The Development and Design of the Rangiora Hospital Rehydration Service

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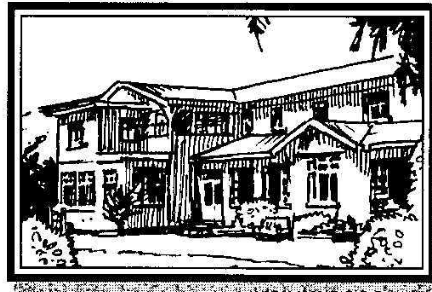

RANGIORA
HOSPITAL

A Birthing and Convalescent Unit

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July 2002

Table of Contents

The Development and Design of the Rangiora Hospital Rehydration Service. 1

The Organisation 1

The Background... 2

The Current Process.. 4

The Improvement Project 6

The Project Sign-off 11

References.. 12

Abbreviations Used 12

Appendices

Appendix A – Flowchart of Rangiora Hospital Hyperemesis Service (WHD/Ref/698)

Appendix B – Survey of NC Women Who Have Used the Rehydration Service at CWH

- Cover Letter
- Survey Tool
- Survey Results

Appendix C – MCP

Appendix D – OPS

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Appendix E – Forms / Records

- QMR 3C – Consultation Request
- QMR 4 – Drug Treatment Sheet
- QMR 4B – IV Fluid Prescription Chart
- QF 50 – Canterbury Health Laboratories General Request Form
- WHD9253 – Obstetric Dietitian Referral Form

Appendix F – WHD/Ref/268 – Discharge Information for Hyperemesis Gravidarum

Appendix G – Welcome to Rangiora Hospital Brochure

Appendix H – Rangiora Hospital Community Midwives Team (WHD/Ref/620)

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The Development and Design of the Rangiora Hospital Rehydration Service

The Organisation

Rangiora Hospital is a primary maternity unit situated in North Canterbury 27km from the base hospital, Christchurch Women's Hospital. It services a large geographical area and has the third fastest growing population in Aoteroa /New Zealand (census, 2000).

The hospital employs 5 (FTE) midwives and 5 casual midwives. It also has 4 community midwives, who each carry a caseload of 50 women per year. Some administrative and support services are provided on-site (clerical, Hospital Aide, etc.). Other required support services are provided from Christchurch Women's Hospital or from Canterbury DHB service areas.

Rangiora is part of the Woman's Health Division and has strong links with the maternity service at Christchurch Woman's Hospital.

Of late, Rangiora Hospital has also been building stronger links with the Gynaecology Unit at Christchurch Women's Hospital with the provision of a post surgical bed space for convalescent care.

The Background

Women who had been accessing the post-natal service at Rangiora Hospital had voiced a frustration at the lack of rehydration service for Hyperemesis being provided during their pregnancy.

Hyperemesis Gravidarum is a rare condition of pregnancy affecting approximately 1:500 women. In some, the nausea and vomiting can be so severe as to cause electrolyte imbalance with resulting liver and kidney tissue necrosis. It is more commonly associated with multiple pregnancies, hydatidiform mole, and a history of unsuccessful pregnancies (Myles 1993).

Since July 1998 – June 2002, 1232 women have treated at Christchurch Women's Hospital (CWH) for rehydration for Hyperemesis Gravidarum. The number of women treated at CWH and the number of women from the North Canterbury area is shown in **Table 1** (below).

Year	1998 / 1999	1999 / 2000	2000 / 2001
Total number of Admissions to CWH	268	328	333
Total number of Women from North Canterbury	21	37	37
% of Total Admissions	7.8	11.3	11.1

Table 1: Annual Statistic for Hyperemesis Admissions to CWH (*Year* is July – June)

In North Canterbury approximately thirty women a year suffer from this debilitating condition. Some of these women live in remote rural areas and have a ninety-minute journey to Christchurch for treatment with intravenous fluids to correct the resulting dehydration and ketoacidosis. (ketoacidosis is an excess of ketones in the body caused by the excessive breakdown of fats due to faulty carbohydrate metabolism. (Mosbys, 1998)).

From discussions with women who require multiple rehydration visits, there were many factors that lead to women failing to receive treatment before they become severely dehydrated.

- For some women the distances required to be travelled seemed daunting, especially were feeling very nauseated.
- Another factor that led to delays in seeking treatment was the lack of transportation. Many women do not have access to their own vehicle and rely on family, friends and neighbours. Women prefer to wait for their husband/partner to return from their work to access treatment, rather than ask others to travel long distances. This can lead to an 8 – 12 hour delay in fluid replacement.
- Also the issue with childcare was a problem for some women, particularly, if this is not a first pregnancy. Having to travel long distances and lack of child-care facilities at a base hospital stopped or delayed some women from seeking treatment. Anecdotal evidence suggests that often these women would wait until the dehydration was so severe as to necessitate a stay in the base hospital.

The Current Process

Women presenting to the base hospital are admitted for rehydration and then discharged home **or** admitted to the Gynaecology Unit for further rehydration (if they are severely dehydrated).

