1. Traditional Acute Geriatric Medicine Models of Hospital Care.

2. Acute Hospital Geriatric Care.

3. Orthogeriatric Service

4. Inpatient Mobility and Rehabilitation Programmes for Geriatric Patients.

5. General Medicine / Geriatric Medicine on call for the ED.

6. ED ASET Teams

7. Community Geriatric Care.

8. Electronic Medical Record


10. Dementia Care Service Programme

11. General Rehabilitation Services

12. Education.

13. VISION FOR THE FUTURE

Cost savings of $32.5 million per year for Central Coast Health with the new model of Geriatric Care:

- $5 million for 50% reduction of adverse drug reactions
- $4.73 million per year for DRG Casemix funding for the diagnosis of malnutrition in the elderly
- $10.6 million by reducing length of stay through improved nutritional support for the elderly (2,500 admissions per year)
- $4 million per year for reduced length of stay in a multidisciplinary Geriatric Ward environment
- $2.5 million for delirium screening and management per 1000 cases
- $1.4 million through domiciliary consultations and community care of the elderly - 140 hospital admissions prevented per year
- $1.8 million by 50% falls reduction through improved monitoring of standing blood pressure (30 fractured neck of femur per month admitted to Gosford Hospital)
- $2.5 million saved per year through Electronic Medical Record reducing length of stay (2,500 admissions)
The NSW Central Coast has a large ageing and retirement population. There are 28,309 > 75 years of age (9.5% of total population) compared to the general Central Coast population of 297,959 (Source: Australian Bureau of Statistics, 2006 Census of Population and Housing).

The increasing age of the Central Coast older population is associated with significant comorbidities including dementia. The number of dementia cases in 2006 was 4,859 (Dementia on the NSW Central Coast – Ref 1)

The Australian population is living longer with the average age of males now 78.5 years and females 83.3 years in 2005 (Source: Deaths Australia, ABS Cat No: 3302.0). The time of death is associated with an increase in burden of disabilities secondary to medical comorbidities. The older group of elderly >85 years will have the largest increase in numbers on the Central Coast over the next 15 years with an increase of at least 600%. This group has a high prevalence of physical dependency and high risk of requiring acute hospital care and of rapid deconditioning and complications in the acute hospital system. In this older group any acute illness may cause preventable major geriatric syndromes including delirium, falls, loss of mobility leading to a prolonged, complex and costly acute hospital admission requiring prolonged rehabilitation and complex post-acute care.

Over the next 20 years the major diseases and medical problems facing Central Coast Hospitals and General Practitioners given the ageing population will be:

1. The rise in the prevalence of dementia and the associated behavioural and psychological complications including delirium and carer collapse.
2. Adverse drug reactions in the elderly. We have previously published our findings that 50% of Geriatric patients ≥ 75 years presenting to the Gosford Emergency Department (ED) are admitted as a direct result of major adverse drug reactions. The estimated cost per year for these 1000 Geriatric acute medical admissions to Gosford Hospital is estimated to be $ 10 million per year. These admissions are completely preventable and with appropriate community care, even at 50% reduction in these ED presentations would save the Central Coast Health Budget $ 5 million per year. (Ref 2)
3. Neurodegenerative and Multifactorial gait and balance disorders contributing to falls and fractures.
4. Osteoporosis contributing to both surgical and non-surgical fractures. The numbers of patients with osteoporosis is set to exponentially rise given that life expectancy is increasing. These osteoporotic fractures contribute enormously to health care costs by causing considerable morbidity and a prolonged length of acute hospital stay. There were 64,500 osteoporotic fractures requiring acute hospitalisation in 2001 in Australia. Osteoporosis related costs in Australia are $7.4 billion per annum (Access Economics. the burden of brittle bones 2001)
5. Malnutrition in the elderly and its associated complications including falls, fractures, recurrent infections and a prolonged, expensive and complicated hospital stay. (Ref 3) For each $dollar spent on high quality nutritional care $5 is saved for the Health Care System (Health Care Financial Management 1997).
6. Increased incidence of delirium in hospitalised elderly.
Given the high cost of acute hospital care and the limited hospital resources, a new Model of Care needs to be established for the increasing ageing population on the NSW Central Coast.

There were 49,440 adult presentations to Gosford ED from March 2005 to February 2006. The total number of those ED presentations > 70 years of age was 17,901 (36.2%).

Our 2007 prospective audit of Geriatric presentations to the Gosford ED (Ref 4) has shown that these patients take on average 6 medications, with the most common symptoms or presentations being:

1. Falls 30%
2. Impaired mobility 33%
3. Delirium and confusion 29%

These presentations are preventable (Clare et al. Lancet 1999; 353:928)

1. Current ED practice routinely focuses on fractures or the injury sustained after a fall, while there is little systematic assessment of the underlying cause, functional consequences, and options for future care and falls prevention strategies.

2. Delirium in the elderly is:
   - common
   - life threatening
   - commonly multi-factorial
   - result in loss of independence
   - high morbidity and mortality
   - amounts for up to 49% of all hospital bed days
   - increases health care costs by at least $2,500 per patient
   - major contributor to inpatient falls in NSW public hospitals
   - major extra costs with rehabilitation and institutional care
   - is potentially reversible in a multi-disciplinary care setting (Inouye SK. NEJM 2006; 354:1157-65)
   - potential cost savings to Central Coast Health by early screening for delirium risk factors and management is estimated at $2.5 million per year for 2,500 medical admissions

Complex elderly patients with multiple comorbidities including physical, psychosocial and cognitive impairments present a major challenge to Public Hospitals and usually result in a prolonged, expensive and complex hospital stay.

