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Citation: Elder, T, Cummins, L, Tait, C & Kuzela, W 2023, 'Website redesign in a maternity setting: Co-designing a resource for consumer support and education', *Health Education in Practice: Journal of Research for Professional Learning*, vol. 6, no. 1 <https://doi.org/10.33966/hepj.6.1.17086>

Website redesign in a maternity setting: Co-designing a resource for consumer support and education

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Abstract

Women want to be informed about their healthcare. Google searches provide an accessible option for women during pregnancy, but the content is largely unmonitored. Women have expressed dissatisfaction and confusion about receiving conflicting information from clinicians across the maternity service. It is essential for providers to offer person-centred care and listen to the voices of consumers. If the aim is to provide a service women want to use, women must have the opportunity to voice what they want. The local health district (LHD) maternity website development project aimed to redesign maternity website pages over 12 months to meet community needs and increase hits to the site by 70% within six months. Consumers were approached to participate through maternity services in a regional Australian health district where approximately 3,500 babies are born yearly. In a three-phase participatory action research study, researchers identified the areas of concern for consumers, worked with them to co-design and implement a new website, and evaluated the changes. Almost 20% of women who birthed from January to March 2022 responded to the evaluation survey. Half of these had explored the website. After the upgrades, the number of hits to the district website service page increased by 875 (from 124 to 999). Post-development surveys showed that women who felt they received inconsistent information at the hospital during their pregnancy were more likely to visit the website for clarification ($p = 0.009$). Of women who visited the website, 78% found the information useful, and 73% said they would use it again. This study highlighted that women engaging in maternity services desire access to relevant, quality information through digital technology. Maternity website development improvements increased patient satisfaction and reduced confusion, providing a reliable source of accessible health information for consumers.

Keywords: maternity, digital, website, education, antenatal

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INTRODUCTION

The World Health Organization recognises women's health during the perinatal period as a foundation for population health (Nieuwenhuijze & Leahy-Warrant 2019). This acknowledgement demonstrates the importance of prioritising accessible, trusted information for women. Empowering women through pregnancy and childbirth education is believed to lead to more positive outcomes in pregnancy and birth that also continue into motherhood (Vedam et al. 2017). Therefore, the design and implementation of good quality, consistent education for women and their families must be a priority of maternity service delivery. Women report greater satisfaction with birth experiences when involved in decision-making (Vedam et al. 2017). Many pregnant women report using online media to supplement their knowledge of pregnancy and childbirth concerns. This highlights online media as a significant resource for maternity care providers to develop quality antenatal education (Alainmoghaddam, Phibbs & Benn 2018). When providers offer accessible, trusted information, women can change from passive recipients into collaborative partners in the healthcare space (Vedam et al. 2017). The significant barriers women report include needing more information, lack of access and receiving conflicting or inconsistent information (Alainmoghaddam, Phibbs & Benn 2018, Cummins, Wilson & Meedya 2022). These barriers can be remedied by providing an improved, trusted, accessible one-stop information source for women via a digital platform (Alainmoghaddam, Phibbs & Benn 2018, Cummins, Wilson & Meedya 2022).

This paper outlines the considerations in designing a maternity website, including acknowledging the diverse community within the Illawarra Shoalhaven Local Health District (ISLHD). In this region, 3.4% of people identified as Aboriginal or Torres Strait Islander (compared to 2.4% in NSW), 9% were born in a predominantly non-English speaking country, 26% lived in the most disadvantaged communities in the region (compared to 20% in NSW) and there was a growing number of refugees (Illawarra Shoalhaven Local Health District 2019). Three models of maternity care are used in the ISLHD: doctors' clinics, antenatal general practitioner shared care and midwifery-led clinics (Illawarra Shoalhaven Local Health District 2019).

METHODS

Participatory action research (PAR) methodology was chosen for this study, as the team wanted to work with consumers to gain their insights into how they thought healthcare information could be improved for all users of the maternity services website. Phase 1 identified areas of concern, and Phase 2 involved working with consumers, staff and LHD stakeholders to co-design and implement an improved website. Phase 3 evaluated whether consumers were using the website, were satisfied with the changes and would use the website again.

Ethics approval to conduct this research was granted by the ISLHD Low and Negligible Risk Research Review Committee (ISLHD/QA147). All participants were provided with project information and gave their consent to participate. Responses received were anonymous.

