RESEARCH AND EVALUATION REPORT

Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO Evaluation

DECEMBER 2019

This research report was prepared by University Research Co., LLC (URC) and the American Academy of Pediatrics for review by the United States Agency for International Development (USAID) and authored by Linda Radecki of RadeckiResearch LLC under the USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project. The work of the USAID ASSIST Project to improve Zika-related health services is made possible by the generous support of the American people through USAID.
Acknowledgements

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For more information on the work of the USAID ASSIST Project, please visit www.usaidassist.org or write assist-info@urc-chs.com.

Recommended citation

## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>AAP</td>
<td>American Academy of Pediatrics</td>
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<tr>
<td>ASSIST</td>
<td>USAID Applying Science to Strengthen and Improve Systems Project</td>
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<tr>
<td>CME</td>
<td>Continuing medical education</td>
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<td>ECHO</td>
<td>Extension for Community Healthcare Outcomes</td>
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<td>MOHW</td>
<td>Ministry of Health and Wellness</td>
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<td>NDS</td>
<td>Neurodevelopmental surveillance</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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What We Learned – Jamaica NDS ECHO Evaluation

The Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO (Jamaica NDS ECHO) is a partnership between the Jamaica Ministry of Health and Wellness (MOHW), USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, and the American Academy of Pediatrics (AAP). Project ECHO® (Extension for Community Healthcare Outcomes), an evidence-based telementoring program that brings together, through basic video technology, healthcare professionals and multidisciplinary specialists to create communities of learners around specific topics of interest and need.

From March 2019-July 2019, a team of experts including developmental and behavioral pediatric medicine specialists from the AAP and MOHW leaders provided support and guidance to a group of master trainers responsible for disseminating information about neurodevelopmental surveillance to health facilities throughout Jamaica. The program’s end goals were to improve use of updated protocols and tools designed to strengthen the knowledge and skills needed for appropriate neurodevelopmental-related surveillance, referral, and education.

AAP conducted evaluation activities throughout Jamaica NDS ECHO implementation to assess participation, participant experience, learner self-reported changes in knowledge and self-efficacy and program impacts at the individual client and larger systems levels.

Evaluation results highlight the positive impacts and outcomes of Jamaica NDS ECHO. Through each evaluation component, participants reported high satisfaction with Jamaica NDS ECHO as well as the ECHO model and demonstrated self-reported gains in knowledge and efficacy regarding key aspects of neurodevelopmental surveillance, including earlier intervention and referral. Participants, empowered with enhanced knowledge and skills, spoke with confidence about their ability to train others to more appropriately assess, intervene and refer regarding neurodevelopmental concerns.

Jamaica NDS ECHO met objectives and provided an innovative and impactful learning experience for participants that merits continuation.
Jamaica NDS ECHO Overview

Project ECHO® (Extension for Community Healthcare Outcomes) is an evidence-based telementoring program designed to create communities of learners. Bringing together healthcare professionals and multidisciplinary subject matter experts using didactic and case-based presentations, ECHO promotes an “all teach, all learn” philosophy. Using basic, widely available videoconferencing technology, clinical management tools, and case-based learning, healthcare professionals collaboratively strengthen knowledge and increase self-efficacy on diseases, conditions, and/or healthcare processes. In use globally, the ECHO model improves professionals’ ability to manage conditions, create sustainable change, and shape better outcomes for the pediatric population.

An innovative and cooperative approach to extend professional training for neurodevelopmental surveillance, the Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO (Jamaica NDS ECHO) is a partnership between the Jamaica Ministry of Health and Wellness (MOHW), USAID Applying Science to Strengthen and Improve Systems (ASSIST) Project, and the American Academy of Pediatrics (AAP).

Jamaica NDS ECHO represents the second phase of a two-phase comprehensive training around neurodevelopmental surveillance provided to healthcare professionals serving infants, young children, and families throughout Jamaica. Pediatric primary care clinicians who completed a November 2018 Master Trainer program offered by the Jamaica MOHW and USAID ASSIST (led by AAP) were invited to continue their education by enrolling in Jamaica NDS ECHO. The ECHO was designed as a forum to further develop clinician knowledge and enhance capacity to improve monitoring, screening, and follow-up care for children, ages birth through six years, with functional impairments of neurocognition, self-regulation, and adaptive functioning as well as improve their skills as trainers. Because the master trainers were tasked with disseminating knowledge on neurodevelopmental surveillance to health facilities, the ECHO included a mentoring component around use of a new neurodevelopmental surveillance tool and training other healthcare professionals and facilities on appropriate use of the tool. The end goal is a cadre of professionals prepared to train other healthcare providers throughout Jamaica on updated protocols and tools designed to strengthen the knowledge and skills to complete surveillance for and identify possible developmental delays, adequately refer babies with suspected problems to the appropriate level of care, and educate caregivers on the importance of getting recommended care.
From March 2019-July 2019, a team of experts including developmental and behavioral pediatric medicine specialists from the AAP and MOHW leaders provided support and guidance to the master trainers. Through biweekly, one-hour sessions, the team implemented the Jamaica NDS curriculum. During each ECHO session, expert faculty delivered a brief lecture on a topic related to pediatric neurodevelopmental surveillance in Jamaica followed by presentation and discussion of a participant-led case. These educational components, encouraging participants to explore best practices and challenges in conducting pediatric neurodevelopmental surveillance in Jamaica, fostered knowledge, skill and confidence-building around clinical guidance and practice implementation of updated MOHW recommendations and tools for pediatric neurodevelopmental surveillance.

Participant benefits included the opportunity to:

- Improve access to quality care for patients with suspected neurobehavioral disorders and other developmental delays
- Increase knowledge regarding best practices for improving the monitoring, surveillance, and follow-up care for children with functional impairments of neurocognition, self-regulation, and adaptive functioning
- Improve knowledge of developmental milestones
- Improve knowledge and confidence using new Jamaica MOHW neurodevelopmental surveillance tools
- Network and problem solve with others

A core component of each ECHO program, regardless of topical focus, is evaluation. To assess participants’ Jamaica NDS ECHO experience as well as examine programmatic successes, impacts, and opportunities for improvement, the AAP conducted evaluation activities throughout the program period, the results of which are summarized in this report and appendices.
Evaluation Plan

The American Academy of Continuing Medical Education (CME) Outcomes Model guided the evaluation plan to assess five of the Model’s seven outcome levels through four evaluation components:

- **iECHO** – an electronic database tool developed by the University of New Mexico ECHO Institute team that allows AAP staff to manage ECHO programmatic components and track session attendance.

- **Post-Session Survey** – a brief questionnaire to assess participant satisfaction and whether each session met objectives and inspired plans for change; *administered to all participants after every ECHO session* [sample size across sessions=23].

- **Post-Program Survey** – a longer survey to gather participant demographics as well as changes in knowledge, skills, and self-efficacy before and after program participation; this survey was administered to all participants at project completion [sample size=10]. All 29 participants were invited to take part in the retrospective survey (over several weeks, appeals were made via three emails and one phone call).

- **Participant Focus Group** – virtual discussion session with participants to gather in-depth information about program experience and impact; open to all and attended by self-selected participants at project completion [1 focus group; total sample size=5]. Participants’ self-described roles included nurse, midwife, and public health nurse.