Upon admission to the Gynaecology Unit, women are rehydrated with intravenous fluids; assessed for their hydration status; given education regarding foods and fluids during their nauseated events and seen by the dietitian for further education about foods and fluids.

During their time at Christchurch Women's Hospital, the women are weighed daily; a urinalysis is done and monitoring of fluid balance status. Education is given regarding the signs and symptoms of dehydration and when to seek intervention.

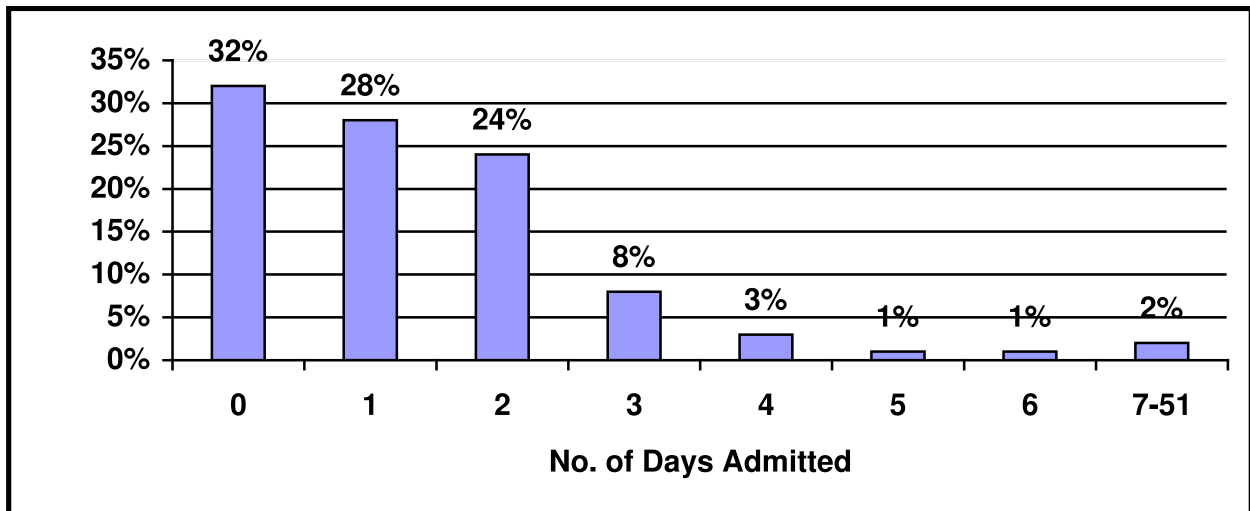
Table 2 shows the distribution of women across the days admitted to Christchurch Women's Hospital.

Number of Days Admitted	Number of Women	% of Total
Days Stay	299	32
1	261	28
2	223	24
3	77	8
4	28	3
5	11	1
6	10	1
7	3	<1

Number of Days Admitted	Number of Women	% of Total
8	2	<1
9	1	<1
10	3	<1
11	3	<1
12	2	<1
13	1	<1
15	1	<1
20	1	<1
25	1	<1
28	1	<1
51	1	<1

Table 2: Length of Stay for Hyperemesis Gravidarum for July 1998 – June 2001
(Total admissions = 929 admissions).
(Statistics provided by Women's Health Division Patient Management System.)

Graph 1: Length of stay for women with Hyperemesis Gravidarum between July 1998 – June 2001



Note: '0' in this chart refers to Day Stay patients

The Improvement Project

With the situation defined and the improvement opportunity apparent, the team at Rangiora Hospital decided to make it their goal to investigate the development of a rehydration service for the women of North Canterbury.

It was decided, after discussions with the Midwifery staff, to conduct a literature search on hyperemesis/rehydration service in rural hospitals. Little of any value could be found.

A proposal was developed to commence a rehydration service at the Rangiora Hospital.
We believed that Hyperemesis can be a normal event during pregnancy and that by "normalising" this condition, linking the women into Midwifery care early in the pregnancy we would be providing a unique service that could only benefit the women of North Canterbury. We also hoped that it would improve the interface between primary and secondary care.

It was at this point that we requested the expertise of the WHD Quality Team, the Dietitian Service, the Gynaecology Nurse Educator and the Charge Nurse from Acute Gynaecology Admissions (Christchurch Women's Hospital) to discuss the feasibility of the project.

Hospital statistics of women experiencing hyperemesis from the previous three years were reviewed these indicated that ninety-five (95) women from North Canterbury had had multiple admissions with hyperemesis.

The process began by designing a survey (Appendix B) to question whether the women in the North Canterbury area believed that this service would benefit either themselves or others in the area.

This survey was sent out to all women who had been admitted to Christchurch Women's Hospital and whose addresses were listed for the North Canterbury area.

Overall, the response was high with a return rate of 43%. Of those women surveyed, 83% of these said they would use the service if it were available locally.

The team believed that the results from the survey indicated that the women would in fact use such a service and this would be invaluable for the women of North Canterbury.

