GPI Updates From the Chair, Dr. Stanley A. Plotkin

Issue 1
August 2013

Welcome to the inaugural newsletter of the Global Pertussis Initiative (GPI). This newsletter is an extension of our main goals – including raising awareness about pertussis as an important and preventable disease, improving understanding of the increasing incidence of reported pertussis, and sharing the most recent information and opinions among our members. Herein you will find summaries of current research, theories, and practice that apply to pertussis prevention and management strategies.

Objectives
- Provide resources, including the latest scientific and clinical information, along with recommendations for pertussis prevention and control
- Develop and communicate recommendations on immunization strategies acceptable at national, regional, and local levels
- Keep you abreast of the GPI activities and facilitate the sharing of information and best practice among GPI members

In this issue we present a number of interesting items, including 1) the latest ACIP recommendation for vaccinating pregnant women; 2) recent pertussis statistics from the CDC; 3) recently published papers that discuss the impact of religious immunization exemptions on the risk for pertussis; and 4) possible differences in efficacy between whole-cell and acellular pertussis vaccines.

In the future, we hope that the “GPI Updates From the Chair” becomes a valuable source of information for you to use while disseminating, sharing, and discussing your own research, thoughts, and practices with other GPI members. Should you have any other ideas for items you would like to see included in our updates, please send an email to GPISecretariat@parexel.com. As this initiative has been developed with you in mind, your suggestions on additional content will be greatly appreciated.

Best,

Stanley A. Plotkin, MD
NEWS FROM THE WEB

Centers for Disease Control and Prevention (CDC) reports an increase in the number of pertussis cases in the US in 2012
In the US, more than 41,000 cases of pertussis were reported to the CDC in 2012, which represents a 50-year high. The increase was observed in 49 states and Washington, DC, with the following states experiencing the highest incidence: Wisconsin, Vermont, Minnesota, Washington, North Dakota, Iowa, Montana, Alaska, New Mexico, Colorado, Kansas, and Oregon. The final 2012 report is expected to be published in September 2013. Recent outbreak activity in 2013 includes 25 cases that occurred in middle and high school students in Ann Arbor, Michigan.
http://www.cdc.gov/pertussis/outbreaks/trends.html

Pertussis statistics from the World Health Organization
The number of reported pertussis cases worldwide for 2012 was 200,869, representing a slight increase from 2011 when the number of cases was 167,865. During this period, the percentage of the target population with DTP3 coverage was 83%, which represents an estimated 107 million infants who were fully protected against pertussis. A higher percentage, 91%, received only 1 dose, highlighting the need to increase full coverage in this group. In some regions of the world, specifically the Americas, Europe, and the Western Pacific, high DTP3 coverage has been achieved in the target population. By contrast, the regions with the lowest coverage were Africa (72%), Southeast Asia (75%), and the Eastern Mediterranean (83%).
http://www.who.int/immunization_monitoring/data/gs_gloprofile.pdf
http://www.who.int/immunization_monitoring/data/gs_afrprofile.pdf
http://www.who.int/immunization_monitoring/data/gs_wprprofile.pdf
http://www.who.int/immunization_monitoring/data/gs_seaprofile.pdf
http://www.who.int/immunization_monitoring/data/gs_eurprofile.pdf

Advisory Committee on Immunization Practices (ACIP) recommends use of Tdap each pregnancy to provide newborns with protection against pertussis
With the goal of reducing pertussis in newborns, previous ACIP recommendations (2011) included Tdap vaccination of pregnant unvaccinated women. The resulting uptake in vaccination was extremely low, with a recent study suggesting only 2.6% of pregnant women received the Tdap vaccination. During the October 2012 ACIP Pertussis Vaccines Work Group meeting, evidence was presented suggesting that maternal anti-pertussis antibodies are short-lived and therefore, to protect newborns, it is advised that women should receive the Tdap vaccine during each pregnancy. Further, although Tdap vaccination could occur at any point throughout the pregnancy, ACIP considers that the greatest benefit would occur if a woman is vaccinated in the third trimester. MMWR February 22, 2013 vol 62 No. 7 131-135.
http://www.who.int/immunization_monitoring/diseases/pertussis/en/

