Service delivery in pharmacy practice: what can be achieved in regional NSW

Carl Cooper
Charles Sturt University

Abstract
In October 2011, a five-year project was concluded that involved transforming a small underperforming community pharmacy in Lockhart, NSW to a broader service offer to the small community. In outlining the findings of this study, there will be discussion of lessons learnt and focusing on what other professionals can take away and use in their professional practice.

On the 16th July 2007, Lockhart Pharmacy and was responsible for the delivery of pharmacy services, estimated population 3,618, with 25.3% of the population under 5 years old, 14.9% of the population aged 65 years and older, 42.1% with dependent children, an unemployment rate of 5.7%, an index of relative disadvantage of 1020 (high) and a 1.5% indigenous population.

As a direct consequence of developing the professional services at Lockhart, and first gaining Accreditation through the AACP (Australian Association of Consultant Pharmacists), the business was able to extend and develop the RMMR (Residential Medication Management Reviews) that were already being offered to Woodhaven (Lockhart) and Urana MPS (Multipurpose Service) to include additional MPS facilities in the Riverina, NSW.

As a direct consequence of the 4th CPA (Community Pharmacy Agreement), the DMAS (Diabetes Management Assistance Service) and PAMS (Asthma Management Assistance Service) were piloted at Lockhart with specifically identified patients being enrolled and supported through these services. Unfortunately both these programs, although successful, were unable to attract further funding in the 5th CPA (Community Pharmacy Agreement).

UTAS (University of Tasmania) also piloted a warfarin monitoring program for selected patients on longterm warfarin therapy as well as piloting the PROMISE (Pharmacy Recording of Medication Incidents and Services) study that has now been consolidated into the PPI’s (Pharmacy Practice Incentives) that are now funded under the 5th CPA (Community Pharmacy Agreement).

In the space of 5 years, local support for Lockhart pharmacy returned. Improvements in local service delivery in the community pharmacy were identified as the prime reason for this return of local support.

Introduction
Community pharmacy in Australia has traditionally been based on the supply of medication through retail based, mainly pharmacist owned businesses with strict controls on what can and what cannot be sold. With the advent of ‘pharmaceutical care’ in the early 1990’s, community pharmacists have been involved in the development of cognitive services. Examples of cognitive services include patient education, diabetes management assistance services (DMAS) asthma management assistance services (PAMS), Warfarin monitoring, PROMISE (Pharmacy Recording of Medication Incidents and Services), professional practice incentives (PPI’s), home medication reviews (HMR), and residential medication management reviews (RMMR).

In the decade 2002-2012 in Australia, there has been a fundamental shift in the focus of Primary Care Models to Medicare Locals, where although the General Practitioner is still at the centre of the axis of Care, all allied health practitioners, including community pharmacists, have been encouraged to become engaged in a dialogue for the future. As a result allied health professions and pharmacists are increasingly becoming more involved in health care teams and initiating closer professional alliances with similar minded and entrepreneurial practitioners in the community pharmacy context.
Cognitive services including HMR and RMMR have been available since the 3rd CPA in 2000, Australia is not alone in the development of such areas of professional support. In the US, UK, Canada and parts of Europe Services such as medication reviews, public health clinics and emergency contraception can now be accessed through community pharmacy. In the US, as pharmacy attempts to move from a solely dispensing model of practice, there has been a resistance in asking patients to pay for pharmacy services. Recent pharmacy practice in US has reported increased amounts of patient information collected and documentation of appropriate care. “The capacity for organizational change can be augmented by increased pro-activeness, autonomy among employees and the availability of adequate and appropriate resources.” Community pharmacy in Australia can change it’s reliance on the supply of medication exclusively if given the right support and assistance.

While the ability of community pharmacy to change to allow the delivery of pharmacy services has been documented conceptually there has been little empirical study of its effects. What has been identified in the literature is that while there is less evidence of the impact of the organization’s culture on the quality and safety of service delivery, there will always be a fundamental dichotomy between the importance of the ‘business-professional role in community pharmacy, the influence of individual pharmacists’ characteristics and organizational settings and the impact on pharmacist’ wellbeing and job satisfaction and the service delivered.” Community pharmacy, being a business, is not only required to offer a sustainable and profitable model of ownership for the pharmacists that invest in the business of pharmacy, but also reflect the nature of the training and health advice that constitutes the role that pharmacists are required to demonstrate in their professional responsibilities.

