

The Range and Accessibility of Maternity Models of Care and Allied Health Service Delivery across Public Hospitals within Victoria, Australia

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Abstract—Australian Government maternity reform documents promote collaborative multidisciplinary models of care and strive to improve service provision and access for all childbearing women. In order to provide a quality and equitable maternity service, effective monitoring and mapping of service provision needs to be undertaken. This paper explored maternity models of care and key allied health services across Victorian public hospitals as per the Victorian Government Health Information Website (VGHIW). Altogether, this study found discrepancies in information provided to consumers using the VGHIW, a scarcity of models offering continuity of care/r and an overall reduction in equity and access throughout rural maternity health service provision

Keywords- *Maternity service provision, models of care, allied health, evidence-based, collaboration, perinatal period.*

I. INTRODUCTION

Inequitable access to maternity care in rural and remote communities in Australia is recognised as a deficiency of current maternity service delivery, a situation exacerbated by frequent service closures (1). Additionally, and especially relevant to postnatal care, birth often creates a disconnection between services, service providers and facilities (2). As highlighted in the Maternity Services Report, Australian women should be able to reliably access high-quality, safe maternity services, from early pregnancy through to postnatal care (3). Most recently the National Maternity Services Plan, set a five year vision “that all Australian women will have access to high-quality, evidence-based, culturally competent maternity care in a range of settings close to where they live”.

A Government report released in 2009 titled, ‘Improving Maternity Services in Australia’, made various recommendations to support this, including the need to improve access to a range of models of care, reduce inequality of outcomes and access, and enhance information and support for women and their families (4).

Within the wider range of services to enhance maternity care, allied health professionals emerge as key members of the

maternity team with specific expertise that enhances the provision of maternity services.

With respect to maternity service provision, the availability of local data to assist in the hospital planning processes is limited. Within the jurisdiction in which this study was conducted (in Victoria, Australia) the focus of data collection tends to be on the actual service use for admitted patients collected through the Victorian Admission Episodic Database (VAED). This descriptive data is then used in conjunction with population data to make projections about the future need for health care services. As noted by Leggat (5) the consequences of this planning process are that Victorian hospital development projects, while based on the best available information, may not fully reflect the community needs at the time new facilities are opened. In regards to rural communities, during 1995 – 2005, the National Rural Alliance estimated 130 rural maternity units had closed across Australia (National Rural Health Alliance Inc., 2006), with services often centralised (1).

When attempting to optimise delivery of any health or human service setting, there are a number of system and environmental elements that need to be examined and addressed. One useful model to use when examining maternity service performance is that of Brethower’s Total Performance System (TPS) (6). A key element in this systems approach is the adequacy of *inputs* to the service system. Inputs are defined as personnel (staff and patients) with suitable knowledge, skills and optimal attitudes. Inputs also include inter-alia, the adequacy of physical and financial resources, along with an appropriately worded ‘mission statement’ (7). In the case of maternity provision, services need to be guided by an organisational philosophy that values collaborative team-work, patient-centred care and similar behaviours alongside traditional high-quality medical, nursing and allied health services.

One important influence on the adequacy of maternity service provision that has been well researched is the human resource shortages, as an appropriately educated and competent workforce is vital to effective health service delivery (8).

Reporting on Australia’s Health Workforce, The Productivity Commission Report recognises that using the skills of existing workforce in the most efficient and effective way possible is an important workforce strategy. To guide this, a core competency model and educational framework for primary maternity services were developed through a national consensus approach. These too are designed to promote the valuing of professional expertise and stimulate awareness and respect for the roles of all primary service providers, thus hopefully enhancing collaboration between professionals across the perinatal period.

Given the issues identified, this paper derives its value from the implicit premise that the collaboration of maternity services across hospitals could contribute to closing gaps in equity and access, thus enabling greater contact with perinatal services. Having a detailed analyses of such service provisions not only complements policy document strategies (3, 4) but gives consumers, future policy makers, area health service managers and associated clinicians, knowledge of the service gaps to address when involved in service planning.

