

**Counties Manukau  
District Health Board**

**Internal Medicine Continuum  
Health Services Plan**

**February 2008**

## 1.0 Introduction

The Medicine Continuum of Care was developed as a framework predominantly for Internal Medicine but suitable for adaptation by all medical subspecialties in a later phase of the Health Services Plan. The framework uses the CMDHB Generic Model of Care to ensure that all components across the Care Continuum are addressed. The Continuum of Care builds on the current Model of Care within CMDHB looking forward for 20 years to 2026.

Patients presenting with medical conditions represent a large proportion of Primary Care consultations and account for the majority of chronic care conditions. Within the secondary care environment at CMDHB, specialist level Internal Medicine Teams manage a large proportion of the patient admissions to Middlemore Hospital (66% in 2005/6) often with support (advice, procedures) from subspecialty services. They also function as a filter for medical subspecialty services. Specialist Internal Medicine services can be extremely useful in other ways across the care continuum, e.g. they can support other practitioners and services such as GP's in a primary care setting, and surgeons managing complex surgical patients with medical comorbidities either during preoperative evaluation or post operatively if medical complications occur or if pre-existing medical problems worsen. They are also important in managing patients with multiple comorbidities such as COPD, congestive heart failure, diabetes and obesity which commonly co-exist in south Auckland patients. The modern day Internal Medicine specialist will have a subspecialty interest of their own (e.g. respiratory, rheumatology, gastroenterology, endocrinology) and are adept at knowing when and how to ask for collegial subspecialty advice or when to refer to a subspecialty service.

The Medical care Continuum at CMDHB has been developed to emphasise integration across the care continuum between internal medicine and subspecialty medicine, and emphasises the importance of teamwork, flexibility, community and ambulatory-based care. For example, a senior clinician may work on his or her ward for 6 months as either an Internal Medicine Physician or as a Specialist Physician. In this manner they support the development of a ward based multidisciplinary team (e.g. pharmacist, specialist nurse(s), clinical health psychologist, physiotherapist, social worker) and work within this team rather than across a number of wards which was the case historically at MMH. This subspecialty team can then provide support to colleagues on other wards if required e.g. advice on diabetics or stroke patients or respiratory failure patients residing on other wards. They are also available to support multidisciplinary outpatient clinics and in the case of specialist nurses and community health workers based at MMH, can provide limited outreach support services in the community.

Throughout the Medical Care Continuum, key directions for the future are identified. There are a number of key foci that shape this Model of Care:

- Introduction of evidence-based health promotion, illness prevention and early detection programmes. Some initiatives are led by medical subspecialists who have an in-depth knowledge of the literature and of what represents best practice e.g. cardiologists screening for risk factors for cardiovascular and cerebrovascular diseases, endocrinologists contributing to community based screening initiatives for diabetes, respiratory physicians leading initiatives in COPD early diagnosis and in accurate diagnosis and management of asthma. A number of other initiatives will be led by primary care with support and input from specialist services as appropriate.
- Increased Supported Self-care assisting people to cope with complex illness or disability in the community. Greater teamwork and care coordination will be enhanced by improved relationships between primary and secondary care, greater use of communication technologies and greater use of support groups.
- Responsibility for managing chronically ill patients remains primarily with Primary Care Teams. Expansion of the Chronic Care Management (CCM), Frequent Acute Medical Admission (FAMA) programmes and Primary Option for Acute Care (POAC), with improved access to diagnostic investigations, and easier access to Specialist Medical Services supporting Primary Care Teams is imperative to the success of any chronic care management programme.

- Specialist medical services will provide timely access to outpatient consultation. The implementation of prioritisation criteria and monitoring of waiting times to ensure timeliness of patient review should improve flow into the ambulatory care facilities and ensure the workload is evenly shared across specialties. Better administration and streamlining of this complex service would be expected to reduce hospital admission rates.
- Middlemore Hospital will be the only acute medical inpatient facility in Counties Manukau. The re-establishment of an Assessment and Planning Unit (APU), and the development of a High Dependency Unit (HDU) and Close Observation Units (COUs) will deliver improvements in internal process management and help create a safer level of care. In recognition of the increasing complexity of medical problems and the ageing of the population, functional maintenance programmes and earlier involvement of ATR services in the care of elderly patients will improve the Health of Older People. Recognising the multiple comorbidities that are common in patients requiring medical admission, acute inpatient services will maintain a strong focus on Internal Medicine with appropriate support from medical subspecialties. However, subspecialty beds will also need to evolve to support this process and to screen off patients requiring more specialised input to their care. The subspecialty beds will also need upskilling of nurses and allied health workers and thus will increase the sophistication of specialist services and therefore the level of care provided on medical wards. The evolution of COUs on the wards to monitor very sick patients (e.g. respiratory patients requiring assisted ventilation, renal patients with acute renal failure and gastric patients with severe gastrointestinal bleeds) will improve the level of care on medical wards and provide invaluable training for nurses wishing to advance their career pathways either within subspecialty services, in the acute care setting, and the ICU/HDU setting. The aim is to attract nursing staff to further their training at MMH and to retain high quality nursing staff in a challenging but well supported environment.
- Multiple strategies enable improved integration across settings, providers and services.
- Adoption of Advanced Care Planning will be adopted across the Continuum of Care with leadership from the Medical service with the support of the newly created Department of Integrated Care, Palliative Care, Primary Care and other specialist services. The focus will be on the patient and on their involvement in decision making. As treatments and technology has advanced an increased and often unrealistic expectation has evolved within the community. Patients with very advanced disorders with a consequential poor quality of life are frequently observed struggling from one admission or treatment to the other without sufficient knowledge or information regarding the future and what it holds for them. A well developed programme "Respecting Patient Choices" is being piloted within a number of Australian states and the lead hospital for the programme in Australia has agreed to support the development and assessment of a pilot within CMDHB.

## 2.0 Key Issues

A number of international trends in Medicine can be identified:

- Increasingly older populations with a higher incidence of medical disorders (due to advancing age) being kept alive longer.
- Development of Chronic Care initiatives to address the increase in chronicity of medical conditions with an increasing focus on community management programmes. Apart from the obvious benefits of such programmes, there is neither the workforce nor the funding available to continue to look after such a large proportion of patients in a centralised hospital based environment
- A shift to earlier interventions. Early intervention in primary care with improved access to specialist care when required aims to ensure the diagnosis is accurate and allows the formulation of a management plan to guide ongoing care by the primary care physician and patient. It also offers an introduction to the MDT and thus the

introduction of patients to better education about their condition with the potential to modify behaviour and improve self management skills. Only seeing patients with advanced disease reduces the potential impact of the specialist medical team. However, ensuring patients are discharged back to their primary care physician in a timely manner is essential and thus the need to carefully monitor OP activity and to explore ways of evolving larger components of care back out into the community. The aims must always be to make patients as self sufficient as possible and not to create a dependency on expensive hospital based specialist services. (The evolution of Primary Community and Health Centres (PCHCs) is therefore seen as an important development which runs in parallel with hospital based strategies).

- An expanding range of short-stay acute options, and changes in internal hospital processes aimed at reducing the hospital Length Of Stay (LOS) is resulting in lower rates of medical beds for populations. MMH has fewer acute medical beds per 100,000 population than most other DHBs in New Zealand and New Zealand has substantially fewer beds than Australia. The changes made to acute medicine management at MMH has already led to continuing improvements with an ALOS of 3.2 days and readmission rate of only 7-8%. Both the lower ALOS and rising acuity is placing increasing pressure on the resources required to service hospital beddays however.
- Increasing need for early but comprehensive discharge planning, more intelligent use of rehabilitation and ambulatory care services together with more sophisticated community-based care would be expected to reduce hospital length of stay, and reduce hospital re-admissions further. However, the need to acknowledge the complexity of these issues and to allocate resources to evolve the work force to meet this evolving challenge will continue.
- Increasing need for a multidisciplinary team (MDT) approach to address patient complexity, chronicity, and workforce issues.
- Integrated MDT programmes for chronic disease management incorporating expanded nursing and allied health specialist (e.g. social worker, clinical health psychologist, pharmacist, physiotherapist, nutritionist) roles.
- Improved integration of providers across all components of care and settings within the full care continuum and with substantially improved electronic communication and with substantially improved electronic communication.
- Inclusive, culturally appropriate care to target groups with poorer health status and to promote lifestyle changes appropriate to the cultural and individual health needs. The impact of social and economic deprivation on health status and on treatment strategies is now being recognised though solutions are more complex. The ongoing awareness of the needs to reduce the indirect costs and intangible costs to patients with chronic medical conditions needs to be borne in mind. Currently the direct costs of those suffering a chronic health problem in New Zealand are higher than for most other OECD countries and solutions to address these issues may need to be developed within CMDHB due to the high social and health needs of our community relative to most other DHBs in New Zealand.
- Ongoing development of evidence-based practice, clinical guidelines, outcome measurement, audit and quality assurance programmes.
- Case Management for high risk conditions or clients. The Palliative Care Team can play an important role in the case management as the service expands into the management of end-stage CCM (e.g. CHF, COPD).
- Increasing rates of Medical hospital presentations due to the higher incidence of medical conditions as the population ages (growth at MMH has been 4-5% per year over last 10 years). Funding and planning for this growth has invariably been retrospective and reactive response. Better planning and changes in models of care should endeavour to influence growth.

