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New Knowledge about Cholesterol Drugs and Muscle Problems

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Edward P. Bollenbach, BA, MA

Statin drugs are one of the great health breakthroughs of the 20th century, dramatically lowering cholesterol and helping to prevent heart attacks and strokes. Taken by millions of people, statins are one of the most effective and widely prescribed medications ever. But they're not risk free. The most common problem reported is muscle pain. PHI asked polio survivor Edward A. Bollenbach, a retired professor of microbiology and chemistry, to explain why this occurs and to discuss how it may relate to post-polio people.

PHI: *What is this new knowledge about muscle problems, and which cholesterol drugs are involved?*

EB: There have been studies at Harvard and Beth Israel in Boston with statins, such as Lipitor and Crestor, which were published last year. This work points at a single chemical, normally produced along with cholesterol, as the lynchpin in the development of new muscle problems.

PHI: *So you are saying that when cholesterol is normally formed in the body this chemical is formed with it?*

EB: Yes, and when drugs like Lipitor, Zocor, Crestor, Mevacor (1), among others, are used, they slow the speed of cholesterol formation, and the amount of cholesterol in the blood and muscles decreases. Geranylgeranyl pyrophosphate, the chemical responsible for preventing muscle problems, also decreases, and it does not function as it normally does. This decrease is very likely the cause of muscle-related problems.

PHI: *What happens to the muscle to make it sore from the decreased amount of chemical?*

EB: Apparently there is a gene which becomes active in the muscles of the body if there is a decrease in the normal function of the chemical mentioned above. The gene produces a substance which stops muscles from rebuilding themselves after use so muscles cannot repair normal wear and tear. But remember, this happens to a small minority of patients.

PHI: *How can this new knowledge help polio survivors?*

EB: There are different forms of this gene, so one form may be more damaging than others. Soon we may be able to test for which version of the gene is present. Also, work is now underway to determine exactly what happens to the chemical that is decreased, which results in the activation of the atrophy gene, called atrogen, and so named because it results in muscle atrophy.

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POST-POLIO HEALTH INTERNATIONAL

POST-POLIO HEALTH INTERNATIONAL
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PHI's mission is to enhance the lives and independence of polio survivors and home mechanical ventilator users through education, advocacy, research and networking.

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Worthy of Note

Funds Available

Thanks to generous contributions from the Helpenstell family and the family and friends who donate to the Gilbert Goldenhersh Memorial Tribute Fund, PHI is accepting applications from polio survivors in need of funds to assist with the purchase of bracing or modified shoes. The maximum donation to one person is $500. The Goldenhersh funds are to assist survivors in Missouri. To receive an application, please contact info@post-polio.org or call Brian at 314-534-0475.

New Editor for *Post-Polio Health*

Post-Polio Health International welcomes Gayla Hoffman as editor of *Post-Polio Health*. Gayla has been associated with the organization as a member of the board of directors and a volunteer on special projects since the '80s. A graduate of the University of Missouri School of Journalism, she has more than 30 years' experience in corporate public relations and for the past 10 years has worked as a freelance writer/editor on health care, energy and telecom topics. Contact her directly at editor@post-polio.org.

Festival of International Conferences on Caregiving, Disability, Aging and Technology – FICCDAT 2011

FICCDAT 2011 will be held June 5-8, 2011, in Toronto, Canada. The two lead organizations, March of Dimes Canada and Toronto Rehabilitation Institute, along with the Government of Ontario, are building on the 2007 inaugural festival. FICCDAT 2011 will bring together six important and different conferences all focused on enhancing the lives of seniors, persons with disabilities and their family caregivers. The conferences in the festival are Growing Older With A Disability; RESNA/ICTA (Rehabilitation Engineering and Assistive Technology Society of North America); Advances in Neurorehabilitation; Caregiving in the 21st Century; 34th Canadian Medical and Biological Engineering Conference; and International Conference on Best Practices in Universal Design.