It is not cost effective to put the majority of Health Funding for the care of the elderly into the acute hospital based system when the greatest need is in fact in the community. By failing to screen and address the needs of high risk Geriatric patients in the community, the Area Health Service is setting itself up for a "tidal wave" of complex, frail, Geriatric patients presenting to the Emergency Department who could otherwise have been safely and cost effectively managed in the community without the need for an acute hospital presentation.
1. Traditional Acute Geriatric Medicine Models of Hospital Care.

The traditional Acute Geriatric Care Model is not sustainable on the NSW Central Coast.

The collapse of Senior Staff numbers in the Department of Geriatric Medicine at Gosford Hospital as well as other Departments of Geriatric Medicine in Sydney based hospitals requires a rethink of how Acute Hospital Geriatric Care is managed.

There are difficulties in:
- the perceived profile and prestige of Geriatric Medicine.
- recruiting and maintaining Senior Staff levels of Geriatricians within acute public hospitals.
- attracting and recruiting Junior Medical Officers to train as Registrars and Consultants in Geriatric Medicine.

Some of the reasons for the difficulties in attracting, retaining and recruiting Geriatricians include:

1. The perceived heavy and demanding workload facing limited numbers of Geriatricians.
2. The unrealistic and unsustainable demands placed on Geriatricians by Area Health Services.
3. The lack of financial incentives for Junior Medical Officers (JMO's) to train in Geriatric Medicine and become Geriatricians. This includes the Medicare bias of financially rewarding medical procedures and investigations rather than holistic Geriatric medical care. This creates a significant financial disincentive for JMO's to train in Geriatric Medicine.
4. The Royal Australasian College of Physicians and Governments not controlling the numbers of sub-specialists trained based on the needs of the community. While the Central Coast Health Service has seen increasing numbers of complex frail Geriatric patients, it is still recruiting single organ Sub-specialist Doctors who do not participate in holistic multidisciplinary care of the elderly. This results in multiple sub-specialist inpatient Medical Consults for the same Geriatric patient which does not work to resolve the patients’ problems and does not produce a better health outcome. It is also very costly to the Area Health Service rather than having a single Geriatrician sort out the patient.
5. Geriatric patients are demanding clinically. Most Geriatric patients have multiple complex medical problems covering all medical sub-specialties including major Geriatric syndromes such as delirium, dementia, falls, fractures, incontinence, malnutrition and carer stress issues, as well as complex discharge planning.

Area Health Services have moved away from General Medicine and Geriatric Medicine to Single Organ Sub-specialist care which now does not meet the needs of the increasing numbers of frail elderly patients in our public hospitals and in the community.

Of concern is the over representation of Basic Physician Trainees entering into subspecialty single organ procedural specialties including Gastroenterology, Cardiology and Neurology rather than Geriatric Medicine.

There is a general reluctance of Physicians to take on complex elderly patients in the acute hospital setting, partly due to the demanding and onerous nature of Acute Geriatric care.

Early multidisciplinary holistic diagnosis and management of Geriatric patients with a view to early mobility and discharge planning is the most cost effective care model to achieve best health outcomes for an elderly patient in an acute public hospital setting.

Given the rapid ageing of the Central Coast population, Geriatric Medicine is now becoming core business for NSW public hospitals.

The current Acute Medical Model in Public Hospitals does not serve the acute older patient with multiple comorbidities well.
The concept of addressing a single organ problem without a holistic and multidisciplinary functional approach to assess all of the medical, physical and psychosocial aspects of patient care results in a prolonged, expensive and often complicated in-hospital stay and a high risk of early readmission within 28 days.

From July 2005 to April 2006 we have shown in our Acute Multidisciplinary Geriatric Medical Ward 6 at Gosford Hospital that their average length of stay was reduced from 11 days to 9.4 days and that the number of patients readmitted within 28 days of discharge from Gosford Hospital was 136 from Medical Ward 6 versus 159 from other subspecialty Medical Wards over the 12 month period.

Given the above challenges facing the Area Health Service I believe that **there should be 50% balance between acute hospital and community aged care services to meet the need**. This group of elderly should be targeted with comprehensive community care programmes to prevent the unexpected or inappropriate public hospital ED presentation when they could have been managed effectively and less costly as patients in the community.

**There needs to be a smooth transition and a continuum of multidisciplinary health care across 3 Geriatric medical settings including acute hospital, community and residential aged care facilities.**

The Commonwealth Government has realised the potential impact and cost saving of Transitional Aged Care packages on supporting frail aged people at home. The effectiveness and availability of community care packages for Geriatric patients discharged from acute public hospitals have allowed for early and successful discharge and prevented a so called “bed block” and inappropriate or premature nursing home placement.

Our new procedures for acute hospital Aged Care Residential Facility assessments (hostels, nursing homes and Aged Care Community Packages) has resulted over 12 months in a saving of 14,965 bed days at $600 cost per day with a **total cost saving to the Area Health Service of $8,979,000**. This is because of the early in-hospital ARCS (Aged Care Residential Consultancy Service) assessment for placement and early discharge to nursing home.

Multidisciplinary holistic care should also be accessible to those elderly living in the community in Residential Aged Care Facilities within the Area Health Service, not just those admitted to the acute hospital facility when in fact that very acute hospital admission could have been prevented by early community multidisciplinary care.

