

## WHD Vision Statement

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

- Women’s Health Division aims to provide a level of clinical care that is the best available in the New Zealand Health System.
- We will provide an environment that is welcoming to families, sensitive to the needs of women and oriented towards a safe and healthy future for babies.
- Our staff will work in partnership with patient/client to ensure they are fully informed of their condition(s), the care process(es) they can expect to be part of and the anticipated outcomes.
- We will work co-operatively with Lead Maternity Carers, community health providers and community-based support groups for the benefit of all who access the services of Women's Health Division.
- Women's Health Division will strive to provide for the principles of the Treaty of Waitangi by being regardful of Mana Whenua and Maata Waka whilst working alongside their women, babies, whanau, staff and community.
- We will continually strive for excellence in the quality of the care and the services we deliver.
- The Women’s Health Division aims to provide a working environment that allows all staff to carry out their duties to the highest standard.

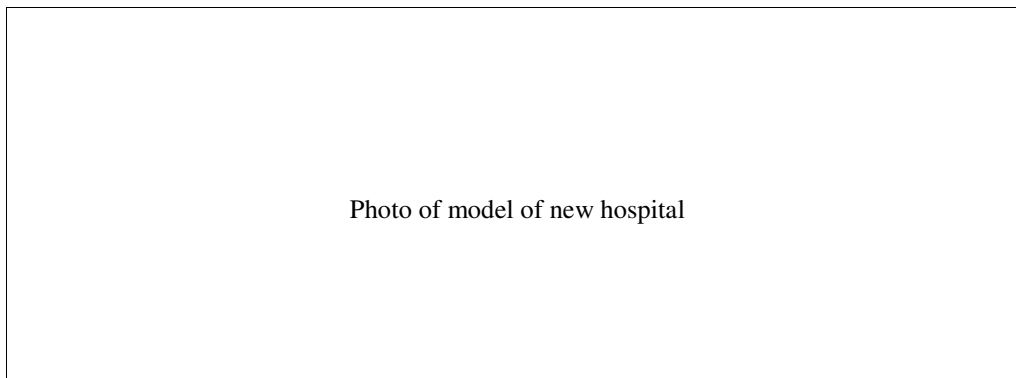
(from The Women's Health Division Vision Statement 2003)

# Contents

<b>WHD Vision Statement</b>	<b>1</b>
<b>Foreword</b>	<b>4</b>
Canterbury District Health Board Chief Executive	4
WHD General Manager	5
Clinical Director	5
<b>2002 Review of Events, Achievements &amp; Acclamations</b>	<b>6</b>
Women's Health Division Profile – Staff Demographics	7
<b>Cultural Perspective</b>	<b>8</b>
<b>Maternity Service</b>	<b>9</b>
Overview of the Obstetric Service	9
Maternity Service Report	10
Maternity Standards Review Committee	11
University Department of Obstetrics & Gynaecology	12
Graduate Midwifery Programme (GMP)	15
Primary Service Reports	17
Burwood Birthing Unit	17
Lincoln Hospital	19
Rangiora Hospital	20
Community Midwives	22
Antenatal Reports	23
Antenatal Clinic	23
Fetal Maternal Assessment	24
Maternal Diabetes Mellitus (DM)	24
Antenatal Admission Rates	30
Labour and Delivery Reports	31
Induction of Labour	31
Waterbirth	35
Instrumental Vaginal Births	37
Caesarean Section	39
Preterm Births	48
Perineal Trauma	53
Obstetric Anaesthesia Report	56
Apgar Scores	61
Postnatal Reports	63
Lactation Service	63
<b>Gynaecology Service</b>	<b>65</b>
Gynaecology Service Overview	65
Outpatient Service Reports	66
Outpatients	66
Cervical Screening	67
Colposcopy	68
Hysteroscopy Clinic	70
Fertility Centre – 2002 IVF Data	71
Assessment of Fertility after Emergency Caesarean Section in CWH	74
Acute Gynaecology Assessment	75
Inpatient Care Reports	77
Gynaecology Unit	77
Hysterectomy Report	79
Laparoscopic Surgery	83
Unplanned Return to Theatre During the Same Admission	84
Blood Transfusion for Gynaecological Surgery	85
Gynaecology Oncology	86
Ovarian Cancer Audit	90
Brachytherapy	93
Lyndhurst Report	94
<b>Neonatal Service</b>	<b>95</b>
Neonatal Overview	95
Neonatal Service Reports	96
Neonatal Clinical Service	96
Neonatal Outreach Service	104
Neonatal Service Research	106

<b>Allied Services Reports</b>	<b>110</b>
Canterbury Health Laboratories	110
Chaplaincy Service	113
Child Protection Service	114
Acting Director of Nursing	118
Infection Control	119
Midwifery & Nursing Professional Advisory Committee	120
Nutrition Services	121
Occupational Therapy	122
Pharmacy	123
Physiotherapy	124
Radiology Service – Sonographers Report	127
Social Work	128

## The Christchurch Women’s Hospital and Day Surgery Development



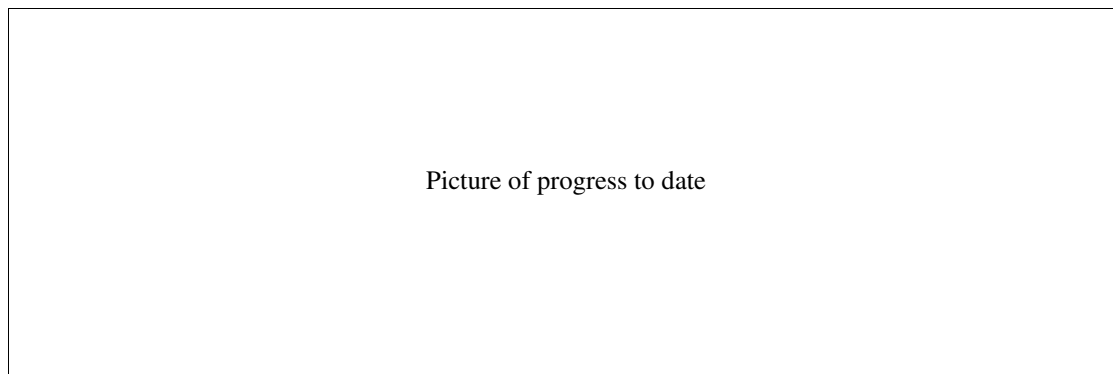
The new Christchurch Women’s Hospital will have 134 beds including:

- 32 gynaecological beds,
- 42 neonatal beds,
- 45 obstetric, antenatal, postnatal beds,
- 15 delivery beds.

The clinical levels include:

- Ground Floor - Outpatients, Fetal Maternity Assessment, Radiology,
- 1<sup>st</sup> Floor - Day Surgery,
- 2<sup>nd</sup> Floor - Gynaecology,
- 3<sup>rd</sup> Floor - Delivery, Consultants,
- 4<sup>th</sup> Floor - Neonatal,
- 5<sup>th</sup> Floor - Obstetrics.

The project will include seven new theatres. Four will replace existing theatres at Christchurch Women’s Hospital and three will be new day surgery theatres for Christchurch Hospital.



# Foreword

## Canterbury District Health Board Chief Executive

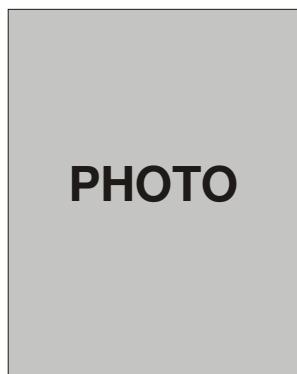
It gives me great pleasure to write the foreword for this report, a report which gives priority and emphasis to the clinical activities of the Canterbury District Health Board's Women's Health Division in the year 2002.

Providing quality and excellence in all our health practices is central to the mandate we have for the people of Canterbury. Women's health is a critical aspect of this mandate and we take great pride in the services we offer at Christchurch Women's Hospital and also at Lincoln, Rangiora, the Burwood Birthing Unit and at Lyndhurst.

It is encouraging to see the positive way in which clinicians, midwives, nurses, health specialists and other staff involved in the Division have responded to this report by making their contribution in their respective areas. This makes the document a valuable resource from which, over time, comparative analyses can be made as to the improvements developed and enhancements put in place.

Regardless of the location of facilities, it is the services that are provided, the dedication and attention that is given to the patients in our care, and the way in which we respond to the need to always look for ways of making improvements that matter.

Having an annual report that assesses and critiques the services provided is an important aspect of quality improvement. I congratulate the staff involved in the compilation of this document. It is an important indicator of the work achieved over the last year.



**Jean O'Callaghan**  
**Chief Executive**  
**Canterbury District Health Board**

## WHD General Manager

In the Introduction to the 2001 Clinical Report I spoke about 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 second Annual Report demonstrates this commitment in action as we considered our clinical performance of 2002, and how we might better reflect the various clinical specialities making a contribution, the sum of which underpins our standard of care, and is captured in the WHD Annual Clinical Report.

The results are contained here in the 2002 report. It is an expanded document which includes Allied Health Service representation, the work of various hospital committees and clinical support areas. Reporting on clinical indicators has also improved on last year and can be seen in the depth of information and analysis offered here.

This report also stands as testament to the continuing commitment of WHD staff to meet the many challenges which form part of the daily landscape that is health.

It demonstrates recognition of the highs and lows, clinical governance and clinical practice improvement in action and knowledge gained, and celebrates the continuing and ever improving fine service provided by WHD to the women and babies of the region we serve.

There are many people to acknowledge in the preparation of this report

- To the many contributors (and their support crew/networks) of articles to the report – the quality of your contributions in the production 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, Sharron Bolitho and Suzanne Richards for keeping the faith and the belief that 'it can be done'
- To Diane Rogers and the WHD Clinical Records Team for the patience and diligence in providing data
- To Linley Robertson and her team at the CDHB Documentation Management Group for the huge logistical support in getting the document published

I commend this report to you.



PHOTO

**Pauline Burt**  
**General Manager**  
**Women's Health Division**  
**CDHB**

## Clinical Director

The future of the Women's Health Division is indeed positive and is in excellent hands.

There have been a number of appointments of more senior clinical staff which means there will be continuous cover in the Labour Ward during the day which inevitably will lead to yet higher standards in the Labour Ward.

The impending enlargement of the Fetal Maternal Medicine Unit we believe will lead to Christchurch Women's Hospital becoming the tertiary referral centre for the entire South Island.

With inductions of labour only being allowed at Christchurch Women's Hospital and the reduction of caesarean sections being performed at St George's this again means that Christchurch Women's Hospital will indeed take the major load of all cases in the Canterbury area.

We are fortunate to have such dedicated management, midwives, nurses and doctors - both senior and junior - which means the hospital is indeed a happy and pleasant place to work in.

Surgery again tends to be amazingly busy with the number of first referrals increasing every week. This in reality means that the waiting list has to go up unless the government provides more funds for surgery, which they have not done at the moment.

The Oncology Unit and Infertility Unit are indeed of the highest standards and continue to grow.

With more senior appointments it is highly likely a further specialist unit in Uro-Gynaecological Surgery will be developed in a relatively short period of time.

As you will know, building has started for the new Women's Hospital, which is an exciting event to look forward to in three years time.

In the meantime it is important, in spite of the present building being somewhat third world, the standards continue to be of the highest possible. We thank all staff for this.



PHOTO

**Harry Bashford**  
**Clinical Director**  
**Women's Health Division**  
**CDHB**

## 2002 Review of Events, Achievements & Acclamations

This Report contains a multitude of examples of activities and achievements within our Division.

Along side these examples lives a veritable feast of success stories and acclamations from the Services and facilities of Women's Health Division.

At Division level, some of the numerous significant events from the year include:

- The publishing and presentation of the first Women's Health Division Annual Clinical Report
- Baby Friendly Hospital Initiative status conferred on Christchurch Women's Hospital
- Strong indicators of high levels of 'patient/customer' satisfaction levels throughout the year and throughout all the Division's Services and locations
- "Excellent performance" in the Progress Visit (half-way point in the three year cycle) for Women's Health Division's Accreditation (Quality Health New Zealand) standing
- The appointment of the first Maori Health Worker to Women's Health Division

Many achievements are created at service or location level within the Division. And, while they are specific to a Service or location, the achievements themselves are hugely important to the patients / customers of, and staff involved in, the Service or location.

Some of the events and achievements for 2002, by Service or location, include:

- Hysteroscopy Clinic set up to offer women (suitable for the procedure and anaesthetic) the service of having hysteroscopy procedures completed under local anaesthetic. This has also allowed for the transfer of the Colposcopy Laser Treatment clinic from the Gynaecology Unit area to renovated facilities
- Hyperemesis service now offered at Rangiora Hospital - a joint project between Rangiora Hospital and Gynaecology Service which provides options for women who live in the North Canterbury area and who require access to treatment for hyperemesis
- The establishment of the Fetal Maternal Assessment unit based at Christchurch Women's Hospital
- The Neonatal Service project "Securing Oral Endotracheal Tubes in Neonates" (locally known as the "Neofit" project) receiving the Quality Health New Zealand 2002 Quality Improvement Award – a nationally recognised award for excellence in clinical project management
- The commencement of a new graduate programme for nurses in the Gynaecology Service
- The establishment of the Team Care Midwives service - a woman-centered service where the midwife is the Lead Maternity Carer and part of the WHD 'team
- Significant progress on Active Review of Waiting List - including the appointment of a GP Liaison person and a Nurse co-ordinator
- Rotation of midwives throughout the full Maternity areas of Christchurch Women's Hospital

These two lists give just a hint of the number and quality of projects, initiatives and activities constantly 'on-the-go'.

So that was 2002! And you are all thinking - 'if you thought that was good...wait until you are reviewing 2003!' Now there is something to look forward to.

Enjoy reading this report. As you read and mentally digest it, think of/imagine the many people who have helped make it happen. Not just the writers, the editorial team and Report co-ordinators (them as well) but also the staff whose work has helped create the stories; has helped realise the goals and has facilitated achievement, success and recognition

Congratulations!



**PHOTO**

**John Kenny**  
**WHD Quality Facilitator**

## Women's Health Division Profile – Staff Demographics

Data for 2002 relating to 375 FTE (equalling 675 people)

**Table 1: Staff Demographics - Profession**

Staff Group	%
Midwives and Nurses	53
Administration and Non-clinical Support Services	34
Medical	7
Clinical Support Staff	6

**Table 2: Staff Demographics - Work area/Service**

Service	%
Maternity	36
Gynaecology	24
Neonatal	20
Administration	20

**Table 3: Staff Demographics - Employment Contract**

Employment Contract	%
Full Time	37
Part Time	52
Fixed Term Contracts	1
Casual Staffing	21

**Table 4: Staff Demographics - Length of Service**

Years of Service	%
0 – 2	37
3 – 5	14
6 – 10	24
11 – 15	11
16+	14

## Cultural Perspective

Over the past year Women's Health Division has continued to develop its cultural responsiveness and to integrate it into all the services within the division. The depth of analysis now possible with the collection of accurate ethnicity data has assisted this work. Women's Health Division has the proud distinction of having the most accurate data of all hospitals in New Zealand. So for example, we now know that more than 9% of the Gynaecology clients are Maori - higher than their proportion in the eligible population which begs the question of why; we know that 18% of Maori women under 20 have babies, compared to 7% of non-Maori and given the smoking rate for young Maori women it helps us feel confident about the targeting of smoking cessation and sexual health messages to this group; we also know that Maori women have 7% less chance of having a caesarean section than non-Maori and this significant difference also requires further research and analysis. It is also pleasing to hear the Neonatal Service staff talk about their work with families whose babies are sick or dying, to respect their cultural values and practices. In an often "high tech" environment, their humanity is impressive.

In January 2003, Women's Health Division appointed a Kaiawhina Whaea me nga Peepi. Already Doris Tamarapa is highly regarded within Women's Health Division, and her contribution will continue to benefit Maori women, and also the development of the divisional workforce, including the Maori staff.

In February 2003, a Maori consultation hui was held to review Cultural policies. This hui was very well attended by WHD staff and Maori community members, and was testimony to the cultural credibility of the division and the openness to learn.

Another highlight during the past year was the Cultural Advisory Komiti's involvement in two significant areas:

1. Research - the Komiti met with various researchers and considered a number of research projects. It is very pleasing to see WHD staff's attention to research, and indeed Clinical Audit, as integral components of its activities, and to have attention to cultural aspects as part of this.
2. The new Women's Hospital and Day Surgery Unit - the Komiti was a user group in this process and, like everyone else, will be eagerly awaiting the opening of the new hospital in 2005.

Women's Health Division has demonstrated leadership within the CDHB in its genuine commitment to working together with Maori. The General Manager, Service Managers, Clinical Leaders, Maori staff and many other staff have exhibited this leadership. This is very important to Maori, and will have positive spin-offs for people of other cultures also. We look forward to the continuation of a positive and warm working relationship between WHD and Maori.



**PHOTO**

**Janice Donaldson**  
**CDHB Maori Manager**

# Maternity Service

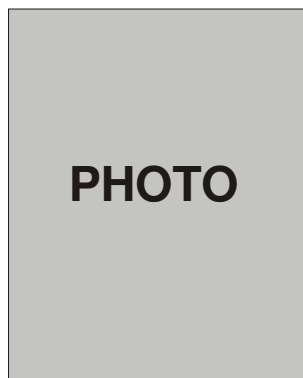
## Overview of the Obstetric Service

The hospital has performed excellently over the past year, with an increase of 16.5% in the number of patients treated.

We are dealing with more high-risk pregnancies. This means that more interventions are performed in the baby's interest and also frequently in the mother's interest. In other words the caesarean section rate is tending to increase, which is a natural world trend particularly in England, Australia and the United States.

We are about to appoint a Professor of Obstetrics and Gynaecology who has a major interest in fetal maternal medicine which will add even further strength to the high standards of the hospital.

I would like to thank all junior staff, consultants and midwives for their excellent contribution over the past year.



**Harry Bashford**  
**Clinical Director**  
**Obstetrics**

# Maternity Service Report

2002 was a busy year for the Women's Health Division Maternity service, with 4149 women giving birth at Christchurch Women's Hospital (CWH) and a further 336 birthing at the primary units. Of the total CWH birthing population 29% of women needed a caesarean section, 27% underwent an induction of labour and 55.3% utilised an epidural during labour. 12% of women presented in spontaneous labour, culminating in unassisted vaginal births and 1.1% (46) women chose to birth in water.

Some of the data mentioned was collected as part of our annual bench marking activity with the Women's Hospitals of Australia (WHA) which has enabled us to compare our services with 16 similar hospitals around New Zealand and Australia. We also make use of some of the ANZRCOG Indicators and, in particular, the induction of labour and caesarean section indicators have enabled the service to consider which changes/actions will be most useful in managing a better quality service. Benchmarking and the clinical audit program are an essential component of the Maternity Service, supporting our clinical governance structure. Some of the 2002 audits include the 'after pains audit' which resulted in an article being published in the NZ College of Midwives magazine, and the publication of a pamphlet entitled 'Are You Feeling Afterpains?' full of useful tips on how to ease the pain associated with this distressing condition.

The gathering of Ethnicity data allows us to focus on priority areas. We know that 6% of the women using our services identify as Maori, with 18% being aged 20 years or less at the time of giving birth. The 20 and under age subgroup do however represent a minority group as a proportion of all births, at 8% of the total birthing population. However, this group may require extra resources once discharged in the community. The 21 – 34 year age group makes up 71% of women who gave birth during 2002 and finally, the 35 years or more subgroup comprise a staggering 21% of the total birthing population. The WHA have identified this latter age group as an important indicator for planning the provision of services and allocation of resources.

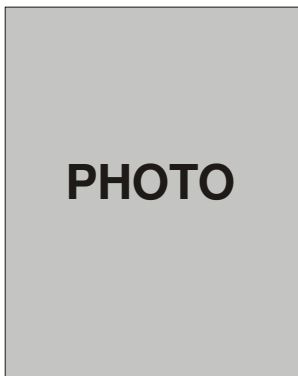
The first half of the year was a busy time with planning underway for the new hospital (due to open in March 2005). In August we saw the appointment of new service managers across WHD, and in September the first Annual Report was compiled with presentations being given by many of the medical staff. The report included much of the clinical audit work completed during the year. A strong theme throughout the report was one of collaboration, commitment and collegial respect between all the disciplines at Women's Health.

September also saw the signing of our cultural policies. This important event was the culmination of several months of development by the Cultural Advisory Komiti and acknowledges the commitment of the Women's Health Division to the Treaty of Waitangi and partnership between the Maori people and the crown.

CWH gained Baby Friendly Hospital Initiative status and were presented with the certification in November. This accreditation is known to be difficult for a Secondary / Tertiary unit to attain and it is testament to the dedication, commitment and hard work of our Lactation Coordinator and all the staff at Women's Health.

It is well documented that rural women are geographically disadvantaged in terms of access to services. With the New Zealand Primary Health Strategy in mind and the desire to improve the secondary / primary interface, Rangiora Hospital staff along with obstetricians, anaesthetists, dietitians, the Gynaecology Service and the Quality Team, developed and commenced a community rehydration service for women experiencing severe Hyperemesis.

This service may prevent unnecessary hospital admissions for women and families already under stress. Women attend as day care and are linked in with a community midwife on the first visit. This provides the opportunity for optimal continuity of care. The women who have utilised the service so far have given positive feedback. In conjunction with the National Cervical Screening Programme, Rangiora continues to offer free cervical screening for the women of North Canterbury.



**Jane Waite**  
Maternity Services Manager

With focus on the primary units being a key target for 2003, it is heartening to see a resurgence of primary birthing at Lincoln Hospital. The 2001 year recorded 69 births whilst 2002 saw an increase of 22 births making a total of 91. The Burwood Birthing Unit also recorded an increase of 19 births and ended the year on 195. Hopefully this trend will continue into 2003.

Several staff presented papers at various conferences throughout 2002 and there were also a number of articles by maternity staff published in professional magazines. Many also completed papers in the Midwifery, Nursing and Public Health supported by WHD funding. These are achievements that our service is very proud of, and our congratulations go out to the many staff involved.

The year ended on a high note in December with the appointment of a Maori Health worker to work alongside CWH staff with women and their Whanau.

## Maternity Standards Review Committee

The Maternity Standards Review Committee (MSRC) was formed to review, discuss and advise the Women's Health Division General Manager on maternity / obstetric policy along with standards, guidelines and practice within the Women's Health Division.

The committee's aims are to provide leadership in the establishment, surveillance and continual improvement in obstetric / maternity policy, standards, guidelines and practice. The committee provides the general manager with advice, assurance and notification of issues relating to obstetric / maternity performance within the Women's Health Division.

In pursuing its role, the MSRC will investigate incidents and complaints relating to the clinical practice of practitioners according to an agreed process, and then take appropriate action. The committee has an educational role along with established policy standards and guidelines, and ensuring that these are regularly reviewed and updated. During the last 12 months communication by Health and Disability Commissioner (HDC) and ACC regarding incidents that have been brought to their attention by the coroner will be brought to the MSRC's attention. As has been the case during 2002/2003, papers made available via the HDC have resulted in reviews of patient call systems within the Birthing Suite, and Lead Maternity Carer (LMC) management during the immediate postnatal interval. Patient complaints regarding outcome of pregnancy where a less than ideal outcome has taken place have been investigated. Such investigations will often involve the complainants and an interview with the LMC.

Enquires during the last 12 months have been pleasingly few in number. By discussing the situation at this committee it is often possible to diffuse some issues, make recommendations regarding further education in other areas, and perhaps avoid more difficult and protracted investigations via the Health and Disability Commissioner's office. This latter situation will not always be the case.

The MSRC has been involved in hearing issues raised by Women's Health Division staff, where staff feel that clinical practice may be compromised. The committee has investigated recent concerns and is pursuing these concerns with Women's Health Division management, addressing the staff's concern on these issues.

The members of the MSRC are elected and represent the following services (current members of the committee are indicated):

<b>Service</b>	<b>Current Member</b>
Maternity Service Manager	Jane Waite
Neonatal Service Clinical Director	Nicola Austin
Obstetric Clinical Director (Representative)	Colin Conaghan
Charge Midwife	Debbie Earl
Consumer Representative	Annette Finlay
Professorial Unit Representative	Rosemary Reid
CWH Full Time Specialist	David Peddie

**Colin Conaghan**  
**Consultant Obstetrician and Gynaecologist**  
**Chair person MSRC**

# University Department of Obstetrics & Gynaecology

## Introduction

The University Department is part of the Christchurch School of Medicine and Health Sciences of the University of Otago. It is staffed by clinicians contracted to the University and Canterbury District Health Board. The Department's primary roles are:

- To co-ordinate deliver and supervise the clinical training of undergraduate medical students in the specialty of obstetrics and gynaecology.
- To provide postgraduate educational opportunities in obstetrics and gynaecology through the University of Otago papers 702, 703, 704 and the University of Otago Diploma of Obstetrics and Gynaecology.
- To perform clinical and laboratory research in obstetrics and gynaecology.

The Departmental staff are also closely involved in the postgraduate teaching of registrars and other staff College and National Advisory matters as well as clinical roles.

## Staffing

### Clinical staff

Dr Peter Sykes (Head of Department)  
Dr Rosemary Reid  
Dr Lynda Croft  
Dr Peter Benny

### Research staff

Professor John Evans  
Mr. Chris Rait  
Dr Mason Abbas  
Dr Alber Youssef  
Ms Dianne Harker

### Support Staff

Jane Marriner

### We are very grateful for the teaching assistance of the following staff in 2002

Mr Harry Bashford, Mr Colin Conaghan, Mr John Doig, Dr Simon Jones, Mr Peter McCormick, Dr Helene Macnab, Mr David Peddie, Mr Greg Phillipson, Dr Dianne Poad, Dr Vicki Robertson, Dr Anne Sissons, Joan Williams, Dr Sarah Wakeman.

We also wish to thank the support of all other staff, which is essential in the training of medical students.

The University Department recognises the support of the WHD General Manager, Ms Pauline Burt.

## Teaching

5 <sup>th</sup> Years	60 students
6 <sup>th</sup> Years	66 students
NZREX Students	12 students
Diploma of Obstetrics	5 students

## Research

### Grants active 2002

- *Lottery Health / New Zealand Centre for Reproductive Medicine*
  - "The regulation of angiogenic factors in endometrial stromal cells"
  - "Adrenomedullin and other vasoactive peptides in individual human endothelial cells"
- *Canterbury Medical Research Foundation*
  - "Regulation of luteinising hormone – a community of peptides"
- *CDHB*
  - "The colposcopy findings and outcome of women under 20 referred to Colposcopy Clinic"
- *ACTORDS*
  - Grant from Australian National Health and Medical Research Council

- *University of Otago Summer Studentship Projects:*  
(Supervisors: Dr Phillipson & Dr Benny)
  - “Assessment of fertility after emergency caesarean section in Christchurch Women’s Hospital”  
(Supervisor: Professor Evans)
  - “Living cells and study with very high resolution microscopy”  
(Supervisor: Dr Iris Sin)
  - “Association of mitochondrial ND6 mutations with human male infertility”  
(Supervisor: Dr Sykes)
  - “How well does magnetic resonance imaging (MRI) predict the stage of endometrial cancer?”  
(Supervisor: Dr Reid)
  - Review of women with diabetes in pregnancy at Christchurch Women’s Hospital”

### **2002 Publications: Journal Articles - Refereed Article:**

VA Cameron, DJ Autelitano, JJ Evans, LJ Elmers, EA Espiner, MG Nicholls and AM Richards  
Adrenomedullin expression in rat uterus is correlated with plasma estradiol. *American Journal of Physiology* (2002) 282:E139-E146.

JJ Evans, AF Youssef, T Yandle, L Lewis, MG Nicholls  
Effects of endothelin-1 on release of adrenomedullin and C-type natriuretic peptide from individual human vascular endothelial cell. *Journal of Endocrinology* (2002) 175: 225-232.

P.H. Sykes, N. Smith, P. McCormick, F.A. Frizelle  
High-grade vulval intraepithelial neoplasia (VIN3): a retrospective outcome and relationship to squamous cell carcinoma of the vulva 1989-1999. *The Australian and New Zealand Journal of Obstetrics and Gynaecology* 42: 69-74 (2002)

JJ Evans  
Peptides interact in gonadotrophin regulation *Archives of Physiology and Biochemistry* (2002) 110:154-161.

F.A. Frizelle, S.W. Beasley, J.A. Roake, P.H. Sykes  
Specialisation within the specialty of general surgery; can the potential advantages be realised? *The New Zealand Medical Journal* 115: 295-298 (2002)

JJ Evans  
The anterior pituitary gland is mysterious, alluring and useful *Archives of Physiology and Biochemistry* (2002) 110:3-8.

P Sykes, S Nam, C Wynne, N Anderson, J North, L Hunter, M Laney, G Fentiman  
The pre-operative identification of low-risk endometrial cancer: an audit of women treated in the South Island of New Zealand 1998-2000 *Australian and New Zealand Journal of Obstetrics & Gynaecology* (2002) 42:4 387-390

J. Ellis, J. Livesey, W. Inder, T. Prickett, R.A. Reid  
Plasma corticotrophin-releasing hormone and unconjugated estriol in human pregnancy: gestational patterns and ability to predict pre-term labour. *American Journal of Obstetrics & Gynaecology* (2002) 186(1) 94-9

### **2002 Publications: Journal - Letters or Notes**

A.J. Holyoake, P. McHugh, M. Wu, S. O'Carroll, P. Benny, I.L. Sin, F.Y Sin  
Related Articles, Links

Research of single mitochondrial nucleotide substitutions in male infertility should consider human mitochondrial haplogroups - Reply. *Int J Androl.* 2002 Dec;25(6):374. No abstract available. PMID: 12406371 [PubMed - in process]

### **Other Involvement of University Staff**

RANZCOG Annual Scientific Meeting (Christchurch)

PSANZ in conjunction with FAOPS Conference (Christchurch)

4-yearly Conjoint OMGA/ADIPS/ASHHP Meeting (Akaroa)

National Advisory           - Cancer Audit  
                                      - Advisory to Ministry of Health Population Based Screening

Training Supervisor – Registrars

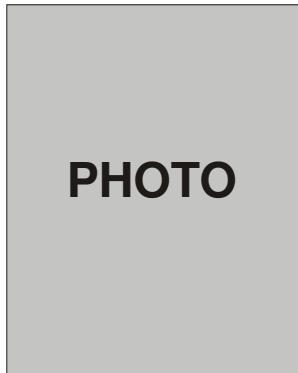
NZREX Examiner

### **2002 Year**

2002 was a busy year for the Department. We were pleased to welcome Dr Lynda Croft to the position of Fixed Term Senior Lecturer and to congratulate John Evans on his appointment as Associate Dean (Research). We also congratulate Jane Marriner's recognition by students as the best support staff to the 5<sup>th</sup> year class in 2002.

The staff have worked hard with redevelopment of the new Diploma of Obstetrics and Gynaecology (to be introduced in 2003) and the new undergraduate medical curriculum to be introduced in 2004.

The position of Chair and Head in Obstetrics and Gynaecology has been advertised and it is anticipated an appointment will be announced in the near future.



**Dr Peter Sykes**  
**Head of Department**  
**University Department Of Obstetrics And Gynaecology**

## Graduate Midwifery Programme (GMP)

The idea of piloting a supportive programme for new graduate midwives (ie. both degree and registered nurse/midwife graduate) was proposed late December 1999. The programme aims to provide a supportive environment for new midwives who chose to practice in a secondary/tertiary care facility.

Christchurch Women's Hospital offers a limited number of positions each year and the majority come from the Christchurch School of Midwifery programme. The programme is important as researchers have explored a phenomenon known as 'Reality Shock' and a supportive environment is identified in the literature as an essential element in helping new graduates adjust to, and overcome the stress of their first job.

One of the primary objectives of the GMP is to provide peer support and to foster a nurturing environment. The aims of the Graduate Midwifery Programme are:

- To create a supportive environment for new graduate midwives
- To provide a programme which focuses on the secondary / tertiary care facility and the implications of practising as a midwife in such a setting
- To introduce and provide the graduate midwife with comprehensive orientation and preceptorship to both Christchurch Women's Hospital and Canterbury District Health Board
- To provide the midwife with an "education" programme focusing on high-risk issues in the midwifery field
- To promote continuing education and professional development
- To discuss and explore the role of the 'core midwife' in the secondary care facility
- To facilitate a two-way learning process between the graduate midwife and her peers, thereby increasing the base knowledge of the unit and improving midwifery care provided to women
- To encourage and support individual learning and personal growth in the field of midwifery (individual needs analysis)
- To consolidate recent education in midwifery and to relate it to practice for both primary and secondary midwifery care

Women's Health Division has offered two positions to graduate midwives in the past 3 years and the GMP has evolved to a 9 month contract. At present two of the midwives are practising as community midwives with Women's Health Division, one midwife is practising as a core midwife currently based on the Birthing Unit at Christchurch Women's Hospital, and one midwife from 2002 left to work overseas. Two positions for 2003 commenced in January.

### **The programme**

Preceptor midwives precept the GMP midwives to each of the clinical areas. All preceptor midwives have had varied and wide clinical experience and are very supportive of the aims of the GMP. The preceptorship period is 4 - 6 weeks depending on the clinical area where the graduate midwives are supernumerary.

Workshops are held throughout the year and are designed to address clinical issues that may arise during their clinical practice. An initial introductory week has proved to be invaluable as this has facilitated transition to being a team member within the Women's Health Division. Each midwife practices for 3 months on the antenatal/postnatal wards and completes 6 months on the Birthing Unit. During the GMP, 24 planned workshop days are organised. The workshops focus fully on clinical issues surrounding secondary care aspects of midwifery that may be encountered in the role as 'core' midwife. All graduate midwives are encouraged to have input into the design of the workshops, in accordance with their own learning needs, as the programme evolves. Clinical scenarios are utilised according to the topic of discussion. Each workshop has a reflective/debriefing hour to encourage discussion, and this is a pivotal part of the session. The discussion period permits the graduate midwives to review their own midwifery practices and raise any issues that they may have encountered. Full day workshops and 'generic' education sessions are open to all midwives to attend. The workshops have proved to be a valuable forum for discussing clinical issues with peers.

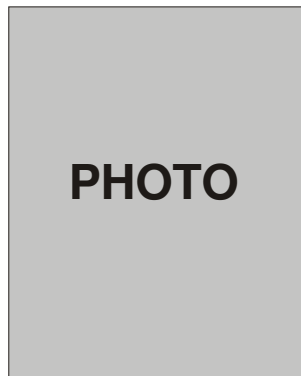
Midwifery competencies are included, as with all employed midwives within Women's Health Division. However, the overall GMP is evaluated throughout the 9-month period.

**The future**

From the evaluations of the last two years it is clear that the GMP is supporting newly qualified midwives, specifically in the secondary/tertiary midwifery environment. It is perceived as a supportive process, permitting the midwife to gain confidence in the busy hospital environment. The GMP encourages the graduates confidence and assures them that as new practitioners they have all the knowledge and midwifery skills to practice as a core midwife in a secondary/tertiary environment.

The GMP continues to evolve and the graduate midwives each year are developing the programme to their own learning needs. As facilitator of the programme, I believe it will continue to evolve to reflect the day to day practice of the midwifery environment.

I would like to acknowledge my colleagues at Christchurch Women's Hospital/Women's Health Division, the Christchurch School of Midwifery Tutors and New Zealand College of Midwives Midwifery Advisor for all their ongoing support.



**Elaine Gray**  
**Midwifery Educator**

## Primary Service Reports

### Burwood Birthing Unit

The Burwood Birthing Unit is committed to providing flexible, safe and supportive care for all women. The Unit is situated within Burwood Hospital in the North West area of Christchurch City and has 10 maternity beds and 3 birth rooms.

