (mean)</th>
<th>Control (mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
<td>Before</td>
</tr>
<tr>
<td>Promotion of services</td>
<td>2.32</td>
<td>2.48</td>
<td>2.38</td>
</tr>
<tr>
<td>Printed materials</td>
<td>2.02</td>
<td>2.50</td>
<td>2.30</td>
</tr>
<tr>
<td>Health literacy policies</td>
<td>1.45</td>
<td>2.33</td>
<td>2.03</td>
</tr>
<tr>
<td>Clear verbal communication</td>
<td>2.09</td>
<td>2.65</td>
<td>2.42</td>
</tr>
</tbody>
</table>

Pharmacies in the face-to-face and electronic groups both showed an increase in scores in the **promotion of services domain** (2.48 and 2.73, respectively), whereas the control group scored lower post-training (2.26). There was an overall increase in means scores for all three groups in the **printed materials domain** following training, although the intervention group pharmacies both recorded a greater improvement than the control group. Both intervention groups scored higher in the domain associated with **health literacy policies**, with the face-to-face group and electronic group scoring 2.33 and 2.25, respectively. The control group made a small improvement, but scored 1.59, indicating that the development and implementation of health literacy policies was generally not adopted in this group of pharmacies. All groups scored higher in the **clear verbal communication domain**.

A number of improvements in relation to the health literacy friendliness of the pharmacy environment were made in both the face-to-face and electronic group pharmacies as a result of the health literacy training. A

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1 Scores are an average out of a maximum score of 3. Statistical significance was not measured due to the low sample size.
dramatic improvement was seen in the consideration of health literacy in CALD consumers and measures that can be taken to improve their understanding of medicine and health information, highlighting the success of Module 3 in educating pharmacy staff in this area.

This area remains an important aspect of health literacy friendliness in pharmacy, and requires leadership from both staff and managers to initiate and implement changes both physically in the pharmacy in relation to signage and printed materials, but also within the structural framework of the pharmacies’ operations to ensure that any changes that are made are sustainable and long-lasting.

### 3.2. Evaluation of behavioural and practice change

The educational package primarily aimed to encourage behavioural change in regards to the use of universal precautions by pharmacists and pharmacy staff. Measuring consumer experience is important in measuring communication and service delivered in the pharmacy, and therefore surveying consumers was deemed an appropriate approach for detecting any change.

A survey tool was developed to identify the impact of the educational package on pharmacists’ and pharmacy staff members’ use of health literacy communication techniques, specifically Universal Precautions, with consumers. The survey tool was divided two sections. The first section aimed to collect demographic data of consumers, education level, vision or hearing impairments, reason for visiting and any short or long-term medical conditions. The second section aimed to collect data in relation to the use of universal precautions by pharmacists and pharmacy staff with consumers. Responses were measured using a combination of both dichotomous and categorical options.

The sample size was calculated based on assuming that there would be an increase in the use of universal precautions by pharmacists and pharmacy assistants from 5% to 15%. With an alpha value of 0.05 and power of 0.8, it was determined that the required sample size per group was 160 consumers, therefore a total of 480 consumers across the three groups. The final sample size was inflated by 10% to account for attrition, with the final sample size being 528 consumers before and after training.

The primary outcomes for this study were the use of the phrase “What questions do you have?” and the use of the teach-back method with consumers. Post-training, there was a significant difference in the use of the ‘What questions do you have?’ phrase, both in the face-to-face group and electronic group. The face-to-face group was 7.88 times more likely to use the phrase than the control group, and the electronic group was 5.00 times more likely to use the same phrase compared with the control group.
The increase in the use of the ‘What questions do you have?’ question suggests that the training was effective in creating awareness among pharmacists and pharmacy staff members in the usefulness and importance of using open-ended phrasing when asking questions to consumers to elicit more information, and to promote a judgment-free environment for the consumer. The use of this phrase has the roll on effect of possibly reducing medication misadventure among consumers as clarification is sought on particular issues or confusion the consumer may have with their medicines.

Although the use of the phrase ‘What questions do you have?’ was met with a fair amount of success and acceptance by participants, it still caused some issues and difficulties.