Detailed result summaries of the post-session and post-program surveys are available in Appendices A and B, respectively. The focus group discussion guide and a summary of focus group findings are included in Appendices C and D, respectively.

An ongoing challenge across pediatric ECHOs is engaging busy professionals in program evaluation. Due to the small sample size obtained for each evaluation component, we incorporated a mixed methods approach – triangulating quantitative and qualitative data sources to corroborate findings rather than relying on a single assessment source.
Results

Participation

To assess Level 1 (Participation) of the CME Outcomes Model, AAP staff tracked enrollee participation. Jamaica NDS ECHO attendees represented numerous professional roles, including senior public health nurse, public health nurse, midwife, nurse, and medical officer. Participants represented all geographic regions of Jamaica. Invitations were extended to NDS master trainers from the 30 ASSIST-supported health centers; 26 of the sites were represented over the course of the ECHO program.

<table>
<thead>
<tr>
<th>Jamaica NDS ECHO... by the Numbers</th>
<th>Total Number of Sessions Held</th>
<th>Total Number of Cases Presented</th>
<th>Total Number of Unique Sites</th>
<th>Total Number of Unique Attendees</th>
<th>Average Session Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10</td>
<td>10</td>
<td>26</td>
<td>29</td>
<td>14</td>
</tr>
</tbody>
</table>

![Map of Jamaica hospitals and health centers](image)
Participant Experience

We examined Outcomes Model Level 2 (Satisfaction) and Level 3 (Learning: Declarative Knowledge and Procedural Knowledge) by assessing self-reported ECHO experience and participant benefits. Post-session and post-program survey results reflect learners’ high ratings of both individual sessions and the Jamaica NDS ECHO program overall.

Over 85% of participants completing post-session surveys agreed / strongly agreed that individual sessions offered evidence-based, relevant content and provided appropriate opportunities for participants’ questions.

Reflecting on their experience at ECHO conclusion, the majority of participants who completed the post-program survey agreed / strongly agreed that Jamaica NDS ECHO provided a satisfying learning experience with numerous benefits.

Jamaica NDS ECHO provided a number of self-reported participant benefits...

- Was a valuable use of my time: 10/10
- Content relevant to my patient population: 10/10
- Improved my understanding of the subject matter: 10/10
- I was satisfied with this training overall: 10/10
- Improved my interest in the subject matter: 9/10
- Made me better at my job: 9/10
- Increased professional satisfaction: 8/10

To further understand learner experience with the primary activities that comprise a typical ECHO session, we asked focus group members to share insights about the utility of the didactic and case-based presentations.

Participants appreciated faculty expertise and modeling and generally valued ECHO didactic presentations as both a source of new knowledge and a review of material introduced during the master training.
...the facilitators were very familiar with the topic that they were presenting and it was easy for me to listen and to understand it...they were not just not reading through it, but they were able to explain it in a way that makes sense and left me feeling comfortable and competent that I can learn this and be able to pass it on to somebody else and teach.

I liked the lectures because [ ] in a classroom setting for four days, sometimes the mind drifts away...you'll miss some things. So this really reinforces what we did initially at the masters training.

With even greater enthusiasm, participants uniformly endorsed the contributions and significance of case presentations to their overall ECHO learning experience. Case discussions allowed participants to reflect on similarities in their own clients and client families and reinforced knowledge gained from the didactic component. Focus group feedback corroborates opinions gathered in other ECHO focus groups as well as the Jamaica NDS ECHO post-session surveys regarding the value of case presentations.

The cases were the best for me because the person is experiencing the same things that I’m seeing and it gave me a better way to assist my clients that I see. It facilitated teamwork because as a team we are closer now.

...especially the last case...we see the same thing every day! ...It was so interesting...the Ministry really stepped in and stated different areas where we could refer the parents to help...things that I wouldn’t think of doing so I was really glad for cases...

Being able to hear a different persons presenting, you as an individual practitioner can pick out of all of that discussion what works for you. You're also able to evaluate your thought process because when I listened to the cases, as I listen, in my head I’m working on what I think I would do. And so when you hear the experts in the group speaking, you are able to identify some things that they say should be done and you have come up with those ideas. Then you are able to evaluate yourself as if you're on par with what's happening...

...the cases give me an insight into what is happening in other areas and looking back I would think, ‘Why didn't I think of that?’ We gather all the information and I know that going back into your situation you're going to use ideas from this case and that case for the client. The discussion at the end of the case studies really, really helped me
Because I realized that some of things that I have been doing can be improved...

Next steps and recommendations for program improvement were also addressed by participants and included expanding the Jamaica NDS ECHO as well as offering additional topics. These recommendations are further outlined on page 13 of this report.

**Impacts and Outcomes**

Beyond satisfaction, and knowledge attained, perhaps the most critical determinant of an ECHO’s success is program impacts and outcomes – on direct patient/client care and services as well as within the systems in which learners serve children and families. For example, did Jamaica NDS ECHO participation lead to:

- Improved individual knowledge, skills and self-efficacy specific to key aspects of neurodevelopmental surveillance?
- Behavior change at the individual healthcare provider level fostering enhanced patient/client care and services?
- Policy, procedure and / or process change at the clinic, practice, or larger systems levels?

Post-program survey and focus group data inform the answers to these questions, addressing **Level 4 (Learning: Competence)** and **Level 5 (Performance)** of the CME Outcomes Model.

**Participant Impact**

The post-program survey asked learners to reflect on their knowledge and self-efficacy regarding aspects of neurodevelopmental surveillance correspondent to key curriculum content, both prior to and at the conclusion of Jamaica NDS ECHO (Appendix B includes a detailed recap of post-program survey results).

Although sample size (n=10) precludes tests of statistical significance, participants self-reporting a knowledge level of **above average** or **expert increased by six percentage points or more after Jamaica NDS ECHO** in all areas of knowledge assessed, including but not limited to:

- Assessment of co-morbidities faced by infants/children potentially exposed to Zika
Understanding and emphasizing key points when teaching colleagues about why Zika virus remains an important issue.

Understanding how to identify age-specific developmental milestones using the NDS tool.

Correctly classifying a child using the NDS tool.

Understanding how Zika-related developmental delays may impact milestones, including vision, hearing, language, gross motor, fine motor, and social milestones.

Similarly, for pre- and post-ECHO ratings of self-efficacy, participants self-described as confident or very confident in their abilities regarding various aspects of care and support for neurodevelopmental surveillance increased by five percentage points or more with Jamaica NDS ECHO participation. For example:

- After Jamaica NDS ECHO, 10/10 were confident/very confident in knowing where to find resources in the Training of Trainers (TOT) Guide to support self as a trainer and support colleagues about the Zika virus and neurodevelopmental surveillance (2/10 before ECHO).
- After Jamaica NDS ECHO, 10/10 were confident/very confident in their understanding of key points to emphasize when training and providing ongoing support to colleagues on appropriate milestones (3/10 before ECHO).

Corroborating post-program survey findings, several focus group members also spoke to the ways in which ECHO participation fostered empowerment and gains in confidence, particularly in their ability to train others and to serve as a resource to others within their communities and regions.