NEWS FROM THE PUBLISHED LITERATURE

Novel mathematical model estimates antibody responses allowing assessment of serological responses during natural infection and vaccine-induced immunity
The authors of this study created a novel model that they used to examine the antibody response induced by either natural infection or vaccination. In this study, across time, the serum IgG responses against 3 pertussis vaccine antigens, pertussis toxin (PT), filamentous hemagglutinin (FHA), and pertactin (PRN) were analyzed. The strongest IgG-PT response was elicited by natural infection. The response elicited by vaccination was less robust and the peak decayed more quickly. Vaccination produced higher peaks of the antigens FHA and PRN, and these peaks decayed faster than those produced by natural infection. Using their model, the authors also compared antibody responses produced by the Dutch whole-cell vaccine with those produced by acellular vaccine and found that the whole-cell vaccine produced smaller antibody responses than the acellular vaccine. In conclusion, this novel dynamic model was effective at comparing the vaccine-induced antibody response to the response that arises from natural infection, and in the future this model can be used to compare the efficacy of vaccines.
A cross-sectional study of pertussis seroprevalence in Mexico reveals gender and age effects
Consistent with other regions in the world, Mexico has seen the number of *Bordetella pertussis* cases rise, although some evidence suggests that better detection methods may have contributed to this increase. This study was conducted to determine the impact of existing immunization programs on the incidence of pertussis in Mexico. The seroprevalence of *B. pertussis* was analyzed using 3344 serum samples that were collected during a National Health and Nutrition survey. This study revealed that seroprevalence was significantly higher in males (53.4%) and children (59.3%) and decreased with age. Further, within Mexico, regional and socioeconomic differences were not observed. Consistent with observations from other countries, women, adolescents, and young adults were identified as possible sources of infection for infants, and therefore the take-home message is that booster vaccination will reduce the disease burden in infants, the most vulnerable group. In addition, the seroprevalence trends observed in this study are consistent with both the vaccine schedule and percentage of coverage in Mexico.

An increase in religious exemptions for immunization is associated with an increase in pertussis in New York state
The authors of this study sought to determine whether children who are not immunized due to a religious exemption impact the incidence rate in the community where they live. Most recently, the state of New York (NY) has seen a rise in the number of children who are not vaccinated due to religious reasons. The data in this study were collected from 2000 to 2011 and were derived from the school-based immunization survey that parents are required to complete before their child enters school. In 2000, the overall annual NY state mean prevalence of religious exemptions was 0.23%, and this increased significantly to 0.45% in 2011 (*P*=0.001). Further, counties with mean exemption prevalence rates of ≥1% experienced significantly higher rates of reported pertussis than counties with lower exemption rates (*P*=0.001). A possible explanation for the rise in requests for religious exemption include an increase in the influx of the Amish population into the state, and parents using the exemption as a way of addressing personal beliefs and concerns over vaccine safety. The results from this study highlight the need to educate parents and communities regarding the risks associated with vaccine exemptions.
Link: [http://pediatrics.aappublications.org/content/132/1/37.long](http://pediatrics.aappublications.org/content/132/1/37.long)

Inclusion of DTaP into the infant vaccination schedule in Turkey is associated with a decrease in adverse events
Over the past several years, the vaccination schedule for infants has been altered in Turkey and as is true in other countries, an ever present concern is the severity of vaccine-induced adverse reactions. In 2007, the DTaP vaccine was introduced in place of the whole-cell vaccine, and the goal of this study was to determine whether this change impacted the frequency of adverse events. Three different infant vaccines schedules, DTwP + OPV, DTwP + OPV + Hib, and DTaP-IPV/Hib were compared across 3 consecutive years in 2401 infants. Data were collected by the parents/guardians using a diary, which they kept for 3 days post-vaccination. The data revealed that all vaccines were well tolerated and no severe reactions occurred. The DTaP-IPV/Hib vaccine was associated with the fewest local and systemic reactions whereas the booster DTwP + OPV and DTwP + OPV + Hib vaccinations were associated with the most adverse events. In Turkey, after the introduction of the acellular vaccine, the coverage rates increased dramatically from 90% in 2006 to 97% in 2011, and the authors suggest that this is due to the fewer adverse events associated with this vaccine.