“You know, it was difficult for us to change how we spoke to customers and saying, “What questions do you have?” It was a bit difficult. It didn’t come out automatically. You had to think about it or you went back and asked just, you know, what you normally asked. “You have any questions?” It was more difficult in the beginning” (Pharmacist, interview 1)

Some pharmacists suggested variations to this question that serve the same purpose, such as the use of open-ended questions throughout the consultation: “What issues do you have with this?”, “What else would you like to know?”, and the use of pauses after each key point to prompt questions throughout the consultation, rather than at the end.

There was no significant difference in the use of teach-back between the three groups, but there was a slight trend towards the intervention groups using teach-back compared to the control group post-intervention, 3.6% in the face-to-face group and 2.5% in the electronic group, versus 1.7% in the control group. Pharmacists and pharmacy staff members provided feedback in regards to the use of the teach-back method and described it as a difficult method of counselling, and would require more training on its application before feeling more confident in using it in practice.
"It’s very hard to do the teach-back thing. I personally find it hard to phrase it in such a way that people will want to do it. Because everyone’s really busy…I personally felt quite unsure of how to do it effectively.” (Pharmacist 2, focus group 2)

There were no statistically significant differences in the secondary outcomes between the face-to-face and control groups, and electronic and control groups, yet there was a trend in the face-to-face group to increasing the odds of repeating information to consumers compared to the control group (RR 1.39) but with a p value of 0.067, it did not fall below the required 0.05 significance level to draw any further conclusions in regards to this trend.

Table 4 Secondary outcomes post-training in the face-to-face group versus the control group.

<table>
<thead>
<tr>
<th>Secondary outcomes</th>
<th>Face to face (n=138) Frequency (%)</th>
<th>Control (n = 121) Frequency (%)</th>
<th>P value</th>
<th>Rate ratio (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer was asked if they had a question.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>122 (88.4)</td>
<td>109 (90.1)</td>
<td>0.665</td>
<td>0.98 (0.90-1.07)</td>
</tr>
<tr>
<td>No</td>
<td>16 (11.6)</td>
<td>12 (9.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printed/handwritten information was supplied</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>24 (17.4)</td>
<td>25 (20.7)</td>
<td>0.503</td>
<td>0.84 (0.51-1.39)</td>
</tr>
<tr>
<td>No</td>
<td>114 (82.6)</td>
<td>96 (79.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeated any information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>61 (44.2)</td>
<td>40 (33.1)</td>
<td>0.067</td>
<td>1.39 (0.98-1.83)</td>
</tr>
<tr>
<td>No</td>
<td>77 (55.8)</td>
<td>81 (66.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used clinical terms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16 (11.6)</td>
<td>10 (8.3)</td>
<td>0.374</td>
<td>1.40 (0.66-2.97)</td>
</tr>
<tr>
<td>No</td>
<td>122 (88.4)</td>
<td>111 (91.7)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5 Secondary outcomes post-training in the electronic group versus the control group

<table>
<thead>
<tr>
<th>Secondary outcomes</th>
<th>Electronic (n=79) Frequency (%)</th>
<th>Control (n = 121) Frequency (%)</th>
<th>P value</th>
<th>Rate ratio (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer was asked if they had a question.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>66 (83.5)</td>
<td>109 (90.1)</td>
<td>0.172</td>
<td>0.93 (0.83-1.04)</td>
</tr>
<tr>
<td>No</td>
<td>13 (16.5)</td>
<td>12 (9.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printed/handwritten information was supplied</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (15.2)</td>
<td>25 (20.7)</td>
<td>0.330</td>
<td>0.74 (0.39-1.38)</td>
</tr>
<tr>
<td>No</td>
<td>67 (84.8)</td>
<td>96 (79.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeated any information</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>34 (43.0)</td>
<td>40 (33.1)</td>
<td>0.153</td>
<td>1.30 (0.91-1.86)</td>
</tr>
<tr>
<td>No</td>
<td>45 (57.0)</td>
<td>81 (66.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Used clinical terms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6 (7.6)</td>
<td>10 (8.3)</td>
<td>0.865</td>
<td>0.92 (0.35-2.43)</td>
</tr>
<tr>
<td>No</td>
<td>73 (92.4)</td>
<td>111 (91.7)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results from this study highlight the difficulties in altering pharmacists’ and pharmacy staff members’ behaviours in regard to communication with consumers, and provides scope for refining the health literacy educational package to increase the likelihood of affecting change after a wider dissemination to community pharmacies in the future.

