

# Use of telementoring to advance cancer control: The 2018 Africa Cancer Research and Control ECHO<sup>®</sup> Programme

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Cancer, a leading cause of death globally, disproportionately affects low- and middle-income countries (1). The National Cancer Control Plan (NCCP) is a key tool for planning evidence-based cancer prevention and control interventions; however, policy-makers and programme implementers in limited-resource settings face NCCP implementation challenges. Use of telementoring, as part of a comprehensive approach to planning, provides a platform for knowledge sharing and multi-directional learning to support implementation of NCCPs for countries and international partners alike.

Cancer is expected to be the leading cause of death worldwide in the twenty-first century. In low- and middle-income countries (LMICs), cancer incidence is on the rise, due in part to an increase in modifiable risk factors, such as obesity, tobacco and alcohol use, and to longer lifespans due to the increase in the control of infectious disease. Cancers like cervical, prostate and breast, which have relatively high survival rates in high-income countries, are among the highest causes of mortality in LMICs (1,2). The number of countries with a Non-Communicable Disease Plan (NCD) that includes cancer, or a National Cancer Control Plan (NCCP), has grown to 87% of countries, and 224 cancer-related plans from 93 countries are available on the International Cancer Control Partnership (ICCP) portal (3). However, there is evidence that countries do not always operationalize their NCCP; thus, there is an increasing demand for dissemination of best practices and solutions to common implementation barriers for NCCPs. For example, while a recent global analysis of NCCPs found that there is reference to a leadership mechanism for implementation in 79% of NCCPs, only 7% referenced who would be accountable for implementation. While 37% of reviewed plans mention costing the NCCP, just 7% have an implementation strategy for costing (3).

From 2013–2017, the Center for Global Health at the US

National Cancer Institute (NCI/CGH), together with global cancer control experts in the ICCP (4), convened regional Cancer Control Leadership Forums (CCLF) to increase the capacity of participating countries to initiate or enhance evidence-based cancer control planning and implementation (5). Ten country teams from the Africa region participated in an in-person CCLF in Lusaka, Zambia, in 2014 and/or a subsequent online, virtual CCLF in 2017. Evaluation data demonstrated the effectiveness of the 2014 and 2017 programmes, including positive reception of the virtual format of the 2017 CCLF and the preference from country teams to learn best practices from others working in the region (6). Based on these evaluation data, and on the need for a sustainable and cost-effective method for convening stakeholders, NCI/CGH explored utilization of the telementoring platform Project ECHO<sup>®</sup> (Extension for Community Health Outcomes) to continue the knowledge exchange of evidence-based best practices for overcoming barriers to effective NCCP implementation.

Project ECHO was developed in 2003 by Dr Sanjeev Arora at the University of New Mexico as a method to improve equitable access to healthcare and provide technical capacity. The platform uses technology for combined case-based and didactic, multi-directional learning (7). Each Project ECHO session consists of case presentations from participants,

discussion and feedback from fellow participants and technical experts, and a brief didactic presentation on a relevant technical topic. Sessions are held on the Zoom videoconferencing platform, negating the need for travel and disruption of daily work. Project ECHO has been effectively implemented in many clinical settings and increasingly in non-clinical settings in the United States and internationally. There are many cancer-related ECHO clinics in the Project ECHO Cancer Collaborative (9). For example, the University of Texas MD Anderson Cancer Center (MD Anderson), has 11 cancer-related programmes, including several focused on cervical cancer - two for cervical cancer prevention in Medically Underserved Areas in Texas and Mozambique (sessions held in Portuguese); as well as ECHO programmes for clinical management of gynecologic cancers with 10 countries in Latin America (sessions held in Spanish), and radiation oncology-focused sessions with Zambia (8). In an evaluation of ECHO to extend knowledge after a hands-on cervical cancer training in the Texas-Mexico border programme, preliminary data showed that post-training ECHO participants maintained or increased their level of knowledge and self-efficacy as a result of participation in the ECHO, demonstrating that these complementary interventions are effective to deliver cervical cancer control capacity building. MD Anderson serves as a training centre (Superhub) to help other organizations become ECHO hubs.

