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## **Foreword**

This is the first annual clinical report for Women's Health Division and I am sure the first of many. An annual report requires a systematic approach to the collection of data, as well as co-ordination and good organisational skills. The production of such a document provides an opportunity to inform everyone of the work completed within the Women's Health Division, as well as assisting in the prioritisation of topics, which are worthy of audit. This provides consultation, discussion and decisions regarding changes required to data collection and clinical practice.

Many junior doctors have made contributions to this document, and without the extensive help provided by the Quality Team, this publication would not have been possible.

We have targeted only a small proportion of the topics that could be included in this document. In future years it is planned to expand the number of topics.

Lynda Croft  
Tutor Specialist  
Women's Health Division

## Introduction

Welcome to the 2001 Women's Health Division Annual Clinical Report.

This is a very exciting juncture in the history of Women's Health Division, our very first Annual Clinical Report. It is another step on the journey of realising our Vision as “*a special place for women and babies*” - where excellence is the target and continual improvement and best practice are the vehicles.

This is the first time such an extensive project has been undertaken.

The publishing of this Report is a major milestone for us all – in so many ways.

- Primarily, it is a **celebration** of what is great about the clinical care provided by the three Services of our Division
- It is **recognition** of our staff's individual and collective, skills, competencies and commitment
- It is a practical demonstration of **clinical governance** – a term often made to sound more aloof, more complicated than it really is
- As well as celebrating what is great about our clinical practice, the Report also highlights valuable opportunities in **clinical practice improvement**
- Furthermore, the Report provides our organisation with yet another tool for capturing some of the vast amount of **knowledge** created by individuals and teams - through activities such as audit, projects, quality monitoring and peer review

By producing this report we have, not only created a valuable resource, but have also established a process – a systematic way – for the production of next, and subsequent, year's Annual Clinical Report.

I am committed to ensuring successive publications of the WHD Annual Clinical Report.

This publication will form an historic record of the wonderful service and quality of treatment and care provided at our facilities; provided in the community; provided by the staff of Women's Health Division and supported by our colleagues from throughout Canterbury DHB.

I commend this Report to you.

Pauline Burt  
General Manager  
Women's Health Division

## **Acknowledgments**

### **Contributions**

On behalf of the staff within Women's Health Division I would like to thank all people (WHD staff members, CDHB staff members and friends elsewhere) who have contributed to making this publication possible.

Assembling a document such as the Annual Clinical Report is a project in itself. Such a feat requires a systematic approach to making the document useful and effective. Collation, proof reading and editing skills were much-needed ingredients for the final Report. The end product is testimony to the effectiveness of this systematic approach.

Despite many obstacles, the project was awash with teamwork, sensible co-ordination and quality organisational skills.

There are many people to acknowledge for their bravery, energy and faith in the shared vision of the project.

- To the many contributors (and their support crew/networks) of articles to the Report – the quality of your contributions is the making of this Report
- To Helene Frapwell for her vigilance in ensuring the cleanliness of the data used in the report is whiter than white
- To the project co-ordination group: Rayoni Keith, Lynda Croft and John Kenny – for keeping the faith and the belief that 'it can be done'
- To the WHD Clinical Records Team for their patience and diligence in providing data
- To Linley Robertson and her team at the Canterbury DHB Documentation Management Group for their huge logistical support in getting the document published

I would also like to thank the National Women's Hospital (NWH) for the inspiration and encouragement to take on the challenge of producing our very own Report. For many years we looked forward to seeing the NWH Annual Clinical Report and to attending their 'big day out'. It was their demonstration of **what is possible** that inspired us to aspire to the production of "our very own" Annual Clinical Report.

Pauline Burt  
General Manager  
Women's Health Division

## **A Cultural Perspective**

This has been a year in which Women's Health Division has worked hard at developing its Maori responsiveness, building upon the progress started during the Quality Health New Zealand Accreditation process, 1999-2000.

Women's Health Division is proud of its achievements in this area, and the momentum is showing results in the:

- pride and recognition of Maori staff within Women's Health,
- activities of the Cultural Advisory Komiti,
- involvement in Ethics Committee and Health Research Council applications
- the commitment to the development of a suite of Maori Health policies written by Annette Finlay and Rayoni Keith, that were well received by a Maori community consultation hui in February 2002,
- development of the Baby Friendly Hospital Initiative policies, by Dawn Hunter, also well received by the Maori community
- participation in the audit process for the BFHI (Baby Friendly Hospital Initiative), including the Maori component
- praise received from NZ Health Information Service at having the "cleanest" ethnicity data of all hospitals in New Zealand.

This year of success and commitment to bi-cultural action culminated in the powhiri held for Pauline Burt in July 2002, to celebrate her appointment as General Manager, Women's Health Division. The powhiri, a first for Women's Health Division, involved more than a hundred staff and many positive comments were received about this memorable occasion. The day was made even more special by the joint signing of the WHD Maori Health Policies by Pauline Burt and Ruahine Crofts, Taua of the CDHB, who has a special commitment to Women's Health Division.

The next year will continue to see firsts in terms of responsiveness to Maori. It is intended to appoint the first Maori Health Worker, and Maori will have involvement in the appointment of senior positions within Women's Health Division.

Our aim is to achieve the best possible outcomes for Maori women, and for the whanau whose tamariki are delivered through our services. We look forward to the future with confidence.

Janice Donaldson  
Maori Manager  
Canterbury DHB

## Overview of the Women's Health Division

### History

In 1993 the Women's Health Division was established as part of the newly formed Crown Health Enterprise (CHE), Healthlink South Limited. WHD comprises Rangiora, Lincoln, Lyndhurst and Christchurch Women's Hospitals.

In December 1997 'ownership' of the Division and the associated health services provided, was transferred from Healthlink South Limited to Canterbury Health Limited. Burwood Birthing Unit joined the Women's Health Division in 2000.

The entire Women's Health Division is an Accredited organisation with Quality Health New Zealand.

Christchurch Women's Hospital has recently been accredited to the World Health Organisation Baby Friendly Hospital Initiative.

Pauline Burt (the General Manager for Women's Health Division) was appointed to the position in July 2002. Pauline brings a solid nursing and midwifery background to the position and continues the vision of Jim Magee (the previous General Manager) for the Women's Health Division to be a *centre of excellence*.

### Christchurch Women's Hospital

Christchurch Women's Hospital was officially opened in Colombo Street in 1952 and it was affectionately known as a St Helen's Maternity Hospital. There have been many changes to the hospital (structurally, politically and administratively) over the last 50 years. With the changes to the Nurse Amendment Act of 1990, midwives can now choose to practise as a Lead Maternity Carer (LMC). We currently have 200 registered Access Agreement Holders who utilise the Maternity Services of Christchurch Women's Hospital to practice as an LMC.

### Current Services

Women's Health Division is a division of the Canterbury District Health Board, which provides health care services to nearly 400,000 people in the greater Canterbury region.

### Service Description

The Division comprises of three core clinical service areas:

- Gynaecology Services
- Maternity Services
- Neonatal Services

The services related to the clinical areas are provided from the following locations:

- Christchurch Women's Hospital (primary, secondary and tertiary maternity care; Levels I, II and III Neonatal care; day surgery and inpatients gynaecology care; outpatients service; colposcopy clinics)
- Burwood Birthing Unit (primary maternity care)
- Lincoln Hospital (primary maternity care)
- Lyndhurst Hospital (pregnancy termination unit)
- Rangiora Convalescence and Maternity Hospital (primary maternity and convalescence care)

There are also some services delivered in the community setting including the services of the Burwood Case Management Midwives; the Christchurch Women's Community Midwives, the Rangiora Community Midwives, Neonatal Outreach Service, the Lactation Service and the Cervical Screening Programme.

To be able to provide these services, Women's Health Division is staffed by close to 650 people (approximately 350 full time equivalent).

### Staff demographics – profession as at 31 December 2001

Staff Group	FTE	Number	%
Medical	33.0	47	7.0%
Midwives, Nurses (including Educators), & Enrolled Nurses	203.8	383	56.9%
Clinical Support Staff (Physiotherapists, Dietitians, Social Workers)	78.9	144	21.4%
Allied Health	7.4	24	3.6%
Non-clinical Support Services (Food Services, Orderlies, Maintenance, Hospital Aides, Ward Clerks)	24.0	44	6.5%
Administration	26.3	31	4.6%
<b>Total</b>	<b>373.6</b>	<b>673</b>	

### Staff demographics – gender

Gender	Number	%
Female	638	94.8
Male	35	5.2

**Staff demographic - Employment Contract**

<b>Employment Contract</b>	<b>FTE</b>	<b>Number</b>	<b>%</b>
Full Time	153	153	22.7
Part Time	211.6	347	51.5
Fixed Term Contracts	8.8	11	1.6
Casual Staffing		162	24.2

**Services Provided by Other Canterbury DHB Providers**

A number of clinical, diagnostic and support services are provided to Women's Health Division by other Departments/Units of CDHB.

These include:

- Anaesthesia
- Central Supply
- Infection Control
- Information Systems Support
- CH Laboratories
- Maintenance and Engineering
- Nuclear Scanning
- Occupational Therapy
- Oncology
- Pharmacy
- Radiology
- Technical Services

## **WHD Vision Statement**

### *“A Special Place For Women And Babies”*

The Women's Health Division aims to provide a level of clinical care which is the best available in the New Zealand Health System.

In striving for such achievement WHD recognises that more is required of a women's hospital than high quality clinical care. These expectations include recognition of the following factors:

- The special bond between mother and infant;
- The wellness focus of maternity care;
- The benefits of involving parents in care of the sick neonate;
- The role of partners and other family members in all areas of care;
- The emotional needs of women relating to sexuality, reproduction and ageing;
- The vulnerability of women in society to:
  - Institutional Power
  - Physical Violence
  - Sexual Abuse
- The sensitivity and privacy required to discuss and treat gynaecological and obstetric conditions.

In response to these expectations we will provide an environment that is welcoming to families, sensitive to the needs of women and orientated towards a safe and healthy future for babies.

The Women's Health Division aims to provide a high level of competent care delivered to, and accepted by, the patients/clients who access its services. This care will be provided in a friendly and efficient manner.

Women's Health Division staff will work in partnership with patient/client to ensure they are fully informed of their condition(s), the expected care process(es) and the anticipated outcomes. Staff will encourage patient involvement and participation in planning care that meets the needs of the individual.

Patients/clients will be cared for in a safe environment which protects their physical, emotional, spiritual and cultural needs.

Quality exists in every dimension of our work at Women's Health Division. We continually strive for excellence in the quality of the care and the services we deliver.

Women's Health Division will provide quality by ensuring the following principles are the foundation of the processes used to deliver care and services to women and infants and their families; to the staff of Women's Health Division and to the other stakeholders in the Division:

- Processes designed to meet customer/consumer expectations.
- Continually seeking to improve how we do things and everything we do.
- Effective teamwork.
- Involvement, development, empowerment and recognition of staff.
- Benchmarking as a key driver of continuous improvement.
- Management accept their responsibility for quality outcomes.
- Clear, measurable and well-communicated goals and objectives exist.
- Use of problem-solving, process management and statistical tools.

Within Women's Health Division, 'Quality' is a way of life and 'Excellence' the target.

The Women's Health Division aims to provide a working environment which allows all staff to carry out their duties to the highest standard. This will be achieved through:

- Ensuring selection and recruitment processes are effective at attracting well-qualified and experienced staff.
- Ensuring that timely and effective orientation, induction, training and development is available to all staff.
- Ensuring that the Division's focus and direction is clearly communicated to all staff.
- Ensuring staff feel valued for the contribution they make.
- Ensuring that a team environment is promoted where integrity and trust are the baselines.

Women's Health Division recognises Te Tiriti O Waitangi - The Treaty Of Waitangi is fundamental within it's role in the community as a health provider and employer. WHD will strive to provide for the principles of the Treaty by being regardful of Mana Whenua and Maata Waka whilst working alongside their women, babies, whanau and community.

Te Tiriti O Waitangi will be delivered in an equitable manner, with the aim of improving health outcomes for women, children and whanau. WHD will attempt to achieve this by striving to provide staff and facilities acceptable to Maori. Enabling Maori to feel able to express their needs of te tino rangatiratanga within an environment which is culturally and physically safe.

**Provisions:**

The vision statement covers:

Article One: Kawanatanga - self administration/governing

Article Two: Tino Rangatiratanga - self-determination

Article Three: Rights and Privileges as the British (equity)

Article Four: Ritenga

**Principles:**

**Partnership:**

Between Iwi and Crown.

Working relationships between Maori and government agencies.

**Participation:**

Maori involvement in a particular activity or sector. New Zealand Public Health and Disability Act 2000 Part 3 22(h).

**Protection:**

Guarantee for Maori the same Rights and Privileges as other New Zealander's.

Proactive measures to promote health and prevent illness to ensure Maori take full advantage of benefits of contemporary society.

## **Maternity Services**

### **Introduction**

Women's Health Division Maternity Service provides a high level of care and service to:

- Primary, secondary and tertiary maternity care at Christchurch Women's Hospital
- Primary maternity care at Burwood Birthing Unit, Lincoln and Rangiora Hospitals
- Birthing suites
- Labouring pool
- Caesarean section theatres
- Antenatal and postnatal wards
- Community midwifery services
- Lactation consultancy service
- Outpatients clinics and service - including specialist clinics
- Parent education

Chris Mazey  
Acting Maternity Service Manager

## **Rangiora Hospital**

Rangiora Hospital was established in 1927 and is situated 27 kilometres from Christchurch in North Canterbury, servicing a population in excess of 45,000 for both maternity and convalescent care. The unit receives funding for eight maternity beds and four convalescent beds. A team of four community Midwives operate from the unit, each caring for a caseload of fifty women per year. The caseloads are a mix of primary and secondary care. The midwives work closely with the antenatal clinic at Christchurch Women's Hospital to provide comprehensive care.

The year has been a busy one at Rangiora Hospital, with many staff coming and going. We welcome Pat Irvine back from an extended working holiday. Neil Bowring and Robert Dickeson join us as gardeners, Caroline Wright and Kathy Hendry join our family as casual Nurse Aides, and Marg Winter and Barb McGusty commence as casual Staff Nurses. These people bring diverse and valuable skills to Rangiora Hospital. We farewelled Kate Salmonds, Greg Mulligan, and Jenny Hollins. Due to significant increases in the numbers of women requesting the Community Midwives Margaret D' Olivera joins the Community Midwifery Team.

Several renovation projects have been completed and the unit and grounds are looking wonderful. The Friends of the Hospital and the Pekeke Lions have been very active and have produced a new deck where the women can sit and enjoy the sun, and a reading room where convalescent patients can relax.

A free cervical screening clinic for the women of North Canterbury is a new initiative being trialed in conjunction with the cervical screening programme. The first four clinics were fully booked and it is planned to hold these clinics periodically throughout the coming year. Rangiora Hospital has strengthened its ties with the Gynaecology Department at Christchurch Women's Hospital and now provides a convalescent bed exclusively for women recovering from major surgery. Another new initiative established in conjunction with our colleagues in Gynaecology is a community based rehydration service for women with hyperemesis. This project has been a year in the planning and will commence in August 2002.

Jane Waite  
Charge Midwife  
Rangiora Hospital

**Statistics**

Admissions (including babies)	732
Antenatal transfer to CWH	17
Admission General	87
Births	82
Primiparous births	30
Multiparous births	52
Admission transfers from CWH	546
Transfer of women in labour	17
Cervical Clinic Numbers	35
Neonatal Transfers	4

<b>Breastfeeding</b>			<b>Formula Feeding</b>	
Exclusive	366	91.3%	9	2.2%
Fully	17	4.3%		
Partially	9	2.2%		

## Lincoln Hospital

Lincoln Hospital is situated on the outskirts of Lincoln Village and is easily accessible to the women of Selwyn and southern Christchurch. It is a seven bed maternity facility providing Early Pregnancy Classes, Pregnancy and Parenting Classes, labour and delivery support and postnatal care. During 2001 there has been a gradual increase in the number of women using the facility.

The facility has an up to date birthing suite with facilities for water birth. The hospital is used by a large group of Lead Maternity Carers (LMCs) and their clients.

Approximately a quarter of our clients birth at Lincoln and the remainder transfer to the facility after birthing elsewhere. In 2001 we undertook an extensive breastfeeding survey of our clients to see if we were meeting their needs and expectations. We found the results enlightening and satisfying.

Lincoln had a number of staffing changes in 2001. We farewelled midwives Jill Donnelly to Australia, Robyn Philips to Independent Practice and Pauline Jacka to Napier. In their place we welcome midwives Andrea Keast and Barbara Finnigan.

Lincoln Hospital has been spruced up with paint and carpet inside, and some exterior painting. Our Gardener Dene attacked the neglected hedges and a new rose bed is planned.