The following conditions will now provide a major challenge for the next 20 years for Central Coast Hospitals. These include:

- Dementia
- Delirium
- Multifactorial gait and balance disorders
- Falls and osteoporotic fractures
- Adverse drug reactions
- Malnutrition
- Postural hypotension (we have previously published that 50% of acute public hospital elderly have unrecognised severe postural hypotension contributing to falls and mobility within the hospital). *(Ref 5)*
- Osteoporosis
- Depression in the elderly

**Geriatric Medicine should be recognised as Core Business for NSW public hospitals.**
2. Acute Hospital Geriatric Care.
There are not enough Geriatricians to support an independent Department being on-call solely for Geriatric Medicine. My strategic plan includes empowering other Physicians to take on the role of Acute Geriatric Care working with Geriatricians on a multidisciplinary ward environment with the concept of “functional holistic care of the elderly”.

The Acute Multidisciplinary Ward 6 Model of Geriatric Care is a cost effective strategy to manage these complex elderly patients by undertaking the following principles:

2.1. Early mobility on day 1 to reduce falls risks and accelerate the early discharge process back into the community.

2.2. A daily early morning multidisciplinary board round to plan complex discharges and prioritise inpatient management to expedite a safe and effective discharge from the hospital into the community. Early discharge planning from day 1 of admission and prioritising the direction of clinical care will ensure an early discharge from hospital, a reduction in health care costs and an effective and safe discharge.

2.3. Develop expertise in major Geriatric Syndromes including delirium, dementia, falls, gait and balance disorders, malnutrition, postural hypotension, osteoporosis and adverse drug reactions.

2.4. Support for other Physicians through a limited and targeted inpatient consultation service, the priority looking at delirium and falls, the most complex and difficult to manage.

2.5. A limited take over of care service for complex Geriatric Medical patients from other units outside Ward 6 and for those well known to the Geriatricians to maintain continuity of care which provides the most cost effective management.

2.6. The empowerment of all other Physicians to be able to approve Hostel and Nursing Home - high and low care for their inpatients on consultation with Multidisciplinary Allied Health teams which has been shown to reduce inpatient health care costs and reduce length of stay.

2.7. Limited surgical consultation service to support the inpatient management of Geriatric surgical patients particularly with complex care needs including post-op delirium, major Geriatric syndromes and impaired mobility.

2.8. Providing clinical leadership, direction and management of complex medical and surgical consultations with a view to early mobility and safe discharge.

2.9. The average length of stay was reduced by 1.6 days in 2006 in the Acute Multidisciplinary Ward 6 compared to other general medical wards without a multidisciplinary approach. The potential cost saving here per year at Gosford Hospital for 2,500 medical admissions is 4000 bed days saved or $ 4 million in costs saved.

2.10. The numbers of patients readmitted to hospital within 28 days from Ward 6 was 136 versus 159 over 12 months in other General Medical Units outside Ward 6.

2.11. Early nutritional screening with the ‘Blue Placemat Programme’. Early identification of patients at risk of malnutrition and needing feeding assistance and nutritional supplementation has clearly been shown to reduce length of stay, and health care costs and improve health outcomes in these older patients. (Ref 6, 7)

2.12. For every $ spent on better nutritional care in the acute hospital system $5 is saved on reduced health care costs.

2.13. The Multidisciplinary Ward Team requires the following staff:
- 2 full time Physiotherapists
- 2 full time Occupational Therapists with the ability to do domiciliary consultations.
- 2 full time Social Workers
- full time Nutritionist, Dietitian
- Speech Pathology consultation work

This principle of multidisciplinary holistic care with early morning board rounds should be spread throughout the Medical and Surgical Units of the Acute Public Hospital. This would allow for effective use of acute hospital beds, early discharge planning and allow for Clinicians and Hospital Managers to instantly know the plans and estimated discharge dates for their entire acute hospital population once the data is entered electronically, daily. The advantage of this is to prioritise for patient staffing levels, bed numbers and community care packages.
3. Orthogeriatric Service to develop an equal partnership between the Geriatricians and the Orthopaedic Surgeons with the following principles.

3.1. The Orthogeriatric Service is a comprehensive consultation service working in the multidisciplinary environment not an in-house management service for the Orthopaedic unit.

3.2. Orthogeriatric patients reviewed through a formal inpatient consult process.

3.3. A multidisciplinary approach with early mobility.

3.4. The development of joint teaching ward rounds with both Senior Orthopaedic consultants and with the Orthopaedic Junior Medical Officers.

3.5. Empowerment of the Orthopaedic Unit to develop an interest and expertise in the care of the complex Orthogeriatric patient which is now core business for the Orthopaedic Ward.

3.6. The development of an innovative “Medical Management Arm” of the Orthopaedic Unit: 2 senior JMO’s (PGY2 or above) rotating through Orthopaedic Medicine, funded by Orthopaedic Surgery and directly responsible to the Orthopaedic Surgeons but also closely interacting with the Orthogeriatrics Unit. These JMO’s will get exposed to Orthopaedic Surgery, pre and post-operative care and also Orthogeriatrics and Geriatric Medicine. They will be ward based and will not have any role in the Operating Theatres. This is a new innovative approach to the management of Orthopaedic Surgical Public Hospital patients. The new Model of Care will be the Benchmark for comprehensive multi-disciplinary care of the Geriatric Surgical patient in public hospitals.

