

Provision of Adult Balance Services

A Good Practice Guide

Provision of Adult Balance Services: A Good Practice Guide

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Foreword

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Improving Access to Audiology Services in England was published by the Department of Health in March 2007. It set out the vision for services for people with hearing and balance problems, and how the NHS needed to respond to the challenge.

The prevalence of 'dizziness' and imbalance, which are the manifestation of a wide array of medical diagnoses in the population is high, with an estimated 30 percent of the UK population thought to experience symptoms of dizziness or imbalance by the age of 65 years. Although most people experiencing dizziness and/or imbalance do not present to their GP, such symptoms are the commonest reason for visits to a doctor by patients aged over 75. Its presence is challenging for both healthcare professionals trying to identify and treat the problem and for patients who can often see many people in the healthcare system before being eventually diagnosed and started on appropriate treatment.

This good practice guide provides practical evidence based advice on how to improve people's access to, and experience of, balance services. It suggests how to reduce waits and unnecessary steps in care, so that people with balance problems receive high quality specialist services as quickly as possible. We recommend that balance services should be delivered in networks, so that as much care as possible is provided close to the patient's home, whilst there is efficient access to high quality specialist and supra-specialist skills and facilities as required. The guide is intended to support commissioners and service providers in tackling service quality and capacity constraints to deliver sustainable low waits.

It is the result of input from a large number of dedicated practitioners working in the health and social care system, with input from patient representatives and was brought together by the tremendous efforts of Professor Maggie Pearson. We are very grateful for their input and endeavours.

We do hope this guide will make a difference to patients who suffer from balance problems. Please use it to inform local dialogue and decision making.



Professor Sue Hill



Professor Linda Luxon

Executive Summary

The vision for services for people with balance disorders

1. The vision for services for people with balance disorders is for high quality, efficient and integrated services, which respond well to individuals' needs and are delivered as close to home as possible. The vision will be delivered through a network of services, in which local care delivered by staff with specialist expertise meets the majority of needs of people with balance disorders. Appropriate triage by the local service will enable seamless and rapid referral to specialist teams and centres for those with serious life-threatening or chronic, disabling conditions.

2. This is one of three documents setting out the Government's vision for the transformation of health services for adults with hearing difficulty. The first, *Transforming Adult Hearing Services for Patients with Hearing Difficulty*,¹ set out the overall vision and principles for the transformation of adult hearing services. A second sets out the vision for services for people with tinnitus.²

3. This document describes the vision of high quality care for people with balance disorders.

4. This document is based on relevant published evidence, professional consensus and service user opinion, and draws on

experience from local initiatives to improve balance services, including pilot sites resulting from the Department's Action on ENT Balance Programme. It provides advice for commissioners and service managers on establishing balance services for the first time, or restructuring them. The Good Practice Guide outlines the scale of the problem and introduces the concept of a national networked balance service providing a nationally equitable, quality service across the spectrum of types and severity of balance disorders.

5. The proposals aim to:

- improve primary care provision for this group of patients;
- increase primary care practitioners' awareness of balance disorders and the scope to treat them;
- improve the rate and appropriateness of referrals;
- reduce waiting times;
- eliminate unnecessary hospital attendances and investigations.

6. This should enable the NHS to deliver rapid, cost-effective services for patients with balance disorders which are easy for them to access and located as close to their homes as

1 http://www.18weeks.nhs.uk/Asset.ashx?path=/Audiology/Audiology%20good%20practice_June07.pdf

2 For 'Provision of Services for Adults with Tinnitus: A Good Practice Guide' see <http://www.18weeks.nhs.uk/Content.aspx?path=/achieve-and-sustain/Diagnostics/Audiology/good-practice>

possible as outlined in *Improving Access to Audiology Services in England*.³ It compliments the Department's published 18 week commissioning pathway for dizziness which is available on the 18-week website.⁴

7. Good local balance services, provided in primary and community care settings, can form the basis of an efficient networked balance service, and can radically reduce referrals and waits for more centralised services. The recommended establishment or restructuring of a balance service network involves:

- establishment of an efficient and effective local multi-disciplinary team skilled and trained in balance disorders with appropriate access to facilities to support medical evaluation and management, vestibular assessment, physiotherapy, psychological and administrative support;
- appropriate 'red flag' referral criteria, consistently applied by well-informed primary care practitioners to assure seamless and rapid transfer of cases requiring either urgent care or a specialist or supra-specialist opinion;
- appropriate triaging, according to agreed referral criteria, of patients with balance symptoms into five categories:
 - the majority with balance symptoms with or without any concurrent auditory or other temporally related symptoms or signs, requiring initial assessment and management in the local balance service
 - those with balance symptoms and associated neurological or cardiovascular symptoms or signs requiring seamless and prompt transfer to a neurological, general medical or cardiological service
 - those with balance symptoms and acute ear pain or discharge, requiring immediate transfer into an ENT service
 - elderly patients with falls and balance problems requiring assessment by the falls service. This assessment may initially be undertaken by a trained 'falls' nurse working in the community, who is also part of a multidisciplinary team comprising therapists and a geriatrician
 - complex balance cases which cannot be diagnosed or managed in the local balance service requiring specialist care.

3 <http://www.18weeks.nhs.uk/Content.aspx?path=/achieve-and-sustain/Diagnostics/Audiology/diagnostic-guidance#28094>

4 <http://www.18weeks.nhs.uk/Content.aspx?path=/achieve-and-sustain/Specialty-focussed-areas/Neurology/dizziness/>

8. Critical to the effectiveness of the network in improving the patient experience of symptoms and services will be:

- awareness amongst patients and GPs of the prevalence of dizziness and balance disorders, the distress which they can cause, and the positive potential for treatment and rehabilitation by specialist balance services;
- the delivery of local balance services by specialist multidisciplinary teams. At a minimum the team delivering the local services should include a doctor, audiologist and physiotherapist, each of whom is trained and skilled in balance;
- a specialist balance centre with more medical specialties to support the specialist balance team, and a wider range of diagnostic facilities;
- access to supra-specialist centres for those patients who need the facilities and specialties provided only there.

Background

9. The Report of the House of Commons Health Committee into audiology services (2007)⁵ considered the provision of balance services and emphasised the need to improve

the provision of care to patients with hearing difficulties, tinnitus and balance disorders.