Cohort model finds that vaccination against pertussis during pregnancy is more effective than postpartum vaccination strategies including cocooning
Infants <2 months of age bear the greatest pertussis disease burden, and therefore vaccinating mothers and extended family members is crucial for preventing infant pertussis. The goal of this study was to compare the effectiveness of vaccination during pregnancy (late second trimester or third trimester) compared to post-pregnancy vaccinations, including the cocoon strategy. Vaccine effectiveness on incidence, hospitalizations, mortality, and cost effectiveness were analyzed using a cohort model. The results suggest that vaccination during pregnancy would be more effective at decreasing incidence and death, compared to postpartum vaccination strategies, including cocooning. Pregnancy vaccination would decrease the number of pertussis cases by 33% vs 20% by postpartum vaccination, or 32% if postpartum vaccination extended to father and one grandparent (ie, cocooning); the number of hospitalizations decreased by 38% vs 19% (32% with cocooning); and the number of deaths decreased by 49% vs 16% (29% with cocooning). Cocooning could avert more cases than vaccination of postpartum mothers alone but at a higher cost.
A vaccination series consisting entirely of acellular pertussis vaccines was associated with a greater risk for pertussis compared to a vaccination schedule that included one or more whole-cell vaccinations

An increase in the incidence of pertussis has been observed in countries with a high level of coverage. Possible explanations for this include better diagnostic methods, mutations in pertussis, and reduced antigenic stimulation. In this recent study, Kaiser Permanente records were examined and children vaccinated exclusively with the acellular vaccine were identified along with those whose vaccination schedules included at least one whole-cell vaccine. A total of 263,496 subjects, aged 8 to 20 years of age, were identified and 904 cases of pertussis were confirmed. In patients with 5 or 6 doses of the acellular vaccine, the relative risk of pertussis was 5.47, which was significantly higher (P=0.001) than in children receiving ≤1 dose of the whole-cell vaccine. The inclusion of a sixth dose of the acellular vaccine was found to decrease relative risk. The results of this study suggest that the durability of the immune response was strengthened when one or more whole-cell vaccines were included into the vaccination schedule.


Link: http://www.ncbi.nlm.nih.gov/pubmed/23487373

Two letters have been published in response to the Witt et al paper and they are:

Possible adaptations in pertussis pathogen may impact vaccine induced immunity

This review article discusses the recent increase in pertussis worldwide, despite high vaccination coverage levels. The authors note that although there is a consensus that waning immunity plays a role in the observed increase, the exact cause(s) remain unknown. Research that suggests the resurgence of pertussis is related to the adaptation of the pertussis pathogen is presented. Recently, allelic variation was found in genes associated with virulence, which include the pertussis toxin, pertactin, serotype 2 and 3 fimbriae. These small mutations in single genes are associated with clonal sweeps that can impact strain fitness, which in turn can affect vaccine-induced immunity. In the Dutch pertussis population, at least 4 clonal sweeps have occurred within the span of 6 to 20 years and all were associated with small mutations in the virulence associated genes. Thus, this research suggests that small mutations can produce significant changes in the pathogen population within a short period.


New vaccine strategies are required to better control pertussis

This review discusses the recent increase in incidence in pertussis in school-aged children and adolescents and outlines new vaccination strategies for controlling the disease, especially in vulnerable groups such as infants. The proposed vaccination strategies include cocooning infants and booster vaccines for adolescents and adults. Additional key topics discussed included the need for worldwide surveillance to monitor circulating strains and new vaccination approaches that include adjuvants and live-attenuated vaccines.


NEWS FROM RECENT CONFERENCES

European Society of Clinical Microbiology and Infectious Diseases (ECCMID), 27-30 April, 2013

All ECCMID abstracts can be obtained at http://www.escmid.org/research_projects/eccmid/.

Temporal changes in circulating Bordetella pertussis isolates after the introduction of acellular pertussis vaccine in Finland
Barkoff AM, He Q, Kalonnen T. Turku, Finland. P2435. In Finland, the acellular pertussis vaccine was introduced in 2005. This study examined temporal changes in pertussis isolates from 2005 through 2012, the years following the introduction of the acellular vaccine. The molecular analysis included serotyping the fimbriae, genotyping the pertussis toxin promoter, the Sl subunit, and
pertactin, in addition to use of pulsed-field gel electrophoresis and assessment of pertactin protein expression. The analysis determined that circulating pertussis is continuously evolving and therefore continuous monitoring of emerging pertussis strains is crucial for managing the disease. Specifically, isolates that contain fimbriae 2 have been increasing since 2011, before which fimbriae 3 dominated, and changes in pertactin also have been observed.