3.7. A separate JMO Theatre team assisting Orthopaedic Surgeons in theatre and in the Orthopaedic Outpatient Clinic.

3.8. The Area Health Service needs to recognise that the Orthopaedic / Orthogeriatrics Ward is really now a “medical high dependency ward” given the multiple serious comorbidities in these frail older people undergoing emergency surgery (Ref 8). It needs to be adequately staffed with appropriate after hours medical cover and have adequate Allied Health staff to allow early mobility and reduced length of hospital stay and better outcomes. This would require:
- 2 full time Physiotherapists
- 2 Occupational Therapists
- a full time Social Worker
- a full time Nutritionist
- a full time Pharmacist
- Speech Pathology consultation service

3.9. Outflows from Orthogeriatrics include:
- to General Rehabilitation wards
- Transitional Care Unit Wyong Hospital
- Slow Stream Transitional Care at Long Jetty or Woy Woy Hospital
- Take over of care at the Multidisciplinary Medical Ward 6
- Discharged home from the Orthopaedic Ward with Community Services

3.10. Orthopaedic Practice for Fractured Neck of Femur – Evidence Based Guidelines – by Orthogeriatric Team Gosford Hospital 2007 (Ref 9). We are the first group in NSW Health to produce comprehensive evidence based local guidelines for the best practice management of these complex frail older orthogeriatric patients.
3.11. Multidisciplinary Orthogeriatrics Surgical / Anaesthetic meeting. We are the first group to have a formal clinical management meeting with:
- all local Orthopaedic Surgeons
- all Anaesthetists
- ED Physicians
- Geriatricians to discuss improving the care of our Orthogeriatric patients.
We have already identified 3 key issues from our prospective audit of Orthogeriatric patients (Ref 8) at this meeting.

1. the need for a more aggressive perioperative blood transfusion policy to prevent the complications of anaemia in these patients
2. prioritising the Orthogeriatric patient on the emergency operating list to avoid delays to theatre which increases complication rates
3. improving osteoporosis treatment of the elderly which can reduce the fracture rate by 50% (Ref 10).
4. **Inpatient Mobility and Rehabilitation Programmes for Geriatric Patients.**

Elderly rehab at Woy Woy was unsustainable. This was because of:

- The lack of Senior Medical cover
- Lack of after hours medical cover
- Lack of on-site infrastructure including Pathology and X-ray to manage highly complex geriatric patients with multiple comorbidities and a low threshold for medical deterioration.
- The inevitable disconnection and withdrawal of Gosford Surgical and Medical teams from patient care, while waiting for a Rehab bed, with patients subsequently arriving on the Woy Woy Rehab Ward a week later when a bed became available with new or unrecognised Physical and Medical Complications including heart failure, renal failure and anaemia.
- Recognising the long delay until Geriatric consultation for Rehab and then the further significant delay before transfer to Rehab. The Rehab process should have been commenced on day 1 of admission to Gosford Hospital if the patient had been in the Multidisciplinary Acute environment thus obviating the need for Elderly Rehab.
- Elderly Rehabilitation needs to be conducted on the main hospital campus where medical infrastructure, resources and medical cover is available.

**The current options for early mobility and elderly rehab include:**

4.1. **General rehabilitation** under the Rehab Physicians at either Woy Woy Rehab or Wyong Rehab depending on levels of comorbidity and cognition.
4.2. Take over of care and mobility on the Multidisciplinary Acute Geriatrics Ward 6.
4.3. Early mobility on the Orthogeriatrics Ward S2.
4.4. “Slow Stream” mobility at Long Jetty or Woy Woy General Ward under the Career Medical Officer and multidisciplinary programme.
4.5. A more prolonged period of in hospital Transitional Care and mobility in the Wyong Transitional Care Unit.
4.6. Interaction with the Acute Post Acute Care Team with view to early discharge.
4.7. Referral to the Community Rehab Programme (at present limited to amputees, strokes and Parkinson’s disease).
4.8. Integration into Physiotherapy and Rehab Programmes within hostels and nursing homes and encouraging the further development of these programmes to assist in the early discharge of inpatients.

**The concept of Multidisciplinary Acute Care should be spread throughout all Medical and Surgical wards in Central Coast. It is the most cost effective approach to the early discharge of these patients giving them the best health outcomes.**
5. **General Medicine / Geriatric Medicine on call for the ED.**

Geriatric patients with multiple comorbidities cannot be selected to be admitted under a single organ subspecialty without an appropriate holistic multidisciplinary approach of care.

The model proposed would be a reversion back to on-call Geriatric / General Medicine for all Units, the primary on call model for the ED.

This would include at least 3 General Medical “Blue” teams on for 24 hours each taking a maximum of 10 inpatients before the next team is activated. If there were 21 teams available the on call commitment would roughly be about 1 in 7 which is manageable.

There could still be a Subspecialty Craft Group “orange” roster as a secondary roster for younger patients with single organ presentation for those patients who particularly need a subspecialty area of interest for their best medical care. **This would allow for the rapid admission of the Gosford ED Geriatric patients into a multidisciplinary environment to clear the ED.**

The empowerment of Physicians and Surgeons to understand and manage the complex geriatric patient will provide decreased length of stay and better health outcomes by preventing the unnecessary multitude of Physician subspecialty consultation for the same patient which is costly and does not produce good outcomes for the patient. If the geriatric patient had been in a multidisciplinary ward environment this would have obviated the need for a Geriatric Consult anyway.
6. **ED ASET Teams.** (Aged Care Services Emergency Teams)
The ED needs a multidisciplinary ASET Team for the early recognition of the high risk Geriatric ED presentation who may require acute hospital admission or those Geriatric patients who may be able to be discharged from the ED without admission.

The ED ASET Teams provide a comprehensive background cognitive and functional history and direction for medical care for the admitting General Medical Teams to facilitate early discharge planning for these types of patients. The ASET Team helps to coordinate care for Geriatric patients within the ED. They empower the ED staff to better manage these patients by developing awareness of major Geriatric syndromes and those high risk patients who cannot be discharged safely back into the community from the ED.