10. A number of recent initiatives including the Department of Health's Action on ENT Balance Programme⁶ and the Royal College of Physicians' *Balance Disorders: Achieving Excellence in Diagnosis and Management*⁷ have raised awareness of the social and economic impact of balance disorders. The Department of Health's initiatives have paralleled these proposals to provide a safe, effective and responsive service for balance disordered patients. Professionally, ENT UK has emphasised the role of otorhinolaryngologists in serving this group of patients⁸ and the multi-disciplinary British Society of Audiology (BSA) Balance Interest Group has published standardised investigation protocols, while the newly formed BSA Vestibular Working Group Subcommittee aims to promote good practice.⁹

11. Whilst the focus of this good practice guide is on balance disorders, and the services required to manage them, it is recognised that some patients experience balance problems together with hearing difficulty and/or together with tinnitus. There are separate 18-week pathways and good practice guides for these,¹⁰ and patients experiencing more

5 <http://www.publications.parliament.uk/pa/cm200607/cmselect/cmhealth/392/392.pdf>

6 Department of Health 2003

7 <http://www.rcplondon.ac.uk/pubs/contents/f4a3564b-2454-45e9-9e20-38b7d48e6ae9.pdf>

8 Vestibular Services: Electronic Questionnaire Survey Results, April 2008, www.entuk.org 2008

9 Dr Rosalyn Davies, personal communication

10 For audiology pathways, see: <http://www.18weeks.nhs.uk/Content.aspx?path=/achieve-and-sustain/Specialty-focussed-areas/Audiology/audiology>

than one of these problems will require an integrated approach which follows the requisite pathways into and across the relevant services in parallel.

12. This document is presented in two parts:

- the first focuses on the challenge to transform services: the scale of the problem, the benefit of introducing appropriate systems and processes to enable effective service planning and scheduling, and an affordable workforce;
- the second introduces a new good practice commissioning pathway of seamless effective care for patients from initial presentation to final management, using a range of healthcare skills and professionals within a networked model of service provision.

Part one: The challenge to transform services

The scale of the challenge

The demographic pattern of balance disorders

13. The prevalence of 'dizziness' and imbalance, which are the manifestation of a wide array of medical diagnoses in the population is high, but there have been few epidemiological studies in the UK population. Reliable UK data are therefore sparse. 30 percent of the UK population is estimated to experience symptoms of dizziness or imbalance by the age of 65 years¹¹ and one in four adults in the community have 'significant' dizziness at any given time.¹² Although most people experiencing dizziness and/or imbalance do not present to their GP, such symptoms are the commonest reason for visits to a doctor by patients aged over 75.¹³ Although age is a major predictor of imbalance, the working age population also experiences a wide range of disorders, which may lead to referral to a specialised balance unit, where one exists.¹⁴

14. Dizziness can have a highly disabling impact, yet rehabilitation may not be offered if primary care practitioners do not understand the underlying causes and scope to improve symptoms and functioning. A random sample survey of working age patients in four GP

practices in North London revealed that 25 percent of 2064 respondents suffered intrusive dizziness. Eighteen months later, of the 480 reporting dizziness, 427 were traced and 53 percent suffered some degree of handicap which affected their ability to function normally.¹⁵ Of those employed, 8 percent had taken 10 days or more off work because of dizziness and of those unemployed at 18 months, 14 percent had stopped work because of dizziness. Of those who consulted the GP (22 percent), only 1 percent had received physiotherapy, despite current recognition of the effective rehabilitation role of physiotherapy in peripheral (inner ear) and central (neurological) dizziness and falls. Nine percent had received medication. These numbers are likely to increase with a progressively ageing population.

15. The German Health Questionnaire (a telephone survey study),¹⁶ which is acknowledged internationally to provide the best current data on prevalence of dizziness and imbalance in a developed country, demonstrated that the lifetime prevalence of vestibular vertigo, which specifically needs a specialised balance service, was estimated at 7.8 percent, the prevalence in any one year was 5.2 percent, and the incidence was 1.5

11 Roydhouse 1974, Davis and Moorjani 2003

12 Nazareth et al 1999

13 <http://www.nidcd.nih.gov/about/plans/strategic/nsrp.asp>

14 Egger et al 1992, Neuhauser 2007

15 Nazareth et al 1999

16 The German National Telephone Health Interview Survey 2003 screened a random sample of 4,869 participants for moderate or severe dizziness or vertigo. Almost 2,500 people (52%) responded. (Neuhauser et al 2005)

percent new cases per annum. In 80 percent of affected individuals, vertigo resulted in a medical consultation, interruption of daily activities, or sick leave. The overwhelming majority of people affected by vestibular vertigo, as opposed to more non-specific dizziness, experience significant distress and disability.

16. Dizziness in older people is associated with multiple predisposing risk factors: depression, cataracts, abnormal gait or balance, postural hypotension, diabetes, previous myocardial infarction and taking three or more medications. The proportion of patients with dizziness rises from just over 1 in 20 for those with one risk factor to just over a half among patients with four or more factors.¹⁷ Older people with dizziness typically have more than one type of dizziness and are more likely to have cardiovascular and cerebrovascular disease.¹⁸ Accurate diagnosis allows both appropriate treatment, thereby significantly improving the quality of life, and early recognition of life-threatening disease¹⁹

17. Falls are more common in those diagnosed with vestibular disorders than in the general population, particularly for those with bilateral

deficits.²⁰ Patients should be assessed for risk of falls at the time of diagnosis and those with an increased falls risk or rate should be referred directly to a falls clinic or specialised balance centre for diagnosis and falls rehabilitation. Simple (eg Get-up-and-Go) and more sophisticated tests of gait and balance (eg the Physiological Profile Assessment²¹) enable appropriate assessment of the older patient. A short form of this latter test is suitable for screening in primary or secondary care, taking about 15 minutes to administer and correctly classifying 75 percent of people into fallers or non-fallers.