It is important to note that the results may have been influenced by the Hawthorne effect during the short observation period. The use of simulated patients was an attempt to negate this effect.
Successful implementation of this educational package relies on the attitudes, motivations, intentions and perceived self-efficacy of pharmacists and pharmacy staff. This study aimed to determine whether these factors changed after the intervention was introduced.

The pre-intervention questionnaire was completed by 216 participants, 71 (33%) of which were pharmacists, 8 (4%) were pharmacy interns, and 137 (63%) were pharmacy assistants from across the two intervention groups and control group. The post training survey was completed by 78 participants, 31 (40%) of which were pharmacists, 3 (4%) were pharmacy interns, and 44 (56%) were pharmacy assistants across the two intervention groups and control group. The significant decrease in questionnaires returned post-intervention was a result of both attrition of 14 pharmacies from the study, as well as the questionnaires being delivered to pharmacies towards the end of the year, a time generally viewed as busy for the pharmacy in terms of business volume.

Following the intervention, it was seen that there was a significant improvement in the intervention groups’ attitudes towards undertaking health literacy training, as well as intentions to undertake health literacy training and employ the use of health literacy universal precautions with consumers when compared to the control group post-intervention. When the intervention group was compared pre- and post-intervention, there was also a significant change in perceived behavioural control in regards to undertaking health literacy training, as well as attitudes and intentions. There was no change in the influence of subjective norms in regards to undertaking health literacy training.

The median responses for each of the four domains surveyed pre- and post-intervention is shown in Table below. The Mann-Whitney U test was selected as the measure of comparison as data was not normally distributed and therefore a non-parametric analysis was required.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention Median (Mean rank)</th>
<th>P value (Pre-intervention vs. post-intervention)</th>
<th>Control Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived behavioural control over undertaking health literacy training</td>
<td>Before: 5 (1415.2) 6 (1544.5)</td>
<td>&lt;0.001</td>
<td>Before: 5 5</td>
</tr>
<tr>
<td>Attitudes toward health literacy training</td>
<td>6 (682.3) 6 (806.0)</td>
<td>&lt;0.001</td>
<td>6 6</td>
</tr>
<tr>
<td>Intentions to change behaviours</td>
<td>6 (505.4) 6 (500.9)</td>
<td>0.805</td>
<td>6 6</td>
</tr>
<tr>
<td>Subjective norm (influence of others on changing behaviours)</td>
<td>6 (713.1) 6 (672.7)</td>
<td>0.603</td>
<td>6 6</td>
</tr>
</tbody>
</table>

There was a significant improvement in both perceived behavioural control and attitudes in the intervention group post-intervention when compared to the pre-intervention data, with a p value of <0.001 for both domains and a higher mean rank score (Table 6). There was no significant change in intentions or subjective norm in the
intervention group post-intervention compared to pre-intervention. There were no significant differences between the control group pre- and post-intervention.

Table 7 Comparison of attitudes and behaviours between intervention and control groups post-intervention for study variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention median</th>
<th>Intervention mean rank</th>
<th>Control median</th>
<th>Control mean rank</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived behavioural control over undertaking health literacy training</td>
<td>6</td>
<td>528.1</td>
<td>5</td>
<td>460.7</td>
<td>0.063</td>
</tr>
<tr>
<td>Attitudes toward health literacy training</td>
<td>6</td>
<td>301.3</td>
<td>6</td>
<td>219.6</td>
<td>0.004</td>
</tr>
<tr>
<td>Intentions to change behaviours</td>
<td>6</td>
<td>171.0</td>
<td>6</td>
<td>98.3</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Subjective norm (influence of others on changing behaviours)</td>
<td>6</td>
<td>235.3</td>
<td>6</td>
<td>238.3</td>
<td>0.603</td>
</tr>
</tbody>
</table>

Following the intervention, it was seen that there was a significant improvement in the intervention groups’ attitudes towards undertaking health literacy training, as well as intentions to undertake health literacy training and employ the use of health literacy universal precautions with consumers when compared to the control group post-intervention (Table 7). When the intervention group was compared pre- and post-intervention, there was also a significant change in perceived behavioural control in regards to undertaking health literacy training, as well as attitudes and intentions. There was no change the influence of subjective norms in regards to undertaking health literacy training.