All six conferences are now accepting abstracts, which are due December 1, 2010. To learn more about the Festival and the opportunities to present, go to www.ficcdat.ca. Online registration is also available. Early bird registration closes April 1, 2011. When you visit the site, it will ask you to sign up, and you will then receive future updates.

Joan L. Headley, Executive Director, PHI

Research

Aging Well with Post-Polio Syndrome: Dealing with Pain

Researchers at the University of Washington's Aging Rehabilitation Research and Training Center, agerrtc@u.washington.edu

Chronic pain is something that many people, including many individuals with post-polio syndrome (PPS), face on a day-to-day basis. In fact, from the preliminary results of our recent survey of post-polio people, we found that 373 out of 419, or 89 percent, reported at least some daily pain. Of these individuals, more than half (227) rated their average pain as being equal to or greater than five on a scale of one to 10. While it is of little comfort to those experiencing PPS, you are not alone!

Although these results are preliminary, we previously completed a survey with a smaller number of participants (63) with post-polio syndrome. In this study we also found that pain was a very common issue for people experiencing PPS. Some 91 percent of the survey participants reported pain, and everyone who experienced pain also reported that they had not been pain-free during the previous month.

Another sign that pain is a major issue for people with PPS is that, in our surveys, those who reported pain said that they have experienced pain for an average of 20 years. We also asked people about *where* they experience pain most frequently. People responded that they most frequently felt pain in the shoulders, lower back, legs and hips. Pain intensity was greatest in the knees, legs, wrists, lower back and head. Knowing *where* the most common and most severe types of pain occur is a good start to finding ways to help reduce that pain.

Another problem with pain, and why it needs to be addressed, is that it often interferes with activities that are important to people. We also asked about this in our smaller-sample survey, and found that pain interfered most with sleep and with recreational activities, mobility and normal work activities, in that order.

Finally, we found that 70 to 95 percent of those in the smaller survey had tried a number of pain treatments – heat, acetaminophen, ice, aspirin or ibuprofen, strengthening exercises – but fewer than half of the participants with pain were using any pain treatment at the time of the survey.

The next step is to investigate ways to reduce the interference of pain in important daily activities and to test what is most effective in reducing pain for most people. It's also important to understand which coping methods are both effective and easy to use, so that people can incorporate them into their lives and continue to use them to treat their pain.

The amount of pain that people with PPS report may not surprise anyone experiencing PPS, but this is critical information to support further research about PPS pain. From such research we can determine which areas of pain are most important to target, and researchers can begin to design and test interventions to reduce the degree to which pain interferes with key activities. In future columns, we'll discuss research findings regarding different treatment options for pain management. ▲

The contents of this column were developed under a grant from the U.S. Department of Education, NIDRR grant number H133B080024. However, the contents do not necessarily represent the policy of the Department of Education, and endorsement by the federal government should not be assumed.

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Edward A. Bollenbach is a retired professor of microbiology and chemistry at Northwestern Connecticut Community College. He earned BA and MA degrees in biology from State University of New York at New Paltz. He holds National Science Foundation Certificates for NSF courses in cryptogamic botany, holistic health and origins of life. He contracted polio in 1954 and is now experiencing post-polio syndrome.

PHI: *Are there any other developments on this subject?*

EB: In 1997, the *New England Journal of Medicine* reported that 60 percent of people who develop muscle problems from statins have a double copy of another gene we can designate as C. So, if you inherited a C gene from your mother and a C gene from your father, you will be CC. If you have neither C but two of an alternative gene, your chance of developing muscle problems is very low.

PHI: *Between the atrogen gene and the C gene how does this change the picture for people experiencing the late effects of polio?*

EB: First of all, muscle problems seem to be controlled by genetic factors, so whether you are a polio survivor may not be likely to have much of an effect on whether you develop increased problems from statins. It seems we may all be in the same boat. Secondly, it is very possible that in the near future we will develop interventions to make the probability of muscle side effects extremely unlikely for everyone even though such effects are already infrequent. When they do occur, they are usually transitory.

