The impact of litigation issues on hepatitis B vaccination

Robert Pless
Immunization and Respiratory Infections Division
Centre for Infectious Disease Prevention and Control
Health Canada

Viral Hepatitis Prevention Board meeting
<table>
<thead>
<tr>
<th>Vaccination “acceptance” factors?</th>
</tr>
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<tbody>
<tr>
<td><strong>Positive</strong></td>
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<tr>
<td>– Apathy: birth, well baby visit, school program…</td>
</tr>
<tr>
<td>– Fear of disease</td>
</tr>
<tr>
<td>– Safety of vaccines</td>
</tr>
<tr>
<td>– Media, Internet, journals</td>
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<tr>
<td>– Friends and family</td>
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<tr>
<td>– Injury compensation plans</td>
</tr>
<tr>
<td>– Recommendation of HCP</td>
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<tr>
<td><strong>Negative</strong></td>
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<tr>
<td>– Apathy: not offered, no school program</td>
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<tr>
<td>– No fear of disease</td>
</tr>
<tr>
<td>– Fear of vaccines</td>
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<td>– Injury compensation plans</td>
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<tr>
<td>– <strong>Mandatory vaccination?</strong></td>
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<tr>
<td>– <strong>Lawsuits?</strong></td>
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Outline and Issues

- History and vaccine injury compensation

- Allegations, activism and lawsuits
  - HepatitisB/MS, MMR/Autism, Thimerosal

- Vaccination mandates (US, Canada)
  - Good, bad and ugly

- Information dissemination, hypothesis generation, publication
  - The use and abuse of information?
Vaccine injury compensation
Modern era of vaccine opposition: North America

- **1982- DPT: Vaccine Roulette**
  - Emmy award winning documentary
  - Allegations of neurologic sequelae to DTwP
- **Rebirth of "organized" vaccine activism**
  - DPT: A Shot in the Dark
  - “Dissatisfied Parents Together”, later National Vaccine Information Center.
  - Vaccine litigation and fear of litigation by industry
- **Outcomes largely positive**
  - Creation of US vaccine injury compensation program
  - Vaccine safety studies and adverse event surveillance (VAERS)
  - Canada’s Vaccine Associated Adverse Events Surveillance system
DTP vaccine lawsuits

Source: CDC – Immunization Safety Branch
U.S. Vaccine Injury Compensation Program

- Established under the National Childhood Vaccine Injury Act (1986)
  - No fault, less adversarial alternative to resolve injury claims
  - Designed by a coalition of parent groups, public health, industry, government
  - Stabilized the marketplace for vaccines
  - In effect October 1, 1988
- Administered by DHHS, DOJ and Court of Federal Claims – oversight by ACCV
- Covers all vaccines recommended for routine administration to children
  - By default, covers adult vaccines
• Qualifying for compensation
  – Showing that an injury listed on the Vaccine Injury Table occurred
  – Proving that a vaccine significantly aggravated a pre-existing condition.
  – Proving that the vaccine caused the condition
• Table is a “presumption of causation”
  – As long as injury not due to an alternate cause
• Injury must have lasted at least 6 months or resulted in hospitalization and surgical intervention
• Claim filing limits exist
Claims filed 1988-2003

Pre-1988
Post-1988

FY 1988
FY 1989
FY 1990
FY 1991
FY 1992
FY 1993
FY 1994
FY 1995
FY 1996
FY 1997
FY 1998
FY 1999
FY 2000
FY 2001
FY 2002
FY 2003

3,199
Claims adjudicated 1988-2003
Hepatitis B Vaccine claims

• Table injury: Anaphylaxis and sequelae
  – No claims filed on this basis
• Several hundred claims for other injury (require proof of causation)
  – Grouped into ~10 categories
    • Demyelinating, Cardiac/Hematologic, Immunologic, Arthritis, etc…
  – Single cases: Death, Diabetes, CFS
• Most are on hold
• Arthritis and Neuro-demyelinating going forward
Quebec’s compensation plan

- **1985: Viral encephalitis after measles vaccine with permanent sequelae**
- Lawsuit filed against the government,
  - Superior Court concluded there was a chain of causation
- Government / its employees / the manufacturer not at fault
  - Manufacture and production of vaccine adequate.
  - Informed consent of risk (1/1M) of encephalitis was obtained
- Moral pressure to get vaccinated = compulsory immunization
  - Not altered by consent to be vaccinated
  - Damage suffered for the good of society should be supported by society.
  - Government is liable
  - The courts suggested that an obligation to compensate independent of fault would be appropriate
Quebec compensation program for victims of immunization was introduced in a new division of the *Public Health Protection Act*.