## **CMDHB Environmental Characteristics - Internal Medicine**

### **Increasing Service Demand**

The Counties Manukau population has high levels of chronic illness associated with low socioeconomic status, diverse ethnic composition and an ageing population. This leads to a

disproportionately higher need for health and disability services at CMDHB when compared to most other DHBs.

The Counties Manukau population is ageing. In 2006, Statistics NZ medium projections are that CMDHB had 40,790 residents over the age of 65 (9.2% of the population) but that by 2026 this will rise to 92,020 (15.3% of the CMDHB population). Between 1999 and 2004, the number of medical admissions to Middlemore Hospital increased from 9,715 to 11,651<sup>1</sup>. This increase (20% in five years) is well above the district population growth and was best explained by an increasingly aged population, by increasing dependence on free ED care by SED groups 8-10 (refer to our review) and by elderly patients with chronic medical conditions referring themselves increasingly to the hospital ED.

Incremental movement of care provision to being delivered by primary care is increasing pressure on the development of the Primary Care workforce. A number of strategies are under development within the CMDHB Primary Care team to increase Primary Care capacity however there are lower numbers of Primary Care Physicians in CMDHB relative to other DHBs and this will limit the opportunities to expand care pathways into the community. CMDHB is committed to a strong primary care service and Chronic Care Management programmes that promote supported self-care to minimise demand for specialist and inpatient hospital treatment.

### Diverse Ethnic composition

CMDHB has the most ethnically diverse population of any DHB in New Zealand with Maaori constituting 76,100 (17.2%), Pacific 90,800 (20.5%), Asian 68,200 (15.4%) and others 207,300 (46.9%).<sup>2</sup>

There were 13,143 medical inpatient admissions to CMDHB in 2005/2006<sup>3</sup>. Pacific people have significantly higher rates of hospital admission c.f. other ethnic groups while rates for Asian people are particularly low (Table 1). For both Pacific and Maaori, hospitalisation rates are high for people over 65 years (Table 2). These higher rates for Maaori and Pacific in both age groups reflect relative deprivation levels by ethnic group within Counties Manukau.

**Table 1: Internal Medicine Hospital Admissions 15-65 years – CMDHB<sup>4</sup>**

	Maaori	Pacific	Asian	Other
Population > 15 years	15.7	18.9	17.3	48.1
Inpatient admissions as a %age of ethnic group	5.4	6.1	1.2	4.9
% of inpatient admissions	18.9	25.3	4.5	51.5
% of inpatient admissions less daypatients	20.8	27.9	3.5	47.7
% of inpatient admissions less EC discharges	19.9	26.1	4.7	49.3
% of daypatient admissions	12.9	18.3	7.0	61.7
% of total medical beddays	23.5	30.9	3.2	42.4
% of EC presentations	19.8	27.3	3.5	49.3

**Table 2: Internal Medicine Hospital Admissions 65+ years – CMDHB<sup>5</sup>**

	Maaori	Pacific	Asian	Other
Population > 15 years	5.2	9.6	8.3	77.0
Inpatient admissions as a %age of ethnic group	37.1	40.2	11.8	24.8
% of inpatient admissions	7.5	14.9	3.8	73.9
% of inpatient admissions less daypatients	8.0	16.3	3.2	72.5
% of inpatient admissions less EC discharges	7.6	14.5	3.8	74.1
% of daypatient admissions	5.7	10.2	5.5	78.6
% of total medical beddays	7.8	15.6	3.4	73.2
% of EC presentations	7.6	16.7	3.1	72.6

<sup>1</sup> Denise Bamfather - XXX

<sup>2</sup> Source : Dianne Wilson and Gary Jacksons data

<sup>3</sup> Source: Transition Data – Dianne Wilson, Decisions Support, CMDHB

<sup>4</sup> Excludes hospital admissions, beddays or EC presentations for CMDHB residents

<sup>5</sup> Excludes hospital admissions, beddays or EC presentations for CMDHB residents

In addition to having lower socioeconomic status, transport, language and cultural barriers create challenges for service delivery to Maaori, Pacific and Asian ethnic groups. Achieving compliance with Chronic Care Management (CCM) programmes in the community is even more difficult to achieve in ethnically diverse communities than during acute hospitalisation. Strategies that recognise cultural differences, promote ease of access, integrate primary and secondary care, and incorporate CCM programmes are critical to achieving health gains for Maaori, Pacific and Asian populations.

### **Increasing Secondary Care Service Development**

Servicing a projected population of 442,400 in 2006, CMDHB is the second largest DHB in NZ. Specialist services within the Medical continuum need to be provided within Counties Manukau District at an upper secondary care level (Level 5 or 5/6 of the New South Wales Role Delineation Model) to promote strong local service delivery and the development of culturally appropriate local services.

International "blurring" of the traditional secondary/tertiary interfaces, and positive collegial relationships with ADHB, will assist in supporting the development of upper secondary care services. Service development is appropriate where services can be clinically and financially sustainable, and where they support the needs of the CMDHB population through delivering well integrated local services. Some low volume components of subspecialist medicine are provided by ADHB for CMDHB residents either in ADHB facilities, or as outreach to Manukau campus though most of the subspecialty services have already been transferred to CMDHB (cardiology, respiratory medicine, haematology, dermatology) and endocrinology and a substantial component of oncology services are in the process of being transferred. The impact of sub regionalisation has already been experienced at MMH with substantial improvement in both the complexity and quality of medical care offered. Both patient and staff satisfaction rates have increased in association with these changes. Senior staff recruitment which was once difficult at MMH has changed and newly advertised positions in most subspecialties are now attracting a number of top quality applicants. CMDHB could utilise this position and, acknowledging, the dearth of primary care physicians appoint new high calibre SMOs to newly created positions within an integrated care structure.

### **Primary Care Health Services**

Counties Manukau has many very small GP practices, with a high proportion of sole practitioners and many practices have only a few GPs. This creates a number of challenges including variable after-hours service provision, poorer access for urgent and semi-urgent appointments, less ability for GP subspecialisation within a small practice, less opportunity for developing nurse specialist roles within a practice and less practice investment in diagnostic equipment. In addition, the limited opportunity for GPs working in sole practice to obtain a second opinion, increases reliance on the EC or specialist outpatient services for a second opinion.

CMDHB initiatives around the development of Primary and Community Health Centres (PCHC) will encourage more collaboration between GPs leading to a reduction in the number of sole practitioners and smaller practices. Models of Care across the Medical Continuum need to accommodate the current reality as the new directions in primary care evolve.

## **3.0 Trends and Future Directions**

The Medical Continuum of Care (Figure 1) illustrates the complexity of delivering Medical Services and the wide range of strategies that are employed or developing within CMDHB to provide a community based service that will continue to manage the demand for inpatient medical beds. Key features of the continuum are:

- The Medical Model of Care operates across community and hospital-based settings. This model is suitable for the medical subspecialties, particularly for patients with

chronic or end-stage conditions where specialist support is required to assist patients and primary care to optimise the patients care.

- There is considerable cross-over between the primary and specialist care provided in community-based settings. Proposed changes in the Models of Care will reduce these boundaries further as more medical services are delivered in ambulatory and community settings, and as inpatient care is increasingly reserved for higher acuity specialist level care. Community need for resources will increase considerably with the transfer of services from hospital to community settings.
- There is a wide range of services and programmes within the Continuum of Care with most operating across several settings and components of care. The central thrust to these services/programmes is avoiding illness wherever possible, keeping patients well in their communities, implementing alternatives that avoid the need for hospital admission, or implementing strategies that reduce the length of hospitalisation.
- Services across the internal medicine continuum of care should be accessible and based on patient need. Components of care need to be targeted for individual patients, rather than a “scattergun” approach.
- Complexity of patient care across multiple settings dictates the need for fluid boundaries, teamwork and communication.

