The Bhowmick Innovation Model (BIM)

Introduction

The Bhowmick Innovation Model (BIM) is a means of redeploying current resources to meet the increased healthcare needs caused by the demographic growth in the numbers of elderly citizens.

The Bevan Commission has considered the BIM as one way of meeting this need, and would recommend this model as the basis for a standard of care of the elderly. The Bevan Commission recognises that other strategies have been developed in Wales[1], and believes all strategies should be measured against the standards laid out in this paper, namely:

- The delivery of excellent, safe care in the community to a higher standard than in secondary care.
- The delivery of new services through redeploying existing resources, at a net zero cost to NHS Wales.
- Patients and staff being satisfied that the new way of working is better.

The BIM is based on the successful innovative and collaborative configuration of services in the community setting, in Torfaen Advanced Clinical Assessment Team (ACAT) and Mon Enhanced Care (MEC) in Anglesey. Together ACAT and MEC have successfully delivered personalised, patient-centred care at home while saving their respective health boards in excess of £2.5m.

The issue at hand

Older citizens of Wales are the highest users of health and social services, accounting for two thirds of all emergency medical admissions[2] and accounting for almost 70% of acute hospital bed days. Hospitals are struggling to cope with the challenge of caring for this elderly population.

> "Despite patients over 65 making up the larger share of the hospital population, the system continues to treat older patients as a surprise, at best, or unwelcome, at worst. Much more can be done to prevent unnecessary

[1] For example, the 'Wyn Model' developed by Cardiff & Vale University Health Board.
[2] Royal College of Physicians (2012), *Hospitals on the edge? The time for action*, RCP: London

hospital admission and readmission, shorten length of stay and ensure the smooth and effective transfer of care for patients ready to leave hospital."[3]

The King's Fund has calculated that 70 pence in every pound spent by the NHS is spent on the management of the elderly and this is likely to increase[4]. The Office for National Statistics predict the number of people aged over 65 will grow by 39 per cent and the number of people aged over 85 is expected to double in the next two decades[5]. There is already a serious demographic bulge of the frail elderly and the 'oldest old' developing.

The high volume of admissions places huge pressures on A/E and MAU services. Frontline clinicians attest to daily 'fire-fighting' to find enough beds for all the admissions. This leads to elderly people being placed in unsuitable wards, moved repeatedly and even patients being discharged late at night. The complex needs of patients can be neglected, fuelled by a misconception held by hospital staff at all levels that the patient is in the wrong place and is a 'bed blocker'.

This undermines the dignity of people and increases the potential for harm. GPs report concerns about patients being discharged without their co-morbidities being addressed, resulting in many cases in multiple readmissions[6].

These issues are not unique to Wales. There is a developing consensus across the UK that change is necessary to meet the changing needs of the population. However, there are isolated pockets of good practice in Wales that could be replicated across the country.

An alternative way of meeting citizen needs

30-40% of bed occupancies are inappropriate and unnecessary if alternative facilities are available[7]. The BIM moves health, social care and voluntary assistance either to the citizen's home or nearer to their home, e.g. to community hospitals, thus avoiding unnecessary acute hospital admissions.

Care occurs at the point of need, i.e. the medical or social breakdown which normally triggers GPs to send elderly patients to A/E departments or seek direct admission to a hospital ward. Because there is consultant input at point of need, GPs are confident to use the services and the population is reassured that the care being offered is of a high clinical standard, perhaps even better than if a person was admitted to hospital.

---

[3] Royal College of Physicians (2012), p.3

[4] The King's Fund, *NHS Spending - The Future of Healthcare Spending*, The King's Fund: London [NB, this report is inaccessible online, and appears to have been withdrawn or superseded. Access attempted 13 February 2013]

[5] Cited in Imison, C. (2012) *Future trends*, The King's Fund: London

[6] Royal College of General Practitioners (RCGP) and The Health Foundation (2011) *Guiding Patients Through Complexity: Modern Medical Generalism*,

[7] Andy Burnham, *Whole-Person Care' A One Nation approach to health and care for the 21st Century* (speech to The King's Fund 24/1/2013), available from http://www.labour.org.uk/andy-burnhams-speech-to-the-kings-fund-whole-person-care,2013-01-24 [accessed 12 February 2013]

This is offering a different healthcare service, not the same services in a different way. The key elements are already in place, but the BIM gathers these disparate elements and gathers them into a dedicated resource to use them effectively.

So far the BIM has delivered the following results in two sites in Wales:

- Provided an alternative choice to acute hospital admission, which elderly people and the families prefer. The model delivers care at home faster, smarter and in a comprehensive way to be acceptable to the population.
- Provide ‘hospital at home’ with full clinical assessment by specialist nurses and care of the elderly consultant with rapid diagnostics at the patient’s home. Patients benefit from being in a ‘home bed’ as it is more comfortable and a more pleasant and secure environment for them.
- Maintaining dignity and privacy in a personalised patient-centred service to aid recovery and health gain.
- Creating a virtual ward in the community supervised closely by the team, consultant and the GPs.
- Reduced inappropriate admissions to acute hospitals by up to 80 per cent[8], thereby freeing beds.
- Reduced the problem of ‘blocked beds’ and delayed discharges.
- Reduce unnecessary hospital admissions from care homes.
- Reduce premature admissions of elderly to care homes, alleviating pressure on health and social services budgets.
- Exceeded the expectations of GPs and the population to deliver a “Rolls Royce service”[9].
- The MEC is estimated to have already saved the health board about £500,000. Savings have also benefited social services and the ambulance service. The Audit Commission reported the ACAT saved the health board over £2,000,000 between 2007 – 2008.[10]
- Improved health outcomes and greater independence for older people.