18. Vertigo, imbalance and falls also have a significant economic impact, reflected in time off work,²² repeated medical attendances and costly investigations.²³ The cost of falls to the NHS and social services in over 60 year olds in 1999 was estimated at £981 million.²⁴

Complex referral pathways

19. Balance disorders with symptoms of dizziness and unsteadiness may be caused by a range of problems in different bodily systems, such that those patients who do present to their GP with balance symptoms may be referred to general physicians,

¹⁷ Kao et al 2001

¹⁸ Lawson et al 2005

¹⁹ Chawla and Olshaker 2006

²⁰ Herdman et al 2000

²¹ Lord et al 2003

²² Egger et al 1992

²³ MacDonald and Melham 1997; Halmagyi 2005

²⁴ Scuffham et al 2003

psychiatrists, geriatricians, neurologists, ENT specialists, audiovestibular physicians or to audiologist led non-medical services. Referral pathways can therefore often be protracted and complex. An internal audit at St George's Hospital, in South London, showed that 94 percent of patients referred to the specialist hearing and balance clinic had had at least one earlier specialist consultation: 63 percent had undergone specialist consultations in two other disciplines and 7 percent had had three such referrals.²⁵ Data from the USA reports that, prior to visiting a specialised 'balance centre' for diagnosis, the average patient had consulted four physicians, completed one imaging series, attended A&E on one occasion, had one psychiatric referral and spent in total 52 months in search of a correct diagnosis.²⁶ This emphasises the potentially poor experience for the patient of repeated steps in the referral pathway, until reaching the requisite specialist expertise, and the potentially poor use of healthcare resources.

20. The misdiagnosis and inappropriate treatment of benign positional vertigo result in significant costs to the healthcare system.²⁷ A study in Norwich has emphasised

the unacceptable delay from primary care presentation to treatment (average 92 weeks) and the human and financial cost of failure to manage this condition appropriately in the current system of referral.²⁸

21. The most common referral route for a dizzy patient is from primary care to an acute ENT service. Most patients can be diagnosed and treated by non-surgical means, whilst approximately 5 percent may also require surgical interventions. As there may not always be the time or specialist expertise and equipment for detailed assessment and management of balance disorders and dizziness in general ENT clinics, many centres have established dedicated 'Balance Clinics'. In parallel, less than 5 percent of dizzy patients referred to a specialist centre suffer symptoms arising from neurological pathology.²⁹ Nonetheless, in some areas, patients with dizziness may be referred directly to a neurological service from primary care or from other specialties for a second opinion, to exclude 'central' vestibular pathology.

25 Drs Ewa Raglan and Susan Snashall, personal communication

26 Presentation on Balance/Vestibular Disorders given by Dr Lewis Nashner at Ponte Verde Beach Florida 3 November 2006

27 Li et al 2000

28 Fife and FitzGerald 2005

29 Evaluation and management of the dizzy patient, L M Luxon, J. Neurol. Neurosurg. Psychiatry 2004; 75: iv45-52iv

Transforming services for balance disorders: a networked model

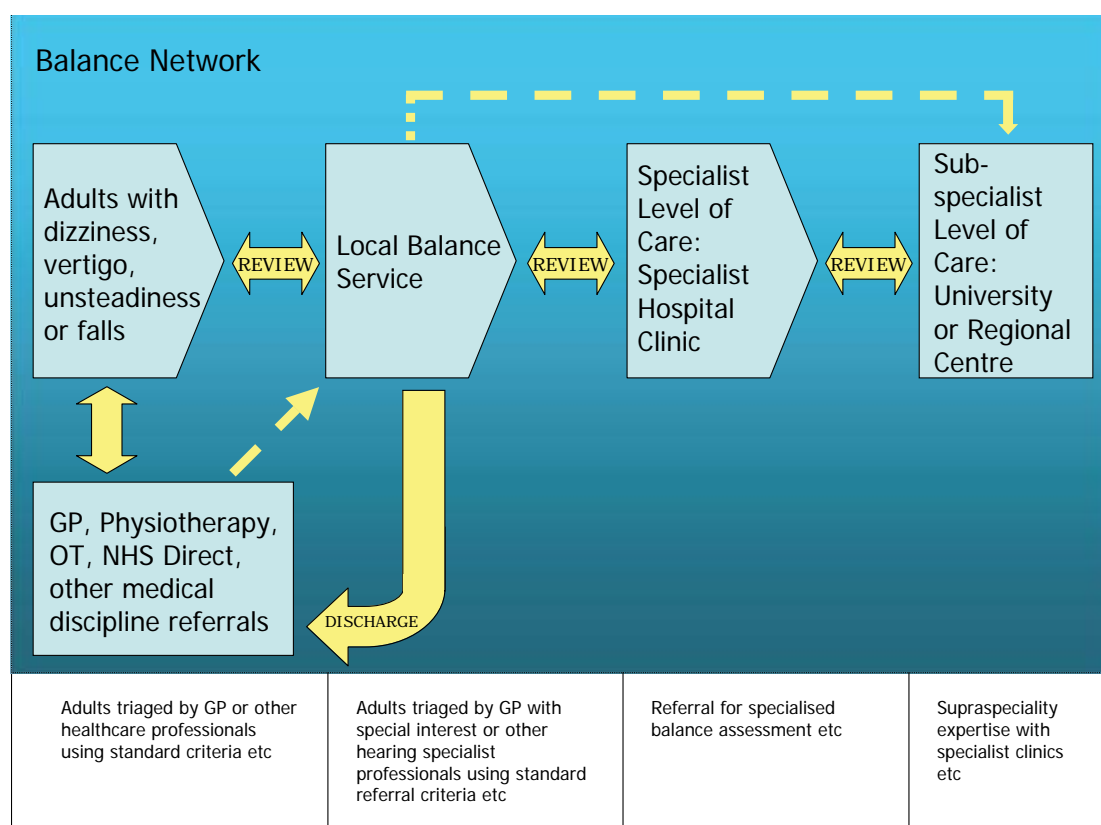
22. Given the low presentation and referral rates and complex referral pathways currently in some areas, a networked model of care which comprises local balance services, a specialist balance centre and supra-specialist centres for those patients who need them, should enable the delivery of a more patient-centred, efficient, and cost effective service.

23. A high level overview of the proposed network model of multidisciplinary care is set out in Figure 1. The local specification and implementation of the model by commissioners

and providers should be flexible, drawing on the principles set out here, but building on current resources, local strengths, service provision and workforce. A more detailed pathway, which sets out the network's component parts in more detail, is presented in Part Two.