The characterisation of fimbrial serotypes and pertactin-pertussis toxin S1 sequence types in *Bordetella pertussis* isolates

Nar Otgun S, Bakkaloglu Z, Acar B, Unaldi O, Durmaz R. Ankara, Turkey. P1916. In 2008, the acellular pertussis vaccine was introduced in Turkey, where it is administered in the second, fourth, and sixth months of life, followed by a school age dose at 6 years. Coverage rates are high in this country and were reported as 96%, 96%, and 97% in 2008, 2009, and 2010, respectively. The molecular analysis included serotyping the fimbriae, genotyping the pertussis toxin promoter, the S1 subunit, and pertactin, and the data from pre- and post-acellular pertussis vaccination was compared. The results from the analysis revealed that since the advent of acellular vaccinations, there has been a shift from fimbriae 3 to fimbriae 2, which is now dominant. The authors suggest this represents an adaptation to the pertussis vaccine and therefore continued molecular analysis is critical for controlling the disease.

*International Society for Pharmacoeconomics and Outcomes Research (ISPOR), 18-22 May, 2013*

All ISPOR abstracts can be obtained at http://www.valueinhealthjournal.com/issues?issue_key=51098-3015(13)X0003-8

Estimated human and economic burden of four major adult vaccine preventable diseases in the United States, 2010. McLaughlin JM. *Value Health*. 2013;16(3):A86. A model was employed in this study to estimate both the human and economic burden produced by 4 vaccine preventable diseases: influenza, pneumococcal disease, herpes zoster, and pertussis. Data from all US states from the 2010 Census were employed. Three primary estimates were generated and they include the number of cases per year, the direct medical cost of a single case, and the indirect medical costs related to morbidity and loss of productivity. The estimated annual cost for all 4 preventable diseases was $15.1 billion, and pertussis made up 3% of this cost.

*European Society for Paediatric Infectious Diseases (ESPID), 28 May-1 June, 2013*

All ESPID abstracts can be obtained at http://www.sessionplan.com/espid2013/

Investigating attributes of vaccine acceptance in contacts of newborns using discrete choice experiment: a new approach to cocooning in pertussis. Agboton CJ, Ledent E, Marchetti F, McCooig C, de Bekker-Grob E, Gabbuti G. This abstract describes a discrete choice study design that will be used to identify decision-making patterns that result in parents and caregivers adopting the cocoon strategy to protect their newborns. Focus groups in Italy (n=300) and Spain (n=300) will be given a questionnaire that measures the relative importance of attributes related to the cocoon strategy. The authors hope that insight into the decision-making process, relevant to obtaining a pertussis vaccination, will lead to better control of pertussis in the population, which will ultimately protect vulnerable newborns.

Current pertussis epidemiological situation in Latin America and associated vaccination strategies. Debbag R, Sarto E, Espinal C, Mascarenas C. This research group reviewed Medline and the National Ministry of Health websites for epidemiological data from countries in Latin America. Across this region, very large increases in incidence were observed in infants in some countries. In Argentina, a 46% increase was observed in infants <1 year old from 2005 (5.7/100,000) to 2011 (8.3/100,000). Similarly, in Brazil, a 77% increase was observed from 2007 to 2011 in infants <1 year. The largest increase was observed in Chile, as the incidence increased by 275% in infants <1 year and since this large increase, the cocoon strategy was implemented in 2011. The countries Colombia, Mexico, El Salvador, Honduras, and Guatemala did not experience an increase in incidence.

Absolute effectiveness of acellular pertussis vaccine and relative effectiveness in comparison to whole-cell vaccine during epidemic years in Queensland, Australia. Sheridan SL, Davis CA, McCall BJ, et al. This study compared the relative effectiveness of acellular versus whole-cell vaccines by assessment of the Queensland Australia notification, hospitalization, and vaccination register data. For children born in 1998, notification rates from 2009 to 2011 were determined and compared to the vaccine composite received during their first year of life, ie, all acellular, all whole-cell, or a mixed pertussis vaccine. The results found that notification rates were higher in children primed with a schedule that consisted of all acellular vaccines but nonetheless this vaccine schedule provided very good protection against pertussis in 1 to 3 year olds and good-to-moderate protection in 5 to 11 year olds.

