SSW REPORTS ...

Speech-in-Noise Testing & Therapy
And Two Case Studies

Vol. 24 No. 4 **November 2002**

Medicaid and Insurance
Jack Katz

I'm probably not the best person to write about Medicaid or insurance problems, but it is time to organize and see what improvements can be made.

The Problem

Medicaid provides very low reimbursement rates for CAP testing. Medicaid provides the standard for insurance companies that (as you know) don't need much encouragement to provide little or no reimbursement for various services not just audiology.

The effect of this policy is to discourage audiologists from providing services because, other than those in the public sector, many can't afford to give their time away for such small returns. Consequently, I'm sorry to say that some audiologists tend to downplay the importance or even the value of CAP testing and intervention. The result is that children and adults do not get the needed services and when they do it is often not in a timely manner. This makes CAP services less effective and less responsive.

What Can Be Done?

I feel that we must band together to make a change. When we *encourage* Medicaid and insurance companies to pay proper amounts for valued services we must be both persistent and respectful. Of course, irate parents also helps as they are the customers.

I believe that one excuse that the insurance companies have is that CAP is not a health problem, it is an educational problem and therefore should not be covered by health insurance. To my way of thinking this argument has no validity in fact.

Central Auditory Processing is no less a health problem than a hearing disorder, a vision disorder or ADHD. These are indeed physical health problems that limit a person from appreciating the world around them and to participate fully in life because of their disability. In fact, as you know, you can generally make a positive change with CAPD cases more easily than with these other disorders. So the small amount of money they give pays big dividends

Because many children are not seen in a timely fashion their ultimate benefits are reduced and the time needed to realize improvement is greater. Also the likelihood of emotional and academic failure increase. Therefore the public, insurance companies and the government all will benefit from appropriate and timely services!

Action

For several years Maxine Young has been fighting a lonely battle to change the reimbursement situation for CAPD. She has plans to influence Medicaid and insurance companies and she needs help. Please contact her at <maxyoung@sprynet.com>.

Speech-in-Noise Testing & Therapy
Jack Katz & Nannette Nicholson

We evaluated Randy, an interesting 10-year-old this month. There were several things that made him so interesting an educational.

INT-8 Gave a Wrong Impression

I have been so pleased with the new INT-8 system for classifying those with Type-A patterns. The 2-classification INT system that we had been using for a number of years failed to recognize any factors except the primary one. So if there was a Type-A pattern and both TFM and DEC, only one of the latter would be identified and the other ignored.

With the new system any significant category is labeled in the INT-8 system. Randy was not labeled as learning disabled and not eligible for any services in school. His mother listed his problems as difficulty in noise, short-term memory problem, and major organization difficulty. She pointed out that he would say 'close the window' when he meant 'open the window' and said 'before' when he meant 'after'. Those seemed to be *reversals*. He reached into his brain and pulled from the wrong memory slot. Because those with ORG problems have to concentrate all the time, they fatigue easily and then they do not realize their error before saying it and sometimes not after saying it either.

We assumed that Randy would be TFM and ORG based on history. We did not expect to see INT as well as DEC to show up on the tests. This translates into an INT-3+ and represents the most severe pattern (often seen in dyslexics), but that wasn't Randy at all. He performed well enough in school so that he could not get any services and was not considered LD. His teacher said that this year his greatest problem was organization.

We believe that because the INT-8 system gives us all the information (that is surely helpful in making recommendations) it may provide an inaccurate overall picture. It appears that although Randy has a DEC problem it is likely mild. Most of the INT-3 cases have major DEC problems and therefore suffer greatly academically (unlike Randy who suffers, but not so much academically).

In previous years, using a 2-category classification system, he would surely have been considered an INT-2. That would tell us that he had INT problems and that his greater difficulty was in speech-in-noise and short-term memory (as opposed to DEC). That would have painted the more accurate picture, but we would have had to add that he also had a massive ORG problem. Let's see how this labeling problem came about and if there is anything that we can do about it.

What Went Wrong?

We surely found the problems that we thought were there: TFM and ORG. But we also found more than we had expected - not shocking as we often do for various reasons.

Let's review Randy's test findings to understand the situation better. We used the Central Test Battery-CD.

Tolerance-Fading Memory

Randy had TFM signs based on a significant SN-difference score in the right ear and the interaural-difference was also significant; suggesting that his two ears did not work effectively together. These findings support his complaints about not hearing the teacher in his noisy classroom and his mother's statement that he does not even bother listening to the coach in the gym (with both noise and reverberation problems). He also

picked up a TFM Qualifier on the PS test. On that test he had 5 quick responses.