The unit recognises the importance of families and friends for new parents so tries to provide a welcoming environment. Closer links with Christchurch Women's Hospital have been established in order to ensure that the health and safety of both mother and baby are maintained.

A team of five community midwives operate from the unit and each has a caseload of up to 50 women per year, providing Lead Maternity Carer (LMC) services for these women.

Childbirth classes are provided with 34 classes held in 2002. A physiotherapist provides care for antenatal and postnatal women as well as the antenatal swimming and infant swimming groups.

In the 2002 calendar year there has been an increase in the number of families using our unit for both birth and postnatal care.

For the five years prior to 2002 there had been a decrease in the number of women choosing to birth at Burwood Birthing Unit. The reasons for this decrease are variable and not easily determined, it was therefore encouraging to have an increase in the numbers of women giving birth in the 2002 calendar year.

The number of women choosing to transfer for postnatal care has also increased since 2001. This may be because of the closer links and improved communication with Christchurch Women's Hospital.

It is reassuring to see that the numbers of women who breastfeed continues to be high with the exclusive breastfeeding rate rising from 80% in 2001 to 85% in 2002. The staff have worked towards accreditation by the Baby Friendly Hospital Initiative in 2002, in collaboration with the Lactation Co-ordinator. Representatives from the NZ Breastfeeding Authority carried out a successful assessment in January 2003.

#### Statistics

**Table 5: Admissions, Discharges and Transfers Numbers**

	2001	2002
Total admissions (excluding babies)	563	651
Intrapartum admissions	218	241
Antenatal transfer to CWH	42	46
Antenatal admissions (not in established labour) and discharged	20	13
Postnatal transfers from CWH	325	397
Neonatal Transfers to CWH	3	6

**Table 6: Labour and Birth Numbers**

	2001	2002
Births	176	195
Primiparous births	51	52
Multiparous births	125	143
Births in Water	42	62
Labours where water used	90	126

**Table 7: Breastfeeding Rates**

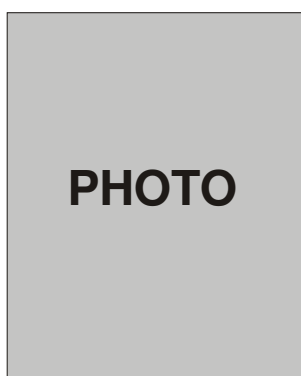
<b>Breastfeeding (Inclusive of Burwood births and transfers)</b>					<b>Burwood births only</b>	
	2001		2002		2002	
Exclusive	395	(80%)	493	(85%)	174	90%
Fully	29	(6%)	23	(3.9%)	1	0.5%
Partially	34	(7%)	40	(6.9%)	12	6.2%
Formula Feeding	33	(7%)	22	(3.8%)	6	3.1%
Total (d)	491		578*		193	**

**Table 8: Ethnicity data**

<b>Ethnicity</b>	<b>2002</b>		<b>Average Length of Stay</b>	
European	889	75.6%	Hours	Approximately 60
Maori	121	10.3%	Days	2.5
PI	31	2.6%		
Asian	14	1.2%		
Middle Eastern	1	0.1%		
Other	27	2.3%		
Not Stated	93	7.9%		
Total	1176	100.0%		

\* BF status not available for 14 women

\*\* BF status not available for 2 women



**Lesley Dixon**  
**Charge Midwife**  
**Burwood Birthing Unit**

## Lincoln Hospital

Lincoln Hospital is a 7 bed maternity facility with two birthing rooms. The facility provides services to women from Christchurch and Selwyn Districts. Services include Early Pregnancy Classes, Pregnancy and Parenting Classes, labour and delivery support and postnatal care.

Whilst numbers of women using the facility are increasing slowly, 2002 showed a definite increase in the number of women birthing at Lincoln. In 2001, 69 women birthed at Lincoln, whereas during 2002 we had 91 births, a pleasing increase of 32% (see Table 9). Of interest, 44% of labouring women used water during this period and 8% decided to birth in water. During the past twelve months data collection has altered and these percentages may be lower than the actual rate.

Lincoln continues to strive to improve services and has spent the later part of 2002 in preparation for an assessment by the NZ Breastfeeding Authority to gain 'Baby Friendly Hospital Initiative' (BFHI) accreditation. This assessment took place in January 2003 and Lincoln achieved BFHI accreditation status. The overall exclusive breastfeeding rate for 2002 is 85% however; women who birth at Lincoln have 98% exclusive rate (see Table 11).

**Table 9: Admission, Discharges and Transfers Numbers**

	2001	2002
Admissions (including babies)	588	615
Intrapartum admissions	83	105
Antenatal transfers to Christchurch Women's Hospital	14	14
Postnatal transfers from CWH	218	205
Neonatal Transfers	1	3

**Table 10: Labour and Birth Numbers**

	2001	2002
Births	69	91
Primiparous births	32	23
Multiparous births	37	68
Births in Water	Not recorded	7
Labours where water used	Not recorded	40

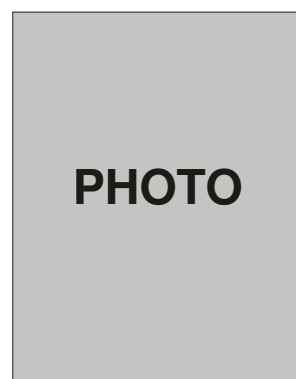
**Table 11: Breastfeeding Rates**

	Breastfeeding (Inclusive of Lincoln births and transfers)				Lincoln births only	
	2001		2002		2002	
Exclusive	235	(84.5%)	251	(85%)	89	(98%)
Fully	23	(8.3%)	10	(3.3%)	0	(0%)
Partially	2	(.07%)	21	(7.1%)	1	(1%)
Formula Feeding	18	(6.5%)	13	(4.4%)	1	(1%)
Total	278		295		91	

Note – in June 2002 data collection methods changed to give a more accurate analysis of breastfeeding data.

**Table 12: Ethnicity Data**

Ethnicity		
European	74	81%
Maori	14	15%
Pacific Island	1	1%
Asian	1	1%
Not Stated	1	1%
Total	91	



**Anne Aitkins**  
**Charge Midwife**  
**Lincoln Hospital**

**Table 13: Length of Stay**

Average Length of Stay	
Hours	Approximately 55
Days	2.2

## Rangiora Hospital

Rangiora Hospital services 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 are based at the unit, each caring for a caseload of fifty women per year, providing a mix of primary and secondary care. The midwives work closely with the antenatal clinic at Christchurch Women's Hospital.

A free cervical screening clinic commenced last year in conjunction with the cervical screening programme and these clinics are proving very popular with up to two clinics per month occurring. The convalescent bed allocated to gynaecology women has been very successful and staff do maintain close links with the Gynaecology Service at Christchurch Women's Hospital. Finally, the new rehydration service for women with hyperemesis commenced in August and those who have used this service have found it beneficial.

The 2002 calendar year has seen a decline in the number of births at Rangiora Hospital. This may have contributed to the cessation of one of the self-employed midwifery practices in North Canterbury. However, recently we have seen an increase in self-employed midwives in our vicinity who are booking women to birth here. This is very positive for the women of Rangiora.

Towards the end of 2002 Rangiora staff collaborated with the Lactation Co-ordinator to seek accreditation by the Baby Friendly Hospital Initiative. Representatives from the NZ Breastfeeding Authority carried out a successful assessment in Jan 2003

**Table 14: Admissions, Transfers and Discharges Numbers**

	2001	2002
Total admissions (including babies)	732	798
Convalescent-care admission	87	99
Gynaecology admissions (dedicated gynae bed)	Not recorded	11
Cervical screening clinic	35	55
Hyperemesis admissions (day stay)	-	2
Intrapartum admissions	99	61
Antenatal admissions (not in established labour) and discharged	Not recorded	32
Antenatal transfer in labour to CWH	17	11
Postnatal transfers from CWH	546	554
Neonatal transfers to CWH	4	5

**Table 15: Labour and Birth Numbers**

	2001	2002
Total births	82	50
Nulliparous births	30	5
Multiparous births	52	45
Births in Water	Not recorded	5
Labours where water used	Not recorded	15

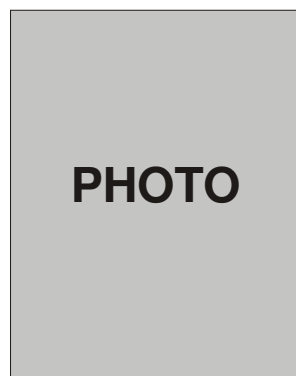
The birth rate of nulliparous women labouring at Rangiora has decreased significantly by 83% during 2002. The multiparous birth rate remains relatively stable. Statistical analysis shows that 30% of women used water during labour, and waterbirths account for 10% of births (see Table 15).

**Table 16: Breastfeeding Rates**

Breastfeeding Inclusive of Rangiora births and transfers					Rangiora births only	
	2001		2002		2002	
Exclusive	366	(91.2%)	334	(86.6%)	45	(90%)
Fully	17	(4.3%)	9	(2.3%)	0	
Partially	9	(2.2%)	9	(2.3%)	1	(2%)
Formula Feeding	9	(2.2%)	34	(8.8%)	4	(8%)
Total	401		386		50	

**Table 17: Ethnicity Data**

Ethnicity		
European	43	86%
Maori	5	10%
Pacific Island		0%
Asian		0%
Not Stated	2	4%
Total	50	



**Suzanne Salton  
Charge Midwife  
Rangiora Hospital**

**Table 18: Length of Stay**

Average Length of Stay	
Hours	Approximately 71
Days	2.6

## Community Midwives

The Women's Health Division has three teams of community midwives, comprising 17 full time equivalent (FTE) positions. A team of four is based at Rangiora hospital, five at the Burwood Birthing Unit and eight FTE's are based at Christchurch Women's Hospital. The midwives operate under Section 88 of the Health and Disability Act 2000, fulfilling the role of Lead Maternity Carer.

The midwives care for clients with a variety of conditions and provide not only primary care, but also extensive secondary/tertiary care (with medical input). Some conditions that community midwives are familiar with include Diabetes and Cardiac disease.

### Christchurch Women's Community Midwives (CWCMs)

**Table 19: Parity of Women delivered by CWCM**

Parity	(n)	%
Nulliparous births	170	38.5
Multiparous births	271	61.5
Total births	441	100

During the 2002 year the Christchurch Women's Hospital Community Midwives provided care to a total of 441 women, representing 10.6% of the CWH births. When this data is analysed further the parity, whilst relatively evenly split, identifies that 38.5% of women were nulliparous at the time of initial booking and 61.5% of women were of multiparous status (refer to Table 19)

At the time of labour 23% of women under the care of a CWCM decided to have an epidural and this rate compares very favourably with the general population who used CWH facilities and whose rate was 53%. In total 37% of the births conducted by the community midwives resulted in normal vaginal deliveries. Whilst this figure is equal to the general birthing population, the assisted birth rate was only 12%. A slightly lower rate than the general population of CWH which was 16%. Interestingly, the caesarean section rate for community midwives was higher at 32%. This rate probably reflects the complex medical conditions of some of the clients. Finally, the Methadone in Pregnancy programme comprised 13 women in the 2002 year.

**Table 20: Ethnicity Data of Women delivered by CWCM**

Ethnicity	%
European	70.56
Maori	9.81
Pacific Island	7.52
Asian	8.98
Middle Eastern	1.46
African	1.25
Other	0.42

The Midwives not only care for women with a variety of conditions but also women with a diverse range of ethnicities (refer to Table 20).

**Table 21: Comparison of CWCM Epidural Rates with total CWH population**

	Total births	Epidurals (n)	Epidurals (%)
CWCM population	441	101	23%
CWH population	4149	1371	37%

**Table 22: Comparison of CWCM Mode of Birth with Total CWH population**

Mode of Birth	CWCM		CWH	
	(n)	%	(n)	%
Spontaneous Vaginal Birth	248	56%	2301	56%
Vaginal birth -assisted	53*	12%	641*	16%
Caesarean section	140	32%	1174	29%
Total	441	100%	4116	100%

\*Breech births have not been included.

**Di Ballantyne**  
Charge Midwife, Antenatal Clinic

## Antenatal Reports

### Antenatal Clinic

The Christchurch Women's Antenatal Outpatient Clinic provides obstetric consultations for pregnant women. Referrals are received from midwives, general practitioners and consultants.

There are three major clinics per week, two of which are specialised. The 'High Risk' clinic (or combined clinic) involves obstetricians and physicians, a dietitian, diabetes nurse and midwives. This allows a multidisciplinary approach for women with medical conditions which affect pregnancy. These conditions include diabetes, maternal fetal medicine and fetal abnormalities. This clinic is known as the Professorial (Prof) Unit clinic.

The Methadone in Pregnancy Service (MIPS) clinic is also a multidisciplinary clinic involving midwives, obstetricians, a midwife from the Team Care Group and also, the mental health team from the Methadone Programme. The multidisciplinary approach allows for consultation between all care providers. Prior to each weekly clinic an education session takes place – this includes parent education and education around issues relating to taking drugs. This clinic is run as part of the Bashford clinic under the care of the Tutor Specialist, Dr S Bolitho.

The remaining Antenatal clinic is the Peddie / Poad clinic, which provides obstetric consultations by specialist Obstetricians. All Obstetric teams have registrars and house surgeons working under supervision. There are also trainee interns and medical students at times throughout the year as CWH is a teaching facility.

Table 23 depicts the amount of patient contact that specific clinician groups had during 2002.

#### New Service commencing 2003

The 'Team Care Midwives' (TCM) comprise of eight midwives who will work as a team providing midwifery care to women whose needs are greater than the average pregnant women. This team of midwives commences in 2003.

**Table 23: Antenatal Clinic Statistics**

2002	Community Midwife	Doctor	MIPS	Clinic Midwife	Physician Clinic	Antenatal Daycare	Fetal Maternal Assessment
Jan	123	328	18	39	66	18	
Feb	143	288	20	27	64	4	
Mar	152	376	18	38	71	15	
Apr	143	402	23	38	85	27	
May	108	395	16	40	93	22	
Jun	92	333	19	38	83	49	
Jul	82	430	16	55	110	19	
Aug	133	364	14	50	91	36	
Sep	104	381	6	42	115	50	
Oct	102	334	7	40	71	46	
Nov	94	331	5	35	91	7	32
Dec	98	382	11	30	102	0	44
<b>Total</b>	<b>1374</b>	<b>4344</b>	<b>173</b>	<b>472</b>	<b>1042</b>	<b>293</b>	<b>76</b>

**PHOTO**

**Di Ballantyne**  
Charge Midwife, Antenatal Clinic

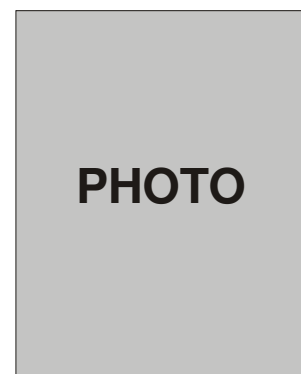
## Fetal Maternal Assessment

The Fetal Maternal Assessment Unit (FMA) is a new service started in November 2002. The aim of the Unit is to improve pregnancy care and understanding if a pregnancy becomes compromised. The Unit is part of Outpatients and operates Monday to Friday, 8.30am – 4.30pm, after-hours monitoring is carried out in Delivery Suite.

The FMA Midwife sees women in their third trimester of pregnancy requiring monitoring as outpatients. Conditions monitored include, hypertension, IUGR, diabetes etc. This service allows a woman to remain at home and tries to be flexible to her needs. Ensuring women understand what is going on is most important and close liaison with LMCs and Medical/Obstetric teams is vital.

The Midwife is also involved in the area of pre-natal diagnosis, liaising closely with Dr Rosemary Reid, Convenor, Fetal Anomaly Advice Committee. Women who require consultation and investigations based on present or family history, ultrasound detection of abnormalities, karyotyping, or other specific prenatal diagnostic test and investigations are co-ordinated through the Unit and close liaison is maintained with the woman's LMC and/or doctor.

This is a new and evolving service, which it is exciting to be a part of. As such, it is important to liaise and be involved in benchmarking exercises with other units doing similar work throughout NZ to ensure a high standard of service. Development of Resources is a key objective for the coming year.



**Jeannie Mathews  
Midwife**

## Maternal Diabetes Mellitus (DM)

Maternal diabetes is one of the most common medical conditions to complicate pregnancy, affecting 3 - 7% of pregnant women depending on the local population. It can be divided into two main groups: pregestational/preexisting diabetes (including Type 1 and Type 2 diabetes) and gestational diabetes (GDM). Gestational diabetes is a heterogeneous entity that includes women who develop diabetes during pregnancy as well as those with previously undiagnosed overt diabetes discovered during pregnancy. In this audit the majority of women with GDM were in the former group. Both pre-pregnancy DM and GDM are associated with an increased risk of maternal, fetal and neonatal adverse outcomes. The multidisciplinary team caring for women with diabetes in pregnancy at Christchurch Women's Hospital aims to optimise outcomes for these mothers and their infants. The team consists of a diabetes nurse, a dietitian, midwives, obstetric physicians and obstetricians. We are very grateful to Jean Bell who keeps an accurate record of women attending the clinic and their clinical course and to David Cole, Physician.

In this audit we look at the clinical course, fetal and neonatal outcomes of those women who delivered at Christchurch Women's Hospital in 2002 and were cared for by the multidisciplinary team.

The audit was part of the Summer Studentship Programme and ethical approval was obtained prior to the commencement of this project.

**Table 24: Women with DM (n=107) who delivered at CWH in 2002**

	No. of DM women who presented to the CWH antenatal services (included in audit)	No. of DM women who did not present to the CWH antenatal service (not in audit)	Total
Pre-existing DM	24	1	25
GDM	61	21	82
<b>Total</b>	<b>85</b>	<b>22</b>	<b>107</b>

107 women with DM delivered at CWH in 2002. Only those women who presented to the CWH antenatal service were included in the audit. Of the 85 women included in the audit, 5 delivered twins. The mean age for these 5 women was 36. Three women had dichorionic diamniotic twins (2 out of the 3 were IVF) and 2 had diamniotic monochorionic twins.

**Table 25: Characteristics of the DM Study Population**

	Background Population		Type 1		Type 2		GDM	
Total No. of Women in Each Group	4149		12		12		61	
	n	%	n	%	n	%	n	%
<b>Ethnicity</b>								
NZ European	3494	84%	10	84%	6	50%	40	66%
Maori	275	7%	1	8%	1	8%	4	7%
Pacific Island	117	3%	0	0%	2	17%	7	11%
Others	263	6%	1	8%	3	25%	10	16%

Maternal Age at Booking	4149		12		12		61	
15 - 24	754	18%	2	17%	0	0%	6	10%
25 - 34	2405	58%	7	58%	5	42%	37	61%
≥35	990	24%	3	25%	7	58%	18	29%

Family History of DM	4149		12		12		61	
Type I Family History			5	42%	5	42%	7	11%
Type II Family History			1	8%	7	58%	27	44%
Family History with Type Unspecified			3	25%	2	17%	7	11%
No Family History of DM			4	33%	3	25%	23	38%

Prepregnancy DM Treatment	4149		12		12		61	
Insulin			12	100%	0	0%	NA	NA
Oral Hypoglycaemics			0	0%	9	75%	NA	NA
Life Style Modification Only			0	0%	3	25%	NA	NA

Gravidity	4149		12		12		61	
1			0	0%	4	33%	15	25%
2 - 4			8	67%	4	34%	32	42%
≥5			4	33%	4	33%	14	23%

Background population consisted of all women who delivered at CWH in 2002.

**Table 26: Maternal Clinical Course of Diabetes in Pregnancy**

Total No. of Women in Each Group	Type 1		Type 2		GDM	
	12		12		61	
	n	%	n	%	n	%
<b>Gestation at 1st Visit to Antenatal Clinic (Week)</b>						
<8	2	17%	3	25%	0	0%
8 - 13	6	50%	5	42%	9	14%
>13	4	33%	4	33%	52	86%
<b>Folic Acid Ingestion at Booking (Dose)</b>						
High	2	17%	4	33%	3	5%
Low / Unspecified Dose	4	33%	3	25%	11	18%
Not Taken/Not Recorded	6	50%	5	42%	47	77%
<b>Hypertension</b>						
Essential and Gestational	3	25%	4	33%	17	27%
Gestational Proteinuric hypertension	2	17%	1	8%	8	13%
<b>Glycaemic Control</b>						
No Hyperglycaemia Since Managed at Antenatal Clinic	2	17%	5	42%	43	70%
Ingestion of Oral Hypoglycaemics	0	0%	0	0.0%	0	0%
Need for Insulin	12	100%	11	92%	37	61%
Diminution of Insulin requirements Prior to Delivery	0	0%	0	0.0%	1	2%

**Table 27: Fetal Monitoring undertaken during pregnancy**

Total No. of Fetuses in Each Group	Type 1		Type 2		GDM	
	13		13		64	
	n	%	n	%	n	%
<b>Total No. of Pregnancy USS (Ultrasound Scans)</b>						
0 - 3	1	8%	2	17%	13	21%
4 - 6	3	25%	4	33%	37	61%
7 - 10	5	42%	4	33%	9	15%
>10	3	25%	2	17%	2	3%
<b>Ultra sound investigations</b>						
<b>1. Fetal Growth</b>						
Macrosomia	4	31%	0	0%	12	19%
IUGR	3	23%	4	31%	4	6%
<b>2. Liquor Volume</b>						
Polyhydramnios	2	15%	0	0%	6	9%
Oligohydramnios	2	15%	4	31%	9	14%
Normal	8	62%	7	54%	48	75%
Not Measured	1	8%	2	15%	1	2%
<b>3. Fetal Liver Length</b>						
Increased	4	31%	3	23%	10	16%
Normal	5	38%	7	54%	39	61%
Not Measured	4	31%	3	23%	15	23%
<b>4. Fetal Interventricular Septum</b>						
Thickened	4	31%	0	0%	3	5%
Normal	3	23%	2	15%	9	14%
Not Measured	6	46%	11	85%	52	81%
<b>5. Doppler blood flow studies</b>						
Normal	10	77%	9	69%	52	81%
Abnormal	2	15%	0	0%	3	5%
Not Measured	1	8%	4	31%	9	14%
<b>Antenatal CTG</b>						
Normal	10	77%	10	77%	56	88%
Abnormal	2	15%	1	8%	6	9%
Not Measured	1	8%	2	15%	2	3%

The documented fetal monitoring represents an enormous input of resources to the pregnancy care of these women. It is interesting to note that a high proportion of women have had an assessment of fetal liver size in addition to standard growth parameters, to attempt to appraise further fetal affects. Similarly, there are very high numbers of women being monitored with antenatal cardiotocographs.

**Table 28: Obstetric and Neonatal Outcomes**

Total No. of Live Birth In Each Group	Background population		Type 1		Type 2		GEST	
	4149		11		11		62	
	n	%	n	%	n	%	n	%
<b>Gestational Age (Weeks)</b>								
<37			7	64%	2	18%	8	13%
37 - 38			4	36%	8	73%	42	68%
>38			0	0%	1	9%	12	19%
<b>Onset of Delivery</b>								
Induction	1153	28%	4	36%	5	45%	30	48%
Spontaneous	2673	64%	3	27%	2	18%	21	34%
<b>Delivery Route</b>								
NVD	2323	56%	2	18.2%	4	36.4%	31	50%
AVD	652	15.7%	1	9.1%	0	0%	5	8.1%
Elective CS	323	7.8%	4	36.4%	4	36.4%	11	17.7%
Emergency CS	851	20.5%	4	36.4%	3	27.3%	15	24.2%
<b>Neonatal Growth</b>								
Macrosomia			3	27%	1	9%	9	14.5%
IUGR			1	9%	2	18%	1	1.6%
Apgar 1 min <6			0	0%	1	9%	2	3%
Apgar 5 min <7			0	0%	1	9%	1	1.6%
Neonatal Acidosis			5	45%	1	9%	9	14%
Admission to NNU			8	73%	5	45%	15	24%
Neonatal Jaundice			7	64%	5	45%	26	42%
Need for Respiratory Support			2	18%	4	36%	13	21%
RDS			0	0%	1	9.1%	4	6.5%
Neonatal Hypoglycemia (glucose <2.6 mmol/L)			8	73%	7	64%	29	47%
Supplementary Feeding Due to Hypoglycemia			8	73%	7	64%	29	47%
Supplementary Feeding Due to Other Reasons			3	27%	3	27%	13	21%
Congenital Malformation*			2	18%	0	0%	4	6.5%

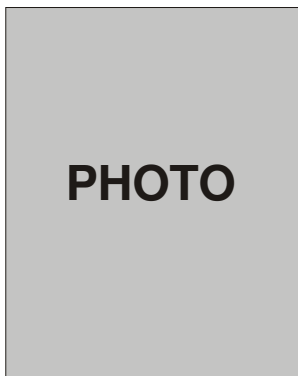
\*In the pregestational DM group, one baby had skeletal dysplasia and the other baby had congenital heart disease. The 4 cases of malformations from the GDM group were right kidney atrophy, 2 cases of dilated renal pelvis and one baby with deviated nasal septum (maternal liquor volume normal).

There were two perinatal deaths in the study period. From the Type 1 group there was a stillbirth at 37 weeks and 1 perinatal death at 28 weeks in a mother with newly diagnosed gestational diabetes, which was thought to be unrelated.

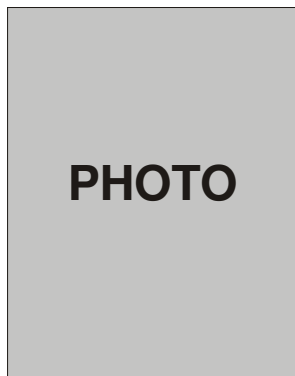
In summary, the overall outcomes for the study population of women and their infants is very satisfactory with only two fetal losses and reassuringly low rates of neonatal macrosomia.

The rates of obstetric intervention are very high, particularly the caesarean section rate. Over recent years, the team has changed its policy in relation to the induction of women with diabetes and, where control is good and there is no evidence of fetal affect, routine induction is deferred to 40 or even 41 weeks in gestational diabetes. It will be interesting to scrutinise this area more closely in further audits. Another area of interest was the high rate of Neonatal supplementary feeding. In view of the risks of hypoglycaemia these rates may be entirely appropriate. However, working within a hospital that is so supportive of breastfeeding, it may be worth focussing on this group particularly where supplementary feeding is for other reasons.

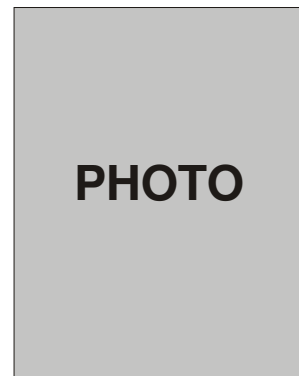
**Miriam Wu, Summer Student**



**Rosemary Reid  
Senior Lecturer**



**Dr Peter Moore  
Physician**



**Jean Bell  
Midwife, A/N Clinic**

## Antenatal Admission Rates

The number of antenatal admissions to the antenatal/postnatal wards 5 and 6 has risen steadily. At present the data available has not correctly reflected the actual workload or numbers of antenatal women, as the information historically has been obtained from coding on discharge. This means if a patient is admitted for antenatal cares but discharges after giving birth she is coded as a postnatal. By this method no recognition is given to the antenatal episode of care.

For the month of March the antenatal admissions were recorded as 44 when in fact the data that was collected manually showed 91 admissions. Table 29 expresses the total admissions for March as a percentage of reason for admissions. The most common reason for admission is Induction of Labour cares, followed by PET/PIH cares.

A database that will reflect the actual number of antenatal admissions and workload involved is being started for the coming year.

**Table 29: Antenatal Admissions**

Reason for Admission	Percentage of total admissions	Average Gestation	Average Stay (days)	Minimum Stay (days)	Maximum Stay (days)
Abdo pain	4	29.5	4.8	1.0	15.0
APH	7	33.3	2.3	1.0	7.0
Diabetes Stabilisation	7	32.0	7.7	1.0	29.0
Early Labour	2	36.5	1.5	1.0	2.0
IOL Cares	22	39.5	1.2	1.0	5.0
IUGR/Fetal Monitoring	10	35.0	3.0	3.0	3.0
Multiple Pregnancy	4	33.8	3.0	1.0	4.0
PET/PIH	13	36.0	2.6	1.0	9.0
Placenta Previa	5	34.5	10.4	1.0	43.0
Prem Labour	5	34.4	1.6	1.0	3.0
PROM (not in labour)	9	36.1	1.3	1.0	3.0
DVT and /or PE	1	37.0	1.0	1.0	1.0
Pylonephritis	1	35.0	1.0	1.0	1.0
Reduced fetal movements	1	38.0	1.0	1.0	1.0
UTI	3	28.7	2.7	2.0	4.0

**PHOTO**

**Chris Mazey**  
**Charge Midwife**  
**Antenatal, Postnatal Wards**

# Labour and Delivery Reports

## Induction of Labour

The total number of women who underwent an induction of labour during 2002 was 1153, or 28% of the total birthing population. The rate in 2001 was 30%.

**Table 30: Percentage of IOL compared to 2001**

Year	IOL (n)	Total Births (n)	(%)
2001	1282	4278	30
2002	1153	4149	28

As a measure of appropriateness of induction WHD utilises the Royal Australian New Zealand College of Obstetrics and Gynaecology (RANZCOG) obstetric indicator topic 'induction of labour for other than for defined indications'. For the purpose of this indicator, defined indications are:

- Diabetes
- Premature rupture of membranes
- Hypertensive disorders (including chronic renal disease)
- Intrauterine growth retardation
- Isoimmunisation
- Fetal distress (as documented by the clinician)
- Fetal Demise
- Chorioamnionitis
- Prolonged pregnancy (41 completed weeks, or more)

Induction of labour is defined as a surgical and/or medical induction.

### Clinical Indicator 1.1

**Numerator** The number of patients undergoing induction of labour for indications other than those listed above (excluding augmentation of labour).

**Denominator** The total number of patients undergoing induction of labour for any reason (excluding augmentation of labour).

The Royal Australian New Zealand College of Obstetric and Gynaecology has set the provisional threshold at 31.6 – 42.1% with a mean of 36.7%. For the year 2002 CWH measured 24%, which is well below the threshold.

**Table 31: Women Undergoing an IOL for 'Other' Indicators as a Proportion of all Women Having an Induction**

Year	Numerator	Denominator	(%)
2001	373	1287	29
2002	282	1153	24

### Clinical Indicator 1.2

**Numerator** The number of patients undergoing induction of labour for indications other than those listed above (excluding augmentation of labour).

**Denominator** The total number of patients delivering (including augmentation of labour).

The Royal Australian New Zealand College of Obstetrics and Gynaecology has set the provisional threshold at 10.0 – 13.7% with a mean of 11.7%. CWH measured 7% which, for the second year, is below the threshold and is down on the 2001 figure of 9%.

**Table 32: Women Undergoing IOL for 'Other' Indications as a Proportion of all Births**

Year	Numerator	Denominator	(%)
2001	373	4241	9
2002	282	4149	7

Table 33 shows the percentage breakdown of the total induction numbers by the RANZCOG 'defined indications for induction'.

**Table 33: RANZCOG Defined Indications for IOL**

Reasons for Induction of Labour	2001 (%)	2002 (%)
Diabetes	3	4
Pre Labour Rupture of Membranes	8	12
Hypertensive Disorders	17	15
Intrauterine Growth Retardation	8	7
Isoimmunisation	0	0
Fetal Distress	0	1
Fetal Demise	1	1
Chorioamnionitis	0	0
> 41 weeks	35	36
Other	29	24

During 2002 the gravidity of women undergoing an IOL was evenly distributed between multiparous and nulliparous women (refer Table 34).

**Table 34: Parity of Women Undergoing an IOL**

IOL Parity	2001 (%)	2002 (%)
Nulliparous	51	50
Multiparous	49	50

In line with the ethnicity ratio, the percentage of women having an induction is representative of the total obstetric population profile, ie 6.63% of the obstetric population is Maori and they account for 5% of inductions.

**Table 35: A Comparison of IOL with Total CWH Birthing Population by Ethnicity**

Ethnicity	Total (%) of IOL	Total % of all Obstetric women
European	87	84.21%
Maori	5	6.63%
Pacific Islander	3	2.82%
Asian	3	4.72%
Middle Eastern	0	0.41%
Latin American	0	0.05%
African	0	0.22%
Other	0	0.02%
Not Stated	2	0.92%

**Table 36: Mode of Birth Following IOL, by Parity**

Mode of Birth	Total		Nulliparous		Multiparous	
	(n)	(%)	(n)	(%)	(n)	(%)
Vaginal	648	56.2	181	31.3	467	81.3
Ventouse	110	9.5	73	12.6	25	4.3
Forceps	88	7.6	85	14.3	15	2.6
Em caesarean section	307	26.6	240	41.5	67	11.6
<b>Total</b>	<b>1153</b>	<b>100%</b>	<b>579</b>	<b>100%</b>	<b>574</b>	<b>100%</b>

Anecdotal evidence suggests that caesarean sections and assisted vaginal births are higher in women who are induced. This report attempts to determine if there is any truth to this suggestion.

Table 36 details the births by mode, with the corresponding percentages and looks specifically at the gravidity of the IOL population, comparing nulliparous modes of birth (by numbers and percentages) with the multiparous group. 2002's data clearly illustrates that nulliparous women who commenced an IOL had a 41.5% (240/579) chance of undergoing a caesarean section. This is an increase of 10% from 2001 when the likelihood of nulliparous women requiring a caesarean section after commencing an IOL, was 31%. Conversely, the chances of multiparous women needing a caesarean section was 11.6% in 2002 and this compares favourably to data obtained in 2001 when the rate was 14.4% (refer Table 36).

The chance of nulliparous women having an unassisted vaginal birth after commencing an IOL was 31%. However, a multiparous woman had a much greater likelihood of a vaginal birth at a rate of 81%.

The total assisted vaginal birth rate in 2002 was 16% (652/4149) of all births. Review of the IOL data identified that an almost equal percentage (17%) of births following IOL were instrumental (refer to Table 37). This data suggests that IOL had no significant impact on the overall assisted vaginal birth rate.

**Table 37: Comparison of Assisted Vaginal Birth rates Following IOL with Assisted Vaginal Birth rates for all Births**

	Assisted Vaginal Birth (n)	Total Number of Births (n)	(%)
Total Births	652	4149	16
IOL only Births Following	198	1153	17

Further sub-analysis of nulliparous women highlighted that their chance of having an assisted vaginal birth was greater at 27% when undergoing an IOL. In order to determine the significance of this finding, the subgroup was compared to nulliparous women who also required an assisted vaginal birth, (but not an IOL) and their rate was 28% (Table 38).

Again, this finding suggests that IOL does not appear to affect assisted vaginal birth rates for nulliparous women.

**Table 38: Comparison of Assisted Vaginal Birth Rates for Nulliparous Women Following IOL with Assisted Vaginal Birth Rates for all Nulliparous Births**

	Assisted Vaginal Birth (n)	Nulliparous	(%)
All Nulliparous Births	514	2035	28%
IOL - Nulliparous	158	579	27%

The total caesarean section rate in 2002 was 28% (1153/4149) of all births. Review of the IOL data identified that 27% of births following IOL were caesarean section.

**Table 39: Comparison of Caesarean Section Rates Following IOL with Caesarean Section Rates for all Births**

	Caesarean section (n)	Total Births (n)	(%)
Total births	1147	4149	28
All Births following IOL	307	1153	27

Sub-analysis of nulliparous women in Table 40 highlighted that their chance of having a caesarean section was increased to 41.5% when undergoing an IOL. By comparison, the overall caesarean section rate is 35% for the nulliparous group who gave birth in 2002 (Table 40). These findings suggest that having an IOL increases the chance of a nulliparous woman having a caesarean section by only 6.5%.

