



Making Hearing Health A Global Priority

Seventh Annual Meeting of the
Coalition for Global Hearing Health
October 24-25, 2016
University of Santo Tomas, Manila

Purpose of the Coalition

To advocate for hearing health services and policies, to equip and empower hearing healthcare professionals, families, educators, communities and the hearing impaired, and to encourage and perpetuate best practices.

Mission Statement

To promote and enhance hearing health services in low-resource communities.

Membership Statement

Join the CGHH movement to support our shared interest in hearing healthcare work and service that reaches low resource communities. As a member, you invest in the CGHH efforts to improve Best Practices, Family/Community Empowerment, Technology options, Education and Training, and Advocacy in related areas of hearing health.

Coalition for Global Hearing Health



Welcome to Santo Tomas University, and the 7th Annual Conference of the Coalition for Global Hearing Health!

Our inaugural conference, held in June of 2010 at the headquarters of the American Academy of Otolaryngology in Alexandria Virginia was a great success. Representatives from 18 countries including professionals from all aspects of hearing healthcare, deaf educators and patient advocates met and discussed common interests.

During our second conference at the House Ear Institute in Los Angeles we engaged in extended discussions about the highest priority concerns in hearing healthcare around the world and especially in low-resource settings.

In Los Angeles, we identified areas of need where the Coalition can have the most impact. We further refined our goals at our third conference at the EduPlex campus in Pretoria, South Africa. We have divided these goals into five categories: Advocacy and the Media, Training and Education, Technology, Best Practices, and Community / Family Empowerment.

During our fourth conference at Vanderbilt University Medical Center in Nashville, Tennessee we continued to focus on these five goals to further improve on and expand the information that is available to us, and to those around us.

In our fifth year at St. Catherines College Oxford, and our sixth year at Gallaudet University, we continued these traditions with breakout discussion sessions on these topics that will evolve into CGHH Steering Committees with the goal of continuing this work throughout the year.

The purpose of each annual conference is to enable us to come together to share the challenges we have faced and the solutions we have developed, to raise awareness of important issues and to explore new technologies to help us meet our goals.

Thanks to your involvement and to the generous support of Santo Tomas University, we continue our work to promote and enhance hearing health services in low resource communities.

Thank you to our hosts! University of Santo Tomas, Manila



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Dr. Robert Ang, UST Alumni
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EXHIBITORS



Visit the Exhibitors Booths

Booths open at:

Monday, October 24, 8:00-17:00

Tuesday, October 25, 8:00-15:15



Pre-Sessions

Sunday — October 23, 2016

9:00-15:00 **Operating a Field-Based Earmold Lab**
-Speech and Language Pathology Laboratory, Ground Floor, Benavidez Building, University of Santo Tomas

-David Pither

One critical component of successful and sustainable community based ear and hearing care services, in a low-income and middle-income country, is prompt provision of earmolds for dispensed hearing aids. Though earmold laboratories can ensure success, the time to train earmold producers and the resources required for production, can be very time-intensive and cost-prohibitive. However, when costs are abated, the earmold lab can become a serendipitous cottage-industry opportunity in a region that will benefit from a fiscal boost.

This workshop describes the process for earmold production. The model created by the charity, Ears, Inc., has been used effectively in many parts of the world and has enhanced local economy with much needed cottage-industry skills. The workshop provides information for production materials and suggests the infra-structure for establishing the earmold lab. Also presented are recommended training procedures for the local program partners.

9:00-12:00 **A Practical Guide to Humanitarian Missions for Improving Hearing Health**
-Meeting Room 4D, 4th Floor, Buenaventura G. Paredes, OP Building, University of Santo Tomas

-Jim Saunders

The workshop presenters have organized dozens of humanitarian outreach trips and non-profit programs in Central America, Africa, and Asia. Based on that experience the workshop will explore how humanitarian outreach has changed in recent years and some ethical issues inherent in doing this type of work. The practical issues related to humanitarian trips in audiology and otolaryngology will be explored including selecting a location for the work, recruiting team members, team and local site preparation, equipment needs, establishing follow up, and sustainability issues. Specific issues and methods of educating both the team members and local providers will be presented and discussed. Teaching methods employed in this pre-conference session will include lectures, presentations by a panel of experts (followed by a Q & A session) and conclude with suggestions for best practices for humanitarian trips focusing on hearing health care.

14:00-17:00 **Community Based Hearing Aid Fitting Using the WFA Method**
-4th Floor, Buenaventura G. Paredes, OP Building, University of Santo Tomas

-Jeffery Larsen

The Starkey Hearing Foundation (SHF) has developed a community-based model for hearing aid fitting that uses the Wide Frequency Audibility (WFA®) fitting method to bridge the access gap and provide impactful benefits for people with hearing loss across the globe. The SHF's community-based hearing healthcare model is governed by standardized best practices and has been developed to be simple, sustainable, and scalable. The model currently provides community-based hearing healthcare services to about 100,000 people in 51 countries annually. This workshop will describe the Wide Frequency Audibility (WFA®) fitting method in the context of the SHF's community-based hearing healthcare model. The various parts of SHF's community-based hearing healthcare model will be both discussed and demonstrated in the workshop and the rationale behind the method and the model will also be explained. Participants of the workshop will have hands-on experience on the phases of the model and gain the knowledge and skills in setting up similar successful models to advance the cause of ear and hearing care globally.



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- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda **Monday** — October 24, 2016

7:30-8:00 **Registration & Coffee**

8:00 **Plenary: Welcome**

BGPOP Building 4A/B/C

Welcome - James Saunders & Jackie Clark

Invited Guest Speaker - The Development of Audiology Profession in the Asia Pacific Region
-Philip Newall (Australia)

9:10-10:10 **Technology**

Moderator: Neethie Lavanithum Joseph
BGPOP Building 4A/B/C

The International Humanitarian Hearing Aid Purchasing Program (IHHAPP)

-Debra Fried, Anita Stein-Meyers, Ronald Brouillette

The International Humanitarian Hearing Aid Purchasing Program was born of the need to address the barrier to hearing-aid fittings in low-resource countries. The program is able to provide low-cost, new, digital behind-the-ear hearing aids to qualified members who are providing humanitarian care. These hearing aids do not require computerized equipment for programming adjustments. The concepts embodied in the program have a long history and have existed in many forms over the past 20 years.

Beginning in 1995, through the efforts of Ron Brouillette, such a project began by providing assembled hearing aid kits for world-wide distribution. During the ensuing years, various organizations have addressed the issue of affordable hearing care. In 2012, the International Humanitarian Hearing Aid Purchasing Program was formed and is under the administration of Mayflower Medical Outreach, with the support of the Coalition for Global Hearing Health.

To date, the program has had a wide reach, with recipients in North and South America, Asia, Africa, and Europe benefiting from this program. This presentation addresses aspects of the program, including history, philosophy, membership requirements, the vetting process, types of hearing aids offered, and the procedure with which to place orders. Recent developments such as inclusion of Personal Sound Amplification Products (PSAP) and the availability of low-cost hearing aid batteries are also addressed.

iPad Hearing Test: A Prospective Validation of Tablet Audiometry Testing

-Ryan Chua, Frederick Fernandez

Hearing loss affects people of all ages. More and more adults are experiencing hearing loss. Impaired hearing affects people in many ways, especially relating to job opportunities, education, social life, and confidence. Not everyone has direct access to a hearing center especially in rural areas where demographics play a significant role on why patients cannot seek medical advice regarding hearing loss. Moreover, the cost of hearing testing does not match the income of some patients with hearing loss, especially of low socio-economic groups.

Automation of pure-tone audiometry offers several potential benefits. Particularly, a portable, tablet-based automated audiometer improves accessibility, providing the prospect of screening of hearing loss in the primary care setting or remote communities. Such a device may eventually permit a primary care physician or patient access to screening audiometry, resulting in increased awareness and detection of hearing impairment.



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Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

Yet, there may be significant differences between mean hearing thresholds determined through a tablet-based automated audiometry and by the standard pure tone audiometry. This study aims to validate the effectiveness of a tablet-based audiometer as a screening tool for the detection of hearing impairment.

How to Start a Tinnitus Evaluation and Management Program: Part 1

-William Martin, Jennifer Martin

This presentation is intended to provide clinicians with practical guidelines and resources that will allow them to begin to offer evaluation and effective care to their patients who have tinnitus. Tinnitus is a complex condition with multiple etiologies and manifestations. For most who have it, tinnitus is readily ignored. For many, it becomes a chronic, debilitating disorder that cannot be treated by surgical or medical interventions. Tinnitus management can be effective at restoring the patient's functionality and quality of life.¹ It is likely that a substantial number of your patients complain of tinnitus. You are a competent clinician but never had much training in tinnitus management. How do you start a tinnitus management program? What equipment, materials, resources and collaborations do you need to start providing tinnitus evaluations and care? Equipment present in most clinical settings and resources available online (even for free) can provide you with enough materials to begin offering help to individual with tinnitus. The majority of those who are troubled by tinnitus can be provided relieve with instrumentation available to the clinician, smart phone apps and other devices. Step-by-step direction for management of mild to moderate tinnitus conditions can be directed through guides like the Progressive Tinnitus Management system. As your program grows you will need to build collaborative relationships with other professionals who can address parallel, confounding issues that act as obstacles to tinnitus relief.

How to Start a Tinnitus Evaluation and Management Program: Part 2

-William Martin, Jennifer Martin

9:10-10:10

Technology

Moderator: Franco Abes
BGPOP Building 402/403/404

Mass School Hearing Health Care

-Dirk Koekemoer

Workers in a noisy factory are at risk of acquiring Noise Induced Hearing Loss. In this paper we provide the findings of a study that determined the levels of knowledge and attitudes of workers towards secondary noise control methods.

A descriptive survey design was used, and the sample included 85 participants from a timber factory that uses heavy machinery. Results of the study were analysed using descriptive and inferential statistics. The results revealed that the majority of the participants (67.1%, n=57) had an average level of knowledge concerning the secondary measures of noise control, and the majority (67.1%, n=57) had a good level of knowledge of their rights and responsibilities. Their attitude was positive, except that they agreed less with statements that support the importance of hearing protection devices.

Personal factors such as length of employment in noisy environment, gender, hours of exposure to noise per day, and hearing and medical related problems were found to contribute significantly to the levels of knowledge and attitude of participants towards hearing conservation. Further analysis indicated that the better level of knowledge, the better the attitude towards hearing conservation. Behavioural intention showed significant association with knowledge of secondary measures of noise control ($p = 0.001$), and their associated rights ($p= 0.001$) and responsibilities ($p=0.018$).

The study concluded that, based on the health belief model and trans-theoretical model, the varying levels of knowledge and attitudes found in the study imply varying stages of behavioural change. Therefore, it is recommended that when planning education and training programmes for workers in factories where noise levels exceed permissible levels for contexts such as South Africa, it is important to determine the levels of knowledge, attitudes, and personal factors of the workers so that a tailored approach to hearing health care is achieved.



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- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
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Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

9:10-10:10

Technology

Moderator: Franco Abes
BGPOP Building 402/403/404

Pure-tone Audiometry Outside a Sound Booth Using Earphone Attenuation, Integrated Noise Monitoring, and Automation

-Carmen Esterhuizen

Objective: Accessibility of audiometry is hindered by the cost of sound booths and shortage of hearing health personnel. This study investigated the validity of an automated mobile diagnostic audiometer with increased attenuation and real-time noise monitoring for clinical testing outside a sound booth.

Design: Attenuation characteristics and reference ambient noise levels for the computer-based audiometer (KUDUwave) was evaluated alongside the validity of environmental noise monitoring. Clinical validity was determined by comparing air-conduction and bone-conduction thresholds obtained inside and outside the sound booth.

Study Sample: Twenty-three normal-hearing subjects (age range, 20 to 75 years; average age 35.5), and a subgroup of 11 subjects to establish test-retest reliability.

Results: Improved passive attenuation and valid environmental noise monitoring was demonstrated. Clinically, air-conduction thresholds inside and outside the sound booth, corresponded within 5 dB or less > 90% of instances (mean absolute difference 3.3 ± 3.2 SD). Bone conduction thresholds corresponded within 5 dB or less in 80% of comparisons between test environments, with a mean absolute difference of 4.6 dB (3.7 SD). Threshold differences were not statistically significant. Mean absolute test-retest differences outside the sound booth was similar to those in the booth.

Conclusion: Diagnostic pure-tone audiometry outside a sound booth, using automated testing, improved passive attenuation, and real-time environmental noise monitoring demonstrated reliable hearing assessments.

How Do We Decide If a Cochlear Implant or a Hearing Aid is More Appropriate for an Infant with a Severe-to-Profound Hearing Loss?: Cortical Evaluation in the Management of a Hearing-Impaired Infant

-Harvey Dillon, Philip Newall, Bram Van Dunn

The coverage of Universal Neonatal Hearing Screening in Australia is now higher than 97%. In Australia, fitting infants with hearing aids at the age of three months is becoming common, and there is a need for an objective method to assess the success of these hearing aid fittings. Where it is shown that hearing aid fittings are not providing enough benefit, the child may be better suited to cochlear implants.

The cortical evoked response can be a useful tool in such cases, and several innovations developed by the team at the National Acoustic Laboratories have made the technique viable. The equipment uses an automatic detection system to identify the response, which reduces the need for expertise in recognition of persons carrying out the assessment.

Speech sounds are used as stimuli, which enable the responses from low, mid and high frequency speech sounds to be evaluated. Special active electrodes are used to reduce the effects of electrical noise. The child's attention is distracted by use of a television monitor with appropriate materials. The HearLab equipment is available in a package that incorporates all these necessary features.

The general morphology of results for a group of hearing-impaired infants was presented. The automatic detection of responses by the equipment was as good as the recognition of responses by a panel of experts. The effect of amplification was seen in the change in the thresholds obtained by the technique. The effects of Auditory Neuropathy Spectrum Disorder on the responses were also investigated.

This presentation describes some case studies that show that the technique can be used to indicate when hearing aids are not providing sufficient benefit and that cochlear implants may be a better alternative.



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- 15:00 - Special Topic
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- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

10:10-10:30 **Break**

10:30-11:30 **Advocacy**

Moderator: Linda Hood
BGPOP Building 4A/B/C

After Newborn Screening in Developing Nations: What Do We Do Next?

-Dr. Richard W. Fee

In developing nations like the Philippines—where innovative medical and audiological advances have inspired national governments to implement and pay for universal newborn screening—more and more babies are being screened. However, without further direct government intervention, there is little or no support for the infant or family until the child attempts to enter a special education center at age 6-7. Laws and medical and audiological evaluations now give a poor family a clearly identified deaf child but without providing realistic a social or educational support system. In many developing countries, many lower-income families may never even send their deaf child to school. Governments in developing nations, while showing empathy for these deaf children, cannot afford the cost of United States style birth-to-21-years education programs.

This presentation addresses the issues of early identification of deaf children in developing nations that have limited or no early intervention services. Particular attention is paid to creating community based mentoring programs for basic parent-centered education (birth-3 years). In this model, community members—grandparents of deaf children to college students—would be trained to assist the family of newly identified deaf babies. These community advocates would help families obtain help such as medical care, regular hearing evaluations, training in using a hearing aid, and instruction in sign language.

Local universities with teacher education, audiology and medical faculties, would provide basic training and support to the community advocates. The newly created community mentoring model developed at the University of the Philippines College of Medicine and College of Allied Medical Professions is presented for discussion.