Anne Atkins  
Charge Midwife  
Lincoln Hospital

## Statistics

Admission (including babies)	588
Antenatal transfer to CWH	14
Births	69
Primiparous births	32
Multiparous births	37
Post natal transfer to CWH	5
Postnatal transfer from CWH	218
Neonatal transfer to CWH	1

<b>Breastfeeding</b>			<b>Formula Feeding</b>	
Exclusive	235	84.5%	18	6.5%
Fully	23	8.3%		
Partially	2	0.7%		

## Burwood Birthing Unit

Burwood Birthing Unit is situated within Burwood Hospital to the northwest of Christchurch City. The unit receives funding for 10 maternity beds and has 3 birthing rooms. A team of five Community Midwives operate from the unit and each have a caseload of up to 50 women per year, providing LMC services for these women.

The Burwood Birthing Unit was part of the Burwood Hospital Division of the CDHB until November 2001 when (following a period of consultation with staff) it was transferred to the Women's Health Division. At this time I was appointed as the Midwife in Charge. The change in management has given us closer links with Christchurch Women's Hospital and the other primary units, leading to easier access to education and skill development.

We continue to have close links with the management team of Burwood Hospital and have recently welcomed Kate Rawlings as the General Manager for Burwood Hospital.

The Birthing Unit has always provided childbirth classes for pregnant women and is currently running 35 classes for 2002, these classes include refresher classes for subsequent mums. Angela Standeven and Joanne Hale have joined the staff as childbirth educators and now use the Allan Bean Centre for classes. We have changed the format of the classes, but continue to have physiotherapist, lactation consultant and child psychologist input. As well as Tuesday and Wednesday evening's classes, we now provide classes on Saturdays. We have introduced reunion classes for the groups, in order to encourage peer support.

We welcomed Lisa Preston and Helen Wilson to our continuity team in November 2001 and hope to have a period of stability within this team. We also welcomed Penny Coggan to the core midwifery team. We said goodbye to Claire Buttigieg from the continuity team and Val Dewe from the core midwives.

At Burwood Birthing Unit we have a physiotherapist who will see women during the antenatal and postnatal periods and who runs the antenatal and infant swimming groups. We have regular talks from a variety of people on topics of interest for both our antenatal and postnatal groups. We also have a WINZ representative come on a weekly basis to provide information on claims.

The numbers of women who are birthing at Burwood Birthing Unit appears to continue to decline. This has been ongoing for several years. Of the 177 births at Burwood Birthing Unit, 42 were born into water, and water was used for labour for a further 48 clients. Therefore water was used in 50% of the births that occurred in the unit. There were 40 women who transferred to CWH during labour, ie a transfer rate of 18%.

## Statistics

Admission (including babies)	921
Antenatal transfer to CWH	42
Births	177
Primiparous births	51
Multiparous births	126
Number of Waterbirths	42 (23%)
Number using water during labour	48 (27%)
Post natal transfer to CWH	3
Postnatal transfer from CWH	356

<b>Breastfeeding</b>		<b>Formula Feeding</b>	
Exclusive	80%		7%
Fully	6%		
Partially	7%		

## Conclusion

The last year has seen many changes to the organisation following the evolution of the Canterbury District Health Board. These changes have influenced the management structure of Burwood Birthing Unit. The services provided by Burwood Birthing Unit have not changed and the closer links with Christchurch Women's Hospital have led to a more streamlined service for women.

There appears to be a trend noticed within the primary units of a declining birth rate. However, the number of women admitted postnatally, is increasing. The primary units provide a safe caring environment for birth and the availability of this choice is important.

Burwood Birthing Unit continues to work toward and within the Baby Friendly Hospital initiative and the breastfeeding statistics favourably reflect this.

Lesley Dixon  
Charge Midwife  
Burwood Birthing Unit

## Antenatal Outpatients

Christchurch Women's Antenatal Outpatients Clinic provides secondary consultations for pregnant women. Referrals are received from General Practitioners, Lead Maternity Carers (LMC), Obstetric Specialists, other Specialists, as well as self referral.

There are four clinics per week, two of which are specialised.

One clinic is the 'high risk' clinic or combined clinic which involves obstetricians, physicians, dietitians, diabetes nurse and a midwife, providing a multidisciplinary team approach for women with medical conditions which affect pregnancy. Conditions monitored include: diabetes, maternal fetal medicine, and fetal abnormalities. The clinic is known as the Prof Unit Clinic.

The Methadone in Pregnancy Service (MIPS) clinic is also a multidisciplinary clinic which involves midwives, an obstetrician and the team from the Christchurch Methadone Programme. This clinic allows women who are on the Methadone programme and pregnant, to attend education sessions which are run just prior to the clinic. Women attend fortnightly and are seen by either an obstetrician or their midwife for their obstetric care, and the team from the Methadone Programme. Having this multidisciplinary approach allows the opportunity for consultation between all care providers, should the need arise.

Many of these babies commence the Neonatal Abstinence Syndrome (NAS) programme and their families are introduced to the Neonatal Outreach Service. This service comprises of a team of specialty-trained midwives and nurses who work closely with a dedicated paediatrician. The Christchurch Methadone Programme caseworker also remains closely involved.

The MIPS clinic is run as part of the Bashford clinic, which also provides secondary care consultations.

The remaining two antenatal clinics are known as the McCormack clinic and the Peddie/Poad clinic and provide secondary care consultations by specialist obstetricians.

All obstetric teams have registrars and house surgeons, working under supervision of a consultant. There are also trainee interns and medical students at times throughout the year as Christchurch Women's Hospital is a teaching facility.

Janette Philp  
Team Leader  
Christchurch Women's Hospital antenatal Outpatients

**Antenatal Clinic Visits by Clinicians**

<b>2001</b>	<b>Community Midwife</b>	<b>Maternity Doctor</b>	<b>MIPS</b>	<b>Clinic Midwife</b>	<b>Physician Clinic</b>	<b>Antenatal Daycare</b>
Jan	122	323	39	32	45	16
Feb	77	317	27	25	48	16
Mar	93	411	27	29	45	52
Apr	97	335	25	55	77	19
May	126	435	40	75	82	20
Jun	129	349	26	73	57	0
Jul	119	430	29	62	77	27
Aug	122	445	23	74	58	32
Sep	102	375	23	61	53	29
Oct	80	425	33	66	75	12
Nov	105	370	17	69	64	22
Dec	107	280	17	43	56	35
<b>Total</b>	<b>1279</b>	<b>4495</b>	<b>326</b>	<b>664</b>	<b>737</b>	<b>280</b>

## Lactation Service

As the Lactation Co-ordinator at Christchurch Women's Hospital I am responsible for the education of staff (including Rangiora and Lincoln Hospitals and the Burwood Birthing Unit), in addition to providing clinical support for the maternity/NICU staff, breastfeeding mothers and their babies.

I am available for consultations antenatally, in the postnatal wards, and for women with a Christchurch Women's Community Midwife, for up to six weeks following birth.

Each month I direct five antenatal breastfeeding sessions and a postnatal support meeting.

Breastfeeding Study Days are held monthly – in the last year I have developed the “Refresher” Study Day, (which has proven to be very popular), for those staff who have completed the initial full day course and who wish to extend their knowledge. Continually the service strives to promote breastfeeding practices positively amongst staff. This is evident with our latest slogan “breastmilk for me exclusively!”

Breastfeeding statistics are recorded on discharge. The four categories as recommended by the World Health Organisation, are Exclusive, Full, Partial and Artificial Feeding. It has taken time to ensure all staff understand these categories as audits conducted manually have shown a discrepancy between computer entries and actual data. Exclusively breastmilk fed is defined as The baby has never (to the mother's knowledge) had any water, formula or other liquid, only breastmilk, from the breast or expressed and prescribed medicines have been given from birth. Fully breastmilk fed is breastmilk only, no other liquids except a minimal amount of water or prescribed medicines, in the past 48 hours. Partially breastmilk fed is the baby has taken some breastmilk and some formula in the past 48 hours.

In June 2001 CWH underwent a pre-assessment of our breastfeeding practices to review our progress towards achieving the Baby Friendly Hospital Initiative (BFHI) standard of breastfeeding care. Three assessors spent three days observing, questioning and examining the staff, the facility and our policies. The feedback proved very positive with some recommendations to assist us to full accreditation.

Dawn Hunter  
Lactation Co-ordinator  
Women's Health Division

## **Christchurch Women's Hospital Birthing Suite**

### **Introduction**

The Birthing Suite is an integral part of the Maternity Unit at Christchurch Women's Hospital, offering primary, secondary and tertiary care from a wide range of practitioners.

A team comprising of charge midwives, core midwives, medical staff, ward clerks and hospital aides, work together with Lead Maternity Carers to provide an optimum service of care, based on best practice.

Other practitioners who use the service regularly include our community based midwives (from Christchurch, Rangiora and Burwood Hospitals), self-employed midwives, general practitioners and obstetricians.

The Birthing Suite provides secondary and tertiary care to all maternity units in Christchurch, as well as the greater Canterbury region and the West Coast, inclusive of Kaikoura, Timaru, Banks Peninsula and the Chatham Islands. However, depending on the NICU bed availability, admissions may be accepted from throughout New Zealand. A team of specially trained Flight Midwives (who have undergone the Flight Nurse Course in Auckland) provide 'transfer care' for women who require prompt transfer to Christchurch Women's Hospital.

The Department of Anaesthesia provides 24-hour Anaesthetic cover, including an epidural service for women, and clinical support in Obstetric Emergencies. On-site paediatric support is provided by the Neonatal Service for routine and/or emergency situations. The Birthing Suite has access to other services provided within the Women's Health Division including Social Work, Chaplaincy, Dietitian, Physiotherapy and Lactation Service.

The Birthing Suite is a busy, high turnover area, providing a high standard of midwifery and obstetric care to women and their families.

Marg Tappin  
Charge Midwife

## Demographic Data

### Ethnic Breakdown

	Number	%
European	3544	83.57
Maori	276	6.51
Pacific Island	113	2.66
Asian	182	4.29
Middle Eastern	9	0.21
Latin American	6	0.14
African	24	0.57
Other	18	0.42
Not Stated	69	1.63
<b>Total</b>	<b>4241</b>	

### Maternal Age

Age	Number	%
<= 20	283	6.67
21 – 25	594	14.01
26 – 30	1241	29.26
31 – 35	1417	33.41
36 – 40	619	14.6
41+	87	2.05
<b>Total</b>	<b>4241</b>	

### Parity

	Number	%
Primiparous	2157	50.9
Multiparous	2084	49.1
<b>Total</b>	<b>4241</b>	

### Gestational Age

Weeks	Number	%
<24	12	0.28
24-27	21	0.50
28-31	46	1.08
32-36	326	7.69
37-41	3786	89.27
42+	50	1.18
<b>Total</b>	<b>4241</b>	

**Maternity Birth Statistics**

The number of women who birthed at CWH 2001	4278	(%)
Total number of babies born	4427	
Normal vaginal births	2455	57
Assisted births	791	19
Breech births (some of these births are included in other sections)	184	
Birth by Caesarean Section	1032	24
Emergency	817	19
Elective	215	5
Total number of still births	15	
Total number of women transferred in and birthed	246	
Total number of women transferred in for postnatal care	29	
Total number of women who transferred out within 4 hours post partum	1397	
Total number of transfers out of Labour Ward	2386	

	Booking by LMC		Births by LMC	
Clinic	356	8.3%	1778	41.9%
Core (midwives)	894	20.9%	181	4.3%
Self Employed LMC	3028	70.8%	2268	53.5%
Not stated			14	0.3%

**Mode of delivery within LMC**

LMC	Total	NVD		Instrumental		C/S elective		C/S Emergency		C/S Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
Clinic	355	131	37	52	14.6	42	11.8	111	31	153	43.0
Core	894	509	57	123	13.7	122	13.6	161	18	283	31.6
SE LMC	3028	1815	60	616	20.0	53	1.75	543	18	596	19.7
<b>Total</b>	<b>4277</b>	<b>2455</b>		<b>791</b>		<b>217</b>		<b>815</b>		<b>1847</b>	

**Assisted deliveries**

LMC	Total	%	Ventouse		Forceps	
			No	%	No	%
Clinic	52	6.6	37	71	15	29
Core	123	15.5	75	61	48	39
SE LMC	616	77.9	325	53	291	47
<b>Total</b>	<b>791</b>		<b>437</b>		<b>354</b>	

## Induction of Labour

### Induction of labour rates

Total women induced	1282	30% of all births
Nulliparous	651	51% of all nulliparous
Multiparous	631	49% of all multiparous

### Rates of Induction of Labour by caregiver at booking

Self employed LMC - Consultant	69	5%
WHD Doctor	106	8%
Self employed LMC - Midwife	873	68%
WHD Midwife	234	18%

**Note:** Post Dates pregnancy is the most common reason for Induction of Labour

### Reasons for Induction of Labour totals for 2001

Reason	Percentage
Diabetes	3
Pre Labour Rupture of Membranes	8
Hypertensive Disorders	17
Intrauterine growth retardation	8
Iosimmunisation	0
Fetal Distress	0
Fetal Demise	1
Chorioamnionitis	0
> 41 weeks	35
Social	1
Other	28

## Caesarean Section Data for Christchurch Women's Hospital for 2001

Although caesarean section data has been collected in the past at Christchurch Women's Hospital, this is the first year that the process has been formalised into a published format.

To collect the caesarean section data we used computer generated records (based on indications entered at the time of delivery for caesarean section). We then broke the data down to parity and gestation greater than or less than 37 weeks. Manual collection of data from patient notes was applied to double check some of the indications for delivery that did not seem to be clinically correct. There were a number of difficulties encountered initially with this audit. This is not a reflection on the staff but a problem stemming from the fact that our information collection programmes are not designed for audit purposes.

In order to optimise the accuracy of the clinical information for future audits we have now implemented a triplicate caesarean section operation note form, that is filled in by the surgeon, and placed on file in the labour ward at the time of delivery. As we are hoping that this audit will become an annual process, we are also working on improving the computerised records to enable us to obtain information that has previously not been accessible.

There has been a lot of information in the media this year, regarding the increasing rates of caesarean section. This has generated much debate over possible causes and how, if at all, the problem can be rectified. Looking at the caesarean section data in sections relating to parity and gestation, is an important first step in this process, because the most common indications for caesarean section will vary depending on these factors.

The leading reason for caesarean section in primiparous women before term (<37/40) is fetal distress occurring during labour. It is recognised that usually pre-term babies (compared to term babies) have a lesser reserve for coping with the stress of labour; meaning that they are more prone to develop fetal distress during labour. Coupled with this, it is likely that this group of women contained some patients undergoing a preterm IOL, for either a fetal or maternal indication, that may also predispose the fetus to develop distress during labour.

Pre-eclamptic toxemia and poor fetal growth are the second equal most common indications for caesarean section in this group of women. In these patients the wellbeing of either the mother or the fetus was at sufficient risk that a caesarean section was deemed the safest mode of delivery.

Multiple gestations were the next most prevalent reason for caesarean section in preterm pregnancy. Opting for a caesarean section for multiple gestations can be a decision based on medical advice (eg malposition of one or more babies), or on the preference of the mother.

Two of the leading indications for caesarean section in primiparous (primip) women are failure to progress (FTP) in the 1<sup>st</sup> stage of labour, and also FTP in the 2<sup>nd</sup> stage. The increasing induction of labour (IOL) rate may be contributing to increased caesarean sections for these indications, but this should be offset by the increasing use of agents to augment contractions. Also progress in labour, as charted on the partogram, is possibly supervised more closely now and interventions recommended earlier, than in the past, given the increasingly patient driven and medico-legally orientated climate in obstetrics.

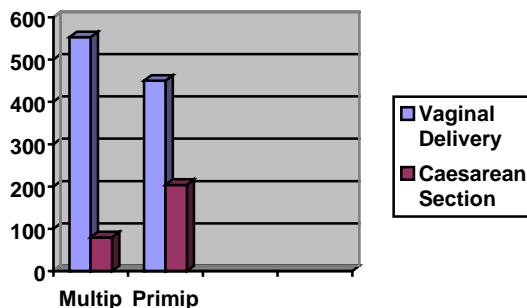
The second most common indication for caesarean section in this group is fetal distress. It is not unexpected that the rate of caesarean sections performed for this indication is increasing with the increasing use of fetal cardiac monitoring (CTG) in labour. Obstetricians acknowledge the limitations of CTG monitoring of fetuses, but in the absence of other tools to monitor fetal wellbeing, it is often all there is to go on. Increasing the use of fetal scalp blood sampling (which as it often needs to be done serially, has varying acceptability to labouring mothers and their partners) to confirm or deny the presence of fetal acidaemia; may help to decrease the number of caesarean sections performed for fetal distress. Also the use of fetal pulse oximetry which is being used in some centres may help to reduce the false positive pickup of fetal distress from CTG monitoring alone.