- Administered by the Public Health Protection Branch of the Provincial Department of Health
- Same organization that manages the Quebec Immunization Program

Regulations governing the program were adopted in November 1987

- The first applications for filed in 1988
Process

- A **claim must be made within three years** following date of immunization
- There is **no limitations on which vaccines are eligible** for compensation
- Application is studied by a **medical evaluation committee** (3 physicians):
  - One each appointed by the Minister of Health, the claimant, and the first two.
- The committee’s duties consist of:
  - **Evaluating the case** and the illness incurred;
  - **Evaluate causation** between the illness and the immunization;
  - **Evaluate compensation** based on the public auto insurance plan.
- The evaluation must deal with and consider the followings:
  - The clinical history, including a statement of relevant physical and mental ailments, intercurrent illness, medical history;
  - A physical examination bearing particularly on the system affected by the immunization.
Results (1987-2000)

- A total of 117 claims were processed.
- 20 have been compensated (17%):
  - Oral polio vaccine: 13
  - Measles: 1
  - Rubella: 1
  - Hepatitis B: 1 (RSD without sequelae)
  - DTP: 1
  - Other (>1 vaccine): 2

- Other hepatitis B cases include chronic fatigue, not compensated.
Allegations, activism and lawsuits

Hepatitis B vaccine and MS
France / Manitoba

Vaccines and Autism
UK / US / Canada
The 1990's: storm after calm?

- Ongoing anti-vaccination activism
  - Freedom of choice in vaccination, perception of coercive public health authorities
  - Shift to ill-defined conditions, “chronic disease”, moving targets
- Mass immunization campaigns
  - Meningococcal vaccine was tolerated
  - Hepatitis B, yes and no
  - Measles: some questions
  - Provided a focus for opposition?
- Addition of vaccines to the schedule
  - Hepatitis B as adolescent program: school-based programs replacing traditional individual parent/child visit for vaccination?
  - Vaccines overload the immune system: not another shot!
Compte tenu de l'ensemble de ces éléments, il a été décidé de mettre en œuvre les décisions suivantes :
- Une stratégie vaccinale mieux ciblée, selon des modalités plus propices à une bonne appréciation du risque individuel à l'égard de l'hépatite B comme de l'éventuel risque vaccinal :
  - pour les adultes : la vaccination doit être limitée aux personnes à risque, telles que définies par le conseil supérieur de l'infirmerie et la pharmacie ; elle se fait sans préjudice des actes de vaccination individuels, conformément aux recommandations du CDC ;
  - pour les préadolescents et les adolescents : sans préjudice des actes de vaccination individuels, la vaccination contre l'hépatite B systématique en milieu scolaire au collège est suspendue. De nouvelles modalités de vaccination seront définies pour personnaliser l'acte vaccinal en prenant mieux en compte les bénéfices et les risques individuels ;
- pour les nourrissons : l'absence de notification d'atteinte démyélinisante du système nerveux central chez les enfants de moins de cinq ans et l'objectif d'améliorer la couverture vaccinale de la population conduisent à ne pas remettre en cause la vaccination recommandée chez les nourrissons.
WHO response (and VHPB !)

NO SCIENTIFIC JUSTIFICATION TO SUSPEND HEPATITIS B IMMUNIZATION

On 1 October 1998, the French Ministry of Health announced a decision to suspend routine HB immunization of adolescents in French schools, while continuing the immunization of infants and high risk adults. This decision followed concerns, despite lack of scientific evidence establishing a causal relationship, that Hepatitis B immunization might be linked to the development or flare-up of demyelinating diseases such as multiple sclerosis (MS), and comes in the wake of enormous pressure from anti-vaccine groups.

WHO, with the assistance of external experts in neurology, epidemiology, immunology and public health, has carefully reviewed the scientific evidence on whether Hepatitis B vaccine can cause demyelinating diseases such as MS. WHO believes that available scientific data does not demonstrate a causal association between HB immunization and central nervous system diseases, including MS.
Hépatite B : le vaccin en procès

Francine Delgado a-t-elle contracté une sclérose en plaques après avoir été vaccinée contre l'hépatite B ? Telle est la délicate question à laquelle le tribunal de Paris devra répondre le 6 novembre. Première étape de la guerre judiciaire entre le mouvement anti-vaccin et les fabricants.