Audiology for Malawi: Creating a Sustainable Audiology Department in a Developing Country

-Courtney Caron

In 2014, Sound Seekers embarked on a four-year project to create a comprehensive audiology department at the largest public hospital in Blantyre, Malawi. The project included the following aims: a) the building of a comprehensive audiology clinic according to international standards; b) training local healthcare workers in audiology; c) increasing access to education for children with hearing loss; and d) creating standards and protocols for the practice of audiology with the country.

This project needed to develop creative solutions in order to maintain a sustainable department in a government healthcare system that is severely underfunded and lacking in facilities, resources, and trained personnel. Examples of the creative solutions include these: a) supplementing services for community patients with funds received from private patients; and b) partnering with organizations within and outside Malawi to obtain donated supplies, services, and professional expertise; and c) future development of industrial screenings for large companies to assist with the financial sustainability of the program.

Although the project has employed an international audiologist to run the service for the first four years, four Malawian audiologists are set to graduate in December 2016, and two of them will take over the service upon departure of the international audiologist. Through the audiology department outreach services are in place in the southern region of Malawi; these services bring the same high standard of care found at the department clinic.

Maintaining high standards has been an essential part of the project as patients in need of audiology services often do not seek them due to a lack of funds for transportation to the hospital. Education is also a component of the project, which is in its development phases with the main goal of providing access to better education for children who have hearing loss.



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- 10:10 - Break
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- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

10:30-11:30 **Advocacy**

Moderator: Linda Hood
BGPOP Building 4A/B/C

Building Resources for Hearing Health Care in the Developing World

-Linda Hood, Jackie Clark

The needs of those with hearing loss in developing countries must be addressed at multiple levels of society and with the commitments, time, and resources from multiple directions. On a global level, efforts involve development of juried resources that can be used in demonstrating need, developing plans, implementing programs, and defining resources. These efforts do not occur in isolation but rather through broad commitments from many sources that promote work focusing on hearing health by global organizations such as the World Health Organization.

Further, this effort cannot succeed unilaterally. Imperative are commitments from individuals, professional organizations, and humanitarian bodies to participate in and support efforts. The resources built can, in turn, provide value to those working in regional and local environments.

This presentation focuses on work on a broad programmatic level and needs to advocate and place hearing health on the global agenda. The presentation also considers how those working on individual, local levels can advocate and contribute to efforts while also deriving benefit from these efforts. The need for participation in these activities by professional and humanitarian organizations is highlighted along with recent accomplishments.

Ear Care Program in Oman

-Mazin Al Khabouri

The “Ear Care Program” is designed for all health care providers, especially for Primary Health Care Doctors and School Health Care Doctors. It is also meant for all the staff of the Ministry of Health institutions that deal with patients at different levels of ear health care in Oman

Since 2000, ear health care was launched at the national and regional level. Middle ear diseases and hearing loss were placed as one of the priority problems in the 6th and now 7th Five Year Health Planning of the Ministry of Health. We are proud to have organized a program approach to deal with hearing loss at national and regional levels.

10:30-11:30 **Advocacy**

Moderator: Ruben Emil Henson III
BGPOP Building 402/403/404

Assistive Devices and Rehabilitative Services for Children with Disabling Hearing Loss Under the Philippine Health Insurance Corporation

-Norberto Martinez, Cristopher Ed Gloria, Melanio Mauricio, Hubert Ramos, Joel Romualdez, Franco Louie Abes

About 32 million children are estimated to be suffering from Disabling Hearing Loss. Even though there are fewer children compared to adults with Disabling Hearing Loss, the prevalence of hearing loss in children has a huge impact considering the delay in speech and language development of children and its effects to education and academic performance. In developing countries, cost is one of the biggest hindrances in accessing assistive devices and rehabilitation for children with disabilities.

The Philippine Health Insurance Corporation (Philhealth) is mandated to provide health insurance coverage and ensure access to health services for Filipinos. Considering the high burden of disabilities and the very small window of opportunity, a Philhealth benefit package for disabilities is being developed. The development of the benefit package started with the scoping of epidemiological data, sensitivity and specificity of diagnostic tools, and cost-effective



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- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
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- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

interventions for Disabling Hearing Loss to identify the main services that will be covered by the package. Based on the literature review, a pathway of care was developed per age group, identifying key diagnostic services and interventions to be included in the package. Interventions that were identified for inclusion in the package are assistive devices (hearing aids and implantable hearing devices) and rehabilitation services (speech therapy). This was followed by the development of the standards of care for the package. Consultations were held with key stakeholders to gather comments and suggestions regarding the proposed package. An epidemiological survey and costing survey will also be conducted to determine the viability of the package if adopted by Philhealth.

Development, Not Charity: Helping Established Local Organizations Develop Their Own Hearing Health Programs

-LewTuck

Himalayan Health and Hearing began with a favour: providing a hearing test and hearing aid to an elderly monk at Kopan monastery in Kathmandu, Nepal. Since 2009, this favour has grown to become a formally recognized organization whose purpose is to help established local organizations, in Nepal and the wider Himalayan region, develop their own hearing health programs.

Our role is one of collaboration with local communities and organizations. We help identify areas of need and existing local resources (human and physical); we help provide training and mentorship to local staff and volunteers; and we help raise funds and facilitate resource development, including supplies of hearing aids, assessment and fitting equipment, medications, and facilities.

Our goal is to ultimately be involved in a purely advisory/supportive capacity. Through our partner organization NAHOH and collaboration with Shechen Clinic and Hospice in Kathmandu, and the Community Family Welfare Association in Dhanusha, our program has helped provide primary ear care to over 12,000 people, and fitted over 1000 hearing aids/assistive devices since 2010, whilst ensuring that appropriate support and maintenance is available. These and future partnerships are the means by which the program will succeed and continue.

Our presentation explores the valuable insights we have gained over this time, with the following focusses: the need for cultural awareness and sensitivity; effective identification of areas of need; local community involvement and ownership; practical planning for remote areas, including considerations of weather, access, power, shelter, transportation, team safety and support while on camps; identification and training of key support volunteers within each community visited; developing a three-fold program of hearing health awareness and education, primary ear care and hearing rehabilitation; training of specialist workers with the skills to provide an ongoing, quality service; and recognizing our limitations while pushing the boundaries.

Day Care Center Hearing Screening of Davao City

-Bendatu Dalandag

Davao City made history as one of the earliest cities to mandate Newborn Hearing Screening for babies delivered in the City. But some pitfalls of the Universal Newborn Hearing Screening Program has frustrated us: (1) Not all hospital and lying-in clinics possess their own hearing screener; (2) lack of a hospital screener led to relying on at third-party service provider, which made screening it even more inaccessible to most newborn deliveries in the country; (3) the steep pricing of hearing aids; (4) lack of a government assistance program for at least temporary acquisition of hearing aids for babies diagnosed with middle ear effusion; (5) the limited hearing centers that offer these hearing aids; (6) the scarcity of audiologists in the country; (7) the excessively high cost of Auditory Brainstem Response for confirmatory diagnosis of cochlear or central auditory pathway hearing loss and the unavailability of diagnostic and intervention hearing facility that offers such confirmatory test; (8) the lack of a cheaper alternative to Auditory Brainstem Response such as combined DPOAE Audiogram plus a Tympanometry in the recommended algorithm of the screening protocol; (9) lack of governing body that standardizes the practice of audiometry in the Philippines; and finally (10) the increasing number of “defaulters” or dropouts as these pitfalls are not properly addressed and with the poor understanding of the general public.



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- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda **Monday** — October 24, 2016

10:30-11:30 **Advocacy**

Moderator: Ruben Emil Henson III
BGPOP Building 402/403/404

These pitfalls hold down a supposedly purposeful program, which the Advocacy Program of the PSOHNS Southern Mindanao promises to solve. The program aims to provide access to hearing testing in the community level and at the same time be able to track defaulters or drop-outs from the screening programs performed in the hospital level. With its ability to track and identify children with possible hearing losses that may limit their intellectual, emotional, social, speech, and language development, the program also promises to enhance Republic Act 9709.

The Hear the World Foundation Project in the Dominican Republic: Building Local Capacities and Investing in Early Identification

-Elena Torresani

The aim of the Hear the World Foundation is to enable people all over the world to enjoy better hearing. Every year we receive a large number of applications for support. An essential criterion for selecting and implementing projects is sustainability.

In all the projects we support worldwide, we are committed to establishing and cultivating the expertise needed on site. This way, we can ensure long-term audiological care and create local jobs simultaneously, which is a key part of the sustainable work of any foundation. The quality of audiological care provided is a crucial element of sustainability, and attention is paid to the potential for “High quality evidence-based practice,” “Long-term capacity-building,” and “Outcome-monitoring.”

The Hear the World Foundation has been partnering with the Centro Cristiano de Servicios Medicos, in the Dominican Republic, since 2010. The partnership started with the financing of a sound-level meter. Subsequently, funding by the Hear the World Foundation supported an audiological education program to train local experts. The program now employs 15 qualified audiologists, who offer the Dominican population top-quality audiological care.

In recent years, modern digital hearing aids as well as more accurate fitting with first-class audiological equipment, has been made possible thanks to support by the Foundation. Now the cooperation has reached yet another milestone: establishment of the first newborn hearing screening program in the Dominican Republic.

To be able to provide high standard care to the increased number of patients who will now come for follow-up care, a new audiology clinic was opened in February 2016, with support from the Hear the World Foundation.

11:30-12:45 **Lunch**

12:45-13:45 **Advocacy**

Moderator: Joel Romualdez
BGPOP Building 4A/B/C

Ear and Hearing Screenings During International Special Olympics Events Reveal A Worldwide Hearing Health Needs in Individuals with Intellectual Disability

-Melina Willems

A study evaluated the prevalence of ear and hearing problems of over 70,000 athletes (age 8 to 89 years) with intellectual disability, competing at one of the worldwide organized Special Olympics events in the past 9 years. These athletes were offered a free ear and hearing screening during Special Olympics Events. The screenings were conducted by trained professional volunteers and health-care students, following a strict screening protocol.



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- 14:15 - Break
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- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

Results show an increased incidence of ear and hearing problems in individuals with intellectual disability throughout the world. Differences between regions were also found. Most problems were unknown for the individuals themselves as well as for their direct environment. General advice was given, individual recommendations were made. At some occasions, hearing aids are fitted on site. The follow-up process for the athletes is challenging, in many cases, due to lack of necessary resources, lack of professional competences, but also lack of education of family and caregivers.

This study reveals an urgent need for a regular universal hearing screening program within this population, with a structured follow-up process, adapted hearing assessment techniques, and adapted treatment strategies. Also, specific training of health professionals and informative sessions for caregivers and family members is necessary. Cooperation with existing public health services may facilitate this process in different regions worldwide.

Infant Hearing Screening in Rural Nicaragua: Initial Results and Cost Effectiveness

-James Saunders, Lye-Yeng Wong

The benefits of universal screening of newborns have been well demonstrated in developed countries in higher outcome scores in social and gross development and quality of life. We report on the incidence and risk factors for congenital hearing loss in a remote region of Nicaragua and perform cost analysis of screening programs in this setting.

A proportionally distributed cross-sectional survey was conducted using Otoacoustic Emissions to screen infants (< 6 months) in Jinotega, Nicaragua in 8 municipalities with varying socioeconomic status and birth settings including NICU, institutional, and home births. Data on 15 risk factors were analyzed. Cost analysis for 4 screening strategies were conducted based on disability adjusted life years (DALY). Targeted screening included high risk infants. Cost effectiveness was determined using the WHO standard of cost effectiveness ratio/gross domestic product per capita.

Establishing a Paediatric Hearing Service in Samoa

-Philip Newall, Cristina Newall, Genelle Cook

Visits to Samoa by overseas audiologists began in 2007 by a local charity The Carabez Alliance. My wife Cristy and I began our visits in September 2008; we have now made 17 visits. During these visits, we assessed the hearing of children and fitted digital hearing aids to 65 children and some adults. The work was supported by the Australian overseas aid agency, AusAid. Further support came from the Royal Institute for Deaf and Blind Children from 2010 onwards, and Genelle Cook and her colleagues joined us on our visits.

Training was provided to local staff in techniques of hearing assessment, hearing aid fitting procedures, repair of hearing aids, and the manufacture of earmoulds. Samoan staff visited Australia on two occasions, and Phonak Australia provided significant help in training and other informal support.

One of the strengths of the project was the leadership provided by the Head of the Senese Centre in Samoa, her deputy, and other staff. Parents were engaged with the service, and much effort was put into involving them. Late identification of children was a major challenge, but progress has been made in this area.

Although every effort was used to encourage the use of oral language, children were given support at school, and sign language was used to supplement support where necessary. Four children were fitted with cochlear implants, which were supplied at no charge by Sydney Cochlear Implant Centre. Older style bone anchored hearing aids donated by Cochlear were fitted on softbands where appropriate. Interesting to note the progression of children through the service and many of them have gained employment despite their hearing loss.



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

12:45-13:45

Advocacy

Moderator: Joel Romualdez
BGPOP Building 4A/B/C

Hearing for All in 2024: Community Ear and Hearing Health Care in the Philippines

-Hubert Ramos, Cheryl Arellano, Jopeth Laguna, Kristine Valencia

With a prevalence rate of 8.8%, disabling hearing loss is the second most common disability in the country. Given the consequent speech and language dysfunction it brings, quality of life, productivity, and participation are hugely affected.

With most of the causes of hearing loss preventable, efforts to reduce cases of hearing disability in the Philippines focuses on optimizing local capacity and strengthening community-based rehabilitation. Developed through active partnership between government and non-government organizations, the National Ear and Hearing Health Care Plan was developed to complement community-based rehabilitation with ear and hearing care to widen reach of services despite the manpower, financial, and physical resource limitations of the government.

This paper presents the development of the Easy Access to ReHAbilitation Services Program and its implementation by clustering four ear-and-hearing-care organizations geographically spread in Luzon, Visayas, and Mindanao to complement existing government programs addressing the problem of hearing disability in the country.

Having completed its medium term plans, the Prevention of Hearing Loss Project through Better Hearing Philippines is constantly evolving as it moves towards achieving its vision in 2024.

Increasing Accessibility to Amplification for Low-Income Individuals in the United States: The Role of Hearing Aid Banks

-Stacie Ray

An estimated nearly 50 million Americans are affected by hearing loss, yet only about 15-20% of the hard-of-hearing adult population pursue amplification. The impact of untreated hearing loss in adults includes high rates of depression, anxiety, and other psychosocial disorders. In children, the impact is even greater, including negative effects on language and speech acquisition, cognition, and overall educational achievement.

One of the greatest obstacles to low-income individuals with hearing loss is the high cost of hearing aids. The average cost of a pair of hearing aids in the United States is over \$4,000, placing hearing aids out of reach for many.

Hearing Aid Loaner Banks are a resource available in over half of the states within the U.S. The banks assist in providing access to amplification for low-income individuals who otherwise would not have the financial resources to purchase hearing aids. The University of Nebraska, in collaboration with numerous organizations, hosts three hearing aid banks. This number includes one of the oldest in the country, in existence for 35 years. This collaborative effort has served thousands of low-income individuals across the lifespan.

This presentation addresses the role that hearing aid banks play in the United States, with a focus on the state of Nebraska, and the steps necessary to successfully establish a sustainable program.