PHI: *Are there any other practical issues that we should be aware of to reduce the chance of muscle damage due to statin drugs?*

EB: I think physicians should probably, if they do not already, take into account other medications that a patient is using when prescribing a statin drug.

PHI: *Why is that?*

EB: Because Lipitor, for example, is broken down in the liver by a different chemical than Crestor or some of the other statins. Other medications are also broken down in the liver by other chemicals. If medications, like the heart drug amiodarone or the hypertension drugs called calcium channel blockers, are taken together with a particular statin like Lipitor, the chemical that breaks down both drugs is the same, so the statin will not be broken down as quickly and will increase in the blood. This may cause muscle soreness.

PHI: *Are there other medications to watch out for?*

EB: Some medication interactions are stronger than others. One particularly powerful interaction is with antifungal drugs called azoles. Using them while using statins can increase the amount of statin in the blood significantly and increase the probability of muscle problems.

PHI: *Can you summarize the essence of what you just described?*

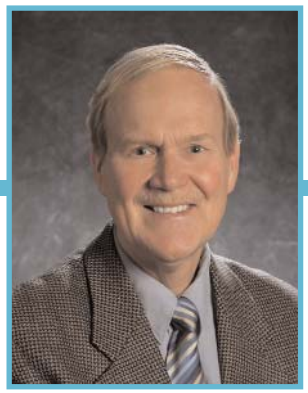
EB: Sure, since there are several different statins that use different liver decomposition chemicals, patients should use a statin that is processed by a chemical that is not being used by another medication they are taking.

PHI: *It seems a lot can be done to lessen the likelihood of problems with statins. Is there anything else we should know?*

EB: One principle is that low doses of statins rarely cause problems and that muscle problems increase as the dose of statin increases. So it is prudent to make diet and lifestyle changes and use low doses of statin rather than continue to eat lots of cholesterol-generating fatty foods and rely on a big dose of a statin to reach your cholesterol target. ▲

(1) Lipitor, Zocor, Crestor and Mevacor are the trade names of statin drugs produced by Pfizer, Merck & Co. and AstraZeneca.

Ask Dr. Maynard



Frederick M. Maynard, MD

Question: *I read about muscle wasting in people who age (sarcopenia) in the syndicated column of "Dr. Donohue." As a 78-year-old polio survivor who is getting weaker, I am not sure if it is post-polio weakness or aging weakness. Is there a way to tell the difference? Does it matter? Are the management recommendations different for each cause?*

A: Sarcopenia is a descriptive term for reduced muscle mass and is observed in aging people. While there is undoubtedly a "genetic programming" component to age-related sarcopenia, much of it is related to the reduced activity levels that are common among older people for many reasons and that result in disuse atrophy of muscle.

There is no reliable way to differentiate age-related (genetic) sarcopenia from underactivity-related sarcopenia; and both can be improved through strengthening exercise. The amount of increased muscle mass and strength achieved may be limited by the genetic component. The amount of effort will limit results to reverse the underactivity component.

Polio survivors have lived with sarcopenia as a result of nerve cell loss after acute polio viral infection. While rehabilitative exercise efforts led to increased strength in the early post-polio years, the amount of nerve cell loss limited the maximal strength that could be achieved. Aging survivors are vulnerable to genetic-related, as well as underactivity-related sarcopenia. Additionally, they are probably vulnerable to an accelerated age-related loss of motor nerve cells and a "shrinking back to normal size" of motor units (the total amount of muscle tissue connected to and supplied by one motor nerve cell). Again, exercise and activity can at least slow down declining strength from these causes.

In answer to your practical questions, there is no reliable way for individuals who had polio to differentiate new neurogenic weakness (neuropenia) from new muscle weakness (sarcopenia). It probably does not really matter because both can be slowed down or partially reversed through strengthening exercise and/or increased activity. The challenges of successfully achieving these theoretical benefits are also the same: how to avoid overuse pain and/or strain to muscle, joints, tendons, ligaments and other musculoskeletal structures as a result of exercise.

