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### Dear Partner,

Makerere University and Columbia University (MUCU) are pleased to publish the 9<sup>th</sup> issue of our newsletter. We are excited to update you on interesting things that have occurred over the past six months in the area of adolescent medicine in Uganda. We are delighted that you have continued interest in the care of the adolescent patient and look forward to hearing about **THE WORK THAT YOU ARE DOING** related to adolescent health.

*Our mission is to provide a forum to share member news, interesting program updates and clinical cases, and to discuss the latest in "hot" adolescent topics*

Uganda has a young population, with 52% of its population under the age of 15 years, and 25% ages 10-19 years. In order to help optimize the health of adolescents, reduce their risk-taking behaviors and guide them into thoughtful decision-making that can capitalize on their strengths, access to comprehensive health education and reproductive, physical and mental health care is essential.

The Society of Adolescent Health in Uganda (SAHU) was launched November 2012, following a regional training in Kampala, Uganda led by experts from Columbia & Makerere Universities & the Naguru Teenage Information & Health Centre. SAHU is now a register Non- Governmental Organization.

### SAHU's Mission:

To promote comprehensive adolescent health, growth and development in Uganda through knowledge dissemination, research, advocacy and affiliation with other societies and bodies involved in adolescent health.

### The Vision of SAHU:

Each & every adolescent will be provided the opportunity to access his/her potential and grow into a healthy, responsible and independent adult.

Visit our website: [www.sahu.ug](http://www.sahu.ug)

SAHU membership is \$10 (ugx 30,000)

Become a member by e-mailing:

[adolhealthuganda@gmail.com](mailto:adolhealthuganda@gmail.com) or [info@sahu.ug](mailto:info@sahu.ug)

Include the following information in your e-mail:

§ Name, title § Job title § Institution / Affiliations

§ E-mail address



# Meet the Newsletter Editorial Board

## Co-Editors in Chief



**Sabrina Kitaka M.D.**, Senior Lecturer & Paediatric & Adolescent Health Specialist, Department of Paediatrics and Child Health, Makerere University College of Health and Sciences Kampala, Uganda and acting President of SAHU. Dr. Kitaka is passionate about promoting adolescent health and medicine in East Africa. For the past 15 years, she has taught Adolescent Medicine at Makerere University College of Health Sciences. Since 2006, she has collaborated with Dr. Betsy Pfeffer and her colleagues at Columbia University, and since 2010, they have conducted three annual in-service adolescent health workshops for East African health providers and four clinical and scientific meetings. She is the director of the Adolescent Program at the Paediatrics Infectious Diseases Clinic at the Mulago National Referral Hospital.



**Betsy Pfeffer, M.D.**, Associate Professor of Pediatrics at Columbia University Medical Center and New York Presbyterian Hospital, New York, U.S.A. Dr. Pfeffer is an adolescent medicine clinician who sees teens in an outpatient and inpatient setting, teaches medical students and residents and lectures internationally on multiple topics related to adolescent health care. She has been working together with Dr. Kitaka for over ten years and is committed to their efforts to help improve health care delivery to teens in Uganda. She is a lifetime member of SAHU and the Director of International Relations.

## Editorial Team



**Denis Lewis Bukenya** BSWA, MPA is a social worker and an Adolescent Health Training Specialist and the Training Manager at the Naguru Teenage Information and Health Centre, a pioneer Adolescent Sexual Reproductive Health and Rights program in Kampala, Uganda, that provides advocacy and youth-friendly reproductive health and related services. Denis has nine years of progressive involvement in Adolescent Sexual Reproductive health services' delivery and trainings, psychosocial and behavioural support for children and youth, specifically on Adolescent Sexual Reproductive Health and Rights and HIV/AIDS. He also is the Vice Chair of SAHU.



**Godfrey Zari Rukundo M.D.**, Child and Adolescent Psychiatrist, Senior Lecturer and Head of the Department of Psychiatry at Mbarara University of Science and Technology University (MUST). Dr. Rukundo is also the General Secretary of SAHU and the programme Director for MMed Psychiatry Training program. He has expertise in psychiatry through his research in schizophrenia, depression, and mental disorders secondary to general medical conditions. He has been an investigator in a number of funded research grants, with a number of publications coming out of this work. He has interest in quality improvement and has been the chair for the committees of Quality Assurance and Strategic Planning of the Faculty of Medicine at MUST for. He is the National Coordinator of Training in Child and Adolescent Mental Health. He is the Key Personnel for Mental Health Research Training in the ongoing NIH five years Research Training Grant (MURTI).