### Induction of Labour and Caesarean Section Data

1287 IOLs were conducted in 2001 (1287/4241=30.3%)

Primiparous total 654		Multiparous total 633	
Caesarean Section	204	Caesarean Section	80
Vaginal delivery	450	Vaginal delivery	553

**Total Inductions of labour = 1287**



## Caesarean Section and Vaginal Birth after Caesarean Section

### Statistics

Gestation	Primip		Multip		Total
	<37 wks	>37 wks	<37 wks	>37 wks	
Deliveries at CWH					4241
Caesarean Section	91	506	78	356	1031
Elective Caesarean Section					214
Emergency Caesarean Section					817
Twins	17	10	11	8	46
Triplets			1		1

### Indications for Caesarean Section

Primips < 37/40	
Fetal distress in Labour	16
Poor Growth	9
PET	9
Prolonged 1 <sup>st</sup> Stage	2
Transverse or oblique lie	2
Multiple Gestation with Malpresentation of 1 or More Fetus	7
PIH with Proteinuria	4
Placenta Praevia with haemorrhage	4
Abruption	4

Primips > 37 /40	
Prolonged first stage	184
Fetal Distress	123
Prolonged 2 <sup>nd</sup> stage	53
Breech	46
Obstructed Labour	20

Multips < 37/40	
Previous Caesarean Section	11
IUGR	7
Antepartum Haemorrhage	6
Breech	13
Multiple Gestation	5
Placenta praevia with Haemorrhage	5
Twins	5

Multips > 37 /40	
Prolonged First Stage	67
Fetal Distress	47
Prolonged 2 <sup>nd</sup> stage	18
Breech	27
Previous Caesarean Section	106

The 5<sup>th</sup> most common indication for caesarean section in this group of women is obstructed labour due to incomplete fetal head rotation. The increased number of women presenting with occipito-posterior (OP) labours is a phenomenon acknowledged by midwives and obstetricians alike. Obviously not a great deal can be done to reduce this relative disproportion; but perhaps by increasing the discussion of ways to try to prevent OP positions developing during the antenatal period, we may be able to reduce the number of women with OP labours. This indication also includes caesarean sections done for obstruction in the second stage, and most midwives and obstetricians would agree that a caesarean section is vastly preferable to a difficult rotational assisted vaginal delivery, that was more commonly carried out in the past.

Breech presentation is more common in pre-term babies, and is the leading cause of caesarean sections being performed on pre-term multiples. Since the Term Breech Trial, the options for delivery of a breech baby (whether term or pre-term) must be discussed with the patient (and her partner). An increasing number of women are now opting for a caesarean section in preference to attempting a vaginal breech birth, after discussion of the risks and benefits of each method of delivery.

Having had a previous caesarean section is the second most likely reason that a pre-term multiple will undergo a caesarean section delivery. This is a combination of women following medical advice to have an elective caesarean section, and them opting for a caesarean section over a trial of scar when faced with the onset of pre-term labour.

## Caesarean Section for Breech Presentation

### Statistics

Breech Presentation 112 of Caesarean Section

ECV offered to 9 of the 112 patients (8.0%)

<b>Successes – 7 (77.8%)</b>			
<b>Vaginal Delivery</b>		<b>C/S</b>	
6	85.7%	1	14.3%

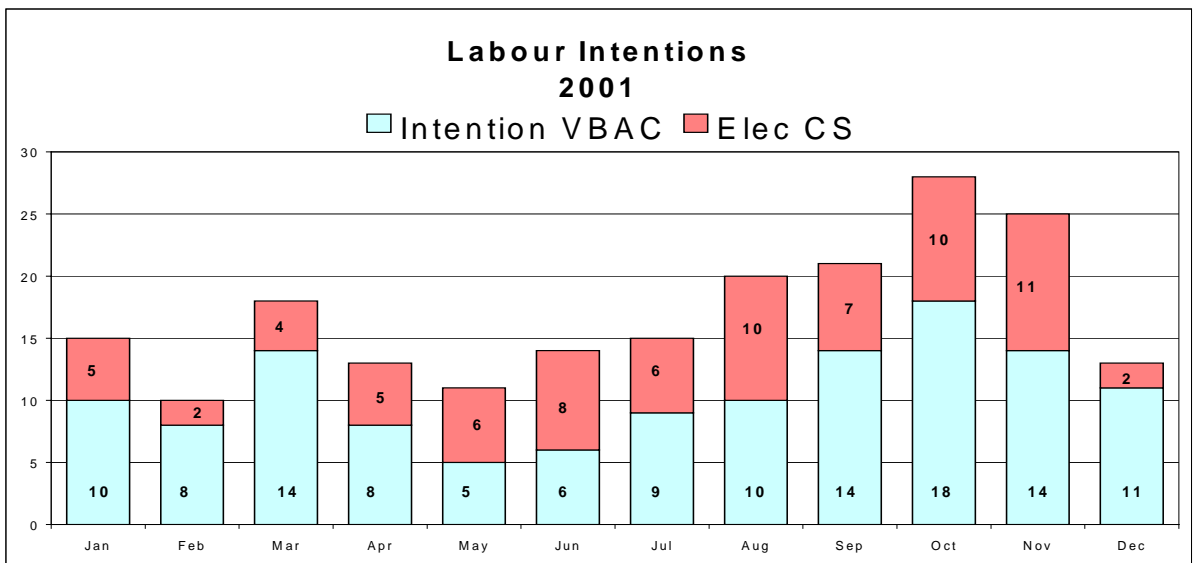
<b>Failures – 2 (22.2%)</b>			
<b>Vaginal Delivery</b>		<b>C/S</b>	
2		0	

If ECV was routinely offered (using the success rate of the small number that we have here) up to 87 patients (56-87) may have a successful ECV, and of those 87, 74-75 women could potentially have a vaginal delivery. This may help in part to reduce the (heavily criticised) overall increasing caesarean section rate; and more specifically caesarean section for breech which has increased as a result of the findings of the Term Breech Trial.

Michelle Bailey  
Obstetric and Gynaecology Registrar

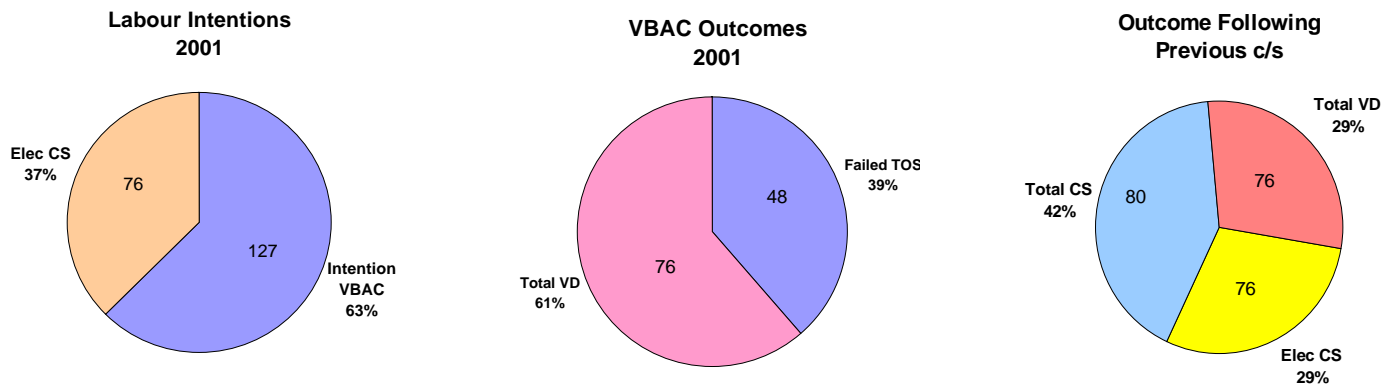
### Vaginal Birth after Caesarean Section (VBAC) for CWH for 2001

This data was generated from computer records set up to obtain information for the College's Obstetric Clinical Indicator on vaginal delivery after previous primary caesarean section. Therefore it includes only patients with a parity of two whose first delivery was by caesarean section. This data has been collected previously, but in past years we were not able to generate correct data on parity. Thus this year's figures should be more accurate.



As you can see from the monthly figures, the fraction of patients who choose to attempt a VBAC fluctuates from month to month. Generally at CWH, more patients will opt for VBAC than an elective caesarean section, with an approximate 60:40 split, when averaged out for the whole of 2001.

When you look at delivery outcome in those women choosing to try for a VBAC, the outcomes are the same with a roughly 60:40 split between vaginal delivery being achieved and caesarean section. However this compares to an overall vaginal delivery rate of 29% if you look at all eligible parity 2 patients.



Michelle Bailey  
Obstetric and Gynaecology Registrar

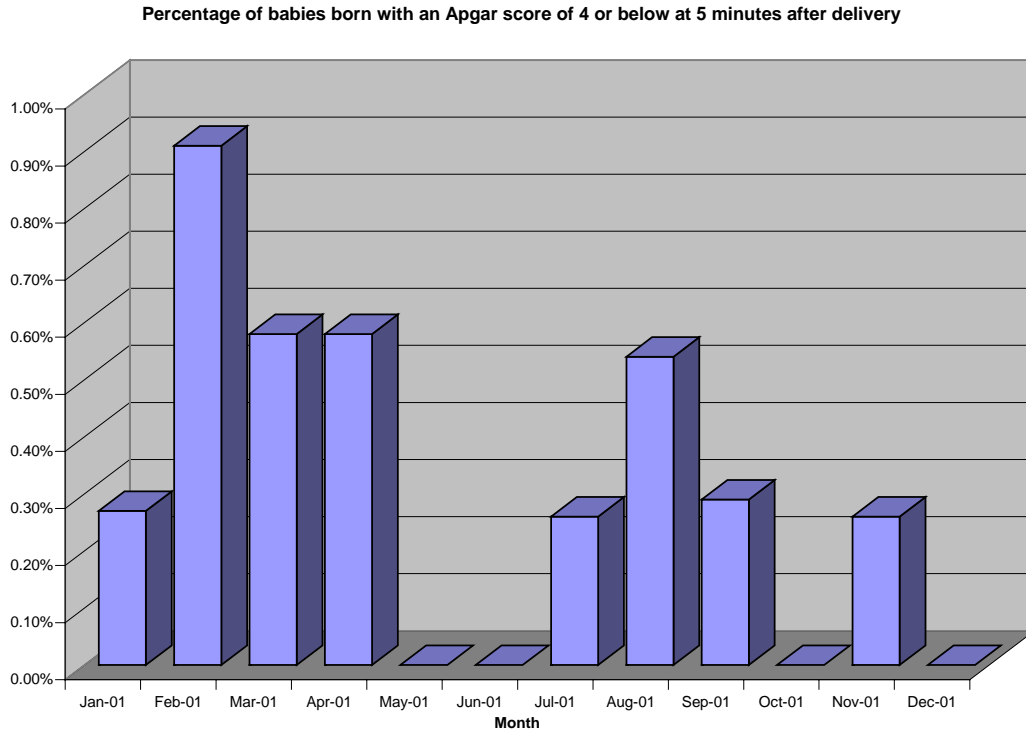
## Apgar Scores

### Number of Babies born with 5 minute Apgar Score of $\leq 4$

The number of babies born with an Apgar score of 4 or below at 5 minutes post delivery, expressed as a percentage of total number of babies born. A provisional threshold of 1.0 – 1.7 % with a mean of 1.3% has been set. At CWH the results fall below this threshold of 1.3 %. There are ongoing difficulties with data entry – midwifery and clerical.

2001	No. babies born	No. babies with Apgar $\leq 4$		Severe prematurity	Congenital abnormalities	No babies incorrectly recorded as having Apgar $\leq 4$	Reason	
			%				Midwife error	Clerical error
Jan	374	1	0.27	0	0	2	1	1
Feb	328	3	0.91	1	0	1	0	1
Mar	344	2	0.58	0	0	5	0	5
Apr	342	2	0.58	2	0	4	1	3
May	364	0	0	0	0	3	3	0
Jun	291	0	0	0	0	6	1	5
Jul	387	1	0.26	0	0	6	0	6
Aug	369	2	0.54	0	0	4	0	4
Sept	344	1	0.29	0	0	2	0	2
Oct	397	0	0	0	0	2	0	2
Nov	378	1	0.26	0	0	2	1	0
Dec	60	0	0	0	0	5	1	4

Other “average peer rates” are available from hospitals with greater than 1000 deliveries per year. July 1999 to December 2000 these were between 0.77 and 0.92 %. Data from Adelaide July 1999 – December 2000 shows a rate of 0.5 – 0.9 % of deliveries with an Apgar score of 4 or less at 5 minutes.



**Number of Babies born with 10 minute Apgar Score of  $\leq 6$**

Number of babies with an Apgar score of 6 or less at 10 minutes, as a % of total births.  
 No provisional threshold established yet (RANZCOG)

Sarah Wakeman  
 Obstetric and Gynaecology Registrar

## Lower Genital Tract Trauma Audit

The Women's Health Division Clinical Indicator used as a starting basis for this audit was 'Incidence of an intact lower genital tract in primiparous patients delivering vaginally'. Intact lower genital tract is defined as 'not requiring surgical repair'. This is in contrast to the National Women's Hospital analysis which looks only at truly intact perineum, which may account for differences in our rates (24.2% CWH versus 13.4% NWH). The clinical indicator study group included all primiparous women who delivered at Christchurch Women's Hospital by spontaneous vaginal delivery in the 2001 calendar year.

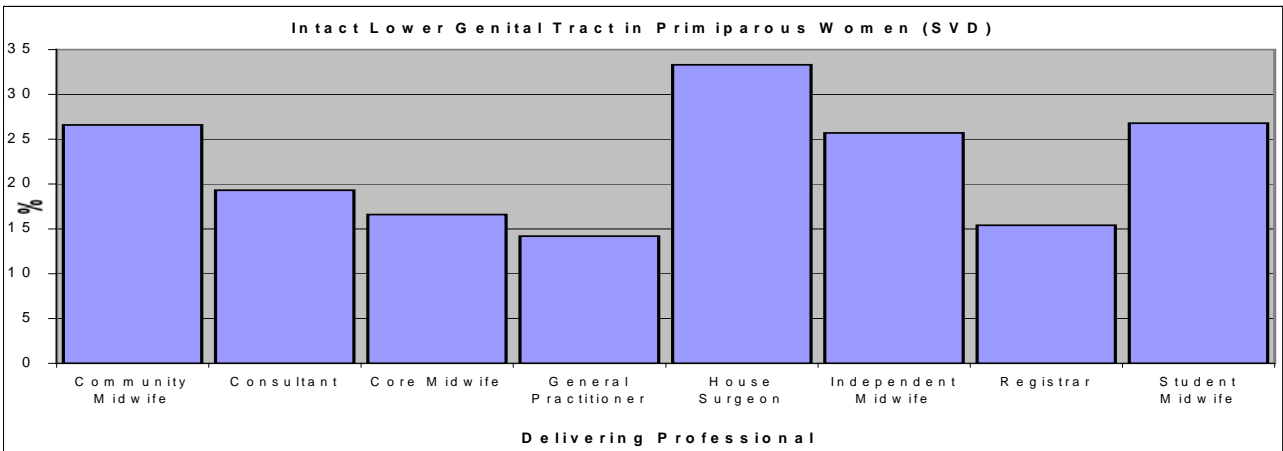
The audit was then expanded to consider all lower genital tract trauma in both primiparous and multiparous women delivering by spontaneous vaginal delivery. Subanalysis by delivering professional, and with respect to episiotomy rate, shows a wide variation in rate. The fact that groups of women may not be similar needs to be taken into account when comparing rates of various trauma. For example, Registrars are only called to deliveries that need to be expedited, and this may account for their high episiotomy rate.

Perineal trauma by type of vaginal birth was also analysed ie: forceps/ventouse/SVD and 3<sup>rd</sup> degree tears were likewise analysed. Our rate of 3<sup>rd</sup> degree tears is identical to the National Women's Hospital data. Of note, the Registrars felt, that 3<sup>rd</sup> degree tears may have been under-recorded, as they felt there were more than what appears in the audit data. This may be because only one item can be put in the 'perineal trauma' field (ie: you can not enter both episiotomy and 3<sup>rd</sup> degree tear). A suggestion to rectify this problem would be to include a new category of 'episiotomy extending to 3<sup>rd</sup> degree tear'. Of interest, all third degree tears by Consultant/Registrars occurred during assisted deliveries with most babies being greater than 4000 gm. Third degree tears by other practitioners occurred during SVD with most babies being 3500 gm or less.