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
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- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

12:45-13:45

Advocacy

Moderator: Jean Johnson
BGPOP Building 402/403/404

Promoting Awareness of Congenital Cytomegalovirus to Prevent Hearing Loss

-Sara Doutre, Karl White

Congenital Cytomegalovirus, or CMV, affects one in 750 babies and is the leading non-genetic cause of hearing loss. CMV causes a broad range of unilateral and bilateral hearing loss that is often progressive. However, fewer than 10% of adults in the United States are aware of CMV and the CDC-recommended precautions to take during pregnancy to prevent CMV infections.

Awareness of congenital CMV among adults in the U.S. was assessed via the HealthStyles survey in 2005, 2010, and 2015. Despite information on the CDC website about CMV, and the American College of Obstetrics and Gynecology recommending counseling on CMV, the awareness rate of CMV in the United States is decreasing.

This presentation will provide an overview of CMV, its characteristics, methods of transmission, and methods to reduce risk of transmission during pregnancy. Presenters share data from the 2005, 2010, and 2015 HealthStyles surveys, including an analysis of what factors affect the likelihood that someone has heard of CMV.

Presenters also discuss the benefits and implications of raising CMV awareness and educating women about CMV so they can prevent disabilities by exercising precautions to prevent transmitting CMV to their unborn baby. Presenters share examples of protocol for adding CMV testing to newborn hearing screening protocol and discuss implications for diagnosis, treatment, and intervention.

Social Justice: The Right to Hearing Health Care for All!

-Jean Johnson

Access to hearing health care is not now a ?right? for children or adults in many parts of the world. Newborn hearing screening has provided a vehicle to improve hearing health care for people in some remote and rural islands. This presentation will describe how audiological diagnostic services, ENT medical and surgical services, and intervention for children with various special needs are being achieved to create greater social justice in some islands in the Pacific.

The Efforts toward Control of Rubella and Prevention of Congenital Rubella Syndrome in Indonesia

-Nyilo Purnami

Introduction. Rubella infection remains an important health problems in many countries. Since Congenital Rubella Syndrome is Introduction. Rubella infection remains an important health problems in many countries. Since Congenital Rubella Syndrome is a preventable disease, there is global commitment in controlling Rubella by 2020. All Members of the World Health Organization have endorsed elimination of rubella and prevention of the congenital rubella syndrome.

Indonesia introduced the Congenital Rubella Surveillance Program nationally in 2014. Updated data are important to identify critical issues and problems of awareness that need to be addressed to improve the global control of rubella and the Congenital Rubella Syndrome.

Information about surveillance for rubella, laboratory diagnosis, and the burden of this disease was introduced in Centennial Hospital. Children under 1 year, those were born with Congenital Rubella Syndrome, or suspected with positive serologies, were reviewed from initial health assessment and hearing screening.

This report summarizes recommendations introducing rubella-containing vaccine in the national programme and future research to improve the global control of rubella and the Congenital Rubella Syndrome through strengthening surveillance of the measles-rubella and the Congenital Rubella Syndrome.



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

Methods. The newborn babies and infants who were admitted for hearing screening were reviewed to find prevalence of rubella or suspected Congenital Rubella Syndrome in Dr. Soetomo Hospital during 2011 to 2015. The retrospective data were collected and evaluated.

Results. This study indicated that rubella virus transmission in infant has occurred with higher percentage of cases, identified positive Ig G Serologis. The referral cases tend to increase by year.

Conclusions. The risk for Congenital Rubella Syndrome continues, and countries need to apply the rubella control/elimination program for national immunization as integration with measles-elimination efforts.

The Incidence of Cerumen Impaction and its Role in Hearing Impairment among School-Aged Children: A Retrospective Study

-Giselle Gotamco, Norberto Martinez

The World Health Organization estimates that 360 million people, or over 5% worldwide, have disabling hearing loss. This condition is defined as hearing loss greater than 30 decibels in the better hearing ear in children. Hearing loss is the leading disabling condition causing moderate and severe disability in both high-income and low-income, and middle-income countries. Its prevalence is highest in children in South Asia, sub-Saharan Africa, and Asia Pacific and lowest in the high-income regions.

A myriad of conditions cause hearing loss, including cerumen impaction. Ear wax was the leading cause of hearing impairment in selected developing countries in Asia. A nationwide Philippine survey in 2005 showed that 10.3% had ear disease or hearing impairment due to ear wax. According to NCP-SHA data, in the same year, impacted cerumen ranked 4th among the 10 leading ailments among grade t students in Mandaluyong City with a prevalence rate of 28.28%.

Impacted cerumen is an easily diagnosable and treatable condition. It has been known to cause deleterious effects in linguistic, social, and intellectual development. Impacted cerumen is believed to cause a significant degree of conductive hearing loss.

This presentation summarizes a retrospective study that aims to determine the incidence of cerumen impaction in school-aged children and its effect on hearing thresholds. The method is through a review of the records collected during a screening evaluation done in 2 primary public schools.

The results of this study would determine the role and the path clinicians should take in the evaluation of children with hearing impairment. It may lead to a more directed approach in the evaluation of hearing impairment in the pediatric age group.

If cerumen impaction significantly affects hearing thresholds, efforts should be directed to patient and caregiver education for prevention, early detection, and prompt resolution.

13:45-14:15

Empowering Families/Communities

Moderator: Jackie Clark
BGPOP Building 4A/B/C

Acute Otitis Media in Infants and Children

-Saud Alsaif

Otitis Media is considered one of the serious preventable diseases. The recurrence rate of Otitis Media declined worldwide after implementation of antibiotics and a rising level of awareness in parents. This presentation covers the causes of Otitis Media, management of Otitis Media, and methods of preventing Otitis Media, including the rate and the measures taken to prevent or minimize the complications worldwide.



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

Fostering Parent Leadership

-Joanne Travers

Attention to coaching and empowering caregivers has emerged as a priority in hearing health and habilitation. Throughout the developing world, however, sustainability of parent education and child services is challenging due to several factors that include limited resources and technology, limited professional training and education, and limited teacher and parent training in areas of hearing differences and habilitation. With specific regard to children who are deaf and hard of hearing, training in parent empowerment and participation are considered important but often left off the table on hearing health humanitarian missions.

A 2011 annual meeting at the Coalition for Global Hearing Health conference revealed the critical need for parent empowerment and engagement in the developing world (Parent Empowerment Committee Meeting, CGHH conference, House Ear Institute, Los Angeles 2011). The complexity of the global hearing health and humanitarian industry and the predicament of most parents living in resource-poor communities imply that a traditional approach to parent education and intervention will not be effective and must change.

Based on 20 years of qualitative experience coaching and educating parents, humanistic research in positive psychology, and Partners for A Greater Voice parent needs surveys, Joanne Travers presents effective ways to Foster Parent Leadership. This session is one of six modules her organization offers.

The program, called “Essential Programs to Coach and Empower Caregivers,” supports the unique needs parents have to be emotionally healthy and prepared in their journey to lead and raise children with hearing differences. Specific techniques are used to foster aspects of leadership such as competence, resilience, and collaboration. Professionals working with families of children with disabilities can enrich their practice by infusing the presenter’s suggested activities and meaningful discussion into their style of parent education and intervention.

Universal Newborn Hearing Screening Program in King Fahd Military Medical Complex

-Saud Alsaif

Objective of the study: The purpose of this study was to establish a Universal Newborn Hearing Screening program in King Fahd Military Medical Complex hospital and to study the prevalence of hearing impairment in neonates delivered in this hospital.

Study Design: All neonates delivered normally or by cesarean section in his hospital from 15 April 2003 to 1st August 2006 were screened for hearing impairment by Transient Evoked Oto-acoustic Emissions, then Auditory Brain Stem Response.

Results: A total of (2592) neonates were screened for hearing loss. The prevalence of hearing loss in both ears was 0.98%; 51 out of 5184 ears had hearing loss; 29 (1.1 %) the newborns had hearing loss of various degrees, 22 of them were bilateral and 7 newborns had unilateral hearing loss.

Conclusion and Significance: The incidence of hearing loss in this hospital seems to be higher than the international recorded percentage. From this study we concluded that Transient Evoked Oto-acoustic Emissions can be used successfully in universal newborn hearing screening, and Universal Newborn Hearing Screening should be made mandatory to allow for early detection and management of hearing loss.

Parents and Caregivers Understanding, Perceptions, and Care-Seeking Practices for Ear Infections in Children Under Five Years Old

-Mukara B. Kaitesi, MD, MMed, Msc

Introduction: Risky health-seeking practices, resulting in lack of awareness or due to lack of awareness, have been shown to significantly contribute towards an increase in ear infections. We conducted a study to evaluate parent and caregivers knowledge and care practices for ear infections in children under five years old in Gasabo district, Kigali,



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

Rwanda.

Methods: We conducted a cross-sectional study and used a structured questionnaire to collect data from 810 parents or guardians. The data were entered and cleaned using CSpro 6.2 and analysed under STATA 13.

Results: The mean age of the respondents was 31.27 years (SD= 7.88, range 17 - 83). The urban dwelling population had a bigger proportion (53.3%) of respondents compared with the population in rural dwellings (46.7%). Perceived as the most common cause for ear infections were poor hygiene (50%) and water finding its way into the ears (27%). While poverty is a barrier for care-seeking (66%), lack of awareness (62%) is equally a barrier.

Correlating knowledge with choice of source of treatment, respondents were 50% more likely to seek modern treatment (OR=0.52, CI 0.34-0.78, P=0.002). Moreover, a bigger proportion of parents who knew about ear infections were likely to use prescribed medications for treatment of ear infections (P=0.003).

Conclusion: Education about ear infection—and making services available, acceptable, accessible, and cost-effective at the primary healthcare level—could go a long way in addressing the issue of chronically discharging ears and their consequences among the community.

There is no one way to educate but sharing the information through fun and interactive presentations can help others learn and change attitudes and behaviors of youth and adults.

13:45-14:15

Empowering Families/Communities

Moderator: Kimberly Ong
BGPOP Building 402/403/404

UNHS: Philippines Experience

-Mart Aimee O. So - Singson

The Philippines is one of the few countries that made an intrepid decision in the early detection in its newborn population, thus allowing immediate intervention. This universal newborn hearing screening in the Philippines evolved during the past 18 years from a few participating hospitals to legislation known as “Universal Newborn Hearing Screening and Intervention Act of 2009”. The government ensures implementation of this act through the National Institute of Health, Newborn Hearing Screening Reference Center, the Philippine Society of Otorhinolaryngology Head and Neck Surgery, and the Philippine Health Insurance Company.

This implementation has resulted in Newborn Hearing Screening Registry, Certifying courses for newborn hearing screening personnel, and online registry, presently involving 128 certified hearing centers. Since 2007, newborns were screened from those who qualified for the high risk criteria, evolving to a universally available program. In 2014 and 2015 over 100,000 newborns were screened from 16 regions all over the country.

The presentation discusses the exact data and its importance in incidence and prevalence in correlation to gender, socio-economic status and the high risk criteria. Screening has enabled early intervention for newborns who had been found with hearing loss; intervention included hearing aid fitting, cochlear implant, and rehabilitation.

Several challenges are still to be overcome to enable full implementation of the “Universal Newborn Hearing Screening and Intervention Act of 2009”. Reporting of newborns screened for a unified national census and funding for such an advocacy remains the biggest challenge.

Collaboration & Partnership within the CNMI EHDI Program

-Margarita Torres-Aldan, Angie Mister

This presentation describes how the Commonwealth of the Northern Mariana Islands implemented and sustains Early Hearing Detection & Intervention (EHDI) program through agency collaboration, partnerships and parent and professional relationships.

The Commonwealth of the Northern Mariana Islands has one hospital, the Commonwealth Healthcare Corporation,



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

located on the island of Saipan. Health centers provide health care services on the neighboring islands of Rota and Tinian.

Given the remote location in the Pacific, it is crucial for the Commonwealth of the Northern Mariana Islands EHDI program to work closely with other agencies and programs to successfully identify infants with hearing loss, provide quality early intervention, and provide parent support.

Who would think that on an island 12 mi (19 km) long and 5.6 mi (9.0 km) wide, a program would be challenged to reduce loss to follow up and that families wouldn't naturally know other families who have children with hearing loss.

Other unique challenges include transportation, English as a second language, as well as the rapidly increasing number of tourist births. The presentation focuses on successes in overcoming challenges in meeting the needs of infants and children with hearing loss and family support on an island with limited resources.

Cultural Challenges in Providing Early Intervention Services in Developing Nations

-Jean Johnson, Chinilla Peter, Nancy Rushmer, Yusnia Weirather

In 2010, when the EHDI program was launched, the concept of early prevention and intervention for young children was new to the people in the Republic of the Marshall Islands (RMI) and to medical as well as health professionals. Health services were limited to a basic clinic, and the people depended on periodic visits from health specialists from U.S. or Asia Pacific countries. Developmental services and education for children with special needs from birth to five were not available and are still limited to this project.

In this session, the presenter discusses steps taken to connect the EHDI program with the conventional approach in early intervention services and gain cultural acceptance. Not until recently did some changes begin to occur— more parents and extended families began to develop awareness of the natural process of child development and to embrace the idea of intervening in the sequence of developmental steps for infants and toddlers who are deaf, deaf-blind and hard of hearing.

The Involvement of Primary Health Care Nurses in the Detection of Prelingual Infants with Hearing Loss at the Community Level in South Africa

-Nasim Banu Khan, Miriam Adhikari, Neethie (Lavanithum) Joseph

Breakthrough scientific and technological advances have provided opportunities to identify hearing impairments in infants soon after birth. In South Africa, primary health care is the first point of contact with the health system for at least 85% of the population, yet early hearing detection and intervention continue to be elusive in primary health-care settings. Nurses at the community level may, therefore, be missing an important window of opportunity to identify prelingual infants with hearing losses and alter their developmental trajectory.

A review of the research evidence from South Africa reveals that, despite their willingness to work within a team context, nurses are constrained in their services to children with hearing loss due to their limited exposure to training in this area, lack of screening equipment, lack of guidelines and protocols, limited awareness of the high-risk factors for hearing loss, and poor practice in record keeping and referrals. Some nurses had neither screened children for hearing loss, nor did they refer on the basis of certain high-risk factors. At best, the nurses could only inform parents of the professionals parents could contact if they were concerned about the child's hearing.

This scenario forms the basis of a larger study that aims to develop a model at community level for primary health-care nurses to identify and refer prelingual infants with hearing loss. The study is explored in this presentation, along with preliminary data. Also considered is identification of hearing loss over time, at specific immunization schedules, rather than a single screen at any given time and that closely approximates the Joint Committee on Infant Hearing imperative of identifying, diagnosing and managing hearing loss by 3, 6 and 9 months of age. The envisaged integration of hearing health into primary health-care services is likely to yield cost-effective solutions.



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

14:15 **Break**

15:00-15:30 **Special Topic**

BGPOP Building 4A/B/C

The WHO Situation Analysis Tool and its role in developing National Strategies

-Suneela Garg

In 2010, when the EHDI program was launched, the concept of early prevention and intervention for young children was new to the people in the Republic of the Marshall Islands (RMI) and to medical as well as health professionals. Health services were limited to a basic clinic, and the people depended on periodic visits from health specialists from U.S. or Asia Pacific countries. Developmental services and education for children with special needs from birth to five were not available and are still limited to this project.