My vision includes the expansion of the Wyong and Gosford ED ASET Teams to include:

- 2 full time Career Medical Officers at each site
- a multidisciplinary Allied Health Team including Social Worker, Physiotherapist, Occupational Therapist and Pharmacist to provide acute multidisciplinary assessment and coordination of inpatient care
- to identify those high-risk Geriatric ED presentations who can be discharged directly back into the community
- have the ability to access hospital high and low care community packages for geriatric patients discharged directly from the ED back into the community
- **strategically following up high risk Geriatric ED presentations who may otherwise rebound into the ED without an appropriate follow up.**

If our multidisciplinary ASET Team can access the hospital based community services appropriately then **we can have a seamless transition between the Geriatric ED presentation and discharged back on the same day safely into the community with adequate follow up to prevent a rebound presentation back to the ED and an expensive hospital admission.**

The cost saving of ED admission reduction will offset the cost enhancement for the new staff.

For too long public hospitals have discharged complex and high risk Geriatric patients back into the community without adequate post-acute care follow up or community services to support the GP, hoping for the best.

The multidisciplinary ASET Teams at Gosford and Wyong will provide strategic follow up for key high risk patients to ensure they have adequate services to manage and home and prevent the avoidable ED presentation and acute public hospital admission.
7. **Community Geriatric Care.**

The majority of Geriatric Medicine is based in the community. It is inappropriate for the hospital to simply wait for the increasing numbers of frail geriatric patients to present as emergency cases to the public hospital ED.

The numbers of Geriatric ED presentations is expected to increase by at least 600% over the next 15 years on the Central Coast. Alternative strategies need to be developed to cope with the increase in numbers of frail older patients.

7.1. **The Geriatric Medicine Domiciliary Consultation Service Gosford and Wyong Hospital.**


Geriatric patients have difficulty accessing the Hospital Outpatient Clinics because of:
- poor mobility
- lack of transport
- poor hospital parking options
- cost of public transport
- difficult to access the Clinic because of gait and balance disorders
- cardiac or respiratory disease
- general frailty
- cognitive impairment
- behavioural problems thus excluding those patients from the Clinic.

Previous experience at Gosford Hospital shows that 30% of Geriatric Clinic appointments do not attend because of difficulties accessing the Clinic or forgetting the appointment.

**Public Hospitals have reduced Outpatient services which are essential for attracting College accreditation for Registrars in Advanced Training in Medicine. There is also lack of exposure to Outpatient or Domiciliary Medicine for JMO's working in the Public Hospital system.** This restricts their medical training and neglects community care of the elderly.

The advantages of a domiciliary consultation includes:
- Assessing the function in the patient’s own home environment.
- Opportunity to interview relatives, friends and carers for a collaborative history.
- A functional assessment of activities of daily living and falls risk in the own home environment.
- A detailed review of medications as the GP and hospital drug list is commonly inaccurate. Patients take different medications at home.
- Opportunity to review the optimal level of function and realistic goals for their home environment.
- It enhances the doctor / patient relationship.
- Cost effective.

My previous audit of the Domiciliary Consultation Service (Ref 11) has shown that up to 50% of these complex patients can be safely and appropriately managed in the community without the need for acute hospital admission saving the Area Health Service an estimated $1.4 million per year by avoidable admissions. Much of the Domiciliary Consultation work to support the General Practitioner includes:
- An accurate diagnoses and medical problem list.
- An appropriate cognitive and functional assessment.
- A falls risk assessment.
- A Multidisciplinary Management Plan.
- Reduction of adverse drug reactions (Ref 2).
- Impact of reduction in falls which will contribute to an ED presentation acute Public Hospital admission.
- Improving the treatment of osteoporosis in the frail elderly (Ref 10).
- Improving nutritional care of the housebound elderly (Ref 12).
Geriatric patients are seen in the community as new referrals from General Practitioners and Physicians and Surgeons from the public hospital.

7.2. I propose a new position, that of a CNS (Clinical Nurse Specialist) in Geriatric Domiciliary consultation, one for the Gosford Sector and one for the Wyong Sector. This new Specialist Nurse will work closely with the Community Geriatricians in assessing Geriatric patients in the community and coordinating appropriate care to maintain independence of patients at home and prevent unnecessary Gosford Hospital ED presentation and public hospital admission.

7.3. The CNS Domiciliary Consultation Nurse will:
- work with the Geriatrician in reviewing patients together.
- working up new referrals and follow ups prior to the Geriatrician’s home visit to streamline the domiciliary consultation process.
- strategically following up high risk and complex domiciliary consultations that require monitoring of new interventions and confirm that new services are in place.
- The CNS Domiciliary Consultation Nurse will work separately from the Aged Care Assessment Team and be directly responsible to the Community Geriatrician.
- The CNS Domiciliary Consultation Nurse will be able to take on delegated GP referrals from the Geriatrician and discussing those cases with the Geriatrician.
- Selective follow ups of Geriatric inpatients discharged back in the community.
(Domiciliary consultations are demanded by GP’s and by patients and families).

The Domiciliary Consultation Service challenges the way Physicians manage older disabled patients. The focus is on patients’ needs and function.

I believe that the “private rooms approach" with the Physician sitting behind a large desk looking at a frail older patient does not work. The retrospective audit of domiciliary consultations at Gosford over 6 months (Ref 11) showed of 140 domiciliary consultations (mean age 81 years, mean MMSE of 17.7) 77% seen at home, 13% in nursing home and 8% in hostel, only 3 of these patient were admitted acutely to Gosford Hospital through the ED, 5 were admitted to Woy Woy Rehab the majority having medication changes, community medical investigations and more community services.