Findings from this study suggest that the attitudes, intentions and perceived behavioural control of pharmacists and pharmacy staff towards undertaking health literacy training and using health literacy principles in the pharmacy environment are modifiable through training. Pharmacists and pharmacy staff may already acknowledge that consumers and managers already expect them to keep the health literacy ability of consumers in mind when counselling.

### 3.4. Simulated patient surveys

The objective of this phase of the study was to measure the change in the practices and behaviours of pharmacists and pharmacy staff in regards to the use of Universal Precautions in a real-life setting using simulated patients, limiting the effect of bias and the Hawthorne effect.

A total of 72 pharmacies were visited by two simulated patients pre-intervention, totalling 143 individual visits, and 63 pharmacies were visited post-intervention twice by simulated patients, totalling 126 individual visits. 9 pharmacies withdrew from the study before post-training data collection was conducted.

The primary outcomes for this phase were use of the phrase ‘What questions do you have?’ and use of the teach-back method. There was no significant change in the use of the phrase ‘What questions do you have?’ or the teach-back method between both the face-to-face group and electronic group, compared to the control group post-intervention. There was a statistically significant improvement in the face-to-face group when compared to pre- and post-intervention, with a rate ratio of 8.17 (CI: 1.06-62.78, p=0.013), meaning that the face-to-face group were more than eight times more likely to use the phrase following training as they were before undertaking training. There was no statistically significant change in the electronic or control groups pre- and post-intervention. (Figure 4).
The low use of the teach-back method was again reflected in the simulated patient surveys as was first observed in the consumer surveys. This low use of teach-back method may have resulted from a lack of confidence or self-efficacy in relation to using it in practice, and therefore the package may benefit from extra video examples and role-play scenarios which relate to the use of the teach-back method.

Regarding the secondary outcomes, the face-to-face group were almost twice as likely to ask consumers if they had questions compared to the control group following training (RR: 1.91, CI: 1.06-3.47, p=0.025). This may highlight the educational package’s value in reminding pharmacists and pharmacy staff members to be aware that consumers may have questions, and only when prompted, may ask these. It would be preferable if pharmacists and pharmacy staff members phrased this question in an open-ended format to create a more conducive lead-in for the consumer to ask questions. Pharmacists and pharmacy assistants across all three groups also demonstrated an awareness of the importance of repeating information to consumers.

There was no statistically significant difference in the provision of printed materials or their subsequent explanation by pharmacists and pharmacy staff members post-intervention across the three groups. There was however a statistically significant decrease in the time spent counselling in the electronically trained group of pharmacies compared to the control group (5.62 minutes vs. 6.64 minutes, p=0.044). The educational package encouraged keeping counselling sessions short and succinct to reduce the risk of consumers becoming confused and overloaded with information. There was also a trend in a decrease in the mean number of points of information supplied to consumers in this group compared to the control group (4.9 vs. 5.8) but this was not statistically significant, and therefore further assumptions cannot be made in regards to his trend. The face-to-face group showed no difference in time spent counselling consumers, but also demonstrated a trend to provide less information with consumers compared to the control group (5.0 vs. 5.8), but as in the electronic group, this difference was not statistically significant and therefore further assumption cannot be made. These trends may be interpreted as demonstrating pharmacists’ and pharmacy staff members’ awareness of the need to provide less information to consumers to reduce confusion, but also that they may require extra training on effective ways to prioritise important information and providing only the essential points of information to consumers.
This phase of the study demonstrated that the educational package was effective in increasing the use of ‘What questions do you have?’ with consumers, but may benefit from the implementation of a reminder system in pharmacies to improve its use. It also showed that the rate of using the teach-back method remained low post intervention and therefore suggested that more examples of its use in the educational package may be of benefit, particularly the use of videos. It also demonstrated that more emphasis on prioritising and reducing content with consumers may be of benefit in the refinement of the package. Otherwise, pharmacists and pharmacy assistants appeared competent in most other areas when communicating with consumers and in understanding the importance of delivering information in a manner that consumers comprehend.