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15:00-15:30 **Meet the Experts: Newborn Hearing Screening**

BGPOP Building 402/403/404

-Linda Hood, Angie Mister, and Jean Johnson



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

15:30-17:30 Training & Education

Moderator: Andrew Smith
BGPOP Building 4A/B/C

The Approach of Hearing International to Global Hearing Health

-Herman Jenkins, Suchitra Prasansuk

Hearing International is a public charity organization registered in the USA, dedicated to fostering hearing health in developing countries. Hearing International seeks to align otologists, audiologists, hearing interventionists, deaf educators, and hearing device manufacturers, all with technical know-how and understanding of world standards for consumer groups to lay the fundamental ground work at a grass-roots level.

The mission of Hearing International, "Healthy Ears and Hearing for All," will be achieved through the education of patients, their families, primary caregivers, otolaryngologist, and audiologist throughout the world. Fifteen Centers of Excellence are located in Thailand, Philippines, Indonesia, Myanmar, China, India, Vietnam, Bangladesh, and the USA. Center members meet annually for discussions and advice on projects and problems. Periodic courses are given by the parent organization in Center sites updating information and skills in applications of newer audiology and vestibular techniques, early newborn hearing screening and intervention, and hands on-training in surgery of the temporal bone.

International contacts of board members in the USA and Europe have provided formal educational experiences with visiting fellowships and university degree programs. These are jointly sponsored between the universities and home countries in partnership. Centers have grown greatly in their ability to deliver excellent patient care and education of primary and tertiary care givers in broader areas of their countries.

Through Centers of Excellence in developing and developed countries, we hope to improve the quality of life of individuals with diseases of the ear, hearing loss, and balance disturbances worldwide. Our focus is not humanitarian missions based, but rather training-the-trainers. Hearing International firmly adheres to the old adage, "give a man a fish and you cure his hunger for a day; teach a man to fish and you feed him for a lifetime."

The Ear, Hearing, and Tools to Help Educate Children about Hearing and Hearing Loss

-Angie Mister

Hearing plays an essential role in communication, speech and language development, and learning. Even a small amount of hearing loss can have profound, negative effects on speech, language comprehension, and communication.

Over 360 million people in the world have a disabling hearing loss, yet very few people have a clear understanding about how the ear works, hearing, or audiology in general. It's never too early to educate students about the ear, hearing, hearing loss, support services, and how to protect their hearing.

This presentation presents basic audiology concepts and terminology. I then demonstrate a fun interactive way to describing the different parts of the ear and basic principles of hearing. Lastly, I provide basic information on three resources available teach students, empower them, and assist them in learning to effectively advocate for themselves.

Knowledge is Power is a program to help students learn about their hearing loss. The goal of Knowledge is Power is to move students from basic information about anatomy, hearing loss, and hearing aids to dealing with their feelings about loss, grief, and self-esteem to self-reliance and personal responsibility.

The Guide to Access Planning program is designed to help teens and young adults learn how to effectively advocate and be responsible for their communication access supports and hearing assistance technologies. "Dangerous Decibels" is a program that uses the principles of inquiry-based learning to teach the concepts of prevention of noise-induced hearing loss. Students discover just how important it can be to "Turn it Down!", "Walk Away," and how to "Protect Ears".

There is no one way to educate but sharing the information through fun and interactive presentations can help others learn and change attitudes and behaviors of youth and adults.



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

15:30-17:15 Training & Education

Moderator: Andrew Smith
BGPOP Building 4A/B/C

The Value of Academic Partnerships to a Model of Global Hearing Healthcare

-Jeffrey Larsen, Luqman Lawal

The WHO estimates that nearly 10% of the world's population has measurable hearing loss, and the Global Burden of Disease data suggest the need to raise awareness for the importance of hearing loss as an important health condition. The situation, however, is not homogenous across all countries and regions.

This session details how the Starkey Hearing Foundation has developed a global model of community-based hearing healthcare, in collaboration with academic partnerships around the world, to assist with addressing region-specific education, training, research, and infrastructural needs. We also provide details regarding our partnership with US AuD programs that are focused on developing future audiologists who are interested in global hearing health.

Included topics include these: 1) curriculum development, 2) development of the Starkey Global Hearing Index, and 3) desired pre-requisites prior for optimization of student participation and outcomes. Audience participation is encouraged.

Audiological Results of Endaural Tympanoplasty Underlay Technique Using Tragal Perichondrial Graft

-Cristopher Ed Gloria, Juan Ramon Perez de Tagle

Disabling hearing loss remains a global burden. According to the World Health Organization, 360 million people around the world have disabling hearing loss. Some 328 million of these are adults. Of the 328 million, 56% are males and 44% are females. The prevalence of disabling hearing loss is highest in South Asia, Asia Pacific, and Sub-Saharan Africa. In the Philippines, an estimated 40% of the population suffers from some degree of hearing loss.

One of the common causes of hearing loss is chronic otitis media. Studies show that the global burden of illness from chronic otitis media affects from 65 million to 330 million people worldwide. Ninety percent of the burden of chronic ear infection is borne by countries in Southeast Asia, Western Pacific, and African regions.

Otitis media is a preventable and treatable disease, effectively managed through medical and surgical approaches. Surgical intervention is indicated for patients with complications, cholesteatoma, and those who fail to respond to adequate medical treatment.

Tympanoplasty is a surgery performed to restore middle ear function by eradicating the middle ear pathology, reestablishing a tympanic membrane, and securing a durable connection between the tympanic membrane and the inner ear. This endaural approach can be used with all perforations; however, it requires mastery of the skill by the surgeon. This study aims to compare the preoperative and postoperative audiogram of patients who underwent a particular technique in Tympanoplasty

15:30-17:30 Panel Discussion Empowering Families/ Communities

BGPOP Building 402/403/404

-Sara Doutre, Shalini Morta, Carmela Arreola, and Richard Fee



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
- 13:45 - Empowering Families/Comm.
- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

17:30-19:15 Posters

All Hear: Philippine National Ear Institute's Vision for Hearing the Future

-Charlotte Chiong

Hearing International Update: Beijing Center

-Long Mo, Haifeng Shi

Hearing International Update: Bandung Center

-Ratna Anggraeni, Sally Mahdiani

Hearing International Update: Surabaya Center

-Nyilo Purnami, Rosudiah Rahmawati Ansori

Hearing International Update: Jakarta Center

-Ronny Suwento, Tri Juda Airlangga

Hearing International Update: Yangon Center

-Khin Hla Hla, Chaw Su Hlaing

Hearing International Update: Khon Kaen Center

-Kwanchanok Yimtae, Paphawee Mana

Hearing International Update: Bangkok Center

-Ogaddee Chaleompong, Patcharapa Promnawet

Hearing International Update: Delhi Center

-Arun Agarwal, Suneela Garg

Colorado Center

-Herman Jenkins, Carol Bauer

Hearing International Update: UST Hearing and Dizziness Center

-Hubert Ramos, Joel Romualdez

Delivery of ear Health, Dental and Genetic Counseling services to an Indigenous Population with a High Prevalence of Otitis Media due to a Duplication Variant in the A2ML1 Gene

-Regie Lyn Santos-Cortez, Charlotte Chiong

Consanguinity and Deafness in Oman

-Mazin Al Khabori

Causes of severe to Profound deafness in Omani pediatric population

-Mazin Al Khabori

Ear Care Day in Indonesia

-Damayanti Soetjipto



- 7:30 - Registration
- 8:00 - Welcome & Introductions
- 8:30 - Invited Guest Speaker
- 9:10 - Technology
- 10:10 - Break
- 10:30 - Advocacy
- 11:30 - Lunch
- 12:45 - Advocacy
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- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
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Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

17:30-19:15 Posters

Knowledge and Attitudes of Timber factory workers towards noise control in South Africa- Does it really matter?

-Seema Panday

Universal Newborn Hearing Screening in Oman

-Mazin Al Khabori

Genetics of Deafness and population migration

-Mazin Al Khabori

Knowledge, Attitude and Practice of verbal communication by parents and teachers of children with hearing impairment: a case study from the Philippines

-Luqman Lawal, Chalese Buttars

Humanitarian Audiology in Canary Islands (Spain)

-Jose Juan Barajas de Prat

Programs & Activities to Reach the Goal of Sound Hearing 2030

-Damayanti Soetjipto

The effectiveness of a paired-comparison approach to helping children with hearing loss in Kenya

-Jeffery Larsen, Chalese Buttars, Luqman Lawal, Dave Fabry

The Relationship Of Age, Duration Of Work And The Use Of Hearing Protection With Noise Induced Hearing Loss At Air Force Personnel At Husein Sastranegara Airfield Bandung Indonesia

-Yanti Nurrokhmawati, Made Fitrika



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- 12:45 - Advocacy
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- 14:15 - Break
- 15:00 - Special Topic
- 15:30 - Training & Education/ Panel Discussion
- 17:30 - Posters
- 19:15 - A Global Connection Gala:
Making Hearing Health a Priority

Agenda

Monday — October 24, 2016

19:15 A Global Connection Gala: Making Hearing Health a Priority

Ballroom, Buenaventura Garcia Paredes, OP Building, University of Santo Tomas, Manila

The Global Connection Gala brings together people who are living and working in almost 50 countries around the world to making hearing health a global priority. The messages from the keynote speakers will remind attendees not only of how far we have come, but what remains to be done. It will be a wonderful evening filled with personal stories, camaraderie, entertainment, and calls for collective action.

Welcome & Report on World Health Organization (WHO) Activities

-James Saunders

Keynote Speakers

Making Hearing Health a Global Priority: Hearing International Perspective

-Suchitra Prasansuk

The Dizzy Patient: Adding Vestibular and Vision Rehabilitation

-Sujana S. Chandrasekhar

We have all experienced the temporary tinnitus and probably temporary threshold shift that occurs after loud noise exposure. We have believed that there is no long-lasting harm from these temporary occurrences. These beliefs have proven to be incorrect.

Recent histopathological data shows that cochlear hair cells are not the most vulnerable elements in the inner ear. It is actually the synapses between hair cells and cochlear nerve terminals that degenerate first in the aging or noise-exposed ear. This occurs immediately and is irreversible, after noise exposure. This primary neural degeneration (unlike hair cell loss) does not affect hearing thresholds, but likely contributes to problems understanding speech in difficult listening environments, and may be important in the generation of tinnitus and/or hyperacusis. This has been labeled 'cochlear synaptopathy'. Diagnosis is difficult, with audiometric abnormalities only being seen between 10K and 16KHz, but SP/AP ratio on electrocochleography may help.

Noise induced hearing loss (NIHL) is one of the major causes of preventable hearing loss. The WHO estimates that NIHL risk to 1.1 billion young people, due to unsafe listening practices. Nearly half of all teenagers and young adults (12 - 35 years old) in middle- and high-income countries are exposed to unsafe levels of sound from the use of personal audio devices and 40% of them are exposed to potentially damaging sound levels at clubs, discotheques and bars. In the US, between 1994 and 2006, the prevalence of HL among teenagers rose from 3.5% to 5.3%. Worldwide, 16% of the disabling HL in adults is attributed to occupational noise: 20-25% in men and 10-15% in women.

Apart from hearing loss, noise-induced quality of life effects in all age groups include hypertension, sleep disturbance, cognitive impairment, and other deleterious non-auditory health effects. Direct local and national regulation, altering the informational environment, and altering the built environment are the least costly, most logistically feasible, and most effective noise reduction interventions.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

8:00 Plenary: Invited Guest Speaker

BGPOP Building 4A/B/C

A Global Model for Hearing Loss Prevention Educator Training

-William Hal Martin (Singapore)

Dangerous Decibels® is a low-cost, evidenced-based program demonstrated to be effective at improving hearing health related to sound exposure for children and adults. Educator training workshops were developed in the US to train, equip and certify individuals from different backgrounds to effectively deliver the Dangerous Decibels interventions. The intensive, two-day workshops cover topics including the physics of sound, normal anatomy and physiology of hearing, noise measurement and exposures, pathophysiology of noise, hearing loss and tinnitus, available resources, program delivery, evaluation and adaptation for special populations. Target populations for the intervention include children and adults in military or workplace settings. Workshop participants are provided with an educator kit that include all equipment and supplies needed to deliver the program.

Dangerous Decibels partnership has implemented a model of establishing and equipping local teams of hearing health experts in different regions of the world so they can conduct local educator training workshops. The US team helped establish a workshop faculty group in New Zealand in 2011 that has been actively conducting workshops since that time. In June 2016, a faculty group will be established with representatives from India, Malaysia, the Philippines and Singapore to deliver workshops across southern and southeast Asia and across the Asia-Pacific Islands. In September 2016, a faculty group will be established in Brazil to conduct workshop in Brazil and South America. The Dangerous Decibels leadership maintains the content of the educational modules and provides them to the faculty conducting the local workshops. This provides continuity in the messages delivered and keeps the information current. Materials for instructing the workshop and those given to workshop participants are translated in appropriate languages by local faculty members. Dangerous Decibels faculty are recruited based on their areas of professional expertise and demonstrated dedication to the prevention of noise induced hearing loss and tinnitus.

8:40-9:45 Training & Education

Moderator: Emmanuel dela Cruz
BGPOP Building 4A/B/C

An Evaluation of the Diagnostic Accuracy of Otitis Media among ENT, Pediatrics, and Family Medicine of a Tertiary Teaching Hospital

-Mark Aldrin Alcud

The objective of the study was to compare the performance of otolaryngologists, pediatricians, and family medicine residents in recognizing the otoscopic examination findings of acute otitis media and otitis media with effusion as presented in static (pictures) and pneumatic (video) formats. Otolaryngologists, pediatricians, and family medicine residents from UST Hospital (n = 10, 12, and 6 respectively) viewed thirty different pictures and ten different videos of otoscopic examinations, including pneumatic otoscopy of tympanic membranes. The ability to differentiate acute otitis media, otitis media with effusion, and normal was ascertained.

Overall, the correct diagnosis on the otoscopic exam by otolaryngologists was higher than with pediatricians and family medicine residents: 73% for otolaryngologists, 52% for pediatricians, and 49% for family medicine residents.

Conclusions: Otolaryngologists performed significantly better than pediatricians and family medicine residents in differentiating acute otitis media, otitis media with effusion, and normal in such a test described here. Physicians may benefit in workshops that teach otoscopic examination findings to improve diagnostic accuracy.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

8:40-9:45 Training & Education

Moderator: Emmanuel dela Cruz
BGPOP Building 4A/B/C

Audiological Counseling in Clinical Practice

-Dele Owolawi

The study aimed to survey theoretical and practical courses in counseling offered to students and time spent with patients in various counseling sessions given to patients by practicing audiologists. The study also examined the audiologist's ability to provide different types of counseling services and professional preparation on counseling skills. Twenty-five practicing audiologists participated in the study. Approximately, 50% of audiologists had some counseling training as part of their curriculum of study. In the audiologists' respective clinical work, more emphasis has been given to providing information, with less time to personal adjustment counseling. A higher number of practitioners advocated for a need to increase time or credit allocated to the teaching of personal-adjustment counseling. Implications of study are discussed.

Audiological Pediatric Screening in Underserved Communities in Puerto Rico

-Soami Santiago De Snyder

This presentation discusses the value of a partnership between a non-profit organization and an academic program preparing doctors in Audiology to develop a country wide screening program for children of underserved communities. The epidemiologic as well as the clinical implications of this service model as an entry level auditory and balance health delivery system are analyzed.