Le premier procès de l'hépatite B, qui s'est tenu en début de semaine à Paris, a révélé un scénario complexe. Les soupçons sur les risques du vaccin s'accumulent, et la Direction de la santé a pris une position délicate.

Après nos premières révélations, les soupçons sur les risques du vaccin s'accumulent.

Hépatite B enquête sur un vaccin très controversé.

Le vaccin contre l'hépatite B peut-il avoir des conséquences dangereuses ? Certains médecins l'affirment, en dépit des assurances des laboratoires pharmaceutiques.
HEPATITIS B VACCINES - PRIVATE MARKET
Evolution of monthly sales growth rate: 96 vs 95, 97 vs 96, 98 vs 97

1st lay public campaign against HB vaccines: L’Impatient, V.S.D., Sciences et Avenir, Capital, ...
2nd lay public campaign against HB vaccines: Le parisien (vaccine overdosed), Nimbus, JT France 2, ...
1st action at law against Pasteur Vaccines
French Health Authorities decide to pursue immunization programmes
B. KOUCHNER support Hep.B immunization
2 actions at law against SB
HB Boosters are suppressed
Ministry of Health press-conference: discontinuation of the school based programme

Source – Dr. Benoit Soubeyrand
Manitoba

• Hepatitis B vaccine in provincial immunization schedules
  – 1992: British Columbia (urging of a parent)
  – 1994-1995: other provinces/territories except Manitoba

• Schedules
  – Grade 3x1, 4x6, 5x1, 6x2, 7x1 + (infantx3)

• Coverage
  – 85%-90%+
Very bad timing…

- Manitoba’s hepatitis B immunization program to start November, 1998
- France suspends school immunization October 1, 1998
- Vaccine opposition in Manitoba
  - Parent association + Chiropractor group
- Consent forms had already been sent in
Parents fight needles

Judge asked to halt hep B vaccination of province’s Grade 4 students

By Leah Janzen
Staff Reporter

Parents concerned about the safety of the hepatitis B vaccination are asking a judge to shut down a voluntary program that was to begin next Monday.

By Leah Janzen
Staff Reporter

A judge ruled last night against a group of parents who had asked the court to stop the voluntary program immunizing children against hepatitis B.

Young students join their parents yesterday in a protest outside the Law Courts Building to demand the hepatitis B vaccination program be stopped.

~15% of parents reversed consent
Hepatitis B vaccine coverage
Manitoba, 1997-2002
(Sep1-Aug31)

Source: MIMS registry data, Dr. Digby Horne
THE SUNDAY POST JANUARY 4TH 1998

Vaccine victims' parents set to sue

A SCOTTISH dad who claims his daughter contracted an incurable disease after a routine jab is one of a growing band of parents planning to take legal action for compensation. At least a dozen Scots parents - and more than 1200 others across the UK have sent details of ailments experienced by their children after the vaccination for measles, mumps and rubella (MMR) to a firm of solicitors which is collecting evidence for a court hearing. David Symington, of North Queensferry, had his daughter Rebecca (14) vaccinated for MMR following Government advice in 1994.
Vaccination coverage by 24mo, England and Whales 1988-89 to 2001-02

Source: PHLS web site
More measles cases confirmed

Health officials recommend the MMR jab

Another eight children have been confirmed as having the measles virus in a south London outbreak.

This means a total of 19 cases in Lambeth have now tested positive.

A further 18 child healthcare services investigations and negative test results have been reported.

There have also been reports on the south-east coast of England.

The results come amid a "media hysteria" over the triple vaccine – a children's vaccination which protects against measles, mumps and rubella.

Measles cases soar

The number of confirmed cases of measles in England and Wales rose significantly last year.

Provisional figures seen by the BBC indicate there were 310 cases, the highest number seen since the triple measles, mumps and rubella vaccine was introduced in 1988.

MMR vaccination rates have fallen

Experts say there is a "significant rise" in cases, despite the relatively small numbers.

First measles case for seven years

The illness of a six-month-old baby has been confirmed as the first case of measles in Hull for seven years.

Health officials are now expressing concern over the low uptake of the MMR vaccine, which protects children against mumps, measles and rubella.

Doctors are urging parents to get their child the MMR jab.