Dr Sharran Bolitho  
Obstetric and Gynaecology Registrar

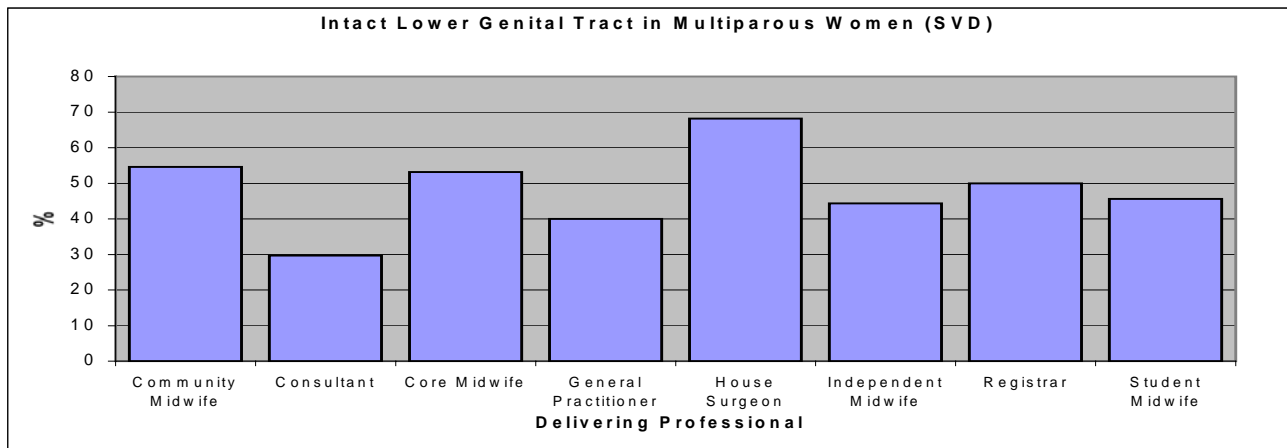
### Primipara lower genital tract trauma in SVD

Delivering Professional	Intact		1° Tear		2° Tear		3° Tear		Labial/Vag		Episiotomy		Total	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Community Midwife	28	26.6	12	11.4	2.7	25.7	3	2.8	17	1.6	18	17.1	105	12.7
Consultant	16	19.3	10	12.0	16	19.3	0	0	3	3.6	38	45.8	83	10.0
Core Midwife	7	16.6	6	14.3	13	30.9	2	1.76	10	23.8	4	9.5	42	5.1
General Practitioner	4	14.2	4	14.2	5	17.9	3	10.7	5	17.9	7	25.0	28	3.4
House Surgeon	6	33.3	1	5.5	4	22.2	0	0	6	33.3	1	5.5	18	2.1
Independent Midwife	125	25.7	91	18.7	100	20.6	6	1.2	65	13.4	99	20.4	486	58.6
Registrar	4	15.4	1	3.8	2	7.7	0	0	1	3.8	18	69.2	26	3.1
Student Midwife	11	26.8	9	21.9	9	21.9	1	2.4	7	17.1	4	9.8	41	4.9
<b>TOTAL</b>	<b>201</b>	<b>24.2</b>	<b>134</b>	<b>16.2</b>	<b>176</b>	<b>21.2</b>	<b>15</b>	<b>1.8</b>	<b>114</b>	<b>13.7</b>	<b>189</b>	<b>22.8</b>	<b>829</b>	



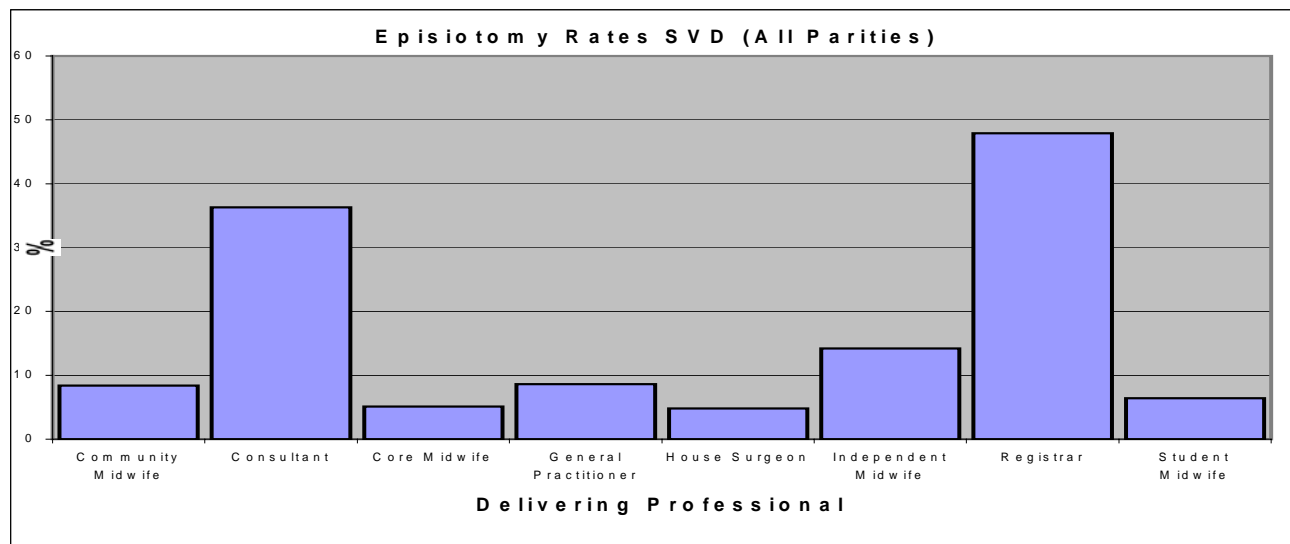
**Multipara Lower Genital Tract Trauma in SVD by Delivering Professional**

<b>Multipara</b>	<b>Intact</b>		<b>1° Tear</b>		<b>2° Tear</b>		<b>3° Tear</b>		<b>Labial/Vag</b>		<b>Episiotomy</b>		<b>Total</b>	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>Community Midwife</b>	143	54.6	62	23.6	28	10.7	2	0.8	14	5.3	13	5.0	262	19.9
<b>Consultant</b>	49	29.7	38	23.0	25	15.2	0	0.0	1	0.6	52	31.5	165	10.7
<b>Core Midwife</b>	50	53.2	18	19.1	16	17.0	0	0.0	7	7.4	3	3.2	94	6.1
<b>General Practitioner</b>	26	40.0	10	15.4	24	36.9	0	0.0	4	6.2	1	1.5	65	4.2
<b>House Surgeon</b>	30	68.2	5	11.4	6	13.6	0	0.0	14	2.3	2	4.6	44	2.8
<b>Independent Midwife</b>	368	44.4	168	20.3	162	19.6	2	0.2	39	4.7	87	10.5	828	53.5
<b>Registrar</b>	11	50.0	4	18.2	2	9.0	0	0.0	0	0.0	5	22.7	22	1.4
<b>Student Midwife</b>	31	45.6	20	29.4	12	17.6	0	0.0	2	2.9	3	4.4	68	4.4
<b>TOTAL</b>	<b>708</b>		<b>325</b>		<b>275</b>		<b>4</b>		<b>81</b>		<b>166</b>		<b>1548</b>	



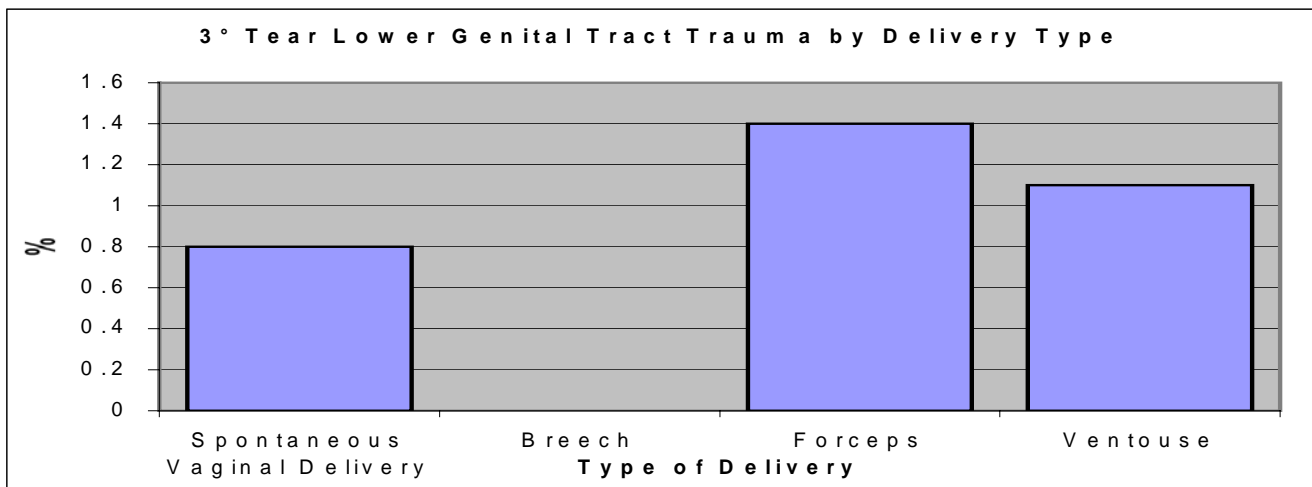
### Episiotomy rates by delivering professional SVD

	PRIMIPARAS		MULTIPARAS		ALL	
	n	%	n	%	n	%
Community Midwife	18	17.7	13	5.0	31	8.4
Consultant	38	45.8	52	31.5	90	36.3
Core Midwife	4	9.5	3	3.2	7	5.1
General Practitioner	7	25.0	1	1.5	8	8.6
House Surgeon	1	5.5	2	4.6	3	4.8
Independent Midwife	99	20.4	87	10.5	186	14.2
Registrar	18	69.2	5	22.7	23	47.9
Student Midwife	4	9.8	3	4.4	7	6.4
<b>TOTAL</b>	<b>189</b>	<b>22.8</b>	<b>16</b>	<b>10.7</b>	<b>355</b>	<b>14.9</b>



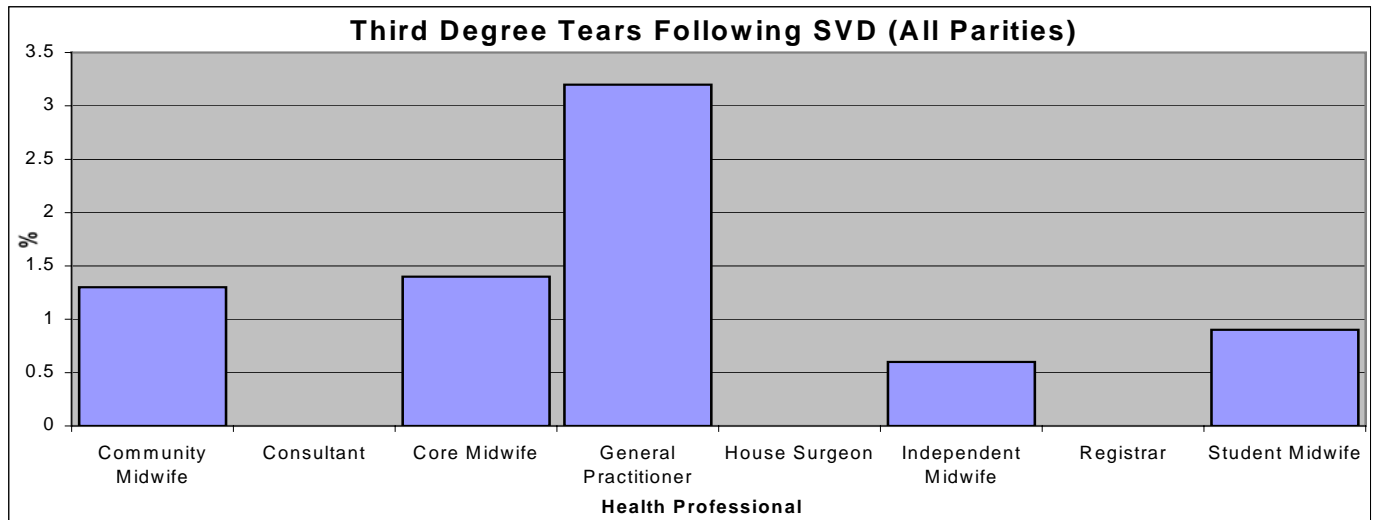
**Lower Genital Tract Trauma by Type of Delivery (All Parties)**

	Intact		1° Tear		2° Tear		3° Tear		Labia/Vag Wall Tear		Episiotomy		TOTAL	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
<b>SVD</b>	910	38.2	46	19.4	451	18.9	19	0.8	182	7.6	355	14.9	2378	73.9
<b>Breech</b>	16	61.5	1	3.8	1	3.8	0	0.0	2	7.6	6	23.1	26	0.8
<b>Forceps</b>	8	2.2	4	1.1	10	2.8	5	1.4	1	0.2	328	92.1	356	11.1
<b>Ventouse</b>	52	11.3	57	12.4	94	20.5	5	1.1	29	5.2	221	48.3	458	14.2
<b>TOTAL</b>	1457	45.3	523	16.3	556	17.3	29	0.9	214	6.7	910	28.3	3218	



**Third degree tears following vaginal delivery (spontaneous and assisted) by delivering professional (all parities)**

	3° Tear SVD	Total SVD	% 3° Tear SVD	3° Tear Ventouse	Total Ventouse	% 3° Tear Ventouse	3° Tear Forceps	Total Forceps	% 3° Tear Forceps
<b>Community Midwife</b>	5	367	1.3						
<b>Consultant</b>	0	248	0.0	1			1		
<b>Core Midwife</b>	2	135	1.4						
<b>General Practitioner</b>	3	93	3.2						
<b>House Surgeon</b>	0	62	0.0						
<b>Independent Midwife</b>	8	1314	0.6						
<b>Registrar</b>	0	48	0.0	4			4		
<b>Student Midwife</b>	1	109	0.9						
<b>TOTAL</b>	<b>19</b>	<b>2378</b>	<b>0.8</b>	<b>5</b>	<b>458</b>	<b>1.1</b>	<b>5</b>	<b>356</b>	<b>1.4</b>



## Anaesthesia Report in Maternity Services

### Introduction

The Department of Anaesthesia, based at Christchurch Public Hospital, provides a 24-hour, seven-day-per week cover for the delivery suite at CWH. In office hours during the week (0800 to 1730) the service is consultant-based. After hours, dedicated off-site obstetric anaesthetists cover the registrars. Apart from their core work, anaesthetists provide teaching, assistance with IV access, fluid management and emergency resuscitation when required.

This is the first calendar year report prepared for the Quality Team. Obstetric anaesthetists actively review their performance and almost all women are interviewed after their anaesthesia by personal visit or telephone. Side effects and satisfaction are recorded and entered into a dedicated Obstetric Anaesthesia database. All numerator figures are derived from this. CareSys supplied the denominator figures i.e. 4241 women delivered 4427 babies during 2001

Every woman delivering with an anaesthetic at CWH enters the obstetric anaesthesia database. All anaesthetic audit records are crosschecked against the contents of the labour ward "green folders" where delivery details are recorded. Every effort is made to ensure accuracy for demographic, delivery and anaesthetic data.

### Obstetric Anaesthesia Database

2427 separate NHIs are recorded as having had 2538 obstetric anaesthetics in 2001. This represents 57.2% of all women delivering at CWH. The average age was 29. **Tables 1 & 2** describe parity and ASA (American Society of Anaesthetists) grading. About 54% of women having anaesthesia were nulliparous. Only 7.5% were ASA 3 or greater.

**Table 1**

Parity	Number
0	1307
1	717
2	274
3	86
4	29
5	9
6	2
7	2
8	0
9	1
<b>Total</b>	<b>2427</b>

**Table 2**

ASA Status	Number
1	1273
2	972
3	181
4	1
5	0
<b>Total</b>	<b>2427</b>

So what anaesthetics were used at CWH in 2001? **Table 3** indicates that over half were epidural, about a quarter were spinal and the rest were combined spinal epidurals (CSEs) or general anaesthetics (GAs). The limited use of general anaesthesia in this population is regarded as important for reducing major morbidity, such as anaesthesia-related airway management complications.