# INTERNAL MEDICINE CONTINUUM OF CARE



GP Consultation

Community Physician

Community/ Generalist Investigations

Specialist Procedures / Investigations

Let's Beat Diabetes

POAC

Healthy Eating  
Healthy Action

Cardiovascular  
Diabetes Risk  
Screening

FAMA

Acute Specialist  
Medical Clinical Reviews

Healthy Housing

Diabetes – Get  
Checked Program

Primary Care Nurse Specialist

Secondary Care Nurse Specialist/Educators

N.I.R.

NGO fieldworkers

Home Health Care

Specialist Allied Health Care

NASC

CCM

Multidisciplinary & Cross Specialty Clinics

Advanced Care Planning

Palliative Care

#### 4.1 Health Promotion and illness prevention

Numerous population health targeted programmes aim at reduction in the incidence of medical conditions. While many of these initiatives are developed nationally and implemented locally, a number of initiatives have been developed locally. While these initiatives are largely driven by CMDHB Primary Care Services Team and delivered through population health initiatives and PHOs, increased participation and engagement of specialist services will support development of integrated programmes across the continuum – the “Lets Beat Diabetes” Programme, the primary care based programme to screen for and modify risk factors for heart disease (PREDICT) and congestive heart failure and COPD chronic care programmes are examples of specialist led interventions and many more are planned.

There are a wide range of programmes within CMDHB addressing conditions across the medical continuum including :

- Lets Beat Diabetes
- Health Eating Healthy Action
- Smoke Free Initiatives
- Healthy Housing initiative
- National Immunisation Register/Well Child
- Heart Guide Aotearoa

Ongoing introduction of many further health promotion and illness prevention programmes over the horizon of the life time of the Health Services Plan is expected.

#### Key Directions

- ✓ *Ongoing local and national health promotion and illness prevention programmes aimed at improving the health and wellbeing of the population.*
- ✓ *Ongoing development of culturally appropriate programmes delivered in culturally appropriate settings for Maaori, Pacific and Asian peoples.*
- ✓ *Ongoing participation of CMDHB experts in the development of national and local programmes and ensuring cultural fit within the Counties Manukau population.*

#### 4.2 Early Detection

Early detection of medical conditions is promoted through increased awareness of key lifestyle and genetic predispositions to medical conditions. By increasing the awareness of symptoms of disease that require primary care investigation and improving the range of point of care tests available to GPs, more appropriate patients will be referred to both specialist services and hospital based clinical support services (namely CT, echocardiography, exercise tolerance testing (ETT)). Late presentation adversely affects the outcomes of many medical conditions and this is a particular issue for Maaori, Pacific and immigrant communities as well as for economically disadvantaged populations. Cancer screening programmes exist for breast and cervical cancer and CMDHB has the staff with the expertise to introduce and scientifically evaluate screening programmes for lung cancer and colorectal cancer.

The CMHDB Primary Care strategy promotes patients establishing an ongoing relationship with a GP or Family practice. It is estimated that up to 90% patients in Counties Manukau are enrolled in a PHO and therefore have a GP and Primary Care Team.

Early detection programmes for medical conditions e.g.. diabetes ‘Get checked’ are a focus for the Primary Health Care Strategy. In 2007 the introduction of a Cardiovascular Diabetes Risk screening programme will see Primary Care Teams utilising both structured and opportunistic screening for early detection and ongoing management and review of cardiovascular risk or cardiovascular disease. As above, we should make every effort to screen for risk factors for cardiovascular and cerebrovascular disorders using PREDICT, as well as for diabetes, gout and smoking related airways disorders. Increased uptake of and training and

accreditation in spirometry to screen for early COPD, Chronic Care Management programmes and POAC will all support earlier detection and intervention.

### **Key Directions**

- ✓ *Promoting wellness reviews by Primary Care Teams and Occupational Health practitioners.*
- ✓ *Development of programmes by Primary Care Teams to manage early detection, factor modification and management of early conditions in primary care.*

### **4.3 Supported Self Care**

Supported self care is a critical component of the Medical Continuum and an essential response to an ageing population with increasing levels of chronic illness. Individuals with considerable health needs are supported to live outside hospital settings with the assistance of their family, caregivers and/or community based health professionals.

The CMDHB Home Health Care (HHC) service is composed of District Nursing and Allied Health staff and is part of the CMDHB Intermediary Care service. It straddles primary, secondary and tertiary care, meets both personal health and disability needs, and provides care for both chronic and acutely ill people.

Needs Assessment and Service Coordination (NASC) is provided within CMDHB as part of the Intermediary Care service at CMDHB. In addition to coordinating support needs for patients with the long term (disability) needs, NASC provides services for Palliative Care patients, many of whom require similar supported care packages.

The key health team coordinating care for the patient in the community (e.g. living at home or in residential care) is the Primary Care Team. Working as a team they coordinate care between community-based health and disability providers, interface with specialist services, and refer patients as appropriate to specialist services. On the discharge of a patient from hospital care, the medical duty of care is transferred from specialist physicians to GP.

Many patients with Medical conditions have strong involvement of NGO (Non-Government Organisations) fieldworkers who provide a range of services to support patients (and their families) across all components of care and all care settings.

### **Key Directions**

- ✓ *Increased coordination between Home Health Care, Specialist Medicine and Primary Care Teams to support people living in the community.*
- ✓ *Patients in the community being managed by their Primary Care Team with support from Specialist Medical services (specialist nurses or specialist physicians) as required.*
- ✓ *Ongoing development of field workers in NGO's providing liaison, information, advice and patient advocacy.*
- ✓ *Development of the Annual Review and Follow up Programme currently in Diabetes being extended into new programmes.*

### **4.4 Chronic Care**

The majority of patients with chronic care conditions are managed by Primary Care within Disease/Injury component of the Generic Model of Care. Referral for specialist review or specialist oversight occurs when clinically indicated.

Several chronic medical conditions (e.g. Renal Disease) are managed predominantly by specialist services with primary care teams managing the other primary care components of

the patients care. Predominantly these are conditions with low volumes, high levels of specificity in care requirements, and high levels of associated clinical risk. Initiatives to support and promote advanced knowledge and practice within Primary Care are a focus on the CMM programme work.

5% of patients within Counties Manukau have a chronic medical condition and this incidence is expected to increase in the future. While many patients live with chronic conditions that require minimal Primary Care intervention, Primary Care practices within CMDHB have several programmes to assist in the management of chronic conditions where the patient has significant clinical needs.

### **Chronic Care Management Programme - CMDHB**

The recognised increase in chronic conditions resulted in the development of the CMDHB Chronic Care Management (CCM) Programme in 1999 and piloted in 2000. This programme is primary care driven and central to integrating the care of high need people with chronic medical conditions within Counties Manukau. There are now five established CCM modules which have a collective enrolment of 9000 patients. The aim of the programme is to have 20,000 by 2016.

Modules already in place or under development are:

- Diabetes
- Cardiovascular Disease
- Congestive Heart Failure
- Depression (pilot)
- Chronic Obstructive Pulmonary Disease
- Renal (Pilot under development)
- Bariatric (pilot under development)

While the CMDHB Chronic Care Management (CCM) programme is primary care driven, Specialist Medical Services support the CCM programme through scheduled or acute specialist review of CCM patients when requested and have led programme guideline development, and treatment plan review.

The Palliative Care Service involves an integrated approach working within and across CCM modules.

### **Frequent Acute Medical Admissions (FAMA) Programme - CMDHB**

The Frequent Acute Medical Admissions (FAMA) programme at CMDHB was developed in 2000/2001 to provide case management in primary care of complex medical patients with two or more admissions to hospital in the previous year as a result of chronic medical conditions.

### **Primary Care Access to Diagnostic Investigation**

Medicine relies on a range of investigations to support an accurate diagnosis and develop a treatment plan. All Primary Care practices within Counties Manukau have access to laboratory investigations provided through decentralised pathology collection centres with timely access to electronic on-line results however they have limited access to radiology services and a range of other investigations including echocardiography.

Improving access to timely 'Community Referred' investigations will improve the ability of General Practitioners to manage patients in primary care without referring them for specialist outpatient consultation. Referring them acutely to Emergency Care to access diagnostics or for acute admission is very expensive - as is referral to specialist Outpatient clinics if all that is required is the acquisition of a simple test such as a CT scan. In relative terms and compared to many other urban DHBs, CMDHB has poorer access to clinical support services offering a range of more complicated investigations (namely CT, MRI, endoscopy, colonoscopy and echocardiography). To make such investigations more available would require an increase in

capacity with strong prioritisation criteria, management of inappropriate referrals, and monitoring of waiting times.