It requires an uptake of 92% to be effective, was discovered, 82% of children as a whole the uptake is 86%.

About links with the MMR jab
The hepatitis B vaccine has been effective in preventing hepatitis B. However, some studies suggest a link between the hepatitis B vaccine and serious neurological diseases or chronic illnesses, including multiple sclerosis, chronic fatigue syndrome, rheumatoid arthritis, or optic neuritis.

See your doctor if you are concerned about the safety of the hepatitis B vaccine. In addition, it may be important to contact an attorney who can help you protect your legal rights. Please keep in mind that there may be time limits within which you must commence suit.
Have you been injured by a thimerosal vaccine?

Click Here to View the Thimerosal Class Action Complaint

On April 3, 2002 a class action lawsuit was filed in the United States District Court for the Eastern District of New York on behalf of three groups against the manufacturer of Thimerosal, a preservative containing mercury, and against the vaccine manufacturers that use or used Thimerosal in the manufacture and/or distribution of childhood vaccines.

Thimerosal is a preservative that was used in childhood vaccines that is approximately 50 percent mercury by weight. Mercury is one of the most toxic elements on earth and its exposure by humans has been linked to neurological, motor, sensory and autoimmune disorders, as well as behavioral dysfunction. Before the FDA recommended that
Special provisions in the Homeland Security Act

- A protective order sealing all information produced by the Department of Health and Human Services (HHS) in the Omnibus Autism Proceeding before the U.S. Court of Federal Claims Office of Special Masters, or “vaccine court.”
  - Claims involving thimerosal not bypass the compensation plan.
  - Pending and future civil suits transferred to the vaccine court.
- Scope of the protective order: all oral, e-mails, transcripts, graphic matter or other written or electronically stored information provided by HHS, *either in the past or in the future*, in connection with the Omnibus Autism Proceeding.
- Covers information that may otherwise be subject to release pursuant to the Freedom of Information Act (FOIA).
- Limit access to government information, to the lawyers and experts in the case
- HHS “will not voluntarily produce discovery material” unless the protective order is entered.
<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>February 25, 2003</td>
<td>Class Action Lawsuits Filed in British Columbia Against Merck Frosst Canada and Glaxosmithkline and Aventis Pasteur for Injuries Caused by Thimerosal</td>
</tr>
<tr>
<td>November 10, 2002</td>
<td>The Not-So-Crackpot Autism Theory By ARTHUR ALLEN</td>
</tr>
<tr>
<td>October 7, 2002</td>
<td>Mcleans Article - TO VACCINATE OR NOT - Has a mercury-based preservative caused autism?</td>
</tr>
<tr>
<td>October 7, 2002</td>
<td>Gregory Article - Lawyer files class action lawsuit saying vaccinations harmed kids</td>
</tr>
</tbody>
</table>
Attention News Editors:

Class-action suit seeks justice for thousands of children left autistic by mercury-laced vaccines

TORONTO, May 9 /CNW/ — A class action lawsuit was filed in Ontario Superior Court yesterday on behalf of children who developed autism after receiving vaccines preserved with thimerosal, a mercury derivative.

Vancouver law firm Klein Lyons filed a Statement of Claim seeking damages from Aventis Pasteur, a pharmaceutical manufacturer whose widely used DPT (Diphtheria/Pertussis/Tuberculosis) vaccine contained thimerosal until 1994. Thimerosal is a compound of 50% mercury, a highly toxic metal known to cause severe neurological and behavioural damage. Infants are particularly vulnerable to mercury poisoning due to their incomplete brain development.

Canadian victims represented in the Klein Lyons suit include nine-year-old Keean East, who began life as a healthy, happy, alert and developmentally normal infant. Soon after receiving a series of three DPT vaccines containing thimerosal, he became withdrawn and unresponsive, failing to develop normal language, social, and motor skills. He has since been diagnosed with autism.

Although the medical and pharmaceutical communities knew of mercury’s dangers for almost a century, they did not advocate removal of thimerosal from pediatric vaccines until the late 1990s. In July 1999, the American Academy of Pediatrics issued a statement calling for thimerosal-free vaccines. That same year, a U.S. Food and Drug Administration report noted that infants injected...
Hospitals & Doctors Sued for Failing to Protect Newborns from Hepatitis B Virus Transmission

Case #1
In 1989 on the West Coast, a woman was identified as a hepatitis B carrier during her prenatal care. However, this information was not transmitted to the newborn nursery at the time of delivery. Her baby received neither hepatitis B immune globulin (HBIG) nor hepatitis B vaccine and the infant subsequently became a chronic carrier. The mother sued the hospital, the obstetrician, and the pediatrician. A substantial settlement was awarded.