The Type-A voids the TFM Ear and Order Effects that we generally see with the Type-A and changes the LC condition from a TFM to an INT sign. In the vast majority of cases this is correct, but in Randy's case he was heavily TFM and only mildly DEC, so it did not give us the proper picture.

Although the Type-A nullifies these 3 TFM signs, the strength of the 3-test battery is that there are many other signs to indicate the TFM problem. The SN test picked it up twice and the quick responses on the PS test also supported TFM.

Organization
The important ORG problem that Randy has was clearly identified. He had 22 reversals on the SSW test! As often happens we see that a person has reversals on the SSW or the PS test but infrequently on both.

Decoding
We also found DEC signs that were not revealed by the case history. On the SSW Randy had a significant LNC score but no Qualifiers and on PS he had a score of 21 just within NL and one delay on a correct item (the delay was not significant either). This gave him a qualitative score of 20 that was still within NL. We wondered whether to include the 4 quick responses in the Qualitative Score, as that would then indicate DEC. It is appropriate to count Q responses for the Qualitative Score because they are generally compensations. So we had a brief scoring dilemma. The LNC score of the SSW (DEC) was already significant so it made the this an INT-3+ case with or without the Qualitative PS Score.

So Randy had evidence of DEC but the signs were not very strong.

FYI INT-3 Criteria

Significant Indicators	Significant
Primary INT, *plus*	*Type-A
≥1 Primary DEC *or*	*LNC; PS Qual
≥2 DEC Qualifiers *&*	none
≥1 Primary TFM *or*	*SN-R; SN-IA
≥2 TFM Qualifiers	PS-Q

Because there were significant reversals (ORG) this made Randy's category INT-3+.

Recommendations and Follow-up
Although Randy is not the person you would picture with INT-3+ because his scholastic performance was not so bad, he surely did have major difficulties with which to contend. In addition, the INT-8 system permits us to consider all of the problems that need to be addressed.

We made 15 recommendations to address the Randy's problems that were seen on the evaluation. The only one we did not make was a recommendation for the INT problem. We were not sure what recommendation would be appropriate as there was no reason to believe that there was an auditory-visual disorder (a common concern with INT) and we were not told of any problems that would suggest the need for Occupational Therapy (sensory-integration).

The family returned to try out an assistive listening device that we recommended because of the severity of Randy's listening problem and his aversion to noise. But by the time they returned a few weeks later, the school had already taken action! They had already ordered the ALD. We are not used to this level of cooperation.

We also tried Randy out on a new speech-in-noise desensitization program on which we are working. He did very well. * * * * *

Two Interesting Case Studies – Nancy Stecker

We often have children presenting with other physical or disabling conditions referred to our clinic for a central auditory processing evaluation. They often pose unique assessment challenges for the examiner. The following two case studies presented are examples of such challenges. The first is a child presenting with Tourette's syndrome and the second with a permanent, unilateral conductive hearing loss.

A Case Study – Tourette's Syndrome

Background Information

A six-year-old male (AB) was referred for a central auditory processing assessment since he was having difficulty in focusing school, paying attention, following directions and attending to and remaining on task. AB attends first grade and was just beginning reading instruction. He did not have a history of ear infections or upper respiratory problems.

AB had been diagnosed with Tourette's syndrome two months prior to the evaluation by a neurologist. His symptoms included tics such as eye-blinks, eyebrow tics, frequent throat clearing and mouth opening, and sniffling. AB was reported as very bright and described as being obsessive about doing well in school. AB was placed on a very low dose of a neuroleptic drug to control the tics when behavior modification techniques failed.

Test Results

AB's tympanograms showed normal middle ear functioning and ipsilateral and contralateral acoustic reflexes thresholds were elicited at expected levels in both ears. Hearing sensitivity was within normal limits in both ears for all frequencies tested. AB was a reliable responder and had no difficulty attending to these initial tasks.

Speech reception thresholds were obtained at 5 dB in both ears and Word Recognition Scores were 92% bilaterally. Speech-in-noise scores were 84% for the right ear and 92% for the left ear, well within normal limits for his age.