II. AIM

To examine current *maternity models of care* provided by Victorian hospitals as per the Victorian Government Health Information website (“Having a baby in Victoria”; www.health.vic.gov.au/maternity/index.htm)

To examine the distribution of *maternity-related allied health services* provided by Victorian maternity hospitals

III. METHODS

A. Design

A descriptive study was conducted, of which the first phase of this research involved identifying Victorian maternity facilities and their corresponding models of maternity care as per the Victorian Government Health Information website ‘*Having a Baby in Victoria*’ which supposedly provides a complete listing of all resources to expectant parents (9).

The second phase of this research comprised a survey which was mailed out to all the identified Victorian maternity facilities seeking information about maternity models of care and allied health services. Included was an information sheet detailing the research and inviting them to participate. Consent to participate was taken as implied if the contact person completed the survey.

B. Data Collection

Data were collected in 2010. The names of hospitals and /or maternity facilities were identified through the Victorian Government Health Website. In total, 61 hospitals were included (14 metropolitan Melbourne; 47 rural Victoria). Surveys were distributed to either the hospital CEO and/or Maternity/Acute Services Managers, along with a stamped, self-addressed envelope to be returned to the researcher.

The survey package consisted of the survey and a file which provided the details of the models of care as listed on the Victorian Government Health Information Website. Participants were asked to confirm if these models were reported accurately on the website. Similarly they were asked to read a list of maternity-related allied health service professionals and confirm those provided by each hospital. Two reminders were sent to non-respondents (three in number).

C. Sample

The Victorian Government Website (“Having a Baby in Victoria”) lists a total number of 61 public maternity facilities. This includes 14 Metropolitan Maternity services (23%), and 47 Regional Maternity Services (77%). The response rate was 13 hospitals for Metropolitan Maternity services (13/14), and 45 for the Regional Maternity Services (45/47). Regional Maternity Services were divided into South West, Western, North West, North East, and South East Victoria as per the Victorian Department of Human Services Regional boundaries. This is illustrated in Fig. 1.

D. Data Analysis

The Statistical Package of the Social Sciences v. 19 Program (SPSS19) was used for all descriptive and inferential analyses. Descriptive analysis was used initially to understand the distribution of the data set analysed. Subsequently, due to the violations of the normality assumptions in both data sets, non-parametric tests were used to assess the difference in the two sources of information namely: Victorian Government Health Website (VGHW) and Hospital Data (2010) respectively.

Wilcoxon Signed rank tests were performed on the data sets

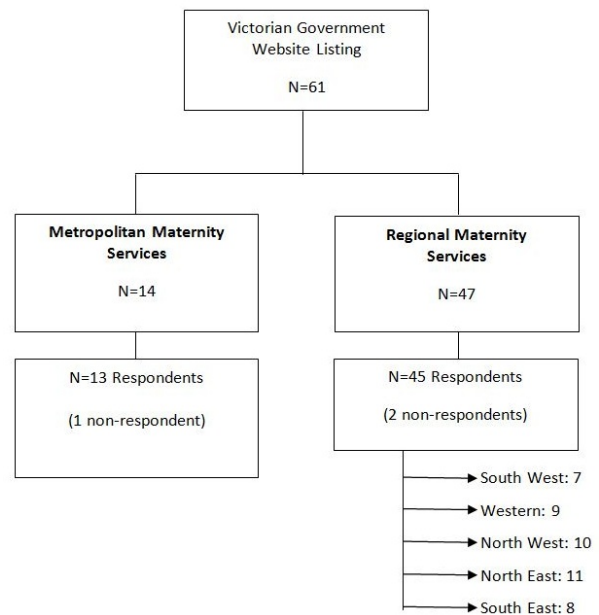


Figure 1. Data Set, Number of included Maternity Facilities

since the assumption used was that normality in the data was not present. The Wilcoxon Signed rank test was applied to identify the differences between the number of models listed on the website and what is actually offered as reported by the maternity facility.