The purpose of this study is to quantify the financial and professional value of offering cognitive services in a community pharmacy. This evidence will help to support the possible introduction of other professional services and whether there is merit in pursuing other pilot cognitive services. To approach this problem, an analysis of financial returns to the pharmacy business will be performed from past accounting returns. In the reporting of past financial results a clearer representation of the true business returns can be assessed and the real value to the business can be obtained.

Materials and methods
A retrospective study of the financial returns to the Lockhart pharmacy business was undertaken. As management of the financial detail has been provided for reporting of business performance to the Australian Taxation Department, close analysis of the businesses performance had already been performed. In reporting the financial benefits to the business, consideration of the professional value to the business will be discussed.

Pharmacy services introduced included DMAS (Diabetes Management Assistance Service), PAMS (Asthma Management Assistance Service), Warfarin monitoring and PROMISE (Pharmacy Recording of Medication Incidents and Services) were initiated as part of a pilot program to determine the future viability and sustainability of these new cognitive services. DMAS and PAMS were ultimately unable to gain ongoing financial support under the 5th CPA. Warfarin monitoring is in the process of negotiating for funding and PROMISE has been absorbed into the current PPI program under the 5th CPA. Pharmacy services introduced at Lockhart pharmacy including HMR and RMMR directly benefited the business financially from July 2007.

This analysis of Lockhart pharmacy has been interpreted over 4 (four) years and 3 (three) months, since the business was purchased in July, 2007 and sold in October 2011. The target population of 1,000 persons in the town including approximately 2,200 in the surrounding area makes a total catchment population of approximately 3,200. Generalizations to similar Community Pharmacy businesses in regional NSW would be appropriate assuming that the pharmacist concerned was appropriately credentialed in professional services.
These results analyse Lockhart pharmacy’s business performance and specifically the professional services including HMR and RMMR and how these services benefited its financial performance. These reports have been developed after the performance of the business has been assessed.\textsuperscript{17}

\textbf{Results}

\begin{figure}
\centering
\includegraphics[width=\textwidth]{lockhart-pharmacy-summary-of-yearly-trading-results}
\caption{LOCKHART PHARMACY SUMMARY OF YEARLY TRADING RESULTS}
\end{figure}

The financial benefit to Lockhart pharmacy of RMMR and HMR has been measured as a percentage of total turnover and as a percentage of gross profit in the following table:

\begin{table}
\centering
\begin{tabular}{|l|c|c|c|c|c|}
\hline
\hline
\% Turnover & 1.34 & 0.82 & 1.74 & 1.05 & 5.27 \\
\% Gross Profit & 4.26 & 2.23 & 4.15 & 2.77 & 11.17 \\
\hline
\end{tabular}
\caption{Financial benefit to Lockhart pharmacy of RMMR and HMR}
\end{table}
Discussion

Lockhart pharmacy was established in the 1940’s and was purchased in July, 2007. The welcoming local residents did not have large expectations of the quality of the services as there were significant issues with regular opening hours and the previous business was in some need of improvement of support for the local community. Services that were being offered apart from the dispensing of medication included the supply of NDSS (National Diabetes Service Scheme) products for Diabetics. NDSS products are diabetes related products at subsidized prices from the Australian government, appropriate education and information for patients suffering from Diabetes requiring assistance.

Pilot programs

The following four programs identified Lockhart pharmacy as a possible invitee because of its remoteness and classification under the Pharia classification four (4). Lockhart pharmacy patients were invited as part of these pilot programs to participate. The responses obtained and feedback offered contributed to the assessment of the appropriateness and possible professional viability of offering such services.

DMAS (Diabetes Management Assistance Service) was developed explicitly for community pharmacy as a trial of evidence based patent-focused specialist diabetes management service. Five patients were identified as part of the pilot program, although only three of these completed the full 12 months. The DMAS commitment required independent credentialing and training of the pharmacist before being engaged in the program. As many patients are unaware of daily food intake requirements, exercise and medication management much of the discussion and education relied on communicating such information to the patient. "The DMAS service was highly valued by patients, based both on the findings of the interviews and the patients' satisfaction questionnaires." Patients that were recruited at Lockhart were appreciative of the education and support provided and benefited from the training. However, in order to commit to the program, time away from the normal dispensing and counselling roles as a pharmacist was necessary. This required allocating additional staff pharmacists or planning outside normal business hours in addition to normal work commitments.