The estimated number of ED presentations and acute hospital admission prevented by Domiciliary Consultations was at least 100, with a 10 day length of stay at least, the cost saving to the Area Health Service was $1 million every 6 months.

With domiciliary consultations there is the added benefit of early identification of adverse drug reaction. Our 2004 prospective audit of major adverse drug reactions causing acute hospital admission of elderly patients (Ref 2) showed that of 267 geriatric presentations > 75 years (average age 83 years) there were an average 6.2 medications taken per patient with a prevalence of 45.3% of major adverse drug reactions directly contributing to the acute hospital admission.

We would provide limited Specialist Consulting Room Outpatient Clinic follow up clinics for highly selected patients who can access the clinics. These will be generally younger and fitter type Geriatric patients (those with reasonable mobility and without significant cardiorespiratory disease) who have adequate transport and a carer who can take them in.

Those patients not suitable for Outpatient Clinics include:
- Hostel and nursing home residents.
- Those without advanced dementia, behavioural or psychological problems.

The majority of follow up patients will still need to be seen in the community.

7.4. I propose a Multidisciplinary community based team to support the Geriatrician Domiciliary Consultation
7.5. **The Occupational Therapist is key member of the Community team** to assess activities of daily living, cognition and the safety of the home environment. The domiciliary consultation service requires a multidisciplinary team to appropriately assess and manage these patients in the community particularly to prevent falls and ED presentations.

**Single interventions by Physiotherapy or Occupational Therapy are very powerful tools in falls risk reduction.** (Campbell J. BMJ 2005; 331:817- 820) A home based exercise programme and improving the safety of the home environment will reduce falls, fractures and ED presentations. This is a cost effective strategy targeting high risk Geriatric patients in the community.

**Even weight bearing exercises and rehabilitation in high care nursing home residents in the nursing home can reduce muscle weakness and functional decline, in this high risk group** – potentially reducing the risk of ED presentations with falls (Morris et al. J Gerontol Series 1999;54:M494 0 500; Fiatarone et al, NEJM 1994;300:1769 – 1775).

- **The Community Physiotherapist** will provide expertise in falls risk assessment, gait and balance assessment and of walking aids and together with the OT develop community based exercise and gait and balance programmes to reduce falls risk. Evidence based medicine confirms that this is a cost effective and powerful tool in the reduction of falls and presentation to the ED.

- **Social worker** will coordinate community care programmes and accessing community services.

- **The pharmacist will** have a critical role in the early identification of adverse drug reactions and drug interactions, reviewing medications and the safe prescription and delivery of medications for complex Geriatric patients in the community.
8. Electronic Medical Record

I have identified difficulties in accessing the medical records from the public hospital system both in hours and after hours. There is a lack of interaction and coordination of medical information between the Public and Private sector. There is a gap in information coordination between the public hospital and privately practising General Practitioners, Specialist Physicians and Surgeons.

8.1. Hospital Discharge Summary.

I have recognised the deficit in coordinating and sharing clinical information and therefore propose a complete transfer to electronic medical record. We have developed NSW’s most comprehensive functionally orientated electronic Acute Hospital Discharge Summary that is immediately available to all Physicians, Surgeons and General Practitioners on the local Intranet. It provides:
- a template for teaching Geriatric Medicine to other health professionals and for the GP.
- serves as a role model for improved Geriatric care by other Physicians and Health Workers.
- provides comprehensive direction for future care needs of the patients through our “Discharge Prognostic Flowerly Statement”, which gives a prediction of how the patient is going to fare once discharged from the acute public hospital system. (Ref 13).

8.2. Inpatient Consultation Reports.

All inpatient Geriatric Medicine consultations are electronic and available within 48 hours to General Practitioners and other involved health professionals outside the hospital. It serves as a teaching template for other health professionals and will serve as a building block for future improved medical care of these complex patients.

8.3. Domiciliary and Outpatient Consultation letters.

All of our electronic medical records are available 24 hours per day particularly through the ED which streamlines the early diagnostic decisions and management of Geriatric ED presentations. This will reduce waiting times for medical decisions, will avoid unnecessary duplication of medical tests and procedures, will avoid inappropriate drug prescribing and adverse drug reactions, will enhance the care of these older patients through the ED and save health care costs.

8.4. Weekly electronic Discharge Summary Review meeting.

Geriatric Medicine at Gosford is the only Unit within the Central Coast Hospitals which undertakes a weekly audit and review of all Geriatric inpatients discharge from Gosford Hospital.
- All electronic medical records are reviewed each week with the JMO’s and other Geriatrician.
- Inpatient management and discharge planning is discussed.
- Review and maintaining the standards of the electronic discharge summary.
- Teaching and discussion of key Geriatric Medical topics for JMO’s and medical students.
- A screening tool for all inpatient deaths to prompt senior Geriatricians for an inpatient file review (as per Area Health Guidelines) if there is an unexpected, complex death or adverse event.
- A comprehensive report on all patient discharges is sent to the Division of Rehab and Aged Care Monthly Patient Safety Review Committee meeting. This process enables internal audit and review of our clinical practice as well as an excellent teaching tool, particularly to maintain the standards of the electronic discharge summary.

8.5. We are the first group to produce such a report on all patient discharges to a Safety Committee. The report includes comments about:
- quality of the electronic discharge summaries
- discharge arrangements
- discharge medication reviews
- diagnoses list
- patient function on discharge
- the discharge prognostic flowery statement
- medical topics for discussion
- review of evidence based medicine topics

All the Department of Geriatric Medicine clinical letters are electronic and immediately available to GP’s, hospital staff and eh ED 24 hours per day.