To the extent a post-polio person's new weakness is largely neurogenic, the more challenging it will be to find the optimal level of exercise that is sufficient for strengthening without producing pain/injury. ▲

Please see PHI's *"Recommendations on Exercise for Post-Polios"* (www.post-polio.org/edu/pphnews/pph19-2a.html) to learn more about these challenges.

Send your questions for Dr. Maynard to info@post-polio.org.

Promoting Positive Solutions

QUESTION: *I have several friends who have disabilities. Some had polio; some have a spinal cord injury. I find that they rebuff my attempts at being their friend or helping them, just as I do anyone without a disability. I know they want to be independent, and I want to respect that, but it can be frustrating. Do you have any suggestions?*

"Spread effect:"
The power of single characteristics to evoke other inferences about a person.

Response from Rhoda Olkin, PhD:

In answering this question I made the assumption that the writer does NOT have a disability. I really like this question, because it has many nuances to it. Let me take the issues one at a time. First, why is it frustrating to you when your friends decline help? Here's the image I have: You are watching a person with, say, polio, who is doing a task and it is taking much longer and more energy than it would take a non-disabled person. Your thoughts are something like, "*that looks hard and/or painful, let me just do it for her. Here, let me help,*" you say.

Here are your friend's thoughts: "*How patronizing. I was doing it just fine. By taking the task over she is saying that doing it my way is less than, not good enough. Once again I'm being told that disability is not just a difference but a deficit. I resent that.*" In this scenario each of you has such a different perspective on the same situation that you both feel misunderstood and perhaps devalued (her as a person with a disability, you as a friend).

Second, you may be guilty of what Beatrice Wright (a writer, researcher and University of Kansas professor who wrote one of the seminal books about disability) called the "spread effect," i.e., attributing something to disability when it has nothing to do with it. Wright's example was thinking that a boy with a physical disability was good at the violin because he had lots of time to practice since he couldn't do sports or play outdoor games with his friends. Note that both parts of this equation may be true (i.e., he can't do many sports or outdoor games; he is good at the violin), but are nonetheless unrelated. Similarly, your friend may have a disability, she may decline your assistance, and these two things may be unrelated.

Third, you say you "have several friends who have disabilities." *Friends* is a word with many shades of meaning. For example, I have a small inner circle of friends, and a new one gets in only every five years or so; my next-level circle is also small, and it includes people I like only in context (e.g., at work), and the next level is *everyone else*. My sister has an even smaller circle of close friends but a very large next-level circle with many friends.

My point is this. I behave differently with these different levels of friends. What I like when it is proffered from someone in my inner circle may be the same thing that offends me when someone from the next outer-level circle offers the same thing. Conversely, when a stranger takes over a task for me I may just smile and say "*thank you*" because it's not worth the time to educate everybody. But if an associate at work does it, I might decline with an explanation, because it is worth the time to educate a co-worker. Hard to know the rules, huh!

So the only way out of this jam is to be able to talk directly with your friend about help, what you mean when you offer it, what it means to her when you offer it and what it means to each of you if she accepts or declines it. If she isn't a good enough friend

to have this conversation with you, then I'm guessing the offer of help is unwelcome.

I apologize if I sound harsh. I'm trying to convey the complexity of meanings in a simple act of saying "*may I help you with that*?"

Response from Stephanie T. Machell, PsyD:

In answering this question I assumed that the writer DOES have a disability. From what you're saying, I wonder if you are making some incorrect assumptions about making friends and helping others with disabilities.

In making friends, it's important to remember that friendships can be on many levels and based on many kinds of shared experiences, including a shared experience of disability. It is wonderful to share experiences and give and receive support when the other person "gets it." However, not every person with a disability wants to have other friends with disabilities. And not every person with a disability wants to be friends with every other person with a disability. If you are assuming that every person with a disability should want to be your friend simply because you both have disabilities, or that there will be an automatic close relationship because you both have disabilities, you are very likely to be disappointed.