IV. RESULTS

A. Models of Care across Victorian Maternity Facilities

Table 1 presents descriptive statistics for the number of models of care as per the VGHW and hospital survey data.

From the application of the Wilcoxon Signed Ranks test ($Z = 3.471, p = 0.001$) the number of listed models differs depending on the data source (VGHW vs. hospital survey data).

The variability in the distribution of the two data sets, clearly highlight the presence of some outlying values. The variation in the data sets, as shown by the high values of the respective Coefficients of Variations¹: 81.97% for the Victorian Government Health Website and 94.87% for the Hospital Data (2010) clearly reflects this trend.

Fig. 2 below is a visual illustration contrasting the median number of maternity models of care across six geographical catchment areas.

The information in Fig. 2 illustrates two points: (a) that actual hospital figures about models of care are typically lower than those derived from the VGHW; and (b) that, regardless of this difference, there is regional variation in the number of models of care said to be, or actually provided. Metropolitan facilities clearly have more models of care available than do rural facilities.

In order to better understand the discrepancy between the two data sources, the direction of differences was examined. In addition, in 10 of the facilities, the numbers of models offered were greater than the number of models listed on the website. In twenty of the maternity facilities there were ties, however even when the number of models correlated, further examination revealed that the actual models of care offered by the facilities were not accurately reflected on the website. For instance, in 11 of 20 (55%) facilities which reported equal numbers (of maternity models) from both sources, the models listed on the website did not accurately reflect what the facility

TABLE 1. Descriptive statistics for the number of models of care as per the VGHW and hospital survey data

Models of Care	VGHW, N=61	Hospital Data (2010) N=58
Mean	5.69	4.29
Median	5.00	3.00
Standard Deviation	4.664	4.070

¹ The Co-efficient of Variation is a measure of dispersion of data around the mean. It is calculated as a percentage by dividing the standard deviation of a group of numbers by the mean of those numbers.

offered in actuality.

Illustrations of discrepancies or problems with the information are wide-ranging, from aspects of inaccurate reporting of maternity models to non-current care information being provided to parents-to-be. As example, Bendigo Health Care Group does not offer a Koori Maternity Program. Instead, the Aboriginal Liaison Officer liaises with Bendigo and district Aboriginal Co-op (BDAC).

Similarly the VGHW states care provided includes ‘Management of the unborn baby with medical condition’; however the hospital respondent reported that “in these cases women are referred to tertiary centers”. Another example illustrating variation can be noted by Alpine Health, Myrtleford, of which the care offered here is a “modified caseload” model where,

“... the women see their allocated midwife throughout the pregnancy. When in labour there is an on call system where another midwife may provide care. The allocated midwife would usually do postnatal domiciliary visits.”

And, Maryborough District Health Service where their model is a combination of those described on the VGHW.

“We have antenatal clinic with G.P’s and midwives. Women book in for birth as a public patient and antenatal clinic also has extra sessions for young women as required.”

This is a similar situation at Stawell Regional Health Service at which the models offered “doesn’t quite fit any of

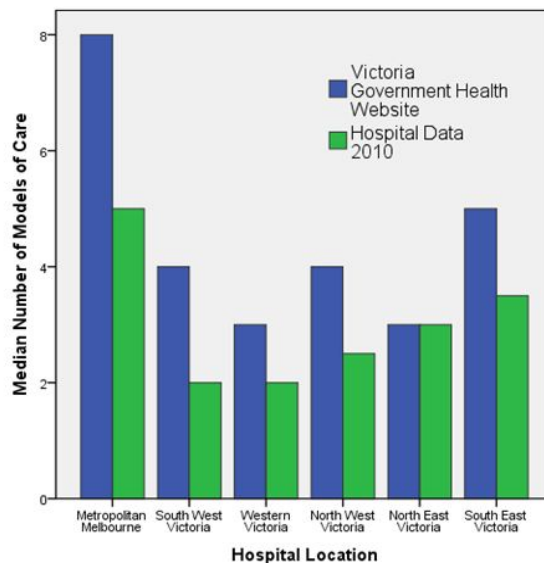


Figure 2. Median Number of Models of Care

these” as displayed on the VGHW.

