

In One Ear and Out the Other – What Patients Remember

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In Meredith Willson's *The Music Man*, Mayor Shinn announces to the July 4th crowd in the River City High School Madison Auditorium, "Members of the school board will now present a patriotic tableau." Up jumps a school board member who whispers in the Mayor's ear and the Mayor corrects himself: "Members of the school board will *not* present a patriotic tableau."

Nine out of ten semantic units were correct. The scene shows how easily the loss of one information unit can completely change the message. Can't you just see the Iowa farmer with noise-induced hearing loss from years in the tractor seat wondering why he is being subjected to Eulalie McKecknie Shinn's impersonation of a Grecian urn instead of the promised patriotic tableau?

How often do our patients miss one or two critical facts resulting in a complete misunderstanding of their communicative problem and what to do about it? This question gnawed at me for years until I came to the conclusion that every important fact or recommendation that is given to a patient should be given in writing, in an easily understood format that can be shared with family members, read, reread, and kept for future reference.

I recently saw a patient who is an intelligent professional and had been seen previously by two audiologists. I know the audiologists well and I don't believe it is possible that they did not thoroughly and clearly explain the results. After I discussed the findings and provided the results and recommendations in a clear, written format, the patient thanked me and said no one had ever explained that before. I think he forgot.

We need to keep in mind that our patients lead busy lives and there are many things that work against the likelihood that they will remember what we tell them. The working mom whose son broke an ankle yesterday playing soccer, who is worried about missing work for just a hearing evaluation, who doesn't have anything for dinner tonight, and whose husband may be laid off next week, might not remember the difference between a conductive loss and a sensorineural loss. And when relating the information to her husband that night, "Your hearing will probably not get better" can easily become "Your hearing will probably now get better." Most of the semantic units were correct.

Recently it occurred to me that ours is not the only field with information that is important for patients to understand and remember. I consulted the Audiology counseling literature but found only one study of patient recall following audiologic consultation and a brief reference to the issue in Luterman's excellent text on Counseling Persons with Communication Disorders and Their Families (Austin: Pro-Ed, 2001). I was shocked that Audiology, a communication profession, has almost completely neglected to be concerned with the effectiveness of our communication of information to patients. Other professions have addressed the issue and there are many research studies and discussions of patient recall in the medical literature, most by British authors. A list of references can be found at www.audiologyincorporated.com.

The Audiology counseling literature makes an important distinction between informational counseling and personal adjustment counseling. Informational counseling, the subject of this article, is intended to provide to the patient the relevant information needed to understand the nature of the disorder and the steps that are recommended to manage it. Because of the emotional impact of the information, personal adjustment counseling may be necessary to assist the patient and family so they can take positive measures to manage the condition. But without effective communication of the nature, extent, prognosis and management plan, the patient and family are unable to play an active, positive role in remediation, rehabilitation, and secondary prevention of long-term

consequences. In this article I discuss the research findings of patient recall in various clinical situations and some recommendations for maximizing what patients remember.

Why is Patient Recall Important?

Just because we feel compelled to explain our test results doesn't mean that it is important that our patients remember the information. It doesn't matter if a patient understands what was found on an x-ray if the appropriate action was taken, right? Wrong. Studies have found that when patients understand the information that is communicated by a healthcare provider, there are significant enhancements of patient satisfaction, compliance with recommendations, and outcomes. In addition, there are significant decreases in anxiety, treatment time, and cost. One study showed that physicians underestimate patients' desire for information and their ability to understand medical information. To withhold information because the patient probably won't understand it is a presumption that can significantly impair the clinical process. When physicians were given specific strategies for enhancing communication, there were measurable improvements in patient recall. Recall of information, then, is important to the welfare of the patient and there are strategies that have been shown to increase what patients remember. A disturbing finding is that physicians' impressions of what patients would remember were not correlated with measures of patients' actual recall. This finding reinforces the need to provide information in writing even for patients who appear to be absorbing everything.

How Much Do Patients Remember?