Case #2
In a large Midwestern city in approximately 1988, a woman was screened in pregnancy and was found to be HBsAg positive. Her baby was born and appropriately immunized in both with HBIG and hepatitis B vaccine. The baby was tested for well-child care with same practitioner who was at the hospital-based clinic. The practitioner asked if the baby had received all doses of hepatitis B vaccine. The provider reviewed the record and told the parents that the vaccine was not necessary and did not give the follow-up dose. The same practitioner delivered the indications for hepatitis B vaccine and at 12 months of age, the child was found to have chronic hepatitis B. From the hospital’s follow-up clinic that treats the infants born to HBsAg positive mothers. The hospital was sued and the case was settled out of court.

Case #3
In 1988, Shellie - A 26-year-old woman who worked in a restaurant as a waitress in California contracted mononucleosis and died in February of 1990. The case in which she worked had seven patients with mononucleosis and was visited by the hospital system. This woman had received one dose of MMR as a child. In late 1989, the AAFP recommended two doses of monovalent vaccine for new employees in medical facilities. Since she was at higher risk for mononucleosis than the general population. The AAFP also recommended that the patient review for Hepatitis B without an annual Hepatitis B screening. In this hospital, hospital workers were not routinely screened at delivery, but the neonatologist tested every infant for HBsAg as part of a panel of tests that were routinely done on cord blood. If the test was negative, no Hepatitis B vaccination was given. If the test was positive, sometimes vaccine and HBIG were given and sometimes they were not. (Yes, handbaby already infected.) Two of the infants at the centers of these lawsuits were born in 1991 when this policy was in effect. In one case, the mother had been tested during her pregnancy but the test results were not communicated to her or the hospital. The infant’s cord blood test was negative. In a subsequent pregnancy she was discovered to be HBsAg positive and was referred to the state’s perinatal program. Her other children were tested as a part of this program and the one child was discovered to be a carrier. In the other case, the mother had not been tested during the pregnancy. The cord blood of this infant was positive for HBsAg, but the report was received after the discharge of the infant and the report was filed without an action. In both cases, the infants were not treated for perinatal exposure because the hospital relied on cord blood testing to determine the need for hepatitis B prophylaxis. The hospital policy has since changed and all mothers screened on admission to labor and delivery. The hospital policy has since changed and all mothers are screened on admission to labor and delivery. Lawsuits are pending in both cases [1994].

Case #5
On December 13, 1999, a previously healthy 3-month-old infant of Southeast Asian descent was brought to a hospital emergency department and was admitted following a 5-day history of fever, diarrhea, and jaundice. Upon admission to the hospital, hepatitis B serology was obtained along with liver function tests and liver enzymes. Laboratory results revealed that the infant was HBsAg positive and IgM core antibody (IgM anti-Hbc) positive. The infant’s mother was tested on the same day and was found to be HBsAg positive and anti-Hbc positive. A diagnosis of hepatic failure due to hepatitis B virus infection was made; sadly, the infant died on December 17 of fulminating hepatitis B. Investigation revealed that the infant’s mother had tested positive for HBsAg during her pregnancy but that the test result was communicated incorrectly as “negative” to the hospital where the baby was born. Neither the laboratory nor the prenatal care provider reported the HBsAg-positive test results to the local health department as required by state law. The infant received no hepatitis B vaccine and no HBIG at the time of birth. There has been no litigation date, but the physician lost his license to practice medicine.
Vaccination mandates
• US model
  – Medical, Religious, Philosophical exemptions vary by state
  – Antigens covered vary by state, includes pertussis.
  – Hepatitis B, Varicella, being added.

• Canadian model
  – In place in 3 provinces
  – Full exemptions
  – Antigens covered vary by province (D, T, Polio, M)
  – To date no new vaccines added to requirements
### Incidence of measles\(^a\) in states with and without school entry laws 1973–74\(^b\)

<table>
<thead>
<tr>
<th></th>
<th>Laws</th>
<th>No laws</th>
<th>% difference</th>
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<tr>
<td>1973</td>
<td>26.5</td>
<td>53.9</td>
<td>−51%</td>
</tr>
<tr>
<td>1974</td>
<td>33.1</td>
<td>55.4</td>
<td>−40%</td>
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\(^a\) Per 100,000 < 18 yr.