In addition to significant reductions in Community Referred Radiology waiting times, GPs will continue to access acute radiology through POAC, or through the direct acute referral pathway to the Radiology Department.

**Table 3: Primary Care access to clinical diagnostics**

<b>Investigation</b>	<b>Primary Care requirements from Specialist Internal medicine</b>
ECG	ECGs provided routinely through most General Practices. Specialist opinion available on request for ECG interpretation and treatment advice. A limited ECG service available at MMH and MSC.
Echocardiogram and transoesophageal echocardiogram	Community referral to Specialist Cardiology services for investigation by echocardiographer after a cardiologist consultation. Despite prioritisation criteria, long waiting lists exist. Echocardiogram volumes one of lowest in NZ. Ideally GPs should be able to refer directly for echocardiography but significant capacity increase required.
Exercise Tolerance Tests (ETTs) and Holter Monitoring	Very limited GP access to Holter Monitoring and exercise ECGs after telephone consultation to cardiologists – generally GP access follows ED attendance with chest pain or Cardiology Outpatient assessment. Chest pain presentations to the ED have increased from 880 in 2001, to 1950 in 2006 and this is creating congestion in ED. Making Exercise Tolerance Tests more readily available to GPs may reduce service congestion. Nurse-led ETT programme is currently being trialled to decrease waiting times and improve access for patients.
Spirometry	20-30% of GPs now have a spirometer but previous studies undertaken by the Auckland COPD development group reveal that frequently these are not performed to a high standard and are substantially underperformed with respect to screening for COPD. A relatively small number of spirometric lung function tests (approximately 300 p.a.) are performed for GPs at MMH. Spirometry of a high standard would be offered through PCHC.
Lung Function Tests	Plethysmography, DLCO measurements and cardiopulmonary lung function tests are available on request to GPs through the Lung Function Lab at MSC
Arterial Blood Gases, Oximetry, Overnight Oximetry	Whilst some GP practices have acquired an oximeter the majority depend on referrals to either the respiratory OP service or the oxygen service for these evaluations. Oximetry would be made available through PCHCs.
Gastroscopy	For investigating upper gastrointestinal symptoms, GPs refer patients for endoscopy to be undertaken by a specialist gastroenterologist, advice given to GP on patient management, or a specialist gastroenterologist consultation is arranged if required. The number of gastroscopies contracted at CMDHB are the lowest in Auckland and an increase in volumes contracted is required.
Colonoscopy	For investigating lower gastrointestinal symptoms. GPs refer patients for colonoscopy which is undertaken by a specialist gastroenterologist and advice given to GP on management, or a specialist gastroenterologist consultation arranged if required. Long waiting times need to be addressed through contracting higher volumes consistent with the intervention rates in other DHBs.
Partial home based Sleep Studies	Available only after respiratory physician assessment
Plain Film radiology, ultrasound	Radiology services are provided through the Community Referred Radiology Contract. Management of waiting times, development of improved access to acute radiology are proposed. Decentralisation of care to PCHC will support improved geographical access for patients and a more timely GP response.
CT/MRI	If, as above, prioritisation criteria could be better developed, an increase in volume of CT scans were acquired and this access to Community Referred CT made, a consequent reduction in medical admissions, ED use and OP referrals would be expected. MRI will be available through Hospital Specialists only.

## **Key Directions**

- ✓ *Additional conditions will be added to the CMDHB CCM programme with ongoing increases in the number of patients enrolled.*
- ✓ *Responsibility for the Chronic Care Management programme remains within primary care with support from Specialist Medicine services as required and which will be funded through the chronic care management budget.*
- ✓ *Ongoing increases in the number of medical patients enrolled under the FAMA programme.*
- ✓ *Improving the capacity of Primary Care to manage patients in the community by improving access to Community Referred diagnostics.*

## **4.5 Acute Care**

Acute medical care is provided by Primary Care, Emergency Department (ED) and both subspecialty and Internal Medicine services. Patients are encouraged to be enrolled with a primary care provider as the first patient point of contact for acute (and chronic) conditions. The majority of acute presentations to Primary Care are able to be managed by the Primary Care Teams using their own resources and community based diagnostic services. For some acute presentations to a GP, hospital admission or access to more intensive clinical support services available only within the hospital or private specialist sector is required. The percentage of medical admissions due to self-referrals is large and largely due to high immigrant population, financial barriers to primary care, poor access to community based afterhours services, and high density population with high social and economic needs residing in close proximity to MMH). Self referrals expressed as a percentage of all admissions, remains the largest in Australasia and programmes aimed at reducing self referrals to the ED with medical problems will continue to be encouraged.

### **Primary Options in Acute Care Programme**

The CMDHB Primary Options in Acute Care (POAC) programme provides GPs with immediate access to a range of diagnostic services. When a GP is of the opinion that immediate access to an investigation or specialist advice or rest home care might lead to avoidance of hospitalisation, \$300 can be forwarded to the GP to spend on such services.

### **Acute Specialist Referral**

There are several routes by which patients can access acute specialist medical care:

- Self-referred patients present directly to EC where they are seen by the Emergency Care medical team. If a hospital admission is indicated the EC team transfers the patient to the care of the acute medical admitting team which completes patient assessment and planning before transferring the patient to the inpatient ward or Assessment Planning Unit (APU).
- GPs refer patients directly to either the Medical Subspecialty or Internal Medicine Service (specialist physician or specialist nurse) using phone contact between the primary care team and the receiving specialist team. On occasions specialist advice or access to ambulatory clinics will avoid the need for further assessment at that time. In most cases, the patient will be asked to present to hospital for assessment and review by the medical team. Most of these calls are currently undertaken by the acute medical team and by an SMO who is rostered on duty within the SSU/EC between 0800 and 2000 Monday to Friday.
- GPs can refer patients for acute outpatient consultation to either MSC or the acute care team at Middlemore Hospital - dependent on the investigation modalities required by the patient, waiting times for OP assessments at MSC, and whether acute hospital admission is likely.

## **Acute Hospital Admission (Inpatient/Daypatient)**

Medical inpatient care is provided under an integrated system of internal medicine and subspecialty medicine. Most patients are screened first by the acute medical team and if admission is required, patients are referred either to the IM service (66%) or subspecialty service (33%) depending on pre-agreed criteria. EC consultants can also refer directly to either the IM or subspecialty service. The acute care team (an SMO, registrar and HO) work within the EC/SSU between 0800-2000 daily Monday to Friday and between 0800-1300 Saturday and Sunday. The SMO triages patients into 1 of 3 categories: Subspecialty Medicine or IM or Acute Care Team (the latter are patients expecting to be discharged within 24 hours and who are managed within the EC/SSU currently but would be better managed within an APU). Since 33% of patients are discharged within 30 hours of presentation it is more efficient to manage them in the front of the hospital.

Each of the 5 medical wards is configured to accommodate a subspecialty service (10 beds) and 2 Internal Medicine Teams (each of 10 beds). For example, ward 7 has 10 respiratory medicine beds and 20 IM beds. SMOs appointed to both respiratory medicine and IM are therefore appointed to a single ward and during weekends when on call, they and their junior staff manage all the patients on the ward, whether IM or respiratory medicine. The efficiency created by this infrastructure has allowed MMH to evolve a subspecialty inpatient service with all the associated benefits (e.g. a ward based MDT involving physiotherapists, specialty nurses, clinical health psychologists and pharmacists). Consequently an assisted ventilation service (NIV) has been successfully developed with no unexpected deaths since its inception and with results at least as good as published in the scientific literature. As such any patients requiring NIV are admitted to ward 7. Such a system would be further advantaged by the development of a Close Observation Unit (COU) within each Medical ward using flexible monitoring is envisaged as part of the next phase of development, and catering for the high-end specialty patients for whom care within a Medical ward environment is appropriate.

On any given day there are 4 IM teams on call and admissions to subspecialty services are either directly to the service from 0800-1600 or via the subspecialty registrar from 1600-2200.

All acute inpatient services for CMDHB will continue to be provided at Middlemore Hospital to concentrate specialist resources until at least 2025, with support for the further development of subspecialty services. The opening of another acute medical hospital would have major workforce (and cost) implications. Instead only those services required to support a top quality medical inpatient service should remain on site with more elective and ambulatory and Day Stay services being conducted at MSC.

Frail elderly patients requiring acute admission to an inpatient ward will increasingly be admitted directly to an ATR ward by the acute admitting team.