[ECHO] boosted my self-confidence for public speaking because once I’d be shy to go up and present but now I’m able to do so…with the materials that were given, everything was given to you. It’s only for you to go out there and present it well, in a way that others can understand it. But once you go through it, revise it, you’ll be able to put it across and it was very good and good for me. I’m now more knowledgeable, for instance, persons calling me to ask, ‘Oh, I saw this baby, what do you think about it?’ and I am confident to say, ‘Do this’ or ‘Do that.’

I feel a bit more confident as a consultant. There are [ ] pilot areas in my parish and so I’m a bit more confident with persons calling me for ideas. Now I can confidently guide the process because I understand what is expected. I’m looking for other things. I am seeing through a
different eye. So when they call to ask a question, I feel much more confident answering them and guiding them.

...to be trained as a master trainer to train others and nurses and persons who actually know a lot...I asked myself what could I do? How could I help them?... So I felt happy at the end because I did not know that I would be able to present myself in front of an audience of persons who know their stuff. One of the nurses who I have known for some years, at the end of the day, she came up to me and said, 'I enjoyed your presentation, it was well done' and coming from her, it was a relief...

In addition to improvements in knowledge and confidence, intention to change is another indicator of program impact. Based on post-program survey responses, 10/10 affirmed identification of at least one action to apply ECHO learnings in the professional setting. Further, when asked to characterize these actions – anticipated or already applied – the majority of respondents had implemented or expected to make changes regarding current best practices or guidelines (10/10) and increased care coordination amongst colleagues (10/10); 9/10 indicated change in consistent use of the new NDS tool. Commonly anticipated barriers to change included lack of necessary materials and resources (6/10), lack of co-worker support (4/10), and lack of managerial support (4/10). Increased staffing and improvements to the referral system were cited as supports needed to overcome these challenges.

Patient/Client Impact

Describing the ways in which ECHO learnings impacted patient/client care and services to families, focus group members cited improvements in awareness and action, particularly regarding earlier intervention and referrals.

...the tools that we used, it is very good in that we are better able to assist our babies and to pinpoint when something is going wrong instead of waiting until a longer time. We can step in and make the necessary adjustment to seek referrals and get help.

...when I'm assessing my babies, I am now more keen in looking out for any developmental delays...

When I hand the passports to the mothers, I go through the different pages and say, ‘These are the things that you’re expected to see and
when you go to clinic, make a note and write in the passport with your pencil so when you go to the nurse you have something to tell nurse.’

…now when you see different cases in the clinic, now you have an idea, this is what needs to be done. This is where I go from here as it relates to the follow-up.

Systems Impact

At the systems level, ECHO’s most immediate impact is the launching of a cadre of well-prepared and confident master trainers – professionals who are already using and imparting their enhanced knowledge and skills in hospitals, health clinics, and one-on-one interactions with families throughout Jamaica. Focus group participants provided anecdotes about the ways they are sharing their expertise and the observed outcomes of that sharing.

…one of the things that I have learned to appreciate is that from the midwife point of view – we’re delivering the baby – it is very important to assess that baby properly and make the necessary documentation, the outcome of the labor, telling the mother was there a problem? Anything that happened, it’s very important to record it because it will have an impact in what we need to find or if a problem arise in the future. So I’ve been trying to sensitize my coworkers in writing the stage of labor because even recently I had a delivery and the second stage lasted 88 minutes…so I had an eye-opener, this is going to be important in the child’s developmental future…

…I’ve been able to use the session to reinforce some things in the minds of the persons who are actually doing the work. So I have interviews with the team to the point where other health centers have craved the information and I’ve taken it on although they are not pilot areas…I use the ECHO sessions to open the door and be able to share it with others as they do the work.

… in the hospital, we are seeing the baby first. We know what their labor and delivery was like. So I’m helping my coworkers appreciate for the labor process and an appreciation for assessment of this newborn baby, talking to the mothers, letting them know that anything that is happening with the baby is important. So when you go to clinic, let nurse know if there is a problem. If you were sick during the pregnancy, think about it. I am asking mothers to write down any problem before they go to clinic because sometime when they are at
An additional measure of impact is the number of patients/clients and families potentially touched by Jamaica NDS ECHO. As a proxy estimate of reach, we utilized a post-program survey question that asked participants to estimate the number of children, ages four years and younger, with whom they interact in a professional capacity over a typical month. We averaged responses across post-program survey respondents and multiplied that number by the average number of Jamaica NDS ECHO attendees per session (n=14) and again by 12 (months) to derive a proxy count of potential reach over one year.

**Jamaica NDS ECHO Reach**

An additional measure of impact is the number of patients/clients and families potentially touched by Jamaica NDS ECHO. As a proxy estimate of reach, we utilized a post-program survey question that asked participants to estimate the number of children, ages four years and younger, with whom they interact in a professional capacity over a typical month. We averaged responses across post-program survey respondents and multiplied that number by the average number of Jamaica NDS ECHO attendees per session (n=14) and again by 12 (months) to derive a proxy count of potential reach over one year.

**21,504**

Potential number of children impacted by Jamaica NDS ECHO in 1 year
Next Step Recommendations

Through program surveys and focus group discussions, participants endorsed the value of the ECHO model as well as Jamaica NDS ECHO and advocated for offering more ECHO sessions to educate a greater number of healthcare and early childhood professionals throughout Jamaica.

Participant feedback also included several actionable suggestions to improve future iterations of Project ECHO in Jamaica.

**Expand Jamaica NDS ECHO beyond the pilot phase** to ensure that more individuals across Jamaica and in a wider range of settings are appropriately trained and share a common knowledge base. Focus group members expressed frustration that their referral sources may lack the level of training and understanding attained by ECHO participants.

**Regarding ECHO logistics:**
- Poll enrollees in advance of the first session to determine preferred meeting days/times and meeting frequency (e.g., bi-weekly vs monthly).
- Consider lengthening individual sessions. In reflecting on their experience at program completion, a subset of Jamaica NDS ECHO attendees noted that some sessions seemed rushed and lacked enough time for participant questions.
- Improve internet connectivity.

**Expand Jamaica Project ECHO portfolio** offerings to include topics such as:
- Communicable diseases
- Non-communicable diseases
- Cerebral palsy
- Immunization
- Maternal death
- Antenatal issues
- High-risk patient/client treatment, management, referral system
Conclusions

The Jamaica NDS ECHO evaluation highlights benefits to individual participants as well as the positive impacts and outcomes for the healthcare and early childhood systems in which they care and provide services for infants, young children, and their families throughout Jamaica.

Through each evaluation component, participants reported high satisfaction with Jamaica NDS ECHO sessions as well as the ECHO model and demonstrated self-reported gains in knowledge and efficacy regarding key aspects of neurodevelopmental surveillance and confidence in their ability to train others to more appropriately assess, intervene, and refer regarding neurodevelopmental concerns.