PHASE 1: IDENTIFICATION OF CONSUMER CONCERNS

Phase 1 sampled 60 women receiving maternity care through Wollongong hospital via a convenient online Qualtrics survey. Staff asked participants to fill in a survey that asked whether they knew a website existed, whether they had used it and what they looked for. If they had not yet seen the site, consumers were given the website link to

evaluate it at that time and answer further questions. They were then asked what they would like to see on an improved hospital-based maternity website to enhance the information gathered from stakeholders in Phase 2 focus groups. Surveys were anonymous and could be completed in paper form while women waited in the antenatal clinic or online via Qualtrics. Consent was implied with completion. All paper-based forms were entered into Qualtrics and then destroyed. Online survey answers were kept on a password-protected computer.

PHASE 2: CO-DESIGNING AN INTERVENTION

In 2020, ISLHD had a basic website that included service information. The study identified what stakeholders thought should be changed on the website through focus groups of maternity consumers, staff and health support services, such as multicultural and Aboriginal health services. Participants were sought through community consumer groups, and staff from all areas of maternity and health support services were invited to attend. Three focus groups of four to 10 participants were run from February to March 2021 to co-design ideas for a new maternity website that would serve the needs of consumers. Facilitators informed all focus groups of the outcomes of Phase 1 consumer surveys. Notes from focus groups were taken, and themes were gathered from all groups. No participants were identified. All files were confidential and kept on a password-protected computer.

Reflexive thematic analysis was conducted during the three focus groups following Braun and Clarke's (2006, 2021) six phases of analysis. Researchers immersed themselves in the emerging data, created themes and revisited them until data collection was complete. There were no new ideas after the three focus groups were completed. The co-designed ideas became the basis for new maternity website pages, and construction started in March 2021. Researchers worked with district leaders to ensure National Safety and Quality Health Service Standards were met for ISLHD by implementing a website that improved the quality of health service provision, partnered with consumers and protected the public from harm (Australian Commission on Safety and Quality in Health Care 2022). Development of the new website pages concluded in September 2021, and they were then advertised to maternity consumers via posters in antenatal clinics, general practitioner surgeries, birthing units and maternity wards.

PHASE 3: EVALUATION

The website team aimed to increase visits to the new maternity site. Therefore, the number of visits and average time spent on the pages were measured and evaluated. To determine whether consumers would revisit the site, an invitation to participate in the Phase 3 online website evaluation survey was sent to all women who birthed between January and March 2022 (n = 1,060) across the district via SMS. Survey questions such as 'did you find the website useful?' and 'would you use it again?' evaluated consumer experiences.

RESULTS

Results across the three phases of the study show how information was gathered to co-design a website well utilised by consumers.

PHASE 1: IDENTIFICATION OF CONSUMER CONCERNS

The study received 60 surveys from women about the website available to them in 2020 (Table 1). All respondents had looked for pregnancy information online, but almost one in four did not know a maternity website existed for the hospital, and 40% thought it was hard to find. Participants were asked to comment on their first impression of the hospital website. Comments were received from 32% of participants, and all of them had negative connotations, such as 'not enough information', 'impersonal', 'disappointing', 'clunky' and 'confusing'.

Most consumer responses (80%) showed they were looking for general information about birth, gestational diabetes mellitus (GDM) or midwifery models of care. Over half of the respondents looked to the website for general pregnancy advice. However, only 10% reported that finding the information they sought was easy.

Table 1: Consumer survey responses to 2020 website

Website 2020 Consumer Responses	n (%)
Used websites to look for maternity information	60 (100)
Unaware of the hospital website	14 (23)
Found the hospital website hard to find	24 (40)
Had a negative first impression	19 (32)
Found it easy to find the information sought	6 (10)
Sought general information (Midwifery Group Practice, gestational diabetes mellitus [GDM], birth)	48 (80)
Sought general pregnancy advice	34 (57)
Sought antenatal classes	23 (38)
Sought breastfeeding information	15 (25)

To inform the focus groups in the next phase of the study, we asked survey participants what they would like changed in new website pages. Every respondent commented. Responses ranged from suggestions about how the website looked (e.g., add photographs, videos and tours, reduce clinical language) to requests for more specific information on antenatal models of care and advice around pregnancy, GDM and breastfeeding.