With the development of the High Dependency Unit (HDU) at MMH, medical services will be able to care for a group of patients who are becoming increasingly unstable and who might require admission to the intensive care unit (ICU). The HDU will also function as a step down unit for some patients in transit from the ICU back to the ward. The relationship between the medical wards and the HDU/ICU will have its greatest strength at a subspecialty level and with the Close Observation Units (COUs) located on each of the wards. In this way a patient admitted for assisted ventilation, for example, may be admitted to ward 7 and if they failed to respond to NIV or if their condition worsened, might in turn be transferred to the HDU in anticipation of the possible need for intubation and ventilation. In this manner, whether the patient was being managed in ward 7, the HDU or the ICU the respiratory medicine team would remain in close contact with the patient thus maintaining continuity of care. Similar examples could be generated for patients admitted with acute renal failure, an acute GI bleed or hepatic failure, and severe ketoacidosis where the relationships would be with renal medicine, gastroenterology and endocrinology respectively.

The development of an HDU will allow for the evolution of a more comprehensive MET team (Medical Emergency Team) who will be more available to consult on unstable patients on the medical wards particularly afterhours.

## **Assessment and Planning Unit**

The redevelopment of an Assessment and Planning Unit at Middlemore Hospital will change patient flows within Internal Medicine. GP-referred patients will be admitted directly to the APU unless they are defined as requiring admission to the resuscitation room. The APU will need to have a minimum of 20 beds and close observation facilities for very sick patients, particularly overnight when RMO staff are concentrated within the APU/EC area. In APU a plan of care will be developed and implemented after appropriate investigation. Patients in the APU will be discharged or transferred to an inpatient medical ward within 24-36 hours of presentation with earlier transfer to wards of patients clearly requiring prolonged medical admissions.

Acutely admitted patients who have been under the care of an Internal Medicine team in the previous 6 months (6% of patients) are transferred to the care of that team the following day to promote ongoing care continuity. Acute patients admitted with subspecialty conditions are either admitted directly to that team or are transferred to the subspecialty team the following day if admitted by one of the after hours IM teams (5% of patients). When a patient is under a subspecialty service within the OP clinic and presents acutely with the same problem then every effort is made to admit them back to the same service to maintain continuity of care. Bed capacity does limit this option from time to time. Sixty-six percent of patients remain within an Internal Medicine team for their full episode of care and receive subspecialist consultation when indicated.

Each inpatient medical ward will continue to have both internal medicine beds and subspecialty beds. This has a number of short and long term advantages. There is better capacity to absorb fluctuations in subspecialty bed numbers and to adapt to long term clinical volume trends. Closer collaboration of internal medicine and subspecialty teams supports a stronger system of care. For example, the acute Stroke Service will provide integrated care between acute stroke and rehabilitation when these services are collocated across one floor. Currently cardiology services similarly already flex back and forth between cardiology inpatient beds and the CCU/SDU.

However, for this service to work there needs to be a smooth transition of patients from ED/APU back to the wards in view of the current problem of high occupancy (upwards of 100%). For the home ward concept to work then the great majority of patients need to be admitted to the right ward. This can be obtained by a higher frequency in which IM medical teams are on call (currently once every 3.5 days cf 1 in 4.5 days historically) and by achieving realistic bed occupancies (ideally around 90% compared with 100% for upwards of 8 months of the year currently). When medical wards are run at 90% bed occupancy then 85% of patients are admitted back to the right ward and this falls to 55% when at 100% occupancy. Currently transfer back to the ward occurs under the guidance of EC and is driven by the need to clear beds as quickly as possible to prevent back-logs occurring. As such patients are often admitted to any ward where a bed is available rather than awaiting for the "right bed" to be vacated. An APU would control flow back to the ward and would in essence allow the evolution of 20 more medical beds and which would ease the burden on medicine.

An APU is a valuable adjunct to Community Based Palliative Care services and inpatient hospital beds. Palliative Care patients frequently require investigations or treatments that are challenging to carry out in an outpatient setting due to the patients condition – frequently these relate to acute pain or symptom management, and these can be carried out effectively and efficiently in an APU. The APU will avoid the need for inpatient admission while supporting the patient and their family in an appropriate environment.

Within an APU the Model of Care will include communication with the CCM "case manager" to avoid admission if this is possible. POAC and FAMA are strategies that can be useful in avoiding the need for a hospital admission.

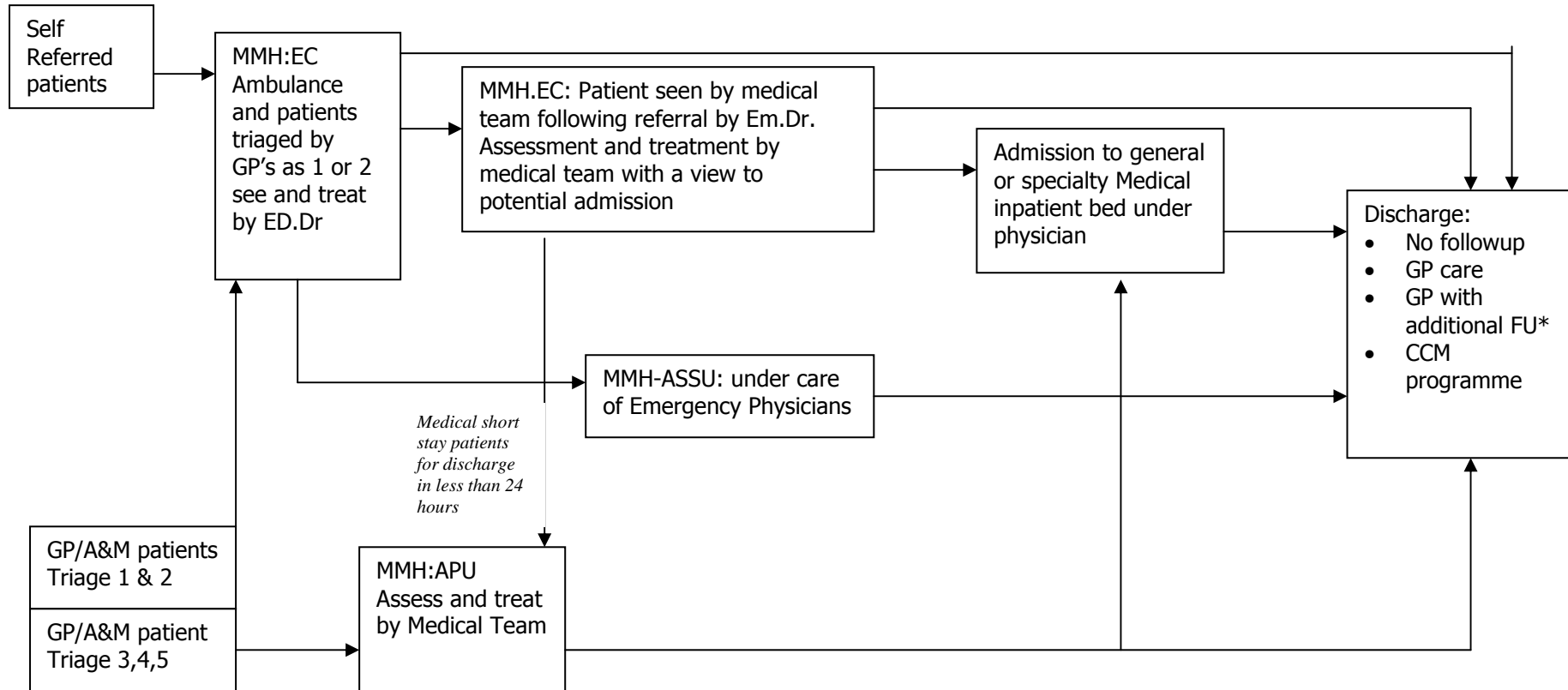
For elderly patients admitted to Medicine, there is a need to ensure that patients maintain an optimal level of functioning during hospitalisation. This will be achieved by ensuring care

planning includes functional maintenance with care planning that is supported by Health of Older People Nurse Specialists if required. Rehabilitation specialty teams will reach into medical services to provide assistance with discharging complex elderly patients into the community, or to facilitate earlier transfer of patients to ATR wards when this is indicated.