The generalizability of Jamaica NDS ECHO evaluation findings is limited due to the small proportion of learners who completed the post-session questionnaires and post-program survey and took part in the focus group. In addition, we lack patient-level data and reports from the recipients of services – namely families – to corroborate changes and improvements. In general, however, findings across multiple evaluation sources suggest that Jamaica NDS ECHO met objectives, provided an innovative and impactful learning experience for participants, and warrants continuation.
Appendices

Appendix A: Post-Session Survey Summary
Appendix B: Post-Program Survey Summary
Appendix C: Participant Focus Group Discussion Guide
Appendix D: Participant Focus Group Summary
Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO (Jamaica NDS ECHO)

Post-Session Survey – Detailed Summary

[Total sample size = 23 unless otherwise indicated]

### Surveys submitted by ECHO session

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<tr>
<th>Curriculum Content</th>
<th>Number of surveys submitted</th>
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<tr>
<td>Refresher/Kick-Off (March 1)</td>
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</tr>
<tr>
<td>Teaching About Zika (March 8)</td>
<td>2</td>
</tr>
<tr>
<td>Teaching Appropriate Developmental Milestones for Age (March 22)</td>
<td>5</td>
</tr>
<tr>
<td>Coaching on the NDS Tool (April 5)</td>
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<tr>
<td>Communication Milestones (April 19)</td>
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<tr>
<td>Gross Motor Milestones (May 3)</td>
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<tr>
<td>Fine Motor Milestones (May 17)</td>
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<tr>
<td>Social Behavior and Play (May 31)</td>
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<tr>
<td>Communicating with Families (June 14)</td>
<td>4</td>
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<tr>
<td>Identifying Autism (June 28)</td>
<td>2</td>
</tr>
<tr>
<td>Coordination of Care, Wrap Up (July 12)</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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### ECHO participant professional role (participants could select >1 response)

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<td>Public Health Nurse</td>
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<tr>
<td>Midwife</td>
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<td>Registered Nurse</td>
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<tr>
<td>ASSIST Staff</td>
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<tr>
<td>Ministry of Health</td>
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<tr>
<td>Senior Public Health Nurse</td>
<td>2</td>
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<tr>
<td>Medical Officer</td>
<td>2</td>
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<tr>
<td>Specialist</td>
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Appendix A

Participant ratings of session experience

<table>
<thead>
<tr>
<th>Aspect</th>
<th># Very Good/Excellent</th>
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<tr>
<td>Relevance of presentation to session topic</td>
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</tr>
<tr>
<td>Opportunity to ask questions</td>
<td>21</td>
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<tr>
<td>How well the session delivered balanced and objective, evidence-based content</td>
<td>20</td>
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<tr>
<td>Presenter’s ability to communicate clearly</td>
<td>20</td>
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<tr>
<td>Organization of the presenter’s presentation</td>
<td>19</td>
</tr>
<tr>
<td>Session pace</td>
<td>15</td>
</tr>
<tr>
<td>Session conveyed commercial bias (Response choice = No)</td>
<td>23</td>
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</table>

Responses to Open-Ended Questions

What Participants Liked Least about ECHO Sessions

- Angle of some cameras
- Background noise from some participants whose microphone was left unmuted
- It was dependent on internet which was poor at my office so I had to go elsewhere
- Poor internet connection
- Poor internet connection resulted in gaps in the presentation
- Some background noise
- Time factor
- Wasn't enough time!
- We didn't get to the heart of the question that the case presenters were asking i.e. what else can they do for mother

What Participants Liked Best about ECHO Sessions

- Case discussion (7)
- Case presentation (3)
- Everything is great
- How clear the audio was
- I was able to follow along with the presentation, information was presented clearly
- Interesting case and good feedback from the community
- It facilitates learning. New ideas are gained from the discussions that can be used in enhancing care of my clients
- Participants were given opportunities to ask questions
Appendix A

- Participation from the group
- Started on time, short duration
- The concise manner in which the information was given
- The presenter tried to make topic interesting
- Videos and case
- Well organized. Easy flow. Great connectivity

**Suggestions for Additional Content/Discussion Topics**

- Causes of autism
- Cerebral palsy (2)
- Cerebral palsy and other neurological diseases
- Common barriers to NDS referral and suggestions to overcome
- Dengue
- Further discussions about possible differential diagnoses for cases
- How to confidently give the caregiver information re the child’s possible [incomplete response]
- Low resource solutions for assessment and intervention
- Referrals, any organizational challenges with implementation of the neurodevelopmental surveillance tool
- Road Map for Referral to Specialist Care for children with Neurodevelopmental issues
- Statistics; causes of autism in Jamaica...possible causes
- Stigma attached to autism
- Strengthening collaboration and a team approach to intervention/treatment of children and families with developmental concerns in Jamaica.
### Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO (Jamaica NDS ECHO) Post-Program Survey – Detailed Summary

Total sample size = 10 unless otherwise indicated

#### Participant Demographics

<table>
<thead>
<tr>
<th>Number of ECHO sessions attended</th>
<th>Number unless otherwise indicated</th>
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<tr>
<td></td>
<td>3-5 sessions = 3</td>
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<tr>
<td></td>
<td>6-7 sessions = 3</td>
</tr>
<tr>
<td></td>
<td>8-11 sessions = 4</td>
</tr>
</tbody>
</table>

**Professional Training**

- Physician (MD/MBBS) 1
- Public Health Nurse 8
- Midwife 1

**Healthcare Provider Primary Practice Setting**

- Health clinic 7
- Hospital 1
- Other 2

**Number of Years in Practice/Profession**

Mean = 20 years  
Range = 12-33 years

**Gender**

- Female 9  
- Male 1

**Estimated number of children and youth (ages 2 months to 18 years) for whom you provide care in an average month**

Mean = 133  
Range = 30-400

**Estimated number of children that you see in an average month who are age 4 years or younger**

Mean = 128  
Range = 15-350
### Jamaica NDS ECHO Experience

<table>
<thead>
<tr>
<th>Statement</th>
<th>Number Agree/Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jamaica NDS ECHO was a valuable use of my time</td>
<td>10</td>
</tr>
<tr>
<td>Jamaica NDS ECHO provided an appropriate balance between instruction and practice</td>
<td>10</td>
</tr>
<tr>
<td>The content of Jamaica NDS ECHO was relevant to my patient population</td>
<td>10</td>
</tr>
<tr>
<td>My understanding of the subject matter has improved as a result of participating in Jamaica NDS ECHO</td>
<td>10</td>
</tr>
<tr>
<td>I was satisfied with this training overall</td>
<td>10</td>
</tr>
<tr>
<td>Jamaica NDS ECHO made me better at my job</td>
<td>9</td>
</tr>
<tr>
<td>My interest in the subject matter has improved as a result of participating in Jamaica NDS ECHO</td>
<td>9</td>
</tr>
<tr>
<td>Participating in Jamaica NDS ECHO increased my professional satisfaction</td>
<td>8</td>
</tr>
<tr>
<td>Participating in Jamaica NDS ECHO made me feel less isolated</td>
<td>7</td>
</tr>
</tbody>
</table>
Appendix B

Intent to Change as a Result of Jamaica NDS ECHO Participation

<table>
<thead>
<tr>
<th>Planned changes as a result of Jamaica NDS ECHO participation</th>
<th>Number reporting “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased care coordination amongst colleagues</td>
<td>10</td>
</tr>
<tr>
<td>Implementing current best practice or guideline in my work</td>
<td>10</td>
</tr>
<tr>
<td>Consistently using new NDS tool</td>
<td>9</td>
</tr>
<tr>
<td>No change(s) planned</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anticipated barrier(s) to change</th>
<th>Number reporting “Yes”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of necessary materials/resources</td>
<td>6</td>
</tr>
<tr>
<td>Lack of management support</td>
<td>4</td>
</tr>
<tr>
<td>Lack of co-worker support</td>
<td>4</td>
</tr>
<tr>
<td>No barrier(s) identified</td>
<td>2</td>
</tr>
<tr>
<td>Insufficient knowledge</td>
<td>0</td>
</tr>
<tr>
<td>Insufficient skill set</td>
<td>0</td>
</tr>
<tr>
<td>Other (specified)</td>
<td>3</td>
</tr>
<tr>
<td>o Challenges with referral feedback</td>
<td></td>
</tr>
<tr>
<td>o Inadequate number of staff</td>
<td></td>
</tr>
<tr>
<td>o Specifically human resources</td>
<td></td>
</tr>
</tbody>
</table>