**Charles Emma Ofwono**, SAHU Web Administrator and Network and Systems Administrator, the B.Sc. degree in Software Engineering from Makerere University, Kampala, in 2012, and currently is pursuing his M.Sc in Information Technology from Walden University, Minneapolis, USA. In 2007, he joined Naguru Teenage Information and Health Centre, as a peer leader in the Post Test Club, and in 2010 became the club coordinator. Since March 2013, he has been with the Department of Advocacy and Research, where he coordinates youth programs and ICT/Data. Emma is also the IT manger of SAHU.

# NEWSLETTER SUBMISSIONS

The next newsletter will focus on Sickle Cell Disease in Adolescents and will be published in November 2017. SAHU members are encouraged to submit member news, program updates and interesting cases related to this newsletter topic with all patient identifiers removed. The editorial board will conduct a peer review process for all submissions. Submissions will be accepted from September 1<sup>st</sup> – October 15<sup>th</sup>, 2017. Please e-mail all submissions to: [sabrinakitaka@yahoo.co.uk](mailto:sabrinakitaka@yahoo.co.uk). Thank you in advance for your participation.

## ANNUAL YOUTH HEALTH DAY BUTAMBALA DISTRICT 2017

Submitted by Mr. Mutyaba Sulaiman Mustapher, President, Youth Alliance for Career Development



### Introduction

Youth Alliance for Career Development (YAFCD), together with Butambala District Local Government Health Department, hosted the 1<sup>st</sup> Annual Youth Health Day 2017 titled “Maximizing Health through Awareness.”

The broad objective of the Youth Health Day was to disseminate information, stimulate discussions and provide services related to health and wellness to the youth in this rural area. The overall goal of the day was to provide the participants with the skills to make healthy decisions and take ownership of their health.

The specific objectives included:

- Providing factual information to help empower the participants to promote their own health
- Openly discussing concerning health problems

c. Fostering new collaborative relationships between youth, health professionals and other community members working to promote healthy youth

d. Educating parents and other community members about the health concerns of youth and encouraging them to help enable the youth community to adopt healthier lifestyles

e. Enabling youth to access up-to-date research and input from guest speakers on issues concerning their health

### Rationale

YAFCD decided on this project because the youth in the targeted area lack access to information related to health and wellness and have limited exposure about how to approach good decision-making. The youth health day hoped that the outlined activities would help address this gap.

### The day involved:

- Health education sessions on teenage pregnancy, drug abuse, stress management, healthy food habits, HIV/AIDS
- Sexual health advice
- Guest speakers
- Audio-video presentations
- General practitioner consultations

- f. Health checks / HIV Testing and Counseling and Services (HTC)
- g. Life skills training sessions
- h. Edutainment
- i. Showcasing and exhibition

**The following stakeholders supported the event:**

- a. Naguru Teenage Information and Health Centre
- b. Uganda Health Marketing Group
- c. MILD MAY Uganda
- d. Butambala District Scouts Council
- e. First Insurance Company Limited
- f. Ugafoil International
- g. PATH International Uganda
- h. Kosa Expo 2003 Limited
- i. Hellozy General Enterprises Limited

The event began with youth from different schools and youth groups conducting community service work that included cleaning Gombe town and parts of Gombe Hospital up to Kayenje.

After the service work, the President of YAFCD, Mr. Mutyaba Sulaiman Mustapher, welcomed the members and gave an overview of the event. He explained that the mission of YAFCD is to serve the youth. He discussed the problem of teen pregnancy in the Butambala district and YAFCD's campaign against teenage pregnancy, which was actually launched on that day.

There was also a session on teenage pregnancy conducted by Sister Asele Naome, a Nursing Officer at Gombe General Hospital in charge of adolescent health at the facility and the district at large. She highlighted the risk and protective factors related to teenage pregnancy and commended YAFCD for having initiated the program in Butambala.

The Executive Director of The Action Foundation (TAF), Mr. Charles Kasozi, also addressed teen pregnancy by initiating a discussion between the young people and answering questions that were privately written on papers to the attention of the presenter.

The Community Development Officer of Butambala District, Mr. Kaggwa John Hannington, who represented the Chief Administrative Office, stressed the importance of such events in the district. He also made comments on the role of each stakeholder in helping to create a healthy environment in which youth and young people could thrive. He thanked YAFCD for thinking about Butambala District, a rural area and a new district. So many service providers do not consider operating in rural areas yet the youth living in these areas are vulnerable to so many health related hazards.

Many officials from the district attended the event including the District Health Officer, Dr. Sekamate Samuel, the District Education Officer, Mr. Sebakumba John, and the District Probation Officer, Mr. Iga Farooq.

HCT services were available onsite and these services were provided by Gombe Hospital ART Clinic and supported by Mildmay Uganda. 170 people between the ages of 12-19 years, 57 between the ages of 20-30 years and 42 between the ages of 30-50 years received testing.

There was a session on life skills where the President of YAFCD discussed basic skills that can help address the challenges of economic constraints.