Other electronic reports include:
- ASET report in ED providing a comprehensive plan for Geriatric admissions.
- Dementia Advisory Service including specialist nurse community dementia patient assessments with behavioural problems to support the GP in community management.
- Orthogeriatrics team assessment (in development)
- ACAT community report (in development). This provides initial cognitive, social and functional information for the GP and ED.

Our Geriatric Medicine Clinical reports average 3 pages compared to a single organ Physician report of 1 page. Together with the complexity of dealing with cognitively impaired Geriatric patients and their carers, Geriatric Medicine services require substantially more administrative and secretarial support staff than other medical units to function effectively.

8.6. DRG Casemix Funding.
The electronic discharge summary and weekly Discharge Summary meeting will ensure accurate diagnoses and medical problem list to capture appropriate DRG Casemix funding for Geriatric Medicine and Central Coast Hospitals. This will attract our fair share of Government funding for Geriatric Medical services.

For example, the inclusion of a malnutrition code in the electronic discharge summary will result in a favourable reimbursement of at least $ 1.67 million per year for just 30% of patients coded for malnutrition. We do know that 85% of Geriatric patients admitted to Central Coast Hospitals have some form of malnutrition. The estimated reimbursement under Casemix based funding for the malnutrition diagnosis alone for Central Coast Hospitals would be at least $ 4.75 million.

8.7. Advanced Care Directives (ACD).
This is collaboration between the Department of Geriatric Medicine and the Central Coast Division of General Practice which promotes the development of Advanced Care Directives with GP’s and their Geriatric patients.

The ACD is now electronic and immediately available 24 hours per day in the ED if the patient presents to allow for early and appropriate medical care based on the patients known wishes. This project improves the ability of the patient to tell us what type of medical treatment they wish to receive particularly those who have delirium and / or dementia who cannot consent.
We are developing strategic links with key personnel involved in the care of the elderly.

- **General Rehabilitation Medicine** in sharing and streamlining the inpatient consultation process, avoiding the duplication of both the General Rehab and Geriatric Medicine consultation on the one patient and sharing inpatient resources for rehabilitation and directing patients to the appropriate facility.

- The **Surgical Units**, particularly General Surgery, Vascular and Urology which have a large number of Geriatric patients.

- The **Orthopaedic Surgery** Unit through our Orthogeriatric Consultation Service.

- **Liaison Psychiatry and Psychogeriatricians** through the consultation process and appropriately directed patients for ongoing intensive PsychoGeriatric care at the Wyong Miri Miri PsychoGeriatric Unit.

- **APAC** with community care of the elderly and early discharge from hospital. Developing links with Acute and Post Acute Care Programmes to manage appropriate Geriatric patients both at home, in hostels and in nursing homes thus avoiding acute hospital admission where possible.

- Developing better links with the **Community Rehabilitation Programme** and expanding the resources of this team to treat patients with gait and balance disorders who could otherwise be discharged home early from the public hospital system, and / or to identify patients living in hostels or at home who would benefit from a home rehabilitation programme to reduce the risk of falls or fractures and to prevent an early ED presentation and acute hospital admission.

Ongoing strong links with our **Aged Care Assessment Team** and early domiciliary consultation of those patients identified at risk by referral through their General Practitioners. The Domiciliary Consultation Service can dramatically reduce adverse drug reaction and ED presentations by early management of these patients in the community.
10. Dementia Care Service Programme
The CADE Unit at Long Jetty Hospital will eventually transfer over to Aged Care Mental Health given their increased funding and resources but with support from the Wyong Department of Geriatric Medicine for a consultation process and after hours JMO cover.

- Dementia Advisory Service to support the GP, patient and family.
- Dementia Care Programmes including Dementia Carer Support Groups, Dementia Daycare. Published research clearly shows that appropriate dementia care dramatically reduces carer stress, prevents carer collapse and ED presentation of patients with advanced dementia. (Bruce et al. MJA 2002;177:186 – 188)
- I propose an enhancement in early cognitive screening with community based specialist CNS in Dementia to work with carers and GP’s in the community, both home and hostel / nursing home environment to help manage the complex dementia patients and the behavioural and psychological complications of the dementia. There will be one CNS Dementia Nurse in the Gosford Sector and one in the Wyong Sector.

The role of the General Rehabilitation Physician has changed over the last 15 years given the ageing population and the increasing number of Geriatric patients they now manage.

The Rehabilitation Physicians on the Central Coast are now seeing increasing numbers of Geriatric patients and successfully providing inpatient rehab programmes for these patients on the Rehabilitation Ward.

Unlike in some Sydney based hospitals, on the Central Coast, the Geriatricians and Rehabilitation Physicians have traditionally worked closely together sharing the workload.

There is a less distinct difference now between a “General Rehabilitation” patient and a Geriatric elderly rehab patient. The priorities for inpatient rehabilitation are:
- early mobility
- better functional outcomes for these frail patients.

I propose the following model of General Rehabilitation care:
- The General Rehab Physicians and Geriatricians share similar type of patients.
- The Geriatricians will take on more of the medically unstable highly complex cognitively impaired elderly.
- The Rehabilitation Physicians will take on those similar Geriatric patients but who are medically stable, less cognitively impaired and are able to participate in realistic rehabilitation programmes.