Supports needed to overcome barriers

- 1. Provision of resource materials needed for the proper assessment of the children. 2. Improve the number of nursing staff members at the facilities
- Additional staffing
- An increase in the number of staff to do the job
- Buy-in from other stakeholders
- FOR THE NECESSARY REFERRAL SYSTEM BE PUT IN PLACE
- Provide training to the doctors in Primary Care so they would have understood referrals made to them regarding suspected delays. The rudiments of the programme including the forms to be used in the care of the clients and the assessment of the programme be introduced. All of the above can be done with in parish but ASSIST could provide the material.
- The referral system over time should get better. Would need toys and charts that can be used in assessing some of the milestones e.g. Building block, picture charts
- Things work better if the directives come from MOH to the hospitals or health centers about the likely changes re using the NDS tool and the new guidelines. Providing the material and resources needed by MOH will make life easy.
## Change in Individual Knowledge and Self-Efficacy with Jamaica NDS ECHO Participation

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Number reporting “Above Average/Expert”</th>
<th>Number reporting “Above Average/Expert”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Scale: 1=None, 2=Limited knowledge, 3=Average among my peers, 4=Above average, 5=Expert, teach others</td>
<td>Pre-ECHO</td>
<td>Post-ECHO</td>
</tr>
<tr>
<td>Provision of primary care for infants/children potentially exposed to Zika</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Assessment of co-morbidities faced by infants/children potentially exposed to Zika</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Management of comorbidities faced by infants and children potentially exposed to Zika</td>
<td>2 [n=9]</td>
<td>8 [n=9]</td>
</tr>
<tr>
<td>Understanding and emphasizing key points when teaching colleagues about why Zika virus remains an important issue</td>
<td>2 [n=9]</td>
<td>10 [n=9]</td>
</tr>
<tr>
<td>Understanding how to identify age-specific developmental milestones using the NDS surveillance tool</td>
<td>1 [n=9]</td>
<td>9</td>
</tr>
<tr>
<td>Correctly classifying a child using the NDS tool</td>
<td>1 [n=8]</td>
<td>9 [n=9]</td>
</tr>
<tr>
<td>Understanding how Zika-related developmental delays may impact vision, hearing and language milestones</td>
<td>1 [n=9]</td>
<td>9 [n=9]</td>
</tr>
<tr>
<td>Understanding how Zika-related developmental delays may impact movement milestones</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Understanding how Zika-related developmental delays may impact fine movement milestones</td>
<td>1 [n=9]</td>
<td>9 [n=9]</td>
</tr>
<tr>
<td>How Zika-related developmental delays may impact social milestones</td>
<td>1 [n=9]</td>
<td>9 [n=9]</td>
</tr>
<tr>
<td>Identifying “red flag” milestones</td>
<td>1 [n=8]</td>
<td>9 [n=9]</td>
</tr>
<tr>
<td>Understanding the meaning of “red flag” milestones</td>
<td>3 [n=9]</td>
<td>9 [n=9]</td>
</tr>
<tr>
<td>Interacting and communicating with providers and/or caregivers of children with neurodevelopmental delays in a positive manner</td>
<td>3 [n=8]</td>
<td>8 [n=8]</td>
</tr>
</tbody>
</table>
### Knowledge Scale

1= None, 2= Limited knowledge, 3= Average among my peers, 4= Above average, 5= Expert, teach others

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Number reporting “Above Average/Expert”</th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to promote stimulation based on current and upcoming developmental milestones</td>
<td>2 [n=9]</td>
<td></td>
<td>9 [n=9]</td>
</tr>
</tbody>
</table>
### Self-Efficacy

**Scale:** 1 = Not confident, 2 = Somewhat confident, 3 = Confident, 4 = Very confident

<table>
<thead>
<tr>
<th>Providing primary care for infants/children potentially exposed to Zika</th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4 [n=9]</td>
<td>9 [n=9]</td>
</tr>
</tbody>
</table>

**Knowing where to find resources in the TOT Guide to support you as you train and support your colleagues about Zika virus and neurodevelopmental surveillance**

<table>
<thead>
<tr>
<th></th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 [n=9]</td>
<td>9 [n=9]</td>
</tr>
</tbody>
</table>

**Understanding key points to emphasize when training and provide ongoing support to colleagues on appropriate milestones**

<table>
<thead>
<tr>
<th></th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 [n=9]</td>
<td>9 [n=9]</td>
</tr>
</tbody>
</table>

**Initiating action when “red flag” milestones are not met**

<table>
<thead>
<tr>
<th></th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 [n=9]</td>
<td>8 [n=8]</td>
</tr>
</tbody>
</table>

**Supporting caregiver/ families during difficult discussions**

<table>
<thead>
<tr>
<th></th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 [n=9]</td>
<td>8 [n=8]</td>
</tr>
</tbody>
</table>

**Classifying and referring a child who may have autism**

<table>
<thead>
<tr>
<th></th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 [n=8]</td>
<td>7 [n=7]</td>
</tr>
</tbody>
</table>

**Accessing community resources for referrals for children with identified or suspected neurodevelopmental disorders**

<table>
<thead>
<tr>
<th></th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 [n=9]</td>
<td>6 [n=8]</td>
</tr>
</tbody>
</table>

**Serving as a resource in my clinic/community/ locality for the care of infants/children confirmed or suspected with Zika**

<table>
<thead>
<tr>
<th></th>
<th>Pre-ECHO</th>
<th>Post-ECHO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 [n=9]</td>
<td>8 [n=8]</td>
</tr>
</tbody>
</table>

### Least Valuable Aspects of Jamaica NDS ECHO

- Due to my learning style the actual presentations of the slides were the least valuable
- Nothing (7)
Appendix B

Most Valuable Aspects of Jamaica NDS ECHO

- All of it, especially the Autism identification training.
- Being able to share with other colleagues our experiences in case presentations
- Case presentations
- Everything
- Hearing from other health care providers nationally and internationally
- Heightened awareness of the Red Flag Milestones, how to identify these, and actions to take.
- Information
- The collaboration
- The opportunity it presents to be able to share with colleagues actual cases and get feedback
- The reiteration of information previously thought and gives room for clarity of implementation of the tool was commenced.