**Table 3**

Anaesthetic techniques	Number	%
Epidural	1519	59.9
Spinal	687	27.1
CSE	255	10.0
GA	77	3.0
<b>TOTAL</b>	<b>2538</b>	<b>100</b>

Anaesthetists make every effort to review satisfaction after anaesthesia (**Table 4**). 59.1% were seen and 38.6% were interviewed by telephone in 2001. A few (2.3%) were lost to follow-up. Women were asked about their satisfaction with their anaesthetic and whether they would, in similar circumstances in the future, have the same technique again (**Tables 5 & 6**)

**Table 4**

Follow-up	Number
Seen	1435
Telephoned	937
Lost	55
<b>Total</b>	<b>2427</b>

**Table 5**

Repeat anaesthetic?	Number	%
Definitely	1846	72.7
Probably	503	19.8
Maybe	120	4.7
Never	15	0.7
Not asked	54	2.1
<b>TOTAL</b>	<b>2538</b>	<b>100</b>

**Table 6**

Anaesthetics graded	Number	%
Excellent	1668	65.7
Good	594	23.5
Adequate	107	4.2
Poor	115	4.5
Not asked	54	2.1
<b>TOTAL</b>	<b>2538</b>	<b>100</b>

### Side Effects of Obstetric Anaesthesia

Side effects (**Table 7**) are defined as being either early (dural puncture, resuscitation required, reinsertion of needle and change to a new technique) or late (post-dural puncture headache, blood patch, ICU admission, nerve damage). The number of early (4.3%) and late (0.4%) side effects is quite low. There were no general anaesthetic-related side effects such as failed intubation or awareness.

**Table 7**

Complications of regional anaesthesia	Number of anaesthetics	% total anaesthetics
No early side effects	2430	95.7
No late side effects	2528	99.6
Reinsertion of Epidural	41	2.8
Reinsertion of Spinal	3	0.4
Change to new technique of anaesthesia	60	2.5
Significant early resuscitation required	2	0.08
Epidural post-dural puncture headache	6	0.4
Spinal post-dural puncture headache	3	0.4
Epidural blood patch for dural puncture headache	6	0.3
Neurological damage after spinal / epidural / CSE	0	0.0

**Table 8**

Reinsertion	Number	%
Epidural	41	3.0% of all Epidurals
Spinal	3	0.44% of all Spinals
CSE	0	0.0 % of all CSEs
<b>Total</b>	<b>44</b>	<b>1.8% all Regional Anaesthetics</b>

The main early side effects are related to the technical function of the spinal, epidural or CSE techniques and whether they needed to be replaced (**Table 8**) or changed to another technique (**Table 9**). The chance of a woman having another anaesthetic, having received an epidural, is about one in 16, or 6%.

**Table 9**

Change to new technique	Number	%
Epidural	43	3.0% of all Epidurals
Spinal	14	2.0% of all Spinals
CSE	3	1.1% of all CSEs
Total	60	2.5% all Regional Anaesthetics

The bulk of the other early and late complications are related to post-dural puncture headaches. The epidural post-dural puncture headache rate at CWH is low for a teaching institution with about 4 per thousand epidurals resulting in a headache. In 2001 there was no documented neurological damage secondary to regional obstetric anaesthesia.

### Anaesthesia and Delivery Mode

The CareSys database is close to agreement with the obstetric anaesthesia database in terms of numbers of Caesareans performed. It reports that 1031 delivered by Caesarean Section (214 elective and 817 emergency).

**Table 10** is derived from the anaesthetic database and details the mode of delivery and anaesthetic provided.

The overall combined elective and emergency caesarean section rate for 2001 was 24%. The total numbers of anaesthetics exceed those of women receiving them because some women received more than one, and occasionally more than two anaesthetics for any given delivery.

CareSys figures indicate that 818 women had operative vaginal deliveries (373 forceps and 445 vacuum extraction). The obstetric anaesthesia database does not agree with this total figure, although there is closer agreement if the category "manual removal" is included as an instrumental delivery.

The indication for epidurals and CSEs is usually maternal request for analgesia. Therefore about 70% of all women requiring anaesthetics on the delivery suite were for pain in labour, even if the mode of delivery ended up being instrumental or operative. Of those requesting epidural or combined spinal epidural analgesia 38% had a normal vaginal delivery, 35% had an instrumental delivery and 27% had an emergency Caesarean section.

Table 10

Mode of Delivery	Number of Women	Epidurals	Spinals	CSEs	GAs	Total Anaesthetics
NVD only	635	547	12	89	0	648
NVD & Man. Removal	9	6	1	2	1	10
<b>Sub Total NVD</b>	<b>644</b>	<b>553</b>	<b>13</b>	<b>91</b>	<b>1</b>	<b>658</b>
Emergency LSCS only	807	406	350	60	57	873
Emergency LSCS (after failed low forceps & Ventouse)	6	5	0	1	0	6
Emergency LSCS (after failed low forceps)	2	1	0	1	1	3
Emergency LSCS (after failed high forceps.)	2	2	0	0	0	2
Emergency LSCS (after failed Ventouse, high & low forceps)	1	1	0	0	0	1
Emergency LSCS (preceding Man. Removal)	2	3	1	0	1	5
<b>Sub Total emerg. LSCS</b>	<b>820</b>	<b>418</b>	<b>351</b>	<b>62</b>	<b>59</b>	<b>890</b>
Elective LSCS only	196	0	193	1	6	200
<b>Sub Total All Caesareans</b>	<b>1016</b>	<b>418</b>	<b>544</b>	<b>63</b>	<b>65</b>	<b>1090</b>
Low forceps only	182	156	10	19	0	185
Low and high forceps	3	3	0	0	0	3
Low forceps & Man. Rem.	3	3	1	0	1	5
High forceps only	27	17	7	5	0	29
High forceps & Man. Rem.	1	0	1	0	0	1
Ventouse only	356	289	21	56	0	366
Ventouse and low forceps	92	67	13	12	1	93
Ventouse and high forceps	4	2	0	2	0	4
Ventouse and Manual Rem.	6	4	1	1	1	7
Ventouse, low forceps and Manual Removal	5	2	3	3	0	8
<b>Sub Total Instrumental Delivery</b>	<b>679</b>	<b>543</b>	<b>57</b>	<b>98</b>	<b>3</b>	<b>701</b>
Manual Removal only	79	0	72	0	8	80
Other	9	5	1	3	0	9
<b>Grand Totals</b>	<b>2427</b>	<b>1519</b>	<b>687</b>	<b>255</b>	<b>77</b>	<b>2538</b>

It must be emphasised that it is impossible to attribute cause and effect between the mode of anaesthesia and the mode of delivery. There is widespread debate regarding the influence that epidural or combined spinal epidural analgesia has on successful vaginal delivery. It is generally thought that any unit's rate for caesarean section is influenced by obstetric practice on the whole. Anaesthetists concede that, in some cases, the chance of instrumental delivery may be increased by epidural analgesia (especially *before* the current use of low concentration local anaesthesia in combination with fentanyl) but again, it is impossible to imply from these figures that epidurals will invariably result in failure to deliver vaginally.

There are many confounding variables (mostly ignored by some) that should be considered. These include the current trend of inducing labour (over 25% women at CWH are induced) and its subsequent "active" management with synthetic oxytocin infusions. The request for an epidural thus is a symptom of a more intense labour, and perhaps the progress of labour and birthing outcomes is more influenced by such supplementation than the presence of regional analgesia.

### **Summary**

The obstetric database figures for 2001 have been presented. Anaesthetists are involved with over half the women delivering at CWH. Overall, these women receive effective and safe anaesthetics. Almost all are followed up and over 90% of those have good or excellent satisfaction, which has been a consistent figure in recent years.

Review of Obstetric Anaesthetic Database  
by Dr. Nigel Skjellerup  
Anaesthesia Coordinator

## **Neonatal Service**

### **Introduction**

The Neonatal Service provides 24-hour care for babies with special medical and nursing needs.

Care is provided by skilled and experienced nursing and medical staff catering for sick and/or premature babies from the Canterbury and West Coast regions.

The Neonatal Service has three main areas:

- Level 3 - which is for those babies needing intensive medical and nursing assistance.
- Level 2 - this is less intensive and is for babies who do not require as much nursing and medical assistance.
- Level 1 - for those establishing breastfeeding and almost ready to go home. Babies on the Methadone programme are also cared for in this nursery.

Neonatal services are provided from facilities at Christchurch Women's Hospital.

These services include:

- 24 hours provision: Medical and Nursing
  - Level 3 – Intensive Care of infants requiring full life support
  - Level 2 – High dependency and Special Care
  - Level 1 – Intensive parent-craft, feeding assistance and discharge planning (key components)
- Retrieval of neonates from peripheral units requiring special or intensive care
- Transfer of neonates receiving intensive care for specialist treatment to (for example) Greenlane and Starship
- Transport of neonate to diagnostic departments & theatre suite at Christchurch Hospital.
- As required – Surgery – in NICU or Gynaecology Operating Theatre
- Outreach Service
- NAS (Neonatal Abstinence Syndrome)
- Ophthalmology Clinic – for Inpatients and Outpatients

Carole Spencer  
Acting Neonatal Service Manager

## Neonatal Service Clinical Report

This, our first formal report will show the figures for the last 4 years where appropriate. The data has been collated and submitted to the Australian and New Zealand Neonatal Network since it began in 1995. This collects data for babies requiring intensive care, or surgery, or who are less than 32 weeks gestation at birth. Infants not covered by these criteria are also included in this report.

### Admissions to the Neonatal Service

	1998	1999	2000	2001
Number of admissions	511	598	629	602
Number of Infants	487	571	603	578
Inborn	405	480	520	504
Outborn	82	91	83	74

This table is for admissions to the level 2 and 3 areas for the last 4 years. Admissions have increased since 1998 but have been similar for the last 3 years. We have additional admissions to the intermediate or level 1 nursery which are not included on this table. The percentage of babies born at CWH in 2001 who are admitted to level 2 or 3 is 11.7%.

### Transfers in were from the following birthing locations.

Transfer/Retrieval from	
Other CHCH birthing units	19
Ashburton	7
Timaru	3
Kaikoura/Hanmer	0
West Coast	7
Nelson/Blenheim	3
Dunedin/Invergargill	16
North Island units	11
Homebirths	8
<b>Total</b>	<b>74</b>

The majority from Dunedin and Invercargill were for surgical procedures as we provide general and ophthalmic surgery for infants from Canterbury south. Admission from North Island units and Nelson and Blenheim are due to unavailability of level 3 cots in their nearest unit. Additional transfers, particularly from Timaru, Ashburton and the West Coast, occur in-utero but are then included in the inborn statistics.

The transport team is involved in just over 200 retrievals, transfers, back transports and escorts to services at Christchurch Hospital for surgery and diagnostic tests in radiology annually.

This table outlines the retrievals and transfers for which our service has a financial responsibility. Air transports are required for situations where clinical expertise is required urgently or by location eg West Coast, Dunedin.

	1999	2000	2001
Retrievals	99	73	64
Transfers out	4	2	8
Transfer to Greenlane	8	8	5
Back Transfers	45	46	47
Escort to CH -Xray	41	46	47
Escort to CH -surgery	10	17	27
Air- Plane and helicopter	70	57	75
Ambulance	139	135	136

### Admissions to the neonatal service by birthweight group

Birth weight	Live Births	Admitted	Admitted %	Survived	Survived % of liveborns	Outborn admitted	Outborn survived	Survived % of total admitted
<500 gr	4	2	50	0	0%	0	0	0
500 - 749gr	15	14	93.3	11	73.3%	3	3	82.4%
750-999gr	11	11	100	11	100%	6	6	100%
1000g –1499gr	47	47	100	47	100%	9	9	100%
1500 – 2499gr	283	185	65.4	185	100%	18	18	100%
>=2500gr	3949	246	6.2	245	99%	38	38	99.5%
<b>Total</b>	4309	<b>504</b>		<b>499</b>		<b>74</b>	<b>74</b>	

All outborn babies survived in 2001. Combining birthweight groups below 1000g gives a survival rate of 86% for those admitted.

**Admission to the neonatal service by gestational age**

Gestational Age	Live births	Admitted	Admitted %	Survived	Survived % of liveborns	Outborn admitted	Outborn survived	Survived % of total admitted
<=28 wks	45	42	95	37	82%	10	10	90%
=29wks -<32 wks	38	38	97	38	97%	10	10	100%
>=32 wks - <=36 wks	356	214	60	214	100%	16	16	100%
>=37 wks	3870	211	5.5	210	99.5%	38	38	99.5%
Total	4309	504		499		74	74	

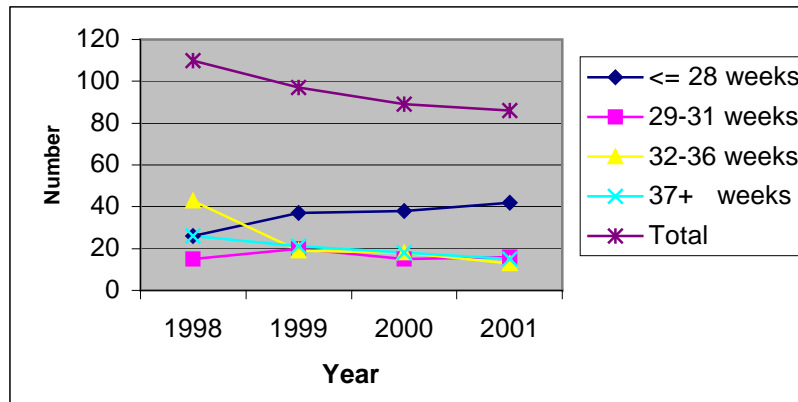
**Causes of Death**

Gestational age	Birth Weight	Age Died	Cause of Death	
22	500	0 D	No resuscitation	
22	350	0 D	No resuscitation	
23	490	0 D	No resuscitation	
23	680	9 D	Extreme prematurity, Twin 1	Pulmonary Haemorrhage
23	660	1 D	Extreme prematurity, Twin 2	IVH, pulm haemorrhage
25	370	1 D	Twin to twin transfusion	
25	485	2 D	Twin to twin transfusion	
25	530	7 D	Cri du Chat	
31	2210	0 D	Hydranencephaly	Antenatal diagnosis
40	3280	5 D	Birth Asphyxia	

**Assisted Ventilation**

All infants commence assisted ventilation in level 3. Modes of endotracheal (ET) ventilation include intermittent positive pressure ventilation (IPPV), synchronised intermittent mandatory ventilation (SIMV), Volume ventilation (VV) and high frequency ventilation (HFV). There has been a reduction in the numbers of babies being ventilated in all modes of ventilation.

Any ET Ventilation	1998	1999	2000	2001
<= 28 weeks	26	37	38	42
29-31 weeks	15	20	15	16
32-36 weeks	43	19	18	13
37+ weeks	26	21	18	15
<b>Total</b>	<b>110</b>	<b>97</b>	<b>89</b>	<b>86</b>



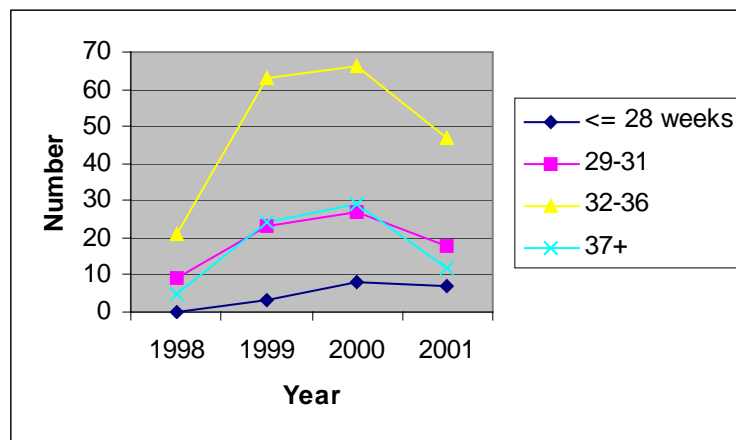
**Number of newborns receiving assisted ventilation 2001**

Gestation	Admitted to NICU	Ventilation alone	CPAP alone	Ventilation and CPAP	No ventilation
<=28	51	7	7	35	2
>=29 and <32	47	1	18	15	13
>=32 and <=36	231	5	47	8	171
>37	249	14	12	1	222
<b>Total</b>	<b>578</b>	<b>27</b>	<b>84</b>	<b>59</b>	<b>408</b>

(Ventilation=any form of endotracheal ventilation)  
 (CPAP = Continuous positive pressure ventilation)

Continuous positive pressure ventilation (CPAP) is delivered by nasal prongs that sit only a few millimeters into the nostril. It is less invasive and tolerated better by the infants than past methods. Both types of assisted ventilation require intensive nursing with ratio of baby to nurse needed either 1:1 or 2:1. More babies have been treated with CPAP only.

CPAP only	1998	1999	2000	2001
<= 28 weeks	0	3	8	7
29-31	9	23	27	18
32-36	21	63	66	47
37+	5	24	29	12
<b>Total</b>	<b>35</b>	<b>113</b>	<b>130</b>	<b>84</b>



### Comment

Fewer babies are ventilated for shorter periods of time. At the same time more babies are being treated with CPAP alone. The greatest increase in CPAP use has been in the 32-36 week gestation group, many of whom were previously ventilated or managed with oxygen via nasal prongs or in a headbox. The majority of our infants 28 weeks or under have a period on ventilation when they frequently receive surfactant as part of their management. The number having CPAP only, has started to increase in this group of extremely preterm infants. Infants of 37 weeks and greater are predominantly ventilated as part of their surgical care.