True friendships may start with common interests or experiences but take time to develop. If you assume too much intimacy too quickly, that is off-putting for most people. And as trite as the phrase, "To have a friend, you must be one," may sound, it is a reminder of the importance of being non-patronizing, respectful and interested in the other person's experiences as well as in sharing your own.

I am sure you, as a person with a disability, have been on the receiving end of unwanted and inappropriate "help." My family members, friends and clients who have disabilities all tell stories about such experiences with TABs (temporarily able-bodied). While these stories are often funny, they are never flattering to the "helper," who is at best seen as well-meaning and at worst as behaving in an offensive and patronizing manner. For someone with a disability, being on the receiving end of such help from someone who (as my father would say) should know better would likely be seen as even more offensive and patronizing. If this is part of what is happening in your relationships with others with disabilities, it may explain why you are being rebuffed.

Offering help – or, worse yet, simply assuming you know what help is needed and taking over – with something someone can do and/or is already doing independently is not likely to be welcomed. In my experiences as a TAB growing up with a parent with a disability, as well as with friends and clients with disabilities, I have learned that it is always best to wait to be asked for help rather than to assume that I know what help is needed. If it seems appropriate, I let others know that I am available to help, but won't unless asked.

The most important element in reducing frustrations of all sorts is communication. Communication is essential in making sure that help is given in the correct way at the correct time,

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"TAB:" An acronym for Temporarily Able-Bodied, used by some people as a reminder that any person may at some time develop disabilities from accident, illness or genetics.

Photo courtesy of WHO

New Vaccine Could Boost Eradication Efforts

A new vaccine against polio, which provides more effective protection against the two remaining strains of polio, was used for the first time in Afghanistan in December. The new bivalent oral polio vaccine (bOPV) was recommended by the Advisory Committee on Poliomyelitis Eradication (ACPE), the technical advisory group of the Global Polio Eradication Initiative, as a critical tool in providing the optimal protection needed by young children against both surviving types of the paralyzing poliovirus.

Of the three wild polioviruses (types 1, 2 and 3), type 2 has not been seen anywhere in the world since 1999. As a result, monovalent vaccines were developed to protect against types 1 and 2 with greater efficacy. The bOPV was developed to test whether it could effectively protect children living in areas where both types 1 and 3 were known to circulate.

In clinical field trials last June, bOPV was found to be at least 30 percent more effective than the traditional trivalent vaccine and almost as good as the monovalent vaccines, but in a package that could deliver both at once.

This is a great advantage in simplifying vaccine logistics and in optimizing protection using a mix of available polio vaccines according to local needs. In areas where access to children is limited by the security considerations, using bOPV maximizes the impact of each contact with a child. It could accelerate vaccination and eradication efforts in war-torn countries like Afghanistan and in countries with inadequate health systems, such as those in Sub-Saharan Africa.

The swift development and production of bOPV in 2009 was a collaborative effort of the World Health Organisation, UNICEF, vaccine manufacturers and regulatory agencies.

The bOPV is expected to be put into use in Nigeria, India and much of West Africa in the first quarter of this year. Among the ACPE's key recommendations at its recent meeting (See story on page 10) was that bOPV be introduced as rapidly as possible. ▲

Read the news release: www.polioeradication.org/content/pressreleases/20091215.ENG.asp

Promoting Positive Solutions

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as well as in making and deepening friendships. Assumptions tend to happen when communication isn't happening or breaks down. Asking a question is always better than assuming you know what is happening in another's mind. ▲

Dr. Rhoda Olkin *is a Distinguished Professor of Clinical Psychology at the California School of Professional Psychology in San Francisco, as well as the Executive Director of the Institute on Disability and Health Psychology. She is a polio survivor and single mother of two grown children.*

Dr. Stephanie T. Machell *is a psychologist in independent practice in the Greater Boston area and consultant to the International Rehabilitation Center for Polio, Spaulding-Framingham Outpatient Center, Framingham, Mass. Her father is a polio survivor.*

Please send questions for Drs. Olkin and Machell to info@post-polio.org.