Seeing the potential to use the Project ECHO model to continue the cancer control evidence dissemination efforts in previous CCLFs, NCI/CGH, in partnership with the ECHO Institute at the University of New Mexico and the MD Anderson Cancer Center, launched three regional ECHOs, including the 2018 Africa Cancer Research and Control Project ECHO Program (Africa ECHO). The Africa ECHO aimed to increase familiarity and utilization of national cancer control planning principles and strategies, and to strengthen the interactions of those working in cancer control programs with researchers, advocates, and regional and international partners. NCI/CGH utilized an evaluation survey approach to measure impact and contribute to the evidence about potential effectiveness of ECHO to strengthen national cancer control planning and implementation.

## Methods

The Africa ECHO included participants from the 2014 and 2017 Africa CCLFs, and additional stakeholders as referred from regional and international partners. These participants represented Ministries of Health, academic institutions, health facilities, and non-governmental organizations. Global and regional partners who participated in the Africa ECHO included global cancer control experts, implementing partner

organizations and academic institutions.

Session topics were planned with input from stakeholders and participants, with an emphasis on commonly reported challenges from past evaluations of CCLFs. Unlike in clinically-focused ECHOs where patient cases are presented, the Africa ECHO case presentations were on cancer control planning challenges, such as tobacco control, resource mobilization and building human resource capacity. Each session was 90 minutes in length, with time split evenly between case presentations, didactic presentations, and discussion (see Table 1 for full list of session topics).

The Africa ECHO was designed to be time-limited to pilot the ECHO model and to measure its effectiveness in advancing and strengthening cancer control planning in the region. A pre-post survey method was used to help NCI/CGH determine the impact and measurable outcomes of the ECHO programme when utilized in a cancer control context (10). Baseline and endpoint questions covered participant level of knowledge, utilization of cancer control planning strategies, partner engagement, and feedback on the ECHO model. Additionally, participating partners and didactic speakers completed an endpoint survey with questions covering usefulness of the ECHO model to their engagement with in-country stakeholders, and level of collaboration resulting from ECHO engagement.

## Results

A total of 48 participants from 12 countries registered for the Africa ECHO, with sector representation by primary responsibility from Ministries of Health (25), non-governmental organizations (9), research/academia/clinical care (8), and technical partners to Ministries of Health (6) (Table 2). Approximately one-third of participants attended at least four of the seven monthly sessions, and an average of 18 participants (38%) attended each session. An average of 10 partners and guests (one-time attendees and speakers) attended each session.

The baseline survey was completed by 37 participants (77.1%) from 11 countries, and 21 participants (43.8%) from nine countries completed both the baseline and the endpoint surveys. Most survey respondents represented Ministry of Health, clinical care, advocacy, and research. A total of 10 individuals completed the partner and speaker survey (the total number of partners varied throughout the programme).

### *Usefulness of ECHO to address cancer control challenges*

At baseline, survey respondents were asked to identify cancer control-related challenges they wanted to address in the Africa ECHO®. At endpoint, 20 survey respondents (95%) reported that their cancer control-related challenges had been

Table 1: 2018 Africa ECHO session topics and presenters (by institution)

Date	Topic	Case presenter institution(s)	Technical presenter & moderator institution(s)
April 2018	Initial findings from the global analysis of National Cancer Control Plans	N/A	World Health Organization
May 2018	Tools to prioritize cost-effective cancer control programmes and to finance the National Cancer Control Plan	Ministry of Health, Ethiopia Ministry of Health, Kenya	International Agency for Research on Cancer World Health Organization
June 2018	Financing the implementation of the National Cancer Control Plan: Mapping resources, engaging experts, utilizing communities of practice, partnering with the private sector	Uganda Cancer Institute, Uganda Ministry of Health, Zambia	International Atomic Energy Agency
July 2018	Building human resource capacity for cancer research and control through partnership and mentorship	African Esophageal Cancer Consortium, East and Southern Africa Rwanda Biomedical Center, Rwanda	World Health Organization Istituto Europea di Oncologia New York University
August 2018	Getting ahead of the curve on tobacco control in the Africa region	Ministry of Health and Childcare, Zimbabwe University of Cape Town, South Africa	Center for Tobacco Control in Africa American Cancer Society
September 2018	Integration of cancer into existing health services (Part I)	Ministry of Health and Wellness, Botswana Jhpiego, Botswana	University of Washington
November 2018	Integration of cancer into existing health services (Part II)	Clinton Health Access Initiative/ Ministry of Health, Nigeria National Cancer Institute, Kenya	Albert Einstein College of Medicine Harvard Medical School/ Massachusetts General Hospital

addressed, and 14 respondents (66%) identified additional cancer control-related challenges that were identified over the course of their participation in the Africa ECHO (including funding for cancer control; monitoring and evaluation; and, access to services, among others). All 21 endpoint survey respondents stated that the virtual platform was suitable to their learning style. The primary logistical challenge with the Project ECHO virtual platform was internet connectivity.