### Surgical Cases

In 2001 25 infants received general neonatal surgery either in the Neonatal Unit (11), theatres at CWH (7), or were transferred to the Christchurch Hospital theatres (7).

Additional infants had inguinal hernia surgery prior to discharge - most often at Christchurch Hospital.

Surgery	Number
PDA ligation	6
Central venous line insertion	5
Gastroschisis	3
Oesophageal Atresia	2
Colon atresia	2
Ileal perforation / NEC	2
Hirshprungs	1
Stoma	1
Bladder extrophy	1
Gastroscopy	1
Diaphragmatic hernia	1

## Morbidity

### Intraventricular haemorrhage

Data for all babies < 32 weeks gestation admitted to CWH who have a scan in the first 10 days of life.

		1998	1999	2000	2001
<b>&lt;30/40 Gestation</b>	<i>Total</i>	<b>30</b>	<b>36</b>	<b>39</b>	<b>40</b>
	Grade 1	2	4	5	8
	Grade 2	3	1	2	3
	Grade 3	0	5	2	0
	Grade 4	2	0	0	0
<b>&gt;=30 &amp; &lt;32 Gestation</b>	<i>Total</i>	<b>23</b>	<b>26</b>	<b>32</b>	<b>21</b>
	Grade 1	4	0	9	1
	Grade 2	0	0	1	0
	Grade 3	0	0	0	1

Significant ultrasound abnormality includes Grade 3 and 4 haemorrhages. High grade abnormality is uncommon.

### Retinopathy of Prematurity

Data for babies alive and remaining in the unit from 6 weeks post delivery when examinations start.

		1998	1999	2000	2001
<b>&lt;30/40 Gestation</b>	<i>Total</i>	<b>30</b>	<b>36</b>	<b>39</b>	<b>40</b>
	Grade 1	5	10	10	9
	Grade 2	3	6	4	1
	Grade 3	2	0	2	1
	Grade 4				
<b>&gt;=30 &amp; &lt;32 Gestation</b>	<i>Total</i>	<b>23</b>	<b>26</b>	<b>32</b>	<b>21</b>
	Grade 1	0	2	3	0
	Grade 2	0	0	1	0
	Grade 3	0	0	0	0

Infants < 31 weeks and < 1250 grams have routine retinal examination from 6 weeks after birth until maturity of the retina vascularity is reached. In 2001 one infant was treated for Stage 3 ROP. Examinations are performed on the unit by Assoc Professor Richard Clemmett.

## Sepsis

Infants with positive blood cultures excluding those thought to be contaminants are listed below.

		1999	2000	2001
<b>&lt;30/40 Gestation</b>	<b>Total</b>	<b>36</b>	<b>39</b>	<b>40</b>
	Early Sepsis	4	0	1
	Late sepsis	13	12	17
	Bacterial- non CNS	7	5	6
	Coag Negative Staph	8	6	9
	Fungal	2	1	2
<b>&gt;=30 &amp; &lt;32 Gestation</b>	<b>Total</b>	<b>26</b>	<b>32</b>	<b>21</b>
	Early sepsis	0	1	0
	Late sepsis	0	1	3
	Bacterial	0	0	0
	Coag Negative Staph	0	2	3
	Fungal	0	0	0

Early onset sepsis (< 72 hours of age) is uncommon. Group B Strep and Ecoli predominate. Two cases of EOS Group B streptococci occurred in 2001 – one of which was at 33 weeks gestation. Our rate of late onset sepsis is low compared to other units. Coagulase negative staphylococci is the predominant organism.

## Chronic lung disease

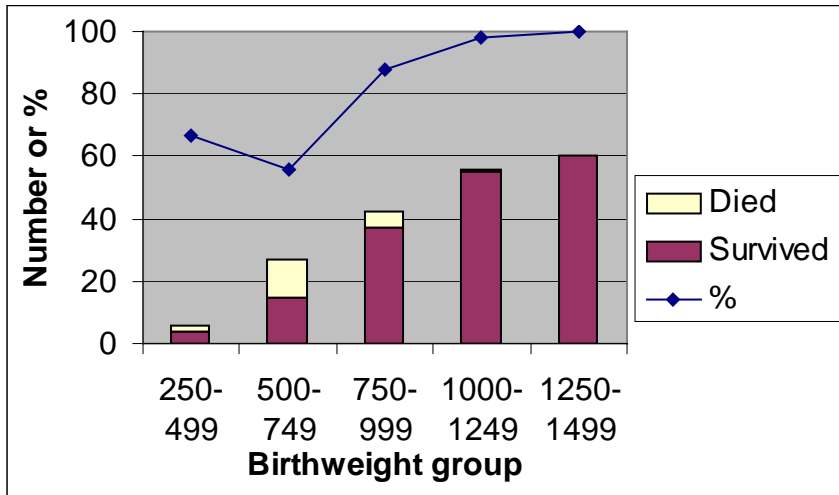
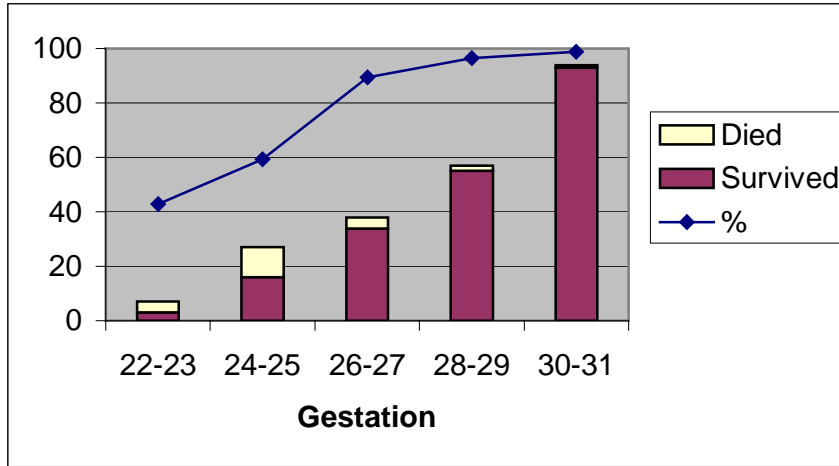
The most widely used criteria for Chronic Lung Disease of Prematurity is oxygen dependency or respiratory support eg CPAP, at 36 weeks post conceptual age.

		1998	1999	2000	2001
<b>&lt;=28 weeks Gestation</b>	Admitted to NICU	26	40	44	51
	02 at 28 days % of admitted	80.7	70.9	59	70
	02 at 36/40 % of admitted	46	45	45	50.9
	Home on 02 %	11	19	22	25
<b>29-31 weeks Gestation</b>	Admitted to NICU	31	47	51	47
	02 at 28 days %	0	14	7.8	12.7
	02 at 36/40 %	0	8	7.8	8.5
	Home on 02 %	0	4	0	2

Despite the increase in use of CPAP and reduced time on ventilators no change in the incidence of CLD has occurred. Half of the infants born under 29 weeks gestation and still in oxygen at 36 weeks will go home on oxygen. This has significant impact on the family and the outreach nurse resource.

**Survival**

The following two graphs represent the survival statistics when the data from ANZNN is combined for the years for 1998 to 2000. This gives greater numbers in the smaller gestational age or birthweight categories, and removes the wide variation when only one year is plotted.



These statistics compare favourably with the ANZNN average statistics.

The care our babies receive and the outcomes reviewed in this report are a tribute to all members of the Neonatal Service team. We are grateful to Nina Mogridge who collates the data for the unit records and the ANZNN data submitted annually.

Nicola Austin  
 Clinical Director  
 Neonatal Services

**Clinical indicators for 2000.**

This is the first year that clinical indicators have been reported using the ANZNN data.

The first column refers to a standard based on data from published studies, with the ANZNN average in brackets. The second column shows the Christchurch units data.

1. The cranial ultrasound deals with the findings in the first 10 days of life. Infants who die before an ultrasound is done are excluded. Late scan results are not included.

ANZNN clinical indicators		
<b>Cranial ultrasound</b>		
		Your unit
Incidence of at least 1 cranial ultrasound in the first 10 days of life for babies born at <30 weeks gestation or < 1250g birth weight who survive for more than 3 days	>95%	96.4%
Incidence of any grade of intraventricular haemorrhage (IVH) in babies born at < 30 weeks gestation or < 1250 g birth weight (by prn or ultrasound)	<45%	21.8%
Incidence of grade 3 or 4 IVH in babies born at < 30 weeks gestation or < 1250 g birth weight (by prn or ultrasound)	<10%	3.6%

2. Chronic lung disease. The data relates to the frequency of infants receiving respiratory support at 36 weeks postconceptual age.

ANZNN clinical indicators		
<b>Chronic lung disease at 36 weeks</b>		
		Your unit
Incidence of babies receiving supplemental oxygen or any form of respiratory support at 36 weeks post menstrual age for their initial respiratory disease in surviving babies born at < 32 weeks gestation	<20%	21.3%
		ANZNN 25.3%

3. Retinopathy of Prematurity.

ANZNN clinical indicators		
<b>Eye Examinations</b>		
		Your unit
Incidence of at least 1 eye examination in babies born at <30 weeks gestation or < 1250g birth weight who survive to 36 weeks postmenstrual age	>90% (80.8%) (ANZNN)	96.1%
Incidence of stage 3 or 4 retinopathy of prematurity in babies born at <30 weeks gestation or < 1250g birth weight who survive to 36 weeks postmenstrual age	<8% (8.6%)	3.9%

4. The use of exogenous surfactant in infants ventilated for hyaline membrane disease.

ANZNN clinical indicators		
<b>Exogenous surfactant for HMD</b>		
		Your unit
Incidence of the use of at least one dose of exogenous surfactant for babies who have intermittent positive pressure ventilation for 4 or more hours for hyaline membrane disease (HMD)	>90%	100% ANZNN 25.3%

**Papers published by clinical staff 1998 – 2001**

Horwood LJ, Mogridge N, Darlow BA. Prospective study of New Zealand very low birthweight infants: Cognitive, educational and behavioural outcomes at 7-8 years in comparison to a general child population sample. *Archives of Disease in Childhood*;79: F12 -F20 (1998) [100720]

Darlow BA, Horwood LJ, Mogridge N, Clemett RS. Survival and disability at 7-8 years of age in New Zealand infants less than 28 weeks gestation. *New Zealand Medical Journal*; 111: 264-7. (1998) [100720]

Inder TE, Graham P, Carr A, Winterbourn CC, Austin NC, Darlow BA. Plasma vitamin A levels in the very low birthweight infant: Relationship to respiratory outcome. *Early Human Development*; 52: 155-168 (1998) [100720 : 100729]

Silvers KM, Darlow BA, Winterbourn CC. Pharmacological levels of heparin do not destabilise neonatal parenteral nutrition. *Journal of Enteral and Parenteral Nutrition*; 22: 311- 314 (1998)

Darlow BA, Knight D, Kempthorne P, Wong M. Audit of early experience with inhaled nitric oxide in New Zealand Neonatal Intensive Care Units. *New Zealand Journal of Medicine*, 111: 474-7 (1998)

Malpas TJ, Darlow BA. Neonatal abstinence syndrome following abrupt cessation of breastfeeding. *New Zealand Journal of Medicine*, 112: 12-13 (1999)

Dow N, Dickson N, Taylor B, Darlow B, Wong W, Lennon D. The New Zealand Paediatric Surveillance Unit: establishment and first year of operation. *New Zealand Public Health Report*, 6: 41-4 (1999)

Cuddihy SL, Anderson NG, Wells JE, Darlow BA. Cerebellar vermis diameter at cranial sonography for assessing gestational age in low birth weight infants. *Pediatric Radiology*; 29: 589-94 (1999)

Darlow BA, Winterbourn CC, Inder TE, Graham PJ, Harding JE, Weston PJ, Austin NC, Elder DE, Mogridge N, Buss IH, Sluis KB, for The New Zealand Neonatal Study Group. The effect of selenium supplementation on outcome in very low birthweight infants: A randomised controlled trial. *Journal of Pediatrics*, 136: 473-80 (2000)

Eden D, Ford RPK, Hunter M, Malpas T, Darlow BA, Gourley J. Audiological screening of newborns at high risk for sensorineural hearing loss. *New Zealand Journal of Medicine*, 113: 182-3 (2000)

Buss IH, Darlow BA, Winterbourn CC. Elevated protein carbonyls and lipid peroxidation products in association with myeloperoxidase in tracheal aspirates from premature infants. *Pediatric Research*, 47: 640-5 (2000)

Winterbourn CC, Chan T, Buss H, Inder TE, Darlow BA. Protein carbonyls and lipid peroxidation in premature infants: Associations with chronic lung disease and retinopathy and effects of selenium supplementation *Pediatric Research*, 48: 84-90 (2000)

Darlow BA, Horwood LJ, Mogridge N. Very low birthweight and asthma by age 7 years in a national cohort. *Pediatric Pulmonology*; 30: 291-6 (2000)

Darlow BA, Horwood LJ, Mogridge N. Regional differences in outcome for very low birthweight infants: do they persist at 7-8 years. *Journal of Paediatrics and Child Health*, 36: 477-481 (2000)

Horwood LJ, Darlow BA, Mogridge N. Receipt of breast milk and subsequent cognitive ability at 7-8 years in a national cohort of very low birthweight infants. *Archives of Disease in Childhood*; 84: F23-27. (2001)

Silvers K, Darlow BA, Winterbourn CC. Lipid peroxide and hydrogen peroxide concentrations in parenteral nutrition solutions containing multivitamins. *Journal of Parenteral and Enteral Nutrition*; 25: 14-17. (2001)

Silvers KM, Sluis KB, Darlow BA, McGill F, Stocker R, Winterbourn CC. Limiting light-induced lipid peroxidation in parenteral nutrition delivered to premature infants by adding multivitamin preparations to Intralipid. *Acta Paediatrica*; 90: 242-249. (2001)

Buss IH, McGill F, Darlow BA, Winterbourn CC. Vitamin C is reduced in human milk after storage. *Acta Paediatrica*; 90: 813-815. (2001)

Stickland MD, Kirkpatrick CMJ, Begg EJ, Duffull SB, Oddie SJ, Darlow BA. An extended interval dosing method for gentamicin in neonates. *Journal of Antimicrobial Chemotherapy*; 48: 887-893. (2001)

Darlow BA, Graham PJ. Vitamin A supplementation in very low birthweight infants (Cochrane Review). In: *The Cochrane Library*, Issue 4, 1998. Oxford: Update Software.

Darlow BA, Graham PJ. Vitamin A supplementation for preventing morbidity and mortality in very low birthweight infants. *Cochrane Database Syst Rev* 2000; 2: CD000501

## Neonatal Abstinence Syndrome - A Community Programme

A pilot programme was commenced for six months in June 2000 which involved assisting infants with Neonatal Abstinence Syndrome (NAS) to withdraw at home in the family environment, instead of staying in hospital for extended periods. The programme was so successful that it was funded as a permanent component of the Neonatal Outreach Service.

The pilot programme incorporated frameworks to assist in reducing the average length of stay for these families from 2-6 weeks to 11-14 days. The reduction in the length of stay minimised the disruption to family lifestyles, with mothers' home much earlier. Mothers of these infants often have other children to consider and managing childcare short term is easier.

The year 2001 saw the consolidation of this programme and 34 infants had their withdrawal managed at home. While withdrawal on the community programme is a lot slower, i.e. up to fourteen weeks, the infant is more settled. This is because the medication is adjusted only once a week instead of every two days. At the weekly Paediatric clinic Dr Jill Mckie, Paediatrician assesses the infant, before the medication is reduced. The Outreach Nurses Jan Dobson and Georgina Ennor visit the families at home between clinic appointments to ensure the baby is managing with the reduced medication and also to assist the family during this transitional process.

One of the most positive aspects of this programme (for the infant and mother) is the increase in breastfeeding rates on discharge from hospital. We have also noted that the reduction in breastfeeding while the family is on the programme has been minimal. The infant's care is normalised in the home environment and the infant is monitored for a longer period post discharge from hospital than would have been possible, if care was managed through the former hospital based programme.

An out of hours back up service was developed to support families on the NAS programme. This involves a fast track system back into the Neonatal Service if parents have any concerns that may be associated with the withdrawal process. Feedback from families on the programme has been very positive and for the year 2001 three families took up the option of returning to the Neonatal Service for care.