Research

Research Update: Biomarkers and Persistent Viruses

Frederick M. Maynard, MD, Marquette, Michigan, and
Joan L. Headley, Executive Director, PHI, director@post-polio.org

Post-Polio Health International's deadline for Phase 1 of proposals for the 2011 $25,000 research award is Friday, March 5, 2010. Details are available at www.post-polio.org/res/rfcall.html.

The unresolved issue of whether or not post-polio syndrome (PPS) can be detected by a test was explored by PHI's last two awards. The work (2007) of the team from the University of Arkansas for Medical Sciences (UAMS), Little Rock, to identify a biomarker has not yet been published. ("Biomarker" is the name given to the results of a laboratory test that can distinguish the presence of and/or amount of activity of a specific disease.)

The Italian team, led by Antonio Toniolo, MD, University of Insubria, Varese, and recipient of PHI's 2009 award, reports the development of a highly sensitive test to detect and characterize poliovirus (PV) strains and other enteroviruses. Their recent work in patients 50-76 years of age confirms that fragments can persist for decades in polio survivors. However, the data do not provide a link between virus persistence and development of PPS. Failure to detect PV fragments in 12 family members of the 47 patients with PPS who were tested indicates that these mutated agents are not transmittable.

The team received additional funding from the Italian government to continue the research, which is good news because these preliminary studies need to be confirmed in a larger cohort of subjects that includes patients, their families and age-matched controls. Also, an abstract of their work was recently accepted by the American Society for Microbiology (San Diego, May 23-27, 2010).

Related Published Work

Other researchers continue to search for a reliable biomarker of PPS.

In a 2008 study by Fordyce, et al., (Ref 1) three non-specific blood markers of inflammation were elevated among 51 PPS patients compared to non-polio controls. Only one of these biomarkers (TNF-alpha) showed a significant correlation with any symptom (muscle pain).

In a 2008 study by Gonzalez, et al., (Ref 2) cerebrospinal fluid was analyzed for protein expression profiles among 15 PPS patients and 51 individuals with other diseases. A disease-specific and highly predictive (previous polio) differential expression of five distinct proteins was found and these proteins suggest active neuroinflammation.

These published studies continue to suggest an active inflammatory component to PPS. Unfortunately, neither study included polio survivors not having PPS. It remains unclear if these potential biomarkers have a significant correlation with the development of, progression of or severity of PPS symptoms. Only when a correlation is made and confirmed will biomarkers become useful to follow the progression of PPS or its response to treatments, such as antiviral agents. ▲

Ref 1 ...
Fordyce, C.B., Gagne, D., Jalili, F., Alta, S., Arnold D.L., Da Costa, D., Sawoszczuk, S., Bodner, C., Shapiro, S., Collet, J., Robinson, A., Le Cruguel, J.P., Lapierre, Y., Bar-Or, A., Trojan, D.A. (2008). Elevated serum inflammatory markers in post-poliomyelitis syndrome. *Journal of Neurological Sciences*, 271(1-2), 80-6.

Ref 2 ...
Gonzalez, H., Ottervald, J., Nilsson, K.C., Sjögren, N., Miliotis, T., Von Bahr, H., Khademi, M., Eriksson, B., Kjellström, S., Vegvari, A., Harris, R., Marko-Varga, G., Borg, K., Nilsson, J. Laurell, T., Olsson, T., Franzén, B. (2008). Identification of novel candidate protein biomarkers for the post-polio syndrome—implications for diagnosis, neurodegeneration and neuroinflammation. *Journal of Proteomics* (January), 71(6), 670-81.

World Polio Eradication Update

In 2009 India surpassed Nigeria as the country with the highest number of polio cases in the world with 703 confirmed cases versus 388 in Nigeria according to the Advisory Committee on Poliomyelitis Eradication (ACPE) meeting at the World Health Organisation (WHO) in Geneva in November.