When asked to describe how the Africa ECHO helped them address their cancer control-related challenges, the primary response was the sharing of experiences and best practices by countries in the region (10 respondents, 50%), followed by technical guidance (7 respondents, 35%), and the application of learning to move cancer control planning forward in their setting (4 respondents, 20%). As a result of participation in the Africa ECHO®, survey respondents reported an increase in utilization of cancer control planning resources, such as the International Cancer Control Partnership portal (ICCP), the World Health Organization cancer control planning tools, and the Union for International Cancer Control resources for

cancer planning and control.

#### *Changes in level of cancer control planning knowledge*

Survey respondents were asked to rank their level of knowledge about 15 cancer control planning strategies, such as building political will, forming partnerships for financial support and using evidence-based resources to inform strategy. Endpoint survey respondents reported an increase in knowledge for all 15 cancer control strategies as a result of participation in the ECHO. Respondents reported the greatest increase in knowledge in: incorporating monitoring and evaluation into plans and programmes; engaging multisector partners in the cancer community; and engaging members of the NCD, women's health, infectious disease fields and partners outside the health sector.

#### *Building regional partnerships*

Endpoint survey respondents reported on number of new partnerships by stakeholder group developed as a result of participation in the Africa ECHO. Respondents reported

Table 2: Africa ECHO registered participants

Country	Total #	Total by sector (primary responsibility)				
		Ministry of Health	Non-governmental organization	Research/Academia	Technical partner to Ministry of Health	Clinical
Botswana	4	2	0	0	2	0
Ethiopia	4	2	1	1	0	0
Kenya	7	2	2	3	0	0
Kingdom of eSwatini	2	2	0	0	0	0
Malawi	2	2	0	0	0	0
Namibia	3	1	0	1	1	0
Nigeria	1	0	0	0	1	0
Rwanda	3	2	1	0	0	0
Tanzania	4	2	0	0	1	1
Uganda	9	6	2	1	0	0
Zambia	4	2	0	1	1	0
Zimbabwe	5	2	3	0	0	0
<b>TOTAL</b>	<b>48</b>	<b>25 (52.1%)</b>	<b>9 (18.8%)</b>	<b>7 (14.6%)</b>	<b>6 (12.5%)</b>	<b>1 (2.1%)</b>

*To experience on-line cancer control learning opportunities on a continuous basis that was broadening my field of cancer control knowledge; also the opportunities to learn from other countries who are having similar challenges.”*

*ECHO participant*

forming the highest number (6 or more) of new partnerships with clinical/hospital partners (8 respondents), the Ministry of Health (7 respondents), and community groups (7 respondents). Respondents also reported that the greatest increase in stakeholder support for their activities came from stakeholders outside of their organizations in their own countries (19.2% increase in reporting “very supported”) and stakeholders from the region (17.1% increase in reporting “very supported”). Anecdotally (not captured in the survey), participants also reported an increase in ease of connection with the global cancer control experts who participated in the Africa ECHO. For example, one participant reported via email that he met one of the World Health Organization experts at a regional conference and that the Africa ECHO connection allowed him to immediately connect and network.

**Reflections on bi-directional learning**

Of the 10 partners and speakers who responded to the endpoint survey, 7 responded that they had served as a speaker or moderator during the Africa ECHO. Of these, 6 (86%) reported that the experience was very useful or useful to them, and 4 (40%) reported developing new collaborations.

**Discussion**

The Africa ECHO was designed to pilot and measure the ECHO platform’s effectiveness in advancing and strengthening cancer control planning in the region. The findings from baseline and endpoint surveys indicate that the Africa ECHO was largely successful. The main challenges the participants

wanted addressed were cancer control planning strategies, such as building political will, forming partnerships for financial support and using evidence-based resources to inform strategy. Endpoint survey results show an increase in level of knowledge, indicating the usefulness of ECHO as a learning platform.