The Outreach Team has established positive working relationships with many community agencies who are also involved with the family:

- pharmacies who manage the dispensing of the medication
- general practitioners and their practice nurses who have often developed long-term relationships with the families
- assistance with the integration of such services as Plunket.

The Neonatal Outreach also initiates services such as Early Start, Safer Families, New Start and/or the Wiapuna Trust.

Anne Morgan  
Neonatal Outreach Coordinator

## **Gynaecology Service**

### **Introduction**

The WHD Gynaecology Service provides inpatient, day patient and outpatient treatment for women in the Canterbury region and tertiary services for the South Island.

This service provides elective and 24-hour acute care.

A comprehensive range of gynaecological services are provided from facilities at Christchurch Women's Hospital and Lyndhurst Hospital.

The services provided include:

- Day surgery
- Acute gynaecology assessment
- Acute gynaecology care
- Elective gynaecology surgery
- Acute gynaecology surgery
- Cervical Screening Programme
- Gynaecology Oncology (inpatient and outpatient)
- Colposcopy Clinic
- Outpatients Service (including specialist clinics)
- Termination of pregnancy
- Inpatient care (elective and acute surgery patients)

Catherine Dwan  
Gynaecology Service Manager

## Demographic Data

### Ethnicity

	Number	%
European	4767	83.44
Maori	515	9.01
Pacific Island	155	2.71
Asian	212	3.71
Middle Eastern	11	0.19
Latin American	9	0.16
African	16	0.28
Not Stated	28	0.49
	<b>5713</b>	

### Age at Admission

	Number	%
<= 20	474	8.30
21 – 40	3361	58.83
41 – 60	1341	23.47
61 – 80	462	8.09
80 – 90	71	1.24
>90	4	0.07
	<b>5713</b>	

## Outpatient Department

The Outpatients Department of Christchurch Women's Hospital provides outpatient gynaecology services for the women of Canterbury from Kaikoura to the Rakaia.

Thirteen general gynaecology clinics are held each week. The majority of referrals for general gynaecology clinics are received from General Practitioners.

Reasons for referral include menorrhagia, post menopausal bleeding, chronic pelvic pain, intermenstrual bleeding, prolapse, urinary incontinence and sterilisation.

A combined gynaecology/oncology clinic is held weekly. This service includes women from the rest of the South Island. Two Gynaecological Oncologists and three Oncologists are involved in the provision of this service.

Eight pre-admission clinics operate each week for surgical procedures. Women are interviewed by Outpatient nursing staff, where a multidisciplinary care pathway is commenced, (depending on the type of operation). The women are assessed by junior medical staff with supervision provided by a consultant who obtains the operation consent.

Other clinics held in the department are:

- Reproductive and general endocrinology      twice weekly
- Neonatal clinic      weekly
- Visiting Geneticist clinics      twice monthly
- Infertility clinic      weekly

A blood collection room within the department enables blood tests to be taken at the time of the clinic attendance.

The departmental area is also utilised by the Christchurch Women's Community Midwifery service and Antenatal Outpatients service.

Jane Allan  
Charge Nurse  
Gynaecology Outpatient Department

**Gynaecology Outpatient Clinics**

<b>2001</b>	<b>Genetic Counselling</b>	<b>Gynaecology Consultant</b>	<b>Reproductive Endocrinology</b>	<b>Infertility</b>	<b>Endocrine (Menopausal/PMT)</b>	<b>Combined Gynaecology/Oncology</b>	<b>Acute Gynae Assessment</b>	<b>Preadmit</b>	<b>Reassessment</b>	<b>Total</b>
Jan	0	465	7	38	0	38	235	120	37	940
Feb	0	477	0	32	0	39	232	131	67	978
Mar	0	469	0	38	0	48	310	106	102	1073
Apr	0	436	6	42	0	47	218	84	94	927
May	0	595	9	41	0	54	228	100	145	1172
Jun	3	456	0	37	11	42	218	95	85	947
Jul	5	473	0	57	15	41	241	104	62	998
Aug	2	519	14	27	18	43	252	145	82	1102
Sept	4	487	10	45	24	59	234	127	69	1059
Oct	3	515	13	38	23	62	251	131	61	1097
Nov	3	491	9	44	26	40	220	93	58	984
Dec	1	328	9	28	21	39	222	41	38	727
<b>Total</b>	<b>21</b>	<b>5711</b>	<b>77</b>	<b>467</b>	<b>138</b>	<b>552</b>	<b>2861</b>	<b>1277</b>	<b>900</b>	<b>12004</b>

**Acute Gynaecology Assessment**

<b>2001</b>	<b>Seen &amp; Admitted</b>	<b>Day Patients</b>	<b>Outpatients</b>	<b>Total</b>
Jan	204	58	235	497
Feb	207	59	232	498
Mar	236	74	310	620
Apr	203	38	218	459
May	210	68	228	506
Jun	168	55	218	441
Jul	188	56	241	485
Aug	229	62	252	543
Sept	175	42	234	451
Oct	204	62	251	517
Nov	201	74	220	495
Dec	195	45	222	462
<b>Total</b>	<b>2420</b>	<b>693</b>	<b>2861</b>	<b>5974</b>

**Gynaecology Theatre Procedures**

<b>2001</b>	<b>Acute</b>	<b>Arranged</b>	<b>Total</b>
Jan	141	209	350
Feb	122	350	472
Mar	136	395	531
Apr	120	335	455
May	116	390	506
Jun	109	269	378
Jul	91	322	413
Aug	132	350	482
Sept	119	341	460
Oct	157	350	507
Nov	97	350	447
Dec	119	218	337
<b>Total</b>	<b>1459</b>	<b>3879</b>	<b>5338</b>

## Colposcopy

New referrals and follow-ups are gradually increasing. Four years ago approximately 2400 women were seen each year. The proportion of follow-up to new patient remains approximately 3:2. The current waiting times for a new patient with high-grade abnormalities is three weeks. Low grade waiting time is approximately eight weeks (the Cervical Screening guidelines for waiting times are 4 weeks and twenty-six weeks respectively).

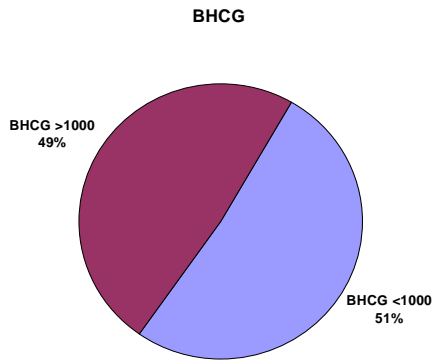
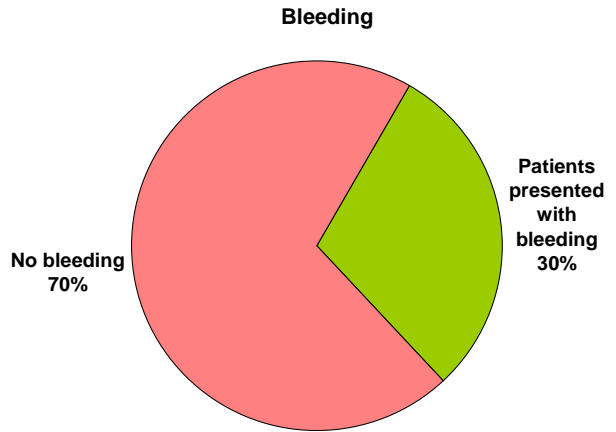
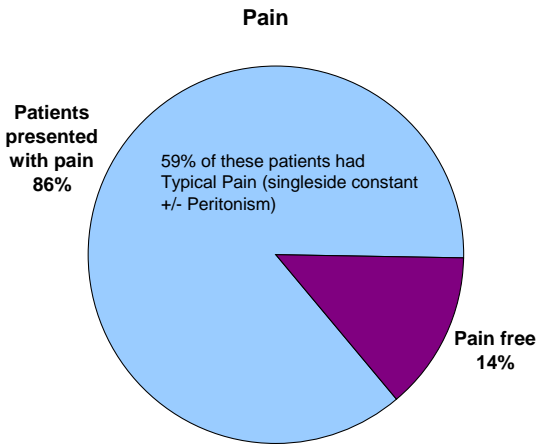
Some of the follow-up patients are waiting longer to be seen than scheduled, up to four months. Within any twelve-month period there is considerable variation in the number of consultants and registrars doing Colposcopy Clinics. Currently there are two registrars and 10 consultants doing regular clinics.

Dr Dave Peddie  
Obstetrician and Gynaecologist

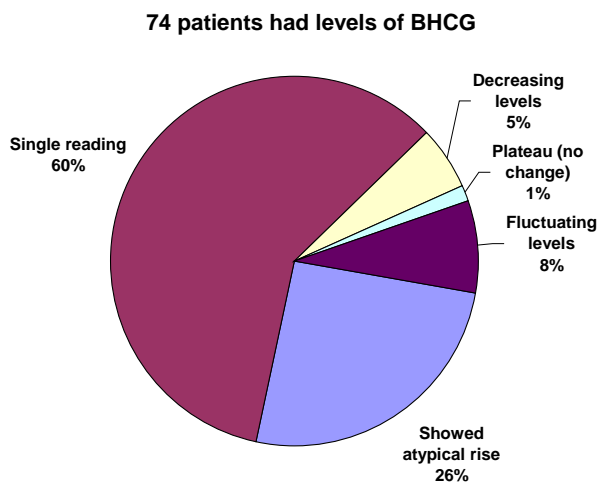
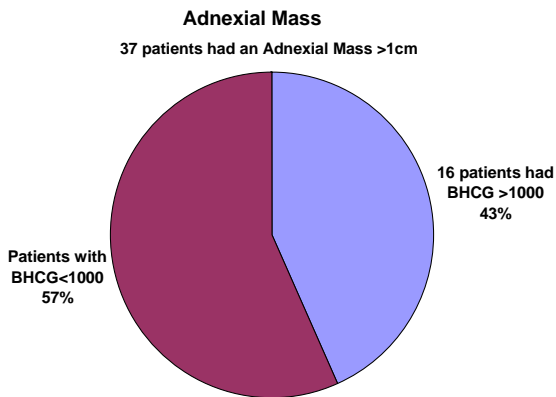
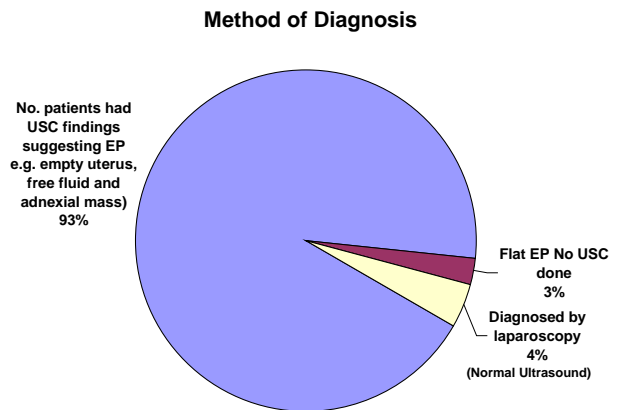
2001	Colposcopy Consultant	Colp/Derm Combined	Colposcopy Laser	Colposcopy Nurse/PMT	Total
Jan	167	0	4	0	171
Feb	245	13	12	0	270
Mar	225	11	11	0	247
Apr	224	3	6	5	238
May	216	12	0	4	232
Jun	188	4	10	1	203
Jul	219	10	9	6	244
Aug	251	10	5	3	269
Sept	242	11	12	0	265
Oct	312	8	9	0	329
Nov	292	8	8	0	308
Dec	185	9	8	0	202
<b>Total</b>	<b>2766</b>	<b>99</b>	<b>94</b>	<b>19</b>	<b>2978</b>

### Ectopic Study

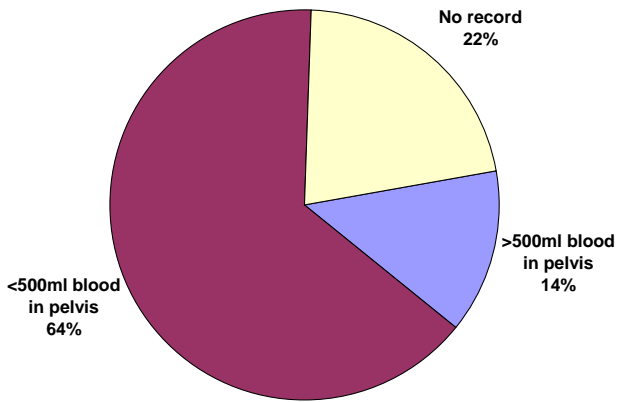
Total number of Ectopic Pregnancies admitted to CWH during 2001 = 79 patients, 5 notes not found



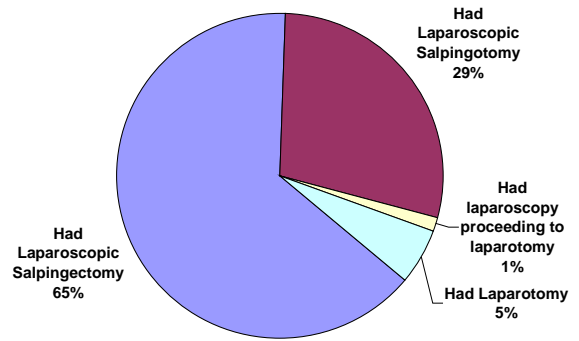
\* Two flat EP admitted to theatre urgently with the patient



**Blood found in pelvis during surgery**



**Surgery**



**Outcomes**

- Two patients required blood transfusions, one went on to have a Laparotomy Salpingectomy and one required a Laparotomy
- Of the two patients who required a Laparotomy Salpingostomy, one returned to theatre with persistent HCG levels and underwent a Salpingectomy
- One of the patients with a persistent HCG was treated with Methotroxate
- One case had Methotroxate 50mg/m2 im, followed up with regular HCG checks
- Finally, there was one case of Cornual Ectopic Pregnancy

Dr.K. Russell  
House Surgeon

Dr. Al-Salihi  
Obstetric and Gynaecology Registrar

## Hysterectomy Report

From January to December 2001 there were 435 hysterectomies performed at Christchurch Women's Hospital. (Fourteen sets of notes were not available for review). This includes all the hysterectomies performed for oncological reasons. These were grouped by the intended operation rather than the final procedure performed and tabled below. The oncology cases are predominately abdominal procedures.

Type of hysterectomy	All hysterectomies Total=421		General gynaecology Total = 371	
	n	%	n	%
LAVH	46	10.9	46	12.4
Oncology	51	11.9		
Subtotal	7	1.7	7	1.9
Abdominal	173	41.1	173	46.6
Vaginal	145	34.4	145	39

Type of hysterectomy	Average operating time	Median operating time	Procedures 1 hour or less	Average length of stay – days post operatively
LAVH	1 hour 44	1 hour 45	9	2.82 days
Oncology	2.12	1.5	3	5.86
Subtotal	1.4	1.4	2	4.29
Abdominal	1.36	1.4	27	4.2
Vaginal	1.21	1.15	59	3.15

Comment: Operating time for vaginal procedures is generally thought to be much shorter, even with added procedures such as anterior or posterior repair and this is represented in the average figures and number of cases taking less than 1 hour. However there does seem to be a trend in reduced post operative stay with laparoscopic assisted vaginal hysterectomy

**Additional procedures****Total abdominal hysterectomy**

<b>Procedure</b>	<b>Number</b>
Oophorectomy – unilateral or bilateral	48
Colposuspension	14
Adhesiolysis	7
Ureteric re-implantation	1
Partial cystectomy	1
Colposacropexy	1
Abdominoplasty	1

**Vaginal hysterectomy**

<b>Procedure</b>	<b>Number</b>
Anterior and/or posterior repair	62
Sacrospinous fixations	7
TVT	3
Colposuspension	1

One vaginal hysterectomy was converted to abdominal hysterectomy.

**Laparoscopic assisted vaginal hysterectomy**

<b>Procedure</b>	<b>Number</b>
Oophorectomy	8
Resection of endometriosis	3
Anterior repair and posterior repair	2
LAVH converted to an abdominal procedure	1
LAVH colposuspension	1

## Complications

26 cases had an intra-operative blood loss of greater than 500mls

32 cases required a blood transfusion (6.65%) - 15 of these cases were oncology

2 cases were associated with a major vessel injury

Australian Council on Healthcare Standards (ACHS) May 2000 states that the number of patients receiving a blood transfusion during/post abdominal or vaginal hysterectomy : mean rate = 3.9%

At CWH the statistics were:

	Total	Transfusion Req'd	Rate
<b>All Women</b>	421	32	7.60%
<b>Excluding Oncology</b>	371	17	4.58%

Comment: the blood transfusion rate is slightly higher than the Australian Healthcare Standards set in May 2000. This is something that can be re-audited to see where improvements can be made.