\(^b\) MMWR 1977; 26: 109–11.

Measles in 6 states strictly enforcing school laws vs other states\(^a\)

<table>
<thead>
<tr>
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<th>Measles incidence(^b)</th>
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<tbody>
<tr>
<td></td>
<td>1975–76</td>
</tr>
<tr>
<td>6 states</td>
<td>47.0</td>
</tr>
<tr>
<td>Other states</td>
<td>50.4</td>
</tr>
</tbody>
</table>


\(^b\) Per 100,000 < 18 yr.

\(^c\) 1st 31 weeks.

The immunization system in the United States — the role of school immunization laws

Vaccine 17 (1999) S19–S24

Walter A. Orenstein\(^a\)*, Alan R. Hinman\(^b\)
Critical factors

• Positive
  – Ensures vaccination of children entering school and/or daycare
  – Even with full exemptions – ensure that someone is checking

• Negative
  – Perception of coercion: provides a rallying point for opposition
  – Misrepresentation in Canada: Forced vaccination

• Model state exemption – new concept
  – Written request by parent explaining why
  – Counseling session related to decision
  – Annually renewed
  – Final decision rests with medical health officer (can be refused if coverage rates threaten resurgence of disease)
Information dissemination, hypothesis generation, publication: The use and abuse of information?
Selective presentation: Japan and SIDS

- “When Japan moved its pertussis immunization program to age 2, the incidence of SIDS dropped”

- Did vaccines really cause SIDS?
  - Not the whole truth…
I"600 patients atteints d'effets secondaires graves, juste à l'Hôtel-Dieu de Montréal!..."

L'Hôtel-Dieu de Montréalsoigne à lui seul plus de 600 patients atteints d'effets secondaires graves à la suite d'une vaccination contre l'hépatite B.
The correction

- "Hepatite B : moins d'effets secondaires qu'annonces"

- 600 consultations, 80 with history of HepB vaccination and adverse events, 2 serious.
Examples of misinterpretations of VAERS data in the published literature

- All suspected adverse events are reported to VAERS as mandated by law.
- The VAERS database is a reliable source of information concerning the potential ability of a vaccine to cause an adverse reaction.
- All serious reactions to VAERS require telephonic and written confirmation by the CDC.
- The Biologics Surveillance Summaries provide estimates of vaccine doses administered for the calculation of incidence rates of adverse reactions.
- Any limitations of VAERS data apply equally to all vaccines and therefore the incidence rate of a specific adverse reaction to one vaccine would be expected to be similar to the incidence rate following another vaccine administered to a similarly aged population.
  - The use of a “control” vaccine provides an estimate of the background rate of the adverse event under consideration.
- The incidence of the adverse event for the vaccine under study, divided by the incidence rate of the same adverse event following the control vaccine, provides the relative risk (RR) of the adverse reaction compared to the control vaccine.
Conclusions and discussion
Compensation

• Provide a safety net for vaccination
• Must be evidence-based, otherwise
  – Conclusions misrepresented
  – Inherently unfair (lucky vaccination)...

• Can they be used as an educational tool regarding real vs. false safety issues?
Lawsuits

• Regression back to the 1980’s
• Visible blow to confidence in vaccination
  – Outcome may not be related to causality
• Current thimerosal-related cases are a real threat to vaccine supply…

• IF rational verdicts and outcomes, provides an educational opportunity
  – Missed in Manitoba
Mandates

- Vocal minority perceive them as coercive
- May create anti-vaccine activists from those who otherwise would vaccinate...

- Movement towards allowing full philosophic exemptions
- Must be as difficult to get exemption as vaccination
- Provides an opportunity to check immunization status
- Opportunity to educate about the importance of vaccination
Information and publication

- Misconceptions about vaccination still persist despite efforts to educate
- Peer review process can be incredibly poor
- Conflicts of interest arise from both sides, only “our side” has to avoid it
- Activists not sued for failure to vaccinate, but health care providers are…

- Missing potentially strong opportunities to demonstrate that the “emperor has no clothes”
Anti Anti-Vaccination Anyone?

- Evidenced-based compensation
- If vaccine mandates in place, allow exemptions (properly managed)
- More aggressive countering of misconceptions
- More diligence in responding to bad science
  - Letters to the editor or “Review articles” in prominent journals