Examples of Jamaica NDS ECHO Impact on Patient Health and Wellness

- Better assessment. Improved clinical conferences.
- Deeper understanding of the milestone development in children
- Discussing a case and area that I might have missed in my management was highlighted
- Early identification of ND challenges resulting in prompt referrals facilitating a better outcome
- Having a similar case to one that was presented. The feedback given was helpful.
- I gained valuable information which will help me to identify potential problems in children as well as I will be able to guide my colleagues
- It has helped me why zika is still important today. Learnt how to invite discussions. Learnt how to identify neuro developmental problems better. How to identify developmental delay. Milestone guide is of great value / red flag. Using the word "could" instead of "should." Got information about where to refer the pts for early stimulation/physiotherapy/speech/neurology etc.
- It has helped me to be more alert and I have gained ideas on how to handle varying cases.
- Listening to the case discussion open my understanding of the intricacies involved in complete care of such clients
- We're using the new tool to assess, intervene and educate patient and caregivers
Examples of Sharing Jamaica NDS ECHO Learnings with Colleagues

- After the sessions I would discuss the cases with my staff
- Clarity regarding toys used. And being able to create an appropriate substitute when needed
- Collaborating various programs for one goal
- Conducted workshops and seminars
- Effective use of the tools so ND challenges can be identified
- I was able to discuss case management strategies
- It's a secret
- The identification of children using the Q 10 chat
- Case presented on July 12 highlighted the need for a standardized follow up system and the importance of effective communication among all members of staff and also the importance of effective communication
- The need to involve family members both as support but also when taking the history from caregivers

Additional Topics Suggested for Jamaica NDS ECHO

- 1. ADHD  2. Counseling parents who have children with Developmental Disabilities.
- Antenatal complication
- Can't think of any right now
- Management of high risk antenatal mothers
- Maternal issues
- More details on Autism
- Revision of physical examination of the six weeks old child with the aim of identifying phenotypical alterations/dysmorphic features.
- Screening areas
- Surveillance and disease investigations  Presentation of cases of any sort Vaccine reactions (ESAVIs)
Additional Feedback/Comments about Jamaica NDS ECHO

- An excellent way to reinforce learning and also to allow for clarifications on material learnt that might not have been clear
- Learnt something new about the Internet; met new colleagues
- When good internet access is a problem it becomes very frustrating to attend to the session
- Thank you for letting me be a part of NDS ECHO SERIES
**ECHO Experience**

- We’re going to spend the first part of our time together talking about the different components that make up an ECHO clinic. First please think about the brief faculty lectures offered during each clinic.
  - What did you find most helpful about the brief lectures?
  - What could be improved about the brief lectures?
  - To what degree were the topics presented relevant to the challenges you face in practice?

- Now please think about the case-scenario presentations by clinicians (presentations by you and your peers).
  - What did you find most helpful about the case scenarios?
  - What could be improved about the case presentations and discussions?
  - To what degree were the cases relevant to the challenges that you face in practice?
  - May I ask who among this group submitted a case?
    - For those who did not submit a case, please tell me why. What were the challenges associated with submitting a case?
    - For those who submitted a case, tell me more about the case submission process. On a continuum from easy to difficult, how would you describe the experience? What made it so?

**Putting ECHO Learnings into Practice**

- In what ways do you use what you learned from this ECHO clinic with your patients, your colleagues, or in your work?
  
  *Probe: To what degree are you able to apply concepts presented by others in the Jamaica NDS ECHO sessions to patients with similar problems or help your colleagues with similar patients?*

- Please share an anecdote or example of a situation where the care of a child or family was directly impacted by knowledge or skill you acquired as a result of ECHO participation.

- What, if any, practice changes related to neurodevelopmental delays/disorders or Zika-related care have you or your practice made as a result of ECHO participation?
Appendix C

- What, if any, clinical related problems or concerns remain unanswered at the conclusion of this ECHO?

- How has your participation in this ECHO contributed to your ability to train your peers?

- Who has shared something that they’ve learned through ECHO participation with a colleague?
  
  *Probe: Tell me more about that.*
  
  *Probe: What facilitates or inhibits sharing information and practices from the Jamaica NDS ECHO clinic with colleagues?*

- How likely are you to reach out to a colleague you’ve met through Jamaica NDS ECHO to share information or seek advice or consult?
  
  *Probe: In what ways, if any, has the Jamaica NDS ECHO created a sense of community around this topic? Facilitated networking?*

**Future Planning**

- In what ways does the ECHO model provide value over other types of learning opportunities or trainings (such as face-to-face trainings, workshops, online learning programs)? Now let’s consider the flip side. What, if any, are the drawbacks or disadvantages of the ECHO model.

- What would you change, modify, or add to improve the Jamaica NDS ECHO clinics?

- How beneficial would it be for the Ministry of Health to continue offering this ECHO? Why?

- In what other ways might the Ministry of Health use the ECHO model to address concerns and challenges faced by healthcare professionals in Jamaica? What additional topics would be useful to work on through an ECHO?
Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO (Jamaica NDS ECHO)
Participant Focus Group Summary

Background

As part of the evaluation of Jamaica Neurodevelopmental Surveillance in the Age of Zika ECHO (Jamaica NDS ECHO) we conducted a participant focus group to better understand ECHO experience and impacts. On July 19, 2019, an external evaluator facilitated the focus group, convened using the Zoom teleconferencing platform. The discussion, directed by a semi-structured interview guide, lasted ~1 hour and was recorded for transcription and analysis of content and themes. Seven individuals (all women) joined the session; two dropped off early in the hour. The remaining 5 participants contributed substantially to the discussion although two experienced intermittent internet connectivity issues. Participants’ professional roles included nurse, midwife, and public health nurse.

Focus group discussions generated feedback on the value of Jamaica NDS ECHO and opportunities for improvement as well as insights about how Jamaica NDS ECHO learnings translated into better patient care and teaching opportunities with other healthcare professionals. This summary recaps findings in two thematic areas, ECHO experience and ECHO impact.

ECHO Experience

ECHO Clinic Components

A hallmark of the ECHO model is the session format – a brief (~15-20 minute) faculty-led lecture on a clinically-relevant topic followed by case presentation and discussion among subject matter expert faculty and participants. Through the focus group, participants shared opinions on the utility of each component as well as suggestions for improvement.
Didactic Presentations  In general, focus group participants valued ECHO educational segments both as a source of new knowledge and reinforcement of content presented during master training. Participants appreciated faculty modeling as well as expertise with the subject matter.

For me it helps to refresh what we did at the master trainer’s course. It was a fast training – the four days – really fast. It helps to refresh what you have learned and when you go back into the clinic it helps you to relate a little more to the information that you were given.

...the facilitators were very familiar with the topic that they were presenting and it was easy for me to listen and to understand it...they were not just not reading through it, but they were able to explain it in a way that makes sense and left me feeling comfortable and competent that I can learn this and be able to pass it on to somebody else and teach.

...the idea of being able to hear the experts present and not actually reading the material, just presenting their thoughts in terms of interpretation and the meaning was helpful and contributed.

It was relevant for us. The information was meaningful. What it was able to also do for me is because there were the recordings, I was able to go back and go through it at a slow pace and appreciate more information because there was a recording there’s always a chance of me going back and replay and understand a little better.

I liked the lectures because [ ] in a classroom setting for four days, sometimes the mind drifts away to wherever. So you’ll miss some things. So this [ECHO] really reinforces what we did initially at the masters training.

One attendee acknowledged personal preference for different learning modalities.

...the teaching aspect of the session wasn't it for me because of learning style. I would have rather sit down and read through it but I enjoyed
Focus group members offered no specific suggestions for improving the didactic component.