A possible limitation of the study may relate to the construction of the data collection form. Outcomes were mainly measured using dichotomous responses (yes or no), and therefore improvement was difficult to detect unless all the requirements of the outcome being tested were met. Pharmacists or pharmacy staff members may have scored a ‘no’ even if improvement was made from the pre-intervention period as they may not have met all the requirements to score a ‘yes’. A scale may have been a more effective scoring method to measure improvements in practice and behaviour.

### 3.5. Qualitative feedback

The aim of this phase of the study was to gather feedback regarding the health literacy education package from intervention pharmacies. Focus groups provided a method of gathering qualitative feedback in regards to a particular topic, in this case, the usability, perceived effectiveness and sustainability of the health literacy educational package. The overall aim of this phase was to validate, add to, and refine the education package before its wider dissemination to pharmacies in the future.

A total of five focus groups were conducted: two in Melbourne, one in rural Victoria, one in Perth and one in rural Western Australia. Individual interviews were also conducted, one with a pharmacist in Sydney and four with pharmacists in Western Australia (two metropolitan and two rural). The discussions were audio-recorded and transcribed verbatim. Preliminary descriptive analysis identified a range of meaning units (i.e. quotes or raw data). These were constructive (positive and negative feedback) and thoughtful, and showed a degree of reflection by the participants.

Overall, the participants found the following aspects of the education package useful: the train -the-trainer approach, understand and implementing the concept of universal precautions, the video clips (of which they requested more examples) and flexibility of the modular approach. Constructive criticism included reducing the length of training for the trainer, refinement to reduce duplication, and the challenges of using the teach-back technique. The small-group peer-learning process was considered an acceptable, constructive mode of learning.

The use of universal precautions, as introduced and incorporated in the education package, was met with mixed opinions and varied success. Many found the concept of prompting further questioning to be useful, such as the term ‘What questions do you have?’ However, variations in the wording would have been easier to incorporate into everyday conversation with consumers. Teach-back was considered difficult to use and implement and it did not ‘feel natural’ for many participants.

Participant feedback provided valuable information in relation to the benefits of the educational package and how it improved both awareness of health literacy in the pharmacy context, and counselling consumers, although it raised areas that require revision and refinement before wider dissemination of the education package.

Improved guidance for pharmacy staff members regarding the level of assistance and intervention they could provide to consumers with limited health literacy and the point at which it would be appropriate to refer these consumers to the pharmacist, would be of value. Both pharmacists and other pharmacy staff felt that this guidance may be provided through pharmacy organisations such as the Pharmacy Guild of Australia.

“...I think it’s pretty worthwhile to incorporate it more into the pharmacy degree...or into the Pharmacy Guild training...” (Pharmacist, interview 1)
Changes to the formatting and presentation of the education package may improve usability, particularly in the electronic train-the-trainer section and it is perceived that this would facilitate learning by making the process more fluid. In addition, adapting the modules to facilitate flexible delivery (i.e. as single modules or as components of a module) may improve the acceptability for pharmacists and pharmacy staff.

“I think the train-the-trainer video could’ve been more in-depth. You can do it as one big chunk because that helps tie everything in together…but that video kept breaking up...The different modules were okay to get broken up...but within the module, there was a closing statement and then an introduction again. That could’ve just been omitted and just given as one.” (Pharmacist 2, focus group 1)

“I found it very intense sometimes like it was quite repetitive in some aspects…but then I guess that’s also reiterating something so it’s also sticking it into that person’s mind” (Pharmacist 1, focus group 5)

The use of a reminder system may improve the sustainability of implementing the universal precautions in the community practice setting. Participants noted the benefits of using reminders to maintain a focus on health literacy, such as posters, stickers or add-ons in computer programs.

“...I think reminders can help. We’ve got a place where we’ve got it set up okay.” (Pharmacist 1, focus group 2)

The challenges experienced with the use of the teach-back technique were raised in the focus groups and were also reflected in the consumer surveys and in the surveys associated with the simulated patients. Participants suggested that more examples of effective use of the technique may be beneficial, particularly in the form of videos and role-play scenarios.