With this information the team decided to proceed. Opinion was sought from the Clinical Directors/Consultants in Gynaecology and Anaesthetics. A detailed discussion followed covering such things as the logistics of such a service; parameters for treatment and at what point further referral to the base hospital would be required.

The consultants proved to be supportive and enthusiastic about the proposed service and the team continued with the project.

A meeting was arranged with all parties to discuss relevant documentation requirements.

An Outcome and Process Standard (OPS – Appendix D) was developed and validated.

Currently, Women's Health Division utilises a Multidisciplinary Care Pathway (Appendix C) for clinical documentation. The MCP was reviewed and accommodated the changed process to allow the Consultant in charge of the care for the women to recommend rehydration at Rangiora Hospital.

A specific day stay sheet was developed for the documentation by the Midwives to record each admission event.

Discharge information for women was updated (WHD/Ref/268 – Appendix F) to accommodate the information that some women may require if they are to access the service at Rangiora Hospital.

Brochures from Rangiora Hospital (Appendix G) were designed to also be included in the discharge information, along with the names and phone numbers of the Midwives from Rangiora Hospital (Appendix H).

The team developed the process as shown in Appendix A.

The women are to be initially assessed at Christchurch Women's Hospital and, if appropriate, be seen, thereafter, at Rangiora Hospital for rehydration.

The service would operate between the hours of 7:00 a.m. and 4:00 p.m. Monday to Friday.

Any women presenting outside these hours would have to go through to the base hospital.

Each woman on admission to Rangiora Hospital would require a blood test before treatment could commence

All blood samples are couriered into a laboratory in Christchurch.

Arrangements were made with CWH Clinical Records for clinical notes of appropriate women to be sent out to Rangiora Hospital in a coloured envelope (purple) which would make them easily identifiable to both Clinical Records staff and ward staff.

Purple stickies with "Rangiora Midwives" were ordered for easy recognition too. The legal requirement is that the midwives need the original documents, such as the Medication Treatment sheet (QMR004 – Appendix E) and the Fluid Prescription sheet (QMR004A – Appendix E) to be able to give treatment. It is not possible to fax the original copy and use this to give prescribed medications. Therefore, the prompt delivery of the original notes is required.

Competency levels of the staff were assessed in terms of skill level for cannulation.

Midwives are able to cannulate as part of their scope of practice and, although most of the Midwives were proficient at inserting intravenous leurs, the opportunity arose to attend an advanced cannulation course. All the Midwives employed within the unit attended this and found it to be extremely useful.

The planned progress of women through the system was as follows (also refer to Appendix A):

- Presents at acute gynae admissions, assessed treated and decision as to suitability for further treatment at Rangiora.
- Notes sent to medical records for coding on discharge from hospital.
- Notes sent to Rangiora via courier and filed in medical records at Rangiora Hospital.
- Women admitted to Rangiora as day care (use of lazy boy chair not bed)
- Notes collected from our own medical records at Rangiora Hospital.
- Bloods, urinalysis, weight, and general observations taken.
- Contact midwife/give options of care/organise midwife.
- Results documented
- Intravenous cannula inserted

- Intravenous fluids as charted by Consultant commenced as per care plan in notes.
- Treatment completed, documentation completed, care plan updated.
- Notification of treatment faxed to medical records at Christchurch Women's Hospital for coding.
- Notes returned and filed in Rangiora Hospital medical records.
- When hyperemesis cares no long require, notes returned to Christchurch Women's Hospital for filing.
- Or notes to be taken by woman if referred back to Christchurch Women's Hospital for further treatment if outside of hours or results outside the parameters set by the Consultant in charge of the woman's care.

Any women who presents at Rangiora Hospital who is acutely unwell or presents during 'out of hours' times will be sent (with her notes) to the Christchurch Women's Hospital for assessment by the medical team.

The Project Sign-off

This process was developed, clarified, validated and ultimately signed off by the team in June 2002.

Currently we are undergoing an education program with the Gynaecology nurses, midwives and clerical staff to ensure a smooth transition to the new service.

Full deployment will be completed by end of July 2002.

It will be some time before we can accurately gauge the success of this project. Indeed we believe the hyperemesis service will need to be operating for at least a year before we can re-survey the women, audit the process and the clinical outcomes and fully measure the results.

The planning and implementation of the new service has taken twelve months to date and we are optimistic for the next stage of consolidation and further integration of secondary and primary services.

We believe this is a unique project and in keeping with the New Zealand primary healthcare strategy of providing a service to the community in order to improve equity and access of care for rural women.

The Rangiora Hospital midwives would like to thank **ALL** the people who have given their time, energy and creativity to this project. It would not have been possible without you.

References

Mosbys (1998). Medical, Nursing and Allied Health Dictionary Fifth Edition

Myles Page 12 of 1 (1994). Textbook for Midwives

Abbreviations Used

AGA = Acute Gynaecology Assessment

CWH = Christchurch Women's Hospital

WHD = Women's Health Division

OPS = Outcome and Process Standard