**Case Presentations** Participants expressed consistently positive sentiments about case study presentations and subsequent dialogue. Case studies allowed participants to reflect on similarities in their own clients and client families and reinforced knowledge gained from the didactic component. Focus group feedback corroborates opinions gathered in other ECHO focus groups as well as the Jamaica NDS ECHO post-session surveys regarding the benefits of case presentations, particularly the opportunity to explore cases through multidisciplinary perspectives.

The cases were the best for me because the person is experiencing the same things that I’m seeing and it gave me a better way to assist my clients that I see. It facilitated teamwork because, as a team we are closer now.

...the case discussion was the best simply because you are no longer limited to the number of questions you can discuss because so many persons from different areas with different thoughts can be a part of the ECHO session and a case that is a puzzle for you can now be an item for discussion and give you more options...to help you see what you might not have seen.

...being able to see a case that I might not have met before, anticipating that if I meet such a case then I’ll be able to know how to handle it a little bit more comfortably.

...especially I think it was the last case...we see the same thing every day! ...It was so interesting...the Ministry really stepped in and stated different areas where we could refer the parents to help...things that I wouldn’t think of doing so I was really glad for cases...

The case presentations were my favorite. It’s like presenting your best practices. To have a case out there and to hear different persons make their comments, what they think should have been done or how they see things. You are able to cipher through all of that and pick out some best
practices based on your situation and where you are. We have limitations and we understand that but sometimes we don't even know how to go beyond our limitations. Being able to hear a different person's presenting, you as an individual practitioner can pick out of all of that discussion what works for you. You're also able to evaluate your thought process because when I listened to the cases, as I listen, in my head, I'm working on what I think I would do. And so when you hear the experts in the group speaking, you are able to identify some things that they say should be done and you have come up with those ideas. Then you are able to evaluate yourself as if you're on par with what's happening, if you understand the process and you're able to better appreciate and have confidence in yourself. So the case studies from me were really, really good. You have novices as it were and the experts, and we get our voices together and come up with some best practices for the case and for future cases.

…the cases give me an insight into what is happening in other areas and looking back I would think, 'Why didn't I think of that?' We gather all the information and I know that going back into your situation you're going to use ideas from this case and that case for the client. The discussion at the end of the case studies really, really helped me because I realized that some of things that I have been doing can be improved. Referrals, now we know where to refer these persons to...

When asked to describe challenges associated with presenting a case, focus group members cited a lack of clients/patients available for case submission based on their work setting as well as personal discomfort with presenting.

I didn't present because I was a bit unsure. More lack of confidence. I [had] a case worth presenting and very sorry I didn’t, but it was all in the head.
The small subset of focus group members who presented a case reported a positive experience, particularly after overcoming initial apprehensions.

...I stalled for quite a while listening to others present and I learned from them but then I keep starting cases and not getting to finish. Then when you're actually put on the spot and know that you are it, I didn't really have a problem because I had started a case over time so I could just get my information from data collected. I honestly didn't have a problem. I just wanted other persons' idea on these cases because I was wondering what do I do at this time? So I learned from the discussion at the end of my presentation.

I wouldn't say it was really difficult as such because we have guidelines on what information to present. I think the more challenging part was after presenting the case, you realize that you have children that need further treatment and sometimes you don't know where to go from there.

Value of the ECHO Model

Similar to other American Academy of Pediatrics Project ECHO evaluation findings, focus group participants gave high marks to the ECHO model overall. In spite of internet connectivity issues, focus group members noted Zoom’s ease of access, availability of recorded sessions for later review, and the ability to interact with others around shared interests across geographically diverse areas – as benefits.

We had experts from certain areas. In other circumstances you might have to pay for those experts. So these sessions allow us to be able to speak to persons, not just in Jamaica but in other countries and get their feedback...

...this platform gives you an opportunity to consult with so many different persons, getting so many different opinions on a case and being able to decipher that, presenting new material and getting a chance to hear about what is happening out there that might not even be in your
neck of the woods. To get exposure through this platform I think is invaluable.

What I think is necessary is that the recordings continue...if you're in and out or not able to attend a session, the recording is there, you can always go back and check. I think the recording should be continued and then sent to us as they are done.

Additionally, several focus group members spoke to the sense of community fostered by Jamaica NDS ECHO.

...we kind of formed a bond as master trainers so we could have asked for help from other persons...

What I also appreciate that we have this big wide web of assistance so you aren’t left alone to decipher any problems. You’re upheld. That’s one of the things that I appreciate. There’s help out there. No matter what. No matter what problem.

Recommendations to improve future Jamaica NDS ECHO offerings beyond the case-related suggestions noted above include:

- Allotting additional time for ECHO sessions. A subset of participants noted that sessions sometimes felt hurried and did not allow enough time for questions.

  ...it could be a bit longer in terms of timing. For example, after teaching session, they will normally have the cases and sometimes at the end we have to be rushing the cases because we are almost out of time.

- Expanding beyond the pilot phase to ensure that more individuals across Jamaica and in a wider range of settings are appropriately trained and share a common knowledge base. Focus group members described frustration that their referral sources may lack the level of training and understanding attained by ECHO participants.
I’m thinking that the Ministry should continue this program. We have pilots. Yes. But in the other areas they would not know all information that’s been given straight across the board, not some areas getting something different so that we are all going to be speaking one voice straight across the country. We need that.

…I refer to the nurse practitioner because she was one of the persons at the training. I also refer to the medical doctor, too, but one of the concerns that she raised with me is that after she sees the baby, assesses the baby and wants to send the baby on farther, her concern is that the hospital facility might not have been trained and then they’re wondering why she’s really referring the baby…she’ll send them on and nothing is done because these persons aren’t so aware. So she was asking if there was any way for them to ensure that we have somebody at different points, a pediatrician especially from the different hospitals ensure that they’re either trained or have had this ECHO session so that when she makes a referral, whoever makes a referral, they are going to be doing their part instead of just putting it aside and wondering why they were really sent.

I’d love to see more of it. I really appreciate the hospital team being present on the ECHO because sometimes our challenges in primary care could have been stemmed if we had good collaboration between primary and secondary care. For example, for us now with the NDS, we have to have some baseline information for the infant. Sometimes that information is missing. Even the head circumference. We do at 6 weeks and 8 weeks and that is not the baseline. It should have been at birth, within 24 hours after. So being able to have the hospital team on the ECHO, hearing the challenges and seeing what shortfall it might have caused and the difficulty going ahead, they’re able to appreciate. It’s a matter of both teams – primary and secondary – being able to see the situation from the same angle and their role in it.

- Offering sessions monthly rather than every two weeks
- Polling participants for preferred ECHO session day/time. Several focus group participants noted challenges with the Friday morning schedule but acknowledged that finding a time mutually agreeable to all is difficult.
• Expanding the Jamaica ECHO portfolio to include additional topics such as:
  o Communicable diseases
  o Non-communicable diseases
  o Immunization
  o Maternal death
  o Antenatal issues
  o High risk patient/client treatment, management, referral system
• Improving internet connectivity

**ECHO Outcomes and Impact**

Beyond satisfaction with Jamaica NDS ECHO, focus group participants recounted numerous examples of the ways in which ECHO learnings informed and transformed individual self-efficacy and direct client/patient care as well as their ability to train other healthcare professionals.

Several women commented on Jamaica NDS ECHO’s powerful impact on their own professional skills and knowledge.