Bridging the Hearing Health Access Gap in Sub-Saharan Africa: An Approach by the Starkey Hearing Foundation

-Luqman Lawal, Alfred Mamba

Overall Objective: To create educational and communication opportunities for hearing impaired children and adults. In line with the goal of Starkey Hearing Foundation—to help people stand at their true height—we recognize that by providing hearing healthcare to those in need has a compounding effect through them, their families, and their communities. This project works to eliminate the critical shortage of hearing healthcare workers.

Comparison of Oto-acoustic Emission Test and Automated Auditory Brainstem Response in Detecting Hearing loss among Newborns and Infants at a Tertiary Private Hospital

-Chalese Buttars, Luqman Lawal

Hearing loss is a global burden, even in developed countries. Global estimates in developed countries revealed that 1 to 5 of 1000 babies are born deaf. Prevalence of hearing loss increases as parents' literacy rate decreases.

Development of screening programs to identify persons with hearing loss is needed because the outcomes of this disability cascades throughout the person's lifetime. Provision of a high quality of early intervention must be prioritized for the infants with hearing impairment to optimize their language and literacy development.

The goal of universal newborn hearing screening is to detect permanent hearing loss averaging 30dB or more in the frequency region important for speech recognition (500-4000 Hz). Several published studies have revealed weakness in the newborn hearing screening program. Some of the weaknesses are failure to detect late-onset deafness, and failure of some children who did not pass the initial screening to return for follow-up. Additionally, there are false-positive results in many newborn hearing screening programs. Consequently, centers began looking for ways to improve services by having a low failure rate yet also detect infants with congenital hearing loss.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

The drawback in the Oto-acoustic Emission test is that it does not detect fluctuating hearing loss or those caused by auditory neuropathy. On the other hand, Automated Auditory Brainstem Response detects only moderate to profound hearing loss. These factors suggest a need to investigate the capability of Automated Auditory Brainstem Response as a screening tool for hearing loss among infants and compare that capability with the capability of the Oto-acoustic Emission protocol.

8:40-9:45 **Training & Education**

Moderator: King Chung
BGPOP Building 402/403/404

Older Adults with Hearing Impairment and Their Perception towards Cochlear Implants

-Kalyani Mandke

WHO statistics (2012) suggested that approximately 15% of adult population and 33% of geriatric population suffer from hearing loss. A high percentage of the prevalence of hearing impairment is in the developing and underdeveloped countries.

Disability Census (2011) indicated similar trends in India. The life expectancy in India is on rise, accompanied by a significantly high number of older adults who have severe-to-profound hearing loss that cannot be treated with amplification devices. These are the individuals whose quality of life is being reduced significantly because of their sensory impairment. They experience emotional reactions such as loneliness, isolation, dependence, and depression. These older adults, when given the option of cochlear implant as one of the better solutions, often turn down the cochlear implant.

This presentation reports a study of 20 older adults who turned down the cochlear implant option. The presentation discusses issues such as low awareness among health-care professionals, no proper referral channel, family member hesitation to make the decision about an invasive procedure, and fear of the unknown. There is a strong need for audiologists, medical professionals, and hearing-aid dispensers to promote a strong message that where a hearing aid can no longer provide support for a person with hearing loss, a cochlear implant can be a solution for all age groups.

Retrospective Study on the Prevalence of Common Ear Pathologies in Children Ages 0-6 Years Old in a Local Baranggay in Quezon City, Philippines

-Paolo Miguel S. Bernardo

Introduction: There are limited local data regarding the prevalence of common ear pathologies. Most references used by Filipino doctors still rely on Western or European literatures and may not be applicable in the local setting. This study aimed to gather the prevalence of common ear conditions reflective of Philippine setting.

Methods and Outcomes: A retrospective study was done using the data collected by the Department of ENT-HNS in their routine medical missions. House-to-house visits were done in Baranggay Doña Imelda, Quezon City during November-December 2013 investigating the common ear pathologies of children ages 0 to 6 years old.

A structured questionnaire was used and otoscopy was performed to diagnose patients. The gathered data was used in this study, encoded in Excel, and analyzed. Results A total of N=345 patients were included in the study. There were 171 males and 174 females. Sixty-three of the patients were 0-1 year old, 58 were 1-2, 38 were 2-3, 55 were 3-4, 47 were 4-5, 44 were 5-6, and 40 were 6-7.

Risk factors included were history of breast feeding, pacifier use, number of children at home, exposure to smoking, frequency of URTI and ear infections per year and, immunization history. Ear conditions were divided as to left and right ear.

Results: Normal N=439 (61.8%); impacted cerumen N=204 (28.7%); acute otitis media N=24 (3.4%); otitis media with effusion N=9 (1.3%); chronic otitis media N=12 (1.7%); and acute otitis externa 2 (0.3%).

Conclusion: The results showed comparable data with global literature in most conditions.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

Solving Middle Ear Pathology in Indigenous Communities: An Australian Perspective

-Lara Shur, Paul Higginbotham

Purpose: In 2014, the Earbus Foundation of Washington formed a close collaborative partnership with two Aboriginal Medical Services in rural and remote parts of Western Australia. The Earbus Foundation team (consisting of a GP, a Nurse Practitioner, a Nurse, an Audiologist, Audiometrists, and an ENT specialist) worked in close partnership with the Aboriginal Medical Services in a partnership based around identified core principles of collaboration: agreed common agenda, shared measurement, mutually reinforcing activity, and continuous communication.

Methods: Using a Mobile GP Clinic bus, the Earbus Foundation visited nine communities in the eastern regions of Western Australia and treated hundreds of Aboriginal and at-risk children for middle ear disease. The complete “treatment” pathway consisted of identification, ongoing surveillance, primary health intervention, and tertiary pathways for each child. In the North West of Western Australia the partnership with the Aboriginal Medical Services included joint clinics, shared resources, and shared cultural knowledge.

This paper presents detailed data on the middle ear health of over 2,300 children seen and treated over two years in these communities.

Results: The authors look at how this primary care arrangement between an NGO NFP and a regional Aboriginal Medical Service is aligned with research from Stanford University into collaborative social impact by Kania and Kramer.

On average, the refer rate at end of 2015 (essentially a type B tympanogram, discharging ear or wet perforation) for the two regions is as follows: Eastern Areas of Western Australia: 35% (decreased by approximately 19% from entry to region at start of 2014); and North West areas of Western Australia 42% (decreased by approximately 10% from entry to region start of 2014). 2016 data are also be presented.

Conclusions: Working in close partnership of an NGO (Earbus Foundation of Washington) and regional Aboriginal Medical Services has fashioned a joint approach that is a working-illustration of how to deliver collaborative social impact.

Universal Newborn Hearing Screening in the Philippines: A Continuing Journey

-Charlotte Chiong

In a lower-middle-income country like the Philippines, Universal Newborn Hearing Screening was mandated with Republic Act 9709. Evidence-based research regarding the prevalence of hearing loss among newborns and high-risk children, and the impact on speech and language development of early detection and intervention, formed the basis for a position paper crafted by the Philippine Society of Otolaryngology-Head and Neck Surgery in 2007. The paper resulted in legislation two years later and the programme development led by the Department of Health and its technical arm the Newborn Hearing Screening Reference Centre.

This presentation describes the results of such landmark researches that paved the way to developing this programme. Included is how the newborn hearing registry card was formulated and tested along with preferred reporting modalities. The registry card was formulated using a pilot programme implementation in accredited newborn hearing screening centers to serve as basis for the first phase of national implementation of Universal Newborn Hearing Screening in 2016.

The initial results from the national registry database are presented along with coverage by the Philippine Health Insurance Corporation and other demographics. Issues regarding programme challenges are discussed along with the researches done towards developing a community based newborn hearing programme that can be used in areas where infrastructure for Newborn Hearing Screening remains inadequate. One challenge is the roaming screener and the voice test administration by community health workers.

Also presented are the ongoing studies in using IT and M-health to enhance the delivery of Newborn Hearing Screening



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

8:40-9:45 Training & Education

Moderator: King Chung
BGPOP Building 402/403/404

services vis-a-vis the initial efforts to apply tele-audiology protocols for Newborn Hearing Screening and beyond the hearing screening per se.

There are indeed formidable challenges in carrying out a Universal Newborn Hearing Screening programme in an archipelagic country such as the Philippines, but innovative and practical approaches to hurdle these challenges have made the work in this field exciting and gratifying.

What Would We Have Missed?

-King Chung, Mariah Cheyney

Introduction: The auditory system is a complex system. Oto-acoustic Emissions and screening Auditory Brainstem Responses are often used for infant screening. There is, however, no universally recommended hearing screening protocol for school-aged children.

The purpose of this study was to examine the pass and referral rates of a combination of commonly used hearing tests when they were carried out in humanitarian environments. The goal was to examine a practical hearing screening protocol for testing school-aged children in the field.

Methods: Children aged 3-18 years were tested using 1) otoscopy, 2) tympanometry, and 3) distortion-product Oto-acoustic Emissions (DPOAEs) in four different countries. If a 3-dB signal-to-noise ratio is not obtained at 4 of the 6 DPOAE test frequencies, the children were sent for a pure tone audiometry. The pass and referral rates were calculated when the results of different combinations of the tests were used to make clinical decisions.

Results: Preliminary results from a total of 1682 ears tested in two countries indicated that: 1) DPOAE only: 96.4% pass rate and 3.5% referral rate 2) DPOAE and Otoscopy: 80.8% pass rate and 19.2% referral rate. The increase in failure rate was mainly due to 15.5% increase in the identification of ear wax accumulation 3) DPOAE, Otoscopy, and Tympanometry: 78.9% pass rate and 19.6% referral rate. Tympanometry identified an additional 0.4% of children with Type B tympanograms 4) DPOAE, Otoscopy, Tympanometry, and Pure Tone Audiometry: 79.3% pass rate and 18.8% referral rate. Forty-seven of the 59 children (80%) who failed the DPOAE test were found to have hearing sensitivity within normal limits, indicating that pure tone audiometry was a valuable test to reduce the false positive rate of the DPOAE tests.

9:45-11:00 Training & Education

Moderator: Cristopher Ed Gloria
BGPOP Building 4A/B/C

Training of Community-Based Hearing Health Workers and Their Roles in the Identification and Management of Patients with Ear and Hearing issues: The Starkey Hearing Foundation Approach

-Luqman Lawal, Wakisa Mulwafu

Hearing loss is the most prevalent sensory disability and a problem that is increasing globally. According to the World Health Organisation, an estimated 360 million people, or 5.3% of the world population, are living with disabling hearing impairment. In many developing countries, there is lack of ENT Specialists and Audiologists. There are also limited resources. Many countries in the developing world are reaching out to community health workers as an effective alternative in the face of the scarcity of health workers.

With support from Starkey hearing Foundation, a three-day training for community based hearing-health workers



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

was conducted in 46 countries. A total of 25 trainings took place, and a total of 972 people have been trained. These community based hearing-health workers are responsible for providing basic hearing healthcare services in their communities. They are able to perform otoscopy and voice tests. They are able to identify and manage impacted cerumen, discharging ears, and to refer patients that need further evaluation. They are also able to take ear impressions and fit hearing aids.

This project has greatly increased the human resource capacity for identification and management of ear and hearing disorders. Many avoidable causes of hearing loss can be managed by trained community based hearing-health workers.

Development of an Ear and Hearing Health Care Manual for Community Health Workers

-Benedict Baguyo, Norberto Martinez

Considering the lack of audiologists and otorhinolaryngologists in the Philippines, part of the program component of Better Hearing Philippines, Inc. is the training of community health workers. With more than half of ear and hearing disorders easily preventable, even at the community level, the training of community health workers is rather significant for the prevention, diagnosis, and management of ear and hearing disorders.

A training manual for community health workers, special education teachers, and community-based rehabilitation workers was developed. Training needs were determined through focus-group discussion with a community-based rehabilitation organization. The following themes emerged from the focus group discussion: information on ear and hearing health, advocacy, lack of professionals, and method of presentation of information.

A thorough review of recent literature on ear and hearing health care was conducted to develop the training manual. The contents of the material were validated through expert panel review. Face validity, reliability, and utility of the training manual were determined through another focus group discussion with the intended users of the manual.

Efficacy of an Ear and Hearing Care Training Program among Selected Community Based Rehabilitation Health Workers

-Joel Romualdez, Jennine Patricia Boado

Hearing loss is the most prevalent sensory disability and an increasing problem globally. In the Philippines, hearing impairment ranked second in prevalence, compromising 33% of all persons with disability. General lack of awareness is a major challenge for many people with hearing loss including their families. Thus, improvement of parental awareness as well as early screening programs regarding hearing loss are vital.

The World Health Assembly Resolution 48.9 acknowledged a general lack of human resources and programs regarding hearing health across the world. There is a lack of persons trained in identification of hearing loss and a lack of equipment and facilities for support services. Severe shortage of staff, including audiologists and ENT specialists, is also a major problem. Thus, integration of ear and hearing care into community based rehabilitation programs allows equal access to prevention, treatment, care, and support programs to those who have, or at risk of, hearing problems.

In the Philippines, Better Hearing Philippines Inc. has a mission of "Better Hearing for all in 2024". In line with this mission, secondary and tertiary training programs were initiated with support from the Christian Blindel Mission to provide training community workers, teachers and health care personnel to increase the number of audiological services in the country.

Selected Community Based Rehabilitation health workers who participated to the training programs of Better Hearing Philippines Inc. will be included as participants of the study. After each workshop, return demonstration by the participants will be facilitated to ensure correctness of procedure. Focused group discussions will also be facilitated to seek the views and opinions of the Community Based Rehabilitation health workers. After each focused group discussion, data will be transcribed and arranged according to themes and issues. It was envisaged that this approach will lead to understanding the relevance of the program to the community.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

9:45-11:00 Training & Education

Moderator: Cristopher Ed Gloria
BGPOP Building 4A/B/C

Improving Hearing Equilibriums: A Mobile Application and Social Innovation Approach

-Michael Herren

Across multiple interfaces, location types, and population bases, we found that multi-faceted and multi-source noise pollution levels decreased. Best-in-practice conservation efforts, coupled with innovative solutions, local studies, and mobile-based monitoring and testing contributed to this achievement, although some gaps remain.

The importance of mobile application technology should not be understated as a tool to drive change among vulnerable communities. In many cases, traditional technology is absent or of limited quality; and in some cases, mobile applications constitute advantages over poorly utilized or understood systems.

However, users must be motivated and engaged to develop mobile application acumen and sustainable scaling techniques. In one case we found varying responses to hearing surveys across 1M population in remote urban settings. Comparatively, megacity data was more homogeneous and less environmentally problematic. This imbalance is not surprising, but it masks common poverty issues related to hearing healthcare nationwide.

There is still limited sustainable and community development for the most affected and vulnerable individuals. Recent research and development shows that mobile, entrepreneurial-based sensorial-solution outputting across sectors is a viable and efficient way to improve healthcare outcomes. Traditional techniques lack the capacity for problem solving and interest generation at this level, while sensorial task and goal shifts through mobile application technology catalyze stakeholders toward sustainability and rapid product/service enhancements.

Training Teachers and Parents on Verbal Communication among Children with Hearing Impairment: Preliminary Results From Schools in Kenya

-Chalese Buttars, Luqman Lawal

Purpose: We sought to assess the outcome of training parents and teachers on verbal communication with children who have hearing impairment in selected schools in Kenya.

Methods: Four schools with 100 students; aged 5 to 18 years were selected for the project. Teachers and parents were trained on use of verbal communication with children with hearing impairment. We utilized a pre-post design and used validated questionnaires for data collection.