In general, the package received mostly positive feedback. The benefits of recognising health literacy as a potential issue among pharmacy consumers was evident in feedback provided by participants during the focus groups. The feedback also highlighted that refinement of the educational package was required before it could be considered for implementation to a wider audience in community pharmacy.

4. The revised educational package

Based on the outcomes of the research, feedback from focus groups and input form the project reference group, adjustments were made to the package to enhance its flexibility, focus, and usability. Overall, the package was well received and no major changes to either content or structure were necessary.

Flexibility in delivery of the package was observed as an issue to be considered. This was evident not only from the feedback in focus groups but also from observations of implementation in pharmacies during the trial period where many variations were used. This included running all sessions together, combining some sessions and having staff read materials from some sessions while working as a group with others. It was clear that the capacity to join or separate various aspects of the package would be important to meet the varied needs of individual pharmacies and their services.

The major focus of refinements to the package included:

- Combining two sessions from Module 1 into a single session. A more focussed introduction in a single module then allows for staff to work on the various strategies to address the issues in modules 2 and 3.

- Revising structure of four sessions for Module 2 so that they can be delivered as individual sessions or combined together to meet the practical delivery needs of an individual pharmacy.

- Enhancing the “teach-back” components of the package with more examples, interaction and resources around this element.
• Combining modules 4 and 5 into a single module as the same process is used across the 2 settings discussed. An important message that comes through this session for either setting is building a culture that it is OK to ask questions of health providers and that questions are normal and, importantly, expected.

Minor amendments of language and presentation were made as well.

Figure 5 Revised educational package outline

The supporting trainer guide was also amended to reflect the changes to the modules described. Focus groups and other anecdotal feedback did not produce any significant issues with using the guide for delivering the package (in fact it was quite well received). Input from the project team suggested some minor enhancements that would make the trainer guide even more useful, including:

• Clearer and more detailed direction for managing group activities
• Adding the duration of videos to the trainer guide to make keeping to time easier
• Changing slide number formatting
• Enhanced descriptions of some video to make it clearer how they inform the next activity

Train-the-Trainer

Face-to-face training was preferred for trainers and supported timely delivery of the package but the flexibility of the electronic version of the package was appealing to those who saw the obstacles of distance and time affecting their opportunity to participate in the project. It is a recommendation of the project team that the educational package be made available in both formats rather than focussing on just one.
5. **CPD Accreditation**

The PGA has accredited this educational package for both Group 2 and Group 3 CPD recognition. Participants in the Train-the-trainer sessions and those who participate in the in-pharmacy trainer will be able to claim Group 2 CPD for their participation on completion of assessments. For the pharmacists who deliver the in-pharmacy training, the will be able to claim up to Group 3 recognition for their work if conditions are met.

6. **Summary of Key Findings**

Health literacy is a major issue in the delivery of healthcare in Australia, particularly in the pharmacy setting. This educational package intended for the community pharmacies proved effective at increasing awareness of health literacy as an issue, and ways in which these issues can be overcome, or at least minimised to improve consumer use of medicines, and reduce the risk of medication misadventure and poor health outcomes.

The uptake of universal precautions was met with mixed results. The use of the phrase "What questions do you have?" with consumers showed significant improvement among pharmacists and pharmacy assistants, yet the use of teach-back was met with poor results. This highlights the relative difficulties faced when attempting to affect practice change with pharmacists and pharmacy assistants in the area of communication, particularly when specific communication methods have been engrained in practice and used for years.

Pharmacists and pharmacy assistants did show positive attitudes, intentions and perceived behavioural control towards acknowledging health literacy as an issue, although difficulties in implementing the package were highlighted in the attitudes and motivations of pharmacists and pharmacy staff members, which showed that managerial barriers may prevent uptake of the training. This may highlight the need to liaise with managers to ensure the creation of a supportive environment for staff to undertake training and use the communication techniques in practice.

Environmental changes were difficult to measure, but did highlight some improvements as a result of the package, particularly in the area of implementing health literacy related policies into the pharmacy structure, for example, in the area of training new staff.