PHASE 2: CO-DESIGNING AN INTERVENTION

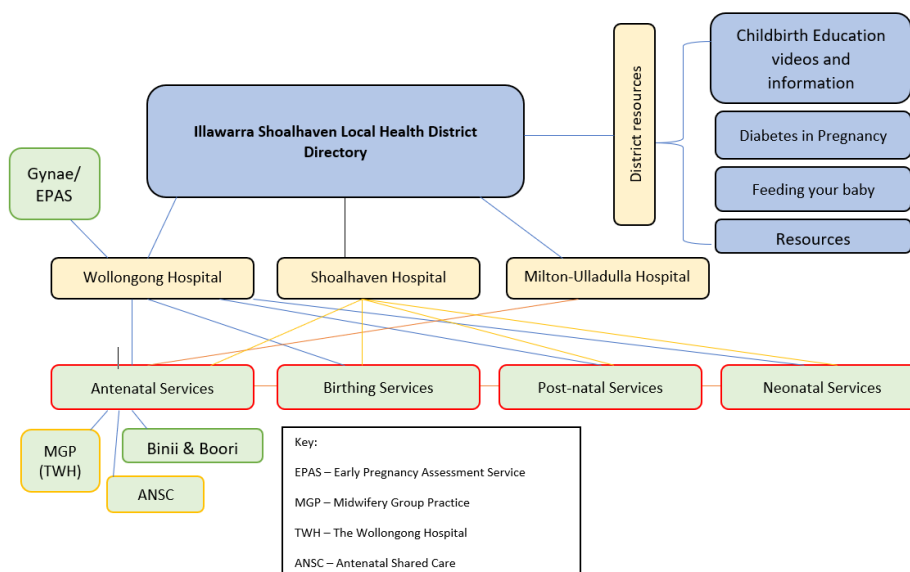
Three focus groups of consumers, staff and community stakeholders were run in February and March 2021. Results from Phase 1 were shared to start a conversation.

Groups collaborated using mind maps. No new themes emerged from the first focus group; however, it was important for researchers to talk to as many staff, consumers and stakeholders as possible. During that time, researchers spoke to 19 people with interest in improving the hospital-based maternity website:

- Workshop 1: eight consumers, two staff
- Workshop 2: one consumer, two ISLHD stakeholders, two staff
- Workshop 3: one stakeholder, three staff.

Following the collaboration, the groups designed a flowchart for a new website to submit to the LHD's quality and safety committee for approval before the website team began construction (Figure 1). The LHD has three hospitals that provide antenatal services and two that offer birth services. New pages would be required for each of these and district information pages on topics such as childbirth education, GDM and breastfeeding.

Figure 1. Outline of flowchart for maternity web pages



Information for each page was gathered from consumer recommendations and the clinical educators in each area. It included photographs, videos and tours and considered the Clinical Excellence Commission's health literacy guidelines (NSW Government Clinical Excellence Commission 2022).

PHASE 3: EVALUATION

Evaluation of the website during Phase 3 by measuring webpage use and asking maternity service users about their experiences. In September 2020, the website was limited to pages with information about the service (e.g., phone numbers) and a general description. The study measured visits to the main district page and the average time visitors spent there.

In September 2020, the average number of visits per month in the previous six months was 539, and the average time spent on each page ranged from 41 seconds to

under three minutes (Table 2). The new pages were completed in September 2021 and then advertised. From January to February 2022, the monthly usage rate was 6,613 visitors across all maternity pages, and visitors were engaged on each page for an average of one to four minutes. Visits to all areas of maternity services were enhanced by improving the pages and letting consumers know the site existed.