24. The network would enable a range of professionals in a local multi-disciplinary team, skilled and trained in balance disorders, to provide an optimal, integrated service. An effective pathway through the network would enable the majority of patients to be assessed and managed as locally as possible in specialised balance services delivered in a primary or community care setting, with the ability to refer

Figure 1



patients to more specialised vestibular services and facilities in the specialist balance centre, or to supra-specialist centres providing more complex testing, rehabilitation and management options, as appropriate. Appropriate triaging within agreed protocols by the local balance service will enable rapid referral of patients with multiple or life threatening pathologies or systemic disease, or in whom a diagnosis cannot be assured to medical specialties, in the specialist or supra-specialist centres, depending on local arrangements. Those specialties include audiovestibular medicine, ENT, neurology, cardiology, and general medicine. For patients who are very distressed by their symptoms, psychological or psychiatric care might be indicated. Once high quality local balance services are developed and delivered by specialist staff skilled and trained in balance disorders, those referred to specialist and supra-specialist centres should be a minority of patients.

25. Good communication between all health professionals in the multidisciplinary team and within the balance network is essential, particularly for patients who are older, or have associated psychological symptoms, or whose

treatment involves a combination of medical and rehabilitative intervention.

26. Appropriate care for balance disorders requires a 'whole system' approach, to allow diagnosis of both otological conditions and systemic/neurological disease with balance manifestations. Since falls and fractures are a major risk for older people with dizziness or imbalance,³⁰ and an estimated 50 percent or more of falls are caused by balance problems and dizziness,³¹ there should be excellent interaction and liaison between Falls and Syncope Services and Balance Services at the local level.³² Where completely new services need to be developed, integration of balance and falls services may prove most cost effective, efficient and clinically robust.

27. Importantly, this transformed balance service would also meet the requirements of the National Service Framework (NSF) for people with long-term conditions,³³ the NSF for older people and the NICE guidelines for the assessment and prevention of falls in older people.³⁴

30 http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_4003066

31 Pothula et al 2004

32 see footnote 11

33 http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/Browsable/DH_4106042

34 <http://www.nice.org.uk/CG21>

28. To deliver the potential benefits of the networked model of care, good practice in providing care for adults with balance disorders includes:

- a challenge to existing practices and a transformation of services to ensure that there is good practice evenly across the country;
- maximum use of healthcare professionals and resources to provide cost effective services to meet the needs of patients with balance disorders;
- minimisation of risks to patients and staff in taking forward these changes;
- use of service improvement techniques, including application of lean techniques and tools developed by the NHS Institute for Improvement and Innovation;
- support for commissioners to deliver the 18 weeks target;
- professional development for all healthcare professionals working with this group of patients. It will require a long-term programme of integration and standardisation of appropriate standards of knowledge and clinical competencies across the professional groups, with top down support in the initial stages.

Achieving the vision

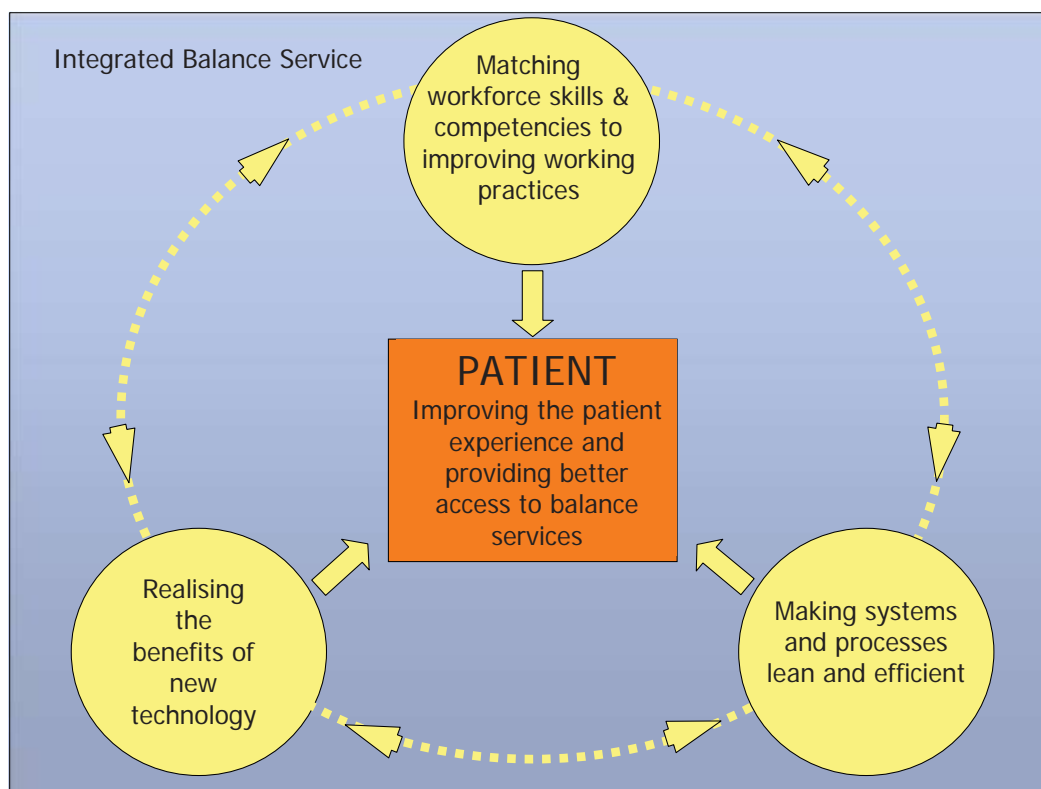
29. For those patients with dizziness and imbalance who present to primary care and require specialised care, referral patterns have resulted in long waiting times and pathways and variable outcomes. A specific, dedicated care pathway for dizzy and/or imbalanced patients served by specialised medical and audiological staff would reduce waits and provide a more cost effective and efficient service for patients. It would also alleviate pressure on ENT, neurological services and diagnostic services, by reducing inappropriate or unnecessary referrals and requests for diagnostic tests, such as “routine” MRI.³⁵

30. Within the networked model of care, services can be transformed to deliver the vision by:

- applying existing knowledge about how to improve *systems and processes*;
- ensuring the use of the most up to date *technology*; and
- introducing a competent, productive *workforce*, skilled in diagnosing and managing dizziness and balance disorders and able to deliver the correct procedures and processes at the appropriate skill level.