Results: The proportion of parents who responded that their children could respond to environmental sounds significantly increased from 15.6% (95% CI 6.7, 24.5), to 87.5% (95% C.I 79.4, 95.6) ($p < 0.05$). A significant increase in the proportion of those that responded their children could vocalize was observed: 17.2% (C.I 7.9, 26.4), to 87.5% (C.I 79.4, 95.6) (P

9:45-11:00 Training & Education

Moderator: Suneela Garg
BGPOP Building 402/403/404

Prevalence of Hearing Loss: Determining its Epidemiological Variants among the Omani Population

-Mazin Al Khabouri

Undertaken in the Sultanate of Oman in 1996-97 was community based national survey for estimating the prevalence of hearing loss and determining its epidemiological variants among the Omani population. Another purpose of the



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

survey was to enumerate the major causes of deafness. Trained investigators examined 11,400 members of the Omani population of all ages to detect hearing disabilities and common ear diseases.

Findings: The investigators found that 55.3 persons per thousand of the population had some degree of deafness. Bilateral hearing loss was found in more males than in females. The rate of deafness increased with age and in the age group 60+ the prevalence rate was the highest (325 per 1000 population). The prevalence was lowest in the 0 to 9 years of age population—16.7 persons per 1000.

Of the total persons surveyed, 20.68 per thousand had a disabling type of deafness. Of this type of hearing loss, the prevalence among males and females was nearly equal. The rate of disabling deafness increased with age. In the age group 60+, the prevalence rate was the highest (217.6 per 1000 population). It was as low as 5.9 per 1000 population in the age group of 0-9 years.

Chronic suppurative otitis media, otitis media with effusion, and dry perforation of the tympanic membrane were the major causes of hearing loss in persons below 30 years age. Presbycusis was the major causative agent in persons above 50 years of age.

Detection of Hearing Impairment in Patients with Subjective Complaints of Hearing Loss Using the Whispered Voice Test and Standard Pure Tone Audiometry: A Prospective, Double-blind, Cross-sectional Study

-Giselle Gotamco, Norberto Martinez

Objectives: To determine the sensitivity, specificity, positive predictive value, negative predictive value, positive likelihood ratio, negative likelihood ratio, and accuracy of the whispered voice test compared with standard pure tone audiometry in detecting hearing impairment in patients with subjective complaints of hearing loss.

Methods: Study Design: Prospective, Double-blinded, Cross-sectional Study Setting: Tertiary Private Hospital Subjects: 55 consecutive patients who underwent hearing evaluation via pure tone audiometry.

Results: 55 subjects composed of 60% (n=33) females and 40% (n=22) males with ages ranging from 13-85 years old (Mean±SD=44.99 ± 19.19) were included in the study. 58.2% (n=64) ears responded correctly in the whispered voice test while 59.1% (n=65) had normal hearing threshold on pure tone audiometry. There was significant association between age and whispered voice test (Pearson's chi-square=68.24, df=27, level of significance=0.05, p-value=0.000). The same significant association between age and pure tone audiometry results (Pearson's chi-square=70.52, df=27, level of significance=0.05, p-value=0.000) was found. There was also significant association between the whispered voice test and pure tone audiometry results (Pearson's chi-square=151.59, df=27, level of significance=0.05, p-value=0.000). Sensitivity and specificity of the whispered voice test were 93.75% and 89.13%, respectively. Positive predictive value was 92.31% and negative predictive value was 91.11%. The positive likelihood ratio was at 8.62 while the negative likelihood ratio was at 0.07. Accuracy was computed at 91.82%.

Conclusions: The results in this study are comparable to those of previous studies. The whispered voice test is an accurate tool in the detection of hearing loss. It can be used as an alternative to audiometric evaluation in the screening of patients with subjective complaints of hearing loss by ENT specialists and general practitioners in the urban and rural setting. Keywords whispered voice test, pure tone audiometry, hearing screening, sensitivity, specificity, diagnosis, hearing loss.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

9:45-11:00 Training & Education

Moderator: Suneela Garg
BGPOP Building 402/403/404

Need for Skilled Primary Ear-Care Workers in Developing Countries

-Dr. Suneela Garg, Deeksha Khurana, Dr. Tanu Anand

Background: Globally, about 360 million people (5.3% of total population) suffer from disabling hearing loss. Prevalence is greatest in South Asia, Asia Pacific and Sub-Saharan Africa. This high rate of prevalence can be attributed to lack of awareness regarding importance of ear care and inadequate resources for addressing these issues. The doctor-to-population ratio is less than the WHO recommendation of one doctor per 1000 persons. The ratio is worse for ENT specialists.

Aim: The need to develop a cadre of skill-based primary ear-care workers becomes pressing for delivering essential ear-care services. A skilled primary ear-care worker can perform certain clinical and administrative duties and play a significant role right from early identification, awareness generation, screening, and making adequate referrals.

Methods: The primary ear-care worker can obtain and record the history of patients having ear morbidities, including family history of ear diseases, social history, exposure to industrial or occupational hazards, trauma, and any surgical procedures. The primary ear-care worker would carry out basic examination to screen and recognize patients with common ear diseases (e.g., wax, simple foreign body, discharging ear etc.). The worker could counsel and refer patients requiring further medical/surgical care.

The primary ear-care worker would also be responsible for carrying out hearing assessment and counseling of patients using an audiometer or voice tests. The worker would also carry out promotion of ear health by creating awareness through community based actions.

Regarding the rehabilitative aspect, he/she would be responsible for informing the populace about available options for inclusion and integration of people with hearing loss in the community.

Conclusion: Creation of a cadre of skilled primary ear-care workers would not only reduce the burden on the scarce ENT specialists but also help address the problem of avoidable hearing loss in developing countries.

Outcomes from a Novel In-country Training Program for Surgical Treatment of Chronic Suppurative Otitis Media

-Aaron Smith, Touch Sokdavy, Chea Sothea, Charlie Huins, Matthew Clark, Jim Gollogly, Mahmood Bhutta

Background: Chronic suppurative otitis media is an under-resourced disease affecting 65 million to 330 million individuals worldwide, with over 90% of disease borne by low-income and middle-income countries. Many cases of chronic suppurative otitis media can be cured only by surgical intervention, but few low-income and middle-income countries have the resources or expertise to offer this intervention. In some locations, ENT surgeons from high-income countries undertake short-term visits to provide treatment, but this model fails to develop local capacity and expertise. We devised and evaluated a novel and sustainable in-country training program for surgical therapy of chronic suppurative otitis media in Cambodia.

Method: Between 2014 and 2016, we instigated a training programme in surgery at the Children's Surgical Centre in Phnom Penh. This programme utilised two recently qualified ENT surgeons from the United Kingdom to train local surgeons, with each trainer in residence for 4 to 6 months. Training was provided in both tympanoplasty and tympanomastoidectomy.

We evaluated outcomes through qualitative data on self-reported confidence of trainee surgeons, and through quantitative data on success rates and audiological outcomes of tympanoplasty performed by these surgeons in the first year after completion of training.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

Results: Both of the Cambodian-trained surgeons reported high confidence in performing tympanoplasty. A total of 124 patients underwent tympanoplasty in the study period. Surgical success (closure of the tympanic membrane) at six weeks post-operation was 88.50%, and pure-tone audiometry at three months showed that 80.85% of patients had improved hearing, with a mean gain of 17.13dB.

Conclusion: Our training programme has demonstrated success, as measured by surgeon confidence and by objective measures of operative outcomes, with operative outcomes as good as or better than those reported in the world literature. The local surgeons have now begun to train other Cambodian surgeons, evidencing that this is a high quality and sustainable model for developing in-country expertise in the surgical therapy of chronic suppurative otitis media.

Resident Physicians' Knowledge, Attitudes, and Practices in Relation to Newborn Hearing Screening at Ilocos Training and Regional Medical Center

-Emmanuel Dela Cruz

The Philippines is an archipelago of 7,107 islands with a population of about 89 million people. It has an annual birth rate of 2 million, which equates to 4 babies born per minute. Based on an estimated incidence in developing countries of 6 per 1,000 infants with permanent congenital and early-onset hearing loss, there would be 12,000 such infants born each year in the Philippines.

In an effort to provide early detection and intervention for infants with permanent hearing loss, universal newborn hearing screening has become the standard of care throughout the Philippines. The Universal Newborn Hearing Screening and Intervention Act (RA 9709) was signed in August 2009, requiring all healthcare practitioners to inform parents prior to delivery of the availability, procedures and benefits of hearing screening for neonates and infants 3 months of age and below. Physicians play a vital role by educating families regarding newborn hearing screening and its results, to ensure appropriate follow-up care and surveillance.

The aim of this study is to determine the knowledge, attitude, and practices amongst resident physicians from training Ilocos Training and Regional Medical Center in relation to the newborn hearing screening.

11:00-11:15 **Break**



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

11:15-12:15 Global Standard Practice

Moderator: Donna Carkeet
BGPOP Building 4A/B/C

Building Successful Island Early Hearing Detection and Intervention Programs Using Quality Improvement Methodology

-Alyson Ward, Angie Mister

The U.S. Maternal and Child Health Bureau provides support for an Early Hearing Detection and Intervention (EHDI) program in all states and in each of the U.S. Territories and Freely Associated States. For almost ten years, the Bureau has supported implementation of Quality Improvement principles in an effort to reduce loss to follow-up in state-based EHDI programs. (Loss to follow-up is the percentage of infants who do not pass their newborn hearing screening and are not known to have completed a diagnostic evaluation and/or be enrolled in early intervention services.)

In 2013, recognizing the importance of spreading Quality Improvement to all EHDI programs as a means to reduce loss to follow-up, The National Center for Hearing Assessment and Management began providing Quality Improvement Technical Assistance to island EHDI programs (Puerto Rico, Virgin Islands, Marshall Islands, Palau, Federated States of Micronesia, Guam, American Samoa, and the Commonwealth of Mariana Islands) funded by the National Center for Hearing Assessment and Management.

Island EHDI programs are held to the same standards and expected outcomes as state EHDI programs. However, islands face challenges that are significantly different from their state counterparts. As such, the Technical Assistance must be based on the needs, strengths, and capacities of each island.

Participants in this session will hear case studies of how Quality Improvement and Technical Assistance provided by the National Center for Hearing Assessment and Management have helped three island EHDI programs improve their processes and outcomes in an effort to reduce loss to follow-up. These island examples demonstrate the importance of 1) involving extended partners and parents in their improvement work; 2) finding creative solutions to common barriers in small, isolated hearing programs; and 3) the need for effective use of Quality Improvement principles.

CBM Tools to Support the Global Initiative for Hearing Health

-Patricia Castellanos

The global scenario in ear and hearing care is going through a crucial stage of development and visibility. The development is greatly due to two circumstances: one is the appearance of accessible and affordable tools for screening and diagnosis of hearing loss, including those delivered through mobile telephones and other devices; the other is the high level technology and reliable quality of hearing devices, specifically of hearing aids and cochlear implants.

The visibility of the global scenario has occurred in a natural fashion, alongside the development aspect. With the immediate access to information provided by global communications and social media, the important contribution of the general population to increasing the visibility of all aspects related to ear and hearing care is not surprising.

However, in low-income and middle-income countries, this global scenario is not that realistic, accessible or affordable. And these countries are precisely where the needs are higher. Our presentation aims to share CBM knowledge and expertise in ear and hearing care with partners in the CGGH and to promote documentation of successful Comprehensive Programmes in hearing health, as recognised evidence to further build on work and initiatives in ear and hearing care.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

Challenges for Early Detection and Intervention: A Case Study from Fiji

-Donna Carkeet

This presentation reviews development of the pilot neonatal screening program in CWM hospital in Suva and the Hilton Organization EIC programs. The presentation highlights the need for the ongoing training and guidance that EARS Inc. is providing to the Fiji project. Discussed are successes, challenges, and obstacles to progress. Also described are some possible ideas for best practice when developing early identification and rehabilitation services in nations where audiology and early intervention services are limited.

Challenges of Multicultural and Multilingual Environment in Aural Rehabilitation in India

-Kalyani Mandke

India is a country with tremendous diversity. Called incredible India, the nation has 8 major religions and more than 500 tribes with different values and beliefs. India has 21 officially recognized languages; 780 dialects are spoken with 86 scripts. When handling children with hearing impairment, all these variables create certain ways to stumble.

Educators, audiologists, speech -language pathologists need to understand different values, beliefs, and decision making process related to cultural values. Early identification and intervention has yet to become mandatory procedures in the country. Informal observations, and information from various centers indicate average intervention age for Speech and Language development has been 3.5+ years in urban areas, and significantly higher in rural areas. Naturally critical age of language development is surpassed.

Cochlear Implant programs at State and Central Government levels have made a head start in the country. However, the structure of aural rehabilitation has yet to develop its appropriate position.

While discussing various options of aural rehabilitation, health literacy of family members and/or caregivers is another issue. Professionals need to find out the key person in that family. Often, two persons in the family are involved in the decision making process of aural rehabilitation: one who gives the emotional support, and one who makes financial decisions.

The presentation discusses these social variables, which affect selection of re/habilitation options, communication options, and sustainability of the aural habilitation and educational program.

11:15-12:15 Global Standard Practice

Moderator: Cristina Lopez
BGPOP Building 402/403/404

Boothless technology for clinically valid Hearing evaluation: How far we've come and where we're going

-Michael Weider, Matthew Bromwich, Renee Lefrancois

Recent technological advances coupled with an impressive collection of quality research studies on hearing evaluation outside of a sound booth have opened up many new possibilities for hearing loss identification.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

11:15-12:15 Global Standard Practice

Moderator: Cristina Lopez
BGPOP Building 402/403/404

Compliance and Efficiency of a Center-based Referral System in the Easy Access to Rehabilitation Services Program among Center-based Referral partners in Luzon

-Adlyanna Velasco, Norberto Martinez

Hearing loss is the second most prevalent disability in the Philippines. While over 102 million people live in the Philippines, the small number of ear and hearing health professionals limit access services—only 661 registered otorhinolaryngology specialists and only 75 audiologists serve the entire population,

Aimed at supporting increased services with Community Ear and Hearing Care activities, Better Hearing Philippines, Inc. developed a Center-based Referral System to address diagnostic evaluation and management of ear and hearing problems under the Easy Access to Rehabilitation Services (EARS) Program. This qualitative study seeks to evaluate compliance of trained community based workers and efficiency of the Program in addressing ear and hearing problems from communities under-served by professionals.

Hearing Loss and Classroom Acoustics in the Philippines: A Pilot Study

-John Newall, Gareth Hoyle

Objective: This paper reports on a school hearing screening program in a sample of primary aged public school children in the Philippines. Also discussed are classroom acoustics in a sample of primary schools.

Design: A convenience sample of school children were assessed with otoscopy, tympanometry, and pure tone audiometry. The acoustic characteristics of a convenience sample of classrooms within the schools undertaking hearing screening were assessed with the "ListenApp for schools" iPad application.

Study Sample: A total of 523 school children and the acoustics of 58 classrooms were assessed.

Results: Middle ear involvement was seen in 24% of ears in this sample. Forty seven children (9%) of the sample failed hearing screening at 35dBHL, with the prevalence of mild hearing loss and moderate or worse hearing loss at 5.9% and 3.1%, respectively, in those who failed screening.