- Improving mobility of the frail elderly is an appropriate use of General Rehabilitation services. Early mobility is the key to early discharge from hospital.
- The General Rehabilitation Physicians have a special role in post-stroke rehabilitation.
- The General Rehabilitation Physicians are likely to take on patients requiring prolonged rehabilitation programme who could not otherwise be mobilised and improved on the main Gosford Hospital campus or through the other programmes including Transitional Care Unit at Wyong, Woy Woy or Long Jetty Transitional Care Slow Stream Hospitals.
- The future of Rehabilitation Medicine should be a unit based at Gosford Hospital and one at Wyong Hospital where there is adequate infrastructure and after hours medical cover and access to appropriate medical and surgical consultation services.
- Expansion of Community Rehabilitation Programmes for younger and Geriatric patients.
12. Education.
We have a strong education policy based on clinical leadership through clinical practice in the Acute Public Hospital system and in the community. The electronic medical record including our electronic discharge summary, domiciliary consultation and inpatient hospital consultation report serve as a useful teaching tool to improve Geriatric Medical care.

Our focus on teaching includes:
- General Practitioners through after hours education programmes
- Medical students through the University of Newcastle Geriatric Medicine Ward attachments
- Basic Physician Trainees teaching though the Northern Sydney Network rotation.
- Teaching of the Hospital Junior Medical Staff.
- Participation in the JMO Breakfast Teaching Sessions.
- Participation in the Grand Rounds.
- Participation in Physician Short Case practice sessions for the FRACP Part One Exam.
- Lectures for Community Nurses and other Community Health Workers.
- Teaching programme for the Aged Care Assessment Team.
- Research projects and audits.

These activities will improve the care of the elderly.
13. VISION FOR THE FUTURE.
- Geriatric medical care on the Central Coast will provide a coordinated and seamless transition of patients presenting to the ED, hospital admission, then back into the community with a safe early discharge and cost effective care.
- Early identification of patients at risk in the community to prevent an avoidable ED presentation and public hospital admission:
  - to improve their function and quality of life.
  - the provision of a high quality electronic medical record which reflects the high quality of care.
  - maintaining high quality of Geriatric Medical care through education programmes.
  - empowering the Public Hospital system to recognise that with the ageing population, Geriatric Medical care is becoming core business through multidisciplinary care supported by adequate Allied Health multidisciplinary teams both in the hospital ward and in the ED with a Mobile Multidisciplinary ASET Team and Community team that can follow up these patients in the community.

These programmes will allow for better care and better outcomes for older people with less hospital admissions thus reducing hospital health care costs and maintaining people functionally at home as long as possible.

All Medical and Surgical wards will have:
  - multidisciplinary teams and daily early morning board rounds to plan for early discharge of patients.
  - early mobility programmes for all Geriatric patients to allow for early discharge
  - the routine measurement of postural blood pressures on all Geriatric patients given that 50% have significant postural hypotension which contributes to falls in hospital
  - all patients will be weighed to assess nutritional status and glomerular filtration rate for appropriate dose adjustment of medications to reduce adverse drug reactions
  - comprehensive early nutritional assessment of Geriatric patients and adequate nutritional supplements and food delivery services within the hospital
  - early cognitive assessment of Geriatric patients presenting to the ED and then again on discharge
  - recognise that cognitive function relates to prognosis and predicted outcomes

The focus of medical care will be:
- preventing delirium in the elderly by early identification of risk factors for delirium:
  - dementia
  - history of cognitive impairment
  - history of delirium / depression
  - functional dependence
  - immobility, history of falls
  - sensory impairment – vision / hearing
  - dehydration
  - malnutrition
  - multiple medications
  - treatment with Psychoactive drugs
  - multiple comorbidities
  - history of stroke
  - Parkinson’s disease
  - metabolic derangements
  - fractures or trauma
  - infections
- reduction in adverse drug reactions in the elderly

- reduction in falls in the elderly by identifying key risk factors such as:
  - gait and balance disorders
  - delirium / dementia
  - postural hypotension
  - multiple medications
  - adverse drug reactions
  - unsafe environment
  - sensory impairment → vision / hearing / peripheral neuropathy
  - previous fractured neck of femur
  - osteoporosis
  - deconditioning, muscle weakness / wasting
  - malnutrition
  - work practice changes
  - equipment changes
  - staff education
  - improved treatment of osteoporosis in the elderly.

Every Geriatric hospital inpatient will have an estimated date of discharge from day 1 of admission and updated daily by the Multidisciplinary Team.

The hospital to move from Subspeciality Medicine to General Holistic Medicine.

Surgeons actively participating in Multidisciplinary morning Board Rounds to assess patients’ progress and discharge plans, and become involved in the medical management of their Geriatric patients through the “Medical Management Arm” of their Surgical Unit.

I have recommended to the Central Coast Health Medical Appointment Committee that all Senior Medical and Surgical appointments must demonstrate an interest and expertise in the care of the elderly within their subspecialty. Also, all Physicians should make some contribution to the General Medical Roster in the care of the elderly.

This White Paper details how multidisciplinary care of the elderly can be both cost effective and produce good health outcomes.
The potential total cost saving for Central Coast Health with these new models of care is estimated at $32.5 million per year.

Cost savings of $32.5 million per year for the new model of Geriatric Care:

- $5 million for 50% reduction of adverse drug reactions
- $4.73 million per year for DRG Casemix funding for the diagnosis of malnutrition in the elderly
- $10.6 million by reducing length of stay through improved nutritional support for the elderly (2,500 admissions per year)
- $4 million per year for reduced length of stay in a multidisciplinary Geriatric Ward environment
- $2.5 million for delirium screening and management per 1000 cases
- $1.4 million through domiciliary consultations and community care of the elderly - 140 hospital admissions prevented per year
- $1.8 million by 50% falls reduction through improved monitoring of standing blood pressure (30 fractured neck of femur per month admitted to Gosford Hospital)
- $2.5 million saved per year through Electronic Medical Record reducing length of stay (2,500 admissions)

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