³⁵ MacDonald and Melham 1997; Halmagyi 2005

Figure 2



Systems and processes

Planning service capacity

31. Local need and activity levels need to be understood, to plan the capacity required for a newly established or improved balance service, with short waiting times.

32. Commissioners should therefore ensure that providers:

- generate awareness amongst patients and primary care practitioners that dizziness and balance disorders are amenable to treatment, and should be reported and managed;
- collect and analyse demand data for patients with balance disorders presenting to general practice and referred to ENT, Neurology, Audiovestibular Medicine, Audiology, Geriatrics, General Medicine or Psychiatry services in order to determine the rate of referral to these various services and the inter-referrals between services;
- maintain computerised data sets which enable understanding of referral trends by recording the type of referral, referral source, including specialty, referral date, appointment date, attendance record, symptom and diagnostic coding and waiting and/or clearance times;

- understand and support the provision of balance services by an appropriately trained multi-disciplinary team;
 - are able to meet demand and future increases through appropriate use of patient management systems;
 - utilise data to inform the redesign and development of balance services to ensure that access is improved and that the flow of patients into and out of the service is flexible, efficient and timely.
33. Having established the scale of the challenge locally on the basis of an estimation of need, it will be necessary to identify the essential components to support an integrated balance service, including efficient systems and processes, the specification and application of new technology, and the multi-disciplinary workforce required, including skill levels.
34. In the Action on ENT Balance Programme,³⁶ 24 pilot sites reviewed current services, using Modernisation Agency tools and techniques, making changes to service delivery and working together to define good practice

Three pilot programmes were highlighted as demonstrating trials of alternative models of patient care allowing access to more rapid rehabilitation for specific cases of imbalance

- **York**, where a balance service was provided by physiotherapy and patients were referred from primary care to a physiotherapist and audiologist, who undertook diagnostic tests and instituted a rehabilitation programme. Patients had access to a balance consultant if they requested it, or if there was a protocol driven clinical indication;
- **Kings Lynn**, where a balance service was provided by an assistant technical officer, based in a GP surgery, who organised basic vestibular rehabilitation following a clinical protocol. Referrals were received directly from general practitioners. However, the number of referrals to the service was remarkably low and it seemed that general practitioners had not been appropriately informed of the available service;
- **Leicester**, where a network was developed of healthcare professionals in a local GP's surgery (physiotherapists, audiologists, occupational therapists, practice nurse), who could treat patients with balance symptoms with basic vestibular rehabilitation. Any of these practitioners could refer to a 'second level' provided by an audiologist and physiotherapist, who, in turn, on the basis of 'red flags' could refer to the specialist one-stop balance centre at Leicester, which was run by an ENT consultant.

in balance services. Although there was no audit of outcome, quality assurance or sustainability, some novel approaches were piloted. The results demonstrated an average reduction in waiting times, from months to four weeks by reorganisation of services provided by healthcare professionals with appropriate clinical competencies in balance. Local referral criteria with 'red flags' indicated immediate referral to a consultant specialist from local community based assessment and management centres.

Improved triage and referral criteria

35. Clear and consistently applied referral criteria are a key element of service transformation processes, supporting equity of provision and ensuring that patients with defined symptoms flow as quickly as possible into the most appropriate service.

36. It is essential that there is audit and review of diagnoses, referral patterns, management and outcomes of dizziness in primary care, to support and develop local services for patients with dizziness and balance disorders. However, in 2003, data supplied by 21 General Practitioners across the country with a Special Interest in ENT, caring for some 180,000 patients, indicated that on average they saw 134 patients with balance problems each

month, 82 percent of patients were managed within general practice, but there were no reported diagnoses, and outcomes were not measured.³⁷ A systematic review of vertigo and dizziness in general practice concluded that there was no definitive information about the types of vertigo and dizziness seen in general practice, or how they were managed. No information was available about numbers referred to hospital for vertigo, but less than 10 percent of cases of dizziness were referred to specialist care.³⁸ This underlines the importance of GPs being made aware of the scope for services to intervene and improve balance disorders and the quality of life of patients with these disorders.

37. Bird and colleagues reported that referral for dizziness was less likely in the older population and that 17 percent of management decisions were deemed 'inappropriate' according to local criteria.³⁹ They suggested that 'further training for GPs and evaluation of therapeutic needs of elderly dizzy patients' is needed. The multi-system pathology of dizziness and falls in the elderly requires a low threshold of referral to appropriate geriatric services linked to a falls and balance service. GPs themselves have argued for better access to balance specialists and one stop dizziness clinics, suggesting that this would improve the

37 Dr Gordon Hickish, personal communication

38 Hanley et al 2001

39 Bird et al 1998

40 Jayarajan and Rajenderkumar 2003

quality of care for dizzy patients and would be cost effective.⁴⁰

Managing waiting lists

38. An efficient clinical service with reduced waiting times can be achieved by adopting efficient processes, lean thinking and systems, using management strategies developed by the Modernisation Agency and more recently the NHS Institute for Innovation and Improvement.

39. Waiting lists can be prospectively and actively managed by the use of patient tracking lists which enable:

- development of a system which calls patients for appointment and later reminds them of the date and time of their appointments, including by text message;
- efficient waiting list management and scheduling of appointments;
- appropriate one stop arrangements for complex and expensive vestibular tests (eg rotational testing) in specialist hospitals and tertiary services;
- immediate access to vestibular rehabilitation and psychological support for patients after diagnosis;
- better management of those who do not attend appointments (DNAs);
- immediate rebooking of cancelled appointments.

40. In addition, to maximize the benefits of IT in managing waiting lists, service managers should ensure that the balance service:

- engages with the Trust's IT department;
- understands how the balance service integrates with the patient management system, including the 'choose and book' pattern of referral;
- receives adequate training to ensure that staff are able to use the systems optimally.

Technology

41. Innovative technology has been highlighted by the Government as critically important in delivering services for 21st century healthcare. This is an important area of research and development for vestibular medicine, which still relies heavily on diagnostic techniques established in the last century.

42. A detailed oculomotor clinical examination is key to vestibular diagnosis and the use of a video-nystagmoscope to observe magnified eye movements [ie without fixation] may facilitate interpretation of eye movement abnormalities in primary care. Training videos of the diagnostic features and exact management strategy for common vestibular disorders (eg benign paroxysmal positional vertigo and the appropriate particle repositioning procedures) and e-learning

41 Pavlou et al 2004

42 Whitney et al 2005

modules will be available and can facilitate good practice in primary and community care.