The intrusive noise, reverberation time, and occupied noise levels of Filipino classrooms were all very high when compared with measures in classrooms in high income countries. The vast majority of Filipino classrooms failed to meet international standards.

Conclusions: Ear disease and hearing loss appear comparatively high in primary aged school children in the Philippines. Such disease and hearing loss often go undetected because of a lack of hearing screening programs. When combined, poor classroom acoustics lack of screening are likely to result in poor academic outcomes for hearing-impaired Filipino children.

State of Neonatal Hearing Screening at St. Luke's Medical Center

-Norberto Martinez, Cristopher Ed Gloria, Charles Castaneda

The prevalence of permanent congenital hearing loss in the Philippines is 1/724, considering that 2M babies are born annually, 2,762. Signed into law in 2009 was Republic Act 9709, which states that all babies born in the country should undergo newborn hearing screening. St. Luke's Medical Center institutionalized newborn hearing screening as early as 2004 as part of the newborn package. Newborn screening results of all babies born at St. Luke's Medical Center from January 2010 through June 2015 were reviewed. Of the 19,138 babies, 97.7% underwent newborn hearing screening wherein 95% passed and 1.2% had refer results on both ears, while 1% had unilateral refer, 2.3% were not screened, and 0.5% did not complete screening. Of the total, 399 had refer results, but only 21% underwent diagnostic testing. Reasons for noncompliance to the diagnostic tests were explored by contacting parents by phone. Modifications to the protocol were introduced after reviewing the outcome of the study.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

12:15-13:30 **Lunch**

13:30-14:30 **Global Standard Practice**

Moderator: Vinaya Manchaiah
BGPOP Building 4A/B/C

Detection of Low-frequency, Mid-frequency, and High-frequency Hearing Loss Using the WFA Voice Test Protocol

-Frances Mary Cristi

Over 5% of the population worldwide suffers from disabling hearing loss. In South Asia and Asia Pacific, an estimated one-third of the elderly population is affected by this disability. Approximately 17% of the Philippine population suffers from some degree of hearing impairment, ranging from mild to profound. In third-world countries and developing countries, access to standard audiologic testing may be limited by scarce resources, showing the need for alternative methods for hearing screening.

A bi-level, pass/fail Voice Test is a non-technological alternative used to screen patients for low-frequency, mid-frequency, and high-frequency hearing loss, employing audio/visual cues both in conversational tone and in soft voice. Results are then compared against standard audiometric procedures in order to determine precise hearing thresholds.

Fighting Back the ‘Silent’ Global Burden of Congenital Cytomegalovirus Infection and Hearing Loss Related to Cytomegalovirus

-Katrin Neumann, Khalid Shahada, Klaus Überla, Thomas Lücke, Norbert Teig, Stefan Dazert, Stefan Volkenstein, Emmanouela Dimitrakopoulou, Hans J Trampisch, Peter Kern

Introduction: Congenital infection with the human cytomegalovirus (CMV) is the leading cause of congenital infections worldwide. In developed countries it is the most common non-genetic cause of a sensorineural hearing loss and an important cause of microcephaly, neurodevelopmental delay, seizure disorders, and cerebral palsy, with profound impact on cognitive and social development of the affected children and their families (Manicklal et al. 2013).

Only 10% of congenital CMV infections lead to symptoms after birth; however, 50% of congenital CMV-related hearing loss emerges later in life. Prevalence numbers of congenital CMV infections given for middle Europe are up to 0.7% per 1,000 newborns, and for developing countries up to 1-5% (Manicklal et al. 2013).

Newborn screening programs for congenital CMV infections are under discussion. Antiviral therapy of symptomatic children has been shown to effectively reduce the risk of long-term impairments. Because an effective pre-conceptual vaccine against CMV could potentially prevent congenital CMV infection, a couple of active and passive immunization strategies are under clinical trials.

Method: In an international project* in Germany and Qatar, 12,000 neonates undergo a CMV screening by real-time PCR-based testing of liquid-saliva specimens. If a congenital CMV infection is confirmed, babies are enrolled in a 6-year follow-up program.

Results: By the end of April, 2016, cytomegalovirus-screenings of about 1200 German neonates and 270 Qatari neonates indicated congenital CMV infections in 3 German and 2 Qatari babies, who were enrolled in treatment and follow-up programs.

Conclusion: The high prevalence of congenital CMV infections and their lifelong sequelae call for action, with respect to the implementation of universal neonatal CMV screening, follow-up, prevention, and intervention programs that seem to be feasible and effective. References: Manicklal S, Emery VC, Lazzarotto T, Boppana SB, Gupta RK. The “Silent” Global Burden of Congenital Cytomegalovirus. Clin Microbiol Rev. 2013 Jan;26(1):86-102.

*Funded by Qatar National Research Fund, NPRP7-1845-3-480.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

Global Hearing Loss Database

-Audra Renyi

Thanks to Google.org support, World Wide Hearing Foundation International (World Wide Hearing) is developing the first worldwide hearing-loss database that is open access and gathers data in real-time. The objective is to facilitate research, provide statistics for decision-makers, and facilitate world-scale interventions to tackle hearing loss.

Current Barriers to Data Access: a) Lack of prevalence data worldwide—lack of such data presents a barrier to awareness, policy-making, and development of appropriate, targeted interventions, particularly in lower and middle-income countries; b) Hearing diagnostic and screening devices capture data locally, in silos; having limited or no connection to the Cloud; c) No data aggregation within countries; d) No data aggregation across countries and devices; and e) No standard protocols for capturing and uploading hearing-loss data.

Actions of a Global Hearing Loss Database: 1) Cloud database will capture a) Anonymized prevalence data with the revised WHO survey and with reduced transcription costs and b) other field data; 2) Will aggregate existing prevalence data and new data.

Key Features of the Database: a) Open access, b) Standardized data, c) Time-connected data for trends analysis, and d) Geography-connected data for pattern analysis.

Open Access: World Wide Hearing is a non-profit organization that supports a policy of open source and open access for all of its projects. The protocol for data upload will be made open source. The resulting database will be open access and designed for the entire community in the field of hearing loss.

Call to Action: World Wide Hearing is inviting contributors from around the world to participate and provide data to this collaborative project.

Hearing for Humanity Novel Hearing Aid Fitting Approach for Developing Countries

-Ingrid McBride, Jacqueline Busen

Hearing for Humanity is a team of audiologists and students from Arizona State University dedicated to providing sustainable humanitarian audiologic and rehabilitative services for improving the quality of life of children and adults with hearing loss in Malawi Africa. The Hearing for Humanity model stresses the importance of following best practices and ethical standards in identification and treatment of hearing loss.

Fitting hearing aids in a developing country should be done responsibly by following best practices and ethical guidelines. Hearing for Humanity uses a clinical-based approach that verifies appropriate audibility for each fitting by programming hearing aids to achieve amplification targets.

While this approach ensures fitting precision, it forgoes scalability. Further, many groups providing humanitarian audiology in developing countries lack the equipment to perform verification in the field.

Further, it is well documented that manufacturer simulated real ear measures are poor predictors of actual hearing aid performance (Aarts and Caffee, 2005), resulting in less than 82% of amplification targets meeting a lax criterion of + 10 dB.

The British Society of Audiology (2007) recommends meeting amplification targets within + 5 dB of target at frequencies 250 Hz through 2kHz and 8 dB at 3kHz and 4kHz. Additionally, the slope in each octave should be within + 5 dB of the target. It has also been shown that achieving amplification targets results in better outcomes in both adults (Abrams et al, 2012) and children (Tomblin et al, 2014).

This presentation examines the results of a pilot project to test a novel fitting approach using standardized audiograms, with the goal of improving efficiency without sacrificing quality. Data are presented on the effectiveness of such a model in a developing country and if the model is a suitable alternative to the clinical-based approach.



- 8:00 - Plenary: Invited Guest Speaker
- 8:40 - Training & Education
- 9:45 - Training & Education
- 11:00 - Break
- 11:15 - Global Standard Practice
- 12:15 - Lunch
- 13:30 - Global Standard Practice
- 13:30 - Meet the Experts
- 14:30 - Committee Updates & Activities
- 15:30 - Last Words - Way Forward
- 16:30 - Post Conference Sessions

Agenda

Tuesday — October 25, 2016

13:30-14:30 **Meet the Experts: Implantable Hearing Devices** Moderator: Dr. Samut Chongvisal
BGPOP Building 402/403/404

-Herman Jenkins, Samutchong Visal, and James Saunders

14:30 **Committee Updates & Activities** BGPOP Building 4A/B/C

15:30 **Last Words - Way Forward** BGPOP Building 4A/B/C

16:30-18:00 **Post Conference Sessions**

Audiological Management and Habilitation

-Philip Newall, Jeffery Larsen, Ianthe Murad, Serah Ndegwa, Alfred Mwamba

Diagnosis and Management of Chronic Ear Disease

-Sujana Chandrasekhar, Navnit Shah, Suchitra Prasansuk, Isaac Macharia

The University of Santo Tomas Manila, Philippines/ Vacity Map

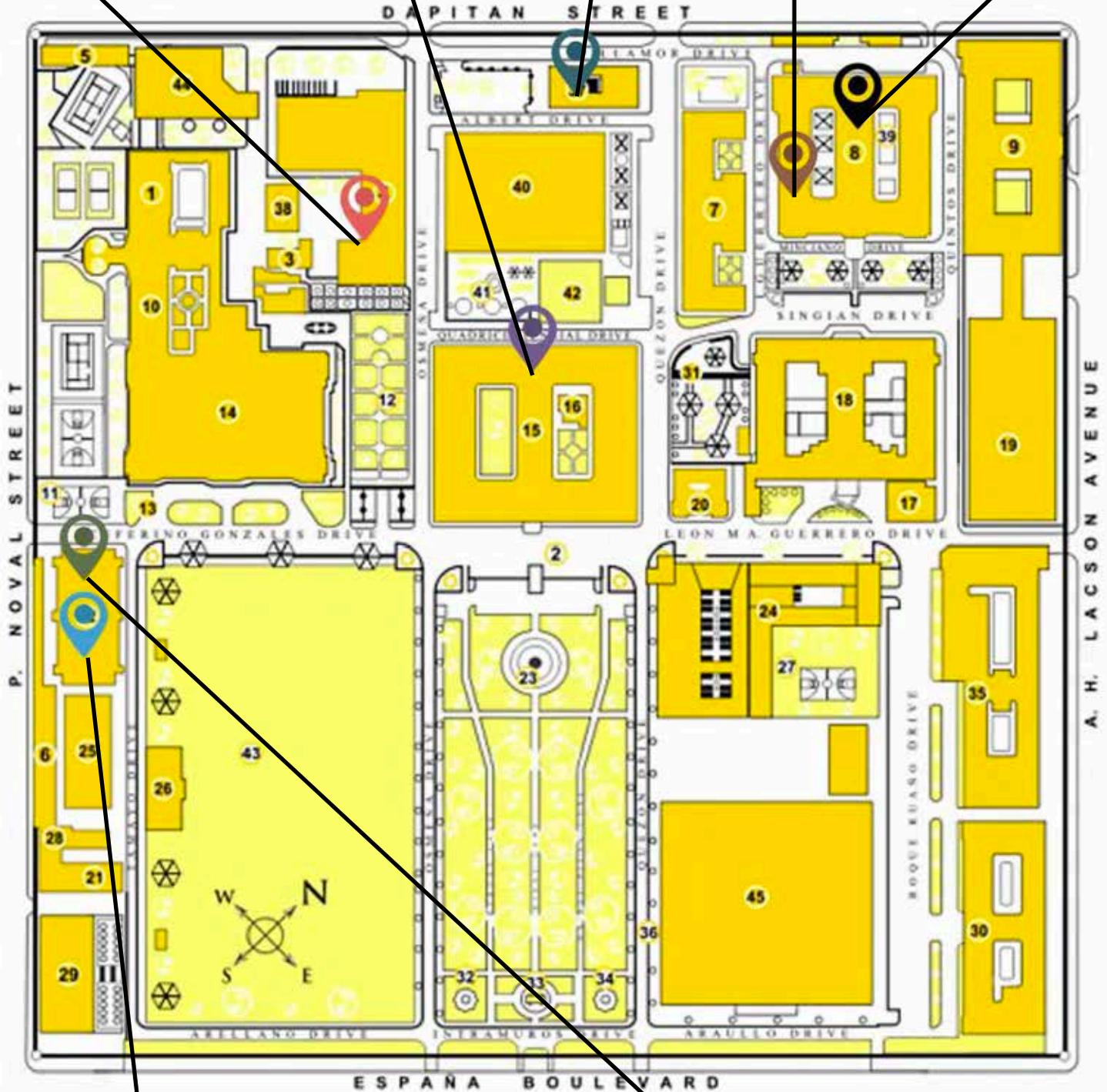
Welcome Cocktails (23 Oct 2016, 6:30 PM) The Civil Law Lobby, Main Building

Public Health Planning for Hearing Impairment (21-22 Oct 2016, 9AM-5PM) Room 102, Tan Yan Kee Building

Hearing International Annual Meeting CME Auditorium, St. Martin de Porres Building

University of Santo Tomas Master of Clinical Audiology Program Room 413, St. Martin de Porres Building

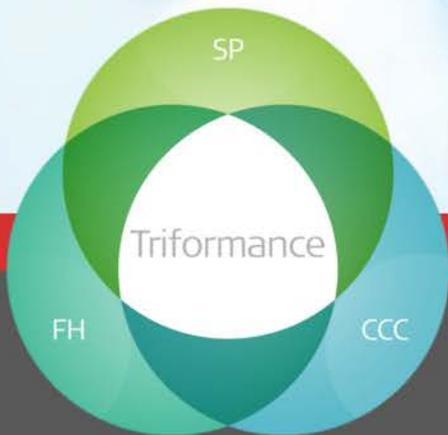
Operating a Field Based Earmould Laboratory (23 Oct 2016, 9 am) Speech Language Pathology Laboratory, Benavides Building



Gala Dinner - A Global Connection: Making Hearing Health a Global Priority (24 Oct 2016; 6:30 PM) The Grand Ballroom, Second Floor, Buenaventura Garcia Paredes, OP Building

The Seventh Conference of the Coalition for Global Hearing Health (24-25 Oct 2016) A Practical Guide to Humanitarian Missions for Improving Hearing Health (23 Oct 2016; 8 am WFA Community Based Hearing Health Care (23 Oct 2016; 2-5pm) Function Halls, Fourth Floor, Buenaventura Garccia Paredes, OP Building