## Post operative complications - all groups

	Number	%
Urinary Tract Infection	29	6.80
Wound Infection	24	5.40
Chest Infection	9	2.10
Temperature >38	20	4.75
Vault Haematoma	26	6.17
Hospital Stay >4 days	74	17.6
Post op ileus	10	2.20
Urinary Retention	9	2.10
Readmitted	23	5.30
Return to Theatre	9	2.10
DVT/PE	1	0.25
Transfer to Christchurch Hospital	1	0.25
Tachycardia	2	0.50
Other	6	1.40
<b>Total</b>	<b>203</b>	

**Long term complications**

<b>Complication</b>	<b>Number</b>
Wound Infection	8
Prolonged pv Bleeding	4
Urinary Tract Infection	12
Incontinence	9
Vaginal Infection	16
Pain	10
Frequency/urgency	4

(one patient may have more than one complication)

**Readmissions**

24 patients were readmitted - (6.4%)

8 patients required a return to theatre - (2%)

**Women aged <35 years**

There were 45 patients less than 35 years of age, with an age range of 17 to 35 years.

<b>Complication</b>	<b>Number</b>
LAVH	9
Oncology	4
Sub total	2
Abdominal	15
Vaginal	15

**Indication for women <35years requiring hysterectomy**

<b>Indication</b>	<b>Number</b>
5 Endometriosis	6
22 Menorrhagia +- dysmenorrhoea	23
4 Pelvic pain	5
2 Trisomy 21, menorrhagia	2
Oncology - ca ovary, endometrium - 2, cervix - 2	5
CIN 3	1
DIC post partum haemorrhage following elective caesarean section	1
Premature menopause, difficulty with HRT	1
AV malformation	1

Clinical indicator 8: the number of patients under 35 years undergoing hysterectomy for an indication other than malignancy of the cervix, uterus, ovary and/or fallopian tube. Mean 9.1%, threshold 7.5 – 10.9%

**CWH 40/371 (10.8%)**

**Indications for hysterectomy all ages**

<b>Complication</b>	<b>Number</b>
Menorrhagia	140
Fibroids	62
Prolapse	56
Endometriosis	24
Pelvic/ovarian mass/cyst	20
Endometrial carcinoma	29
Endometrial hyperplasia	15
Ovarian carcinoma	15
Dysparunia/pelvic pain	24
Postmenopausal bleeding	12
Cervical carcinoma	13
CIN	11
Other	11

Some women were given multiple indications. Fibroids or endometriosis were listed in preference to menorrhagia, and menorrhagia in preference to prolapse.

Antibiotic prophylaxis was given in 361/421 cases (85.6%)

RCOG effective procedures in gynaecology state that prophylactic antibiotics should be given to all women undergoing hysterectomy.

Dr Lynda Croft  
Tutor Specialist

## Gynaecology Oncology Report

There is an active Gynaecological Oncology team working from Christchurch Women's Hospital offering tertiary services to the South Island. The team works in close cooperation with Gynaecologists from private practice and other South Island Hospitals.

In the 2001 calendar year 186 women with malignant disease were managed in conjunction with the Christchurch multidisciplinary team. A further 40 women were managed via the Dunedin Hospital multidisciplinary group.

The Christchurch Multidisciplinary team as at 01/08/02 comprises of Mr MG Laney, Mr P Sykes, Mr P McCormick, Dr B Fitzharris, Dr R Burcome, Dr L Hunter, Dr H Roberts, Dr N Anderson and Dr H Fraser.

The distribution of disease by site, stage and pathology is tabled below. Women with endometrial cancer comprise our most frequent referrals. It is pleasing to note that over 80% of women with Cervical Cancer are diagnosed at Stage 1. Ovarian cancer is the disease of most concern, with the majority of women presenting with advanced disease.

Dr Peter Sykes  
Gynaecologist/Oncologist

## Gynaecology Oncology Database

### Average Age at Registration

Registration Site	Number of Women	Average Age of Women
Christchurch	186	57

### Reason For Referral

Reason for Referral	Number of women
Further Treatment	1
New	168
Recur	10
Not Stated	7
Total	186

**Site of Disease**

<b>Primary Site (Gynae)</b>	<b>Number of Women</b>	<b>Average Age of Women</b>
Cervix	39	46
Endometrium	54	62
Ovary	43	50
Para Ovary	1	76
Peritoneal	5	55
Tube	1	63
Unknown	3	76
Vagina	7	68
Vulva	11	70
Non Gynae	22	55
<b>Total</b>	<b>186</b>	

**Stage of Disease**

<b>Stage</b>	<b>Cervix</b>	<b>Endometrium</b>	<b>Ovary</b>
1		2	2
1A	3	7	13
1A1	10		
1A2	2		
1B	13	10	1
1B1	2		
1B2	2		
1C		6	1
2		1	
2A	3	7	
2B	2	3	
2B/2A			
2C			1
3		1	
3?4			1
3A		4	1
3B	2		3
3C		5	11
4			5
4A			
<b>Total</b>	<b>2</b>	<b>5</b>	<b>21</b>

**Morphology**

Primary Site	Morphology 1	Morphology 2	Number of Women
Cervix	Carcinoma	Adenocarcinoma – Mucinous	2
		Adenocarcinoma – NOS	11
		Squamous Cell – NOS	21
		Squamous Cell – Keratinising	2
		Squamous Cell – Non Keratinising	1
Endometrium	Carcinoma	Adenocarcinoma – Clear Cell	6
		Adenocarcinoma – Endometrioid	36
		Adenocarcinoma – Mucinous	1
		Adenocarcinoma – NOS	4
		Adenocarcinoma – Serous	3
		Serous	1
	Sarcoma	Carcinosarcoma (MMMT)	1
		Endometrial Stromal – High Grade	1
		Endometrial Stromal – Low Grade	1
Ovary	Borderline Epithelial	Mucinous	6
		Serous	6
	Carcinoma	Adenocarcinoma – Clear Cell	3
		Adenocarcinoma – Endometrioid	3
		Adenocarcinoma Mucinous	2
		Adenocarcinoma – NOS	2
		Adenocarcinoma – Serous	13
		Immature Teratoma	1
		Serous	2
		Small Cell – NOS	1
	Germ Cell Tumour	Dysgerminoma	1
		Endodermal Sinus Tumour	
		Immature Teratoma	1
	Sarcoma	Leiomyosarcoma	1
Stromal Tumour	Granulosa Cell – NOS	1	

## Fertility Centre – 2001 IVF Data

- The Fertility Centre is a joint venture between The University of Otago and the Canterbury DHB.
- Both private and public infertility investigation and treatment is undertaken at The Fertility Centre.

### Statistics

- Number of cycles commenced = 333
- Number cancelled = 63 (18.9%)
- Number of oocytes per cycle (average) = 10.1
- Fertilisation rate = 66%
- Number of cycles proceeding to embryo transfer = 247 (91.5%)
  - 3.3% = freeze-all cycles
  - 5.2% = failed fertilisation
  
- Number of clinical pregnancies = 71, (56 singleton and 15 twins)
- Pregnancy rate per oocyte collection procedure = 26.3%
- Pregnancy rate per embryo transfer procedure = 29%
- Implantation rate (ie. per embryo) = 16.2%

**Note:** These results are for all couples - a significant proportion of the women are aged over 35 years and this reduces their chance of pregnancy.

Note these results do not include subsequent frozen embryo transfer cycles that result from the initial treatment cycle.

Sarah Wakeman  
Obstetric and Gynaecology Registrar

## Blood Transfusion for Gynaecological Surgery

### Patients requiring blood transfusion during/post abdominal or vaginal hysterectomy (excluding Laparoscopic hysterectomy)

Total operations	324
Patients requiring blood transfusion	11
Number of adverse effects or reactions	0

### Patients requiring blood transfusion during/post endoscopic operative procedures (including Laparoscopic hysterectomy)

Number of procedures	627
Number receiving Blood transfusion	9

### Total percentage of gynaecological patients requiring blood transfusion

Operative	79%
Non operative	21%

### Patients requiring blood transfusion

Oncology	43.5%
Non Oncology	56.5%

Among the oncology cases there were advanced ovarian/endometrial, cervical or vulvar cancer patients who were admitted either pre or post chemotherapy or radiotherapy treatment.

### Surgical Patients requiring blood transfusion

Operation by Registrar	7
Operation by consultant	31

### Surgical Patients requiring blood transfusion

Normal preoperative haemoglobin	38%
Abnormal preoperative haemoglobin (56-105g/dL)	62%

Author S Al Salihi  
Obstetric and Gynaecology Registrar

## Allied Health Support Services

### Pharmacy

It is a year now since Barbara Robertshawe and myself were assigned as pharmacists to Christchurch Women's Hospital and Women's Health Division, and began visiting Christchurch Women's each morning. This has been a shared half-time position. Our Pharmacy Aide Anne Armstrong has continued to provide the imprest pharmacy supplies as before.

After an initial survey to clinical areas, medical/midwifery/nursing staff, and anyone else we could think of, it was decided we would focus our service initially on the neonatal area, where there was already significant pharmacy involvement with parenteral nutrition manufacture and gentamicin dosing.

Our learning curve was steep, but our daily visits, attendance at ward rounds and multi-disciplinary meetings in NICU has enabled us to have input into drug dose checking, standardised drug profiles, drug information queries, therapeutic drug monitoring, discharge planning, smoothing supply difficulties, improving presentation of medications, reviews of stock on wards, and drug usage reports.

In addition we have made weekly visits to other ward and clinic areas. This has generated various questions about medicines and our service, which we hope we have answered suitably. We have provided some, and participated in other, education sessions, and were invited to join the WHD IV subcommittee of the Canterbury DHB IV Fluid and Medication administration Committee.

My hours have changed to Mondays, Tuesdays, Wednesdays, and Fridays until 2.30pm, meaning less time spent travelling and more time available for the gynaecology wards checking medication charts, and trouble-shooting pharmacy queries.

From the Pharmacy Department's point of view, a specified on site pharmacist has allowed better liaison and helped give better background information to questions we all have, leading to smoother running at that end. We have been made very welcome, and appreciate the willingness of Christchurch Women's staff to consult with us on pharmacy matters. We look forward to being of further service.

Kirsten Simonsen  
WHD Pharmacist

## CH Laboratories

### Analysers

At CWH we have two Blood Gas Analysers, the large 860 model in NICU which measures Blood Gases, Electrolytes and Metabolite, and the smaller 348 model in Labour Ward, which measures Blood Gases and Blood pH.

The Laboratory technician ensures that these analysers are always working properly, and trains staff members to use them correctly. Like all automated equipment, they can cause extreme frustration when they malfunction, so a considerable amount of time is spent in correcting problems, following strict maintenance schedules and running Internal and External Quality Control programmes in order to confirm and maintain correct analyser function.

In NICU we have a Bilirubinometer which measures Bilirubin levels in neonates and this also requires daily attention to ensure correct function and results. As medical and surgical decisions can be made on such results, it is imperative that these analysers remain accurate.

### Phlebotomy

The Technician also performs venopunctures (phlebotomy) on adult patients and heel pricks on babies. This entails three ward rounds daily, and often callbacks in case of acute admissions and emergencies.

### Blood Bank

The Technician also oversees the Function of Blood Bank, to ensure that NZBS (New Zealand Blood Service) Guidelines, relating to the reception, storage and/or return of all blood and blood products, are followed, to ensure the correct check procedures are in place, that correct stock levels of blood products and their expiry dates are maintained and to follow up any discrepancies relating to these.

### Statistics

Numbers of tests performed in 2001

Analysis	Number (2001)
Blood Gas Analysis	9122
Bilirubin	800

Margaret Gale  
Laboratory Technician

## Physiotherapy Service

The Physiotherapy Service at Christchurch Women's Hospital is provided by 1.5 full time equivalent staff. The Service covers obstetrics and gynaecology inpatients and outpatients, and provides a weekly antenatal exercise class in addition to contributing Parent Education classes.

Inservice training is provided to CWH staff as required and has covered topics such as back care, breathing control and relaxation for labour, bladder and bowel dysfunction, and pelvic floor muscles exercises.

Obstetric inpatients have routine caesarean follow-up and treatment for conditions such as chest infection, musculoskeletal pain and incontinence.

Obstetrics outpatients are provided with treatments mainly for musculoskeletal pain associated with pregnancy and childbirth, urinary and/or faecal incontinence and exercise prescription.

The Gynaecology inpatients service covers pre and post operative advice and assessment for major surgery, chest physiotherapy and bladder dysfunction problems.

The service provided to Gynaecology outpatients is by consultant referral only and involves treatments for bladder and bowel dysfunction.

Maree Frost  
Physiotherapist

## Statistics

Total Outpatients	623
Total Inpatients	2096
Total Groups (Inpatients & Outpatients)	314
Total Patients (Inpatients & Outpatients) treated by the Physiotherapy Services in 2001	2719

## Infection Control Service

### Post-LSCS Infection Rates

Prior to March 2002, the Infection Control Practitioner had undertaken six-monthly audits, (extending over a 2-month period) of the wound infection rates post-lower section caesarean section (LSCS). The audits were carried out by postal questionnaire sent to all women who underwent LSCS at Christchurch Women's Hospital. The questionnaire asked the women to report whether they had developed a wound infection within one month of the operation. If the woman replied "yes" then the infection was classified as hospital acquired (HAI).

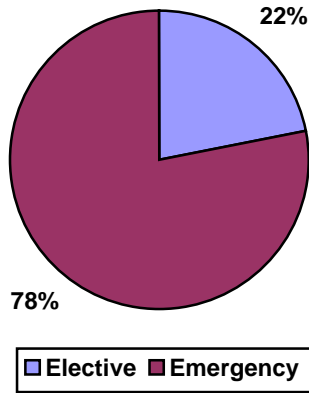
The results of the audits were higher than expected, with the HAI rate ranging from 11% - 23% (between January 2001 and February 2002). Infections were not classified into superficial or more significant deep wound infection. The average infection rate for LSCS is < 6.66% - according to the National Nosocomial Infection Surveillance Report (December 2001).

In view of concerns about the previous method of collecting the data, the questionnaire was revised and the questionnaires were sent directly to the woman's Lead Maternity Carer (LMC) for completion, in consultation with the woman. In the revised questionnaire wound infections were divided into **superficial** or **deep wound** classifications.

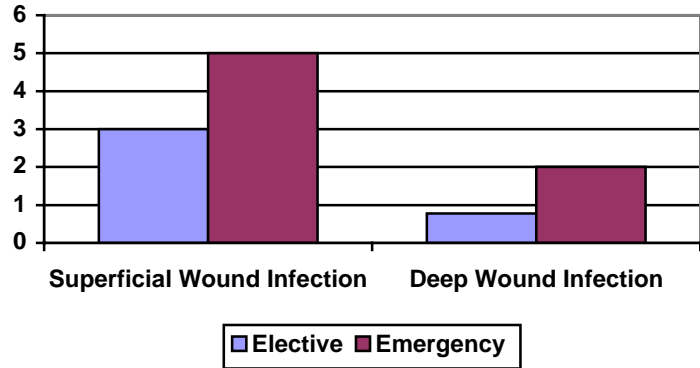
The results, to June 2002, were more in line with national data and trends.

Questionnaires Sent	89
Returned (by 30.6.02)	58
Deep Wound Infection (DWI)	
Emergency LSCS	2
Elective LSCS	1
<b>Total</b>	<b>3</b>
Superficial Wound Infection (SWI)	
Emergency LSCS	5
Elective LSCS	3
<b>Total</b>	<b>8</b>

LSCS June 2002



Superficial vs Deep Wound Infection



The issue of the impact (if any) of unreported results has still to be addressed. The audit will continue for a further six months.

Access Agreement Holders will be notified of the audit via the *Communique* and through the Access Agreement Forum.

**Blood Stream Infections**

The Infection Control Service (ICS) monitors blood stream infections (BSI) of inpatients at Canterbury DHB Hospitals.

For the 11 month period July 2001 – June 2002, CWH has recorded 29 BSI that were determined to be hospital-acquired (HABSI). This figure is up from 22 for the previous twelve-month period, an increase of 32%. Other Canterbury DHB Hospitals have also recorded an increase in numbers of HABSI.

The majority of the BSI cases between July 2001 – June 2002 (22) occurred within the Neonatal Unit, while the remaining 7 nosocomial BSI were isolated from Gynaecology inpatients.

The most common isolate from CWH inpatients, in both the Neonatal Unit and Gynaecology was Coagulase Negative Staphylococcus.

Coagulase Negative Staphylococcus remains the main causative organism in the Neonatal Unit over the last three years for HABSI.

This information has been addressed with the WHD Infection Control Committee and an investigation into the relationship between numbers of long lines with bacteraemias in the Neonatal Unit is planned.

Margaret Burns  
Infection Control Practitioner