Recall of information communicated to patients has been measured under a variety of conditions. In these studies facts are given to the patient and the proportion of facts correctly recalled is measured. Because many factors affect memory for health information, there is a wide range of results but overall studies indicate that about 50% of information provided by healthcare providers is retained. Depending on conditions, 40-80% can be forgotten *immediately*. Studies in which recall was measured at two points in time do not show a difference when recall is measured soon after the

consultation and at a later date. It seems that patients remember a small proportion of facts and those stay with them for a period of at least several weeks.

Of the information that is recalled, about half is remembered incorrectly – the Mayor Shinn effect. So about half is forgotten immediately and half of what is remembered is wrong. If you take any complex message that has an information component and an advice component and you remove 50% of the facts, and distort half the remaining information, the result could be a dangerously misunderstood message that could have life-threatening consequences.

An even more disturbing finding is that patients often forget their medical diagnoses even when the conditions are serious. In one study patients could not recall 68% of the diagnoses told to them in a medical visit. When there were multiple diagnoses, patients could not recall the most important diagnosis 54% of the time. Some of the diagnoses in this study were serious, even life-threatening conditions such as diabetes, hypertension, and liver disease. In another study, patients and physicians agreed on problems that required followup for only 45% of the problems identified by the physician as requiring followup. When there was disagreement between the physician and patient regarding the need for followup, the likelihood of appropriate management was significantly lower.

Factors that Affect Patient Recall

Recall of information is dependent on many factors, some related to the patient, some related to the mode of presentation of the information, and some related to the clinician.

Patient Factors. Some factors that you might expect to affect the ability to retain information don't appear to influence recall. Intelligence, for example, has not been shown to affect the proportion of information retained. However, familiarity with the information does have an affect. A patient who is familiar with hearing loss as a result of

prior consultations, an affected family member, or professional knowledge tends to remember more. The degree of understanding of issues related to the diagnosis can have a significant effect. A finding that the patient expects is remembered more than one that is unexpected. A finding that is welcome or desired is more likely to be recalled than one that is unwelcome or unwanted. Interestingly, a patient is better able to recall information when they are in the same emotional and physical state they were in when they received the information. If they were anxious at the time of the consultation they will remember more when they are in a similar state than when they are relaxed. Elderly patients tend to remember less than younger patients. When elderly patients are not included in the study, age effects are not seen. Anxiety can have a positive or negative effect on retention. Moderate anxiety enhances recall but severe anxiety inhibits retention of information. Stress causes “attention narrowing” which interferes with the patient’s ability to redirect to a different topic. Denial, a defense mechanism that is common in patients with a variety of diagnoses including hearing loss, may contribute to poor recall. A patient who is in denial of their hearing loss is not likely to convey information provided at the hearing evaluation accurately to family members.

Mode of Presentation. Not surprisingly, information presented in a simple, easy-to-understand format is remembered better than information presented in a more complex manner. The more information presented, the lower the proportion that is recalled by the patient. Information that is presented first tends to be remembered better (the primacy effect).

Several studies have shown that categorizing information can improve retention and some authors discuss the *method of explicit categorization*. Information is organized in specific categories such as Explanation of Systems, Diagnostic Tests, Results, Prognosis, and Recommendations. The patient is told that the information will be presented in these categories, each category is announced, and the patient is asked if there are questions before moving on to the next category. One study found a significant enhancement of recall with this method. Another found that in combination

with asking the patient what information is wanted, the method provides a framework for enhancing retention.

A number of studies have investigated the effects of written and graphical material to supplement verbal presentation of information. Written material, cartoons, and pictures, when used appropriately during the consultation can enhance recall of information.

Recommendations are more likely to be remembered and followed when they are specific rather than general. A recommendation should be a specific statement telling the patient what to do rather than a more general statement of the goal. A recommendation to “stay home from work and rest for two weeks with no strenuous exercise” is more likely to be followed than “get some rest and take it easy for a while.”