A full account of the success of ACAT is available in *Promoting patient choice and preventing unnecessary hospital admissions*, a BUPA foundation award submission.

A new way of caring for the elderly

The BIM (and other models of delivering care in the community) dependent upon the following:

- Bold leadership to implement change. There will need to be a steering board comprising the consultant, GP, director/head of social services, nurse director,

[8] NLIAH, Preventing hospital admission of the older persons - a collaborative alternative., available from http://www.nliah.com/portal/GoodPracticeOnline/GoodPracticeOnlineViewer.aspx?GoodPracticeOnlineID=253 [accessed 12 February 2013]
[9] Brindley, M (2008) Torfaen pioneer medics help keep elderly out of hospital, Western Mail, 17 November 2008
[10] Wales Audit Office (2009), *Unscheduled care: developing a whole systems approach*, Wales Audit Office: Cardiff. P.38 (Case Study F)

chief of voluntary alliances, and a joint business manager. The group can also recruit other experts.

- A clinical champion. This would be a specialist generalist, preferably a geriatrician. Having an expert clinician at the helm will give assurance to GPs and other services that the ‘virtual ward’ is a safe and viable alternative to hospital admission.
- The clinical champion will have to create a network to align the following groups:
    - GPs (arguably, the most important group)
    - District nurses
    - Ambulance services
    - Community MDTs
    - Secondary services, e.g. x-ray, haematology, radiology, palliative care services, old-age psychiatry
    - Pharmacists – both hospital and the community
    - Social services (at all levels)
    - Voluntary organisations offering care and support to the elderly and their carers
- Creating a single point of access to the service; this will require a **genuine commitment to integration** both within healthcare (primary and secondary change) and with outside partner organisations, e.g. social services.
- A dedicated team with expert nurses willing to participate in continuous education and training.
- Initial investment may be necessary to create the team to actually deliver the service. However, changes to service delivery and the formation of a team to deliver services were made with no investment in additional resources in both Torfaen and Anglesey.
- A co-ordinated communications approach to reassure the people of Wales that this will mean a better, more effective, safer and more sustainable service delivered more quickly directly to them.

The details of how the BIM has been developed in Torfaen and Anglesey can be shared, with much of the information already in the public domain. So far it has proven successful in semi-urban and rural areas, but it would probably deliver best results in urban areas with a higher population density and high levels of demand on existing healthcare services.

The suggestion is that the BIM is adapted as the basis for a national standard for NHS Wales, with executive directors in health boards being responsible for delivering it within a specified time-frame.

The following typical pathway outlines the way this model has worked in practice.

> Criteria for referral are: Patients who are not critically ill (e.g. with MI or stroke) but need urgent diagnostics and further assessments. These will be predominantly elderly and also adults with chronic conditions. Patients with critical illness **refusing** to go to hospitals can also be referred.

Operational process

GPs/Out of Hours services will be the sole agency to refer to the service. (District nurses, therapists, social workers and Care workers and Care Homes noticing a patient unwell are advised to contact GPs who will then visit patients before considering referral).

GP refers a patient through a single point of access and speaks with the advanced nurse practitioner (ANP).

Patients will be visited at home within 2 hours, although preferably much earlier, by the ANP followed by the care of the elderly consultant (COTEC). They will assess patients in their own home (home bed), care home or sheltered home.

The ANP and COTEC will undertake investigations, e.g. ECG, Oximetry, Glucometry, Urine Dipstix, bloodtests (taken to hospital), and expedite X-rays of chest or limbs and spine in Community hospital on the day. Blood results should be turned around and available within one hour.

Specialist imaging are expedited on the day or next day depending on the urgency.

Using the test results, the team formulate an action plan in discussion with the referring GP who does the prescribing. In some circumstances, the ANP can prescribe under the direct supervision of the attending COTEC.

Emergency social care, therapists, support from third sector organisations, and equipments are arranged on the day in discussion with the patient and the carer to ensure all services are personalised as per need.

A Virtual Ward Round is undertaken daily. The ANP will revisit and repeat tests if needed. The COTEC can also revisit if deemed necessary. There should be communication between the team and the GP after each revisit.

On average a patient needs 4 or 5 revisits. There is no time limit. The team stays involved until at Ward Round it feels recovery and health gain has occurred, at which point patients are handed back to GP and statutory services.

Patient, relative and GP satisfaction questionnaires distributed for measuring purposes.

The service is reliant on the co-operation of GPs and the rapid return of test results or facilitation of procedures such as x-ray by hospitals.