Naguru Teenage Information and Health Centre made entertainment available. This event added to the festivities of the day.

There was a play on domestic violence performed by students from the Kibibi Secondary School. The play revolved around the effects of domestic violence and illustrated how this violent environment could potentially lead to the breakdown of families.

The District Executive Commissioner of Butambala District Scouts Council, who was also on the organizing committee, thanked members and participants for their support. He announced the Scouts Run for Safe Water event to take place in July 2017 and thanked YAFCD for partnering in the event.

The District Health Officer of Butambala District, Dr. Sekamate Samuel, closed the day by thanking YAFCD for their commitment and initiative and commended all the participants for attending the event. He lamented that there are so many health related hazards in the schools in Butambala. He described the lack of knowledge that young people have related to health, the inadequate information that many teachers have and the importance of comprehensive health education. Dr. Sekamate Samuel was pleased with the content of the day and the accuracy of all information shared. He assured the organizers of ongoing support for future events.

The chief guest was the District Chairperson who was represented by his Deputy Al haj Hood Bukenya Wagwa. The Chairperson told the congregation that the day was very crucial to the participants and that those who missed the event were the unlucky ones. He pledged support to the YAFCD, thanked all partners for the support they give Butambala and prayed to Allah.

The day closed with the following recommendations:

1. Hold the Youth Health Days annually and in all Sub Counties of Butambala District and the Greater Mpigi
2. Facilitate youth leadership and participation and inclusion in decision-making and program/policy design
3. Provide life skills programs to the young people in and outside schools
4. Establish an environment conducive for youth to access their sexual and reproductive health rights

5. Review and update school curricula to include accurate health education issues as a basic education
6. Provide comprehensive sexuality education that is both accurate and sensitive to the youths' needs
7. Encourage research and studies on youth health and use the findings to shape policies and programs
8. Use social media to provide health education and life skills information
9. Ensure high-quality services for youth, including training health workers so that services are youth-friendly.
10. Include "Adolescent Medicine" in postgraduate studies in medical and nursing schools
11. Promote socio-cultural and behavioral change



# Highlights of the 7th Annual Adolescent Health Conference and the 4<sup>th</sup> Clinical and Scientific meeting of the Society of Adolescent Health in Uganda

Submitted by Dr. Godfrey Zari Rukundo

This annual conference was hosted by the Society for Adolescent Health in Uganda (SAHU) in partnership with the Makerere University-Columbia University (MUCU) Collaboration with financial support from Columbia University and the WIDE SPECTRUM Pharmaceuticals. It was a two-day conference held on March 29<sup>th</sup>-30<sup>th</sup>, 2017 at Hotel Africana in Kampala, Uganda. *The conference theme was: Keeping Our Adolescents Healthy through Preventive Care.*

Globally, adolescents constitute approximately 20% of the population, with 196.5 million adolescents in Africa. Uganda has a predominantly young population with adolescents (10-19 years) constituting 25% (8.48 million). A young population is highly dependent and vulnerable and also presents serious challenges of addressing their sexual and reproductive health and rights and other conditions. If the needs of the young population are not addressed, they undermine social transformation and sustainable development. Another important aspect of adolescent health that has largely been neglected is oral health. It is a public health concern that affects every person. There is therefore a need to discuss the importance of improving the oral health of both the population and the individual.

The key objective of the 7<sup>th</sup> annual adolescent health conference was to provide health care providers with up-to-date evidence-based information related to preventive care of the adolescent patient. Adolescents remain at risk for many diseases during and after adolescence, many of which can be prevented given the correct approaches. The meeting discussed infectious diseases, immunization, and oral health issues, as well as mindfulness approaches, behavior change and communication.

On the first day of the conference, there were many insightful and interesting presentations made by distinguished professionals and researchers in different fields. The discussions in the plenary sessions were also quite enriching. The details of the conference and the profile of the presenters are in the conference report of the SAHU website. Please visit the SAHU website to view all of the conference presentations, [www.sahu.ug](http://www.sahu.ug).

## CONFERENCE PICTURES



All Participants



Dr. Betsy Pfeffer, Emma Ofwono and Dr. Sabrina Kitaka



Drs. Melissa Stockwell and Sabrina Kitaka



Dr. Regina Mutave (Kenya), Sara Mtagwa (Tanzania),  
Dr. Sabrina Kitaka (Uganda), Fredrick Meena (Tanzania)



Mindfulness Exercise

**PLANS ARE  
UNDERWAY FOR THE  
8<sup>TH</sup> ANNUAL  
ADOLESCENT HEALTH  
CONFERENCE IN  
KAMPALA, WHICH WE  
HOPE TO HOST, IN  
EARLY 2018**