Pertussis vaccine coverage of parents: current situation in maternity units in north-west France and impact of cocooning strategies. Robine A, Gascoin, G, Cipierre C, Savagner C, Gras-Leguen C, Lebouche B. The study described here assessed the impact of adapting a cocoon vaccination protocol within maternity units. A total of 8968 healthy newborns were studied and a telephone interview was conducted 1 month post-discharge from the maternity unit. Across hospitals with and without a cocoon protocol the overall vaccine coverage was higher in mothers (42.8%) compared to fathers (36%). A significant increase in coverage was observed in mothers that gave birth at hospitals with a cocoon vaccine protocol in place. For these mothers, the coverage percentage was
55.4% compared to 25.6% coverage in mothers from hospitals without a protocol (P<0.01). The same significant impact of the cocoon protocol was observed in fathers, where coverage was higher with the protocol (46.4%) compared to 22% without (P<0.01).

**Proportion of hospitalisations and complications in infancy during 14 years of surveillance and the incidence of pertussis.** Nilsson LJ, von Segebaden K, Engstrom G, Lepp T. Since 1996, the pertussis vaccination coverage rate is very high in Sweden with 98 to 99% of the country having received the vaccine. Vaccination against pertussis occurs at 3, 5, and 12 months in this country. Since 2009, only 40 cases per year have occurred in infants <1 year. This study reviewed hospitalization data from the years 1997 to 2011 and determined that the proportion of infants with complications or hospitalization due to pertussis was decreased and relatively constant, even in infants too young to be vaccinated, suggesting high coverage impacts disease.

**2006-2012: Follow-up of pertussis paediatric surveillance, in private practice, in France.** Guiso N, Levy C, Romain O, Bechet S, Cohen R, The French Pediatrics Groups ACTIV AFPA. Between 1966 and 1998 in France, a whole-cell vaccine was used to prime infants, and as a booster. The protection duration for the whole-cell vaccine was calculated to be about 10 years. A second booster, consisting of an acellular vaccine, was introduced in 1998, and in 2005, the entire whole-cell vaccine schedule was replaced with an acellular vaccine schedule. In this study, pediatricians were administered a questionnaire to determine the duration of protection of the acellular vaccine, and it was found to be approximately 7 years.

**Pertussis epidemic in Israel, 2010-2012, increased laboratory detection despite two additional DTap booster doses.** Abu Raya B, Bamberger E, Peterman M, Vaintrub A, Golan O, Srugo I. Despite the fact that acellular booster doses were implemented in Israel in 2005 and 2008, the pertussis incidence rate nearly doubled between 2010 (15.0/100,000) and 2011 (28.8/100,000). To further study this increase, PCR and culture assay data from a pertussis reference laboratory were analyzed. Several hypotheses were put forth to explain the increased incidence based upon the data and they include lower effectiveness of the acellular vaccine, waning immunity, improved sample collection, which increases sensitivity, and last, increased symptom awareness by clinicians.

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**Get involved...**
Do you have a paper, abstract, or presentation that you would like to see in the next issue? Would you like to provide your expertise on a piece? If so, please email GPISecretariat@parexel.com.

**UPCOMING EVENTS**

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<th>Meeting name, date, and venue</th>
<th>Overview</th>
<th>Abstract deadline</th>
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<td><strong>IDWeek 2013: 2nd Annual IDWeek (2nd Joint Meeting of the Infectious Diseases Society of America, the Society for Healthcare Epidemiology of America, the HIV Medicine Association, and the Pediatric Infectious Diseases Society), October 2–6, 2013, San Francisco, CA, USA</strong></td>
<td>6000 attendees are expected at this meeting. Website: <a href="http://www.idweek.org/index.php?option=com_content&amp;view=article&amp;id=65:2013&amp;catid=2&amp;Itemid=183">http://www.idweek.org/index.php?option=com_content&amp;view=article&amp;id=65:2013&amp;catid=2&amp;Itemid=183</a></td>
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<td><strong>WSPID 2013: 8th Biennial World Congress of the World Society for Pediatric Infectious Diseases, November 19–22, 2013, Cape Town, South Africa</strong></td>
<td>The conference will provide approximately 2000 specialists a world forum for sharing the latest knowledge and receiving updates on the treatment and prevention of pediatric infectious diseases. Website: <a href="http://www.wspid.com/">http://www.wspid.com/</a></td>
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<td>24th Annual European Congress of Clinical Microbiology and Infectious Diseases (ECCMID), May 10–13, 2014, Barcelona, Spain</td>
<td>The program will focus on the latest developments in clinical microbiology and infectious diseases. This is the largest European microbiological meeting, attracting more than 7000 attendees a year. Website: (for 2013) <a href="http://www.congrex.ch/eccmid2013">http://www.congrex.ch/eccmid2013</a></td>
<td>November 2013</td>
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<td>114th Annual General Meeting of the American Society for Microbiology (ASM) May 17–20, 2014, Boston, USA</td>
<td>ASM 2014 will include diverse perspectives and in-depth discussions on the current state and future direction of microbiology, and is the largest microbiological meeting, with 9000 attendees expected. Website: (for 2013) <a href="http://asm.org/asm2013">http://asm.org/asm2013</a></td>
<td>December 2013</td>
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<td>32nd Annual Meeting of the European Society for Paediatric Infectious Diseases (ESPID), May 6–10, 2014, Dublin, Ireland</td>
<td>ESPID 2014 provides its 3000 attendees unparalleled access to the latest data and interpretation in the field of pediatric infectious diseases. Website: <a href="http://espid.kenes.com/">http://espid.kenes.com/</a></td>
<td>January 2014</td>
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**NEWS FROM THE GPI**