Some important discrepancies included information about non-current care. While the VGHW lists birthing facilities provided at Rosebud Hospital, in reality,

“... All women are now birthing at Frankston Hospital as we no longer have birthing facilities at Rosebud. Two women gave birth in the Rosebud emergency department and then they were transferred.”

Similarly, the Daylesford campus of Hepburn Health Service no longer has birthing services. At this facility they,

“...continue to provide postnatal care and women are transferred to Daylesford post-delivery (most commonly from Ballarat Health Services). Local G.P’s provide shared antenatal care for women in the local community. There are no antenatal classes available currently.”

This is a comparable picture at Edenhope and District Hospital in which there are now no deliveries. As noted,

“Women birth in either Naracoorte (South Australia) 50km away or Horsham (Vic) 100km away. Women may transfer back to our hospital post-delivery.”

With respect to access to birthing services and available clinicians, West Wimmera Health Service is an illustration of

an inadequately resourced facility where women may often be required to travel further. While they offer a shared care program with the local G.P. and midwives, these services cater only for those meeting low-risk birthing criteria as “we don’t have an anesthetist on site.”

With respect to Djerriwarrh Health Services, their antenatal care is provided at Melton health site – Maternity at Melton. However this facility deliver only low-risk mothers (no twins, breech, BMI>40, Type 1 diabetes). These expectant mothers can attend antenatal care at Melton Health but give birth at Sunshine Hospital. While continuity of care is highly valued and noted in various Government reports, the composition of care in some health settings does not always closely reflect this philosophy.

Table 2 below contains information about the absolute frequency of models of maternity care in Victoria (see Chapter Three for definitions of Victorian models of care).

The information in Table 2 indicates that only 13.7% (8/58) of Maternity facilities offer the caseload model of care – even though the literature suggests that this model of maternity care reliably produces positive outcomes for child-bearing women (see (10)].

Additionally, combined analysis of metropolitan and regional services, indicates that there were no Caseload models of care offered in the whole of Western Victoria (see Table 3).

B. Antenatal and postnatal allied health and associated maternity services

The extent of allied health services provided by each maternity facility varies. A larger metropolitan tertiary hospital such as The Royal Women’s Hospital included (but was not limited to) clinicians such as hematologists and psychiatrists, as well as a drug and alcohol service and a family and reproductive rights education program (FARREP). However, clinicians and services are not as abundant in all health settings. As example, at Kilmore and District Hospital, approximately 70.8km from The Royal Women’s Hospital, services such as the diabetes educators and dieticians are accessed through local community health services. Similarly at Maryborough District Health Service they,

“...only cater for low risk women and refer others e.g. drug

TABLE 2. Rank Order of Frequency of Models of Care

Model of Care	Total (%) (n = 58)	Rural (%) (n = 45)	Metropolitan (%) (n = 13)
Combined (Rural)	26 (44.8)	21 (46.7)	5 (38.5)
Shared Care with GP	25 (43.1)	18 (40.0)	7 (53.8)
Midwives Clinic	21 (36.2)	14 (31.1)	7 (53.8)
Standard	20 (34.5)	10 (22.2)	10 (76.9)
Private Obstetrician	12 (20.7)	3 (6.7)	9 (69.2)
Young Women	12 (20.7)	5 (11.1)	7 (53.8)
Koori Maternity programme	11 (19.0)	8 (17.8)	3 (23.1)
Team Midwifery	10 (17.2)	5 (11.1)	5 (38.5)
Community based (Satellite Clinic)	9 (15.5)	4 (8.9)	5 (38.5)
Caseload (Know your Midwife)	8 (13.8)	6 (13.3)	2 (15.4)
Doctor -Midwife Teams	6 (10.3)	3 (6.7)	3 (23.1)
Shared care with Midwife Local Community Health Centre	5 (8.6)	2 (4.4)	3 (23.1)
Birth Centre	3 (5.2)	0 (0.00)	3 (23.1)
Shared care with GP Local Community Health Centre	2 (3.4)	1 (2.2)	1 (7.7)

TABLE 3. Caseload Maternity Care by Region

Region	Total	Number of Facilities Providing Caseload Maternity Care by Region (%)
Metropolitan Melbourne	13	2 (15.4)
South West Victoria	7	0 (0.0)
Western Victoria	9	0 (0.0)
North West Victoria	10	2 (20.0)
North East Victoria	11	3 (27.3)
South East Victoria	8	1 (12.5)
Total	58	8 (13.8)

dependent women or diabetic to Ballarat for antenatal care.”