43. Specialised vestibular centres should be equipped with a full range of visual, vestibular, balance and audiometric equipment to allow assessment of the labyrinth, eighth nerve and central vestibular connections and interactions and evaluation of rehabilitative strategies and outcomes.

44. It has been shown that certain balance symptoms (eg visual vertigo) do not respond to physical exercises alone; but in combination with dynamic visual stimulation, significant improvements are noted.⁴¹ Evidence suggests that mechanical and novel physiotherapy interventions such as virtual reality⁴² and visual flow stimulation can promote improved vestibular compensation and rehabilitation, particularly when the patient experiences visual vertigo. Supra-specialist balance centres should have access to such equipment.

45. Information regarding evidence-based advances in vestibular rehabilitation should be easily accessible to practitioners.

Workforce

46. The key factor in the provision of an effective, efficient balance service network is an integrated, seamless multidisciplinary team which may be comprised of a primary care physician[s] with a Special Interest and skilled and trained in balance disorders, audiologists, audiovestibular physician,

otorhinolaryngologist, neurologist, psychiatrist, behavioural therapist/psychologist, nurse, falls nurse, physiotherapist trained and skilled in vestibular therapies and clinic coordinator/ clerk. An occupational therapist may provide invaluable support when return to work is an issue, or if home modifications are required to allow the patient to carry out activities of daily living long term. The team should meet regularly to evaluate the effectiveness and efficiency of the combined service, audit outcomes and discuss complex cases/methods of service improvement.

47. In addition, the delivery of a high quality service which can assess and treat patients' balance and dizziness problems as quickly and effectively as possible requires a primary care workforce which is aware of and alert to balance and dizziness problems, and recognises the positive potential to improve patients' symptoms and experiences through treatment and rehabilitation.

48. The aim of the transformation of the workforce is to provide a greater number of appropriately skilled professionals to deliver the various components of the balance service and to ensure optimal efficiency and efficacy at every level of care across the country, limiting the current overdependence on specific professionals and a limited number of centres.

New or expanded roles

49. A range of redesigned and new workforce roles have recently emerged in audiology

service developments. Many of these expanded roles will impact upon the provision of both audiology and balance services. Some examples include:

- wax removal by audiologists to reduce the number of extra appointments for vestibular tests, and the number of journeys for patients;
- empowering clerical staff to manage referrals and improve scheduling of appointments to ensure that patients are seen by the most appropriate team member as quickly as possible;
- primary assessment and management of balance disorders in primary care or the community, rather than in hospital clinics;
- audiologist led balance clinics;
- development of Audiovestibular Medicine to complement current surgical and audiological skills in the multidisciplinary team supporting the balance service.

50. Expansion of the role of healthcare professionals will require additional, appropriate training and approved clinical competences to enable the healthcare professional, with the agreement of their multidisciplinary team, to expand their role beyond that of their traditional professional boundary. This will enable optimal and efficient use of human resources, which will vary locally depending on the skills and competences of individual staff members.

Education and training

51. Well-informed primary care and local balance service staff will be key to the success of transforming or establishing an efficient and effective balance service, with the requisite competences in initial vestibular assessment, examination and management strategies. There is an immediate requirement for improved training with the establishment of appropriate courses. Standardised education across the relevant health care professionals, together with evaluation of competences, should be introduced at the undergraduate and specialist post-graduate levels for medical, audiological and physiotherapy staff.

52. Any professional (nurse, physiotherapist, occupational therapist, audiologist) who is implementing a vestibular rehabilitation programme requires specialist training. Prior to implementation of a new service, professionals should attend an accredited dizziness course which will involve hands-on vestibular rehabilitation training, as well as education regarding types of vestibular disorders, investigative tests, and the interaction between emotional state and vestibular symptoms. A recognised and standardised assessment of competences for all professionals should be established and met by those working in the field.

Part two: A new good practice commissioning pathway for balance disorder services

53. In commissioning balance services in response to their local population's needs, commissioners should ensure that they have identified and addressed the diverse range of patients' circumstances, in terms of race, first language and other cultural considerations, age, gender and disability in order to promote equal access to services and reduce health inequalities. They should consider the impact of any proposed changes in terms of whether they will have a different impact on different groups, and whether there might be an unexpected negative effect. The nature and diversity of the balance service workforce may need to be addressed to ensure that all service users' needs and requirements, including language spoken, can be met.

54. This network model of balance services incorporates a number of service transformation elements, including:

- multidisciplinary working;
- expansion of the role of audiologists;
- increased provision of care local to the patient;
- seamless provision across the network from primary through to supra-specialist care;
- reduction in the burden of overstretched hospital specialties;
- ability to deliver rapid treatment following presentation, to meet the 18-week referral to treatment target.

55. Good local balance services, provided in primary and community care settings, can form the basis of an efficient networked balance service, and can radically reduce referrals and waits for more centralised services, important in the sustained delivery of an 18-week referral to treatment pathway. The recommended establishment or restructuring of a balance network involves:

- establishment of an efficient and effective local multi-disciplinary team skilled and trained in balance disorders with appropriate access to facilities to support medical evaluation and management, vestibular assessment, physiotherapy, psychological and administrative support;
- appropriate 'red flag' referral criteria, consistently applied by well-informed primary care practitioners to assure seamless and rapid transfer of cases requiring either urgent care or a specialist or supra-specialist opinion;
- appropriate triaging, according to agreed referral criteria, of patients with balance symptoms into five categories:
 - the majority with balance symptoms with or without any concurrent auditory or other temporally related symptoms or signs, requiring initial assessment and management in the local balance service
 - those with balance symptoms and associated neurological or cardiovascular symptoms or signs

requiring seamless and prompt transfer to a neurological, general medical or cardiological service

- those with balance symptoms and acute ear pain or discharge, requiring immediate transfer into an ENT service
- elderly patients with falls and balance problems requiring assessment by the falls service. This assessment may initially be undertaken by a trained falls nurse working in the community, who is also part of a multidisciplinary team comprising therapists and a geriatrician
- complex balance cases which cannot be diagnosed or managed in the local balance service requiring specialist care.