The most often reported source of learning was from best practices shared by regional colleagues. The benefit of learning from real-world experiences was underscored in various ways in the survey, and informally by participants, and reflects similar findings from other ECHOs that local and regional expertise and locally-relevant knowledge are both vital sources of information for programme implementers (11). The value of South-South exchanges in building regional capacity has been shown in other models (12–16), and the Africa ECHO adds to the evidence that demonstrates the value of this type of exchange. For programme implementers with limited time and capacity to build networks to help them with problem solving, the Africa ECHO provided brief live interactions that opened doors for further engagement offline. This is underscored by the fact that participants reported that the highest increase in support for their cancer control activities came from stakeholders from other sectors or from within the region (not within their own organizations).

At the same time, the informal setting created by using the Zoom platform allowed participants to interact with regional and global experts in cancer control, some of whom were instrumental in development of the global cancer control resources and implementation research findings accessed by the ECHO participants. The ability to ask direct and sometimes

provocative questions to global leaders in cancer research and control resulted in dynamic discussion. The ECHO Institute describes this as “the democratization, or demonopolization, of knowledge” (17). Direct engagement between participants and experts brought tools and resources to life and provided opportunities for further networking. These connections were bi-directional, as partners and speakers also reported an increase in number of partnerships at the country-level resulting from ECHO engagement.

Participants demonstrated an increase in technical knowledge as a result of participation in the Africa ECHO in various cancer control planning principles and strategies. This finding is consistent with another study that used Project ECHO as a telementoring tool for healthcare professionals’ knowledge and self-efficacy in pain management (18). This contributes to the evidence of Project ECHO’s application for strengthening knowledge at the clinical, as well as policy and planning levels. The areas where participants reported the higher levels of increased knowledge mirror the cancer control topics covered in the sessions, demonstrating that a specific ECHO curriculum focused on evidence translation to policy and programmes can result in a high impact in addressing cancer control challenges. New challenges that were identified in the course of participation may be a result of exposure to new challenges as presented in the case-based learning format (11). The additional technical topics listed are the natural “next steps” to the knowledge pieces gained in this ECHO – for example, building research capacity or monitoring and evaluation. Notably, these topics mirror some of the recommendations outlined in the global analysis of NCCPs (3).

### Limitations

The Africa ECHO was a positive learning, knowledge-exchange, and partnership-building experience for the participants and technical experts alike. However, the time-limited structure of the programme, and pre-post survey method only provides short-term outcome data based on programme participation (10). Longer-term engagement would help to highlight the ability of participants to apply acquired knowledge, to identify barriers and challenges, and to provide sustained opportunities for cross-regional knowledge exchange. The pre-post survey demonstrated an increase in knowledge and familiarity with cancer control strategies and principles. However, there was lower overall session participation compared to registrant numbers, and lower response rate to the endpoint survey than the baseline survey. Both factors are key limitations to these findings.

### Conclusion

The adoption of this model of mentoring in cancer control

planning, implementation and monitoring, is recommended. The ECHO model should continuously be developed and evaluated in terms of its impact, not only on cancer stakeholders’ knowledge and skills, but on cancer control plan implementation and health outcomes. To that end, it is recommended that future ECHOs in the policy arena include a longer-term impact evaluation be conducted at regular intervals of three to five years to gauge if and how participation in ECHO impacts the effectiveness of implementation of NCCPs or other policies. Effort is required to enhance participation and response rates in future evaluations and to ensure that future ECHO® networks meet the needs of the population using them. This should address minor technological issues to enhance audiovisual quality and connectivity.

One of the outcomes of demonopolized knowledge is the emergence of technical leaders in regions where knowledge exchange is taking place. Following the six-month Africa ECHO engagement convened by NCI/CGH, a steering committee representing four countries in the region has emerged to move the Africa ECHO programme forward. This group will continue to convene scientists, planners and policy-makers from the region to share best approaches and challenges in cancer control. Opportunity exists to continue to accelerate recent progress in cancer control in the region, which has included strengthening of cancer surveillance and prevention services (3). Challenges remain, especially in the areas of financing and resourcing NCCPs, and in building human resource capacity for equitable cancer control. The experience of the 2018 Africa ECHO indicates that Project ECHO and telementoring, as part of a comprehensive approach, can play an important role in improving health outcomes.

For information about partnership opportunities, contact the Project ECHO Cancer Collaborative. ■

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