This pattern of restricted access appears consistently, as it can be noted that a number of rural-based health settings used external referrals in the community. As example, the diabetes educator and lactation consultant at the Mount Alexandra Hospital in Castlemaine is also sourced via referral, and postnatal support is via “regional resources”.

Similarly at Bendigo Health Care Group, Pastoral care is resourced via Bendigo Health pastoral care if needed, and chemically-dependent women are referred out through Bendigo Community Health.

While not all services are provided directly by the hospitals, it seems there is also little consensus surrounding the way services are described. As example, at the La Trobe Regional Hospital there is no specific “young mums program” or “chemically dependent women’s program”, however they have, *“...an outreach midwife program – 2 days per week providing care to teen mothers, chemically dependent women, DHS vulnerable infants and social issues”*.

Similarly Frankston hospital have a ‘Special Midwives Clinic’ that, *“Focuses on women with chemical dependency, psychiatric or complex issues.”*

Bendigo Health Care Group have a “*Maternity Support Worker*” in place of the social worker, and though there is no defined miscarriage clinic, under development is an Early Pregnancy Assessment Service (EPAS). Table 4 following illustrates the relative probability of encountering four key postnatal allied health services (physiotherapy, diabetes educator, psychologist and lactation consultant).

Table 4 shows a higher probability of receiving physiotherapy and lactation consultant services in Metropolitan maternity settings as opposed to rural maternity settings. However, the diabetes educator variable showed an opposite pattern. A possible explanation for this is that being overweight is an important risk factor for major disease targets, including diabetes. As presented by Warner-Smith, Bryson (11) rural

women are heavier than women in the city.

In regards to four key postnatal health services, one quarter of these rural maternity settings do not provide postnatal physiotherapy (11/45), nearly one-fifth do not provide a diabetes educator (8/45), over one quarter do not provide psychologist services (13/45) and over one-third do not provide a specific lactation consultant (16/45).

V. DISCUSSION

This study was designed to provide information to health providers, facility managers and policy directors on models of care and actual allied health services available within current Victorian public maternity hospitals. In particular, this descriptive research mapped current maternity models of care and allied health services as per the Victorian Government Health Information Website. Regular health care during the perinatal period is recommended for improving maternal and neonatal outcomes (1). However, in general, our study found discrepancies in information provided to consumers using the Victorian Government Health Website, a lack of models offering continuity of care/r and an overall reduction in equity and access throughout rural maternity health service provision.

A. Models of Care across Victorian Maternity Units

In the Maternity Services Review (2009) a framework was proposed to endorse a set of principles to be used across Australia which included “ensuring that services enable women to make informed and timely choices regarding their maternity care and to feel in control of their birthing experience”. The current research examined the information reported on the Victorian Government Health Website, as a probable first point of contact for expectant parents. As illustrated, findings showed that the information consumers receive may not always be accurate, as models defined on the Victorian Government Health Website do not always correlate with actual models of care reported to be offered at each maternity health setting. The current research found that overall there was a statistically significant higher number of maternity care models reported on the Government Health Website in comparison to the actual models of care stated in the Hospital Survey Data (2010).