56. Critical to the effectiveness of the network in improving the patient experience of symptoms and services will be:

- awareness amongst patients and GPs of the prevalence of dizziness and balance disorders, the distress which they can cause, and the positive potential for treatment and rehabilitation by specialist balance services;
- the delivery of local balance services by specialist multidisciplinary teams. At a minimum the team delivering the local services should include a doctor, audiologist and physiotherapist, each of whom is trained and skilled in balance;

- a specialist balance centre with more medical specialties to support the specialist balance team, and a wider range of diagnostic facilities;
- access to supra-specialist centres for those patients who need the facilities and specialties provided only there.

Primary care

57. Within the network, it will be important that GPs are aware of the prevalence of balance disorders, and of the positive scope for treatment. If GPs are unsure of the diagnosis or see no rapid improvement in symptoms over four weeks, they should refer the patient to the local balance service. There should be clear criteria and protocols for patients presenting to GPs who should be immediately referred on to the local balance team or to the specialist centre.

The local balance service

58. In the local balance service, patients may present from primary care, the independent sector or other medical disciplines, eg a falls clinic, if provided separately.

59. The local balance team may include:

- a GP with a Special Interest in Balance Disorders, or an outreach audiovestibular physician or ENT specialist,
- an audiologist,
- a physiotherapist.

60. In some areas, medical consultants with a special interest in balance deliver outreach clinics in primary care-based facilities with the requisite equipment, thereby developing the understanding of GPs and other primary care staff of balance disorders and the scope to treat them. It is also important that psychological support can be given within the local service by a practitioner [who need not be a psychologist], but who has appropriate training and supervision by a psychologist, and is able to screen for affective disorders [anxiety and depression].

61. The primary screening assessment and triage may be undertaken by a doctor or other healthcare professional with specific training and documented competences in vestibular and balance assessment, testing and rehabilitation techniques. Basic routine audiometric and vestibular tests can be carried out and management of 'simple' vestibular disorders such as benign positional vestibular vertigo and uncomplicated vestibular neuritis would be undertaken. Those with additional hearing difficulty or tinnitus will also need to have those problems addressed, accessing in parallel locally commissioned services informed by the 18 week commissioning pathways.⁴³

62. An assessment of balance requires four key areas of examination, which may be undertaken by the doctor within the local balance service:

- a medical history highlighting the nature of imbalance, triggers, duration of symptoms, association of neurological, cochlear or cardiovascular symptoms, concomitant general medical disorders, recent trauma, drug, family and past medical history;
- general medical examination including pulse rate and rhythm, lying and standing blood pressure, gross neurological examination including fundoscopy, cerebellar signs together with vibration and proprioceptive sensation;
- balance examination: vestibulo-ocular reflex, oculomotor examination, visuo-vestibular interaction, Romberg, stance and gait tests;
- appropriate and relevant blood tests and/or other investigations which may include EEG, ECG or MRI for example.

63. In addition, screening for affective disorders should be undertaken.

64. The facilities and equipment required for the local balance service include:

- pure tone audiometry
- videonystagmography/
videonystagmoscope
- microscope with microsuction
- ophthalmoscope

⁴³ See: <http://www.18weeks.nhs.uk/Content.aspx?path=/achieve-and-sustain/Specialty-focused-areas/Audiology/audiology>

- office rotating chair
- snellen chart
- balance foam cushion
- tuning fork
- sphygmomanometer for lying and standing BP

65. In the first level of care the common conditions of benign paroxysmal positional vertigo, vestibular neuritis and migrainous vertigo could, in most cases, be managed. A patient with sudden onset vertigo, without any associated symptoms or signs in any other system, with or without horizontal, unidirectional vestibular nystagmus⁴⁴ obeying Alexander's Law and with no other balance or eye movement abnormality, may be provided with a trial of vestibular rehabilitation. Similarly, a patient with characteristic positional nystagmus clearly attributable to a specific semi-circular canal may be treated with a particle repositioning procedure without the requirement for further investigation or intervention. A patient with clear cut migrainous vertigo could be treated with antimigrainous drugs and receive vestibular rehabilitation physiotherapy. With appropriate training, these strategies could be undertaken by a competent practitioner in the local (first level) balance service.

66. Vestibular rehabilitation in the community may be efficient, and effective.⁴⁵ The therapist providing treatment must have appropriate training to be able to assess the patient to identify impairments, symptoms, and limitations to activity which need to be addressed during therapy. The therapist must also be able to use validated questionnaires for symptoms of dizziness and unsteadiness, functional and balance scales, and be able to perform an accurate gait observation analysis. S/he must also be able to provide suitable customised exercises tailored to each individuals' symptoms for best results. A customised programme has been shown to provide greater benefit compared to a generic exercise programme, as evident in both an individual's reported experience of symptoms and more objective balance tests.⁴⁶ The programme should provide exercises to improve movement and/or visually induced symptoms, postural stability in standing and whilst walking, and to promote return to activities of daily living as necessary.

67. Patients should be provided with follow-up appointments to monitor improvement, progress the exercise programme as necessary, and discuss any concerns or queries. Compliance with vestibular rehabilitation programmes is frequently poor outside specialised units or in the absence of

44 an involuntary, rhythmic oscillation of the eyes, often from side to side, with a slow eye movement in one direction followed by a fast return movement in the opposite direction

45 Walsh et al 2007

46 Badaracco et al 2007; Black et al 2000; Shepherd and Telian 1995

directed and supported therapy programmes.⁴⁷ To promote motivation and compliance, patients should be provided with a contact telephone or email address to discuss any issues which they may have between appointments, concerning their vestibular rehabilitation programme.

68. In older patients with balance disorders and/or falls, a multifaceted approach emphasising strength and balance exercises, drug review and occupational therapist input to improve home safety is most effective and can reduce falls by about one-third.⁴⁸ Studies have shown that for stability to improve, balance must be stressed by exercise programmes that include a change of visual, vestibular and somatosensory inputs.⁴⁹ Therapists should aim to expose patients to a wide variety of environments and situations, so that they learn specific strategies to counter threats to their balance.⁵⁰

69. Physical interventions have an important role to play in improving balance disorders. A single intervention in older patients comprising an individually tailored programme of physical therapy in the home delivered by a physiotherapist can produce a 47 percent reduction in falls, fewer injuries and improvements in both balance and sit-to-

stand.⁵¹ Other effective interventions include a Tai Chi exercise programme, which over six months reduced the risk of falls and improves balance.⁵²

70. Whilst these proposals for a local balance service are based on limited available evidence, further research is needed to evaluate whether:

- the conditions mentioned above can be correctly diagnosed and managed at the first level of care;
- the majority of patients can be seen and treated successfully in this environment;
- more serious pathology requiring specialist referral is appropriately and rapidly referred and managed;
- outcome measures are analysed to ensure effective management regimes;
- patients are satisfied.

