



The benefits of a multi-disciplinary approach to the management of complex dizzy patients

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Dizziness is a very common problem and is among the most frequent complaints by patients in all of medicine.¹ Dizziness and imbalance may have many causes and can be complicated by: complexities of gathering a clear history; the multitude of possible causes and mechanisms; and/or the simultaneous occurrence of several intersecting disorders that cause dizziness.

Outline:

- I. Dizziness is common and has many possible causes (see Continuum)
- II. Management approach tends to be piecemeal, especially in complex cases
- III. Multi-disciplinary approach serves to learn from one-another, leverage unique skill sets and experience, can reach consensus and provide direction and a treatment approach. Similar to the model of a tumor board.
- IV. Studies support this approach
- V. Model for doing it. In-person or remote wrap-up or weekly meetings to discuss case summarized by the main treatment provider like occur in CARF rehab institutions
- VI. Implementation must be flexible to the circumstances of care and patient population

Medical care has been divided by traditions and so-called scope of practice for many years. Otolaryngologists often see patients with hearing loss, tinnitus, dizziness and vertigo but many of these are not surgically remediable by otolaryngologists and many are not familiar with non-otological causes of dizziness. Cardiologists, internal medicine and family medicine also see patients with dizziness and imbalance and usually focus on medications, cardiogenic causes and postural hypotension. Neurologists are frequently consulted when a cause is not readily apparent, but they are most often looking for structural causes such as tumor, stroke, cerebral hemorrhage or for other neurological disorders such as Parkinson's disease, cerebellar ataxia, spinal cord disorders or migraine. Many neurologists are less familiar with primary inner ear causes. Less frequently endocrinologists become involved, more commonly due to adrenal insufficiency and other hormonal causes. Psychiatry is sometimes involved but in the medical model is often relegated to the final evaluation since psychiatric or psychological causes are perceived by many medical clinicians as the conclusion of final resort. Sometimes this is the most obvious possible mechanism but is not considered until far less likely medical causes are investigated. The many specialties that may see a patient with complaints of dizziness or imbalance underscores the many mechanisms that may result in dizziness or unsteadiness. The end result is that many patients are shuffled from one specialist to another. Furthermore, each may conclude a different cause belonging to another specialty, leaving the patient frustrated and feeling like much of their time has been wasted and no physician takes ownership for finding a cause and devising a treatment plan.²

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As mentioned above, dizziness may have many causes and mechanisms. Some cases are simple and can be diagnosed readily by the proper specialist but other cases may prove much more

complicated. In addition, roughly 20% of patients have two significant causes of dizziness at the same time.³ Indeed, sometimes more than one treatment is indicated simultaneously. For example, a patient with vestibular neuritis may develop acute vertigo and imbalance that is treatable by vestibular physical therapy but in the process the patient has also developed persistent postural-perceptual dizziness (PPPD), generalized anxiety and panic attacks. Such a patient may benefit from a combination of physical therapy to hasten habituation along with pharmacological care with anxiolytic medication and close follow up for support. Similarly, a patient with benign paroxysmal positional vertigo (BPPV) may have not only that condition but then develops a recrudescence of vestibular migraine. The BPPV, each time it occurs, evokes intensification of the motion sickness and motion sensitivity associated with vestibular migraine and the two conditions become entwined and difficult for many clinicians to decipher and recognize.

For complex cases of dizziness or imbalance, a multi-disciplinary approach in which specialty clinicians from multiple fields weigh in on the cause and provide direction in formulating a plan of investigation and/or therapy is particularly useful.⁴⁻⁸ An approach that includes vestibular therapists, neurologists, otolaryngologists or otologists, audiologists and others with an interest and familiarity with dizzy patients can convene on such patients and recognize the cause or combined causes to help in shaping a treatment plan. This approach has been modeled by that of a Tumor Board in the management of complicated tumor cases in which an oncologist, radiologist, radiation oncologist and tumor surgeon meet to discuss patient management and care. The case-management and interdisciplinary team approach has proved useful in improving quality of care in many different settings,⁹⁻¹² particularly when action is taken based on the recommendations of the team¹³. This team approach fosters discussions and airing opinions by experts in differing fields and can lead eventually to consensus and a plan for the best next steps to advance and improve patient care.