In respect to standardising classification of models, the current research further found that the descriptions of models of care detailed on the Victorian Government Health Website

TABLE 4. Frequency, Percentage and Odds Ratio of Obtaining Selected Postnatal Allied Health Services in Victorian Hospitals

Allied Health Services	Frequency of Hospital Service Provided		% of Hospital Providing Service		Likelihood of Hospitals Providing this Service (95% CI)	
	Metropolitan (n= 13)	Rural (n= 45)	Metropolitan	Rural	Metropolitan	Rural
Physiotherapy	10	28	76.9	62.2	3.33 (0.99 to 11.23)	1.65 (0.91 to 2.98)
Diabetes Educator	9	36	69.2	80.0	2.25 (0.73 to 6.89)	4.00 (1.96 to 8.18)
Psychologist	4	9	30.8	20.0	0.44 (0.15 to 1.36)	0.25 (0.12 to 0.51)
Lactation Consultant	12	31	92.3	68.9	12.00 (2.00 to 71.93)	2.21 (1.19 to 4.12)

do not consistently correlate with the models reported by the maternity facilities. A similar discrepancy was raised in an earlier paper titled 'Moving towards a common understanding in maternity services' (12). Providing more accurate information on models of care available would both take out any ambiguities making it easier for consumers, and better meet the recommendations of providing accurately informed choice for childbearing women and families (4, 13). Additionally, with regards to general performance benchmarks in Australian health care, it was earlier proposed that a robust set of indicators should be developed which include timeliness of access and cost to the consumer (14). In the context of this study and maternity service provision, consumer assessed indicators could be combined with clinical outcome indicators and encapsulated on a website such as the Victorian Government Health Website. A comprehensive move towards providing accurate information with a consensus approach would provide the basis for the provision of a high quality maternity care system.

Further analysis of the data involved the examination of service model provision. Of the total models provided across Victoria, the research uncovered the top four as including (i) Combined (rural); (ii) Shared care with own GP; (iii) Midwives Clinic, and (iv) Standard Care. Perhaps surprisingly, many of these models still represent obstetric-led services. In 2009 the Australian Government announced its intention to pursue a primary maternity care reform agenda representing major change in the way maternity services are delivered (Commonwealth of Australia, 2009). The reform was designed so that healthy pregnant women, formerly included into obstetric load, would be re-categorised to non-obstetric based services (15). Similarly, while the Australian Health Ministers' Conference committed to continuity of care – and, wherever possible, continuity of carer, as a key element of quality maternity care (4), the current findings show little progress towards the implementation of such. As example, in two of the highest ranked models (as illustrated above) women are seen by midwives or doctors on duty at the time of their consultation. Further, in combined (rural) care women visit a GP/Obstetrician for antenatal appointments and following this they may have a booking or pre-admission visit to the hospital during their pregnancy with a midwife on duty, highlighting both a lack of continuity of care and carer.

In addition to safe maternity care, evidence suggests women want choice, control and continuity, as well as greater access to midwifery-led models of care and the opportunity to know their caregiver (16). Studies surrounding continuity of care include 'Caseload Midwifery' of which Australian studies provide evidence that this model of care is associated with lowered rates of caesarean section operations, fewer obstetric interventions (e.g. epidural analgesia and oxytocin augmentation) and an increase in satisfaction (17, 18). Despite the evidence, results in the current study reveal that caseload midwifery is offered in only 8 of the 58 maternity settings. These results are similar to that of other states and territories in which there is only small numbers of caseload practices (19).

Finally, the hospital data reflect the ramifications of the closure and restructure of maternity units and services across

both rural and metropolitan regions. Maternity closures have resulted in the centralisation of services (20) and the offset of this can lead to several financial, personal and social barriers in access to comprehensive care at this important life-transition stage (21).

B. Services and Allied Health across Victorian Maternity Units

Effective health service planning involves adequately meeting the needs of the local community. With respect to providing accessible, safe and quality care to women and families as promoted by the Victorian Government, the second objective in this research was to provide a description of the geographical distribution of services and allied health provided by each maternity setting across Victoria. While obstetric and clinical outcomes are of great importance, maternal morbidities are on the rise, and include, conditions such as depression and poor physical health following the birth. Such situations often call for higher rates of allied health services if expectant women are to optimally rehabilitate and successfully make the transition to parenthood. As the existing research suggests, and this study confirmed, particularly in rural regions, women are required to travel longer distances for care. Further, allied health services are not always provided through the maternity setting in which women give birth, but rather sourced via referral to external community settings. These findings in particular illustrate the inequality in provision of and access to psychological services provided directly through maternity facilities. This is of great importance given the numbers of women experiencing postnatal depression (22).