Specialist centre

71. Medical 'red flags' would result in some patients being referred to other specialties in secondary care, for example ENT and Neurology, while other patients would be referred into a specialised audiovestibular centre with medical consultant input, along

47 Yardley et al 1998

48 Tinetti 1994

49 Hu & Woollacott 1994

50 Horak et al 1997

51 Campbell 1997

52 Li et al 2005

with senior audiologists, physiotherapists, psychologists and a full multi-disciplinary team.

72. To try to minimise the number of separate clinic visits required, patients would be booked into appointment slots with appropriate investigations undertaken on a single visit basis, leading on to appropriate management instruction with physiotherapy and psychological interventions, with the patient's agreement. The aim would be to provide a 'one-stop' service whenever possible.

73. The specialist team delivering the service at the specialist centre would comprise:

- Audiovestibular physicians, otorhinolaryngologists and neurologists
- Audiologists
- Physiotherapists
- Psychiatry/psychology provided as part of the balance service, to reduce stigma

74. The interplay of psychiatric/psychological disorders and balance problems is complex. The experience of highly distressing symptoms may result in psychiatric/psychological problems which may become the primary problem if not treated. Equally, mental health problems may manifest themselves as an "unexplained" disorder of balance and dizziness. It would be

good practice for there to be dedicated sessions of a psychiatrist and a psychologist as part of the specialist balance services team, who would have a special interest in balance/dizziness and be able to offer assessment and support to patients as part of the balance service, minimising the prospect of stigmatisation. The integration of such mental health diagnostic and therapeutic sessions within the balance service may also maximise patients' willingness to undergo assessment of their mental state and any subsequent treatment required, such as Cognitive Behavioural Therapy.

75. Equipment and facilities required in the specialist centre include:

- Videonystagmography +/-electronystagmography
- Caloric testing
- Vestibular evoked myogenic potentials
- Auditory electrophysiology and auditory brain stem response test [ABR]
- Otoacoustic emissions and contralateral suppression
- Speech audiometry
- Foam pad/balance cushion

Supra-specialist centres

76. More complex cases would be referred to tertiary centres, with supra-specialist interest and skills staffed by both clinical and academic consultant audiovestibular physicians, otorhinolaryngologists, neurologists, audiologists, psychiatrists/psychologists and physiotherapists. Specialised surgery, eg skull base surgery, cochlear implantation may be undertaken in these centres. These regional and/or university centres would have state-of-the-art facilities and would be academic centres taking the lead in teaching and research.

77. Depending on local arrangements and specialties at the specialist centre, the multidisciplinary teams at the supra specialist centre[s] would normally include:

- Audiovestibular physicians,
- Otorhinolaryngologists
- Neurologists
- Audiologists
- Physiotherapists
- Specialised surgery
- Psychiatry/psychology

78. The facilities and equipment available would include:

- Rotating chair and computerised analysis

- Visual vertical and horizontal equipment
- Posturography
- Optokinetic stimulation
- Novel vestibular rehabilitation including for example virtual reality and strategies for visual vertigo
- Advanced auditory electrophysiology

Follow up across the network

79. Follow up from each level would be determined by need and patient request. Maximal use would be made of follow-up in primary care and by telephone consultation, unless clinical need determined otherwise.

80. Rehabilitation outcome measures (such as questionnaires to identify and assess subjective symptoms as well as functional assessments) should be routinely evaluated by healthcare professionals, using such measures as the Vertigo Symptom Scale, the Dizziness Handicap Inventory, the Vestibular Rehabilitation Benefit Questionnaire, the Vestibular Disorders Activities of Daily Living Scale, the Situational Characteristic Questionnaire, the Functional Gait index, and the Get-up-and-Go Test. Outcome measures should be completed immediately prior to the initiation of treatment and approximately every five to six weeks until the end of treatment, in order to monitor the benefit of the implemented vestibular rehabilitation programme.

Benefits of the network approach

81. This seamless network of care would promote good practice and expertise across the levels of care while enabling optimal use of healthcare professionals and allowing the introduction of new diagnostic and management strategies, including pharmacological interventions, specialised physiotherapy techniques and otological/skull base surgery, across a range of balance disorders.

82. The precise arrangement of the different levels of care and the professionals involved within the network should be flexible and managed according to local resources. However, the proposed framework should include recommended set of good practice service indicators required to ensure equitability of access and care.

83. This approach to balance disorders is innovative, but flexible, patient centred and timely. The structure and provision of services for people with balance disorders can be improved with significant educational input in the early stages of implementation, followed by careful monitoring and audit to evaluate and validate the changes.

Annex 1: Third sector and patient support groups

84. Charities and patient support groups for patients with balance disorders have been few compared with those for patients with hearing difficulties. The Royal National Institute for the Deaf has produced a range of booklets on balance topics, which have been readily accessible to patients with both hearing and balance disorders, but have not always reached patients with balance disorders alone:

http://www.rnid.org.uk/information/resources/factsheets/medical/factsheets_leaflets/

85. The Menière's Society provides information chiefly targeted at people with vestibular disorder due to Menière's Disease, but also provides information and self-help booklets for managing vertigo and dizziness symptoms by means of balance retraining and anxiety reduction through a magazine, *SPIN*, a website and meetings: <http://www.menieres.org.uk/>

86. The Brain and Spine Foundation have also produced documents relevant to those with balance disorders which have been helpful:

http://www.brainandspine.org.uk/information/publications/brain_and_spine_booklets/index.html

87. Patient support websites have also been developed, such as <http://www.labyrinthitis.org.uk> in the UK. A range of American websites, <http://www.vestibular.org>; <http://www.dizziness-and-balance.com>; <http://www.balancenetwork.org> are also available. It is helpful for patients to be made aware of booklets and websites with helpful information on specific conditions and balance disorders in general.

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