PAMS (Pharmacy Asthma Management Service) was developed explicitly for community pharmacy as a trial of evidence based patent-focused specialist asthma service. After intensive training, pharmacists were required to act as intermediaries between patients and prescribers in the monitoring of patients with asthma. The recruited pharmacists across Australia were critical of the research protocol because of its depth and detail. Five patients were identified as part of the pilot program, although only four of these completed the full 12 months. Key challenges for pharmacists related in the recruitment of patients, time management and collaboration with GP’s. "Overall, their positive experiences demonstrated that if the challenges were managed strategically, implementation of such a service model would be possible." In the engagement of patients within the pharmacy, the interviewing pharmacist was required to be available without distraction for extended amounts of time. In small regional single pharmacist businesses, this requires the pharmacist to make other arrangements for the safe checking of medication. Interviews were therefore organized in lunchtimes or out of normal business hours. The four patients that were successfully recruited for this program were very positive in their responses, greatly benefited from the education and support that was given to them and showed improvement in their asthma control over the programs duration.

Warfarin Monitoring is a necessary requirement for all patients that are prescribed warfarin usually after hospital discharge. In regional and remote NSW, many patients have to travel large distances to receive appropriate pathology testing of warfarin levels. The recent availability of Point of Care INR (international normalised ratio) testing equipment has advanced other possible solutions. Home or community pharmacy settings for the testing of INR results can be used with considerable savings in terms of transport, time and convenience. Four patients were identified as part of the pilot program, although only two of these completed the full 12 months. As the ongoing monitoring of warfarin requires education and monitoring, the program involved extensive training and education of the
patients involved. This monitoring required the involvement of the local GP via a Home Medication Review which would allow the pharmacist to discuss the patients medication use, the issues around the taking of warfarin and communicating with the GP if there were any outstanding issues of concern. ‘The aim is to incorporate POC INR monitoring and warfarin education into the existing HMR remuneration structure to produce a streamlined and sustainable model more pragmatic for widespread implementation into practice’. All four patients on the trial at Lockhart were comfortable with the equipment after training and were using the POC INR testing equipment as well as regular pathology to monitor appropriate INR levels. If patients were going to purchase the machines and strips for their own use, some cost subsidization would need to be considered, as the costs would be prohibitive.

PROMISE (Pharmacy Recording of Medication Incidents and Services) was an electronic monitoring system for the reporting and documentation of Drug related problems (DRP) in community pharmacy. Trialled over a three month period, the categorisation of pharmacist interventions with patients about their medications by classification according to the DOCUMENT system allows classification by type and allows the pharmacist to record their actions, recommendation and the significance of the intervention. As the intervention and documentation integrates with the dispensing software, the pharmacist can identify the issue, intervene with their professional judgement and document what has been resolved at that point in time. The opportunity to seamlessly identify and document drug related problems allows the practice of pharmacy to develop evidence of the professional interventions that pharmacists are responsible for in their daily practice. Being able to document these important judgements has allowed for a system of recording of clinical interventions and evidence of their validity for future reference.

As a direct consequence of the PROMISE study, PPI’s (Pharmacy Practice Incentives) were funded in the 5th CPA (Community Pharmacy Agreement). Community Pharmacies are able to claim for DAA (Dose Administration Aids) and Clinical Interventions performed under the DOCUT categories under the DOCUMENT classification system. Interventions are required to be recorded either manually or electronically. Medscheck and Diabetes Medscheck are new professional services also funded under the 5th CPA from July 2012, allowing community pharmacists to use their professional judgement to identify medication issues with patients and facilitate resolution of these issues in an appropriate manner.

The previously discussed new services DMAS, PAMS, Warfarin Monitoring and PROMISE were all used at Lockhart Pharmacy and have been able to improve the professional services delivered to the patients that were enrolled in the programs. There was limited monetary benefit to Lockhart Pharmacy for the considerable professional effort required to deliver these programs in an informed and professional manner. The Training of patients for DMAS, PAMS, Warfarin Monitoring and PROMISE was provided by each program without charge by the pharmacist, however there was, in formal questioning, some attempt to discuss with patients a ‘fee for service’ model for DMAS and PAMS, which lacked support and would be difficult to implement.