Dr. Ezekiel Mupere, Maria Male



Professor Lawrence Stanberry

**STAY TUNED  
FOR DETAILS!**

# Promoting the Concept of Dignity and Respect for Children and Adolescents Suffering from Mental Illness in Uganda

Submitted by Alice Janet Namaganda (Nursing Officer/CAMH Trainer)

## Workshop Goals:

A workshop organized by graduates of the diploma in Child and Adolescent Mental Health (CAMH) program was held at Mulago Guest House in Kampala Uganda on March 3, 2017. The theme of the workshop was promoting the concept of dignity and respect for people suffering from mental illness with a focus on the need for creating awareness and sensitization among health workers. The workshop was attended by health workers with different backgrounds from various hospitals in Uganda: Mulago National Referral Hospital, Mulago-Kawempe Hospital, Mulago-Kiruudu Hospital, Butabika National Referral Psychiatric Hospital, Naguru Teenage Centre and Jinja Regional Referral Hospital. Six broad topics were discussed:

1. Overview of the role and activities of CAMH services in Uganda
2. Understanding the developing brain
3. Importance of mental health care givers in the care of children and adolescents
4. Disparities of health in children and adolescents living in underserved areas
5. Suicide & survival among adolescents
6. Handling behavior problems among adolescents in secondary schools

From the presentations and subsequent discussions it was evident that mental health professionals do not handle mental health problems in schools. The pressing need to train teacher counselors on how to assess children and adolescents for signs and symptoms of poor mental health and to equip them with the skills to deal with these problems became apparent. Participants in the workshop agreed that health workers often have misperceptions about mental illness and intellectual disabilities and that it was essential to help address these gaps in knowledge through education. Disseminating information about the CAMH services available in Uganda was also recommended.

## Observations and Recommendations

The participants were from different health departments but ALL agreed that mental health assessment and treatment was part of their work and that they needed to have improved training in this area. In addition, the workshop was seen as an eye opener on how to deal with children and adolescents with mental illness. Participants appreciated the presentations and requested more written literature on mental health. The one complaint was that the workshop was too short, with little time to have detailed discussions. All topics were seen as relevant to the training needs of the participants. They noted that there was a need to improve policy and enhance practices so that children and adolescents who have or are at risk of developing mental health disorders get the care that they deserve.

All Departments of Psychiatry and Pediatrics were encouraged to put strategies in place to improve outcomes for children with mental health needs. The participants suggested that presentations on mental health be organized for parents, teachers and school counselors and highlighted that some of the information could be shared on social media. They also suggested that mental health should be integrated in all health curricula, including courses delivered in school.

The organizers of the workshop thank the participants for their support and look forward to working together to help scale up mental health awareness, assessments and services for all children and adolescents in Uganda.



# Child and Adolescent Mental Health Care at Mbarara Regional Referral Hospital, Southwestern Uganda

Submitted by Owona Joseph, Child and Adolescent Specialist and Psychiatric Clinical Officer

Mental health problems among children and adolescents are a growing public health concern because of their prevalence, early onset, and impact on the child, family and community. More than 50% of impairing adult mental health disorders have their origins early in life. Reducing the global burden of mental illness must begin with appropriate diagnosis and treatment of children and adolescents. However, Child and Adolescent Mental Health (CAMH) professionals vary in number and distribution in developing countries. As a result, professionals who have only been trained in adult mental health see many children and adolescents with mental health problems in Uganda. This may affect the accuracy of diagnosis and appropriateness of treatment.

A retrospective study was conducted at Mbarara Regional Hospital to determine if the diagnoses and treatments prescribed by CAMH specialists differed from those prescribed by the general mental health professionals. Two hundred charts of children and adolescents ages 1-17 years seen by a mental health specialist between 2015-2016 were reviewed. One hundred of the charts were of patients seen by a mental health specialist trained in CAMH (59% were under the age of 13 years, 41% were age 14-17 years) and the other 100 were of patients seen by an adult mental health specialist (40% were less than 13 years, 60% were age 14-17 years). Of the 200 charts reviewed, 107 (53.5%) had a diagnosis of epilepsy, 42 (21%) had neurodevelopmental disorders and 32 (16%) psychotic disorders. Other diagnoses made included depression, bipolar affective disorders, trauma and stressor-related disorders, disruptive impulse-control and conduct disorders, substance-related and addiction disorder. The CAMH professionals made a wider range of diagnoses compared to the general mental health specialists.

In terms of treatment, it was found that there was a difference between what the two groups of mental health specialists recommended. The CAMH professionals gave a total of 42% pharmacological treatments and 90% psychological treatments (psycho-education, counseling and family therapy), compared to the adult mental health specialists who gave 58% pharmacological treatments and 10% psychological treatments.