**Table 40: Comparison of Caesarean Section rates for Nulliparous Women Following IOL with Caesarean Section Rates for all Nulliparous Births**

	Caesarean section (n)	Total Births (n)	(%)
All Nulliparous births	705	2035	35.0
All Nulliparous Births following IOL	240	579	41.5

Caesarean section following IOL for all parities made up 26% of the total caesarean section rate. Sub-analysis of the data set following IOL for multiparous women indicated a rate of 14% and the nulliparous rate of caesarean section for women following IOL was 34% (Table 41).

**Table 41: Percentage of Caesarean Section following IOL to the Total Caesarean Section Rate**

Parity	Total caesarean section (n)	Caesarean section following IOL	
		(n)	(%)
Nulliparous	705	240	34
Multiparous	469	67	14
All parities	1174	307	26

### Summary

Clearly this report highlights that the rate of IOL has decreased over the last 2 years, however regardless of this finding, the caesarean section rate continues to climb steadily. Comparing the IOL findings with a comparable group, ie nulliparous subgroup who required an assisted vaginal birth or caesarean section, did not substantiate the earlier suggestion that the cascade of intervention commenced by IOL increases the likelihood of further intervention.

### Acknowledgments

Information referred to in this report was collated via a variety of means but primarily, the report could not have been completed without the ongoing support of Helene Frapwell, Information Analyst who relentlessly reviewed data every month.

The Clinical Records department codes Induction of Labour and this was cross-matched with data obtained from CareSys (WHD patient management system). A further cross-reference is made to the IOL diary maintained by the charge midwives of the Birthing Suite. In regards to the reason for IOL, this information was collected from the Delivery Summary Sheets completed at the time of birth, by the midwife providing care.

**PHOTO**

**Rayoni Keith**  
Clinical and Risk Projects Facilitator

**Sharron Bolitho, Tutor Specialist**

## Waterbirth

The installation of a birthing pool in the Birthing Suite in September 2001 was met with excitement and some apprehension. Initially intended for use in the first stage of labour as a form of analgesia, it was not long before the pool was being used for birthing as well. The pool is an asset to the Birthing Suite facility and offers an alternative for women planning to birth in a secondary unit.

Table 42 compares the total number of women who had a waterbirth with the total number of women who had an unassisted vaginal birth at CWH (46/1671). This would indicate that 2.7% of all women who had a normal vaginal birth at CWH did so in water.

**Table 42: Vaginal Deliveries**

Year	Waterbirths (n)	Vaginal Deliveries	(%)
2002	46	1671	2.7%

Table 43 compares the total number of women who gave birth in water with the total number of women who gave birth at CWH (46/4149), highlighting that only 1.1% of all births are waterbirths.

**Table 43: Births**

Year	Waterbirths (n)	Births	(%)
2002	46	4149	1.1%

Whilst the total percentage of women who gave birth in water is low at 1.1%, it is reassuring to learn from the CareSys database that 415 women (10%) used water as a form of pain management during labour.

Christchurch Women's Hospital staff did attempt to benchmark with other hospitals providing a similar secondary/tertiary service and were unable to do so at this stage. However, statistics are available for the primary facilities. Burwood Birthing Unit conducted more waterbirths as a proportion of the total number of WHD births compared to Lincoln, Rangiora and CWH (refer to Table 44). Although the primary units have relatively low birth numbers in comparison to the total number of births at CWH, it would appear that the practice of labouring and birthing in water is popular at these units.

**Table 44: Primary Units and CWH Births / Waterbirth Rate**

Unit	Total Births	Waterbirths	%
Burwood Birthing Unit	195	62	31.7 %
Lincoln	91	7	7.7 %
Rangiora	50	5	10.0%
CWH	4149	46	1.1%

The following statistics provide a summary of information about the women who chose to labour and birth in water at CWH. Two thirds of these women were multiparous. All births occurred at a gestational range of between 37 - 41 weeks with the age range of the women varying from 15 - 41 years. Of note, 11 women were aged 35 years or more and this particular age group has been identified by the WHA as a group worthy of monitoring because there is a consistent relationship between the increasing maternal age and an increasing caesarean section rate.

The ethnicity of women using the pool was predominantly European, with the second largest group (13%) identifying as Maori. The length of labour ranged from 1 hour 46 minutes to 11 hours 6 minutes, giving an average labour time of 5 hours 32 minutes. The vast majority of labours (96%) were spontaneous, with only a couple (4%) occurring following an induction. Of interest are the figures for artificial rupture of membranes (20% of women) and the number of women who had had a previous caesarean section (6.5%). A consultation with an obstetrician is strongly recommended for women who wish to birth in the pool and have any previous or current obstetric complications. Blood loss was within acceptable limits with 2 women (4%) experiencing a blood loss of 500 – 1000mL, and 63% of perineums were intact. In summary it appears that the majority of women who choose to birth in water at CWH are term, multiparous, European women in their thirties.

**Table 45: Statistics for Women who gave birth in Water**

Parity	(n)	%
Nulliparous	18	39 %
Multiparous	28	61 %

Age Range	15 – 41 yrs
	Mode 30 yrs
	Average 30 yrs

Ethnicity	(n)	%
European	35	76 %
Maori	6	13 %
Pacific Islander	1	2 %
Asian	2	4 %
Not stated	2	4 %

Gestation Range	37 – 41 weeks
Mode	40 weeks
Medium	40 weeks
Average	40 weeks

Length of labour		
1 hr 46 mins – 11 hrs 6mins		
Mode	3hrs	27 mins
Medium	5 hrs	39 mins
Average	5 hrs	32 mins

Labour	(n)	%
Spontaneous	44	96.0
IOL	2	4.0
ARM*	9	19.5
VBAC's*	3	6.5

\* Figures not mutually exclusive

Blood Loss (mL) at birth	(n)	%
< 250	25	54 %
250 - 450	19	41 %
500 - 1000	2	4 %

Perineum Trauma	(n)	%
Intact	29	63.0
First Degree	3	6.5
Second Degree	14	30.5

The assessment of the infants at birth indicated that their condition was satisfactory at one and five minutes. No infants were admitted to the Neonatal service as a result of a waterbirth (Table 46).

**Table 46: Apgar monitoring**

Apgar	01min (n)
6	1
7	1
8	5
9	31
10	8
Mode	9

Apgar	05 min (n)
8	2
9	7
10	37
Mode	10

**Conclusion**

The number of women who birthed in water at CWH represents 1.1% of the total births, even though 10% of women chose to labour in water. The pool is an asset for women birthing at a secondary unit, providing them with an alternative choice of pain relief and increased birthing options. Whilst these statistics are encouraging, it would be premature to draw any concrete conclusions from them.



**Debbie Earl**  
Charge Midwife, Birthing Suite

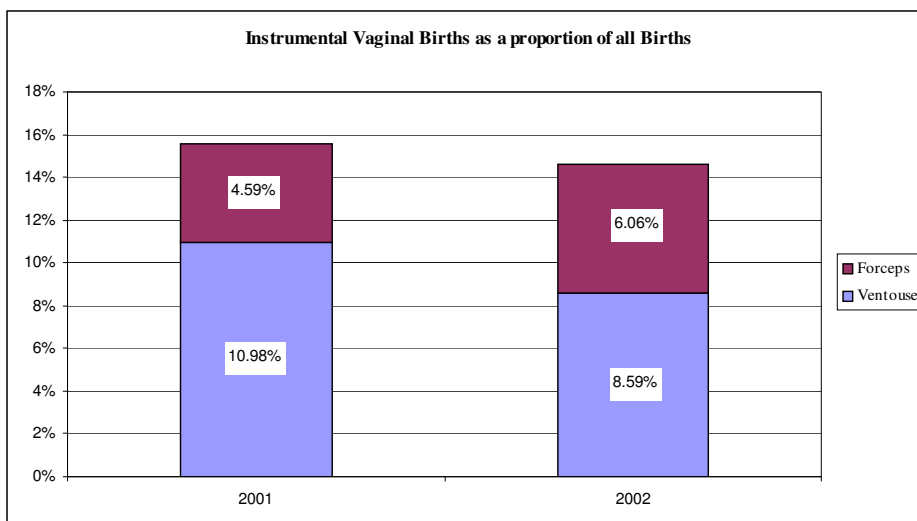
## Instrumental Vaginal Births

This is the first year that instrumental vaginal births have been included in this report. The data recorded has been collated from the CareSys computer data input from all births. This database was not designed for audit purposes, therefore there may be some inaccuracies.

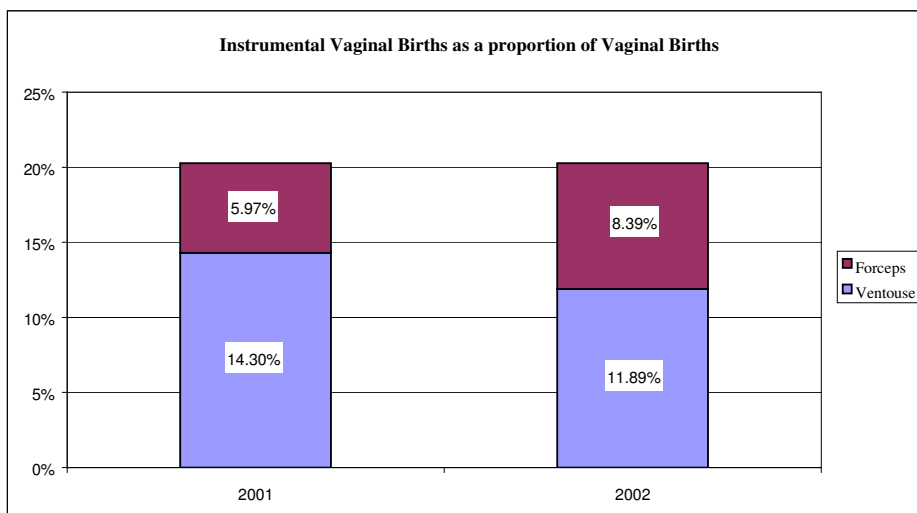
The rate of instrumental vaginal deliveries as a proportion of all deliveries in 2002 was 14.59% compared to 15.56% in 2001 (refer to Figure 1).

As a proportion of all vaginal deliveries (ie. removing caesarean section statistics from the figure) the rate of instrumental vaginal deliveries in 2002 was 20.28% compared to 20.27% in 2001 (refer to Figure 2).

**Figure 1: Instrumental Births as a proportions of all Births**



**Figure 2: Instrumental Vaginal Births as a proportion of Vaginal Births**



Of the labouring women transferred to the unit, many come to CWH specifically because of the need for assisted delivery. This includes women who start labouring at St Georges Hospital, Burwood Birthing Unit, Lincoln and Rangiora Hospitals, as well as women planning a home birth. This must be considered in reviewing these figures.

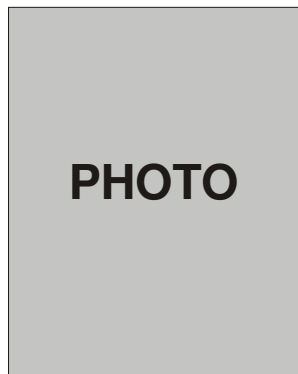
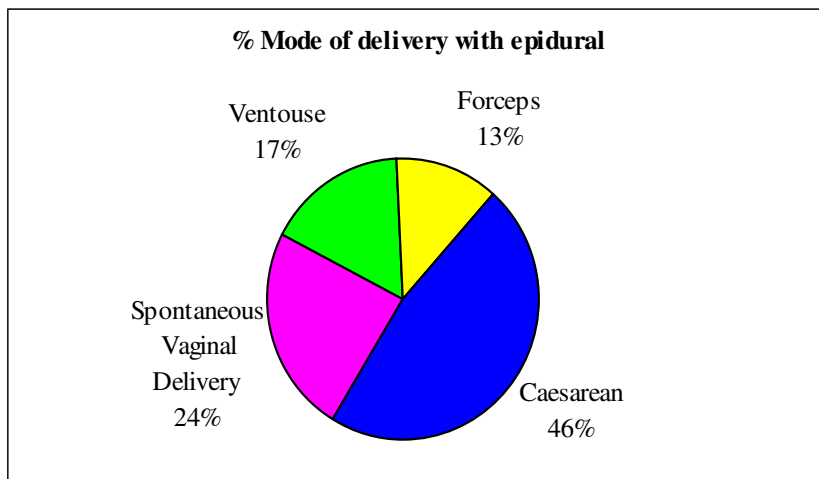
In 2002, the rate of instrumental vaginal delivery as a proportion of all deliveries for those women transferred into the unit was 24.52% in comparison with the total for the unit excluding transfers of 13.98%.

### Epidural and the Instrumental Birth Rate

Epidural has been implicated in increasing the instrumental birth rate. In 2002, 1371 women took advantage of the epidural service representing 36.34% of the birthing population.

From the available data, including clinical coding information, it was possible to work out the mode of delivery for women with epidurals. This information is shown in Figure 3

**Figure 3: Percentage mode of Birth with Epidural**



**Helen Paterson**  
Obstetric and Gynaecology Registrar

## Caesarean Section

### Introduction

Caesarean Section has been a hot topic in the media over the last few years. It is a very important area of obstetric audit and there is a high level of interest amongst the general public and health professionals about caesarean section rates and indications.

As part of our ongoing clinical practice improvement activities, Christchurch Women's Hospital (CWH) has set up a database to improve our audit process for caesarean section. Over the last 2 years a triplicate standardised caesarean section operation note has been introduced. A copy of this note is kept in a folder in labour ward and the data from these entered into the database by data entry personnel. The process of data gathering has improved from 2001, but we are still not able to complete all the Women's Health Division (WHD) nominated clinical indicators using the database. There will be further refinements to the caesarean section form and to the process of data entry as a result of this audit report. Information on vaginal and total births is from the CareSys database. Please note that in the caesarean section database parity is recorded prior to the caesarean section, whereas CareSys records parity after delivery ie a nullipara in the caesarean section database is a primipara in the CareSys database.

This report presents the CWH and Canterbury DHB region caesarean section data for 2002. Firstly general statistics and secondly a sub analysis concerning the four most common reasons for caesarean section, including WHD clinical indicators where possible. This is followed by a discussion on possible factors affecting each caesarean section rate.

It is hoped that this audit document will prompt wider debate and feedback from all the clinicians at CWH.

It is important that our audit in this institution should not be too focused on overall rates but rather on ensuring that there are clear clinical indications for individual caesarean section.

### General Caesarean Section Data

**Table 47: Caesarean Section Rates at CWH for 2002 by parity and type of caesarean section**

Parity	Total births	Elective C/s		Emergency caesarean section		Total caesarean section	
		(n)	%	(n)	%	(n)	%
Nulliparous	2035	94	2.3%	604	14.6%	698	16.8%
Multiparous	2114	229	5.5%	247	6.0%	476	11.5%
All parities	4149	323	7.8%	851	20.5%	1174	28.3%

**Table 48: Caesarean Section rates at Christchurch Women's Hospital**

Parity	Total births	Elective C/s		Emergency caesarean section		Total caesarean section	
		(n)	%	(n)	%	(n)	%
1999	3765	264	7.1%	608	16.1%	872	23.2%
2000	4108	234	5.7%	643	15.6%	877	21.3%
2001	4241	214	5.0%	817	19.3%	1031	24.3%
2002	4149	323	7.8%	851	20.5%	1174	28.3%

Looking further afield how does CWH compare with other hospitals?

Firstly, with other NZ hospitals. The most recent nationwide report is the Ministry of Health (MOH) document 'Report on Maternity 1999'. The total caesarean section rate for NZ in 1999 was 20.4% and the rate for all tertiary institutions combined was 24.3%. The national elective caesarean section rate was 7.1%.

Secondly, with overseas hospitals. In making international comparisons it is important to choose countries with a similar economic, and demographic profile and who have a similar medical system and obstetric management. Two of the most similar countries to NZ for this purpose are Australia and England. The Women's Hospitals Australasia group, of which CWH is a member, have produced a document 'Benchmarking in Obstetrics 1997-2001' which shows an average caesarean section rate for Australian and NZ tertiary member hospitals (n= 16) of 23.12% in 2001. This is also comparable with a rate of 21% for England in 2000 reported in their document the 'National Sentinel Caesarean Section Audit' (NSCA).

Therefore, CWH rates for 1999 were in line with the NZ national average for tertiary institutions in that year. CWH caesarean section rates for 1999, 2000 and 2001 were also on a par with rates in Australia and England during this time period. Our 2002 rate is somewhat above other hospitals pre 2002 rates, but we may well find that their caesarean section rates have risen similarly in 2002 once their data is published.

The data presented so far concerns only births at CWH. It is important to note the following points;

- CWH is the tertiary referral centre for the region and is the only hospital performing emergency caesarean section (apart from the occasional one in Ashburton). Therefore a caesarean section rate including all the births from units from which the women needing emergency caesarean section are drawn in the denominator, may be a more accurate reflection of the true caesarean section rate for women served by CWH.
- Two hospitals in Canterbury perform elective caesarean section, CWH and St Georges Hospital Inc, therefore caesarean section rates for the whole Canterbury Region need to include St Georges data.

The total number of births in the CDHB area (as far as can be determined), for 2002 was 5535, this includes births from all CDHB units, St Georges Hospital Inc., and home births. The total number of caesarean sections in the CDHB region was 1519. The total caesarean section rate for the CDHB region was 27.4% in 2002.

### **Data On Reasons For Caesarean Section**

In order to understand the factors contributing to our caesarean section rate an analysis of reasons for caesarean section is necessary. The NSCA report found that in the UK four reasons account for over 80% of caesarean births. They are;

- Repeat caesarean sections.
- Presumed fetal distress.
- Failure to progress in labour.
- Breech presentation

The CWH data on each of these reasons followed by data on maternal age and maternal request for caesarean section are presented.

### **Repeat Caesarean Section and Vaginal Birth after Caesarean**

There were 272 repeat Caesarean Sections performed at CWH in 2002. This gives a proportion of 23% of all caesarean sections. The converse of the repeat caesarean section rate is the vaginal birth after caesarean (VBAC) rate. The clinical indicator which WHD has chosen to assess VBAC is RANZCOG obstetric clinical indicator number 2.1. as shown below. No provisional thresholds have yet been set for this indicator.

#### **Clinical Indicator 2.1**

**Numerator**      The number of patients delivering vaginally following a previous primary caesarean section and having no intervening pregnancies greater than 20 weeks gestation

**Denominator**    The total number of patients delivering who have had a previous primary caesarean section and no intervening pregnancies greater than 20 weeks gestation.

Unfortunately it is not possible to glean this exact information from the caesarean section database or CareSys. This is because of not being able to ascertain whether the birth immediately preceding the current one was a caesarean section or vaginal birth in women who have had more than one baby. There will be a change to the data entry form so this information can be collected. However it has been possible obtain accurate data about VBAC in 2 subgroups of women who have had a primary caesarean section. The first subgroup was women who have only had one previous birth (para 1), which was a primary caesarean section. The second subgroup was women who have had 2 previous deliveries (para 2), of which 1 was a primary caesarean section and 1 was a vaginal delivery.

**Table 49: Comparison of Mode of Delivery between Subgroup 1(Para 1) Women and Subgroup 2 (Para 2) Women who have had one previous caesarean section.**

Subgroup	Total number in each parity subgroup	Number of caesarean section	Percentage caesarean section	Number of VBAC	Percentage VBAC
Subgroup 1, Para 1 C/s=1	231	145	63%	86	37%
Subgroup 2, Para 2 C/s=1, SVD=1	50	17	34%	33	66%

Therefore we can say that women who had a primary caesarean section as their first delivery had a 37.2% VBAC rate in their next birth in 2002 at CWH. Also women who have had 2 previous deliveries, one caesarean section and one vaginal (order unspecified) had a 66% VBAC rate in their next birth in 2002 at CWH.

It must be noted that these are VBAC rates are for CWH only. We do not know the successful VBAC rate for all of Canterbury, but it will be less than the rates for CWH for the following reasons. To get a total VBAC rate we need a numerator consisting of all VBACs and a denominator of all women delivering who have had one previous caesarean section. Trials of VBAC are only conducted at CWH, so it is known that all the information on VBAC has been included (ie the right numerator). However we do not have all the information for the denominator, because we do not know the number of women who have had a previous primary caesarean section and then chosen an elective caesarean section at St Georges’.

For a woman trying to decide whether to have a trial of VBAC or not, an important piece of information is the success rate of attempted VBAC. The question she is asking is “ If I choose to attempt VBAC what are my chances of success?”

In order to provide this information it is necessary to know how many women were intending a trial of VBAC. This information was not available from the database due to a combination of factors. In particular a large percentage of ‘emergency caesarean section in labour’ were not trial of VBAC women but rather women planned for caesarean section who happened to labour prior to their booked caesarean section date. The clinical notes were searched to determine actual delivery intentions of subgroup 1 women. ie, the delivery intentions of those women who had one previous delivery which was a caesarean section. In order to have this information in the database a new category for women ‘planned for elective caesarean section but delivered prior as an emergency’ will be included on the caesarean section form.

The tables below show the delivery outcomes for subgroup 1 women who were intending VBAC. They can also be used to show what the chances for successful VBAC were for a woman according to how far along the path to delivery she was, as follows;

- If a woman intended VBAC she had a 61% chance of success.
- If she managed to attempt VBAC (ie, get into labour) she had a 64% chance of success.
- If she managed to get into established labour (ie. cervical dilation > 3 cm) she had a 73% chance of VBAC.

**Table 50: Delivery Intentions for Subgroup 1 Women ( Para 1, caesarean section 1)**

Delivery Intention	(n)	%
VBAC	141	61%
Elective caesarean section	83	35%
Plan not decided.	7	4%
Total	231	100%

**Table 51: Mode of Delivery for Subgroup 1 Women intending VBAC**

Mode of delivery	(n)	%
VBAC	86	61%
Emergency caesarean section	55	39%
Total	141	100%

**Table 52: Mode of Delivery for Subgroup 1 Women attempting VBAC**

Mode of delivery	(n)	%
VBAC	86	64%
Emergency caesarean section in labour	49	36%
Total	135	100%

Note: There were 6 women intending VBAC who had an emergency caesarean section prior to labour.

**Table 53: Mode of Delivery for Subgroup 1 Women who get into Established Labour (cervical dilation >3cm)**

Mode of delivery	(n)	%
VBAC	86	73%
Caesarean section	32	27%
Total	811	100%

### **Presumed Fetal Distress**

There were 202 primary caesarean sections performed for presumed fetal distress at CWH in 2002, of which 172 were for presumed fetal distress in labour. Caesarean Section for presumed fetal distress accounts for 17.2 % of the total caesarean section rate at CWH in 2002. There were 819 primary caesarean sections, of which 716 were emergency (non-elective) caesarean sections at CWH.

Women's Health Division has chosen RANZCOG obstetric clinical indicator number 4 to audit primary caesarean section for presumed fetal distress in labour. It is broken into 2 subgroups. The aim of this indicator is to determine the comparative frequency of caesarean section for presumed fetal distress.

### **Clinical Indicator 4.1**

**Numerator** The number of patients undergoing primary caesarean section for presumed fetal distress in labour.

**Denominator** The total number of patients delivering, including those delivering vaginally

$172 / 4149 = 4.1\%$ .

The provisional mean for this indicator is 2.7%, with a threshold of 2.4 –3.0%.

### **Clinical Indicator 4.2**

**Numerator** The number of patients undergoing primary caesarean section for fetal distress in labour.

**Denominator** The total number of patients delivering by primary caesarean section only.

$172 / 819 = 21.0\%$ .

The provisional mean for this indicator is 19.2%, with a threshold of 16.5 – 22.3%

These clinical indicators demonstrate the contribution presumed fetal distress makes to various delivery rates. They do not indicate the success rate in selecting which babies really need urgent caesarean section delivery for fetal hypoxia. So, the question was asked – 'in how many of our caesarean sections for presumed fetal distress was the baby truly hypoxic?' How many of these caesarean sections were necessary?

The current gold standard for assessing fetal hypoxia is umbilical cord artery blood pH. An acidotic pH indicates fetal hypoxia. An intermediate pH indicates probable fetal hypoxia. A normal cord pH indicates no fetal hypoxia. Cord pH is recorded in the caesarean section database.

**Table 54: Cord pH Levels in Babies delivered by caesarean section for Presumed Fetal Distress in Labour**

Cord pH Category	(n)	%
<7.2 acidotic	40	23.2%
7.2 to <7.25 intermediate	34	19.8%
>7.25 normal	98	57.0%
Total	172	100%

Approximately a quarter of babies were hypoxic and a further (approximately 20%) were probably hypoxic or well on the way to becoming so. A little over half of the 'presumed to be distressed' babies had cord pH levels in the normal range.

It was very pleasing to note that in 197 out of the 202 caesarean sections performed for presumed fetal distress, cord pHs were obtained, which is a 97.5% performance rate. The 5 babies with no cord pHs performed were all in the 'presumed fetal distress not in labour' group, which means 100% of babies in the 'presumed fetal distress in labour' group had cord pHs done. This is a commendable result. Also, with respect to the 5 babies with no cord pHs, it had been attempted in 3, but was not possible due to technical difficulties.

The caesarean section database does not currently record whether an attempt at Fetal Blood Sampling was made prior to caesarean section. This needs to be included in the database as part of the audit for presumed fetal distress

### **Failure to Progress in Labour**

There were 308 caesarean sections performed for failure to progress, ie 26% of all caesarean sections at CWH in 2002. There were 819 primary caesarean sections at CWH in 2002, of which 716 were emergency (non elective).

As a monitor of the adequacy of trial of labour WHD has chosen the RANZCOG obstetric clinical indicator number 3. This is broken into 2 indicators as follows. These are comparative rate indicators, for which provisional thresholds have not yet been established.

#### **Clinical Indicator 3.1**

**Numerator** The number of patients undergoing primary caesarean section for failure to progress after a period of labour with cervical dilation of 3cm or less.

**Denominator** The total number of patients undergoing primary non-elective caesarean section.  
 $52 / 716 = 7.3\%$ . No threshold yet established.  
 This indicator reflects caesarean section rates for women who fail to establish in labour.

#### **Clinical Indicator 3.2**

**Numerator** The number of patients undergoing primary caesarean section for failure to progress after a period of labour with a cervical dilation of more than 3 cm.

**Denominator** The total number of patients undergoing primary non-elective caesarean section.  
 $256 / 716 = 35.8\%$ . No provisional threshold yet established.  
 This indicator reflects caesarean section rates for women who fail to progress in labour.

### **Breech presentation**

The total number of births at CWH where the baby was presenting breech was 178. This means the total rate of breech presentation for 2002 was 4.3%. Rate of breech presentation depends on gestation, with a higher percentage of preterm babies presenting breech. Table 55 illustrates this. The rate of term breech presentation is 2.8%, which is within the 2 to 3% that most textbooks quote.

**Table 55: Breech Presentation Rate by Gestation in 2002**

Gestation	Total births	Breech presentations	Breech % by Gestation
<28 weeks	47	18	38.3%
28 – 36 weeks	372	55	14.8%
> 36 weeks	3730	105	2.8%

There were 145 caesarean sections for breech and 33 vaginal breech births at CWH in 2002. These figures exclude second twin data. The total caesarean section rate for breech presentation was 81.5%. The rate varied with gestation as shown below.

**Table 56: Caesarean Section rate for breech by gestation in 2002**

Gestation	Total Breech Births	Breech caesarean section (n)	Breech caesarean section rate
<28 weeks	18	9	50%
28 - 36 weeks	55	43	78%
>36 weeks	105	93	89%

Caesarean Sections in which the baby was a breech presentation contributed 12.4% to the total caesarean section rate (145 /1174).

### Maternal Age

Caesarean section rate was increased for women 35 years and over at CWH in 2002 by 4 to 5% compared to women less than 35 years. 21% of women delivering at CWH in 2002 were 35 years and over.

**Table 57: Caesarean Section Rate by Age at CWH in 2002**

Age in years	Total Births	Caesarean Sections (n)	caesarean section rate by age
< 35	3280	895	27.2%
>= 35	869	279	32.1%
Total	4149	1174	28.3%

**Table 58: Proportion of Women Delivering by Age at CWH in 2002.**

Age in years	Number of Women	% of Total Women Delivering
< 35	3280	79%
>= 35	869	21%
Total	4149	100%

### Maternal Request

It is probable that the rate of caesarean section for maternal request in Canterbury is actually higher than 2.4%, as it is likely that some of the elective caesarean sections performed at St Georges are for maternal request.

**Table 59: Caesarean Section Rates for Maternal Request**

Parity	Maternal Request (n)	Total caesarean section (n)	%
Para 0	9	706	1.3%
Para >=1	19	468	4.0%
All	28	1174	2.4%

## **Summary of Data**

The most common reason for caesarean section at CWH in 2002 was failure to progress, followed by repeat caesarean section, fetal distress and breech presentation.

It is acknowledged that there is often more than one indication for a caesarean section. In the database only the primary indication, as defined by the surgeon, is entered. As the database does not allow for secondary indications, there will be some women who could be classified in more than 1 group, but currently this cannot be reflected in the statistics.

**Table 60: Caesarean Section Rates for the 4 Major Reasons for Caesarean Section. A comparison of CWH 2002 rates with NSCA 2000 rates**

<b>Indication</b>	<b>(n)</b>	<b>% of all caesarean section</b>	<b>NSCA 2000 %</b>
Repeat caesarean section	272	23%	29%
Fetal Distress	202	17%	22%
Failure to Progress	308	26%	20%
Breech	145	12%	16%

## **Discussion**

The data for CWH has been presented. There follows a discussion on possible factors contributing to the caesarean section rate for each major indication and some suggestions on how to impact these rates. The factors leading to a caesarean section are often multiple, and the suggestions below may be somewhat simplistic. However, it is always worthwhile to analyse current practises to determine possible improvements.

### **Repeat Caesarean and VBAC**

There are 2 possible main ways to impact the repeat caesarean section rate. Firstly to decrease the number of primary caesarean sections. Based on CWH 2002 data if a nulliparous women has a caesarean section, it does not mean that one caesarean section is added to the ongoing data, rather, if the woman has another child 1.63 caesarean sections can be added to the data. If she then carries on to have more children the effect is additive. From an audit perspective it is important to ensure that all primary caesarean sections are indicated, because of this flow on effect.

The second possible way to decrease the repeat caesarean section rate is to encourage more trials of VBAC. Not all women are suitable for a trial of VBAC. Case selection for trial has been an individual decision. It may be that CWH needs to develop a more specific guideline about which women are suitable for trials. The VBAC rate for para 1 women who actually got into established labour at CWH was actually 73%, which is encouraging.

### **Presumed Fetal Distress**

The only way to decreasing the number of unnecessary caesarean sections for presumed fetal distress is to have a foolproof way of picking which babies are truly hypoxic when the Cardio Tocograph (CTG) is non reassuring. This audit has shown that at CWH the rate of correct decisions was 50%. Why is this? The tools used to assess fetal wellbeing are limited. The CTGs, on which we rely heavily to diagnose hypoxia, are well known to overcall fetal distress. The non reassuring CTG is unfortunately very common.

A more accurate antenatal test of fetal hypoxia is the fetal scalp blood pH. It has been suggested by many obstetricians, before now, that frequent recourse to scalp pH will decrease the number of caesarean sections for presumed fetal distress, by reassuring the team that it is safe to carry on if the pH is normal. Scalp pHs are not always technically possible and there may be other indications for caesarean section in addition to the non reassuring CTG. However if scalp pHs were performed half of the time, and half of those were normal, 43 caesarean sections could possibly have been prevented. If this had been achievable in 2002 we could have decreased the number of caesarean sections to 1131. This would have decreased the total caesarean section rate by 1.1%.

### **Failure to Progress**

This is a hard area to comment on because detailed information is not available on the conduct of labour in the 'failure to progress in labour', group at CWH. However, there is a well documented approach to managing the slow to progress labour. Firstly it has to be recognised that progress is slow and a partogram is a useful tool for diagnosing this. Then appropriate action needs to be taken, which is augmentation of the labour contractions with synthetic syntocinon. It is usually accepted that a labour has failed to progress if there is no increase in cervical dilation after 3 to 4 hours of good contractions on syntocinon. At CWH the most common indication for caesarean section is failure to progress (26%). This is the only Clinical Indicator that is actually higher than data from the UK (20%). It is not known whether the problem is NZ women's ability to labour, or if more trials of labour should be conducted. This could be a topic for audit in the coming year.

### **Breech Presentation**

The well publicised multi centre 'Term Breech Trial' has given major scientific weight to the often held view that a caesarean section is safer than a vaginal birth for babies presenting breech at term. The result is that obstetricians are almost universally recommending caesarean section for breech. Obviously it is not appropriate to recommend anything which would increase the risk of harm to the fetus, therefore it cannot be recommended that term breech babies should have a trial of vaginal birth in order to cut down the caesarean section rate. The only way to decrease the caesarean section rate for breech presentation at term is to decrease the rate of breech presentation at term.

Happily there is a safe and effective way to do this by turning the baby around, known as external cephalic version (ECV), as recommended by the Cochrane database of systematic reviews. This is usually done at 36 weeks. There is currently a wide variation in the practices of obstetricians with respect to ECV. An audit and the development of a unit policy plus or minus a dedicated ECV service could potentially increase the number of ECVs performed. If the success rate for ECV was 50% (a conservative estimate) then potentially there would be 52 less caesarean sections for breech presentation at  $\geq 36$  weeks gestation per year. If this had been achieved in 2002 the total number of caesarean sections would have decreased to 1122, ie 27.0%, which is a reduction of 1.3%.

### **Maternal Age**

Although we do not have information on trends in maternal age specifically for Canterbury, it is useful to look at worldwide trends. There has been a rise in caesarean section rates over time worldwide. The NSCA document reports the following caesarean section rates for the UK over time;

- 1950s - 3%
- early 1980s - 10%
- 1990 - 12%
- 2001 - 21%

They also noted an increase in the percentage of women over 35 years during this time. In 1975 6% of mothers were 35 or over; in 2000 16% of mothers were 35 or over.

At CWH 21% of mothers were over 35 in 2002. This is similar to other western European data with the notable exception of. Scandinavia and the Netherlands. These countries have followed a different pattern. Although there has been a rise in caesarean section rate since the 1950s, rates have plateaued since the 1980s and now remain at less than 15%. The NSCA document comments that Scandinavia and the Netherlands have seen similar demographic changes to the UK. ie, a rising proportion of women over 35, but have not had a corresponding rise in caesarean section rate. It may be a case of 2 trends being observed over time and the conclusion drawn that one has led to the other. With some countries going against the flow, it is hard to substantiate this.

### **Maternal Choice**

This is the most controversial indication for caesarean section and the cause of much media furor, particularly when celebrities choose to have an elective caesarean section. Our caesarean section rate for maternal request is 2.4% (2002) compared with 1.5% in the UK (2000). It is felt that there will be an increasing number of women requesting elective caesarean section as a lifestyle choice. This is a hard issue, but one that will not go away. There seems to be as many opinions on this as there are professionals caring for women. The views however fall into 2 main camps.

On one hand there is the view that caesarean section is increasingly safe for the mother and that a woman should have the absolute right to choose her mode of delivery and that it is paternalistic to think otherwise. An increasing fear of litigation may also be contributing to the pressure on clinicians to agree to these requests.

On the other hand there is the view that birth is a natural process and should not be interfered with unnecessarily ie, a caesarean section should be of proven benefit to mother and/or baby before it is performed. Also, that it is unethical to perform an operation that could be avoided, because there are still risks associated with caesarean section.