How can the multi-disciplinary model be implemented?

Implementation must be tailored to the institution and situation and practicability of the cost structure.

For example, it is generally not practical for a neurologist and an otolaryngologist to see the patient sequentially who would then be seen by therapists and audiologists. The reason is one of cost overhead and efficiency that are realities of the business of medicine when different specialists are in different practices or healthcare systems. This approach is used in some settings, so may have a role when under the auspices of a single healthcare system that has prioritized this area for a dedicated comprehensive approach (e.g., every patient, every specialist).

I. Every patient, every specialist model

- General Setting: single healthcare system committed to this approach
- Model: Each specialist sees the patient in a systematic sequential manner. ENT dizziness specialist and Neurologist both see patient, Audiologist may do testing or assessment, PT/OT does assessment, psychologist does screening test and brief interview. Intermittent or end-of-day conference to discuss each day's patients to hone a treatment plan. This model is used in some ALS Clinics, Inpatient mental health clinics, etc. but can be hard to implement.
- Pros: Comprehensive, multiple specialists see patient and communicate in real time what they conclude, hastening greatly the evaluative process and treatment plan formulation. Effectiveness of improved outcome depends on the dynamics of the group and effectiveness of subsequent implementation.
- Cons: Not likely to be cost effective in the current healthcare setting compared to other models. For example, the various specialists could see and bill more patient visits in the same allotted time. Generally it may be more challenging to get reimbursement for case management conference by each of the participants.

Another model more commonly used is patients are selected by team members as being complex (at least to that specialist) and brought before the case conference for discussion. They may then be referred to some of the specialists within the larger group but not necessarily to all specialists and not all at the same time and place. Rather, they would be referred through the usual health insurance referral processes.

II. Selected patients, selected specialists model

- General Setting: any healthcare setting including private practice but better suited if some specialists are in the same healthcare system and the referral process is seamless and takes place in the same location.
- Model: Patients deemed as complex (by duration, severity, co-morbidities) are seen by several specialists such as either physical therapy or audiology and ENT or neurology. Inter-specialty referral is up to the physicians seeing the patient on a case by case basis. Intermittent or end-of-day conference to discuss each day's patients to hone a treatment plan.
- Pros: Less comprehensive but brings focus to the more difficult and complex patients that need it. It serves to hasten the evaluative process and treatment plan formulation but only for the more difficult dizzy patients. Effectiveness of improved outcome depends on the dynamics of the group and effectiveness of subsequent implementation.
- Cons: Might still have some cost-effectiveness and logistical concerns but is easier than the first model described.

III. Selected patients, case management conference

- General Setting: May work best for separate private practice specialists or mixed private practice hospital-based or group practice settings.
- Model: Each specialist sees patients referred to them based on determinations of need and complexity sufficient to warrant evaluation by that specialist. Some patients will be seen by some specialists, but not necessarily by all specialists. Monthly or with other periodicity case conference meetings to discuss patients and decide who may need additional referral, testing or treatment. Best if overseen by someone to summarize the outcome and opinions arrived at during the Case Conference.
- Pros: Practical, fairly easy to set up and as cost-effective as any model can be for patients and providers. Effectiveness of improved outcome depends on the dynamics of the group and effectiveness of subsequent implementation.
- Cons: Can still pose some delays in setting up consults, referrals, testing and evaluation between the time an approach is decided to when it can be executed by various front and back office scheduling and insurance authorizations.

Conclusion

Team approaches tend to work well in the management of complex patients for whom the joint application of expertise from multiple areas can be brought to bear, discussed and explained to the other members of the case management team. It fosters learning among care providers, generates a valuable sense of teamwork, improves the appropriateness of care and of referrals and when implemented, improves patient outcomes.

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