Table 2. Visits to maternity website 2020 and 2022

Page Title	Visits per Month March to September 2020	Average Time (minutes) 2020	New Pages Built	Visits per Month January to February 2022	Average Time (minutes) 2022
District services main page	124	0.41	District	999	1.24
Postnatal services	12	1:33	TWH	118	2.36
			SDMH	41	1.21
Birthing services	69	1:53	TWH	476	3.43
			SDMH	75	2.15
Antenatal services	120	2:53	TWH	592	3.47
			SDMH	45	2.00
			MUH	15	1.43
Neonatal services	8	1:55	TWH	47	3.06
			SDMH	12	1.08
Feeding your baby	N/A		District	502	2.46
Childbirth education	N/A		District	558	4.08
Gestational diabetes mellitus (GDM)	N/A		District	147	3.15

In addition to attracting more visitors to the maternity website, the researchers also wanted to evaluate whether women found the information useful or would use the website again. An invitation to participate in an online survey was sent to 1,060 women who birthed across the district between January and March 2022, and 11.5% of those responded (n=122). Almost half of the respondents (47.5%) had used the website (n = 58), and, of those, 53% were having their first baby and 19% were aged 36 years or over. Of the 122 women who responded to the survey, 41.3% (n = 50) stated they did not feel they received consistent information while in hospital. Of these women, 53.4% looked at the website to clarify information ($p = 0.009$).

Of the women who used the website (Table 3), 78.8% found it easy to use, 73% would use it again, 69.2% thought the information was well organised and 63.5% thought the information was easy to find (63.5%). A third accessed the website to help manage breastfeeding issues. Overall, 80.8% were satisfied with the website pages.

Table 3. Consumer survey responses to 2022 website

Website 2022 Consumer Responses (n = 58)	n (%)
Having their first baby	31 (53.4)
Aged 36 years or over	11 (19)
Found the website easy to use	41 (78.8)
Found it easy to find information	33 (63.5)
Found the information well organised	36 (69.2)
Would use the website again	38 (73.1)
Used information for breastfeeding issues	16 (33)
Were satisfied with the pages	42 (80.8)

DISCUSSION

The high percentage of responses received in the study highlighted that women wanted to be heard, which informed the creation and management of the website. Many women use digital technology to access health information about their maternity care (Alainmoghaddam, Phibbs & Benn 2018). The maternity care team should use websites and social media to capitalise on these forms of communication as key methods of health promotion. This may allow healthcare professionals to positively influence care and provide women with an avenue to allay their concerns more promptly (Alainmoghaddam, Phibbs & Benn 2018, Lupton & Maslen 2019).

After the website was developed, the statistical records showed that the number of visits increased as more women were utilising it to gather information. The

participants felt they received conflicting information while in hospital. This is consistent with reports from other maternity services, specifically regarding information about breastfeeding and GDM (Alainmoghaddam, Phibbs & Benn 2018, Cummins, Meedy & Wilson 2021). This validates the website development team's action and provides scope for further updates and enhancements.

Providing quality education to empower women's decision-making during pregnancy is imperative. Enhancing a maternity website in any LHD will positively impact prenatal and postnatal health outcomes (Nieuwenhuijze & Leahy-Warrant 2019). Further research should be undertaken amongst different pregnancy cohorts to assess and develop the impact of online information.

PRACTICE IMPLICATIONS

The results demonstrated that co-designing a website with consumers, staff and ISLHD stakeholders enabled the website team to develop well-utilised pages that offered consumers relevant, evidence-based information and education. Maternity services can support consumers by providing a website that has the information they want and need to clarify information gained from other sources.

IDENTIFIED SERVICE GAP

From the research, the website development team was able to identify and address a service gap. Women did not always receive consistent information from the hospital system. The redevelopment of the website improved the availability and accessibility of appropriate quality information.

STRENGTHS AND LIMITATIONS

Identified strengths of the study were the high response rate and a qualitative research method where women were encouraged to share their priorities with the website development team.

There were also some limitations to this research. The target demographic is women who can access and use digital technology via a computer or smartphone. This may exclude some women. The research required women to recall their previous experiences within the healthcare system. While the period between the healthcare interaction and the research contact was not excessive, there was potential for participant recall bias. It should also be noted that the question in the survey asking whether participants would use the website again provided no opportunity for a contextual response. Therefore, this question could include responses from women who would not use the website again due to having completed their families.

CONCLUSION

The study identified that women have stated that they are not receiving consistent information from the hospital system. The researchers were able to address this concern through the implementation of a website with accessible, high-quality information. The website provided a trusted information resource many women said they would use again.

Acknowledgements

The authors wish to thank all the research participants who contributed to this work. Their participation has been invaluable in helping the researchers develop the website and complete the study.

Conflict of interest

There are no conflicts of interest.

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