### **Key Directions**

- ✓ *Middlemore Hospital will be the only CMDHB facility for acute internal medicine admissions for the foreseeable future.*
- ✓ *The Specialist Internal Medicine Model of Care at Middlemore Hospital will be expanded to include incorporation of HDU.*
- ✓ *Increased numbers of frail elderly patients will be admitted directly to the ATR Service from EC or APU.*
- ✓ *Specialist Internal Medicine services have a strong focus on General Medicine to manage patients with comorbidities and to support General Practice.*
- ✓ *Responsive acute consultation system provided to GPs through acute, scheduled and, phone consultations.*
- ✓ *Development of functional maintenance care planning for elderly patients with assistance from Health of Older People Nurse Specialists.*
- ✓ *Development of a Rehabilitation “pull” philosophy to ensure early involvement of rehabilitation during acute hospitalisation, and to ensure that patients are “pulled” earlier into ATR programmes/wards when required.*
- ✓ *Development of an APU to improve the patient flows within medicine and medical subspecialties and reduce the number of inpatient admissions and average length of stay.*

## Flow chart for Acute Medical Referrals with following development of APU



APU: is intended for acute GP or A&M referred patients at triage category 3, 4 or 5. Patient length of stay will be less than 24 hours and presentation to Emergency Care is not required. Triage category 1 and 2 patients may be admitted directly from EC to inpatient wards/departments. In some models and where appropriate surgical patients could be transferred directly from APU to Operating Theatre then warded or returned to APU for discharge.

#### 4.6 Specialist Internal Medicine

Apart from an inpatient and diagnostic procedural service specialist medical services will be provided through outpatient consultations at MSC with outreach clinics provided in PCHC or large GP practices. Specialist clinics are coordinated with relevant diagnostics to ensure that services are patient-focused, and that early and appropriate clinical opinion is available to GPs. Prioritisation criteria are used to manage waiting lists and the percentage of patients seen within the allocated time frames of each of the prioritisation categories with monitoring against Elective Services requirements of the Ministry of Health and prioritisation criteria developed by subspecialty societies

Specialty Nurses within the specialist services are taking an increasing role in coordination, case management, patient education, clinical review and ongoing management of medical patients whether they are inpatients, daypatients, outpatients or as home visits in the community.

Ongoing development of expanded specialist nursing roles across Medicine will increase the capacity of specialist services to meet increasing service demands. Specialist nurse functions (depending on the subspecialist areas) will increasingly support changes in the Model of Care through providing:

- Nurse-led clinics
- Specialty patient education
- Case management
- Collaborative nurse/specialist clinics

Some nurse specialists attached to specialist medicine will practice only within secondary care inpatient and outpatient settings, while others will operate in community settings including domiciliary care or PCHCs.

Development of specialist Medical clinics in GP practices will be an alternative to outpatient clinics at Manukau campus. This will be achievable where necessary clinical investigations/reports are available, and where opportunities to work alongside Primary Care will benefit patient care. To achieve this function more specialist SMOs will need to be employed by CMDHB and not by merely devolving Outpatients services back into community settings. Many subspecialties have developed dedicated multidisciplinary clinics. These clinics are multidisciplinary and not readily duplicated in a community setting. Conversely, the opportunity to see “difficult patients” with a known disorder in a community setting in association with the patients general practitioner has substantial potential as does guideline development and clinical pathway development at a PHO level. The Palliative Care Team of medical, nursing and allied health staff by providing a wider range of multidisciplinary clinics with other specialty teams (e.g. colo-rectal, oncology, respiratory medicine) will increasingly integrate care between active treatment and palliation and hospital, community and hospice provision of services.

Reductions in follow-up consultation rates is promoted through early and appropriate discharge of patients to the care of their GP from hospital and outpatient services alongside the provision of appropriate advice. The development of specialist nurses in Medicine will allow follow-ups in some specialties to be done by specialist nurses where the service needs to retain input into the patients ongoing care. Increasingly the specialist nurse will work in collaboration with Specialist Physicians, and act as an alternative to Specialist Physician care (e.g. congestive heart failure nurse, diabetes nurse, respiratory nurse). Through reducing Specialist Physician follow-up consults, and supporting specialist nurses developing technical diagnostic and treatment procedure skills, physicians will become able to provide a broader service to acute or chronic specialist referrals.

Specialist outpatient follow-up following a hospital admission is generally by subspecialty teams or Internal Medicine clinics operating alongside a subspecialty team.

Robust internal processes with electronic transfer of information from specialist care to primary care is required to ensure that patient information is rapidly transferred and thus available to GPs when reviewing patients and this is particularly important with respect to hospital discharges. Improvements in electronic communication are required from primary to secondary care to support patients care continuity.

Virtual Clinics involving the “paper” review of information provided by Primary Care to the specialist service via email contact is another way of improving upon the advice offered by subspecialty services all of whom provide 24-hour rosters and thus urgent telephone advice to GPs when requested.

**Table 4: CMDHB Secondary Medical Service**

	<b>Inpatient</b>	<b>Daypatient</b>	<b>Outpatient</b>
General Medicine	MMH	MMH	MSC
Cardiology	MMH	MMH <sup>6</sup>	MSC and Botany
Respiratory	MMH	MMH	MSC and Botany
Rheumatology/	MMH	MMH <sup>8</sup>	MSC and Pukekohe
Neurology <sup>9</sup>	ADHB	ADHB	MSC (limited), ADHB
Renal <sup>10</sup>	MMH	MMH	MSC and Botany
Gastroenterology	MMH	MMH, MSC	MMH, MSC
Haematology	MMH	MMH	MMH
Medical Oncology <sup>11</sup>	ADHB	ADHB, MSC (limited) <sup>12</sup>	MSC(limited) <sup>13</sup>
Radiation Oncology <sup>14</sup>	ADHB	ADHB	ADHB

### Key Directions

- ✓ *Responsive acute consultation system provided to GPs through acute, scheduled, phone and virtual consultations.*
- ✓ *Specialist nurses developing greater range of diagnostic and treatment skills, nurse case management, and increasingly providing an alternative to Specialist Physicians services where appropriate.*
- ✓ *Reductions in specialist physician follow up of patients with earlier and appropriate transfer of care responsibility to primary care and specialist nurses.*
- ✓ *Provision of Virtual clinics as an alternative to face-to-face consultation, and to support Primary Care.*
- ✓ *Development of community based specialist clinics as a substitute for Manukau campus and to support primary care in managing more complex patients in primary care.*

<sup>6</sup> Cardiology has a strong daypatient service associated with cardiac catheterisation, Transoesophageal echocardiograms, etc. Cardiology daypatient procedures high technological requirements and patients are at risk of haemodynamic compromise so these are performed at Middlemore Hospital where a cardiologist is present.

<sup>7</sup> Acute Rheumatology patients are managed in acute medical wards by general physicians with specialist rheumatologist input, and represent a small number of patients per annum. Chronic rheumatology conditions and patients requiring rehabilitation are managed within the Rehabilitation Continuum.

<sup>8</sup> Rheumatology daypatients are predominantly receiving an active rehabilitation programme which is carried out in the Rehabilitation Service.

<sup>9</sup> Neurology inpatients are predominantly managed at Auckland Hospital as part of the regional service. Stroke patients are managed in the stroke unit at Middlemore Hospital with the team lead by a Stroke physician/geriatrician

<sup>10</sup> Dialysis is provided for inpatients, daypatients, satellite and home dialysis

<sup>11</sup> Medical Oncology specialty patients are managed in Auckland Hospital. Medical oncology patients are managed at MMH by CMDHB physicians for some acute complications (in discussion with Auckland Hospital e.g. neutropenia) or patients entering a palliative care phase of care.

<sup>12</sup> Medical Oncology chemotherapy administration.

<sup>13</sup> Under development

<sup>14</sup> Radiation Oncology inpatient are managed at Auckland Hospital.

#### 4.7 Integration, Teamwork and Care Coordination

Multiple strategies will be in place to improve integration between components of care, care settings and procedures:

- Better electronic systems support the timely transfer of quality information between general practice, the provider arm and other providers. Each party needs to ensure commitment to providing the necessary information to enable appropriate clinical care to be provided by other parties. e.g electronic referrals, hospital discharge letters, outpatient consultation letters
- Selective specialist services working alongside General Practice in Primary Care Health Centres or large local practices
- Responsive specialist and primary care booking systems that accommodate acute, urgent or routine medical/nursing consultations utilising established prioritisation criteria but with monitoring of waiting times.
- Better coordination of Supported Self Care through closer collaboration of Home Health Care with Primary Care Teams or Specialist Teams
- Improved primary care access to more complex investigations, associated reports and specialist advice
- A greater focus on teamwork within primary and specialist care, and across all providers in the Medical Continuum of Care
- In response to rising complexity, there will be an increasing range of multidisciplinary and cross-specialty team approaches
- Specialist physicians with a commitment to community based care will work as part of subspecialty and Internal Medicine teams. Specialist physicians will undertake medical consultations in PCHC or large GP practices, support and advise GPs, and support GPs with the implementation of Advanced Care planning. A range of Specialist Medical services provided in PCHC will reduce growth in facility demand at the Manukau campus as an increasing range of ambulatory care could then be provided in PCHC
- The development of a pre-operative medical assessment service at Manukau Campus for medically-complex patients being considered for elective surgery would further reduce post-operative medical complications. Operating alongside other medical subspecialties further opinions can be sought by Internal Medicine physicians as required. As an adjunct of this service, an enhanced internal medicine ward consult service for Manukau elective surgery patients could then be provided.
- Adoption of additional evidence-based clinical pathways and guidelines across primary and secondary internal medicine will assist with the integration of care for chronic and acute patients
- Where appropriate, complex case management will work intersectorally. Often enacted through social work services at the patient level, this may involve for example Healthy Housing and WINZ

Critical to meeting the medical needs of the people of Counties Manukau is an approach that builds in teamwork, relationship development and a focus on the patient. Teams will increasingly have flexible membership across professional groups and operate across settings of care based on the needs of the patient.