**We’d like to hear from you...**
Do you have a research project ongoing or planned that may be of interest to other GPI members? Have you been selected to present at an upcoming meeting? Is there anything else you would like to share with the group? If so, please email GPISecretariat@parexel.com and we’ll add your news to the next update.

Perhaps you wish to ask for input or an opinion from the GPI. Again, do please get in touch.

**Update on GPI activities**
GPI Roundtable Meeting, 26-27 January 2013, Paris, France

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| Epidemiology, surveillance, and vaccine effectiveness | • In general, there has been a recent increase in reported pertussis cases observed, especially in children and adolescents (7–14 years old) and the adult population.  
• Incidence trends also differed between the countries discussed.  
• Underestimation of deaths due to pertussis in the very young and the elderly.  
• There is a clear need to better understand the differences in the immune responses induced by acellular and wcP vaccines (primary and booster series). |
**Biology of Bordetella**

- *Bordetella pertussis* clinical isolates now circulating are different from those used for the current vaccines and major changes have been observed in *B. pertussis* populations after the introduction of vaccination.
- Studies in mouse models suggest that these changes affect vaccine efficacy and may be important when immunity has waned.
- However, there currently are no epidemiology data that suggest the observed changes in pertussis have clinical significance. For the development of improved vaccines consideration should be given to whether, and how, to change pertussis vaccine seed strains.

**Correlates of protection/ mechanisms of protective immunity against pertussis**

- Clear need for more data on the impact of vaccination on the innate and adaptive immune responses following both acellular and wcP vaccination (including the impact of vaccine type on Th1 and Th2 responses and functional activity of the antibodies).

**Animal models of pertussis**

- The baboon model may be the best animal model of human disease. The mouse model remains of value. There remains benefit in developing the human challenge model.

**Vaccine design**

- In light of long-term vaccine efficacy data, vaccination strategies must be reconsidered and new vaccines studied.
- Correlates of protection need to be studied in more detail.
- Vaccines containing different antigens and/or adjuvants are under examination.

**Regulatory processes for introducing “new and improved” ACVs**

- “New and improved” pertussis vaccines may need more testing and data for licensure.
- Adding a new component to a pertussis vaccine may require human efficacy data; but removing a component from a vaccine that is already licensed, eg, removing diphtheria/tetanus to create a monocomponent vaccine may not.
- Efficacy trials in adolescents and adults may be difficult to carry out but are not impossible, but an infant-toddler efficacy trial design remains an unsolved challenge.
- Bridging efficacy data may be acceptable if comparative immunogenicity data exist.

**Ongoing GPI publications**

The GPI currently have 2 publications in development

1. The global epidemiology of pertussis
2. The cocooning strategy (including maternal immunization)

Should you have any further thoughts on potential GPI publications, please let us know at GPISecretariat@parexel.com.

**Upcoming GPI Activities**

**GPI Global Summit Meeting, 2014**

The next GPI Global summit meeting is in its initial planning stages and we are open to ideas for topics. What do you consider relevant for discussion? If you have ideas please let us know and do watch out for future correspondence regarding this meeting.

**GPI Website**

We are in the initial planning stages of a GPI website for members. This will be a place for you to come and browse the document library and the member directory. You can also use this website to share ideas and discuss topics for inclusion in future GPI activities and review outcomes of previous activities. In the future, we may be using this portal for web-meeting access and to host a bi-annual member survey poll.