The discrepancy between the diagnoses and treatments given to children and adolescents by CAMH professionals compared to the general mental health professionals may be explained by differences in training. Children and adolescents are not just small adults thus training mental health providers about the mental health issues facing this age group can improve both the knowledge and skill set of those delivering care. It is recommended that all mental health professionals working with children and adolescents undertake specific courses in CAMH to help assure the delivery of quality mental health care.



# HPV Vaccine Case

Submitted by Priyam Thind, MPH & Melissa Stockwell MD,  
MPH Associate Professor of Pediatrics and Population, Family  
Health



RB is a thirteen-year old girl who attends boarding school near Kampala City. She is a good student with no past medical history, is not sexually active, displays no risky behavior and has a very close relationship with her family, especially her mother.

A few weeks into the term, RB injures her arm playing football and is brought home from school to consult the family doctor, Dr. DM. Upon visiting Dr. DM the next day, RB and her mother learn RB's arm is sprained and requires a splint. While Dr. DM puts the splint on RB's arm, her mother asks about the HPV vaccine – she mentions that she has heard about the vaccine and wants to know if RB is a suitable candidate for it. Dr. DM initially hesitates when responding because he is uncomfortable discussing HPV. He suggests that RB's mother take her to the adolescent clinic to find out more about the vaccine. He does not offer the vaccine to RB. After another day of recovery, RB returns to boarding school and does not go to the adolescent clinic.

A few months later, during her summer break, RB and her mother visit another family doctor to follow up on RB's arm injury. Again, her mother expresses interest in learning more about the HPV vaccine. RB is hesitant because at school she heard that the vaccine will cause her to be infertile and might even cause cancer. This provider does discuss the vaccine with RB's mother while RB is temporarily out of the examination room getting weighed and recommends the HPV vaccine for RB. When RB returns, the provider administers the first dose of the HPV vaccine to her. Although otherwise fearless, RB shrieks when she gets the vaccine because it is painful. RB is also very upset because she was just given the vaccine, not involved in the decision and now very concerned about her future fertility and cancer risk. The provider asks RB to return in six months to receive the second dose of the vaccine series.

A few months later, RB is back at home from boarding school during her winter break. The family gathers around the dinner table that evening and her father describes his uncomfortable visit to the dentist's office earlier that day. Just then, RB recalls visiting the doctor during her summer break and realizes six months has passed since she received the first HPV vaccine dose. RB remembers the vaccine being painful, is still upset that she was not included in the conversation about getting the vaccine and, because she did not really understand the importance of the vaccine, she decides to not mention the passing second dose due date to her mother.

RB graduates from boarding school and two years later, is a student at Makerere University. She now has a boyfriend and, appropriately, wants information on birth control. Her friend suggests she visit the local youth-friendly health center that treats patients with non-judgmental, confidential, and respectful care. RB visits the health center and meets with a provider who, in ascertaining her medical history, asks if she has received the HPV vaccine. RB says she is pretty sure she remembers getting both doses (even though in reality she only received the first dose), but doesn't have her purple card for confirmation. The provider trusts RB is remembering her immunization history correctly and moves on to prescribe her birth control.

Ten years pass and RB is now married and a mother of two children. One day she experiences pelvic pain and notices an unusual vaginal discharge. The symptoms persist for another six months and after experiencing vaginal bleeding she finally decides to pay the doctor a visit. The doctor conducts a check-up, sends some tests and RB is diagnosed with cervical cancer.

# CASE REFLECTION: HPV TEACHING POINTS

Submitted by Priyam Thind, MPH and Melissa Stockwell MD, MPH Associate Professor of Pediatrics and Population, Family Health

## 1. What were RB's misperceptions about the HPV vaccine?

RB was concerned with rumors she had heard about the side effects of the HPV vaccine. She heard from students in school that the vaccine could cause infertility and cancer. Although RB's reluctance to get the vaccine is understandable, her concerns are, in fact, misperceptions related to the vaccine. The HPV vaccine does not cause fertility problems and can help protect women from future fertility problems linked to cervical cancer. The vaccine also cannot cause cancer or any other HPV-related diseases. When a patient gets the vaccine, it prompts his/her body to produce antibodies, which are then used to fight the real virus if he/she is exposed to it.

Several common misperceptions exist about the HPV vaccine and in the current communication environment of mass media and smartphones, misinformation travels even farther and faster. Appropriately responding to misperceptions is the key to mitigating their impact. Below are common myths about the HPV vaccine and facts with which the myths can be discredited:

- **Myth:** The HPV vaccine causes side effects such as cancer, infertility, toxicity, genetic effects on future offspring and reduced libido.

**Fact:** The United States (U.S.) Centers for Disease Control and Prevention (CDC) have found no proof that HPV vaccines cause bad side effects. Like other vaccines, there may be common temporary side effects like pain, redness, and/or swelling where the vaccine was given, or sometimes feeling faint. In rare cases, a person may have a latex allergy to certain vaccines if they are allergic to latex or yeast.