When AB was administered the SSW test, he seemed to learn the task quickly and was responding with ease with very few errors. About half way through the test, AB's behavior changed significantly. He began displaying many of the tics reported above, with increasing frequency and intensity. It was as if they burst out after trying to hold them back for the first part of the evaluation. AB also began reversing almost every item and seemed to be struggling now with the test. His eight cardinal numbers are as follows:

A	B	C	D	E	F	G	H
1	3	5	0	0	5	3	0

AB scored within the error norms for six year olds, but had a significant number of reversals that continued after re-instruction. Children with Tourette's Syndrome can consciously control their tics for a short period of time, although there often seems to be a tension that builds up that needs to be replaced. Therefore, it is often recommended that they do not try to control them. Also, the tics will be minimal during less tense situations and when their mind is on an interesting task. In observing AB's

behavior, it appeared that the novelty and challenging nature of this test wore off for him during the second half. The following are the test results and norms:

	RNC	RC	LC	LNC	Total	REV
AB	1	6	10	0	17	14
No.	4	10	15	5	28	4

No further testing was administered due to AB's difficulty controlling his tics and his noticeable fatigue. Since AB scored with in normal limits on the SSW and speech-in-noise testing, a central auditory processing problem was not suspected at this time. Recommendations were made to enhance the listening environment in the classroom for AB, including preferential seating, maintaining eye contact prior to directions, and a quiet working environment. Also, un-timed tests were suggested to reduce stress during test-taking. Since individuals diagnosed with Tourette's Syndrome often experience other problems, such as Attention Deficit Disorder, Obsessive Compulsive Disorder and Learning Disabilities, it was recommended that further evaluation be pursued to rule out these disorders.

The Tourette's Syndrome webpages (www.tourettesyndrome.net and www.tourettes.com), edited by Leslie Packer, are excellent resources for information and recommendations. Leslie Packer recommends the following for children with Tourette's Syndrome:

1. Try to ignore the tics.
2. Give a permanent pass to leave the classroom at his own discretion.
3. Give extended time on reading assignments.
4. Allow extended time on tests and test in a separate location.
5. Peer education to minimize teasing.
6. Provide books on tape if facial and neck tics interfere with reading.
7. Reduce workload to minimize tension and stress.
8. For gifted students like AB, let them work ahead when possible.

A Case Study – Unilateral Conductive Hearing Loss

Background Information

RV was referred by her psychologist to rule out central auditory processing disorder as a contributing factor to her Attention Deficit Disorder. She is a 14 year old who attends ninth grade in a private girls' high school. Since the age of 15 months, RV has had tubes to treat her chronic middle ear infections. At the age of 12, she began having repeated ear infections again that resulted in a right ear perforation. Her otolaryngologist performed a tympanoplasty on the ear at that time, two years prior to this evaluation. The surgery was unsuccessful and an open perforation is still present in the right ear. RV reports difficulty hearing since her surgery. Although her grades are good, she struggles at school with math.

Test Results

RV's tympanic membranes were clearly visible upon otoscopic inspection, with the perforation quite evident in the right ear. The left ear tympanogram showed normal middle ear compliance and pressure. The right ear canal volume measured 6.3. The left ear pure tone air and bone conduction results revealed

normal hearing sensitivity with a pure tone average of 5 dB. The right ear air and bone conduction thresholds indicated a significant conductive hearing loss with air conduction pure tone average of 40 dB and a bone conduction average of 5 dB. Speech Reception Thresholds were obtained at 40 dB in the right ear and 5 dB in the left ear. Word Recognition Scores of 100% and 96% were obtained in the right and left ears respectively.

Due to the significant difference in sensitivity between the two ears, the central auditory test stimuli were delivered by bone conduction to the right ear and through an insert earphone to the left ear. Speech-in-noise test results indicated normal performance on the day of testing. The following were her scores and difference scores:

	Quiet	Noise	%Difference
RE	100%	80%	20%
LE	96%	76%	20%
BI		76%	24%

The SSW was also administered using bone conduction for the right ear and an earphone for the left ear. The presentation level was 40 dB sensation level for both ears. RV had minimal difficulty with the task and rather enjoyed this procedure. Her eight cardinal numbers were as follows:

A	B	C	D	E	F	G	H
0	0	2	1	0	2	0	1

RV had no reversals and only one delay. No other response bias was noted. Her error scores and the adult norms were as follows:

	RNC	RC	LC	LNC	Total
RV	1	2	4	1	6
Norm	1	2	4	1	6

The Auditory Continuous Performance Test was also administered since she had been diagnosed with Attention Deficit. RV performed within normal limits on this test with only two inattentive errors noted.

Several recommendations were made for RV even though her central auditory test results were within normal limits. Due to her significant unilateral conductive hearing loss, an FM auditory trainer was recommended using an ear bud in the right ear in her school. If she did not find that comfortable, the totable version of the receiver could be used. Preferential seating was suggested for all classes, with her left side toward the teacher. Monitoring of her right ear on a regular basis by her otolaryngologist was highly recommended.

These two cases represent some unusual modifications to our tradition, standard testing procedures when asked to evaluate for central auditory processing disorder. Audiologists can assess these nontraditional cases with using a little creativity- the art of audiology!