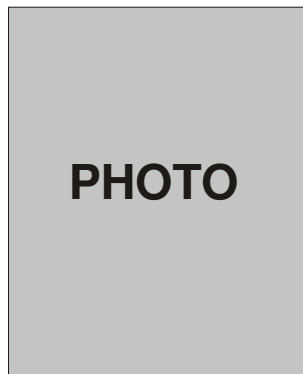
### **Conclusion**

The rates for caesarean section have risen over time and the trends seems to be continuing. There is often a complex set of factors influencing caesarean section rates. Some of these are the medico-legal climate, patient choice, rising maternal age, the expectation for perfect babies and cultural factors, in addition to clinical indications. There are many problems in trying to sort out what is really important.

At the end of the day it may be found that rates are less important than thought previously and that excellent outcomes for mother and baby, maternal choice and satisfaction may be considered to be more important.

WHD is working towards increasing our knowledge base about what happens at CWH. The aspects of caesarean section that are being audited are increasing each year. WHD has the potential for excellent clinical audit in this area with further refinements to our caesarean section database.

Issues surrounding caesarean section in NZ are also being addressed at present on a national level by the New Zealand Guidelines Group working party. It is hoped that these evidence based guidelines will be constructive for WHD. Their findings are eagerly awaited.



**Sharron Bolitho  
Tutor Specialist**

## Preterm Births

There are various indicators that could be looked at in regard to preterm deliveries. Women's Health Australia looks at births before 37 completed weeks of gestation in addition to those before 32 weeks. It is obvious that stratification into age of delivery bands is useful in relation to health care budgeting and provision of services, as the most premature groups, with their associated higher morbidity and mortality rates, are likely to have huge cost considerations.

For the 2000/2001 period Women's Health Australia documented rates of 10.74% for births before 37 completed weeks and 3.41% for births before 32 completed weeks. Christchurch Women's Hospital had rates for the same period of 10.42 % and 2.21% respectively thus comparing well with our Australian counterparts.

### Clinical Indicator

**Numerator** Total number of preterm deliveries = 419

**Denominator** Total number of births = 4149

**Table 61: Percentage of Preterm Deliveries 2002**

Year	Numerator	Denominator	(%)
2002	419	4149	10.09%

**Table 62: Stratification by Gestational Age**

	Total	Live births	Still Births
<28 weeks	47	36	11
28-32 weeks	69	66	3
33-36 weeks	303	298	5
<b>Total</b>	<b>419</b>	<b>400</b>	<b>19</b>

**Table 63: Stratification by Parity**

Parity	1	2	3	4	5	6	7	Total
<28 weeks	30	12	3	1	1			<b>47</b>
28-32 weeks	39	12	11	4	1	2		<b>69</b>
33-36 weeks	153	84	38	21	4	1	2	<b>303</b>
<b>Total</b>	<b>222</b>	<b>108</b>	<b>52</b>	<b>26</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>419</b>

The data in Table 63 illustrates that preterm births are divided relatively evenly between parous women and those women who are nulliparous prior to the birth. Nulliparous women =  $222/419 = 52.9\%$  for the year 2002, this compares to 49% of all births to primiparous women.

**Table 64: Breakdown by Maternal Age Group**

Maternal Age	Total No. of Births	%	Total No. of Preterm Births	%
<=20	338	8.15%	33	8%
21 - 25	626	15.09%	60	14%
26 - 30	1150	27.72%	105	25%
31 - 35	1400	33.74%	136	32%
36 - 40	537	12.94%	70	17%
41+	98	2.36%	15	4%
<b>Total</b>	<b>4149</b>	<b>100%</b>	<b>419</b>	<b>100%</b>

From the data in Table 64 it can be seen that for women over the age of 35 years there is a trend towards a higher percentage of preterm births compared to the percentage of overall births. Age over 35 is an important indicator for the provision of services and allocation of resources.

**Table 65: Ethnic Breakdown**

Ethnicity	Total No. of Births	%	Preterm Births	%	No. of Preterm Births Expressed as a % of all Births for Each Ethnic Group.
European	3494	84.21%	341	81.4%	10%
Maori	275	6.63%	36	8.6%	13%
Pacific Island	117	2.82%	15	3.6%	13%
Asian	196	4.72%	18	4.3%	9%
Middle Eastern	17	0.41%	4	1.0%	24%
Latin American	2	0.05%		0%	0%
African	9	0.22%		1.0%	0%
Other	1	0.02%	1	0.2%	100%
Not Stated	38	0.92%	4	1.0%	11%
<b>Total</b>	<b>4149</b>		<b>419</b>		

It appears that Maori, Pacific Island and Middle Eastern ethnic groups have higher percentages of preterm deliveries compared to European and Asian groups (see Table 65). However, whilst the numbers are relatively small and may not reach statistical significance, certain trends can be observed. This sort of data could be useful for predicting the ethnic mix utilising other services as many preterm infants need Neonatal care at the initial stage, and go on to have paediatric follow up for many years.

**Table 66: Comparison of Preterm Births with All Births by Mode of Delivery**

	All Births	%	Preterm	%
Vaginal	2975	71.7	217	51.8
Caesarean	1174	28.3	202	48.2
<b>Total</b>	<b>4149</b>		<b>419</b>	

The increased caesarean section rate for preterm births (see Table 66) is not unexpected and relates to several factors including malpresentation, multiple pregnancies and an increased number of urgent indications for delivery, for which a trial of vaginal delivery or induction would not be appropriate.

**Table 67: Mode of Delivery By Gestational Age**

	Vaginal Birth	% Total Births for GA	Caesarean Birth	% Total Births for GA	Total	No of Still Births
<28 weeks	26	55.3	21	44.6	47	11
28-32 weeks	22	31.8	47	68.1	69	3
33-36 weeks	169	55.8	134	44.2	303	0
<b>Total</b>	<b>217</b>		<b>202</b>		<b>419</b>	<b>14</b>

The percentage of babies born by caesarean section is greatest for the group of women falling within 28 –32 weeks gestational range. This could relate to the <28 week group including a number of babies whose viability is in question, inductions for fetal abnormality, and situations where caesarean section is not indicated.

#### Indication for delivery

Data collection in this area was more difficult as only the indications recorded at the time of delivery were available. In many cases preterm labour was recorded, however the underlying reason (if known) was not necessarily recorded. The indications could be listed as any of the four complication spaces on the delivery sheet making it difficult to always extract the background indication.

**Table 68: Complications Listed According to Gestational Age: 33-36 Weeks**

Indication Listed as Complication 1	Number of Deliveries	% of Total
Antepartum Haemorrhage	13	10%
Breech	10	8%
Eclampsia	1	1%
Essential hypertension	3	2%
Fetal Bradycardia	11	8%
Fetal Distress	14	11%
Failure to progress	14	11%
Fetal tachycardia	4	3%
Gestational diabetes	4	3%
IDDM	1	1%
IUGR	20	15%
Maternal pyrexia	2	2%
PET	13	10%
Triplets (2 caesareans @ 33 and 34 weeks)	2	2%
Twins	18	14%
<b>Total</b>	<b>130</b>	

Using the specific indications identified in Table 68, shows that 130 of the 303 births at this gestation were recorded. In regards to the 'failure to progress' category all babies were 36 weeks with the exception of 1, which was 34 weeks.

**Table 69: Complications Listed According to Gestational Age: 28-32 Weeks (Total of 69 Deliveries)**

Indication Listed as Complication 1, 2 or 3	Number of Deliveries	% of Total
Antepartum Haemorrhage	10	14.4
Breech	10	14.4
Eclampsia	0	0
Essential hypertension	0	0
Fetal Bradycardia	4	5.7
Fetal Distress (not brady)	6	8.6
Failure to progress	1	1.4
Fetal tachycardia	0	0
Gestational diabetes	0	0
IDDM	0	0
IUGR	5	7.2
Maternal pyrexia	1	1.4
PET	5	7.2
Triplets	0	0
Twins	15	21.7
"Other " as complication 1	17	24.6
<b>Total</b>	<b>74*</b>	

\*Multiple complications applied

**Table 70: Complications Listed According to Gestational Age: Under 28 Weeks**

Indication Listed as Complication 1, 2 or 3 - CareSys	Number of Deliveries	% of Total
Antepartum Haemorrhage	10	21%
Breech	8	17%
Fetal Bradycardia	1	2%
Fetal Distress (not brady)	4	9%
Fetal tachycardia	4	9%
IUGR	3	6%
Maternal pyrexia	1	2%
PET	3	6%
Triplets	1	2%
Twins	4	9%
HELLP	1	2%
Cord prolapse	2	4%
Listed as other	24	51%

Table 70 contains the information that is derived from the delivery summary sheet. To determine how accurate this was in capturing the data relating to the 47 preterm births below 28 weeks, the notes were audited and the indications for preterm delivery documented.

**Table 71: Preterm Delivery Indications**

	Primary Reason for Preterm Birth	Secondary Reason for Preterm Birth	Total	% of Births Involving Indication	% of Total CareSys
SROM	11	1	12	26%	Not listed
PTL	5		5	11%	Not listed
Chorioamnionitis	2	2	4	9%	Not listed
APH	12		12	26%	21%
Abruption	5		5	11%	Not listed
Uterine anomaly		1	1	2%	Not listed
PET	3	1	4	9%	6%
Cord Prolapse		2	2	4%	4%
FD	1		1	2%	20%
Twins		5	5	11%	9%
Triplets		1	1	2%	2%
IUD – IOL	4		4	9%	Not listed
IUD – SB		3	3	6%	Not listed
Cervical Incompetance	2		2	4%	Not listed
PG Top Fetal abnormality	3		3	6%	Not listed

It can be seen from the Table 71 that the primary indication for the preterm delivery is hard to acquire with our current data collection method. The data collected on CareSys and the complications relate more to the conduct of the labour and the reason for the mode of birth (i.e. SVD, instrumental, or caesarean section) and do not elucidate the reason for preterm birth unless it happens to be part of the peripartum events. For example, preterm rupture of membranes and chorioamnionitis are not listed in the CareSys complications whilst from the review they were implicated in 26% and 9% of the births respectively. In addition, some complications are clearly missed off the CareSys data. For example, the review identifies 37% of women having antepartum bleeding whilst CareSys only recorded 21%.

Obviously CareSys is not designed to capture this data and if preterm births are to be one of the WHD indicators a specific box on the delivery summary sheet relating to preterm birth may need to be included.

Having said this, the CareSys data has still allowed the acquisition of important information regarding preterm births, in particular, the demographics of the women and babies delivered at early gestation. Combining this with data from the paediatric service should enable a more detailed picture to be obtained.

**Emma Jackson**  
**Obstetrics & Gynaecology Registrar**

## Perineal Trauma

The RANZCOG obstetric indicator topic ‘incidence of an intact lower genital tract in vaginal delivery’ is utilised by WHD since a high incidence of an intact perineum is considered to be a desirable outcome.

For the purpose of these indicators:

- Lower genital tract is defined as those structures below and not including the cervix
- Surgical repair is defined as the suture of the lower genital tract following delivery
- This indicator related to those patients who are Para 0 at time of delivery

### Clinical Indicator 1.1

**Numerator** The number of primiparous patients not requiring surgical repair of the lower genital tract as defined above.

**Denominator** The total number of primiparous patients delivering vaginally.

There is a presumption that this indicator refers to unassisted vaginal births and whilst ‘an intact perineum is considered a desirable outcome’, the numerator is measuring the rate of ‘primiparous patients not requiring surgical repair’. To clarify these ambiguities the report will look at a variety of different options. Table 72 refers to primiparous women with an intact perineum compared to all primiparous women who delivered vaginally.

**Table 72: Primiparous Women with an Intact Perineum as a Proportion of all Primiparous Women who Delivered Vaginally (Includes Assisted Births)**

Year	Numerator	Denominator	(%)
2001	238	1476	16
2002	238	1337	17.8

The provisional threshold has not yet been established, however the Women’s Hospitals Australasia (of which CWH is a member) uses the same indicator for benchmarking. The average determined by the 16 hospitals included in the benchmarking activity, was 38.42% and ranged from 12.33 (CWH) to 62.94% for the period of 2000/2001.

Reconsidering the above group but including only primiparous women who had an intact perineum as a proportion of those who had a spontaneous vaginal birth, how is the percentage affected?

**Table 73: Primiparous Women with Intact Perineums as a Proportion of Primiparous Women who Delivered Vaginally (Unassisted)**

Year	Intact Perineum – Primiparous women	Total number of Primiparous vaginal births	(%)
2001	201	829	24
2002	214	823	26

A difference of 9% is relatively significant. Whichever means WHD chooses to measure this indicator by, there is an increase in the rate of intact perineums over the previous 2 years. Nevertheless, it is clear that the CWH rate is lower than that of our counterparts. Of note, the figures in Table 72 are in line with the National Women’s Hospital 1999/001, rate of 13.1%.

Table 72 and Table 73 measure the percentage of intact perineums of primiparous women, Table 74 and Table 75 look at the group of women, who fit the College’s criteria, and whose perineum has not been sutured (note this group also includes the intact perineum subgroup)

**Table 74: Primiparous Women with Perineums not Sutured as a Proportion of all Primiparous Women who Delivered Vaginally**

Year	Perineum – not sutured Primiparous women	Total number of Primiparous vaginal births	(%)
2002	342	1337	26

In the loosest possible sense WHD could say that it meets the criteria of the indicator with a rate of 37% (Refer to Table 75) and as such, which would be in line with the WHA average.

**Table 75: Primiparous women with perineums not sutured as a proportion of primiparous women who delivered Vaginally unassisted**

Year	Perineum – not sutured Primiparous women	Total number of Primiparous Spontaneous vaginal births	(%)
2002	321	829	39

The audit was expanded to consider the percentage of multiparous women with intact lower genital tract, who had a vaginal birth, as described by the indicator. A comparison is made to the 2001 rate (refer to Table 76). The result may be reflective of either an increase in the rate of intact perineums or a decrease in the rate of suturing.

**Table 76: Multiparous Women with Perineums not Requiring Surgical Repair as a Proportion of Multiparous Women who Delivered Vaginally**

Year	Intact Perineum – Multiparous women	Total number of Multiparous vaginal births	(%)
2001	708	1548	46
2002	871	1635	53

The episiotomy rate is measured as a percentage, recording the number of women who have an episiotomy against the total number of vaginal births.

The episiotomy rate of both primiparous and multiparous women was reviewed, (refer to Table 77). Overall, the percentage of episiotomies for the primiparous group has decreased to 35% and a slight decrease is also noted in the multiparous group. The vaginal groups do include both instrumental and unassisted vaginal births. The total CWH episiotomy percentage of 24% is higher than the Women’s Hospitals Australasia (2000/01) report, which indicated an average of 19.41%. It is important to note however, that this percentage is a decrease on the rate that WHD reported to the WHA of 37.5% for the 2000/01 period.

**Table 77: Proportion of Women Having an Episiotomy Against all Women Delivering Vaginally - Expressed by Gravidity**

	Episiotomy (n)		Total number of vaginal births		(%)	
	2001	2002	2001	2002	2001	2002
Primiparous	623	474	1476	1337	42	35
Multiparous	268	233	1752	1638	15	14
Total	891	707	3228	2975	28	24

Table 78 represents both primiparous and multiparous women who had a spontaneous vaginal birth and an episiotomy. Whilst the overall percentage for 2002 remains the same as 2001 (14%) the percentage of primiparous women requiring an episiotomy has decreased.

**Table 78: Proportion of Women having an Episiotomy Against all Women having a Spontaneous Vaginal Birth - Expressed by Gravidity**

	Episiotomy (n)		Spontaneous Vaginal Births		(%)	
	2001	2002	2001	2002	2001	2002
Primiparous	181	131	829	832	22	16
Multiparous	163	196	1547	1578	11	12
Total	344	327	2376	2410	14	14

This report concludes with analysis of the rate of third degree tears. Table 79 illustrates that the rate remains stable at 1% and Table 80 reviews the rate of third degree tears that resulted from spontaneous vaginal births only.

**Table 79: Proportion of Women having a Third Degree Tear Against all Women having a Spontaneous Vaginal Birth and Expressed by Gravidity**

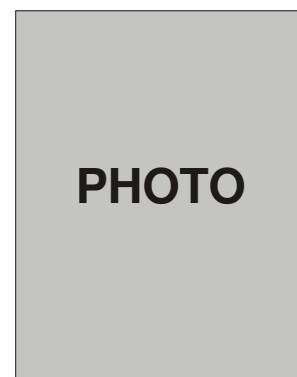
	Third Degree Tear (n)		Total number of Vaginal Births		(%)	
	2001	2002	2001	2002	2001	2002
Primiparous	25	24	1476	1337	2	2
Multiparous	4	10	1752	1638	0	1
Total	29	34	3228	2975	1	1

**Table 80: Proportion of Women having a Third Degree Tear Against all Women having a Spontaneous Vaginal Birth - Expressed by Gravidity**

	Third Degree Tear (n)		Total Number of Vaginal Births		(%)	
	2001	2002	2001	2002	2001	2002
Primiparous	15	15	1476	1337	1	1
Multiparous	4	9	1752	1638	0	1
Total	19	24	3228	2975	1	1

**Conclusion**

In conclusion this report shows that the ambiguity of the indicator makes it difficult to benchmark WHD against the other centres. The WHD rates appear to be lower than our counterparts, however, it is difficult to know whether we have the same interpretation of the indicator. Nevertheless it is still encouraging to see a consistent downward trend in perineal trauma.



**Rayoni Keith**  
Clinical and Risk Projects Facilitator

**Pamela Laws**  
Charge Midwife  
Birthing Suite

# Obstetric Anaesthesia Report

## Introduction

The Department of Anaesthesia, based at Christchurch Hospital, provides 24-hour, seven-day-per week cover for the birthing suite at Christchurch Women's Hospital (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 second 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 ie. 4149 (4241) women delivered 4266 (4427) babies during 2002. Bracketed figures indicate 2001 data.

A record is kept of every woman delivering with an anaesthetic at CWH on 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

2325 (2427) separate NHIs are recorded as having had 2479 (2538) obstetric anaesthetics in 2002. This represents 56 (57.2) % of all women delivering at CWH. The average age was 29.85 (29) years. **Table 81** and **Table 82** describe parity and ASA (American Society of Anaesthetists) grading. About 57 (54) % of women having anaesthesia were nulliparous. Only 5.6 (7.5) % were ASA 3 or greater.

**Table 81: Parity**

Parity	Number
0	1328
1	644
2	232
3	82
4	24
5	5
6	2
7	2
8	0
9	1
<i>TOTAL</i>	<i>2325</i>

**Table 82: ASA Status**

ASA Status	Number
1	1402
2	792
3	130
4	1
5	0
<i>TOTAL</i>	<i>2427</i>

**Table 83: Anaesthetic Techniques**

Anaesthetic techniques	Number	%
Epidural	1371	55.3
Spinal	722	29.1
CSE	295	11.9
GA	91	3.7
<i>TOTAL</i>	<i>2479</i>	<i>100</i>

So what anaesthetics were used at CWH in 2002? **Table 83** 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 84: Follow up**

Follow-up	Number
Seen	1475
Telephoned	823
Lost	27
<i>TOTAL</i>	<i>2325</i>

Anaesthetists make every effort to review satisfaction after anaesthesia (**Table 84**) 63.4% of women who delivered with an anaesthetic were seen and 35.4% were interviewed by telephone in 2002. A few (1.2%) were lost to follow-up. Women are asked about their satisfaction with their anaesthetic and whether they would, in similar circumstances in the future, have the same technique again (**Table 85** and **Table 86**).

**Table 85: Anaesthetic Grade**

Anaesthetic Graded	Number	%
Excellent	1677	67.6
Good	543	21.9
Adequate	103	4.2
Poor	127	5.1
Not asked	29	1.2
<i>TOTAL</i>	<i>2479</i>	<i>100</i>

**Table 86: Repeat Anaesthetic?**

Repeat Anaesthetic?	Number	%
Definitely	1878	72.7
Probably	459	19.8
Maybe	92	4.7
Never	21	0.7
Not Asked	29	2.1
<i>TOTAL</i>	<i>2479</i>	<i>100</i>

### Side Effects of Obstetric Anaesthesia

Side effects (**Table 87**) 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 (6.2%) and late (0.7%) side effects is quite low. There was one general anaesthetic-related side effect with a failed intubation at the beginning of one general anaesthetic, but no morbidity occurred.

**Table 87: Side Effects**

Complications of Regional Anaesthesia	Number of Anaesthetics	% Total Anaesthetics
No early side effects	2326	93.8
No late side effects	2462	99.3
Reinsertion of Epidural	30	1.2
Reinsertion of Spinal	11	0.4
Change to new technique of anaesthesia	103	4.2
Significant early resuscitation required	3	0.1
Epidural post-dural puncture headache	8	0.6
Spinal post-dural puncture headache	1	0.1
Epidural blood patch for dural puncture headache	7	0.5
Neurological damage after spinal / epidural / CSE	2	0.08

**Table 88: Reinsertion**

Reinsertion	Number	%
Epidural	30	2.2% of all Epidurals
Spinal	11	1.5% of all Spinals
CSE	2	0.7% of all CSEs
TOTAL	43	1.8% of all Regional Anaesthetics

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 88**) or changed to another technique (**Table 89**). The chance of a woman having another anaesthetic, having received an epidural, is about one in 13, or 7.5%.

**Table 89: Change to New Technique**

Change to new technique	Number	%
Epidural	73	5.3% of all Epidurals
Spinal	15	2.1% of all Spinals
CSE	15	5.1% of all CSEs
Total	103	4.3% 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 6 per thousand epidurals resulting in a headache. In 2002 there were two documented neurological insults secondary to regional obstetric anaesthesia. One involved a CSE where there was L buttock numbness that resolved after parasthesiae in that area on insertion, and the other involved attempts at epidural and spinal anaesthesia in a labouring woman that also resulted in parasthesiae and self-limited cutaneous symptoms.

### 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 1174 delivered by Caesarean Section (323 elective and 851 emergency). CareSys figures indicate that 619 women had operative vaginal deliveries although this is not in agreement with anaesthetic department figures.

**Table 90** is derived from the anaesthetic database and details the mode of delivery and anaesthetic provided.

**Table 90: Mode of Delivery**

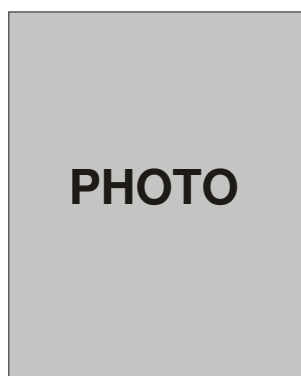
Mode of Delivery	Number of Women	Epidurals	Spinals	CSEs	Gas	Total Anaesthetics
NVD only	581	493	6	104	0	603
NVD & Man. Removal	15	12	4	1	0	17
<i>Sub Total NVD</i>	596	505	10	105	0	620
Emergency LSCS only	897	447	381	84	65	977
Emergency LSCS (after failed low forceps & Ventouse)	8	7	1	1	1	10
Emergency LSCS (after failed low forceps)	6	3	1	2	0	6
Emergency LSCS (after failed high forceps.)	2	1	1	2	0	4
Emergency LSCS (after failed Ventouse)	32	22	9	7	2	40
Emergency LSCS (after ventouse & high forceps)	2	0	1	2	0	3
<i>Sub Total emerg. LSCS</i>	947	480	394	98	68	1040
Elective LSCS only	231	3	220	5	13	241
<i>Sub Total All Caesareans</i>	1178	483	614	103	81	1281
Low forceps only	113	98	6	17	0	121
Low and high forceps	4	3	1	0	0	4
Low forceps & Man. Rem.	2	1	0	1	1	3
High forceps only	8	8	0	0	0	8
High forceps & Man. Rem.	1	0	1	0	1	2
Ventouse only	275	215	17	54	0	286
Ventouse and low forceps	73	49	15	13	0	77
Ventouse and high forceps	1	0	0	1	0	1
Ventouse and Manual Rem.	7	6	1	0	0	7
Ventouse, low forceps and Manual Removal	5	2	3	0	1	6
<i>Sub Total Instrumental Delivery</i>	489	382	44	86	3	515
Manual Removal only	60	0	54	0	6	60
Other	2	1	0	1	1	3
<b>Grand Totals</b>	<b>2325</b>	<b>1371</b>	<b>722</b>	<b>295</b>	<b>91</b>	<b>2479</b>

The overall combined elective and emergency caesarean section rate for 2002 was 28%, up from 24% in 2001. This represents a 17% increase which is mostly accounted for by an increase in emergency Caesareans (1178 last year, up from 1016 in 2001). Note that 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.

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 36.6% had a normal vaginal delivery, 28.1% had an instrumental delivery and 34.7% had an emergency Caesarean section.

### **Summary**

The obstetric database figures for 2002 have been presented. These figures demonstrate a fall in instrumental delivery, although this is balanced by a concomitant increase in Caesarean sections. Anaesthetists are involved with over half the women delivering at CWH. Overall, these women receive effective and safe care. Serious side effects of obstetric anaesthesia are rare. Compared to last year there has been a 25% increase in epidural anaesthetic replacement or alteration to a new technique (from 6 to 7.5% of all epidurals). This is currently subject to further more detailed investigation as it is a worrying trend. The post-dural puncture rate climbed 0.2% but still lies well below the 1% benchmark for a teaching institution. Almost all women were followed up (only 1.2% were lost compared to 2.3% in 2001), and over 90% of those contacted reported good or excellent satisfaction, which has been a consistent figure in recent years.



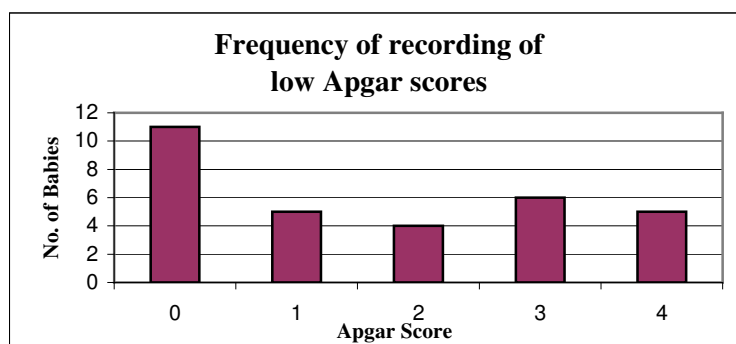
**Dr. Nigel Skjellerup**  
**Anaesthesia Coordinator**

## Low Apgar Scores

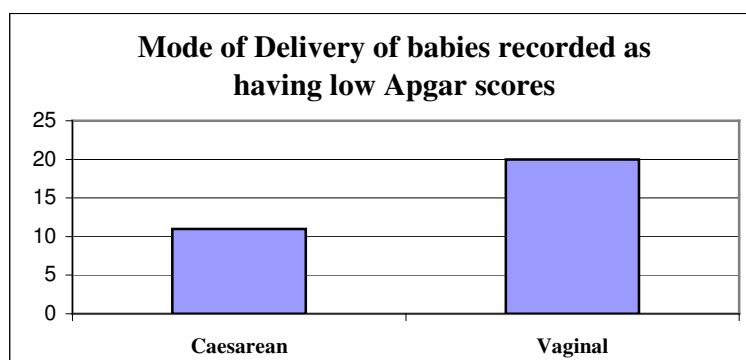
This data is gathered as a marker of baby wellbeing. We did not collect data on 10 minute apgars this year, because it was found last year that a large number of babies were being recorded as having apgars of 0 at 10 minutes, when this was not the case. Therefore we have decided that it is of more interest, and is more accurate to only collect 5 minute scores.

The data is gathered as numbers of babies with 5 minute apgars of 4 or less, expressed as a percentage of the total number of babies born. There were 4265 babies born at CWH in 2001. This total included 25 babies who were stillborn. Those 25 babies were excluded from the data analysis, because they would be expected to have a 5 minute apgar of 0. This left a further 31 babies who were recorded as having an apgar score of 4 or less at 5 minutes. At CWH our apgar rate was 0.699%. The Royal Australian and New Zealand College of Obstetrics and Gynaecology has set a provisional threshold of 1.0 -1.7%. Reassuringly our rates fall well below this threshold.

**Figure 4: Frequency of Recording Low Apgar Scores**

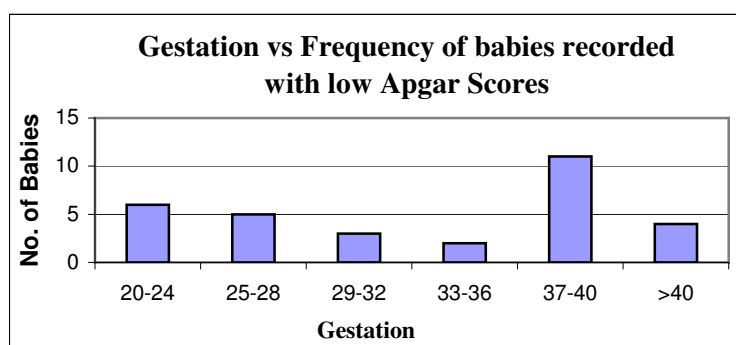


**Figure 5: Mode of Birth with Low Apgar Score**



The gestation of the babies ranged from 20-41 weeks, with a mean gestation of 32.84 weeks.

**Figure 6: Gestation vs Frequency of babies Recorded with Low Apgar Score**



Causes of low apgar scores are detailed in the table below.

Please note there were errors in the CareSys data for 10 babies after reviewing the notes. Also, 6 sets of notes were not available for review.

**Table 91: Causes of Low Apgar Scores**

2002	No. Babies Born	No. of Babies recorded as having an Apgar Score of 4 or less	Actual No. of Babies with Apgar Score of 4 or less	% of babies recorded as having an Apgar Score of 4 or less	Causes for Low Apgar Score			Error Type		
					Prematurity	Congenital Abnormality	Other **	Clerical	Data Entry	No Notes Available to check
Jan	355	2	0	0.56%				1	1	
Feb	295	2	1	0.68%				1		1
Mar	341	3	0	0.88%				2		1
Apr	324	3	2	0.93%			2			1
May	371	5	3	1.35%	1	1	1	1	1	
Jun	342	1	0	0.30%				1		
Jul	365	2	2	0.55%	1		1			
Aug	366	2	2	0.55%	1		1			
Sep	375	1	1	0.27%	1					
Oct	395	5	2	1.27%		1	1			3
Nov	326	1	1	0.31%	1					
Dec	385	3	1	0.78%			1	2		
Total	4240	30	15	0.08%	5	2	7	8	2	6

\*\* Other reasons for Low Apgar Score

- Shoulder Dystocia
- Antepartum Haemorrhage
- Medication
- Fetal Distress
- Aberrantly Low 5 minute Apgar



**Michelle Bailey**  
Obstetric and Gynaecology Registrar

# Postnatal Report

## Lactation Service

### Background

The service, based at Christchurch Women's Hospital consists of a full time Lactation Co-ordinator (LC) whose role is both clinical and educational. The LC is available to consult with women who birth and stay for postnatal cares at Christchurch Women's Hospital and other WHD maternity facilities. In addition, the LC receives referrals from the Christchurch Women's Community Midwives, to advise and/or assist women under their care antenatally and during the postpartum period (for up to six weeks after the birth).

Although no database was available in 2002, information identifying the reason for referrals, parity and mode of birth is of interest. It is envisaged that in the future, a database will be developed to capture information about women who are referred to the service.

### The Baby Friendly Hospital Initiative (BFHI)

Christchurch Women's Hospital is the first and only NZ tertiary hospital to gain the Baby Friendly Hospital Initiative accreditation in 2002. The award was presented at Government House in Wellington in November – rewarding the facility management and staff for many months of hard work. Achieving BFHI certification confirms the high standard of breastfeeding/lactation support set by all the staff. As a result of accreditation, the LC addresses the forum and discusses strategies to implement the BFHI into hospitals with other interested parties.

### Breastfeeding Statistics

To be considered eligible for BFHI assessment a minimum exclusive breastfeeding rate of 75% must be achieved. A manual audit in February 2002 showed an exclusive breastfeeding rate of 78%. In November 2002 computerised data collection showed the exclusive breastfeeding rate continuing to be >75%. However, this data does not account for the variation where a breastmilk substitute is given for a medical indication. This variation excluded, the statistics would show CWH to have a much higher exclusive breastfeeding rate than required for assessment.

### The Breastfeeding Policy

The Women's Health Division (WHD) Breastfeeding Policy was finalised in 2002 in preparation for BFHI accreditation. The WHO demands 100% compliance to achieve this step. Wide community consultation was necessary to ensure adequate input from interested groups. A Hui was organised for February and group meetings for Asian and Pacific Islanders were also well attended.

### Staff Education

Education of all WHD staff occurs regularly with frequent study days and individual sessions available for staff to attend. All staff who regularly come into contact with mothers and babies are required to have undergone eighteen hours of breastfeeding education over the past three years. Medical and allied health professionals are also required to have four hours education whilst ancillary staff require three hours each year.

### Antenatal Breastfeeding Sessions

The number of women attending the monthly antenatal breastfeeding education sessions is noticeably increasing. Surveys assessing the benefit to both the Lead Maternity Carers and the women attending this concentrated course are under way.

### 'Skin-to-skin' Contact

Placing the newborn baby skin-to-skin on the mother's abdomen and chest for 30 minutes within 30 minutes of birth has proven benefits for mother, baby and the breastfeeding outcome. Christchurch Women's Hospital is credited with achieving this skin-to-skin contact standard against the BFHI assessment. Audits are planned regularly to ensure that a high quality of care is maintained in this area.

**Student support**

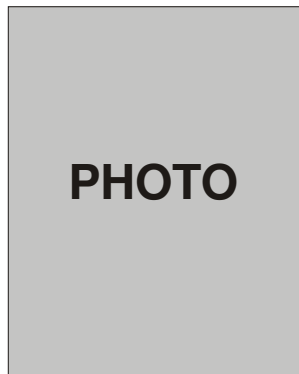
The LC supports the Christchurch Polytechnic Faculty of Health and Sciences by accommodating a Bachelor of Midwifery student one-day a week. This contact helps the student understand the LC role and gain experience in breastfeeding and lactation.

**Ankyloglossia**

Ankyloglossia, or tongue-tie, can impact on breastfeeding/lactation. Where this condition has been identified and a breastfeeding problem exists, the Lactation Co-ordinator assists the Paediatrician who releases the frenulum. An audit was completed to assess the impact of this practice on breastfeeding outcome, with greater than 80% of cases achieving a positive result. This audit is ongoing due to the positive feedback received from mothers who were contacted seven days after the procedure.

**Infant Sleep Position**

In the past, the Lactation Co-ordinator has also scheduled 'Back is Best' education sessions. Infant sleep position audits have been performed with very good results in all WHD facilities. The toughest challenge proved to be finding babies sleeping in their beds – most were being held by their mothers! Christchurch Women's Hospital gained 100% compliance in this area against the BHFI assessment. These audits are ongoing.



**Dawn Hunter IBCLC  
Lactation Co-ordinator  
Christchurch Women's Hospital**

# Gynaecology Service

## Gynaecology Service Overview

Another busy and at times frenetic year has been completed. However, in spite of the pressure placed on staff working in the various departments, all services appear to be functioning very well indeed, at times under circumstances that are less than ideal.

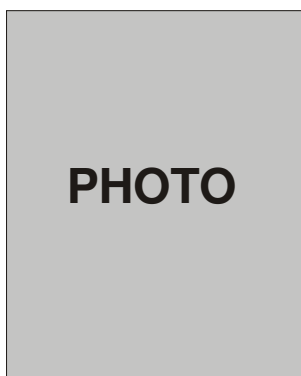
Our patient throughput continues to increase. The reasons for this are many but include;

- population drift to Christchurch
- 'defensive' referrals from General Practitioners
- improved number and quality of services being offered to the public and
- improved public awareness of these services

All Departments continue to perform very well. This is reassuring and comforting, particularly as we look towards re-siting on to the Christchurch Hospital site in the foreseeable future.