- **Myth:** The HPV vaccine is not effective and has little impact on the general population.

**Fact:** During initial clinical trials, 20,000 women aged 16-26 years in 33 countries received the HPV vaccine to assess its efficacy. These trials showed the vaccine is almost 100% effective in preventing both incident and persistent cell abnormalities caused by high-risk HPV types 16 and 18, reducing the risk of cervical, vulvar, and vaginal cancers and cervical dysplasia and genital warts<sup>1</sup>. An additional trial including more than 4,000 males aged 16-26 years from 18 countries showed the vaccine was 90% effective in preventing external genital lesions associated with penile cancer, and 78% effective in preventing intra-anal disease, caused by HPV types 6, 11, 16 and 18<sup>2</sup>. At a population level, another study across the U.S. showed a 64% decrease in 4vHPV type (quadrivalent vaccine) among women aged 14-19 years and a 34% decrease among those aged 20-24 years within 6 years of introducing the HPV vaccine.<sup>3</sup>

- **Myth:** The HPV vaccine is only for females.

**Fact:** Both males and females can get the HPV vaccine. Currently, in Uganda, the HPV vaccination program is for female adolescents only due to availability.

- **Myth:** Getting the HPV vaccine at a young age leads to promiscuity.

**Fact:** There is no evidence that getting the HPV vaccine leads to changes in sexual behavior or the number of sexual partners. The age at which teens start having sex, the risk of sexually transmitted diseases, and the number of pregnancies are fairly similar when comparing teens who have been vaccinated to those who have not<sup>4</sup>. Vaccines are most useful at preventing disease when given before a person comes in contact with a virus. Young teens build more antibodies against the HPV vaccine and are less likely to already have HPV, so it's better to get vaccinated as a teen than to wait to get it later.

- **Myth:** The manufacturers of the HPV vaccine have an intention of harming Africans.

**Fact:** The HPV vaccine does not contain harmful ingredients. Some parents are worried about the vaccine containing aluminum. There is aluminum in the HPV vaccine, but it is a safe amount, and it is included to make the vaccine work better. Aluminum can also be found in everyday foods we eat as well as in breast milk.

## **2. How could the first two providers have presented the vaccine to RB and her mother differently?**

A health care provider may not feel adequately prepared to carry out conversations with adolescents. However, in order to deliver quality care, it is important to identify and address the adolescent's questions and concerns regarding a potential health intervention. By exhibiting respect and non-judgement, a provider creates a space for the adolescent to openly express his/her concerns, ultimately leading to a more comprehensive health assessment.

The first provider, RB's family doctor, Dr. DM, hesitated to speak with RB's mother about the HPV vaccine. Perhaps he was reluctant to talk about the vaccine because it would have led to a more uncomfortable conversation about RB's sexual activity. When asked directly about the vaccine, Dr. DM should have provided RB and her mother with information about vaccine efficacy and eligibility and answered any questions they may have had. As a 14-year old girl, RB should have been offered the HPV vaccine. In cases where providers are inexperienced in recommending the HPV vaccine, it may be beneficial to train providers in basic counseling, so they can engage in conversations. Moreover, it's important that providers have timely access to vaccine recommendations, national burden-of-disease data, cost-effectiveness data and common misperceptions associated with the vaccine, so they can confidently support informed decision-making. It is also important that providers recommend the HPV vaccine the same way that they offer other adolescent vaccines like the tetanus vaccine.

The second provider, who followed up on RB's arm injury, spoke to RB's mother about the HPV vaccine without ever talking to RB. While she did successfully recommend the vaccine to RB's mother, the provider should have spoken with RB in confidence to learn of her reluctance to get the vaccine and addressed her concerns. In addition to providing RB with information about the efficacy of the vaccine, the provider should have informed RB about the discomfort she could experience from the shot and emphasized the importance of coming back for the second dose to complete the vaccine series. In addition to receiving HPV clinical training curricula, providers would benefit from resources like clinical decision support tools and materials to facilitate patient counseling and education.

## **3. How might have RB's risk of cervical cancer been reduced?**

The HPV vaccine is close to 100% effective in protecting against cervical precancers and genital warts. However, the efficacy of the vaccine is contingent on completing a multiple-dose series. While the first dose of the HPV vaccine does generate an immune response, the second (and third, when appropriate) doses cause a body's immune system to produce a more specific and longer-lasting response in general. The American Society of Clinical Oncology's global guidelines for the HPV vaccine use are as follows:

The American Society of Clinical Oncology recommends two doses of human papillomavirus vaccine for girls ages 9 to 14 (spaced at 6-15 months apart) in all resource settings and three doses for girls ages 15 and older (at 0,1-2 and 6 months) in maximal and enhanced settings who didn't receive prior HPV vaccination. The guidance in the Journal of Global Oncology also advised that the vaccine may be extended to boys in limited resource settings, if there is at least 50% coverage of the priority female target population and vaccine supply is sufficient<sup>5</sup>.