Key requirements & recommendations

Although this service has only been offered from 9-6, Monday to Friday it should be available 24/7 as 50% of admissions come through out of hours services or at night.

Health boards need to invest in enough community geriatricians to provide a sustainable service and deliver this care 24/7.

Measuring progress

To ensure that services are meeting the needs of citizens, the following data should be collected:

- Rate of elderly admissions to hospital
- Rate of community hospital through-put
- 'Bed blocking' rates (delays in discharge)
- Rate of care home admissions
- Patient, relative and GP satisfaction (quantitative and qualitative data)
- Amount of social services used in the community, e.g. home care packages

Ideally data will be collected before the service is launched to provide a baseline against which to measure the impact of the service and to see if the new service has improved patient care.

Once the service has been launched, the following data can also be collected:

- Number of people admitted to hospital within 4 weeks of being discharged from the 'virtual ward'.

A questionnaire to monitor satisfaction has been developed and tested by Betsi Cadwaladr University Health Board for use with MEC.

Additional KPI can be determined locally, depending on the needs of local organisations.

Conclusions

Older people with complex needs account for the largest spend, the most activity, and the biggest variation in quality and outcomes (as evidenced in the Francis Report). Older people also have the biggest interdependency between different services with all the inefficiencies that entails.

Two thirds of medical emergency admissions and 70% of hospital beds are occupied by the elderly. A significant number of these are considered inappropriate and unnecessary if there is an alternative.

The BIM is an example of an innovative community based integrated service aiming to ensure that older people receive the care and treatment at the point of need, whether that is medical, social or psychological break down. This treatment is delivered in the comfort of their home.

The service is Consultant-led with an expert team working in close collaboration with General Practitioners, Social Services and the voluntary alliance. Strong clinical leadership is key to success.

The programme provides expert assessment, urgent diagnostics and treatment in the patients` home-bed promptly on the day of referral with revisits and retesting as necessary, thus creating a Virtual ward.

The outcomes are the reduction of unnecessary admissions to acute hospitals, significant savings and, most importantly, ensuring the dignity of older people through offering them a genuine choice. These improved outcomes can be delivered within existing resources.

The BIM (or equivalent, where such equivalents exist) should be speedily adopted across Wales to meet the increased demands on the health service, in terms of changing population needs, establishing a sustainable service, and meeting challenging financial budgets.

Appendix A – Feedback from integrated partners

“I can honestly say that the way this initiative (MEC) is working under the inspirational leadership of Prof. Bhowmick is the most innovative and best of any model of care that I have ever seen. I have no doubt that MEC will prove to be a prime exemplar model of care ..."

Dilys Shaw, Chair of the Voluntary Alliance, Former CHC Chief Officer and Non Executive Director of Betsi Cadwaladr University Health Board

"I write on behalf of the Elected Members, Senior Officers and all staff in Adult Services at the Isle of Anglesey County Council to thank you most sincerely for your efforts, drive and immense success on the Island over the past year... So much has been accomplished in so little time – with MEC now clearly on the map and impacting on the lives of significant numbers of people."

Anwen Davies, Head of Adult Social Services

Feedback from GPs

" Prof Bhowmick moved to our area a year ago to lead an initiative in community care for patients who would previously have been admitted to hospital. During the past eight months I have referred patients to him and on each occasion they have received very prompt and expert assessment by Prof. Bhowmick at home. This has led to a variety of further investigations and treatments but on each occasion the hospital admission was avoided.. I feel Prof Bhowmick is an excellent clinician and my patients felt his professionalism and manner were exemplary." - DTW

"From the bottom of my heart I thank you for all your help and cooperation during the last few months and your achievement in setting up the MEC service. AS a Practice we are extremely grateful for the work which you have done." – HROP

“May I take this opportunity to thank you for your hard work setting up MEC, despite our scepticism which you have more than allayed." – EH

"You have built up a team from nothing and have engendered in the nurses a definite 'spirit de corps'. You have managed to obtain services from the secondary sector through your negotiating skills." – DJR

"A friendly, dynamic Doctor with a wealth of experience and knowledge set up 'hospital at home ' on Anglesey which has been a great success." – HE

Appendix B

Results from Torfaen
In the first year of the service the ACAT team assessed 1208 referred patients. 99% of referrals to the service are from the GP's.

The total number of visits (including preliminary clinical assessment, diagnostic visits, follow-up visits and hot clinic appointments) totalled 2,729 for the same period.

The age range of patients seen was 49 – 100 years. The number of hospital admissions prevented during this period was 975 i.e. approx. 80% of referrals.

Further data analysis suggests that over 90% of admissions were avoided up to 28 days post assessment.

The measurements used were:
- Monthly admission rates for admission to hospital for Torfaen patients over the age of 75
- Attendance rates for hospital based assessment units for the same client group
- The number of referrals into the proposed model
- The number of admissions from long term care institutions
- Qualitative data

(Adapted from http://www.nliah.com/portal/GoodPracticeOnline/GoodPracticeOnlineViewer.aspx?GoodPracticeOnlineID=253)

This paper was prepared for the Bevan Commission by Professor Bim Bhowmick, Professor Ewan MacDonald, assisted by Jon Matthias.