I would like to pay a special tribute to all of our staff, medical, nursing, allied and administrative. We are often understaffed and are chronically under-funded, but not only do the staff continue to respond to the challenges that their work offers, but they do so with a smile at almost every instance. I think that is one of the very special things about working at this hospital. The sense of family that we all feel and the unashamed will, to do our very best for patients whether they be inpatients or outpatient.

On behalf of all the staff I would like to pay a special tribute to Pauline Burt, General Manager, Women's Health Division. Pauline's appointment has bought a breath of fresh air to our hospital, and despite being in one of the most stressful jobs, she is always ready to share her good humour and good will. We are continually grateful to her for her efforts.



**Mike Laney**  
**Clinical Director**  
**Gynaecology Services**

# Outpatient Service Reports

## Outpatients

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 weekly, and one clinic fortnightly. The majority of referrals for general gynaecology clinics are received from general practitioners. Reasons for referral include menorrhagia, pelvic masses, 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 whole of the South Island. Two gynaecological oncologists and three oncologists are involved in the provision of this service. Nine weekly pre-admission clinics operate for surgical procedures. Women are interviewed by nursing staff, at which time a multidisciplinary care pathway is commenced, (depending on the type of operation). Assessment is completed 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

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

**Table 92: Outpatient Services**

2002	Genetic Counselling	Gynaecology Consultant	Reproductive Medicine	Infertility	Endocrine (Menopausal/PMT)	Combined Gynaecology/Oncology	Hysteroscopy L/A Clinic	Acute Gynae Assessment	Preadmit	Reassessment	Total
Jan	1	422	14	34	27	46		229	77	28	878
Feb	3	459	12	39	27	48		217	114	55	974
Mar	1	449	3	43	15	51		270	90	66	988
Apr	2	431	10	46	42	67		285	116	52	1051
May	5	559	6	48	48	43		280	109	63	1161
Jun	2	476	13	29	44	40		213	116	54	987
Jul	4	569	6	56	34	41		220	139	49	1118
Aug	1	545	8	48	58	33		282	162	71	1208
Sep	1	543	12	52	50	37		243	167	60	1165
Oct	3	546	10	30	46	39	14	246	100	79	1113
Nov		478	14	34	55	39	18	203	108	50	999
Dec		409	9	51	29	52	8	259	92	36	945
Total	23	5886	117	510	475	536	40	2947	1390	663	12587

**Jane Allan**  
**Charge Nurse**  
**Gynaecology Outpatient Department**

## Cervical Screening

The Canterbury Region's National Cervical Screening Programme covers an area slightly larger than the District Health Board catchment area. It covers Kaikoura in the North, to the Waitaki River in the South, and inland to the Southern Alps. There are approximately 140,000 eligible women in our area who are aged between 20 and 69. This figure has been adjusted for hysterectomy. 90% of the women in the Canterbury region have had a smear and are enrolled on the National Cervical Screening Programme (NCSP).

Each year we process more than 60,000 cervical smear and histology results. We have recently begun processing all results from the West Coast region and this has increased our workload by approximately 3,000 results.

The team in Canterbury is made up of 7 data entry staff, a secretary, a Manager, and 5 Health Promoters. The health promotion team consists of two Maori Educators and a Kaumatua, a Pacific educator, and a Chinese educator. The Health Promotion team regularly provides education sessions to women's groups, holds Health Days, and runs community smearing clinics. They also support women who are attending for treatment if this is required.

We have a number of priority groups who are targeted because they have a lower level of enrolment. These groups are women who have:

- never had a smear
- not had a smear within the last five years
- aged over 40
- Maori women
- Pacific women

Participation figures for the Canterbury region, which shows the number of women who have had a cervical smear in the last 6 years, declines with age. While the participation rate is in the 70-90% range for women aged between 30 and 49, it decreases to around 60% for the 50-60 age group, and further declines to 51% for the 60-64 age group, and settles at 45% for the 65-69 age group. We are currently looking at strategies for increasing participation rates for these women.

Cervical Screening, in partnership with the Pegasus Group and Breastscreen South, has received funding to establish a project aimed at increasing the enrolment of Maori and Pacific women. This project involves recalling women within a practice or inviting women who have never been screened to participate in both the Cervical and Breastscreening Programmes. All the women would have been recalled on a number of occasions by the practice but in this project the contact is made by either a Maori or Pacific Health worker. It is hoped that this personal and culturally appropriate invitation may encourage women who have been reluctant to attend for screening before to overcome their barriers and attend their appointment. It is also hoped that this project will give us a better understanding of why these women have been reluctant to attend in the past. This project runs for the next 6 months.

An Independent Monitoring Group monitors the work carried out in each Cervical Screening site. This group reports quarterly on all aspects of the data entered on the National Cervical Screening Register including rates of reported abnormalities, turnaround times for both laboratories and data entry staff, short interval rescreening, and waiting times for treatment. These reports are published on the Healthy Women website at [www.healthywomen.org.nz](http://www.healthywomen.org.nz)



**PHOTO**

**Helen McLeod**  
**Manager, Cervical Screening**

## Colposcopy

### Volumes

In 2002 there were a total of 2822 visits by women to the colposcopy clinic. This is 156 less than the figure for 2001 (2978) and does not include women who 'did not attend' (DNAs).

Data obtained from the Information Analyst indicates that there were 103 colposcopy/dermatology visits. It is likely that more visits took place, as approximately 15 patients are assessed at each monthly clinic and there are also quite a number of women dispersed through the other colposcopy clinics who would not have been represented in this data.

### New Appointments

During 2002, 1044 new appointments were entered onto the system for women attending the colposcopy service. These women have been reviewed within the National Cervical Screening Program's (NCSP) recommended guidelines (within 4 weeks for highgrade smear abnormality (HGD) and 6 months for lowgrade (LGD)). The waiting time for new appointments for colposcopy / dermatology is about 9 months for non-urgent referrals.

### Follow up Appointments

1604 women were seen in follow-up appointments (includes post treatment) in 2002. The NCSP guidelines recommend that follow-ups should be seen within 6 months. Data drawn on the 20<sup>th</sup> March 2003 shows that there were a total of 1114 women waiting for follow-up appointments at this time. There is some concern that 374 (33%) are waiting beyond the 6 month threshold for their appointment. However, not all of these will be for post treatment follow-ups.

The delay in post treatment follow-up is a cause of considerable confusion for women and their smear taker.

Up until recently the aim was to have each colposcopist review a minimum of 100 new patients per year, to meet the requirements of the NCSP Colposcopy Standards. For clinicians who complete one clinic per week, this number has not been easy to reach without favouring new referrals at the expense of follow-ups. The Colposcopy Standards are being revised and the target of 100 is likely to be reduced.

### Did Not Attends

During 2002, 542 women did not attend their appointment and of those 167 (31%) were new patients. All colposcopy appointments include a request for confirmation. If no confirmation occurs our receptionist attempts to contact the woman by phone. If contact still cannot be made, the appointment is sent to another woman. As a general rule, the Colposcopy Service operates on the 'two strikes and out' method. A letter is then sent to the referral source, with a copy to NCSP to advise of the outcome.

### Results of Treatment

During 2003, a previous audit that reviewed treatment results over a 15-month period (1998 - 1999) will be repeated. It is important that there is a reasonable number of completed treatment results to review, therefore the next audit will cover the 2001 and 2002 interval.

The audit includes women who have returned for a first follow-up visit after treatment, and when the treatment followed the first assessment. Three treatment methods are reviewed: diathermy, laser ablation, and loop excision.

Various target figures have been suggested as standards that New Zealand Colposcopy clinics should achieve. However the New Zealand standards are yet to be finalised, and collecting local data from clinics and private colposcopists will help to establish standards that are realistic.

The following is a brief summary of treatment results:

### CO2 Laser Ablation

**Table 93 : CO2 Laser Ablations – Results at Follow-up**

	(n)
Total CO2 Laser Ablations	115

Follow up Smear or Biopsy	(n)	(n)
Normal or 'benign changes'	104	90
Abnormal: LGD	7	7
Abnormal: HGD	1	

### **Diathermy Ablation**

**Table 94: Diathermy Ablations– Results at Follow-up**

	(n)
Total Diathermy Ablations	101

Follow up Smear or Biopsy	(n)	(n)
NAD or BEN	83	82
Abnormal: LGD	12	15
Abnormal: HGD	3	

### **Loop Excision**

The breakdown for loop biopsy histology is detailed in Table 95

**Table 95: Loop Biopsy Histologies**

	(n)	(n)
Total Loop Biopsy Histologies	339	
Invasive	8	2
High Grade	241	71
Low Grade	76	22
'Other'	14	4

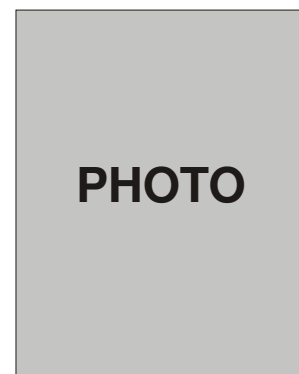
**Table 96: Loop Excisions– Results at Follow-up**

	(n)
Total Loop Excisions	339 (8 Cartier, 331 Lletz)

Follow up Smear or Biopsy	(n)	(n)
NAD or BEN	274	81
Abnormal: LGD	36	14
Abnormal: HGD	10	

### **Cone biopsy and invasive carcinoma**

In the two year time period there were 128 cone biopsies returning for their first follow-up. 12 of this number were for invasive carcinomas (mostly early stromal invasion and microinvasion).



**Dave Peddie**  
Clinical Leader, Colposcopy

## Hysteroscopy Clinic

2002 saw the development of a number of new services within the Women's Health Division. One of these was the outpatient hysteroscopy service, which we had been keen to offer for some time.

This clinic is principally aimed at streamlining the investigations undertaken for women with problematic or abnormal vaginal bleeding by offering a clinical and surgical assessment in one visit. Historically, women were referred by their general practitioner to be seen in the gynaecological outpatient department. Depending upon the potential seriousness of the problem they could wait between four weeks and ten months to be seen. Following that assessment, the majority of women would have been scheduled for a hysteroscopy under general anaesthetic and placed on the surgical waiting list, which could take between six weeks and eighteen months.

The advantages this new service provides for women, are the reduction in substantial delays, the often unnecessary general anaesthetic and less time away from work or family.

The clinic began seeing patients in October of 2002 and is currently, due to limitations on consultant availability, operating five sessions every four weeks. New staff have recently been appointed to the hospital. Consequently, we should soon be in a position to increase the number of clinics per week and, once everyone is more familiar with the process, the number of patients seen per clinic.

Other advantages of this clinic include the reduction of operating theatre time used, freeing additional time for other cases in the main operating theatre, as well as a reduction in the surgical waiting list.

Currently referrals are being taken from both consultant clinics and the general practitioner referral letters. It is helpful to establish whether the patient is agreeable to having the procedure performed under local anaesthetic and to consider whether there are any features of the patient's history or examination which would make it unlikely for the procedure to be successfully completed under local anaesthetic (such as cervical stenosis or poor vaginal access). Additionally, it is preferable for any woman referred to the clinic to have had a pelvic ultrasound scan to rule out significant pathology, which would indicate additional procedures are required.

Next year we will be in a position to provide a summary about what has been achieved over the previous twelve months and, at this point, we will also be able to produce some statistics in regards to the clinic's impact on the waiting lists.

**Di Poad**  
**Consultant Obstetrician and Gynaecologist**

**Dave Peddie**  
**Consultant Obstetrician and Gynaecologist**

## Fertility Centre – 2002 IVF Data

The Fertility Centre is a joint venture between The University of Otago and the Canterbury District Health Board undertaking both public and private infertility investigation and treatment.

### Section 1 Fresh IVF Report 2002

**Table 97: Oocyte Aspiration Cycles (Egg pick-up)**

	(n)	%
Number of cycles started	342	
Number of cycles with oocyte aspiration (TVOR)	307	90%
Number of cycles cancelled	35	10%

**Table 98: Embryo Transfer Cycles**

	(n)	%
Number of cycles with embryo transfer (ET)	279	91%
Cycles with no ET		
No eggs	3	1%
Freeze - all	12	4%
No embryos (usually failed Fertilisation)	13	4%
Total	307	100%

**Table 99: Clinical Pregnancies**

	(n)	%
Number of clinical pregnancies	108	
Clinical pregnancy rate per TVOR (n=307)	108/307	35%
Clinical pregnancy rate per ET (n=279)	108/279	39%

**Table 100: Ongoing Pregnancies**

	(n)	%
Ongoing pregnancies	85	
Ongoing pregnancy rate per TVOR (n=307)	85/307	28%
Ongoing pregnancy rate per ET (n=279)	85/279	31%
Ongoing pregnancy rate per clinical pregnancy (n=108)	85/108	79%

**Table 101: Multiple Pregnancy Rate**

	(n)	%
Singleton pregnancies	77	71%
Twin pregnancies	30	27%
Triplet pregnancies	1	1%
Total	108	100%

**Table 102: IVF (standard fertilisation) vs ICSI (intracytoplasmic sperm injection) cycles**

Number	IVF	ICSI	Mix
Cycles	129	171	4
% of oocytes fertilised	59%	74%	
Number of Clinical Pregnancies	n = 46	n =60	n=2
Clinical Pregnancy Rate per Cycle	36% (46/129)	35% (60/171)	50% (2/4)
Number of Ongoing Pregnancies	n = 42	n = 42	n = 1
Ongoing Pregnancy Rate per Cycle	33% (42/129)	25% (42/171)	25% (1/4)
Ongoing Pregnancy Rate per Clinical Pregnancy	91% (42/46)	70% (42/60)	50% (1/2)

**Table 103: Age of woman at TVOR in relation to pregnancy rates**

Age (yrs)	TVOR Cycles	Pregnancies	Pregnancy Rate	Miscarriages	Miscarriage Rate
20 - 25	1	1	100%	0	0%
25. - 34	120	50	42%	10	20%
35 - 37	75	26	35%	5	19%
38+	95	24	25%	8	33%
40+	50	28	16%	3	37.5%

**Section 2 Frozen Embryo Report 2002****Table 104: Frozen Embryo Transfers**

Outcome of Frozen Embryo Transfers	Natural	E2V (artificial cycle)
Number of Frozen ET cycles	149	38
Number of Clinical Pregnancies	37	10
Clinical Pregnancy Rate per FET Cycle	25%	26%
Number of Ongoing Pregnancies	28	4
Ongoing Pregnancy Rate per FET Cycle	76%	40%

**Section 3 Implantation Rate Report 2002**

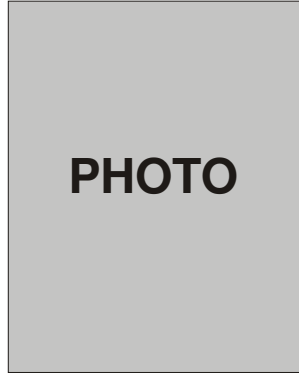
Implantation rates – ie. pregnancy rate per embryo transferred rather than per embryo transfer procedure. (often >1 embryo transferred).

**Table 105: Implantation Rate**

Type of Embryo transfer	All Ages	25-34 years	35+ years
Fresh	25%	27.5%	22%
Frozen	16%	14%	17%

#### **Section 4 Live Birth Rate Report**

- 2002** Live birth rate for 2002 IVF pregnancies is not available yet because many of the pregnancies are ongoing
- 2001** Babies delivered from 2001 IVF cycles
- 91 babies delivered from fresh IVF cycles – includes donor egg cycles
  - 17 babies delivered from frozen embryo replacement cycles



**Sarah Wakeman**  
Subspecialist trainee in reproductive  
endocrinology and infertility.

## Assessment of Fertility after Emergency Caesarean Section in CWH

Currently, about 20% of births in New Zealand are by caesarean section. News media and professional groups have raised issues about the immediate and long-term effects of caesarean sections. A 1999 British study<sup>1</sup> has suggested a doubling of infertility five years following emergency caesarean delivery. A 1984 US study<sup>2</sup> has also shown that primiparous women who underwent caesarean section have fewer children and more difficulty conceiving. A summer studentship research study was designed to assess if the reported increase in fertility delay after caesarean section delivery is occurring in Christchurch.

A questionnaire was constructed based upon the previous American<sup>2,3</sup> and British<sup>1</sup> reports. Possible infertility risk factors such as age of first live birth, weight, height, smoking, and previous pregnancy losses were included. Approval by the Canterbury Ethics committee was obtained. A cohort of 953 primiparous women (624 by caesarean section 329 by vaginal delivery) who gave birth 5 years ago at CWH were recruited. Questionnaires were mailed out in November 2002 with a letter explaining the purpose of the study. A second mail-out was sent to those who had not responded after 2 weeks.

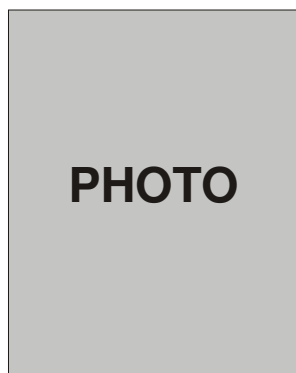
The response rate was similar for both groups (approximately 40 %). The inclusion of questions detailing fertility history prior to the first birth indicates a possible response bias with more fertility delay than expected. However, both groups were similar in age, Body Mass Index, ethnicity, smoking behaviour before pregnancy and infertility risk factors/investigations. Following caesarean section for the first birth, women were more likely to have involuntary fertility delay of more than 2 years (relative risk 2.18  $p=0.04$ ). In the vaginal group, a high pregnancy rate and low response rate limited further analysis.

These results agree with the overseas reports of fertility compromise following caesarean section but the explanation is yet to be identified. Over 90% of the cohort was able to achieve an ongoing pregnancy within 2 years without contraception. Further prospective studies will be required to assess the possible reasons for this small but statistically significant reduction in fertility.

### References

1. Jolly J, Walker J, Bhabra K, Subsequent obstetric performance related to primary mode of delivery. *British Journal of Obstetric and Gynaecology*. 1999; 106: p 227-232
2. Zdeb M, Therriault G D, Logrillo V M, Frequency, spacing, and outcome of pregnancies subsequent to primary caesarean childbirth. *American Journal of Obstetric and Gynaecology*. 1984; 150:205-212
3. Hemminki E, Graubard B I, Hoffman H J, Mosher W D, Fetterly K, Caesarean section and subsequent fertility: results from the 1982 National Survey of Family Growth. *Fertility and Sterility*; 1985 43:520-528

**Grace Chang**  
Summer Student



**Greg Phillipson, Consultant**

## Acute Gynaecology Assessment

The Acute Gynaecology Assessment (AGA) department at Christchurch Women's Hospital provides nursing and medical assessment for women with acute gynaecological complaints. This service is operational 24 hours a day, 7 days a week, with the majority of patients seen between 9am and 5pm. In most cases a woman's specialist, midwife or general practitioner will refer her to AGA, however some women do self refer. Following assessment approximately 50% of patients are admitted to Gynaecology Services and the remaining 50% are discharged home.

Services provided by AGA include:-

- telephone advice service
- assessment of complications arising in the first 20 weeks of pregnancy
- assessment of women with gynaecological complaints
- outpatient rehydration service for women with hyperemesis gravidarum
- assessment of women with postnatal complaints that cannot be managed by their lead maternity carer
- a post discharge service for women discharged from Gynaecology Services who require wound checks or blood tests eg  $\beta$ HCG
- administration of medication to Fertility Centre patients outside of office hours

Currently data is collected manually through 2 main sources. Review of this data has revealed a 12.66% discrepancy between the figures input into the CareSys database, and figures collected manually by AGA nursing staff.

**Table 106 : Presentations to AGA - 2002**

Data source	2002
CareSys data	5575
AGA Nursing data	6281

The unit plans to review the current data entry process and carry out improvements based on the findings of this investigation.

For the purpose of this report we have used only the figures from the CareSys database.

### Overview of AGA Assessments

Table 107 separates the length of stay per assessment into 2 categories. Patients assessed through outpatients and discharged within 3 hours and assessments that took greater than 3 hours. The average length of stay in AGA was 2 hours and 40 minutes. This includes waiting time for blood test results, ultrasound appointments and reports. As mentioned previously, approximately 50 % of all women seen at AGA are admitted to the Gynae Unit.

**Table 107: Overview of AGA Assessments**

Length of Stay	2002	%
< 3 hour	2324	88%
> 3 hour	667	12%

Information from Table 108, Table 109 and Table 110 is derived from a database designed by Dr Peter Sykes and is based on data entered into the CareSys programme.

**Table 108: Admissions from AGA to the Gynae Units - Pregnancy Related**

(n)	(d)	Total
1542	2584	60%

**Table 109: Admissions from AGA - Gynaecology Related**

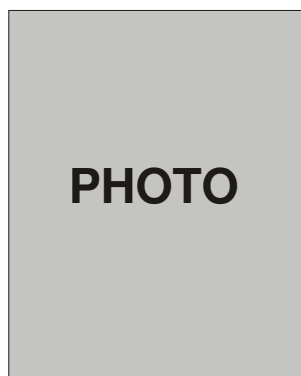
(n)	(d)	Total
804	2584	31%

**Table 110: Admissions from AGA – Non-specific problems**

(n)	(d)	Total
235	2584	9%

**Conclusion**

Analysing data has proven a valuable way of reviewing the services provided by AGA. It is hoped that future improvements to our data collection process will result in more effective definition of client presentations to our service.



**Marilyn Benton  
Charge Nurse  
Acute Gynaecology Assessment**

# Inpatient Care Reports

## Gynaecology Unit

The Gynaecology Unit provides 36 beds and is separated into two levels:

- Gynae Unit 1 (20 beds) operates 24 hours a day, 7 days a week
- Gynae Unit 2 (16 beds) operates Monday till Saturday morning

One nursing team consisting of a staff mix of 5:1 registered nurse/enrolled nurse ratio, covers both Units. Services available on the Units include:

- Non-surgical services
- Acute and elective Gynaecology/Oncology surgery
- Brachytherapy treatment
- Acute antenatal care for women less than 22 weeks
- Acute postnatal care for mothers and babies
- Second trimester termination of pregnancy and induction of labour (fetal abnormalities)

Women are referred to our service from all areas of the South Island. The majority of women using the service identify as being European, however 9% identify as Maori (refer to Table 111). This figure is interesting, given that the profile for Maori population of the Canterbury region is 6%. The age ranges from 14 – 95 years, with an average age of 40 years (refer to Table 112).

**Table 111: Ethnicity**

Ethnicity	(n)	%
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>Total</b>	<b>5713</b>	

**Table 112: Age**

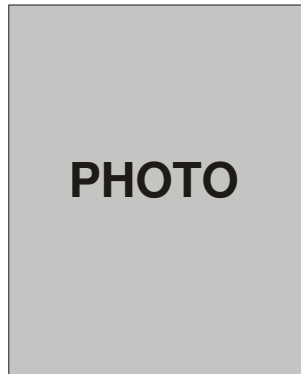
Age	(n)	%
<=20	474	8.30%
21 - 40	3361	58.83%
41 - 60	1341	23.47%
61 - 80	462	8.09%
80 - 90	71	1.24%
90+	4	0.07%
<b>Total</b>	<b>5713</b>	

Women can be admitted to the Units either through other gynae services or privately. The Gynae Units also provide second trimester termination of pregnancy and induction of labour for fetal abnormalities. In 2002, 113 women used this service for induction of labour for fetal abnormalities.

The Gynae Unit has a multidisciplinary approach to care and works closely with a team of social workers, physiotherapist, occupational therapist, pharmacist, dietitians, chaplain and the newly appointed Maori Health worker. The multidisciplinary team meets weekly to discuss oncology inpatients and once a month, a physician and palliative care specialist attend this meeting.

Recently a service was introduced at Rangiora Hospital for women suffering from Hyperemesis Gravidarum. The midwives provide rehydration to women as directed by each woman's individual treatment plan. Consultant review occurs at CWH prior to care being referred to Rangiora and the treatment plan includes criteria for referring women back to the core service at CWH.

With the introduction of the Selectron Machine we are now able to give Brachytherapy (Radiation treatment) without being exposed to radiation when dealing with patients receiving LVA treatment (one of the 2 treatments available). Time and effort has gone into updating protocols and providing extensive education in the use of the Selectron machine for all nursing staff. It is hoped to commence the Fletcher Suite Treatment via the Selectron machine later in 2003.



**Bea de Langen**  
**Charge Nurse**  
**Gynaecology Unit**

## Hysterectomy Report

From January to December 2002 there were 372 hysterectomies performed at Christchurch Women's Hospital. 370 sets of notes were reviewed for the purposes of this report; two sets were not retrieved.

Comparisons were made with the 2001 data where this data is available. However, due to the data being collected retrospectively and via different means this is not always possible. With the introduction of a prospective data collection process and with the experience gained from the previous two years, it is hoped that more consistent data will be maintained in the future to enable comparisons from year to year and between different institutions.

**Table 113: Types of Hysterectomy**

Type of Hysterectomy	All Hysterectomies				General Gynaecology			
	2002		2001		2002		2001	
	(n)	(%)	(n)	(%)	(n)	(%)	(n)	(%)
LAVH	51	14%	46	11%	51	17%	46	12%
Oncology	60	16%	51	12%	0	0%	0	0%
Subtotal	11	3%	7	2%	11	4%	7	2%
Abdominal	121	33%	173	41%	121	39%	173	47%
Vaginal	126	34%	145	34%	126	41%	145	39%
<b>Total</b>	<b>369</b>		<b>422</b>		<b>309</b>		<b>371</b>	

There seems to be a trend of increasing numbers of LAVH being performed (12 –17% with a decrease in the abdominal approach (47 –39%).

**Table 114: Length of Stay**

Type of Hysterectomy	Average Operating Time		Procedures 1 Hour or Less	% of Hysterectomy Type	Number Staying >4 Days
	2002	2001			
LAVH	1 hr 47	1 hr 44	11	21.6	6
Oncology	1 hr 53	2 hr 12	1	1.7	40
Sub total	1 hr 23	1 hr 40	3	27.3	2
Abdominal	1 hr 40	1 hr 36	29	24	33
Vaginal	1 hr 17	1 hr 21	64	50.8	14

The average length of stay could not be calculated as the data collection form was headed 'Prolonged Stay, > 4 Days' and only these patients were captured. Therefore, it has not been possible to make comparisons between different operating techniques, length of operation time and average post-operative stay. We can only comment on those with a prolonged post-operative stay, the majority of whom were oncology patients.

**Table 115: Indications for Surgery**

Indication for surgery	Number	Indication for Surgery	Number
Cervical carcinoma	13	Fibroids	46
Endometrial carcinoma	27	Incontinence	2
Ovarian carcinoma	11	Menorrhagia	124
Pelvic/ovarian mass/cyst	31	Postmenopausal bleeding	3
CIN	10	Haemorrhage post ERPC	1
Cystocele/rectocele/prolapse	52	Caesarean hysterectomy	1
Dysmenorrhoea	17	Pyometria/pyosalpinx	2
Dyspareunia/pain	1	Profound learning difficulty	1
Endometriosis	20	Metastatic bowel cancer	1
Endometrial hyperplasia	6		
<b>Total</b>			<b>369</b>

Antibiotic prophylaxis was given in 313 of the 369 cases representing 84.8%. This figure is comparable to the 2001 figure of 85.6%.

**Table 116: Comparison of Fragmin and TED Stockings Usage**

	Gynaecology	Oncology
Fragmin &/or TED stockings	50	21
Fragmin (only)	60	33
TED stockings (only)	58	2
Total (number)	168	56
<b>Total (%)</b>	<b>54%</b>	<b>93%</b>

The figures in Table 116 may be under-represented as there was not always clear documentation regarding the use of TED stockings. This is a separate issue that needs to be addressed.

### Complications

There were 16 cases where a greater than 500mL intra-operative blood loss was documented. Three of these cases were general gynaecology whilst 13 came under oncology.

A blood transfusion was required in 31 cases (8.4%) compared to the 7.6% recorded cases in 2001. Eleven of these were oncology patients whilst the remaining 20 were general gynaecology.

**Table 117: Timing of Transfusion for General Gynaecology and Oncology Patients**

Timing of Transfusion	General Gynaecology	Oncology
Pre-operative	2	0
Intra-operative	2	2
Post-operative	16	9

Table 117 shows that excluding the pre-operative blood transfusions there were a total of 18 blood transfusions with the general gynaecology group 18/307 (5.86%). (2001 - 4.58% excluding oncology). The Australian Council on Healthcare Standards (ACHS) May 2000 states that the mean rate for the number of patients receiving a blood transfusion during/post abdominal or vaginal hysterectomy is 3.9%. There was one documented major blood vessel injury. There does seem to be an upward trend in those requiring a blood transfusion. This is an area that could be reviewed and perhaps, audited.

**Table 118: Hysterectomy Complications**

Complications	2002 (n)	2002 %	2001 %
Chest infection	12	3.25	2.1
Vault haematoma	7	1.9	6.17
Post operative Ileus	10	2.7	2.2
Urinary retention	8	2.17	2.2
Transfer to Christchurch	2	0.54	0.25
Heart failure/pulmonary oedema	2	0.54	0.25
Temperature >38	24	6.5	4.75
DVT/PE	1	0.27	0.25 (1)
Hospital stay >4	95	25.7	17.6
Wound infection	9	2.43	5.4
Urinary tract infection	45	12.2	6.8

**Readmissions**

There were 26 women (7%) who were readmitted in 2002 comparing with 23 (5.3%) in 2001. Of these women, 22 were general gynaecology and 4 were oncology.

**Returns to Theatre**

In 2002, there were 11 (3%) women who returned to theatre, 6 from general gynaecology and 5 from oncology. The 2001 figures were slightly lower at 9 (2%) returns to theatre.

**Women aged <= 35 years**

There were 48 patients in the 35 years and under group who underwent hysterectomy surgery in 2002 (45 in 2001). Table 119 and Table 120 provide a breakdown of this data.

**Table 119: Hysterectomy Types for Women <= 35 Years**

Hysterectomy	2002	2001
LAVH	12	9
Oncology	2	4
Subtotal	4	2
Abdominal	9	15
Vaginal hysterectomy	21	15
<b>Total</b>	<b>2050</b>	<b>2046</b>

**Table 120: Indication for Women <=35 Years Requiring Hysterectomy**

Indication	2002	2001
Menorrhagia	21	22
Endometriosis	11	6
Dysmenorrhoea	5	4
Learning difficulties	1	2
Fibroids	1	
CIN	2	1
Ovarian/pelvic mass	1	
Cervical/endometrial ca	2	5
Post ERPC bleeding	1	
Prolapse	3	

Clinical indicator 8: the number of patients 35 years of age or below 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%. The rate at CWH was 46/309 (14.9%).

**Menorrhagia**

In 2002 there were 124 women who had a hysterectomy for menorrhagia. A total of 68 women received prior treatment (detailed in Table 6) and for the remaining 56 women either no prior treatment was given or none was recorded.

**Table 121: Prior Treatment for Women Having a Hysterectomy for Menorrhagia**

<b>Prior Treatment</b>	<b>Women (n)</b>
Depo Provera	2
Mirena	13
Danazol	3
COC	4
Progestogens	19
Tranexamic Acid	26
Voltaren	1
<b>Total</b>	<b>68 (54.8%)</b>

**Lynda Croft  
Senior Lecturer**

## Laparoscopic Surgery

From a total of 4779 operations, the coding office reports that 783 laparoscopic gynaecological procedures were carried out at Christchurch Women's Hospital in 2002. This figure includes both elective and emergency operations that were carried out solely, or in combination with, other procedures.

The coding office figures and descriptions are less than ideal for report writing, both in description and accuracy, yet these are infinitely superior to the theatre coding, which reports only 724 laparoscopic procedures. These 724 are described as SCOPE (569), LAVHY (68) or LAPST (87) with only 65 of these providing any detail as to the actual procedure performed in the area for free text.

The types of procedures performed have been grouped as follows:

**Table 122: Type of Procedure Performed**

Type of Procedure	(n)
Diagnostic	230
Ovarian / Tubal Surgery	150
Sterilisation	118
Adhesiolysis	96
Ectopic Pregnancy	69
LAVH	56
Endometriosis	52
Oncology	9
Incontinence / Pelvic Floor	2
Miscellaneous	1

The growing movement for operative laparoscopy is emphasised both in the fact that only 29% of procedures were purely diagnostic, and also in the extent and diversity of operations performed which touched on all fields of operative gynaecology.

Given this, it becomes increasingly important for audit and clinical governance to have accurate recording of operative details in an easy to access format. This is not the case currently. For example, a number of colposuspension and pelvic floor procedures were performed laparoscopically in 2002, yet the coding office only recognises two of them in the published data.

A simple solution would be for the theatre nurse coding a procedure to include an accurate description of the surgery performed in the "free text" area of the computerised operation record. These may well be other solutions, and I would appreciate people's comments and ideas.

**Simon Jones**  
**Fellow in Endoscopic Gynaecology**

## Unplanned Return to Theatre During the Same Admission

### (Indicator Topic 11: ANZRCOG)

This indicator gives an index of early surgical morbidity and may reflect less than optimal management.

#### **Clinical Indicator 11**

**Numerator** The number of patients having an unplanned return to theatre during the same admission.

**Denominator** The total number of patients having a gynaecological procedure.

In 2002, there were 4779 gynaecological procedures carried out at Christchurch Women's Hospital compared with 5308 in 2001.

17 patients were identified as returning to theatre during the same admission.

Data collection practices changed during the year such that the figures for January to June were taken from Operating Theatre Records whilst those for July to December were collected from the CareSys system.

Of these 17, 2 were excluded, as they were planned two stage oncology procedures.

Thus the indicator figure for 2002 was 0.3% which, as in 2001, falls below the suggested mean of 0.4% and at the lower end of the threshold 0.3 - 0.6%.

As in 2001, haemorrhage was the major reason for return to theatre, involving 8 of the 15 cases. Interestingly 5 of these cases were following STOPS or ERPOCS for unwanted or failed pregnancies. Of more concern, were the 6 cases returning to theatre for problems concerning wound management, there were predominantly for wound breakdown requiring exploration and resuturing.

In summary, whilst the overall figures are excellent, being at the lower end of the threshold, more consideration of uterine evacuation procedures and wound care, both surgical and post operative, would seem appropriate.

**Simon Jones**  
**Fellow in Endoscopic Gynaecology**

## Blood Transfusion for Gynaecological Surgery

Women's Health Division uses the Royal Australian New Zealand College of Obstetric and Gynaecology (RANZCOG) indicator 'Blood transfusion for Gynaecology Surgery' as a general measure of surgical management. In 2002, 1.68% of all women admitted to the Gynaecology Service underwent a blood transfusion, a slight increase in the rate from 2001 of 1.08% rate (refer to Table 123).

**Table 123: Transfusion Rates for All Gynaecological Inpatients**

Year	Total Number of admissions	Transfusions (n)	Transfusions (%)
2001	5713	62	1.08
2002	5401	91	1.68

### Clinical Indicator 9.1

**Numerator** The number of patients receiving a blood transfusion during/post abdominal or vaginal hysterectomy (excluding laparoscopic hysterectomy).

**Denominator** The total number of patients undergoing abdominal or vaginal hysterectomy (excluding laparoscopic hysterectomy).