RB could have reduced her risk of cervical cancer by returning for the second dose of the HPV vaccine series. Had the second provider more effectively communicated with RB regarding her concerns about the vaccine, she would have more likely returned to the clinic to receive the second dose when she remembered she was due for it. Additionally, if the clinic had sent RB's mother a reminder message regarding the upcoming second dose due date, she may have been more likely to bring RB to the clinic. Text-message vaccine reminders can be an effective tool in improving HPV vaccine series completion for minority adolescents.

#### **4. What role does accurate immunization records play in improving vaccine administration?**

Initiation and timely completion of the HPV vaccine series is critical to the HPV vaccine uptake. Often, adolescents miss an opportunity to get a vaccine during a routine visit or forget to return for their second and, when applicable, third doses. In RB's case, when she visited the third provider to procure birth control, RB falsely remembered getting all needed doses of the vaccine. Since she did not have a purple card indicating an accurate record of the vaccine administration, her provider proceeded with the assumption that RB had completed the HPV vaccine series.

Immunization registries consolidate immunization information across multiple sites, usually across a city, state or country-level, and share it with health care providers, families and other health agencies to help ensure that people receive vaccines and to monitor vaccination rates at a population level. Prompts in the immunization registry can let providers know that a vaccine is due and remind them to recommend the vaccine. Receiving a recommendation for the HPV vaccine from a health care professional is key

to parents initiating the vaccine series for their children. As mentioned above, text-message vaccine reminders linked to the immunization registry and sent to parents of the vaccine recipients would improve timely completion of the HPV vaccine series.

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At the Society for Adolescent Health Uganda conference held in Kampala, Uganda in March 2017, we asked participants what are some of the misperceptions that families and providers have about the HPV vaccine.

The most common misperceptions about the human papillomavirus (HPV) vaccine related to adverse effects from the vaccine such as infertility, cancer, exposure to toxins and genetic disorders. While most of these related to fear of side effects, some providers mentioned concerns that the HPV vaccine was intended to create harm. Providers also stated that their parents express concern that getting the vaccine leads to early sexual activity initiation or increased promiscuity among adolescents. Please see the HPV vaccine case reflection for some facts to counter these myths.

The requirement of multiple doses raised concerns about incomplete doses or overdosing. Often, the issue of getting an incorrect number of multiple doses was linked to a lack of an immunization registry: "Can't a person get an overdose if they are given a vaccine and it's not recorded anywhere and the person goes back for more?" Please see the evidence-based review for some information about immunization registries.

Finally, providers also mentioned systemic barriers in regards to administering the HPV vaccine such as the cost of the vaccine (to the patient in some cases) and issues with the cold chain in rural areas. In addition to cost and supply chains, providers expressed concern that inadequate health provider training can lead the practitioner to provide the patient with misinformation or can dissuade them from appropriately recommending the HPV vaccine to suitable candidates: "I am not confident [in] explaining to 12 year olds about the vaccine and sexual health."

These issues presented by providers in Kampala are key to contextualizing, and therefore, addressing, HPV vaccine barriers specific to Uganda.



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# HPV VACCINE UPDATE

## Potential Directions for Improving Vaccination Rates Through Use of Technology

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Cervical cancer is the leading female cancer in Uganda with 3915 new cases diagnosed annually.<sup>6</sup> Unfortunately, many women are diagnosed with late-stage disease;<sup>7</sup> 80% of women die within 5 years of diagnosis.<sup>8</sup> There are 2275 cervical cancer deaths annually, about six cervical cancer deaths daily.<sup>6</sup> Human papillomavirus (HPV), a sexually transmitted infection, is the principal cause of cervical cancer, with the 16/18 strains being found in 29.8% of low grade cervical lesions in women in Uganda, 43.9% of high grade lesions, and 57.3% of cervical cancers.<sup>6</sup> HPV prevalence in Uganda with point prevalence of HPV in normal cervical cytology ranging from 15.6%- 73.2% depending on age and region.<sup>6</sup>

The single most important primary preventive measure for HPV is vaccination. The National HPV vaccine program began in Uganda in 2015, with a goal of 80% coverage for females ages 9-13 years. Currently, 74% of girls in the program have initiated vaccination, but less than 25% have completed the series. At one of the urban clinics the completion rate is much lower; of the 80% of girls that initiated the vaccine only 15% received all needed doses. The vaccine is only effective if patients receive all needed doses, therefore strategies for improving series completion rates are necessary elements of any vaccine program. Such a program needs to focus on both bringing in more patients for vaccination as well as capturing all opportunities to vaccinate when eligible patients encounter the healthcare system.