Further refinement of the educational package is warranted to further increase the likelihood of success in changing both practice behaviours and illicit organisational and environment changes of the pharmacy.

7. **Summary Discussion**

The overall aim of the proposed research was to increase Australian community pharmacists’ and pharmacy staff members’ knowledge of health literacy, and ability to detect and respond to consumers’ health literacy issues. This was to be achieved through the delivery of an education package that used a variety of methods to help overcome communication barriers regardless of consumers’ perceived health literacy ability. The literature suggests that measurement of consumers’ health literacy is impractical in a healthcare setting such as community pharmacy; thus, this project focussed instead on building capacity in community pharmacy to communicate and engage effectively with consumers to improve their use of medicines and healthcare resources.

Effectively, it is a risk reduction strategy to assist consumers get the basics of medication use right, particularly if they are at risk of confusion or misunderstanding when too much or too complex information is presented to them.

While there are strengths and weaknesses to the research outcomes, overall the package was well received and did have an impact. The issues of sustainability of changes and addressing the challenges of implementing “teach back” more effectively are of concern. Wide distribution of this package to Australian community
pharmacies has the potential to contribute to better medicines use and reduced negative consequences of medication misadventure. The following important effects should be observed from wide dissemination:

1. The health literacy education package will increase Australian community pharmacists’ and pharmacy staff members’ awareness of the concept of health literacy.

2. The health literacy education package will improve Australian community pharmacists’ and pharmacy staff members’ practice in relation to using Universal Precautions for all consumers, regardless of their perceived health literacy capacity.

3. The method of delivery, being face-to-face and electronic, will show similar rates of success in regards to implementation. While face-to-face was preferred, having the option was popular to enhance flexibility and access.

4. The attitudes and motivational reasons behind implementing the health literacy educational package in the pharmacy will influence the success of implementation and on-going use of the package.

5. The health literacy “friendliness” of the pharmacy environment will change to be more conducive to acknowledging and addressing health literacy as a barrier to information provision.

8. Recommendations

The following are a discussion of the recommendations as a result of this study.

- It is recommended that the Pharmacy Guild of Australia make this health literacy educational tool available by open access (e.g. under a creative commons licence, etc.). This would allow for the package to be used in a wide variety of areas related to patient care and health practitioner education. Health literacy principles apply not only to pharmacists and pharmacy staff, but also many other professions where patient-focused care is involved. Consideration of a ‘roadshow’ to raise the profile of the health literacy educational package and increase dissemination of the training into community pharmacies may be beneficial. A national roll out, as well as inclusion into the annual APP conference could also be considered.

- The educational package is made available to Schools of Pharmacy for integration into Bachelor/Master of Pharmacy curricula to ensure that pharmacy students are equipped with the necessary skills to manage consumers with limited health literacy, and understand its importance for both pharmacy practice and the health care system. An added benefit to this is that new pharmacists who enter the workforce may be familiar with the content and format of the educational package and thus may be in a better position to lead training for other pharmacy staff.

- Invest in further research to incorporate the needs of Indigenous and CALD consumers.

- To more specifically trial Module 4 (schools and aged care)

- To invest in further research to develop methods to measure effectiveness and sustainability of this intervention (staged approach to full roll-out).

- To incorporate organisation/structure and support elements of the educational package into QCPP. Qualitative feedback from study participants suggested that the incorporation of this educational package into the QCPP framework may improve uptake and consistency of health literacy training and knowledge of pharmacists and pharmacy staff members in Australia. Compulsory implementation into community pharmacies in Australia may increase the use of universal precautions with consumers, and therefore may improve health outcomes related to medication misadventure.

- To invest in reminders (pop-ups, gimmicks, laminated card, slogans) to encourage routine/habitual use of the PUPPY principles.
• That the findings be used to enhance the evidence surrounding pharmacists’ time spent in patient consultation, creating a more efficient counselling process.

• That Universal Precautions and health literacy should be a consideration in any patient-focused policy. Universal Precautions involves encouraging pharmacists and staff to assume that a consumer has limited health literacy until cues or clues from the consumer indicate otherwise, and use a variety of communication techniques with them to improve information provision and comprehension.

9. Bibliography