The threshold for the indicators has not yet been established. However, the Australiana Council on Healthcare Standards has set a benchmark suggesting the number of patients receiving a blood transfusion during/post abdominal or vaginal hysterectomy be set at 3.9%. In 2002 the rate of transfusion increased from 2001, by 2.49% to 5.88% (refer to Table 124).

**Table 124 Transfusion Rates for TAH & VH (not LAVH or Oncology)**

Year	Denominator	Numerator	(%)
2001	324	11	3.39
2002	323	19	5.88

### Clinical Indicator 9.1

**Numerator** The number of patients receiving a blood transfusion during/post endoscopic operative procedures (including laparoscopic hysterectomy and excluding oncology cases).

**Denominator** The total number of patients undergoing endoscopic operative procedures (including laparoscopic hysterectomy and excluding oncology cases).

The provisional threshold has not yet been established (refer to Table 125).

**Table 125: Transfusion Rates for Laparoscopic Hysterectomy (excluding Oncology)**

Year	Denominator	Numerator	(%)
2001	627	9	4.10
2002	713	6	0.84

Overall the total number of patients requiring a blood transfusion appears to be relatively low at 1.68%.

The following tables give information about numbers of gynaecology patients requiring transfusions in different categories. They do not give transfusion rates per category.

**Table 126 Comparison of Numbers of Oncology and non Oncology Patients requiring blood transfusion**

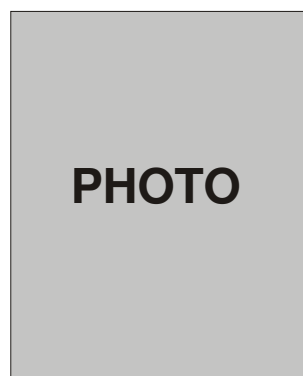
	(n)	(%)
Oncology Related	16	17.5
Non Oncology Related	75	82.4

**Table 127: Pre-op Haemoglobin Levels of Surgical Patients requiring blood transfusion**

	(n)	(%)
Normal preoperative haemoglobin (>105 g/l)	22	71.5
Abnormal preoperative haemoglobin <105g/l)	6	28.5

**Table 128: Operative Cases – Comparison of number of transfusions between consultants and registrar surgeons**

	(n)	(%)
Operation by consultant	22	71.5
Operation by registrar	6	28.5



**Selwan Al Salihi**  
Obstetric and Gynaecology Registrar

## Gynaecology Oncology

The key team members are:

<b>Gynaecological Oncologist</b>	Mike Laney	<b>Palliative Care</b>	Kate Grundy
	Peter Sykes	<b>Nursing Gynae Unit</b>	Bea de Langen
<b>Radiation Oncology</b>	Raghu Gowda	<b>Social Work</b>	Sarah Kidd
<b>Medical Oncology</b>	Bernie Fitzharris	<b>Occupational Therapy</b>	Sania Gugich
	David Gibbs	<b>Physiotherapy</b>	Hillary O’Dea
<b>Pathology</b>	Lauree Hunter	<b>Dietitian</b>	Helen Little
<b>Radiology</b>	Hugh Roberts	<b>Chaplain</b>	Dianne Smith
	Nigel Anderson	<b>Maori Health Worker</b>	Doris Tamarapa

2002 has seen a further modest increase in the women referred to the Gynae-Oncology Service. With the support of Drs Gary Fentiman, David Perez and John North in Dunedin we continue to provide an integrated multidisciplinary service available to all women in the South Island. We wish to thank the support of all referring practitioners and are happy to be contacted regarding patients referred to the Service.

### **Clinical Data**

Clinical data regarding new patients is tabulated below.

**Table 129: Average Age of Oncology Patients at Registration**

Registration Site	Number of Women		Average Age of Women	
	2001	2002	2001	2002
Christchurch	186	194	57	57

**Table 130: Reason For Referral to Oncology service**

Reason for Referral	Number of women	
	2001	2002
Further Treatment	1	1
New	168	184
Recurrence	10	8
Not Stated	7	1
Total	186	194

**Table 131: Site of Disease for Gynae Oncology patient**

Primary Site (Gynae)	Number of Women		Average Age of Women	
	2001	2002	2001	2002
Cervix	39	43	46	44
Endometrium	54	66	62	62
Ovary	43	51	50	57
Peritoneal	5	5	55	58
Tube	1	1	63	65
Unknown	3	1	76	73
Uterus		2		57
Vagina	7	1	68	80
Vulva	11	6	70	64
Non Gynae	22	21	55	61

**Table 132: Stage of Disease for Gynae Oncology patient**

Stage	Cervix		Endometrium		Ovary	
	2001	2002	2001	2002	2001	2002
1	33	32	25	38	17	17
2	4	4	11	10	1	1
3	2	2	10	6	16	28
4				4	5	1
Total	39	38	46	58	39	47

**Table 133: Morphology of Gynaecology Cancers**

Primary Site	Morphology 1	Morphology 2	Number of Women	
			2001	2002
Cervix	Carcinoma	Adenocarcinoma	13	10
		Adenosquamous		2
		Small Cell - NOS		1
		Squamous Cell	24	26
	Sarcoma	Carcinosarcoma - (MMMT)		1
Endometrium	Carcinoma	Adenocarcinoma – Clear Cell	6	3
		Adenocarcinoma – Endometrioid	36	49
		Adenocarcinoma – Mucinous	1	
		Adenocarcinoma – NOS	4	1
		Adenocarcinoma – Serous	4	3
		Undifferentiated		1
	Sarcoma	Carcinosarcoma (MMMT)	1	1
		Endometrial Stromal – High Grade	1	2
		Endometrial Stromal – Low Grade	1	2
Ovary	Borderline Epithelial	Mucinous	6	2
		Serous	6	12
	Carcinoma	Adenocarcinoma – Clear Cell	3	3
		Adenocarcinoma – Endometrioid	3	2
		Adenocarcinoma Mucinous	2	6
		Adenocarcinoma – NOS	2	1
		Adenocarcinoma – Serous	14	21
		Granulosa Cell – NOS		
		Serous	1	
		Small Cell – NOS	1	
	Undifferentiated		1	
	Germ Cell Tumour	Dysgerminoma	1	
		Endodermal Sinus Tumour		
		Immature Teratoma	2	
	Sarcoma	Leiomyosarcoma	1	
		Carcinosarcoma (MMMT)		3
	Stromal Tumour	Granulosa Cell – NOS	1	1
Uterus	Sarcoma	Leiomyosarcoma		1

For women with endometrial and uterine cancer there has been a slight increase in the number of referrals to the service, cervical cancer referrals are stable. Endometrial cancer is now clearly the most frequent malignancy managed by the Service. This is consistent with an increase in registration of endometrial cancers nationally and the predicted continuing rise in incidence of the disease.

### **Cervical Cancer**

Advanced cervical cancer continues to decline. Microinvasive cancer represents 37% of new diagnoses. A recent study performed in Christchurch reveals that most cases of microinvasive carcinomas have delayed rescreening with a median interval of 4 years to the last smear as opposed to an interval of 2 years from the last smear seen in women with CIN 3 (corrected for age). Inadequacy of excisional biopsy can result in difficulties of management for these patients. It is important to consider the possibility of microinvasion in women aged 35 and over with florid CIN3 and delayed screening. The average age of women with cervical cancer continues to fall, and carefully selected women are now being offered fertility sparing surgery. 32% of cervical cancers are now adenocarcinomas. Early identification and prevention of this disease is an increasing priority.

### **Endometrial Cancer**

Endometrial cancer appears to be an increasingly common disease and there is some suggestion that the average age of diagnosis is decreasing. Strategies for management of this disease are important. Fortunately, in 62% of cases the disease seems to be restricted to the uterus but it is important that metastatic disease is detected and treated. Clinical review of our patients reveals that pre-operative selection of low risk patients is difficult. We would therefore recommend that all patients with endometrial cancer are managed in conjunction with the Gynaecological Oncology Team. However ¾ of women with Grade 1 tumours and an endometrial thickness less than 2cm have low risk disease and may be suitable for Total Abdominal Hysterectomy (TAH) and Bilateral salpingo oophorectomy (BSO) alone. Further review of MRI findings suggest that MRI offers a better indication of low risk disease and that women with Grade 1 tumours and less than 50% invasion on MRI findings or Grade 2 tumours and no myometrial invasion detected on MRI are likely to have low risk disease.

### **Ovarian Cancer**

The database is now mature enough to offer some follow up data. A summary of an audit of ovarian cancer outcomes at 3 years is examined. (see page 90) .

## **International Developments 2002**

### **Ca Cervix**

HPV vaccines for the prevention of cervical cancer have now been developed and are internationally (including New Zealand) undergoing clinical trials. The long term efficacy of these vaccines will not be known for several years. Concomitant chemo-radiation is now considered the treatment of choice for locally advanced carcinoma of the cervix.

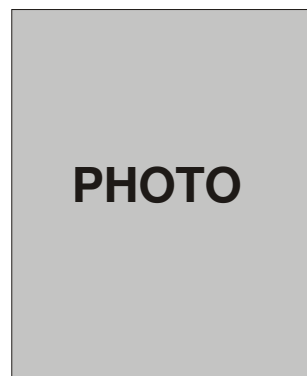
### **Ca Ovary**

Two large trials have shown a survival benefit for women with Grade 2 and Grade 3 Stage 1 ovarian carcinomas treated with chemotherapy. However the benefit is controversial where complete surgical staging is performed. Numerous new chemotherapy agents have been shown effective in ovarian cancer. These agents are under evaluation internationally in GOG 182.

### **Research**

Our Group are active members of the Australian New Zealand Gynaecology Oncology Group (ANZGOG) and our patients are offered the opportunity to participate in ANZGOG sponsored multicentre trials. Notably at present we are participating in GOG 182, a randomised trial comprising 6 different modern chemotherapy regimens in the primary treatment of advanced ovarian cancer. This trial offers access to new drugs for our patients and offers them the hope of better survival and less morbidity for sufferers of ovarian cancer worldwide. In 2003 we plan to participate in another GOG study, a trial exploring the benefit of erythropoietin therapy in patients undergoing radiotherapy for carcinoma of the cervix. The Group also has an active research programme in clinical and laboratory research. Please see the University Department Report for a list of 2002 publications. (see page 12)

We wish to thank all our referring doctors and request that where possible we are informed regarding the follow up of patients to enable us to make our follow up information accessible. We are also pleased to get any feedback that may assist in the improvement of our service.



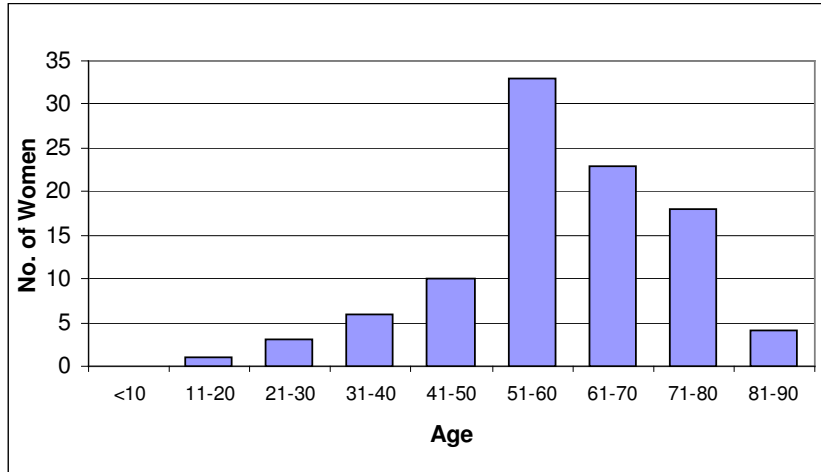
**Dr Peter Sykes**  
**Lecturer**  
**Gynaecological Oncologist**

## Ovarian Cancer Audit

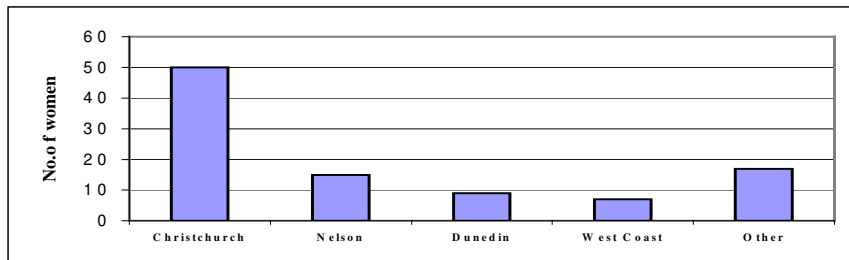
This audit looked at the follow-up of all 98 patients with a new diagnosis of Ovarian Cancer between 2/8/99 and 22/11/00, who underwent surgery at CWH.

- The patients ranged in age from 18-87 years.
- The average age at presentation was 59.34 years.

**Figure 7: Age of Women**



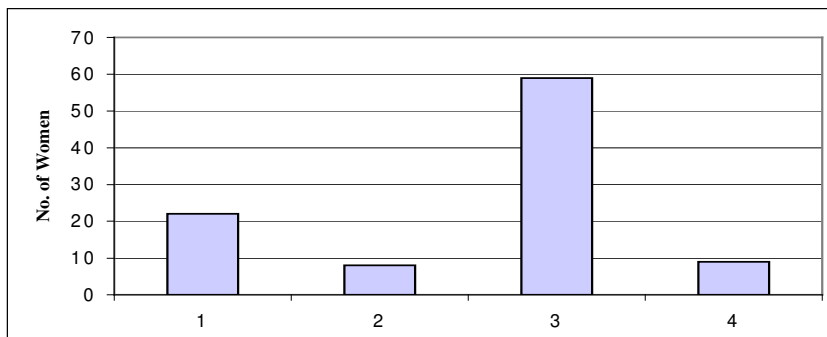
**Figure 8: Referral Centre**



CWH is a tertiary referral centre for the treatment of gynaecological malignancies. Approximately half of our patients were from Christchurch or the surrounding area, the other half were referred from other South Island centres.

These centres work closely with Christchurch in the follow-up period, which means that most of the patients from out of Christchurch can be followed up by specialists (both Gynaecologists and Oncologists) closer to home.

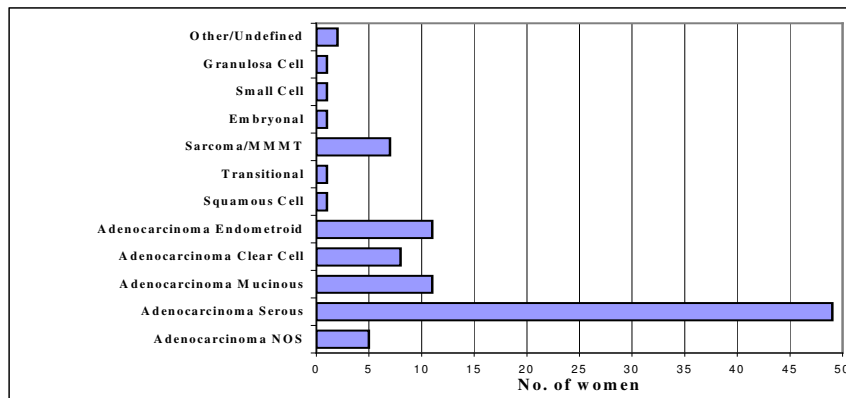
**Figure 9: Stage at Primary Treatment**



A number of variables govern the outcome of patients with Ovarian Cancer. Two of the most important of these variables are the type of tumour and how advanced the cancer is at the time the patient presents.

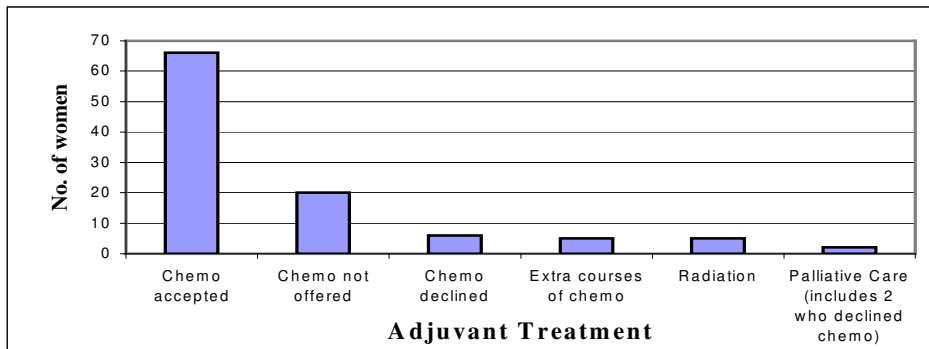
The department utilises a multidisciplinary approach working with specialists from the pathology, oncology and radiology departments to ensure that the most accurate diagnosis and staging is made; this in turn means that each patient receives treatment tailored for their needs.

**Figure 10: Histological Site**

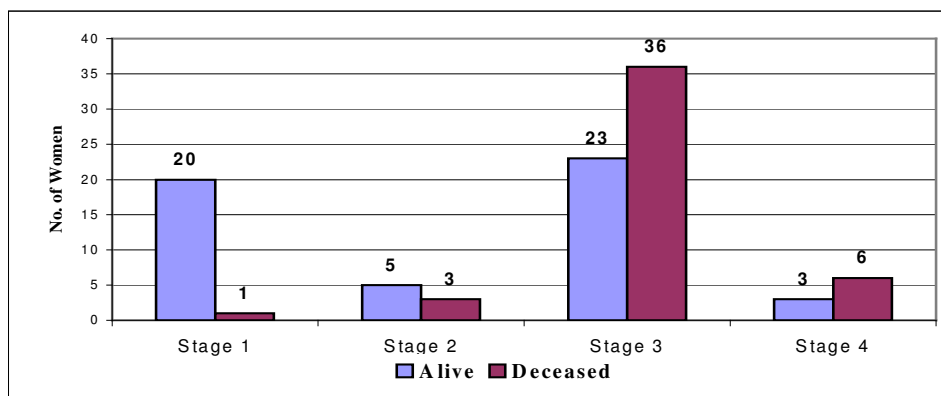


Follow up information was not available for two patients (1 stage 1, and 1 stage 3). We audited the adjuvant treatment that they received, the occurrence of complications and cancer recurrence.

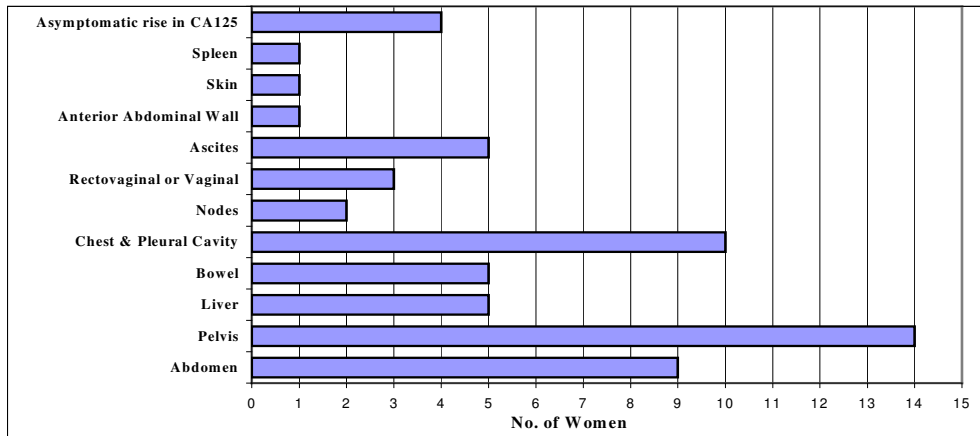
**Figure 11: Non-surgical Treatment given**



**Figure 12: Survival Data**



**Figure 13: Site of Recurrence of Ovarian Cancer**



At the time of the audit all patients with Stage 1 disease were alive apart from 1 woman who had a small cell carcinoma. For the majority of women who had Stage 3 disease 39% were alive at the time of the audit and the median survival was 31 months. Women with Stage 4 disease had a median survival of less than 12 months but 3 were alive, 2 of the women were alive and well more than 3 years from diagnosis.

**Complications of either cancer or treatment**

Advanced ovarian Cancer is a condition associated with significant morbidity. The recorded complications of disease or treatment, are listed in Table 134

**Table 134: Complications of either Cancer or Treatment**

Complications of either Cancer or Treatment	No. of Women with Complications	Complications of either Cancer or Treatment	No. of Women with Complications
Hearing Problems	1	Pneumonia	1
Candida Sepsis	1	Bowel Obstruction	6
Neuropathy	3	Abscess Neck Node	1
PE/DVT	4	Post Op Bleeding	1
Anastamosis Leak	1	Vault haematoma	1
Anaesthetic complications	1	Dermatomyositis	1
Pelvic Abscess	2	Hernia	1
Uretic Obstruction	2	Pneumothorax (iatrogenic)	1
Neutropenia	2	Cardiac arrhythmia	3
Neutropenic Sepsis	1	Biliary Tract Obstruction	1
Lymphoedema	2	Ileostomy Closure Abscess	1
Thrombocytpaenia	1		

**Conclusion**

These survival figures are consistent with international data and reflect improvements over historical information. Further, a more detailed review will be ongoing.



**Michelle Bailey**  
Obstetric & Gynaecology Registrar

## Brachytherapy

Brachytherapy radiation treatment is a treatment that Christchurch Women's Hospital has provided for women with gynaecological cancers for over 30 years. In 2002 a Selectron machine was introduced, enabling gynaecology radiation practices to utilise up to date equipment.

Brachytherapy comes from the Greek word 'Brachy' meaning close. It involves either the insertion of a Linear Vaginal Applicator (LVA) into the vagina or an intrauterine apparatus called a Fletcher Suite. A radioactive source is then loaded inside the chosen apparatus. For the duration of the treatment, the woman is confined to a specially designed lead-lined bed in a designated room.

Approximately 30 women a year undergo this service with the greatest number of treatments using the LVA method. With the introduction of the Selectron Machine, exposure rates to radiation to staff and visitors have been eliminated altogether for LVA treatments.

For the duration of the treatment the woman is in isolation. To ease the impact of isolation, the Oncology Service has provided a television and stereo for the woman to enjoy. She also has use of a telephone to contact relatives or friends. Prior to admission every woman is informed that she will be in isolation and is advised to bring in books or activities for her stay in hospital. All the women we have cared for so far have stated that they were well advised of what to expect prior to their admission, and have been able to plan well for their time in hospital.

A video camera and microphone have been installed in the treatment room, enabling staff to talk with and view the patient at any time without having to enter the room. This is especially important during the night, so as not to disturb the patient. Patient privacy issues have been addressed.

Safe practices are adhered to by incorporating the ALARA principles, As Low As Reasonably Achievable. This is achieved by:

- Limiting the time a staff member is in the room
- By increasing the distance between the staff member and the radioactive source
- By standing behind the lead shielding at all times

Staff comply with these practices.

There has been significant change in practice to the provision of nursing care for these women. The machine is stopped each time the nurse enters the room, thus increasing the overall amount of time the woman is required to stay in the treatment bed. This has an impact on bed rest complications such as pressure areas, chest infections and DVTs, so it is important that staff plan a group of nursing cares and carry them out in a timely manner. The total allocated nursing time has been set at one hour per twenty four hours allocated treatment time.

Prior to the introduction of the Selectron machine, an audit was undertaken to look at the length of treatment times and the factors that influenced nursing staff entering the room. 62 treatments occurred between August 2000 and June 2002. Average treatment times for this period are detailed in Table 135 below. The times for LVAs now range from almost 14 hours to almost 83 hours.

With the introduction of the Selectron Machine we are now able to give Brachytherapy (Radiation treatment) without being exposed to radiation when dealing with patients receiving LVA treatment (one of the 2 treatments available).

**Table 135: Average Treatment Times (August 2000 – June 2002)**

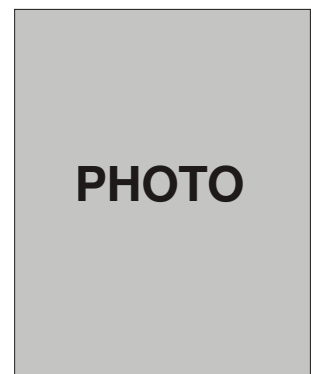
LVA Applicator 20 Gy	LVA Applicator 60 Gy	Fletcher Suit 20 Gy
16.3 hours	47.7 hours	26:6 hours

**Key**  
Gy = gray (unit of absorbed dose)

The audit showed that the major reason for nursing staff entering the room was to perform nursing duties and comfort cares for the woman, but when returning to the room for additional cares it was for the treatment of nausea. On four occasions, urgent medical assistance was called for. An audit is currently being conducted to look at these same factors, the change of practice and ways we can improve the delivery of cares to the woman in the quickest possible way.

All documentation used for educational purposes has also been reviewed to incorporate best available evidence. This has led to changes in our Outcome & Process Standards, and related policies.

The introduction of the Selectron machine at Christchurch Women's has greatly improved the safety of the nursing staff, medical and radiation staff as well as the general public. With the system now running effectively, plans are under way to introduce the Selectron machine for Fletcher Suit insertions later this year.



**Sheryl Heeren, Gynaecology Nurse Educator**

## Lyndhurst Report

Lyndhurst Hospital is part of the Gynaecology Service and is located on a separate site Christchurch Women's Hospital. The Hospital is licensed and functions under the 'Contraception, Sterilisation and Abortion Act 1977' providing a day surgery clinic for first trimester termination of pregnancies for women from Canterbury, West Coast and Southland. A multidisciplinary team of medical, nursing, ancillary, clerical and social work / counselors, staff Lyndhurst.

For women from the Canterbury region, Lyndhurst functions on a three-appointment system. At the first appointment, the woman sees a counselor and certifying consultant. If the request for termination is approved a second appointment is made during which another certifying consultant assesses the woman and the operation date is confirmed. The operation takes place at the 3<sup>rd</sup> appointment. For women travelling from outside the Canterbury region Lyndhurst provides a day service where all requirements are fulfilled.

Lyndhurst sends information concerning the referral process and the counseling service it provides to referring doctors and other agencies. An extensive patient information booklet has been produced, which is either given to women on their first visit or (in the case of women from outlying areas) by their general practitioner. The medical and nursing staff at Lyndhurst provide advice on contraception to all women admitted.

Lyndhurst is equipped to perform a termination of pregnancy service for nearly all of the referrals it receives. However, for women requiring general anaesthetic or second trimester termination, referrals are made to Christchurch Women's Hospital.

Currently Lyndhurst has the capacity to perform ten to eleven terminations per day. These are scheduled Monday to Thursday and every second Friday. On average the time from referral to first appointment is two to three working days. The time from first appointment to operating day is two and a half weeks.

In line with national trends, the number of terminations of pregnancy continues to increase each year.

From January to December 2002 Lyndhurst admitted 2156 women for termination of pregnancy and transferred 8 patients to Christchurch Women's Hospital. During the corresponding period in 2001, Lyndhurst admitted 1985 women for termination of pregnancy and transferred 14 women to CWH.

**Table 136: Transfers to CWH**

Year	Admissions	Complications transferred to CWH
2001	1985	14
2002	2103	8

One of the key quality measures with terminations of pregnancy is the post-operative complication rate. In 2002 Lyndhurst reported complication rates lower than the 5% nationally accepted maximum for the procedure.

**Table 137: Complication Rates**

Ethnicity	Lyndhurst	%	CDHB %
European	1468	70%	85
Maori	250	12%	7
Pacific Island	81	4%	2
Asian	231	11%	3
Other	73	3%	3

A comparison of the ethnicity distribution of women who use Lyndhurst services identifies that women of non-European ethnicity are over represented proportionately, relative to the CDHB population profile.

Although the Lyndhurst database (for complication rates) for 2002 is not complete, we expect to be able to report on a full year's data in 2003 (with suitable comparisons and benchmarks).

**PHOTO**

**Kate Paterson**  
Nurse Manager

# Neonatal Service

## Neonatal Overview

In 2002 the Neonatal Service has maintained the ongoing challenge and commitment to quality neonatal care in an environment which has had three recent changes in nursing leadership, ongoing high acuity levels, recruitment and retention issues, and some disruption from industrial issues early in the year.

Advances in respiratory support for neonates included the introduction of Bubble Continuous Positive Airway Pressure (CPAP) to provide options for babies when the need for CPAP Flow Driver Machines exceeded demand. The initial challenge to use the conventional nasal prongs within our developmental supportive care philosophy prompted a request to a company to expedite development for a midline bi-nasal system which enabled us to continue to nurse babies in a neuro-developmentally supportive way. There was also an upgrade of a Bird Ventilator to the VIP Gold, giving more options to use volume ventilation especially of bigger babies. New point of care testing equipment (ISTAT) for blood analysis for use on neonatal transports was introduced into the service. Also new incubator covers were developed to maintain temperature stability and reduce light and noise during transports.

The third South Island Neonatal Group (SING) meeting in October in Dunedin, was well represented by the Christchurch Neonatal Service. This annual meeting provides a forum for discussion around clinical issues and advances in neonatal care. This year was focused on administration of CPAP, and surgical issues, including transportation of the surgical baby.

The Ministry of Health called an important meeting in October to address the issues around the national neonatal bed state, and the high levels of inter-regional transfers due to lack of beds in the tertiary and secondary centres. The importance of ensuring correct nursing levels was identified as being crucial. Related to this, for Christchurch, is the impact of being the Southern Neonatal Tertiary Surgical Centre. This provides the challenge of ensuring safe transportation of the sick surgical neonate and an adequate provision for parent transport and accommodation.

Neonatal Service nursing staff were well represented on various external committees in 2002. This included representation on the National Resuscitation Guideline Group - Michael McIlhone, New Zealand Association of Neonatal Nurses - Debbie O'Donoghue - editor and vice president, Liz Buckland - web design, and the Flight Nurses Association - Sue Moore and Anne Jackson.

Two important conferences for staff working in neonatal care were organised and hosted locally in Christchurch. The NZANN Conference "Matters of the Mind" focused on promoting, supporting and understanding neurodevelopment and outcomes. The major FAOPS / Perinatal Society of Australia and NZ International Congress titled "Our Future In Our hands" was held over four days in March. It attracted interest from many overseas personnel working in the field of paediatrics and neonatology. The conference and scientific committee included five members from both neonatal and wider WHD staff.

The Neonatal Service was supported by the WHD Quality Team to enter and receive a New Zealand Quality Award for an audit into the neofit device for securing endotracheal tubes.

Advanced competencies including CPR instructors certificates (6), Immunisation vaccinators Certificate (3) and IV cannulation programmes (1) were completed by neonatal staff. This year the Neonatal Service successfully targeted 75% of nursing staff to complete the adult CPR competency. A neonatal consultant completed training as a BCG vaccinator.

The Neonatal Unit Nurses' commitment to postgraduate education included the completion of a Postgraduate Diploma in Health Science (Nursing), two Postgraduate Certificates in Health Science (Nursing) - Child and Family Health, the completion of neonatal nursing papers at Massey University (4), and research papers at Otago School of Pharmacy (2).

The beginning of 2002 saw the introduction of two locally supported advanced practice nurses who completed their training and are working towards Nurse Practitioner<sup>TM</sup> status. A third advanced practice nurse joined the service later in the year.

Strategies to facilitate parent support and education included the completion of a project on redirection of care. A working group including parent representatives developed parent information, unit hand-books now at a pre-production state. A colour printer, and laminator was donated by the Neonatal Trust in order to generate parent education material and infant memorabilia, along with a digital camera donated by parents for these purposes.

Planning and design of the new hospital has been a focus of the year 2002 and the service began to consider how the relocation will impact positively on clinical practices once on the Christchurch Hospital site. The renaming of the Intermediate Nursery to the Level One Nursery was integral to the initiation of this process. Challenges for the Service will be to continue the level of innovation and clinical practice achieved and built on in previous years.



**PHOTO**

**Bernard Hutchinson, Neonatal Service Manager**

# Neonatal Service Reports

## Neonatal Clinical Service

This is our second annual report and the data from 2002 will add to the data collated over the last 5 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.

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.

**Table 138: Admissions to the Neonatal Service**

	1998	1999	2000	2001	2002
Number of admissions	511	598	629	602	736
Number of Infants	487	571	603	578	726
Inborn	405	480	520	504	652
Outborn	82	91	83	74	74

For the first year our admission figures include all infants admitted to Level 3, 2 and 1. From 1998 - 2001 the admissions were to the level 2 and 3 only. For comparison, 635 babies were admitted to level 2/3 in 2002. Of the 91 admissions to level 1 52 were less than 2.5kg and 39 were over 2.5kg. The percentage of inborn babies born in 2002 who are admitted to level 2 or 3 is 13.2% compared with 11.7% in 2001. Compared with 1998 this represents an increase of 22.2% in admissions. This has occurred in all level 3 units in New Zealand and is directly related to having periods when we are required to transfer babies to other centres for care because of fullness and/or low nursing staff levels for the volumes.

**Table 139: Transfers in by Location**

Transfer/Retrieval from	2001	2002
Other Christchurch birthing units	19	25
Ashburton	7	6
Timaru	3	5
Kaikoura/Hanmer	0	1
West Coast	7	6
Nelson/Blenheim	3	1
Dunedin/Invercargill	16	8
North Island units	11	11
Homebirths / Born before arrival	8	11
Total	74	74

Additional transfers, particularly from Timaru, Ashburton and the West Coast, occur in-utero but are then included in the inborn statistics. For infants < 32 weeks gestation, over 80% of the babies are inborn which ensures they receive intensive care immediately after birth. The majority transferred 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 are due to unavailability of level 3 cots in their nearest unit.

## Transport

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. The requirements of the team for staff and equipment are significant.

This table outlines the retrievals and transfers for which our service is responsible financially. Air transports are required for situations where clinical expertise is required urgently or by location eg West Coast, Dunedin. Additional mothers were transferred with their infants in utero (6) because our unit was full.

**Table 140: Retrievals and Transfers**

	1999	2000	2001	2002
Retrievals	99	73	64	70
Transfers out	4	2	8	6
Transfer to Greenlane	8	8	5	8
Back Transfers	45	46	47	63
Escort to CH -Xray	41	46	47	33
Escort to CH -surgery	10	17	27	24
Air- Plane and helicopter	70	57	75	83
Ambulance	139	135	136	128

**Table 141: Admission to the Neonatal Service by Birthweight group**

Birth weight	Live Births	Admitted	Admitted %	Survived Inborn	Survived of liveborns %	Outborn admitted	Outborn survived	Survived % of total admitted
<500 gr	4	1	25	0	0	0	0	0
500 - 749gr	21	19	79	9	42.9	0	0	47.4
750-999gr	20	18	95.2	17	85	3	3	95.2
1000g –1499gr	47	46	93.8	44	93.6	6	5	94.2
1500 – 2499gr	296	273	92.2	270	99	10	10	98.9
>=2500gr	3851	295	7.7	294	99.9	55	54	99.4
<b>Total</b>	<b>4238</b>	<b>652</b>		<b>634</b>		<b>74</b>	<b>72</b>	

Two outborn babies died in 2002, one preterm and one at term.

In 2002 our survival for babies 500-749 grams was lower than 2001. These babies were in the 23-24 week gestation category, which is at the extreme of viability. The survival rate for gestational age less than or equal to 28 weeks below is similarly affected.

**Table 142: Admission to Neonatal Service by Gestational Age**

Gestational Age	Live births	Admitted	Admitted %	Survived Inborn	Survived % of liveborns	Outborn admitted	Outborn survived	Survived % of total admitted
<=28 wks	53	46	86.8	33	62.3	8	7	72.2
=29wks -<32 wks	37	36	97.3	33	89.2	5	5	92.7
>=32 wks - <=36 wks	380	298	67.1	296	99.5	4	4	99.3
>=37 wks	3768	272	6.2	271	99.9	57	56	96.2
<b>Total</b>	<b>4238</b>	<b>652</b>		<b>634</b>		<b>74</b>	<b>72</b>	

### Causes of Death

These are the deaths in hospital before discharge home. Neonatal deaths refer to babies whose death is in the first 28 days.