The evolutionary grouping of GPs into larger practices will support increased peer support GP to GP. Community based specialist clinics will provide an opportunity to support the confidence of GPs to manage both chronic and acute patients with complex medical conditions, through providing direct patient consultation clinics and through specialists providing GP education updates.

#### Key Directions

- ✓ *Improving integration of care through enhanced electronic transfer of clinical data, closer physical working of GP's and General Medicine Specialists, responsive booking systems, virtual consultations*

- ✓ *Introduction of virtual consultations*
- ✓ *Transparent integrated discharge from Internal Medicine to Rehabilitation Services, Primary Care, HHC*
- ✓ *Development of Community Physicians providing visiting Specialist General Medicine services in PCHC and Manukau Superclinic*
- ✓ *CCM patients managed by primary care with inputs of Specialist Internal Medicine as required*
- ✓ *Nurse specialists attached to Specialist Internal Medicine subspecialty services providing care for specified conditions in collaboration with Specialist physicians when indicated (e.g. cardiology, respiratory, renal, gastroenterology, haematology). These services will generally operate across multiple settings - residential care, private homes, community clinics, specialist clinics, hospital, GP practices). Close communication and collaboration with GPs supporting the Primary Care Team as required.*
- ✓ *Patients with multiple pathologies on CCM programmes under GPs with case management provided by Practice Nurses*
- ✓ *Promoting the development of flexible teamwork using multidisciplinary, cross- specialty consultation, GP peer consultation and Community Physician consultation by GPs*

#### **4.8 End Stage Conditions**

A significant number of medical patients will suffer medical conditions with a poor prognosis and whereby the patient's quality of life is severely impaired and where the patient's independence is substantially compromised.. The implementation of an Advanced Care Planning programme will provide early and informed discussions between health professionals and the patient to review the place of interventions which do not improve upon quality of life. While initially lead by Medical services this evidence-based programme is across all health professionals and care settings and requires uptake in rest homes, medical wards and in the community.

#### **Key Directions**

- ✓ *Introduction of an Advanced Care Planning programme will be lead in Counties Manukau by the Specialist Medicine Service with involvement of all health professional groups.*
- ✓ *Integrated options for palliative care patients are provided across multiple settings with support from Palliative Care subspecialty services as required.*

Service: Internal Medicine

Model of care planning template

Need complexity						
		General Population	Population at risk of condition	Population with an early condition and minimal co-occurrences	Population with advanced condition and multiple co-occurrences	Populations with an end stage condition
Component of Care	Prevention	Healthy Lifestyles	Targeted and culturally appropriate programmes that prevent the development of Internal Medicine conditions e.g. Lets Beat Diabetes, Healthy Eating Health Action, Healthy Housing, National Immunisation Register			
	Early Detection		Screening by GPs during routine consultation for IM conditions, particularly where there is genetic predisposition e.g. hypertension, diabetes  Diabetes- Get Checked programme Cardiovascular Diabetes Risk Screening programme  NGO fieldworkers community education			

	<b>Supported Self Care</b>			Individual/Family/whanau Home Health Care (HHC) under Intermediary Care oversight Needs Assessment and Service Coordination (NASC) Society fieldworkers CCM programme GP as Medical Oversight FAMA programme	Individual/Family/whanau Home Health Care (HHC) under Intermediary Care oversight Needs Assessment and Service Coordination (NASC) Society fieldworkers CCM programme GP as Medical Oversight FAMA programme	Home Health Care Residential Care Hospice Services
	<b>Disease/Injury specific care</b>			CCM Programme FAMA Programme Primary Care Team management of other chronic conditions Primary Care Team acute and acute-on-chronic care. POAC GP access to Community Referred diagnostics Allied Health referrals for assessment/treatment.	CCM Programme FAMA Programme Primary Care Team management of other chronic conditions Primary Care Team acute and acute-on-chronic care. POAC GP access to Community Referred diagnostics Allied Health referrals for assessment/treatment.	CCM Primary Care Case management GP access to Specialist Internal Medicine Services as required

	<b>Specialised Care</b>			<p>Strong Multidisciplinary Team approach to assessment and treatment.</p> <p>Specialist DHB specialist nurses and educators</p> <p>Specialist DHB Case management for some conditions</p> <p>Specialist and complex investigations</p> <p>Development of scheduled Multidisciplinary clinics</p> <p>Development of Specialist Internal Medicine clinics in PCHC</p> <p>Access to acute clinic consultation and review</p>	<p>Strong Multidisciplinary Team approach to assessment and treatment.</p> <p>Specialist DHB specialist nurses and educators</p> <p>Specialist DHB Case management for some conditions</p> <p>Specialist and complex investigations</p> <p>Development of scheduled Multidisciplinary clinics</p> <p>Development of Specialist Internal Medicine clinics in PCHC</p> <p>Access to acute clinic consultation and review</p>	<p>Strong Multidisciplinary Team approach to assessment and treatment.</p> <p>Specialist DHB specialist nurses and educators</p> <p>Specialist DHB Case management for some conditions</p> <p>Specialist and complex investigations</p> <p>Development of scheduled Multidisciplinary clinics</p> <p>Development of Specialist Internal Medicine clinics in PCHC</p> <p>Access to acute clinic consultation and review</p>
	<b>Day Admission</b>			<p>Specialist procedures and investigations</p> <p>Recurrent Care Medical treatments – dialysis, blood transfusion and chemotherapy</p> <p>Development of acute specialist review for CCM patients under GP care in APU or outpatient clinic at GP request</p>	<p>Specialist procedures and investigations</p> <p>Recurrent Care Medical treatments – dialysis, blood transfusion and chemotherapy</p> <p>Development of acute specialist review for CCM patients under GP care in APU or outpatient clinic at GP request</p>	<p>Specialist procedures and investigations</p> <p>Recurrent Care Medical treatments – dialysis, blood transfusion and chemotherapy</p> <p>Development of acute specialist review for CCM patients under GP care in APU or outpatient clinic at GP request</p>

	<b>Inpatient Admission</b>				<p>Acute or acute on chronic exacerbation resulting in hospital admission.</p> <p>General medical Admissions +/- subspecialty consultation, and subspecialty admission +/- subspecialty consultation</p> <p>Development of changed internal processes to incorporate HDU</p> <p>Facilitated discharge processes, functional maintenance and earlier rehabilitation</p> <p>Full range of specialist investigations and facilities</p> <p>Development of Assessment and Planning Unit (under development) will drive improvement in patient disposition decisions, reduction in length of stay.</p> <p>Implementation of Advanced Care Planning</p>	<p>Acute or acute on chronic exacerbation resulting in hospital admission.</p> <p>General medical Admissions +/- subspecialty consultation, and subspecialty admission +/- subspecialty consultation</p> <p>Development of changed internal processes to incorporate HDU</p> <p>Facilitated discharge processes, functional maintenance and earlier rehabilitation</p> <p>Full range of specialist investigations and facilities</p> <p>Development of Assessment and Planning Unit (under development) will drive improvement in patient disposition decisions, reduction in length of stay.</p> <p>Implementation of Advanced Care Planning</p>
	<b>Palliative Care</b>				Coordinated care across all settings and components of care	Coordinated care across all settings and components of care

## 5.0 Reduction in inpatient medical bed requirements:

The Internal Medicine Continuum of Care is focused on ongoing reductions in the rate of Medical Beds required for the Counties Manukau population. Medical bed requirements are a function of three variables:

- Standardised Discharge Rate (SDR) – the rate of the populations admission to medical beds annually. Inter-District Flow trends influence the number of beds that are required locally.
- Average Length of Stay (ALOS) – the average length of time patients stay in hospital.
- Occupancy Rate – The accepted occupancy rate that the facility can accommodate. Robust patient process flows and flexible bed management/admission policies increase the capacity of a hospital to operate at higher levels of occupancy.