The ACPE, the global technical advisory body of the Global Polio Eradication Initiative, also reported to that date that 1,337 cases caused by wild poliovirus (WPV) had been reported from 23 countries compared with 1,473 cases reported from 16 countries during the same period in 2008. This is the largest number of countries reporting WPV cases since 2000.

The overall 10 percent decline in cases is primarily the result of a significant drop in the number of cases reported from Nigeria. However, Nigeria, India, Pakistan and Afghanistan are the only four countries in the world where polio is endemic and where transmission of the wild poliovirus has never been stopped.

The ACPE found that major barriers to polio eradication include sustaining program momentum and intensity of activity in endemic countries, limitations on access to communities due to problems of security in key endemic and reinfected areas, the inadequacy of political will in reinfected countries to respond quickly and effectively to importations of WPV and the persistence of transmission in a handful of reinfected countries that now pose a major threat in continuing the international spread.

More than 20 percent of the total global cases in 2009 were reported from 19 reinfected countries; and importations from Central Africa, the Horn of Africa and West Africa have spread to multiple countries, the ACPE said. The spread has continued and remains active across West Africa and in Central Africa, as well as in Angola and Chad.

Of interest to travelers is the ACPE's recommendation that a white paper be developed to determine the part played by travelers from infected areas in spreading polio to countries persistently at high risk of importation in order to inform decisions on immunization policies for travelers. It further recommended that high risk countries consider taking steps to ensure that travelers arriving to or from infected areas are immunized prior to arrival and also at the point of entry, especially when large groups are expected, such as for the FIFA World Cup.

Targets and milestones proposed by the ACPE:

2010, mid-year: Stop all outbreaks following 2009 importations.

2010, year-end: Stop transmission in countries where it has been re-established following importation.

2011 forward: No secondary spread from any country experiencing a new importation.

2011, year-end: Interrupt transmission of WPV in more than two endemic countries. ▲

To read the Conclusions and Recommendations of the Advisory Committee on Poliomyelitis Eradication, November 2009, in the WHO Weekly Epidemiological Record, go to www.who.int/wer/2010/REH_01-02.pdf.

Thank you

For recognizing your friends and loved ones with contributions to support the unique mission of PHI and IVUN. PHI strives to publish an accurate list. Please contact us if we made an error.

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Phone: 314-534-0475
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PPH26/1

Post-Polio Health
www.post-polio.org
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Post-Polio Wellness Retreats

Wellness Retreats are a good idea that can be duplicated in your area. PHI's website now has a page – *Post-Polio Wellness Retreats* (www.post-polio.org/edu/10thConfWellRet/) – that links to several sites, documents and videos that explain a wellness retreat and offers ideas on how to organize one. The page also contains videos (www.post-polio.org/edu/10thConfWellRet/index.html#vid) from PHI's Post-Polio Wellness Retreat held April 2009 at Camp Dream, Warm Springs, Ga.

Post-Polio Directory Online

PHI's online *Post-Polio Directory* at www.post-polio.org/net/PDIR.pdf is continuously updated. The 38-page document lists post-polio clinics, health professionals, support groups and organizations. Send additions, corrections or deletions to info@post-polio.org. Print copies are available (USA $12; Canada and Mexico $14; Overseas air $16) by contacting the PHI office.

Join a Post-Polio Support Group

If you live in Pinellas County, Fla., and would like to participate in a support group for polio survivors at the Cypress Palms in Largo, please contact Stephanie at 727-559-7888 ext. 3359 or sreimund@thegoodmangroup.com.

Moving? Change of address? Please notify PHI before you move by calling 314-534-0475 or email info@post-polio.org. It is helpful if you tell us your old *and* new addresses. **Will you be temporarily away?** If you send us your "second" address and the dates you will be at each address, we will do our best to send the newsletter.

POST-POLIO HEALTH INTERNATIONAL

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