**Table 143: Causes of Death**

Gestational age	Birth Weight	Age Died (days)	Cause of death
20	335	0	<i>No resuscitation</i>
20	385	0	<i>No resuscitation</i>
21	400	0	<i>No resuscitation</i>
22	625	0	<i>No resuscitation</i>
23	525	0	<i>No resuscitation</i>
23	610	20	Chronic lung disease / IVH
23	560	12	Severe lung disease
24	730	0	<i>Sepsis</i>
24	690	35	Chronic lung disease/renal failure
24	615	1	Extreme prematurity / IVH
24	610	12	Extreme prematurity
24	550	2	Massive pulmonary haemorrhage
24	670	15	Pulm haemorrhage / PIE
24	790	0	Sepsis, unable to resuscitate
24	280	3	Severe growth restriction
25	870	32	Chronic lung disease/ Bilateral IVH
25	690	15	Chronic lung disease
27	1090	5	IVH / renal failure / pulmonary haemorrhage
28	980	0	<i>Multiple congenital abnormalities</i>
28	2050	27	Lymphangioma
28	740	95	Severe chronic lung disease
30	1220	26	Necrotising enterocolitis
30	1235	0	Respiratory failure
30	1400	0	<i>Thanatophoric dysplasia</i>
34	2035	2	Pneumopericardium
35	2255	15	Congenital nephrotic syndrome
38	3000	0	Severe HIE
40	3000	1	Severe HIE
40	2870	0	<i>Unable to resuscitate</i>

The deaths include those who were not admitted to the neonatal unit but had signs of life. 5 were delivered at or under 23 weeks and were not resuscitated. No infant under 500grams survived in 2002. There were 6 infants whose death was due to or associated with congenital malformation, 2 of these were considered lethal and no treatment was initiated. Parents are involved in the decisions to enter or withdraw care. There were 3 term infants whose death was associated with hypoxic perinatal events at term.

There were 6 infants whose death was 'early' (Day 0 - 5) due to the complications of RDS, sepsis or pulmonary haemorrhage and all but one, was extremely preterm. Another 6 had progression of their lung disease to chronic lung changes requiring ventilation. Additional complications lead to withdrawal of care.

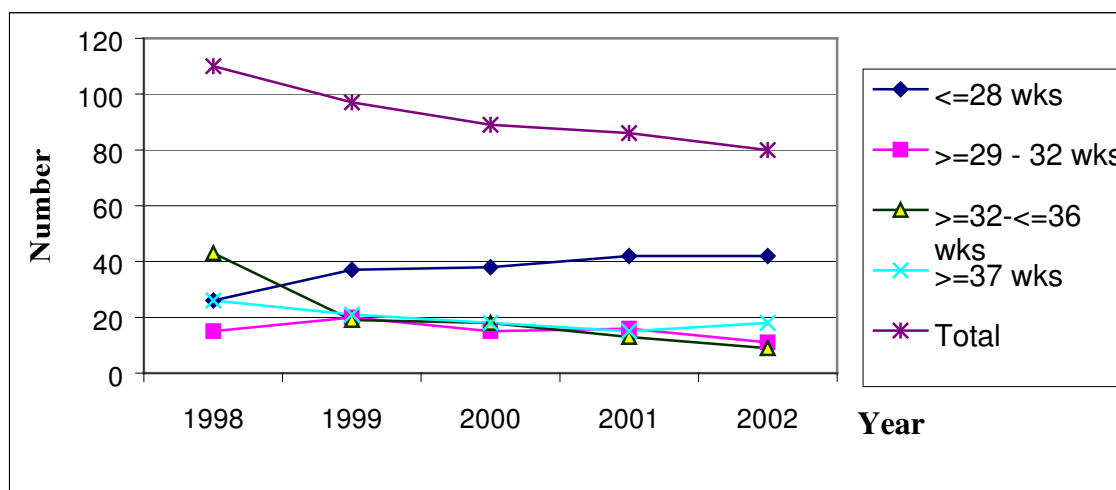
## Assisted Ventilation

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 ET ventilation, with this trend continuing in 2002.

**Table 144: Assisted Ventilation**

Any ET Ventilation	1998	1999	2000	2001	2002
<= 28 weeks	26	37	38	42	42
29-31 weeks	15	20	15	16	11
32-36 weeks	43	19	18	13	9
37+ weeks	26	21	18	15	18
Total	110	97	89	86	80

**Figure 14: Assisted Ventilation**



**Table 145: Number of Newborns receiving assisted ventilation 2002**

Gestation (weeks)	Admitted to NICU	Ventilation alone	CPAP alone	Ventilation and CPAP	No ventilation
<=28	54	11	8	32	3
>=29 and <32	41	1	21	10	9
>=32 and <=36	302	5	68	4	225
>37	329	14	22	4	289
<b>Total</b>	<b>726</b>	<b>31</b>	<b>119</b>	<b>50</b>	<b>526</b>

(Ventilation = Any form of endotracheal ventilation)

(CPAP = Continuous positive pressure ventilation)

In 2002 30 more babies received ventilator support compared with 2001. This was due to 35 more babies being commenced on CPAP with the biggest increase in babies over 32 weeks gestation. While these babies are generally only on CPAP for a short time this has increased the occupancy of level 3.

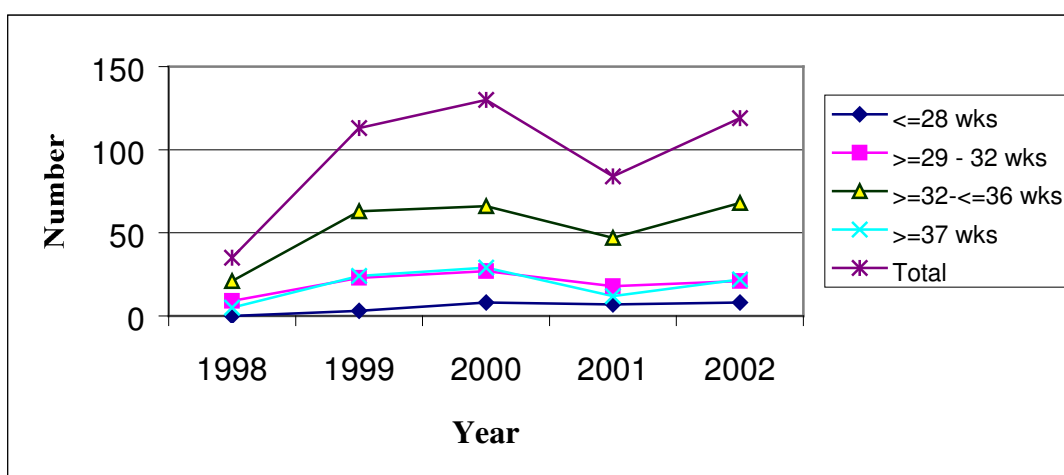
**Continuous positive pressure ventilation (CPAP)** is delivered by nasal prongs that sit only a few millimeters into the nostril. It is less invasive and tolerated better by the infants than past methods

Our use of CPAP has increased in the last year but the graph shows a consistent trend over the last 4 years.

**Table 146: Continuous Positive Pressure Ventilation**

CPAP only	1998	1999	2000	2001	2002
<= 28 weeks	0	3	8	7	8
29-31	9	23	27	18	21
32-36	21	63	66	47	68
37+	5	24	29	12	22
Total	35	113	130	84	119

**Figure 15: Continuous Positive Pressure Ventilation**



**Comment**

Two forms of CPAP are now used with the introduction of Fisher and Paykel bubble device which uses a midline nasal prong, our unit assisted with it's development. We continue to use the EME flow driver device which as well as the prongs has a mask system which is useful for the smallest infants. This allows us to continue our developmentally supportive care policy, which minimises distress and handling of babies. The number of days on a ventilator has decreased for the smallest babies so that they go onto CPAP earlier. This has caused some cases of nasal trauma when again the mask system is most helpful.

## Surgical Cases

In 2002, 26 infants needed surgery in the neonatal period either in the neonatal unit, theatres at CWH or were transferred to the Christchurch Hospital theatres. This year 3 babies required neurosurgical procedures, one for an acute haemorrhage, one Rickman reservoir for the management of post haemorrhagic hydrocephalus and one for fused metropic suture. Additional infants had inguinal hernia surgery prior to discharge at Christchurch Hospital. A close working relationship exists with the paediatric surgeons. For cases not from Christchurch, in-utero transfer was achieved for all those cases diagnosed antenatally.

**Table 147: Surgical Cases**

Surgery	2001	2002
PDA ligation	6	6
Central venous line insertion	5	0
Gastroschisis /Omphalocele	3	3
Oesophageal Atresia/ TOF	2	2
Duodenal anomalies	0	2
Colon atresia	2	0
Ileal perforation / NEC	2	1
Hirschsprungs	1	1
Imperforate Anus	0	4
Stoma	1	1 Mec Ileus
Bladder extrophy	1	0
Urologic	0	2
Gastroscopy	1	0
Diaphragmatic hernia	1	1
Neurosurgical	0	3

## Morbidity

### Intraventricular haemorrhage.

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

**Table 148: Intraventricular Haemorrhage**

		1998	1999	2000	2001	2002
<30/40	<b>Total</b>	<b>30</b>	<b>36</b>	<b>39</b>	<b>40</b>	<b>67</b>
	Grade 1	2	4	5	8	8
	Grade 2	3	1	2	3	12
	Grade 3	0	5	2	0	5
	Grade 4	2	0	0	0	0
>=30 and <32	<b>Total</b>	<b>23</b>	<b>26</b>	<b>32</b>	<b>21</b>	<b>28</b>
	Grade 1	4	0	9	1	2
	Grade 2	0	0	1	0	1
	Grade 3	0	0	0	1	0

Significant ultrasound abnormality includes Grade 3 and 4 haemorrhages. High grade abnormality is uncommon. We monitor this outcome against the ANZNN data, which comes out annually. Over 95 % of eligible babies have an US in the first 10 days. Our rate of any IVH and Grade 3 or 4 are within the clinical indicator acceptable levels.

### Retinopathy of Prematurity

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

**Table 149: Retinopathy of Prematurity**

		1998	1999	2000	2001	2002
<b>&lt;30/40</b>	<b>Total</b>	<b>30</b>	<b>36</b>	<b>39</b>	<b>40</b>	67
	Grade 1	5	10	10	9	21
	Grade 2	3	6	4	1	3
	Grade 3	2	0	2	1	1
	Grade 4					
<b>&gt;=30 and &lt;32</b>	<b>Total</b>	<b>23</b>	<b>26</b>	<b>32</b>	<b>21</b>	28
	Grade 1	0	2	3	0	1
	Grade 2	0	0	1	0	0
	Grade 3	0	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 2002 no infants were treated for Stage 3 ROP, although one infant was affected but care was withdrawn at about the time that surgery was felt to be needed. Examinations are performed for the unit by Assoc Professor Richard Clemmett, Ophthalmology.

### Sepsis

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

**Table 150: Sepsis**

		1999	2000	2001	2002
<b>&lt;30/40</b>	<b>Total</b>	<b>36</b>	<b>39</b>	<b>40</b>	<b>67</b>
	Early Sepsis	4	0	1	0
	Late sepsis	13	12	17	11
	Bacterial- non CNS	7	5	6	2
	Coag Negative Staph	8	6	9	7
	Fungal	2	1	2	2
<b>&gt;=30 and &lt;32</b>	<b>Total</b>	<b>26</b>	<b>32</b>	<b>21</b>	<b>28</b>
	Early sepsis	0	1	0	0
	Late sepsis	0	1	3	3
	Bacterial	0	0	0	0
	Coag Negative Staph	0	2	3	3
Fungal	0	0	0	0	

Early onset sepsis (< 72 hours of age) is uncommon. Group B Strep affected 2 term infants early, infections are suspected more frequently than this but blood cultures are frequently negative because of appropriately given maternal antibiotics before delivery. Our rate of late onset sepsis is low compared to other units. Coagulase Negative staphylococcus is the predominant organism and is often found in very preterm infants who have required a central venous line for fluids and TPN. Two cases of systemic fungal infection in 24 week infants occurred.

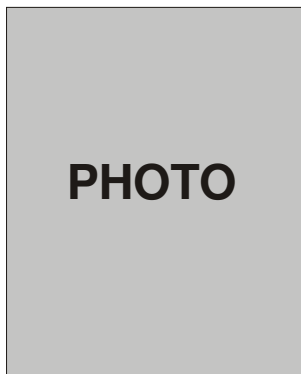
**Chronic lung disease.**

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.

**Table 151: Chronic Lung Disease**

		<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
<b>&lt;=28 weeks</b>	Admitted to NICU	26	40	44	51	<b>54</b>
	O2 at 28 days % of admitted	80.7	70.9	59	70	50
	O2 at 36/40 % of admitted	46	45	45	50.9	30
	Home on O2 %	11	19	22	25	14.8
<b>29-31 weeks</b>	Admitted to NICU	31	47	51	47	<b>41</b>
	O2 at 28 days %	0	14	7.8	12.7	14.6
	O2 at 36/40 %	0	8	7.8	8.5	9.75
	Home on O2 %	0	4	0	2	7.3

For the first time since the use of CPAP has increased the rate of CLD at 36 weeks gestation has decreased. Many of the infants < 28 weeks are extubated early after receiving surfactant onto CPAP which they then stay on for many weeks. It will be important to see if this trend continues. Our levels of CLD have been average when compared to the ANZNN data previously.



**Nicola Austin  
Clinical Director  
Neonatal Services**

## Neonatal Outreach Service

It is recognised that infants who have been inpatients in the Neonatal Service have different needs on discharge than those of a normal term infant. For the past nine years the Neonatal Outreach Service has provided transitional support and advice for families of neonatal graduates. The service employs three nurses, one full time and two at 0.7 full time equivalents to cover six days per week. The geographic area covered is approximately 45 minutes radius from Christchurch Women's Hospital.

The length of involvement with families varies from 1 week to four to six months, depending on the circumstances surrounding the health and well being of the infant. During this time the Outreach Service works alongside other health professionals and community support groups to provide a multidisciplinary team approach to care.

In addition the Outreach Service provides the Neonatal Abstinence Syndrome (NAS) program, which is unique in New Zealand. This program provides home based and outpatient support follow up for infants who were born to mothers on the methadone program.

The Outreach Service also provides an apnoea monitor service for specific infants who, due to their current or past health issues, will require ongoing monitoring for up to six months. As well as working with families in the community, the Outreach Nurses work alongside the hospital staff to provide health education for families prior to discharge in preparation for the transition to home.

### Outreach Service Statistics for 2002

376 infants were admitted to the service in 2002. The majority were infants needing support and monitoring to fully establish feeding. The Outreach Team also works to support and empower the parents/caregivers to manage the day to day care of their infant. Additional health concerns on discharge from the service were as identified (refer to Table 152).

**Table 152: Health Concerns on Discharge**

Health Concerns on Discharge	(n)	%
Commenced onto the NAS community program	13	3.4
Discharged on home oxygen	7	1.8
Discharged on enteral feeding	8	2.1
Discharged for palliative care	1	0.3
Discharged with a naso-pharangeal tube in place	1	0.3
Admitted to the service because going on home CPAP	1	0.3
Discharged with Apnoea monitors	28	7.4
No concerns on discharge	317	84.3
Total	376	100.0

**Table 153: Neonatal Abstinence Programme**

Infants on NAS Programme	2001	2002
	34	13

Although numbers of NAS infants appear low in 2002 this is not necessarily indicative of an overall decline in the numbers of infants treated. Figures from the last ten years show a history of fluctuation, with occasional years where numbers treated were low, followed by years where the numbers treated increased again to between 30 - 40 infants per annum (refer to Table 153).

## **Neonatal Outreach Acuity**

In May of 2002 we started gathering data on an Access database and have developed an acuity system to try and capture the amount of time individual infants and their families require from the Outreach Service. We examined the amount of time we spent with different groups of infants and built our acuity around this knowledge.

### **Acuity (1)**

We noted that apart from the initial assessment visit that could take up to one hour, subsequent contacts would take up to 30 minutes of a nurse's time. These families adjusted very quickly to the transition from hospital to home and had few, if any problems.

### **Acuity (2)**

Families were identified as acuity (2) when visits/contacts could take up to 40 - 45 minutes of the nurse's time after the initial assessment visit. Generally any problems here were related either to feeding where it may have taken longer to establish full breast feeds, or to apnoea monitor care, or there may have been ongoing social issues to work through.

### **Acuity (3)**

Finally the third group of infants were those who were given acuity of (3). These children went home with additional health issues as identified in the earlier table or may have had multiple social issues to be addressed. The time spent with these families usually involved an average 50 - 60 minutes of the nurse's time per contact.

Of the 185 infants admitted to the service during that period, 94 were given acuity of (1). As mentioned previously, this acuity indicates that these families need the least amount of contact time. When examining this group from a gestation perspective, it is interesting to note that infants from 26 weeks to 42 weeks gestation fall within this category. The median gestation being 33 - 36 weeks. The average length of stay in the Outreach Service for this group was 28.3 days.

There were 69 infants in the next group identified with acuity of (2). Once again the range of gestations was right across the spectrum from 24 - 40 weeks gestation. The median being 33 - 36 weeks. The average length of stay (for) in the Outreach Service this group was 41.8 days.

Finally those identified with acuity of (3) represented 19 infants. These infants required the most input from the Outreach Service, which was a minimum of 50 minutes per contact. The gestation range was similar to the other two groups, between 25 - 41 weeks with a median of 33 - 35 weeks. The average length of stay in the Outreach Service for this group was 74 days.

**Table 154: Acuity**

<b>Acuity</b>	<b>(n)</b>	<b>%</b>	<b>ALOS</b>
1	94	52.8	28.3
2	96	36.5	41.8
3	19	10.7	74.0

**Key**

ALOS Average length of stay with the Outreach Service

These figures tell us that the largest percentage of infants admitted to the service are between 32 -36 weeks and that gestation does not always indicate the complexity of issues a family may face. However, as expected, the infants given acuity of (3) stay in the service a lot longer than those given acuity of (1) or (2).



**PHOTO**

**Anne Morgan**  
**Neonatal Outreach Service**

## Neonatal Service Research

Neonatal Service WHD has a strong research focus, which is demonstrated by the quality and number of the following research studies undertaken in 2002. Many staff members of the Neonatal Service contribute significantly to these studies, it is this team effort that makes our research successful.

### Active studies in 2002

#### **Neurological and Psychological Outcomes of Very Low Birth Weight Infants**

Study Group: Lianne Woodward, Terrie Inder, Nicola Austin and Carole Spencer

##### *Aims of this study:-*

1. To describe the neurologic, cognitive, motor, behavioural, and social development of a regional cohort of VLBW (<1500G) children assessed at 2 years and 4 years corrected age. This will involve comparing the function of VLBW infants with a sample of full term control children matched for gender and term age on a range of developmental measures.
2. To examine, within the VLBW group, the relationship between MRI and neurobehavioral data obtained at term equivalent and children's subsequent developmental outcome measures at 2 years and 4 years.
3. To examine the extent to which early risk is moderated by VLBW children's postnatal experiences in the family and in preschool/early intervention settings.

The cohort that was recruited in 1998-2000 was assessed at 2 years-corrected age and this was completed in January 2003. The control group have recently been completed. The 4-year assessments began in November 2002 and will run through until March 2005. This important follow up study involves staff at Christchurch Women's Hospital, the Champion Centre and the University of Canterbury Education Department. The findings from the 1-year review and an interim report on the 2-year follow up will be presented at the Paediatric Academic Societies meeting in Seattle, May 2003.

#### **Neurological outcomes of infants exposed to methadone during pregnancy**

Study Group: Lianne Woodward, Terrie Inder, Trecia Wouldes, Carl Kuschel, Carole Spencer, Jill McKie.

##### *Aim of the study:-*

1. To examine the effect of prenatal methadone exposure on infants' health and development, neurological functioning and cerebral development.
2. To examine, within the methadone group, the relationship between maternal dose and a range of measures of infant health and neurological development.
3. Recruitment started in October 2002. The assessment involves a MRI using previously used research protocols at Southern Cross Radiology Dept Christchurch Hospital.

#### **EEG Studies**

Study Group: Terrie Inder, Nicola Austin, Liz Buckland, Carole Spencer.

The relationship of brainwave activity in the first weeks of life to long-term outcome in the premature infant, including control studies.

Recruitment was completed in 2002.

#### **Human Factors assessment, User Interface of the Brain Monitor system**

Study Team: Liz Buckland, Nicola Austin, Cristina Parra, Malcolm Battin, Clare West

### **Neonatal Hearing screening** (combined study CWH Neonatal Unit and Canterbury University)

Study Group: Nicola Austin, Mark Flynn, Rodney Ford, Liz Buckland

#### ***Aim of the study:-***

1. To assess the benefits and feasibility of running a hospital based screening service using Otoacoustic emission in the newborn period.

Completed July 2002

### **The ICON study**

Study Group: Brian Darlow, Terrie Inder, Fook Choe Cheah. Nina Mogridge

“Inflammatory cascade and oxidative damage.” Causes of later health problems in the preterm and ventilated babies.

### **Studies to commence in 2003, which involves significant time in planning, grant application and ethics committee application.**

#### **ICE Trial**

Study Group: Sue Jacobs, Nicola Austin, Brian Darlow.

#### ***Aim of the study:-***

1. To determine the effect of whole body cooling of newborn babies with Hypoxic Ischaemic Encephalopathy (HIE) TO 33.5C for 72 hours on survival free from major sensorineural disability.

#### **Footprint Study**

Study Group: Brian Darlow, Nicola Austin, Beth Wynn-Williams, Nina Mogridge.

#### ***Aims of the study:-***

1. Assess how well babies who have required admission to the NNS at CWH are doing at 2 years of age.
2. Compare this outcome with a group of healthy babies born at term who did not require admission to NNS.
3. Trial a simple parent-reporting scheme on how children are doing at 2 years of age.

Neonatal staff recruited the cohorts for the Footprint and Parent study in 2001. The follow-up will take place from early 2003 until March 2004 by which time all of the children will be 2 years corrected age.

#### **Parents Study**

Study Group: Roger Mulder, Janet Carter, Brian Darlow, Beth Wynn-Williams

#### ***Aims of the study:-***

1. Assess the impact on the mother and father, of having an infant admitted to the NNS.
2. Assess what additional assistance or intervention would be most helpful at this time.

### **Women’s Experiences of Establishing and Maintaining Breastfeeding in a Neonatal Intensive Care Environment**

Investigator: Carol Bartle

Supervisor: Brian Darlow

Twenty women will be enrolled in this qualitative research study. Narrative analysis methods will be used to analyse data obtained through regular semi-structured interviews. Potentially modifiable factors may be identified to enable further support of breastfeeding women in intensive care settings.

This study is presently in the enrolment stage.

## Neonatal Research Activity

### **Papers published by clinical staff 2002**

Grimwood K, Stone PR, Gosling IA, Green R, Darlow BA, Lennon DR, Martin DR. Late antenatal carriage of antenatal Group B Streptococcal by New Zealand Women. *Australian and New Zealand Journal of Obstetrics and Gynaecology*; 42: 217-221. (2002)

Grimwood K, Darlow BA, Gosling IA, Green R, Lennon DR, Martin DR, Stone PR. Early onset neonatal Group B Streptococcal infections in New Zealand 1998-99. *Journal of Paediatrics and Child Health*; 38: 272-277. (2002)

Willis JA, Scott RS, Darlow BA, Nesbit JW, Anderson P, Moore MP, Lunt H, Cole D. The incidence of type I diabetes diagnosed before age 20 in Canterbury, New Zealand. *Journal of Pediatric Endocrinology and Metabolism*; 15: 637-643 (2002)

Willis JA, Scott RS, Darlow BA, Lewy H, Ashkenazi I, Laron Z. Seasonality of birth and onset of clinical diabetes in children and adolescents (0-19yr) with type I diabetes in Canterbury, New Zealand. *Journal of Pediatric Endocrinology and Metabolism*; 15: 645-647 (2002)

Inder TE, Mocatta T, Darlow BA, Spencer C, Winterbourn CC, Volpe JJ. Markers of oxidative injury in the cerebrospinal fluid of a premature infant with meningitis and periventricular leukomalacia. *Journal of Pediatrics*; 140: 617-21. (2002)

Inder TE, Mocatta T, Darlow BA, Spencer C, Volpe JJ, Winterbourn CC. Elevated free radical products in the cerebrospinal fluid of VLBW infants with cerebral white matter injury. *Pediatric Research*; 52: 213-218. (2002)

Carradice DP, Austin N, Bayston K, Ganly PS. Successful treatment of Acute Promyelocytic Leukaemia during pregnancy. *Clin. Lab. Haem.* 24,307-11. (2002)

Austin N, Darlow B. Prophylactic oral antifungal agents to prevent systemic candida infection in preterm infants. (Protocol) *Cochrane Database of Systematic Reviews*. 1, 2002.

B Darlow, Austin N. Selenium supplementation to prevent short-term morbidity in preterm neonates (Protocol) *Cochrane Database of Systematic Reviews*. 1, 2002.

McGuire W, Clerihew L, Austin N. Prophylactic intravenous antifungal agents to prevent mortality and morbidity in very low birth weight infants. *Cochrane Database of Systematic Reviews*. 1, 2003.

## Abstracts

Darlow BA, Buss H, McGill F, Mogridge N, Han DY, Graham P, Winterbourn CC. Optimal vitamin C supplementation in very preterm infants: a randomised controlled trial of three different regimes. *Proceedings of the 4th Annual Congress of the Perinatal Society of Australia and New Zealand*, Christchurch, March 2002

Cheah FC, Darlow BA, Winterbourn CC. Exhaled hydrogen peroxide as a marker of airway inflammation and oxidative injury in neonates on respiratory support – a reliable measure? *Proceedings of the 4th Annual Congress of the Perinatal Society of Australia and New Zealand*, Christchurch, March 2002

Cheah FC, Mocatta T, Winterbourn CC, Darlow BA, Vissers MCM. NF-kappa B activation in pulmonary inflammatory cells is associated with TNF-alpha elevation in tracheal aspirates from infants with respiratory distress syndrome. *Proceedings of the 4th Annual Congress of the Perinatal Society of Australia and New Zealand*, Christchurch, March 2002

Buss IH, Senthilmohan R, Darlow BA, Mogridge N, Cheah FC, Kettle AJ, Winterbourn CC. 3-Chlorotyrosine in tracheal aspirate samples from very-low-birthweight infants – associations with myeloperoxidase, protein carbonyls and clinical outcome. *Proceedings of the 6th Annual Congress of the Perinatal Society of Australia and New Zealand*, Christchurch, March 2002

Willis JA, Scott RS, Darlow BA, Nesbit JW. Immunogenetic features of type 1 diabetes in children and adolescents: Temporal changes. *Diabetes/Metabolism Research and Reviews* 18 [Suppl 4], S5. (2002)



**PHOTO**

**Carole Spencer**  
**Research Nurse Neonatal Services**

# Allied Services Reports

## Canterbury Health Laboratories

### Analysers

At Christchurch Women's Hospital we have two Blood Gas Analysers, the large 860 model in the Neonatal Service, which measures Blood Gases, Electrolytes and Metabolites, and the smaller 348 model in the Birthing Suite, 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 the Neonatal Service 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 call-backs in case of acute admissions and emergencies.

### Blood Bank

The Technician oversees the function of the Blood Bank, to ensure the NZBS (New Zealand Blood Service) guidelines relating to the reception, storage and/or return of all blood and blood products are followed. This is 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.

**Table 155: Number of tests performed between Jan 02 to Dec 02**

Analysis	2001	2002
Blood Gas Analysis	9122	8414
Bilirubin	800	630

## Canterbury Health Laboratories Test volumes and dollar values January to December 2002

**Table 156: Maternity Inpatient**

Unit	Quantity	Total (\$)
Burwood Birthing Unit	272	2,720.61
Lincoln Hospital	21	73.53
Rangiora Hospital	16	46.05
Administration	12	75.23
Ward 5	20,351	108,588.00
Ward 6	80	368.36
Ward 7	22	198.62
Birthing Suite & Caesar OT	46,533	316,661.00
Case Management Midwives	1,778	10,802.40
		<b>\$439,533.80</b>

**Table 157: Maternity Outpatient**

Unit	Quantity	Total (\$)
Burwood Birthing Unit	29	569.97
Administration	5	92.16
Ward 5	441	1,899.17
Birthing Suite & Caesar OT	6,905	76,197.20
Case Management Midwives	8,435	72,295.00
		<b>\$151,053.50</b>

**Table 158: Unknown**

Unit	Quantity	Total (\$)
Birthing Suite & Caesar OT	2	470.00
		<b>\$470.00</b>

**Table 159: Neonatal Inpatient**

Unit	Quantity	Total (\$)
Intensive Care Unit	74,420	252,924.00
Intermediate Care	28	75.49
Administration	15	125.59
		<b>\$253,125.10</b>

**Table 160: Neonatal Outpatients**

Unit	Quantity	Total (\$)
Intensive Care Unit	2,086	20,900.60
Administration	3	24.65
		<b>\$20,925.25</b>

**Table 161: Gynaecology Inpatient**

Unit	Quantity	Total (\$)
Assessment Unit	25,365	18,1312.00
Cervical Screening - Admin	3	33.36
Colposcopy Service	119	1,333.91
Day Surgery	220	2,154.15
Gynaecology Unit	19,145	112,670.00
Lyndhurst Hospital	12	188.42
OT/Recovery	2,835	134,445.00
Outpatients	2,615	25,740.50
Recovery	349	1,485.35
Sterile Services	224	1,816.59
		<b>\$461,179.30</b>

**Table 162: Gynaecology Outpatient**

Unit	Quantity	Total (\$)
Assessment Unit	660	6,032.35
Colposcopy Service	3741	198516
Day Surgery	68	257.79
Gynaecology Unit	3,250	37,286.20
Lyndhurst Hospital	9	246.82
OT/Recovery	5,576	307,844.00
Outpatients	15,624	169,052.00
Recovery	39	503.66
Sterile Services	4	37.34
		<b>\$719,776.20</b>

**Table 163: Division Inpatient**

Unit	Quantity	Total (\$)
Administration	348	<b>\$3,892.94</b>

**Table 164: Divisional Outpatient**

Unit	Quantity	Total (\$)
Administration	48	<b>\$572.83</b>

<b>Grand Total</b>	<b>241,708</b>	<b>\$2,050,529.00</b>
--------------------	----------------	-----------------------



**PHOTO**

**Margaret Gale  
Phlebotomist**

## Chaplaincy Service

The Chaplaincy Service provides spiritual & emotional care for patients, families and staff thus contributing to the multidisciplinary approach to health care adopted by WHD.

The Inter-Church Council currently employs chaplains for Hospital Chaplaincy roles through its contract with the Ministry of Health. The Christchurch Hospital's Board, consisting of representatives from local churches, the chaplains and members from hospital management, oversees the work of the chaplains.

### Focus of Work

The Chaplaincy Service is available to all areas of the WHD: Maternity, Gynaecology and Neonatal Services.

A significant part of chaplaincy work is involvement with women and families experiencing loss of a baby either through early miscarriage, termination of pregnancy, intrauterine death, stillbirth or neonatal death. The service provides a supportive presence in times of crisis and assists people through transitions of despair, helplessness, guilt, fear, anxiety as well as those who are trying to find meanings and make sense of their life's experiences. Chaplains enable people to tap into their spiritual resources as a source of strength and hope. These resources may or may not have their origins in formal faith backgrounds. Chaplains often assist women and their families to acknowledge the event, express their feelings and honour and farewell their baby, through the facilitation of simple meaningful rituals, blessings, or more formal larger funerals. Celebration of birth through blessings, naming and baptism is also part of the chaplains' work.

Hospitalisation for a lengthy antenatal period brings a variety of stresses for both women and their families. Developing a listening relationship helps to make their stay in hospital more manageable. In the Neonatal Service, where babies may be in hospital for 1 - 3 months, families often find it helpful to have a supportive non-medical presence with whom they can share their hopes, joys and fears.

In the Gynaecology Unit many women's issues are related to the healing or loss of reproductive ability. While for some there may be a sense of celebration and moving to a new phase in life, others experience grief associated with loss of their reproductive ability, a perceived loss of womanhood and different future possibilities particularly in the case of younger women. There is often a strong interest in celebrating womanhood as well as expressing grief and loss through ritual. The chaplain is included in the weekly multidisciplinary Oncology meetings to plan and assess women's ongoing care. Many Oncology patients are from other parts of the South Island so isolation from home, family and friends can add to the stresses associated with a cancer diagnosis and surgery. The chaplain's contribution in this area is through a neutral presence and an ability to visit regularly. Listening to stories is one of the privileges of chaplaincy work. Story telling can often bring new meanings and connections for women, thus contributing to their healing and wholeness. Where women have a faith background prayerful support is also offered and valued.

Staff can be affected by a number of situations and often talk through their issues with the chaplain. The chaplain has also been invited to officiate at the weddings of staff. It has been a pleasure to be involved in this way, adding to the celebratory aspect of chaplaincy. Staff may also request the blessing of rooms and special places, particularly after a death or when a space/room changes its original purpose. As a resource for staff, the Chaplaincy Service has multi-faith contacts and can network with other professionals and groups in both the community and hospitals.

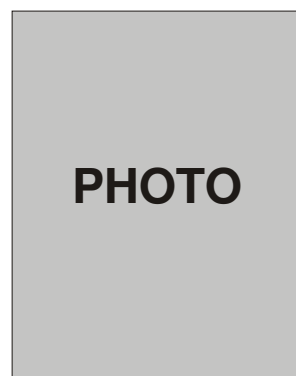
The Chaplaincy Team within WHD is part of the Chaplaincy Service covering the five public hospitals in Christchurch. This service is available 24 hours a day, seven-days a week. The WHD ecumenical position is 0.75 FTE & is supported by two volunteer chaplaincy assistants, the chaplain to Maori, a Catholic chaplaincy assistant and a priest from St Mary's Catholic Church.

The chaplains value and enjoy working alongside nurses, midwives, social worker/counsellors as well as other allied health and medical staff.

**Table 165: Statistics**

Number of Visits	(n)
Patient Visits	2052
Family/Whanau Visits	257
Staff Visits	411
<b>Total</b>	<b>2720</b>

General Data	(n)
Education Sessions	11
Acts of Worship/Ritual	136
Urgent Serious 'Call Outs'	31



**Dianne Smith  
Chaplain WHD**

## Child Protection Service

The Child Protection Service, located at Christchurch Hospital, was established as a result of the implementation of the Children Young Persons and Their Families Act, 1989. The service is managed by a full time Child Protection Co-ordinator and part time Secretary who work closely with the Social Work Departments throughout the Canterbury DHB as well as other agencies working within the field of child protection.

The Child Protection Service is available to all staff working throughout the CDHB with the exception of the Mental Health Division.

The Child Protection Co-ordinator is a member of the Papanui Child Youth and Family Care and Protection Resource Panel, and also chairs the Child Protection Network whose members come from a number of government and community agencies.

The principle objectives of the Child Protection Co-ordinator's role are:

- To facilitate multidisciplinary teams that review child protection cases at Christchurch Hospital and Christchurch Women's Hospital (SCAN - Special Child Assessment Network Team).
- To identify, promote and co-ordinate policy for the CDHB for the management of child protection in accordance with the requirements of the Children, Young Persons and Their Families Act, 1989.
- To train and educate CDHB staff in child protection in a culturally appropriate manner and provide training assistance to community agencies as required.
- To promote, co-ordinate and integrate child protection services within health and outside agencies, Department of Child Youth and Family Services, Police, Justice.
- To maintain a clear and accurate administration system co-ordinating and overseeing other child protection staff.