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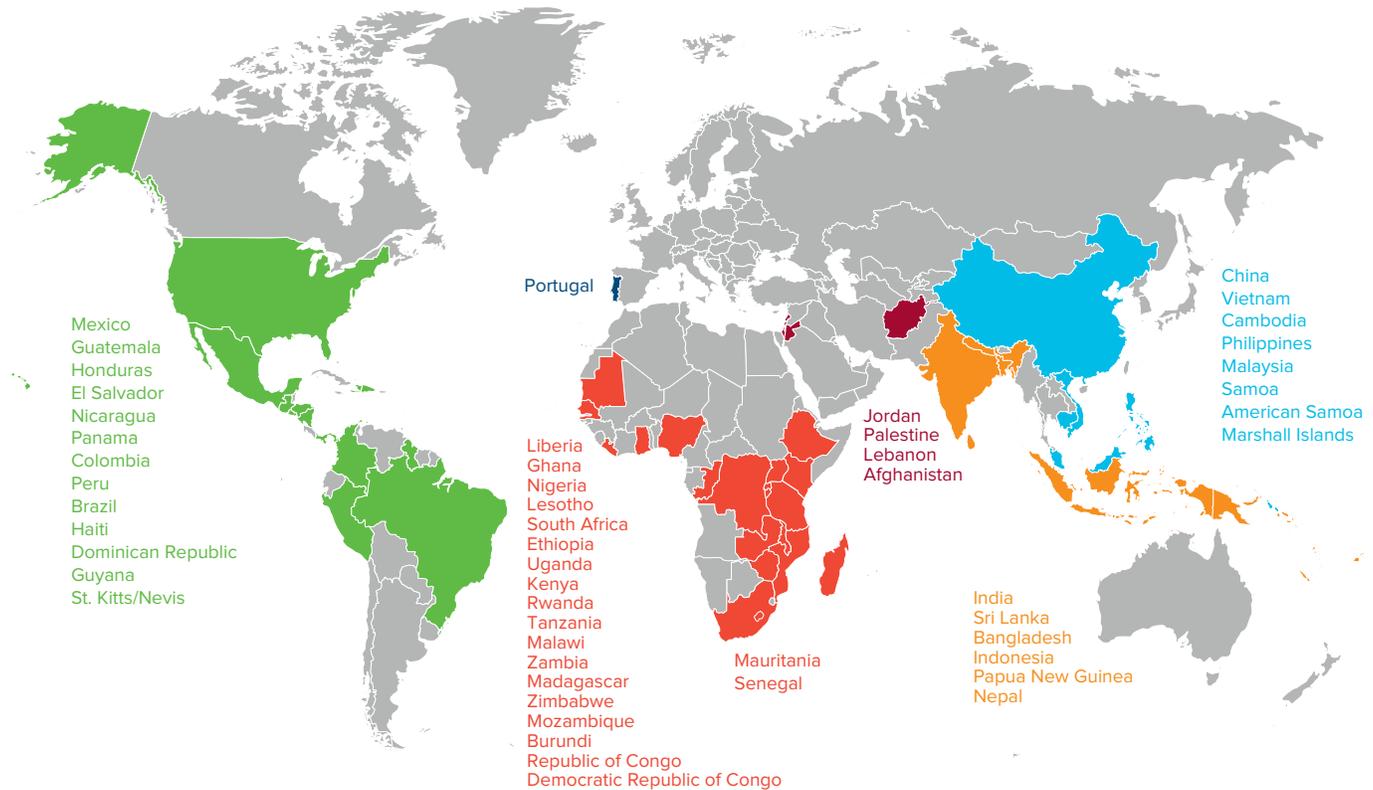
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Phase 2
Hearing Mission



Phase 3
Aftercare Program



Phase 4
Mainstream into Life

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CBM is privileged to be part of this high level conference and together with our partners, we are working towards improving ear and hearing care programmes in the Philippines and worldwide.

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Time	Session	Presenter	Location
7:30	Registration & Coffee		
8:00	Welcome	James Saunders, Jackie Clark	BGPOP 4A/B/C
8:30	Plenary: Invited Guest Speaker	Philip Newall	BGPOP 4A/B/C
9:10	Technology		
	The International Humanitarian Hearing Aid Purchasing Program (IHHAPP)	Debra Fried, Anita Stein-Meyers, Ronald Brouillette	
	iPad Hearing Test: A Prospective Validation Testing of a Tablet Audiometry Testing	Ryan Chua, Frederick Fernandez	
	How to Start a Tinnitus Evaluation and Management Program: Part 1	William Martin, Jennifer Martin	
	How to Start a Tinnitus Evaluation and Management Program: Part 2	William Martin, Jennifer Martin	
9:10	Technology	Moderator: Franco Abes	BGPOP 402/403/404
	Mass School Hearing Health Care	Dirk Koekemoer	
	Pure-Tone Audiometry Outside a Sound Booth Using Earphone Attenuation, Integrated Noise Monitoring and Au	Carmen Esterhuizen	
	How Do We Decide Whether a Cochlear Implant or a Hearing Aid is Most Appropriate for an Infant with a Severe Loss - Cortical Evaluation in the Management of a Hearing-Impaired Infant.	Harvey Dillon, Philip Newall, Bram Van Dunn	
10:10	Break		
10:30	Advocacy	Moderator: Linda Hood	BGPOP 4A/B/C
	After Newborn Screening in Developing Nations: What Do We Do Next?	Dr. Richard W. Fee	
	Audiology for Malawi: Creating a Sustainable Audiology Department in a Developing Country	Courtney Caron	
	Building Resources for Hearing Health Care in the Developing World	Linda Hood, Jackie Clark	
	Ear Care Program in Oman	Mazin Al Khabouri	
10:30	Advocacy	Moderator: Ruben Emil Henson III	BGPOP 402/403/404
	Assistive Devices and Rehabilitative Services for Children with Disabling Hearing Loss under the Philippine Health	Norberto Martinez, Cristopher Ed Gloria, Melanio Mauricio, Hubert Ramos, Joel Romualdez, Franco Louie Abes	
	Development Not Charity - Helping established Local Organizations Develop their Own Hearing Health Programs	LewTuck	
	Day Care Center Hearing Screening of Davao City	Bendatu Dalandag	
	The Hear the World Foundation Project in the Dominican Republic: Building Local capacities and Investing into Ea	Elena Torresani	
11:30	Lunch		
12:45	Advocacy	Moderator: Joel Romualdez	BGPOP 4A/B/C
	Ear and Hearing Screenings during International Special Olympics Events Reveal Worldwide Hearing Health Need Intellectual Disability.	Melina Willems	
	Infant Hearing Screening in Rural Nicaragua: Initial Results and Cost Effectiveness	James Saunders, Lye-Yeng Wong	
	Establishing a Paediatric Hearing Service in Samoa	Philip Newall, Cristina Newall, Genele Cook	
	Hearing for All in 2024: Community Ear and Hearing Health Care in the Philippines	Hubert Ramos, Cheryl Arellano, Jopeth Laguna, Kristine Valencia	
	Increasing Accessibility to Amplification for Low-income Individuals in the United States: The Role of Hearing Aid	Stacie Ray	
12:45	Advocacy	Moderator: Jean Johnson	BGPOP 402/403/404
	Promoting Awareness of Congenital Cytomegalovirus to Prevent Hearing Loss	Sara Doutre, Karl White	
	Social Justice: The Right to Hearing Health Care for All	Jean Johnson	
	The Efforts Toward Control of Rubella and Prevention of Congenital Rubella Syndrome in Indonesia	Nyilo Purnami	
	The Incidence of Cerumen Impaction and its Role in Hearing Impairment among School-aged Children: A Retrospe	Giselle Gotamco, Norberto Martinez	
13:45	Empowering Families/Communities	Moderator: Jackie Clark	BGPOP 4A/B/C
	Acute Otitis Media in Infants and Children	Saud Alsaif	
	Fostering Parent Leadership	Joanne Travers	
	Universal New Born Hearing Screening Program in King Fahd Military Medical Complex	Saud Alsaif	
	Parents and Caregivers Understanding, Perceptions and Care Seeking Practices for Ear Infections in Children Unde	Mukara B. Kaitesi, MD, MMed, Msc	
13:45	Empowering Families/Communities	Moderator: Kimberly Ong	BGPOP 402/403/404
	UNHS: Philippines Experience	Mart Almee O. So - Singson	
	Collaboration & Partnership within the CNMI EHDI Program	Margarita Torres-Aldan, Angie Mister	
	Cultural Challenges in Providing Early Intervention Services in Developing Nations	Jean Johnson, Chinilla Peter, Nancy Rushmer, Yusnia Weirather	
	The Involvement of Primary Health care Nurses in the Detection of Prelingual Infants with Hearing Loss at Comm Africa	Nasim Banu Khan, Miriam Adhikari, Neethie (Lavanithum) Joseph	
14:15	Break		
15:00	Special Topic: The WHO Situation Analysis Tool and its Role in Developing National Strategies	Suneela Garg	BGPOP 4A/B/C
15:00	Meet the Experts: Newborn Hearing Screening	Linda Hood, Angie Mister, and Jean Johnson	BGPOP 402/403/404
15:30	Training & Education	Moderator: Andrew Smith	BGPOP 4A/B/C
	The Approach of Hearing International to Global Hearing Health	Herman Jenkins, Suchitra Prasansuk	
	The Ear, Hearing and Tools to Help Educate Children about Hearing & Hearing Loss	Angie Mister	
	The Value of Academic Partnerships to A Model of Global Hearing Healthcare	Jeffery Larsen, Luqman Lawal	
	Audiological Results of Endaural Tympanoplasty Underlay Technique Using Tragal Perichondrial Graft	Cristopher Ed Gloria, Juan Ramon Perez de Tagle	
15:30	Panel Discussion: Empowering Families/Communities	Sara Doutre, Shalini Morta, Carmela Arreola, and Richard Fee	BGPOP 402/403/404
17:30	Posters & Reception		
19:15	A Global Connection Gala: Making Hearing Health a Priority		
	Welcome & Report on World Health Organization (WHO) Activities	James Saunders	
	Keynote Presenter: "Making Hearing Health a Global Priority: Hearing International Perspective"	Suchitra Prasansuk	
	Keynote Presenter: "The Dizzy Patient: Adding Vestibular and Vision Rehabilitation"	Sujana S. Chandrasekhar	

Time	Session	Presenter	Location
8:00	Plenary: Invited Guest Speaker	Billy Martin	
8:40	Training & Education	Moderator: Emmanuel dela Cruz	BGPOP 4A/B/C
	An Evaluation of the Diagnostic Accuracy of Otitis Media Among ENT, Pediatrics, and Family Medicine of a Tertiary Audiological Counseling in Clinical Practice	Mark Aldrin Alcid Dele Owolawi	
	Audiological Pediatric Screening in Underserved Communities in Puerto Rico	Soami Santiago de Snyder	
	Bridging the Hearing Health Access Gap in Sub-Saharan Africa: An Approach by the Starkey Hearing Institute	Luqman Lawal, Alfred Mamba	
	Comparison of Otoacoustic Emission Test and Automated Auditory Brainstem Response in Detecting Hearing Loss in Infants at a Tertiary Private Hospital	Cristopher Ed Gloria, Norberto Martinez	
8:40	Training & Education	Moderator: King Chung	BGPOP 402/403/404
	Older Adults with Hearing Impairment and Their Perception Towards Cochlear Implant	Kalyani Mandke	
	Retrospective Study on the Prevalence of Common Ear Pathologies in Children Ages 0-6 Years Old in a Local Barangay in the Philippines	Paolo Miguel S. Bernardo	
	Solving Middle Ear Pathology in Indigenous Communities: An Australian Perspective	Lara Shur, Paul Higginbotham	
	Universal Newborn Hearing Screening in the Philippines: A Continuing Journey	Charlotte Chiong	
	What Would We Have Missed?	King Chung, Mariah Cheyney	
9:45	Training & Education	Moderator: Cristopher Ed Gloria	BGPOP 4A/B/C
	Training of Community-based Hearing Health Workers and Their Roles in the Identification and Management of Hearing Issues: The Starkey Hearing Foundation Approach	Luqman Lawal, Wakisa Mulwafu	
	Development of an Ear and Hearing Health Care Manual for Community Health Workers	Benedict Baguyo, Norberto Martinez	
	Efficacy of Ear and Hearing Care Training Program among Selected Community Based Rehabilitation Health Workers	Joel Romualdez, Jennine Patricia Boado	
	Improving Hearing Equilibriums: A Mobile Application and Social Innovation Approach	Michael Herren	
	Training Teachers and Parents on Verbal Communication among Children With Hearing Impairment: Preliminary Results from Kenya	Chales Buttars, Luqman Lawal	
9:45	Training & Education	Moderator: Suneela Garg	BGPOP 402/403/404
	Prevalence of Hearing Loss and Determine its Epidemiological Variants among the Omani Population	Mazin Al Khabouri	
	Detection of Hearing Impairment in Patients with Subjective Complaints of Hearing Loss using the Whispered Voice Test: A Prospective, Double-blind, Cross-sectional Study	Giselle Gotamco, Norberto Martinez	
	Need for Skilled Primary Ear Care Workers in Developing Countries	Dr Suneela Garg, Deeksha Khurana, Dr Tanu Anand	
	Outcomes from a Novel In-Country Training Program for Surgical Treatment of Chronic Suppurative Otitis Media	Aaron Smith, Touch Sokdavy, Chea Sothea, Charlie Huins, Matthew Clark, Jim Gollogly, Mahmood Bhutta	
	Resident Physicians: Knowledge, Attitudes, and Practices in Relation to Newborn Hearing Screening at Iloilo Train Medical Center	Emmanuel Dela Cruz	
11:00	Break		
11:15	Global Standard Practice	Moderator: Donna Carkeet	BGPOP 4A/B/C
	Building Successful Island Early Hearing Detection and Intervention Programs Using Quality Improvement Methods: A Case Study from Fiji	Alyson Ward, Angie Mister	
	Challenges for Early Hearing Detection and Intervention: A Case Study from Fiji	Patricia Castellanos Donna Carkeet	
	Challenges for Multicultural and Multilingual environment in Aural Rehabilitation in India	Kalyani Mandke	
11:15	Plenary 9: Global Standard Practice	Moderator: Cristina Lopez	BGPOP 402/403/404
	Boothless Technology for Clinically Valid Hearing Evaluation: How Far We've Come and Where We're Going	Michael Weider, Matthew Bromwich, Renee Lefrancois	
	Compliance & Efficiency of a Center-based Referral System in the Easy Access to Rehabilitation Services (EARS) Program in Luzon	Adlyanna Velasco, Norberto Martinez	
	Hearing Loss and Classroom Acoustics in the Philippines: A Pilot Study	John Newall, Gareth Hoyle	
	State of Neonatal Hearing Screening at St. Luke's Medical Center	Norberto Martinez, Cristopher Ed Gloria, Charles Castaneda	
12:15	Lunch		
13:30	Global Standard Practice	Moderator: Vinaya Manchalai	BGPOP 4A/B/C
	Detection of Low, Mid, and High-Frequency Hearing Loss Using the WFA Voice Test Protocol	Frances Mary Cristi	
	Fight Back the 'Silent' Global Burden of Congenital Cytomegalovirus Infection and CMV-Related Hearing Loss	Katrin Neumann, Khalid Shahada, Klaus Überla, Thomas Lücke, Norbert Teig, Stefan Dazert, Stefan Volkenstein, Emmanouela Dimitrakopoulou, Hans J. Trampisch, Peter Kern	
	Global Hearing Loss Database	Audra Renyi	
	Hearing for Humanity Novel Hearing Aid Fitting Approach for Developing Countries	Ingrid McBride, Jacqueline Busen	
13:30	Meet the Experts: Implantable Hearing Devices	Herman Jenkins, Samutthong Visal, and James Saunders	BGPOP 402/403/404
14:30	Committee Updates & Activities		BGPOP 4A/B/C
15:30	Last Words - Way Forward		BGPOP 4A/B/C
16:30	Post Conference Sessions		
	Audiological Management and Habilitation	Philip Newall, Jeffery Larsen, Ianthe Murad, Serah Ndegwa, Alfred Mwamba	
	Diagnosis and Management of Chronic Ear Disease	Sujana Chandrasekhar, Navnit Shah, Suchitra Prasansuk, Isaac Macharia	