Clinician Factors. The clinician’s communicative style can have a significant influence on retention of information by patients. Information given by clinicians who speak in clear language with simple sentence structure is more likely to be remembered than information provided in complex language loaded with scientific terms. Clarity of communication requires that the clinician understand what the patient wishes to learn and what his/her level of understanding is. To communicate clearly in a manner that promotes retention of information, the consultation needs to be a dialog in which the clinician listens to the patient. When the patient’s ideas are evaded or inhibited, the patient is less likely to remember important information. Even the clinician’s anxiety affects recall. Patients remember less when the information is provided by an overtly anxious clinician. The perceived importance of the information also affects retention. Information that is presented in a manner that emphasizes its importance is more likely to be remembered than information presented in a matter-of-fact manner. Non-verbal communication is important in reflecting the clinician’s state (confident, anxious, distracted, empathetic) and in indicating the importance of information.

We all know the head-nodding behavior often exhibited by people who hear only part of the message but don't get enough to really be part of the conversation. The same phenomenon occurs in a consultation when the patient appears to understand but their understanding is not confirmed by the clinician and the patient is not encouraged to ask questions. Information that is unorganized, unclear, or incomplete can be interpreted by patients to confirm their pre-existing beliefs which may not be in concert with the message the clinician is attempting to communicate. One writer called this the "illusion of shared understanding." When the clinician is oblivious to the patient's lack of understanding of the information, the entire consultation session may provide little benefit, or worse, do more harm than good.

Methods of Maximizing Retention

Studies of patient recall lead to effective strategies for presenting information in a manner that maximizes retention. Although the following strategies will improve retention, all patients will forget some information, even when presented in an optimal manner. Nevertheless, clinicians should incorporate these methods into their counseling sessions.

- Advice should be given as concrete instructions. "Use ear plugs when you use your power tools" rather than "Keep your noise exposure to a minimum."
- Use easy to understand language. Short words and sentences are remembered better.
- Present the most important information first to capitalize on the primacy effect. Often the most important information is the recommendations such as "make an appointment with the ear doctor."
- Stress the importance of recommendations or other information that you want the patient to remember.
- Use the method of explicit categorization. Tell the patient "We are going to go over **recommendations**, then we will talk about your specific hearing problem (**diagnosis**), then we will go over **test results**, then we will talk about how your

hearing may change in the future (**prognosis**)". Ask the patient for questions before moving on to the next category.

- Repeat the most important information.
- Don't present too much information. Present only the information that is important for the patient to remember. Proportion of retention decreases with the amount of information presented.
- Be sure you understand what the patient wants from the evaluation and what his/her beliefs are concerning the problem. Specifically address the patient's desires and beliefs.
- Supplement verbal information with written, graphical, and pictorial materials that the patient can take home.

These techniques will significantly enhance the accurate recall of information by our patients. But they will still forget. The best way to ensure that the information gets home is to provide the patient with a permanent record. One author recommended that the patient be instructed to write the information as the clinician presents it. For certain kinds of information this may be an effective teaching technique. Another author recommended tape recording the consultation which would allow the patient and family to review the results and recommendations together. Another approach provides clearly written, illustrated, patient-specific, educational materials that ensure that the information is clear, accurate, complete, and available for review and discussion with family members and other professionals.

Patients are always encouraged to bring family members or friends to the consultation. Of course, this is not always possible. We've all seen the elderly patient whose spouse encouraged him/her to have a hearing evaluation but can't accompany the patient to the clinic. The patient has prior beliefs about the extent of the hearing problem that may or may not be realistic or the patient may be in denial. We present information in the 5-10 minutes we have for counseling at the end of the evaluation and we expect the patient to communicate the information to family members. Given what is

known about retention of information by patients we should not expect the patient to be able to explain the results and recommendations accurately.

Our profession is solely concerned with the communicative well-being of our patients. Yet our own communication to patients is fundamentally disordered. Although we complain that our counseling efforts are not reimbursed, an analysis of our methods and outcomes would probably not convince payers that we are providing a valuable, reimbursable service when we verbally present complex information in a format that is known to be ineffective. I recommend the following guiding principle for our communication of results and recommendations to our patients.

Any information that is important for the patient to understand and remember should be provided in writing.

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