The Christchurch Woman's Hospital SCAN Team is a multidisciplinary group consisting of the Child Protection Co-ordinator, paediatrician, midwife, social workers, ward manager, neonatal outreach nurse, and a Plunket representative.

Multidisciplinary teams are acknowledged internationally as the best way to respond to care and protection concerns and the team meets weekly to discuss referred cases where such concerns exist. Recommendations are made and are actioned by assigned person/s.

Empirical and anecdotal evidence indicates that women and children often have improved physical, social, and emotional health when interventions are implemented early in their pregnancies. The Christchurch Women's Hospital SCAN Team works with staff within the Canterbury District Health Board and community agencies to help implement services and strategies that will best assist women and their children towards wellbeing.

**Table 166 : SCAN Statistics**

	1998	1999	2000	2001	2002
Meetings Held	45	41	47	44	38
Meetings Cancelled/Public Holidays	8	11	5	7	14
New Cases Discussed	31	39	68	71	61
Cases Reviewed	76	97	151	135	58
Average No. of Cases Per Meeting	2.37	3.31	4.66	4.68	3.13
Referred Antenatally	12	32		40	37

Sixty-one new referrals were discussed at Christchurch Women's Hospital SCAN meetings in the year 2002. Referral rates have decreased by 10 when compared to 2001 figures. There has also been a decrease in the number of cases reviewed. It is likely that the data does not accurately reflect the number of women receiving services from Women's Health within the Canterbury District Health Board where there are care and protection issues. However, the continued training of staff about how to access the Child Protection Service and refer to SCAN is already increasing referral levels. The lack of a Child Protection Co-ordinator within the Canterbury District Health Board for a period of time last year is also likely to have had an impact on the number of referrals received by SCAN. It is pleasing to see that the number of cases referred antenatally has remained high, at 61 percent. This is a slight decrease from the 2001 figure, when the percentage of antenatal referrals sat at 66 percent.

### Age of mothers referred to SCAN Team

Statistics New Zealand literature reveals that in 2001, the average age for women giving birth in New Zealand for the first time was 29 years and four months. Child Protection Service data indicates that 61 percent of women referred to SCAN were under the age of 25 years. This was not necessarily their first born child.

Table 167 indicates that women referred to SCAN for child protection issues have had children at an earlier age than the wider population of New Zealand. Research indicates that parents under the age of twenty years are more likely to abuse or neglect their children. Whilst many young mothers parent extremely well, it is important to remember that this is a population that is likely to need more support and assistance with their parenting. Christchurch Women's Hospital statistics reveal that 279 women under the age of twenty years gave birth at the hospital last year. There has been a 3 percent increase in the number of referrals made for women aged up to 20 years in 2002 when compared to 2001 figures. However, given the total number of young mothers giving birth at Christchurch Women's Hospital, referral levels remain relatively low.

**Table 167: Women per defined Age Categories**

Age	Number
16 – 20	16
21 – 25	21
26 – 30	12
30 +	12

### Risk Factors

Most women referred to the Christchurch Women's Hospital SCAN team, have a number of risk factors impacting on their lives.

**Figure 16: Women referred to CWH SCAN Team affected by one or more risk factors**

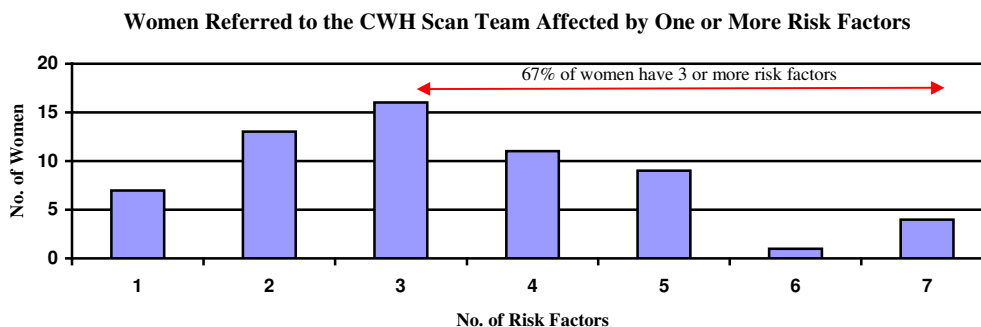


Figure 16 indicates that 67 percent of women referred to SCAN have 3 or more risk factors impacting on their lives. Putting comprehensive plans in place as soon as issues are recognised allows professionals to work in a preventative way, prior to matters reaching crisis point.

**Table 168: Risk factors impacting on women referred to the SCAN Team - 2002**

Risk Factor	Women (%)	Risk Factor	Women (%)
Drug use	24	Unable / unwilling to care	12
Alcohol use	21	Lack of support	41
Mental illness	31	Domestic violence	27
Young mother	23	Unstable home life	41
Premature	11	Social problems	68

Table 168 illustrates that social problems, an unstable home life, and a lack of support feature more predominantly as risk factors for women referred to Christchurch Women’s Hospital SCAN meetings. Excessive drug and alcohol use, mental illness and being a young mother also feature quite highly. Referrals where drug and alcohol issues are a risk factor have decreased from 56 percent (2001) to 45 percent (2002) of total referrals to SCAN whilst referrals where mental illness is a risk factor have increased from 29.5 percent (2001) to 31 percent (2002).

**Child, Youth and Family Service Involvement**

Data collected by the Child Protection Service in the year 2002 also indicated the level of involvement that the Department of Child Youth and Family Services had with women who were referred to Christchurch Women’s Hospital SCAN team meetings. Twenty-four women had had past involvement with the Child Youth and Family Service. Eighteen women were currently involved with the service, and some of these women had also had extensive past involvement with the Child Youth and Family Service. Thirteen new referrals were made to the Child Youth and Family Service in 2002. These were often with cases where Child Youth and Family had had past involvement. Due to data being collected in a different manner in 2002, it is difficult to make direct comparisons with previous years.

**Ethnic Origin**

Data collected on ethnic origin indicates that Europeans make up the largest ethnic group of referrals at 36 percent. Maori families continue to make up the second largest ethnic group at 20 percent. However, little can be gleaned from this data except that the ethnicity was often (44 percent of cases) not recorded on referral forms submitted to SCAN in 2002. Improved data collection in this area is necessary in the future so that we are better able to make informed decisions in respect to practice and policy.

**Source of Referral to SCAN**

**Figure 17: CWH SCAN Team Referral Sources**

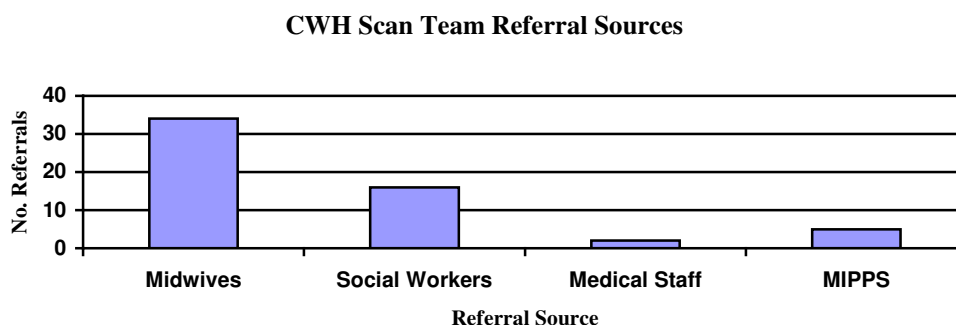


Figure 17 shows that midwives continue to be highly represented as a referral source. Anecdotal evidence leads the writer to believe that these referrals have mainly been hospital based or from community midwives. An increased awareness of SCAN, and the availability of the Christchurch Women’s Hospital maternity social worker to bring matters to SCAN on behalf of or in conjunction with independent midwives, is likely to increase referral levels in the future. Referrals by midwives directly or via the hospital social work department are extremely positive in terms of planning for early intervention in children’s lives.

Maori are the second largest ethnic group referred to SCAN, so it is with pleasure that the SCAN team welcomes Doris Tamarapa, the recently appointed Maori Health Worker at Christchurch Women's Hospital, as one of its members. Doris's involvement in the team will assist in ensuring that child protection cases are managed in a culturally appropriate manner.

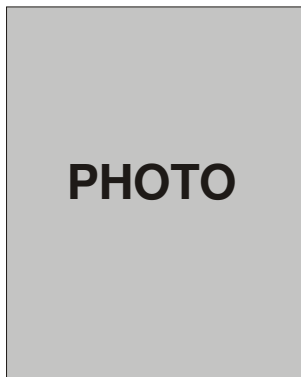
### **Summary and Recommendations**

The referral rate to the Christchurch Women's Hospital SCAN team has decreased in the last year. The Women's Health Division has been without a child protection co-ordinator for several months, and this may have had an impact on referral levels. A reduction in the number of community midwives may also have been a contributing factor.

Information has been sent to all independent midwives in Christchurch to inform them of the function of the Child Protection Service and SCAN team, and an article promoting these services has been published in a recent edition of the Childbirth Communique. There has been an increase in the number of community midwives attached to the hospital and training within Christchurch Women's Hospital has also been initiated. These measures have resulted in greater numbers of social work and SCAN referrals this year (2003). Ongoing training is necessary for Women's Health Division staff and independent midwives, to ensure that they continue to recognise risk factors and issues related to child health in the families they work with.

Looking into the future there is the challenge of introducing the Ministry of Health Family Violence Guidelines, which recommend that screening for family violence be introduced as a routine procedure for women receiving health services within the Canterbury District Health Board. The development of a database and memo alert system that can be utilised by all Canterbury District Health Board sites, including the Mental Health Division will also be addressed.

Increased awareness, improved practice and the future development of resources will continue to improve health and welfare outcomes for women, children, and young people as well as their wider whanau within our region.



**Sue Miles**  
**Child Protection Co-ordinator**  
**Child Protection Services**

## Acting Director of Nursing

The Acting Director of Nursing attends monthly meetings with Directors of Nursing (DoN) from Older Persons Health, Mental Health, Christchurch Hospital, Burwood Hospital and Ashburton Hospital.

Recently representatives from Pegasus and Nurse Maude Association have been attending some of the meetings to discuss primary and secondary health care interface issues.

Sue Hayward, Director of Nursing, Christchurch Hospital, chairs the DoN meetings.

The DoN group have a number of functions including:

- providing nursing advice to the Executive Management Team
- co-ordinating the development of a nursing service that delivers continually improving, quality, patient-focused health care
- providing a co-ordinated approach to nursing initiatives, education and information within CDHB

As the representative of Women's Health Division, the Acting Director of Nursing has the responsibility to feedback and report to the WHD General Manager. She also provides an update to the WHD Midwifery and Nursing Professional Advisory Committee.



**Catherine Dwan**  
**Acting Director of Nursing**

## Infection Control

The Canterbury District Health Board (CDHB) is obliged to comply with the Health and Disability Services Act 1993. Under this act the Infection Control Service is mandated to ensure the CDHB can demonstrate compliance with the New Zealand Standard Infection Control NZS 8142; 2000.

The Infection Control (IC) Service's core business is to limit the introduction and transmission of infection within defined institutions. The IC Service's aim is to minimise nosocomial (or hospital) acquired infections in patients, residents, clients and healthcare workers through coordinated processes of education, surveillance, antimicrobial usage monitoring, quality and risk management, outbreak intervention and setting specific yearly goals.

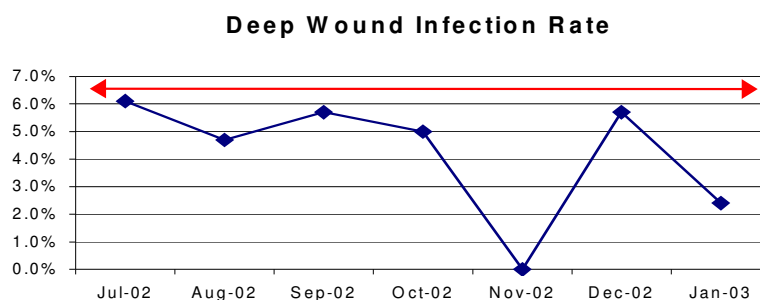
Women's Health Division has a part-time Infection Control Nurse, a multi-disciplinary Infection Control Committee (providing a forum for regular consultation between Infection Control and other hospital staff), and an Infection Control LINK Committee (identified IC who that act as a link between Infection Control and clinical areas). However, like Quality Services, Infection Control is everyone's business.

This year has seen the revision of the MRSA (Methicillen Resistant Staphylococcus Aureus) Risk Assessment Screening policy throughout the CDHB. In essence, the major outcome of this policy is that fewer patients will need to be in isolation for the duration of their hospital stay as a consequence of a perceived MRSA risk. The impact of this can be measured in financial, time and human terms. Thus far, the WHD's name has never appeared on the New Zealand MRSA Cross Infection Register. This can be credited to the revised policy together with strong staff commitment to consistently identify and screen patients who may be a potential MRSA risk and the revision of documentation and updated information available in the Infection Control Manual, Volume 10.

Surveillance is an important role in the Infection Control Service, as information obtained is used to evaluate how well we do as a Service. Monthly Hospital-Acquired Blood Stream Infections (HABSI) data is reported to the Hospital Monitoring Directorate (HMD) via the Quality Service and is a Ministry of Health requirement. Environmental sampling is also carried out, which includes monitoring hot water and air conditioning systems for Legionella spp., and the ice machine for bacteria associated with food-borne infections.

In response to concerns that reported rates of wound infections following Lower Section Caesarean Sections (LSCS) at Christchurch Women's Hospital were somewhat high (11% - 23%), the method of data collection was reviewed and an audit was commenced. The initial audit period was from June 2002 to December 2002. By altering the methods of data collection and further reclassification of wound infections into either superficial or deep wound it is believed that the statistics now demonstrate a more accurate infection rate and are certainly more encouraging. The National Nosocomial Infections Surveillance System Report Data Summary 2001 reports an expected deep wound infection rate of 6.6% per 100 LSCS performed (Am J Infection Control, 2001).

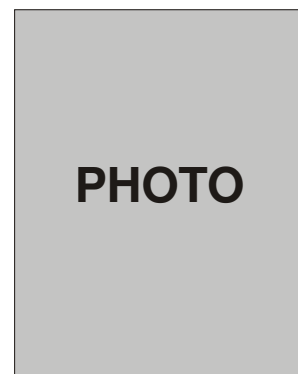
**Figure 18: Deep Wound Infection Rate**



The reported deep wound infection rate for June 2002 to Jan 2003 is between 6.1% and 0% (average 4.4%). Refer to Figure 18

Surveillance will continue quarterly and participants will be informed of the results via WHD publications. The cooperation and involvement of Access Agreement Holders and WHD staff is reflected in the admirable return rates of between 64% and 81%.

**Margaret Burns**  
Infection Control



## Midwifery & Nursing Professional Advisory Committee

The Midwifery & Nursing Professional Advisory Committee (PAC) was established in 2000 in response to feedback from Quality Health New Zealand during the initial accreditation process.

At present, the committee comprises of four elected clinical members representing the three Services. In addition, members include a Maori advisor, service managers, clinical educators, clinical charge nurse, charge midwife and neonatal co-ordinator.

The committee has a number of functions as outlined in the Terms of Reference however its primary role is 'strategic' rather than 'operational'. A Strategic Plan was completed in February 2002, in which we identified five strategic issues for the committee to focus on. These are:

1. Midwifery and Nursing leadership
2. Partnership and collaboration
3. Professional development
4. Clinical practice and care
5. Research, audit and evaluation

The main focus for 2002 was clinical practice and care, with a special emphasis on clinical documentation.

Tactics used in achieving this goal included: the review and revision of clinical records and patient information documentation, and the WHD glossary of acronyms and abbreviations (both found in the WHD Policy & Procedure Manual, Volume A).

Having raised the profile of thorough documentation it was useful to highlight this practice by concentrating on nurses' and midwives' clinical documentation. This culminated in a very successful 'Documentation week', the highlight of which was a presentation titled 'Documentation – Hints and Suggestions from a Legal Perspective' by Jeannie Bayly, the CDHB Corporate Solicitor.

In addition to our focus on documentation, the PAC co-ordinated a joint event in celebration of International Midwives and International Nurses Day. Highlights of this day were presentations by Norma Campbell the New Zealand College of Midwives, Professional Advisor and Angela Deken a Midwifery Tutor from the Christchurch Polytechnic Institute.

Our final act of the year was to organise a workshop on "Professional Boundaries" facilitated by Suzanne Trim who is the Professional Advisor for the New Zealand Nurses Organisation. All of these sessions were exceptionally well attended and reinforced the value of the Midwifery and Nursing Professional Advisory Committee.

The committee meets on a monthly basis and feedback is provided to the General Manager. Further information about the committee including Terms of Reference, Strategic Plan and minutes from all meetings, can be found on the PAC web page of the WHD intranet which has been operational for the last 12 months.

Over the past 3 years the committee has found its place within the WHD structure and has set and achieved realistic goals that benefit both Nurses and Midwives on a professional level.



**Michael McIlhone**  
**Chairperson**  
**WHD Midwifery and Nursing**  
**Professional Advisory Committee**

## Nutrition Services

The Nutrition Service comprises a team of three Dietitians who provide dietary assessment, education and follow-up for inpatients and outpatients across the Maternity, Gynaecology and Neonatal Services.

The majority of our patient contacts are with women diagnosed with Gestational Diabetes and pre-existing Diabetes in pregnancy, women with Hyperemesis, Gynaecology Oncology patients and low birth weight infants. Nutrition and breastfeeding education sessions are run monthly to a growing number of antenatal clients.

Last year, two Dietitians completed post-graduate certificates. Helen Little completed a post-graduate certificate in Paediatric Nutrition and Dietetics through Melbourne University. Carol Perwick completed a post-graduate certificate in Diabetes Management with the University of Otago.

Dietitians contribute to the training of eight Dietetic students each year. In 2002 Julie Hunter completed her practicum at Christchurch Women's Hospital and produced a resource for Midwives titled *Nutrition for Adolescent Pregnancy*. A teaching session on Vitamin B12 and Vegans' diets in pregnancy was also presented to the Community Midwives.

An audit was completed in the Maternity Service, looking at the number of women referred to a Dietitian following a post-partum haemorrhage. Dietitians met with maternity staff to discuss results and encourage referrals for women with post-partum anaemia.

**The following statistics were collected in 2002**

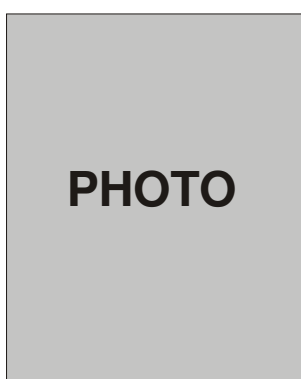
**Table 169: Dietitian Statistics**

	2001	2002	% Difference
Outpatients	603	621	Increase of 3%
Inpatients	1925	1925	No change
Women Attending Education Sessions	287	380	Increase of 30.2%

### Conference attendance During 2002

Dietitians attended three conferences respectively:

- New Zealand Dietetic Association Conference
- New Zealand Society for the Study of Diabetes Conference
- Nutricia Study Day titled *Nutrition and Wound Care*



**Helen Little  
Dietitian**

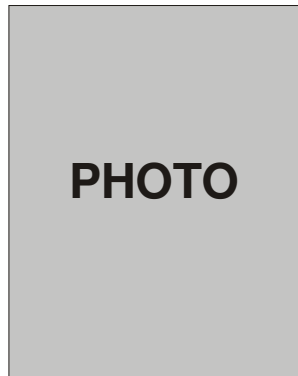
## Occupational Therapy

An occupational therapy service was introduced to Christchurch Women's Hospital in February 2002 and is part of the allied health team at Christchurch Women's Hospital. The onsite presence and accessibility to an Occupational Therapist has allowed the service to grow and integrate efficiently within the Gynaecology/Oncology multi-disciplinary team. The service is being increasingly utilised by the Maternity Service and at times, the Outpatient Department.

An Occupational Therapist is on site at Christchurch Women's Hospital on Tuesday, Thursday and Friday until 1.30pm. The Service is located within the Gynaecology Units 1 and 2.

Occupational Therapy focuses on a person's ability to perform their daily tasks and manage safely and independently at home. The Occupational Therapy role within Christchurch Women's Hospital includes but is not limited to:

- Provision of assistive equipment to the wards for inpatient use following surgery.
- Home Visit Assessment and provision of housing modifications
- Follow up at discharge,
- the issue of assistive equipment (short term or long term loan)
- Complete Hospital Transfer Referrals to other regions
- Liaison with/referral to other services
- Promotion of Occupational Therapy Services



**Sania Gugich**  
**Occupational Therapist**

## Pharmacy

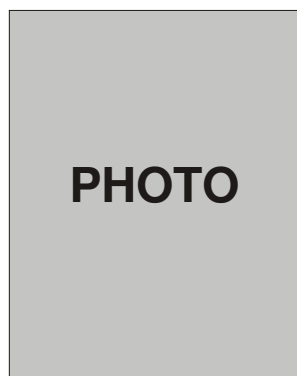
A Pharmacist is on site at CWH Monday, Tuesday, Wednesday, and Friday until 2.30pm. Until recently this position was job-shared but currently due to maternity leave it is being filled by one Pharmacist.

A change in hours has created efficiencies, with more time now available for daily visits to the gynaecology wards in addition to the Neonatal Service. As well as these services, there has been more input into the maternity areas.

The Pharmacist role includes but is not limited to:

- Drug dose checking
- Standardised drug profiles
- Drug information queries
- Therapeutic drug monitoring
- Discharge planning
- Medication Counselling
- Smoothing supply difficulties
- Improving presentation of medications
- Review of stock on wards
- Drug usage reports
- Education for staff
- Membership of the IV Medication and Fluid subcommittee

The Pharmacy Department at Christchurch Hospital backs up the CWH on site Pharmacy Service Monday to Friday (8am to 5pm) and also Saturday mornings. An on-call pharmacist and the Clinical Pharmacology Drug Information Department is also available.



**Kirsten Simonsen**  
**WHD Pharmacist**

# Physiotherapy

## Background

The Physiotherapy service employs three physiotherapists part-time (1.5 FTE). Inpatient cover is provided to the Gynaecology and Maternity wards for chest physiotherapy, mobility and musculoskeletal conditions, continence advice and post-surgery recovery advice.

Outpatient clinics cover antenatal/postnatal musculoskeletal conditions and continence management. The continence clinics for patients referred by consultants at Christchurch Women’s Hospital, focus specifically on urinary and faecal incontinence, as well as anorectal disorders and prolapse conditions.

We have an educational role in Parent Education classes and also offer Transcutaneous Electrical Nerve Stimulation (TENS) classes which provide the opportunity for couples to learn how to use the TENS machine (for relief in labour). A weekly antenatal exercise / relaxation class with an educational component in back care, continence advice and preparation for labour, is also provided.

## Changes in 2002

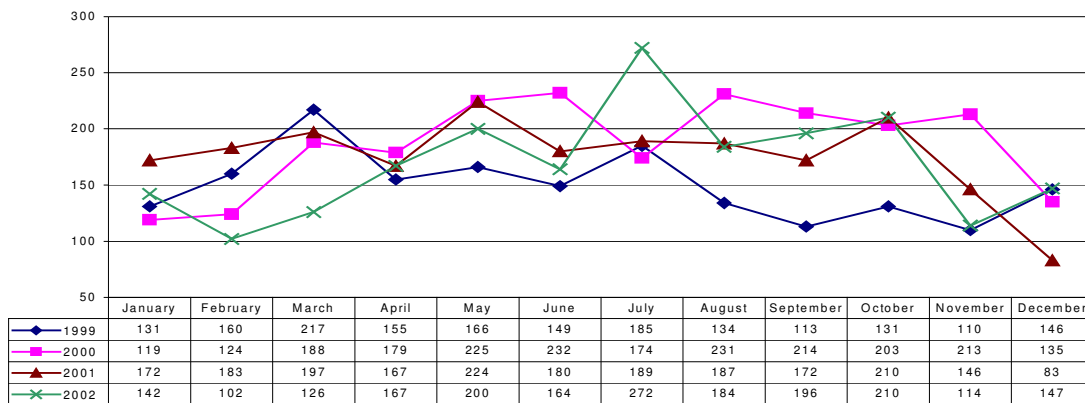
In April 2002 a permanent Physiotherapy Co-ordinator role of 4 hours per week was established in order to assist in the management and development of our service. A clerical support position of one hour per day with the implementation of a computer was also given to assist in administration duties, especially booking outpatient appointments. Although these hours are few, it has been an important step in enabling us to work towards a professional and efficient service.

Also in November 2002, a staff member completed postgraduate studies in Continence Management. This has served to increase the expertise in this growing area of the Physiotherapy Service.

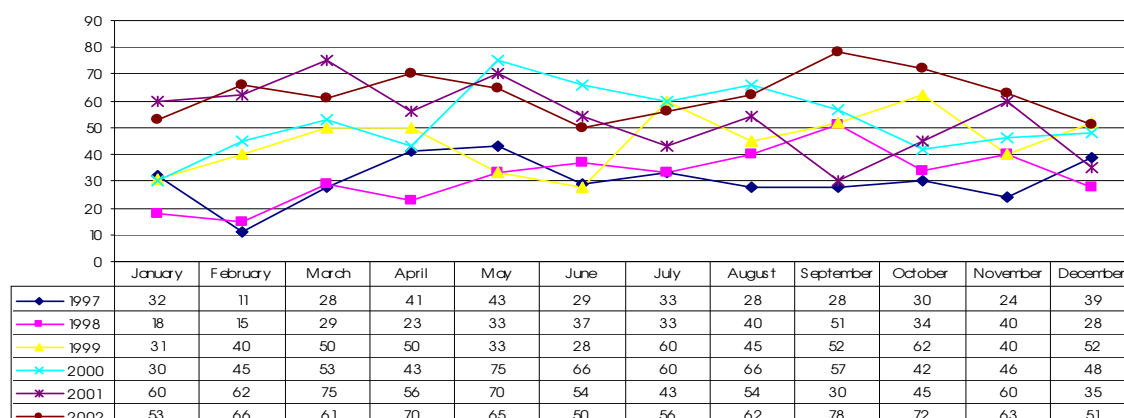
## Patient Data Trends

Prior to 2002, patient data for the Maternity and Gynaecology Services was combined showing inpatient and outpatient trends (see following 2 figures). This shows a steady increase in patient volumes, particularly in outpatients, since 1997. This trend is causing us to reconsider aspects of our service delivery (refer to ‘Looking Ahead’ over page).

**Physiotherapy Inpatient Contacts Graph (Gynaecology & Maternity)**



### Physiotherapy Outpatient Contacts Graph (Gynaecology and Maternity)



### Patient Data 2002

For 2002 patient data, we have separated out the information for Maternity and Gynaecology into inpatients, outpatients and groups (refer to Table 170 and Table 171).

**Table 170: Maternity Figures 2002**

Maternity		
Inpatients	1099	Patient contacts*
Outpatients	479	Patient contacts
Groups	151	Include Parent Education classes Antenatal classes TENS classes

These figures are comparable to 2001. \*Contacts are assessments / treatments.

**Table 171: Gynaecological Figures 2002**

Gynaecology		
Inpatients	824	Patient contacts
Inpatient groups	177	Pre-discharge education advice following surgery
Outpatients	268	Patient contacts

Inpatient figures are comparable to 2001. Outpatient figures have increased by 90 contacts, this is due to an increase in referrals, particularly from October 2002 (also in 2001 patients contacts decreased in August/September, due to decreased physiotherapy cover).

### **Physiotherapy Internal Customer Survey - October 2002**

The purpose of this survey was to ascertain:

1. Staff awareness of the physio service and conditions we treat.
2. Staff knowledge of how to refer to the Physiotherapy Service.
3. Staff opinion of the quality and efficiency of the service.

The response rate was 42% with the majority of respondents rating our service from very good to excellent. There was variability in how to refer and the majority of reasons given for referral were for respiratory conditions. It would appear that staff awareness of some of the other conditions we manage is limited.

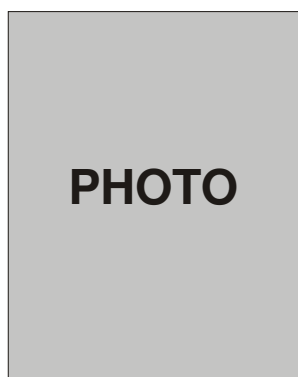
### **Looking Ahead ...**

The year 2002 has seen the Physiotherapy Service reach a pinnacle of increasing pressure on staff resources. Due to a steady increase in service demands (especially outpatients), it has become necessary to implement risk management strategies. Establishing clerical support and physiotherapy management roles is aiding this process.

A major goal for 2003 is to optimise patient care without compromising quality issues and professional development. In order to achieve this we will:

1. Increase waiting list times in outpatients
2. Educate ward staff as to appropriate and essential referrals to optimise our time
3. Schedule time for professional development
4. Increase clerical support hours to 2 hours per day

We have plans to reintroduce an undergraduate programme for physiotherapy students from Otago University. Women's Health Physiotherapy, especially Continence Management, is a specialist area of which there is little exposure to during training years. It thus becomes difficult to draw physiotherapists into this area, or employ physiotherapists with any women's health experience. As recognition for women's health physiotherapy grows nationally, the need to train physiotherapists for the future is essential.



**Maree Frost**  
**Physiotherapy Co-ordinator**

## Radiology Service – Sonographers Report

2002 proved to be not only very challenging for the Ultrasound Department but also very rewarding. Early in the year some experienced staff moved on; meaning other staff had to step up and fill senior duties early in their careers. They have done this with enthusiasm and have coped admirably with the extra stress. We now have a very experienced group of sonographers in many fields. The exodus of staff did, however, put a strain on resources. July to September we were very short-staffed, resulting in many non-urgent outpatient referrals being contracted out to private radiology groups. Consequently, the number of scans performed dropped significantly from 2001 to 2002 (refer to Table 172).

**Table 172: Number of Scans /FTE Sonographers**

	Number of Scans 2001	FTE Sonographers 2001	Number of Scans 2002	FTE Sonographers 2002	Scans/FTE Sonographers 2001	Scans/FTE Sonographers 2002
Jan	813	3.0	691	2.7	271	289
Feb	812	3.0	649	2.7	270	270
Mar	854	3.0	666	2.6	284	302
Apr	767	3.0	708	2.0	255	354
May	763	3.0	674	2.6	255	306
Jun	827	3.0	614	1.6	275	383
Jul	876	3.0	497	1.6	292	355
Aug	818	3.0	588	2.0	272	294
Sep	746	3.0	637	2.4	248	280
Oct	714	3.0	630	2.6	238	286
Nov	732	3.0	592	2.8	244	246
Dec	499	3.0	597	2.6	166	271

### Reasons for Reduction in Overall Numbers of Scans Performed in 2002

- decrease in FTE'S in qualified sonographers
- loss of experienced staff
- increase in numbers of students (plus radiology and O & G registrars)
- increase in complexity of scans, decrease in 'routine' cases
- 1 of 3 U/S machines produced scans below acceptable quality standards – therefore limiting use
- occupational overuse syndrome issues for sonographers
- decrease in time allocated for administration and teaching

When the data was reviewed giving consideration to the number of scans per FTE of sonographer time, it was clear that there had been a significant increase in the number of scans per sonographer (ie 10 – 35%). As a result, this has put a strain on some individuals, especially sonography students.

Training of sonography students working towards the Diploma in Medical Ultrasound (DMU) occurs both at CWH and at Christchurch Hospital. The diploma takes 2 – 5 years and is predominantly a self-directed academic programme, supported by both tutorials and clinical training. To everyone's credit, all the students passed their exams. Jo Mullen and Anna Glass passed their final part 2 DMU exams and Lucy Berwick and Sally Pepper passed Part 1 DMU exams. As a group, we have been excited by the appointment of a new section head – Dr Rachael McEwing. Rachael specialises in all areas of obstetric and gynaecology imaging with a particular interest in fetal maternal medicine. We have already benefited from her enthusiasm and her keen interest in teaching.

During 2002 we participated in the clinical teaching of obstetric and gynaecology registrars. Sadly, this has lapsed due to reduced staffing in both departments. We are keen to continue this when staffing improves.

Dr Rosemary Reid has been scanning in our department on a regular basis and this has been beneficial for all concerned.

In summary, we have had a very successful, although somewhat stressful, year. I would also like to mention a group of staff who we cannot do without - our office staff, led by Lynn Ford. We have extra assistance from Gillian Parr (Charge MRT) and Mary Andrews (Radiology Aide) who make our work lives easier on a day by day basis. Pauline Burt and the CWH management team, alongside Radiology department management deserve a special mention and thanks for all the 'behind the scenes' work that they do. As a group we are all looking forward to tackling 2003 with an enthusiastic and positive attitude.

**Julie Mitchell**  
Charge Sonographer

## Social Work

The Women's Health Division Social Work and Counselling Service covers Maternity, Gynaecology and Neonatal Services' and also Lyndhurst Hospital, and is staffed by a team of 4 Social Workers based at Christchurch Women's Hospital, and 3 Social Work/Counsellors based at Lyndhurst Hospital. Clients are referred from all centres in the South Island.

We have two Social Workers providing the Service to the Gynaecological Wards / Outpatient Service. They have developed strong collegial relationships with the Social Workers based in the Oncology Service at Christchurch Public Hospital, with whom they meet regularly. They also participate in the weekly meeting within the Gynaecological Service to review the care of patients with cancer. Additionally, they provide Social Work services to women who have experienced miscarriage, terminations of pregnancy, stillbirth, gynaecological problems, hysterectomy, colposcopy etc.

The Maternity Social Worker works full time, covering inpatient and outpatient Maternity Services. There is a particular interest in the delivery of health services for younger women, and a working paper on a proposal for a Young Woman's Antenatal Clinic has been produced. Currently liaison is taking place with community organisations and colleagues within Women's Health, to further research how such a proposal might be funded/delivered.

The Neonatal Service Social Worker is located within the Neonatal Service, and works as part of a closeknit inter-disciplinary Team.

A significant aspect of the Social Work role within the WHD is around the identification/assessment and intervention of care and protection of Children (babies). The Child Protection Coordinator, based at Christchurch Hospital also covers Christchurch Women's. In 2002 there were 140 referrals to this Service from the WHD.

Lyndhurst Hospital has 3 Social Workers/ Counsellors who provide pre and post decision counselling for women in relation to termination of pregnancy. They all work part time hours, but cover is provided for each week day. Referrals within the Service continue to increase.

One of the exciting new developments during 2002 was the creation of a permanent Locum position within our Service. The Locum covers in all areas when Social Workers are on leave. The locum is able to orientate to new areas, and undertakes professional development when not covering leave.

In October 2002 a new position (.2 = 8 hours) of Professional Advisor for the WHD Social Work and Counselling Service was commenced. This has been a development which the Social Work Team have worked hard to see to fruition. Another key member of our Staff is the Secretary who provides .2 (8 hours) administration support.

**Table 173: New Referrals 2002**

	<b>Jul</b>	<b>Aug</b>	<b>Sept.</b>	<b>Oct.</b>	<b>Nov.</b>	<b>Dec.</b>
Gynaecology	39	47	37	31	32	31
Maternity	23	18	16	19	10	8
Neonatal Service	23	23	21	22	16	23

In addition to new referrals, the Social Workers are also involved with ongoing clients, who may continue to require Social Work input based on their health needs.

### Conclusion

2002 has resulted in some significant changes for the Social Work Service. The trend is towards increased referral rates in all areas. We will continue to address workload issues alongside ensuring best practice standards are maintained through professional development and review processes.

**Darral Campbell**  
**Professional Advisor**  
**Social Work and Counselling Service**