Multidisciplinary practices are thought to be key strategies in rationalizing resources and delivering cost effective services (15). Further, it is perceived to be a risk-management solution and a path for maximizing good-quality health care. In maternity care, collaboration is a dynamic process of facilitating communication, trust and pathways that enable health professionals to provide safe, woman-centred care (National Guidance on Collaborative Maternity Care – the Guidance). One of the key considerations emerging from this study is the possible benefits of effective collaboration between professionals across maternity health care facilities. As researchers emphasize (23) integration of service delivery potentially results in enhanced access to services; improved health outcomes; a wider choice for consumers; and, a reduction in the use of inappropriate or unnecessary services. In view of current service provisions across rural regions of Victoria, mapping the geographical distribution of key maternity services has provided the foundation on which to substantiate and instigate collaborative maternity health service practices.

VI. SUMMARY

This study produced data surrounding the accuracy (quality) of maternity-related information available to Victorian consumers. Firstly, in using the Victorian Government Health Website as a template, this research identified significant variations in comparing the hospital data maternity models with those the Government website reports

are offered. Further, terminology used to describe models and services is not consistent across facilities. This analysis shows that Victorian service provision is still dominated by obstetric models of care, and little continuity of care and/or carer exists within these models despite best-practice recommendations and consumer feedback regarding the desirability of these.

This research also supports existing literature highlighting the inequalities and disparities between rural and metropolitan services. The identified biopsychosocial benefits of both collaborative care and allied health services for new and expectant parents, in addition to the descriptive examination and mapped geographical distribution of key allied health services, provides useful basic evidence and foundations for policy makers and future maternity service provision infrastructure.

The results from this study substantiates the need for greater evidence-based models of care that provide accessible service provision, continuity of care and collaborative practice between perinatal health professionals that can be adapted into existing resources.

VII. STUDY LIMITATIONS

This simple descriptive study had a number of limitations. While the study detailed differences between metropolitan and rural service provision, no detailed examination was made of variation across the five large regions within rural Victoria. Similarly, detailed comparisons were not made of the variations in all allied health services across the regions of rural Victoria.

Given we used the Victorian Government Health Website, Private hospitals were neglected from this analysis and future research could include publically available descriptions of these maternity facilities also.

VIII. FUTURE RESEARCH

A major issue identified in the capability framework publication was the need for every health service and its clinicians to be clear about the services that they should be providing within their own settings as part of the regional and statewide provision of maternity and neonatal care (24). From current study results, services such as allied health are often sourced from the community. Future research could explore current staff knowledge of referral processes involving community service provisions.

This research further identifies the need to standardise terminology used when describing the organisation and provision of maternity services (12). Most recently the National Maternity Services Plan (2011) reinforced the importance of standardising classification and definitions across the range of maternity models to facilitate meaningful analysis and program comparisons. With such details arising from the present research, opportunity exists to update and simplify maternity facilities classification of models for perinatal women and their families.

Guided by Brethower's TPS constructs, future research could attempt to gain a more comprehensive understanding of the adequacy of Victorian maternity service provision by assessing other elements in Brethower's TPS, such as the quality of *outputs* produced by the maternity service (e.g. the enhanced knowledge of mothers, the attitudes of staff who withdraw from maternity services provision etc.). This information is invaluable as 'feedback' to guide future decisions about staff recruitment and organizational priorities regarding the provision and structure of maternity services. Maternity service *mission statements* need to give appropriate priority to key elements such as the provision of a culturally competent service, collaborative partnerships, and enhanced education and access for all childbearing women and their families.

Finally, future research could build on the descriptive mapping of allied health services. A typology of collaboration could be designed and implemented (with evaluation) for further evidence-based examination.

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