[ECHO] boosted my self-confidence for public speaking because once I’d be shy to go up and present but now I’m able to do so...with the materials that were given, everything was given to you. It’s only for you to go out there and present it well, in a way that others can understand it. But once you go through it, revise it, you'll be able to put it across and it was very good and good for me. I’m now more knowledgeable, for instance, persons calling me to ask, ‘Oh, I saw this baby, what do you think about it?’ and I am confident to say, ‘Do this’ or ‘Do that.’

I’ve learned a whole different scope of serving and the knowledge was rich. It gives me a chance to do a little bit of public speaking since we had to do our own individual training because we became master trainers...for that I really applaud them.
[ECHO] boosted my self-confidence. I’m bolder because you have to be open to presenting to different persons and areas...

I feel a bit more confident as a consultant. There are [ ] pilot areas in my parish and so I’m a bit more confident with persons calling me for ideas. Now I can confidently guide the process because I understand what is expected. I’m looking for other things. I am seeing through a different eye. So when they call to ask a question, I feel much more confident answering them and guiding them.

...to be trained as a master trainer to train others and nurses and persons who actually know a lot...I asked myself what could I do? How could I help them?...So I felt happy at the end because I did not know that I would be able to present myself in front of an audience of persons who know their stuff. One of the nurses who I have known for some years, at the end of the day she came up to me and said, ‘I enjoyed your presentation, it was well done’ and coming from her, it was a relief...

Others shared anecdotes about how ECHO learnings and resources informed changes to direct patient/client care and family support, particularly regarding earlier intervention and referrals.

...the tools that we used, it is very good in that we are better able to assist our babies and to pinpoint when something is going wrong instead of waiting until a longer time. We can step in and make the necessary adjustment to seek referrals and get help.

...when I’m assessing my babies, I am now more keen in looking out for any developmental delays...

...one of the things from the ECHO session for me is knowing who else is out there taking care of children. What documents they need? Who do we refer to? Because I didn’t know about some of them – the organizations that were available in Jamaica. I didn’t know that so much is available. Like different institutions. I didn’t have an appreciation for
that, not just me at my hospital but everybody else needs to know what is happening with that child that has passed through my hands.

...now when you see different cases in the clinic, now you have an idea, this is what needs to be done. This is where I go from here as it relates to the follow-up.

...each clinic visit is important to make the relevant documentation because each visit, if something came up at it and you did not make a note of it, when the child comes back next year or next month or the next visit, you’re going to ask what happened at the last visit?

Focus group participants also spoke with pride of their new roles as Master Trainers, spreading knowledge to colleagues and other healthcare and child-serving professionals. Several acknowledged newfound opportunities to serve as a local resource for consultation and guidance, further extending ECHO's reach. Participants expressed gratitude for availability of resources needed to support their efforts.

For me, as a master trainer and an active participant at clinics, it's not just a regular clinic session anymore. We have all of these interventions. We just used to have 50 clients and you just want to see them all go through for the day but now we have so many other things...sessions are not just fast sessions anymore. It's a learning experience and for one of my colleagues they see that we’re doing something and putting some things in place and it's more enjoyable for you and for the children... we still have challenges getting other persons fully on board... but for me and for other staff, it has changed what we have been doing, how we assess parents and on child clinic day. And to be honest, we get excited sometimes, real excited knowing that we are reaching them, knowing that we can assess and look for that, we are enjoying it. To be honest, it's a bit more work but it gets easier over time.

...when I was supposed to do my training for my colleagues, I was informed that it should be for my health center, which was a pilot but I incorporated all the nurses from the health districts because from time to time they would work within that facility. I’m usually comfortable with my staff, but I wanted to know that I was confident enough with the information. And so when we received the package, I realize everything
was basically outlined and we got little pointers that guided us...we did the training and I found the response was very good, which also helped to boost our confidence. The colleagues wanted to learn, they wanted to know more, they were interested to hear what we have to say and that really helped to put across the material very easily...Since the training, one nurse that had left my area and has gone to another area wanted to bring the information. So I had to give her that. It's a booklet that we got. We had gotten some extras of the booklet so I was able to give her that to take along with her. And there was another colleague also, she wanted to be a part of it, although she wasn’t within the health center or health district. So I gave her the information so she was able to go back to her facility and share with the others as well. So the persons are interested. Some of them will think of it at first that is more work. Yes, it is more work, but as they get into it, they realize, 'Okay, it's not just work. It is something that is helping to benefit us and the clients.'

We were not only trained and trained others, we were provided with the necessary materials to use. So we have the child milestone booklet, we have the education guidelines, each practitioner at each center, to know how to classify the child after they have assessed the child. It's really good that they provide us with the necessary equipment to use not only just to train us but they do give us the necessary resources.

...one of the things that I have learned to appreciate is that from the midwife point of view – we’re delivering the baby – it is very important to assess that baby properly and make the necessary documentation, the outcome of the labor, telling the mother was there a problem? Anything that happened, it’s very important to record it because it will have an impact in what we need to find or if a problem arise in the future. So I’ve been trying to sensitize my coworkers in writing the stage of labor because even recently I had a delivery and the second stage lasted 88 minutes...so I had an eye-opener, this is going to be important in the child’s developmental future...

...because I’m telling all of my nurses, attendants...where was I for the 4 days [master training] and I even showed them the neurodevelopmental surveillance booklet. So they’re asking me are these things really happening? Is it important for a child to be walking at what age and
persons are coming to me and asking me...this sense of the public awareness part is very good...

...if a mother comes to clinic with the baby, they are going to argue with everything that nurses says...they know ‘my child should be walking, my child should be passing things from hand to hand’ because I had that discussion...persons are not aware that their children are supposed to be doing specific things. But if they are aware that they should be looking out for it, they will go home and actually look for that specific thing...I’m creating public knowledge. Look out for these in your children and in the maternity ward. When I hand the passports to the mothers, I go through the different pages and say, ‘These are the things that you’re expected to see and when you go to clinic, make a note and write in the passport with your pencil so when you go to the nurse you have something to tell nurse.’

...I’ve been able to use the session to reinforce some things in the minds of the persons who are actually doing the work. So I have interviews with the team to the point where other health centers have craved the information and I’ve taken it on although they are not pilot areas...I use the ECHO sessions to open the door and be able to share it with others as they do the work.

... in the hospital, we are seeing the baby first. We know what their labor and delivery was like. So I’m helping my coworkers appreciate for the labor process and an appreciation for assessment of this newborn baby, talking to the mothers, letting them know that anything that is happening with the baby is important. So when you go to clinic, let nurse know if there is a problem. If you were sick during the pregnancy, think about it. I am asking mothers to write down any problem before they go to clinic because sometime when they are at clinic they might be overwhelmed after waiting and not remember to tell the nurse...from my angle, it’s creating an awareness both for the mothers and for the midwives. Even in measurement of the head circumference because normally we have a tendency to round up to the nearest centimeter. Rounding off to the nearest millimeter is important to understand how the head is growing. Sometimes I’m talking to my coworkers about
that...I explained to them how the growth curve will show how a child is growing, I'm seeing a difference since I've started attending the session.

I'm seeing a lot of difference in the assessment from within the hospital on the maternity ward. So changes are happening and my coworkers are very excited about it. And sometimes I go to other wards and I talk to the nurses at the children ward about things that have learned and assessment and the stages of development that children go through...