**Professionally renumerated programs**

HMR (Home Medication Reviews) are a professional collaborative review of medication provided for a community patient via an accredited pharmacist to a general practitioner. Initially provided by the patient’s community pharmacy of choice, recent changes to the referral process have now allowed accredited pharmacists to be directly engaged in their completion via the referral process directly from the GP. Lockhart pharmacy was able to increase numbers of HMR reviews to include not only the local general practitioner but also patients who used doctors in other centres including Wagga Wagga. The results of completing reviews for patients in the community improved the relationship between clients and pharmacist, as well as trust in the general practitioner. There has been some use of HMR’s to target drug related problems amongst clients in community mental health teams and chronic heart failure. Interestingly HMR’s have been identified as a ‘promising strategy to address the morbidity and mortality associated with adverse drug events and drug-related problems among psychiatric patients’ but have
been identified as having ‘in isolation, post-discharge pharmacist directed intervention does not offer improvements in patient outcomes above usual care’.[32] The involvement of the accredited pharmacist with individual clients is helpful in assessing the appropriateness of current therapy and formulating an alternative strategy for the general practitioner. Under the current procedures annual HMR reviews can be claimed through Medicare Australia, but the process does not guarantee the information and education provided in isolation will be followed through by the general practitioner or community pharmacist involved.

RMMR (Residential Medication Management Reviews) are collaborative medication reviews for permanent residents in which resident care facilities are available.[33] In 2008 Lockhart pharmacy was contracted to provide RMMR services to Woodhaven Hostel (Lockhart) and Urana MPS. Annual reviews of patient’s medication were prepared for the visiting medical officer, and copies of these reviews were then supplied to the facility for their records. The general practitioner was the initiator of any changes to medication subsequent to the review process and changes were duly advised to the supply community pharmacy. Initiation of a monthly MAC (Medication Advisory Committee) meeting for Woodhaven Hostel (Lockhart) allowed all three parties (pharmacy, nurse manager and doctor) to raise and discuss medication issues in an organized and systematic way. Improvements to the supply function, streamlining system delivery and reducing medication errors were all discussed at these MAC meetings.

Financial remuneration for professional programs such as HMR and RMMR directly benefited the Lockhart pharmacy business and contributed to the regaining of customer support. Pilotng additional programs such as DMAS, PAMS, Warfarin Monitoring and PROMISE, although not financially contributing to the business, were able to regain customer support and confidence in the business. In order to sustain the business model as discussed, additional resources are required to facilitate the implementation of professional services and this requires support from other sources. If the Australian government is not forthcoming, then patients may be required to support these programs financially. The implementation of a fee for service option is currently unpopular, but a real option for the future development of professional cognitive services.

**Outcomes and recommendation of this study**

Lockhart pharmacy has benefited financially by increasing the professional cognitive services available in this small regional town. Although as demonstrated, the financial returns from professionally renumerated services to the business were modest, support from local clients improved and customers returned to the local pharmacy because of the convenience and service made available.

Future funding of professional services requires some form of subsidized support from either governments or the clients using the service. PAMS, DMAS and Warfarin Monitoring were all unable to attract recurrent funding after the pilots were completed, although there have been deputations to the Australian government for the Warfarin Monitoring Service by the Pharmaceutical Society of Australia in 2013.[34] The HMR and RMMR programs (and more recently PPI’s, Medscheck and Diabetes Medscheck) are the only recurrent programs funded under the 5th CPA.
**Glossary**

<table>
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<tr>
<th>Acronym</th>
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<tr>
<td>AACP</td>
<td>Australian Association of Consultant Pharmacists</td>
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<td>APESMA</td>
<td>Association of Professional Engineers, Scientists and Managers Australia</td>
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<td>PBS</td>
<td>Pharmaceutical Benefits Scheme</td>
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<td>CPA</td>
<td>Community Pharmacy Agreement</td>
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<td>DMMR</td>
<td>Domiciliary Medication Management Review (same as HMR)</td>
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<td>GP</td>
<td>general practitioner</td>
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<td>HMR</td>
<td>Home Medication Review (same as DMMR)</td>
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<td>MPS</td>
<td>Multipurpose Service</td>
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<td>POC</td>
<td>point of care</td>
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<td>Pharmaceutical Society of Australia</td>
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<td>National Australian Pharmacy Students Association</td>
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<td>National Diabetes Services Scheme</td>
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<td>QUM</td>
<td>Quality Use of Medicine</td>
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<tr>
<td>RMMR</td>
<td>Residential Medication Management Review</td>
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**References**


3. Brooker, C. Ahead of the pack – Pharmacists who are leading the way on professional services. Pharmacy News March, 2013: 25-30


