

Question and Comments for the IACC meeting on Feb 4, 2009.

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(1) Can we get feedback on whether comments from the public are discussed, and reasons why public comments were not considered for inclusion in the strategic plan?

(2) Autism should be investigated in the way that transportation accidents are investigated by the National Transportation Safety Board. A link to their Strategic Plan for 2007-2012 is at:

[http://www.nts.gov/Abt\\_NTSB/Plans/Strategic-Plan\\_2007-2012.pdf](http://www.nts.gov/Abt_NTSB/Plans/Strategic-Plan_2007-2012.pdf)

Note a few of the key points in this plan:

- Maintaining their congressionally mandated independence and objectivity – p vi (pdf p8)
- Mission – includes assistance to victims of transportation accidents and their families – p vi (pdf p8), p1 (pdf 11).
  - “ . . . we have responsibility for coordinating communication with and assistance to the family members of accident victims.” – p2 (pdf p12).
- Strategic plans, performance goals, planning process – p vii (pdf p9)
  - “The cost of transportation accidents to society is unacceptable, and growth in transportation activity in the United States will exacerbate the problem.” – p4 (pdf p14)
  - “Maintain a competent and effective investigative workforce” – p5 (pdf p15)
- Performance measures – p5 (pdf p15)
- Stewardship of resources – p9 (pdf p19)
  - “Every agency of the U.S. Government has a duty to ensure that the resources appropriated to it by Congress are expended in an efficient, responsible, and results oriented manner. At the NTSB, the scope of our responsibility is broad and our team of dedicated employees is relatively small.”
- Strategic goals refined, enhanced, and prioritized with performance goals – p16 (pdf p26)
- Strategic plan meeting schedule – p20 (pdf p30)

- (3) Autism is a catastrophe. Autism is not just a fertile field for research. Autism is the negation of everything worth looking forward to. Life-long care for increasing numbers of victims of autism cannot be brushed aside as merely a family concern. Families or siblings cannot be expected to provide life-long care – mental health professionals need to understand that autism is traumatizing. Family members suffer from major depression that professionals want to overlook. Please review the NTSB strategic plan and revamp the one for autism.
- (4) Please do not dismiss oxygen insufficiency at birth as an etiologic factor in autism – unless you can cite specific evidence to the contrary.

Following is a letter-to-the-editor that I submitted to the British Journal of Obstetrics and Gynaecology (BJOG ). It was rejected for publication in part because my response on November 2, 2006 was to an article that had appeared more than three months earlier:

Baskett et al., in their paper on respiratory depression at birth, reported a delay of up to 3 minutes in initiating and maintaining respiration in 5.2 per 1000 infants after birth [1]. Infants with an Apgar score less than 3 at 5 minutes numbered 1 per 1000, and neonatal seizures occurred in 0.7 per 1000. Infants with at least one of the three measures yielded a composite outcome of 6.2 per 1000.

These statistics closely resemble those for the increasing prevalence of autism. For example, the CDC website ([www.cdc.gov/ncbddd/autism/](http://www.cdc.gov/ncbddd/autism/)), provides prevalence rates for autism spectrum disorders (ASDs) between 2 and 6 per 1,000 individuals. Putting it another way, they state that between 1 in 500 (2/1000) to 1 in 166 (6/1000) children have an ASD. Lately, the 1 in 166 figure is quoted often.

Autism is associated with several medical conditions such as prenatal exposure to alcohol or other drugs, prenatal infections, tuberous sclerosis, fragile X syndrome, and other genetic metabolic disorders. However, in PubMed, a search using terms such as autism & "obstetric complications" yields several citations. Glasson et al. in 2004 identified infants who later developed autism "were more likely to have taken more than 1 minute before the onset of spontaneous respiration" [2, pp 621-622].

An important goal for autism research will be to investigate the final common pathway in the brain, susceptible to damage from all etiologic factors. A lapse in respiration at birth has been shown to have variable and unpredictable effects. However, Myers (1972) demonstrated, in newborn monkeys, that catastrophic total interruption of respiration resulted in ischemic damage of the brainstem auditory pathway. He also demonstrated that a period of chronic partial oxygen insufficiency leads to the more widespread pattern of neuropathology usually associated with cerebral palsy.

Involvement of brainstem auditory nuclei is an important piece of evidence. Human children learn to speak "by ear," which requires intact transmission of acoustic information. Analysis of acoustic signals also takes place within

the brainstem nuclei, and normal development of the language areas of the cortex depends upon trophic neurotransmitters produced in nuclei of the brainstem auditory pathway. Papers on these subjects can be found in PubMed using keyword "inferior colliculus," the auditory nucleus most susceptible to damage.

Baskett et al. noted that after 1996, umbilical artery pH was measured for depressed infants, which would imply that the modern protocol for clamping the umbilical cord within seconds following birth was followed. Most infants breathe immediately at birth. The importance of Baskett et al.'s research is that it provides evidence that a substantial number may need continuing circulation from the placenta for several minutes after birth.

Evidence-based medicine must include appropriate care for patients outside statistical norms. Until the mid-1980s, textbooks of obstetrics taught that the umbilical cord should not be tied or clamped until the newborn infant was breathing on its own. A return to this tradition seems warranted.

### References

1. Baskett TF, Allen VM, O'Connell CM, Allen AC. Predictors of respiratory depression at birth in the term infant. BJOG. 2006 Jul;113(7):769-74.
2. Glasson EJ, Bower C, Petterson B, de Klerk N, Chaney G, Hallmayer JF. Perinatal factors and the development of autism: a population study. Arch Gen Psychiatry. 2004 Jun;61(6):618-27.
3. Myers RE Two patterns of perinatal brain damage and their conditions of occurrence. Am J Obstet Gynecol 1972 Jan 15;112(2):246-76.

(5) If statistics for plane crashes were the same as for "respiratory depression" at birth, not many people would want to risk flying as a means of transportation. Look at the abstract for the paper by Baskett et al. in PubMed, where they state as their conclusion:

"Overall, the rate of respiratory depression at birth in the term infant was low and the serious manifestation of seizures was less than 1 in 1000. There was a significant relationship between operative delivery in labour and respiratory depression at birth."

Baskett et al. did not follow the development of infants who suffered respiratory depression at birth. They are not in a position to state that serious manifestations were low – they did not look for long-term evidence that respiratory depression at birth is not a serious problem.

(6) The NTSB is sponsoring a meeting Feb 3-6 in Washington on the safety of helicopter emergency medical services, also to be telecast on [www.nts.gov](http://www.nts.gov). It would be interesting to watch some of this and compare their meeting to those held by the IACC. I will try to do this. See: <http://www.nts.gov/Events/Hearing-HEMS/Hearing-HEMS-announcement.htm>.