The CMDHB Internal Medicine Continuum of Care framework employs multiple strategies for achieving reductions in the rate of Medical Beds required per 1000 population into the future.

The NHS Institute for Innovation and Improvement in July 2006 published the “Making the Shift: Key Success Factors”<sup>15</sup>. This study reviewed internationally published research from 1980 to May 2006 and found five components of the secondary care pathway that may be most amenable to shifts in the primary care sector for medical and surgical patients:

- Simple diagnostic tests
- Outpatients appointments
- Day case surgery (sic)
- Step-down care
- Outpatient follow up

The review also identified a number of additional strategies that may help refocus care into the community, including:

- Integrating primary and secondary care services
- Substituting the skills of one provider for another
- Changing where services are located
- Changing the way care is provided in hospital
- Supporting self care
- Providing care according to need
- Simplifying access to services

Each of these strategies is addressed within the Medical Continuum of Care and reinforced within the key directions at CMDHB.

A study by Jackson 2006 identified widely variable medical bed rates/population in public hospitals across New Zealand. CMDHB has the fourth lowest rate of medical beds in New Zealand. The three DHBs with the lowest rates each have significant numbers of community based beds which substitute for reliance on acute specialist medical beds and reduce the ALOS in base hospitals.

The Standardised Discharge Rate (SDR) for populations identifies the rate at which people are hospitalised. CMDHB has a SDRs of 1.10 which is the fourth highest of NZ DHBs.. This reflects that patients are admitted to Middlemore Hospital medical beds at a higher rate than in many other DHBs. Conceivably this could reflect inadequate primary care or health promotion activities, poor alternatives to hospital admission available within the Model of Care, or a high rate of inappropriate hospitalisation. It is most likely to be reflective of the poor socioeconomic status of the local population.

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<sup>15</sup> NHS: Making the Shift...

The standardised casemix adjusted Medical Average Length of Stay (ALOS) at Middlemore Hospital is the third lowest rate at 0.95 indicating a comparatively short LOS – and it should be noted that this is occurring in the absence of community based beds unlike many of the rural DHBs.

**Table 5: Comparable Medical Data for NZ DHB's**

DHB	Medical Beds/1000	SDR	Major DHB Facilities	Medical ALOS
Northland*	0.38	1.19	Whangarei Hospital Area	0.92
Waitemata	0.55	1.29	North Shore Waitakere	0.98 1.00
Auckland	0.82	1.10	Auckland City Hospital	0.96
Counties Manukau	0.52	1.10	Middlemore	0.95
Waikato	0.77	1.11	Waikato Thames	1.05 1.08
Lakes	0.88	1.09	Rotorua Taupo	1.08 1.13
BOP	0.80	0.85	Tauranga Whakatane	1.07 1.04
Tairāwhiti	0.73	0.78	Gisborne	1.03
Taranaki	0.69	0.80	Taranaki Base	0.99
Hawkes Bay	0.61	0.86	Hawkes Bay District Hosp	1.07
Whanganui	0.61	0.96	Wanganui	0.93
MidCentral	0.76	0.83	Palmerston North	1.03
Hutt	0.59	0.99	Hutt Hospital	1.01
Capital and Coast	0.62	0.71	Wellington Kenepuru	0.99 1.17
Wairarapa	0.77	0.98	Masterton	1.03
Nelson-Marlborough*	0.41	0.76	Nelson Wairau	0.98 0.89
West Coast	0.70	1.00	Grey Base Hospital	0.98
Canterbury	1.04	0.91	Christchurch	1.02
South Canterbury	0.56	0.89	Timaru	1.00
Otago	0.77	1.07	Dunedin	0.95
Southland *	0.44	0.95	Southland	1.01

[\* = DHBs with significant numbers of community based beds]

It is widely accepted that initiatives to reduce the requirement for Medical Beds (per 1000 population) can be grouped into three categories:

- Development of primary or secondary care community based services that act as an alternative to hospital admission.
- Development of primary or secondary care services that improve health status and avoid patients developing a condition that is severe enough to need hospital level care.
- Strategies that improve the efficiency of internal service delivery to reduce Medical Bed demand

Under each of these categories, CMDHB has implemented a wide range of initiatives to reduce demand for Medical beds.

**Table 6: CMDHB strategies to reduce demand for medical beds**

<b>Development of primary or secondary care community based services that act as an alternative to hospital admission</b>	
Primary Options for Acute Care (POAC)	Existing
Hospital in the Home Programme	Existing
Community Access to diagnostics	Enhancing
Community Based Rehabilitation Programme	Enhancing
Heparin management in primary care	Existing
<b>Development of primary or secondary care services that improve health status, or avoid patients developing a condition that requires a hospital admission</b>	
Chronic Care Management programme	Existing
Frequent Acute Medical Admission programme ( Primary Care Case Management)	Existing
Secondary Care case management	Existing
Care Pathways, Guidelines and Protocols in Primary Care	Enhancing
Community Rehabilitation Programme	Enhancing
GP Liaison role between primary and secondary care	Existing
Hospital in the Home	Existing
<b>Strategies that improve the efficiency of internal service delivery to reduce Medical Bed demand</b>	
Clinical Pathways	Enhancing
Admission Appropriateness Audit	Ongoing
Assessment and Planning Unit	Proposed
Access to acute medical consultation	Enhancing
Chest Pain clinics/protocols/units	Existing
Observation Unit in EC for self-referred patients not requiring admission	Existing
Discharge planning processes	Enhance
Early discharge programmes through Internal Medicine and Rehabilitation interface	Enhance
Nurse Case Managers in EC	Existing

CMDHB has extensive strategies in place for reducing demand for medical beds and has been successful at achieving low medical bed numbers/population and an ALOS below national averages. An ongoing challenge for CMDHB will be to reduce the Standardised Discharge Rate through developing:

- Effective community-based strategies that raise health status and reduce avoidable admission rates.
- Community-based care options and tight criteria for admissions that reduce inappropriate hospital admissions.
- Ensuring robust discharge planning to avoid hospital readmissions.

### **Key Directions**

- ✓ *Ongoing improvement in key indicators for medical bed management (Medical bed rates/1000 population, Standardised Discharge Rate, Average Length of Stay) that deliver ongoing reductions in demand for medical beds/population.*

## 6.0 Workforce Implications

The Model of Care for Medicine will see considerable growth in the requirements for additional staff over the next 20 years. Most notable will be:

- The growth of specialist nurses working collaboratively with other health professionals in both acute and chronic care. In some areas nurses will take on clinical care that is currently provided by SMOs or RMOs. Nurses will need to be increasingly skilled in working across hospital and community settings. Medical nursing will become more complex and require increasingly sophisticated levels of nursing knowledge as the threshold for hospital admission increases and the length of stay shortens. Medical nurses will increasingly be focused on complex nursing care and assistance with patients Activities of Daily Living (ADL) and Functional Maintenance will be shared with Health Care Assistants working under the supervision of Registered Nurses. The maintenance of Close Observation Units on Medical wards will assist nurses in developing subspecialty skills and will be the clinical training ground for specialist nurses in the future. The development of post-graduate medical nursing programmes would significantly improve retention of medical nurses and assist in the development of specialist nurses. CMDHB is well positioned to become a centre of excellence for the training of medical nurses.
- Increased recruitment of well trained medical subspecialists who have skills and commitment to Internal Medicine will be needed to meet the growing numbers of patients with multiple comorbidities. The growing CMDHB population will increasingly support development of subspecialty medicine. There is a need to employ more medical SM staff to bring the numbers more in line with other large DHBs such as ADHB and CDHB, in acknowledgement of the very high clinical workload carried by medical SMOs in CMDHB and to allow protection of non-direct clinical time to allow a higher quality of care to evolve (time needs to be protected to allow quality initiatives to be developed and to undertake audit, guideline development and teaching of other members of the health workforce. There is also a need to increase staffing rates to introduce integrated care strategies.
- Increases in the numbers of technical and allied health staff will be required to support increases in diagnostic and treatment services. Increasingly CMDHB will provide clinical training opportunities for new staff with a key direction being to attract new staff. Many tasks currently undertaken by medical staff will be devolved to other health professionals.
- Incorporation of evidence based practice, research opportunities for health professionals, and a positive work culture will be important for people working across the continuum. Working collaboratively to achieve improvements across the continuum will be important
- Increases in the number of trained Health Care Assistants who assist Registered Nurses in the delivery of patient care.