One frequently used strategy for bringing patients in who need to complete the series is reminder-recall. Reminders let caregivers and adolescents know about upcoming recommended vaccines, while recalls let them know that the adolescent is overdue for a particular vaccine. These methods are both important for the HPV vaccine since it is vital that girls receive all needed doses in a timely manner and, ideally, before initiation of sexual activity. The effectiveness of the vaccine is also highest when administered at a younger age.<sup>9</sup>

Reminder-recalls, such as letters or postcards, phone calls, text messages, or emails are widely recommended and shown to be successful in improving vaccination rates<sup>10,11</sup> However, historically versions using traditional forms, such as mail and automated calls, have been less successful in low-income, adolescent and/or rural population in the United States.<sup>12-16</sup>

Currently, an estimated 65% of Ugandans have access to a mobile phone, with text messaging being the most common use of a cell phone in Africa in general.<sup>17</sup> Due to their unique characteristics, text messages have been shown to be particularly useful for vaccination reminders. Cheap and easily scalable, text messages can be used to reach many caregivers at the same time. Text messages also serve to grab the attention of the recipient, as well as may be more likely to reach the intended participant than other methods since it is not clear if the primary caregiver will be the one who answers an automated phone call on a land-line or opens a letter. Unlike information given via phone call or in a letter, a text message is often easily accessible and more likely to be with the person as it is saved in their cellphone. They also don't require an immediate response, which allows caregivers to view the information or interact with the message at a time that it is convenient for them. Finally, because text messages are only 160 characters, they are useful in populations with low or varied literacy since they are by nature short and uncomplicated.

The effect of text message reminder recalls on vaccination rates has been documented in the United States, including by Dr. Stockwell, one of the authors of this submission. For adolescents specifically, an increase in receipt of adolescent vaccination in general<sup>18,19</sup> and for completion of the HPV vaccine series in particular has been demonstrated.<sup>20,21</sup> In the wider general pediatric population text messaging has been shown to increase influenza vaccination.<sup>22-24</sup> It has also found been

shown that text messages with embedded educational information are more effective, at least for influenza vaccination, than just text message reminders that solely let a caregiver know that it is time to return for a vaccination.<sup>24</sup>

Although the use of text message reminders for vaccination has not been studied in Uganda, a few mobile health programs have explored the use of text messages for antiretroviral therapy (ART) adherence, health education such as HIV prevention, and referral to care. These studies have found text messages to be considered as acceptable means of receiving health information and/or reminders if users have access to a mobile phone.<sup>25-28</sup> A study of patients receiving ART at an HIV care and treatment organization in rural Uganda found that 83% of participants had a mobile phone. Of the 64% of participants who were both mobile phone owners and were able to read, support for a text message-based ART support program was high.<sup>27</sup> Another study assessing the feasibility of an interactive text messaging health program in Uganda reported response rates of over 60%, suggesting that an interactive text message reminder system could be adapted for successful implementation in Uganda as well. Of note, they found that a participant's network provider had significant effect on both response rate and response time which may have implications for implementation for future programs.<sup>28</sup> Finally, there is evidence that text messages can be successfully used to improve patients returning for needed clinical care.<sup>26,29</sup> For example, one HIV prevention program showed that text message reminders were more effective than standard clinic referrals for uptake of male circumcision.<sup>26</sup> Overall, the evidence on both acceptability within the population and effectiveness suggests that text-messaging programs for immunization reminders could be implemented in Uganda.

Immunization Information Systems (IIS), also known as vaccine registries, can also be employed to improve vaccination rates, improve care and data quality. Registries consolidate patient-specific vaccine data on a population level which can be particularly useful in contexts where care is fragmented or medical records are not complete. This fragmented care is

further complicated by the use of paper records at sites, and reliance on family-held vaccination cards that can be easily forgotten or lost. The use of a vaccine registry may be helpful when health care providers are not clear if a given adolescent needs another dose of vaccine since they believe they may have been vaccinated elsewhere. That provider may choose to wait to vaccinate until they can get vaccine records or the caregiver can find the vaccination card; this can lead to under-vaccination. Alternatively, a provider may choose to vaccinate which could lead to over-vaccination, which while not harmful may waste valuable vaccine resources. We have shown in the U.S. that such a registry linked with a medical system improves both under and overvaccination.<sup>30</sup> Such registries are not yet commonly used in Africa but have the capacity to improve vaccination rates as well as quality of care if implemented with context-specific guidance from local providers.

Overall, the use of mobile technology to promote vaccination against HPV in Uganda holds great promise.

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