

## **How GG #2459030 Meets RI Disease Prevention and Treatment Area of Focus**

*The information below shows how Global Grant #2459030, Rwandan Nurses Saving Lives, addresses the Disease Prevention and Treatment Area of Focus. All Areas in Blue are TRF Statements. Note: Strep Throat (ST), Acute Rheumatic Fever (ARF), Rheumatic Heart Disease (RHD) are used throughout this document.*

Rotary supports activities that reduce the causes and effects of disease. Projects strengthen the health care system by improving access to and expanding medical services, providing medical equipment, or training health care personnel.

Supporting projects that are designed to...

**1. Improving the capacity of local health care professionals:** This VTT grant finances training of a Core Team of Rwandan Nurses and Physicians to become conference content experts, presenters and mentors. This Core Team of Rwandan healthcare professionals will train additional Rwandan nurses to be Certified Conference Presenters. The Certified Conference Presenter will provide conferences to healthcare providers (mainly frontline nurses) from five District Hospitals and Health Centers that are in remote areas. Nurses at Health Centers are a priority audience for this grant as 80% of healthcare in Rwanda is delivered in Health Centers, in remote areas, without physician supervision. The specific area of improved capacity will be in the assessment and diagnosis of streptococcus pyogenes infection and the potential autoimmune sequela. A unique aspect is the gift of a stethoscope combined with a day of skills training. This is their first time to hear heart and lung sounds which opens a whole new aspect to assessment and data for differential diagnosis and critical thinking.

**2. Promoting disease prevention and treatment programs that limit the spread of communicable diseases and reduce the incidence and effect of noncommunicable diseases:**

Streptococcus pyogenes is endemic in Rwanda and all of Sub-Saharan Africa. The highly contagious diseases of Strep Throat and Impetigo is more rampant in low-resource countries. Rwanda's culture is to allow children to share food off your plate, share drinks and most beds have several children. Thus culture, social determinants, and circumstance drive the cycles of infection. To help address the spread the communicable diseases by Streptococcus pyogenes this VVT grant teaches transmission and ways of prevention to increase awareness and provide implementable ideas to decrease transmission within households. In addition, by adding the 4-hour seminar to teachers

and community health worker we are increasing community awareness. The schools are critical places of transmission...making them ideal for education and improving recognition of symptoms.

**3. Strengthening health care systems:** Working in remote areas can create feelings of isolation for nurses. To mitigate these feelings of isolation, conference attendees work in groups to build relationships and friendships. They stay in the same groups for the two-month follow-up mentorship. Building trust between individuals in the Health Centers and the District Hospitals is a key component of improving the referral system. We promote the referral system and help to build the relationships of the HC nurse to their District Hospital NCD nurse (who is a certified presenter).

**TRF considers the following activities to be within the scope of the disease prevention and treatment area of focus:**

**Prevention and Control of Communicable Diseases**

**1. Educating community members and health care professionals about intervention strategies for preventing disease transmission:** This project will provide community health workers, teachers, and Health Center nurses with educational tool kits to provide consistent and evidence-based tools to teach about the prevention of the communicable streptococcus pyogenes infections of Strep Throat (ST) and Impetigo. Emphasis of evaluation by the trained nurse and the evidence-based antibiotic therapy (Penicillin). Strategies for prevention includes recognition of symptoms, evaluation by a train nurses, hand washing, proper dishwashing, no sharing toothbrushes, towels, and importance of full therapy of antibiotics. The rationale to decrease strep infections is the core of this conference as African have both genetic and epigenetic attributes that increase their risks for ARF and RHD.

**2. Providing equipment specifically to offer health care services to remote populations that lack access to the local primary care system:** This project will give each nurse-participant a stethoscope and otoscope for them to use to assess patients with potential ST, ARF, RHD, and heart failure. These tools can help the nurse complete comprehensive physical exams thereby impacting all patients.

**3. Treating communicable diseases through an approach that also helps prevent disease, improve the training of medical professionals, or enhance public health education to promote a**

**community's long-term well-being:** This program will provide information that will encourage parents to seek appropriate treatment for children with a sore throat or skin infection and help them understand the connection between strep throat and heart disease through the training on community awareness in the teacher and community health worker's seminar. The Rwandan Nurses Saving Lives conference is six modules providing evidence-based research and treatment plans to improve the medical professional's knowledge concerning strep infections, acute Rheumatic fever, RHD, and heart failure.

## Prevention and Control of Noncommunicable Diseases

### 1. Developing community education and early screening and treatment programs designed to

#### **reduce the incidence and prevalence of chronic diseases:**

The sequela of *Streptococcus pyogenes* infections can be the acute rheumatic fever and then rheumatic heart disease. Both are noncommunicable diseases due the autoimmune inflammatory response of molecular mimicry of M-proteins on the streptococcus pyogenesis bacteria. The project hopes to reduce late entry into the health care system by patients with strep throat and suspected ARF and RHD (currently the majority of patients are diagnosis in Heart Failure stage C and NYHA III/VI). Improving diagnostic abilities can be accomplished if nurses in the remote Health Centers can assess, diagnosis and refer patients with these conditions before the quality of life diminishes and death occurs. It is hoped that this nursing educational program which provides participants with stethoscopes and training to use the stethoscopes will decrease the incidence and prevalence of ARF and RHD and improved diagnosis before end stage heart failure occurs. Currently there have been no diagnosis of acute rheumatic fever, yet one must have ARF before RHD. Increasing the knowledge and skills on the autoimmune disease of ARF ad RHD can allow children to be treated sooner and maintain a quality of life longer.

### 2. Providing equipment specifically to offer health care services to remote populations that lack

**access to the local primary care system:** The stethoscope is an essential tool to use to diagnose heart disease. Currently in Rwanda, stethoscopes are perceived as a physician-only tool. Providing a high-quality stethoscope for nurses to use is essential to the diagnosis of heart disease early in the disease process. To support the use, we discuss nursing empowerment, and share about nursing worldwide and the use of a stethoscope. During the 2-month virtual mentorship the use of a stethoscope is discussed and encouraged.

3. Treating noncommunicable diseases, including mental illness, through an approach that also helps prevent disease, train health service professionals, or enhance public health education with measurable outcomes to promote a community's long-term well-being: The Rwandan Nurses

Saving Lives project provides nurses with the knowledge and skills for the assessment, diagnosis and treatment of the autoimmune response of ARF and RHD. Measurable outcomes for the training are established and are addressed below. Concerning mental health, there is a stigma felt in RHD patients as their heart failure does not allow them to work a manual labor job. They are often called lazy. In addition, all RHD patients must take daily medications. In Rwanda, people who take a daily medication are assumed to have TB or HIV. RHD Stigma and the depression that comes with a chronic disease is discussed along with ways to support RHD patients. Ideas for support came from RHD patients during the 2023 and 2024 RHD patient reunions.

### **Elements of Successful Humanitarian Projects and Vocational Training Teams**

Disease prevention and treatment global grants are:

1. Sustainable — Communities can address their disease prevention and treatment needs after the Rotary club or district completes its work: This project is focused on sustainability and that is

accomplished through the training and mentorship of six Core Team Rwandan healthcare providers who gain knowledge and skills on the conference content. They will move from a “proficient level” towards an “expert level” (These terms are from Benner’s levels of knowledge of novice- beginner- competent-proficient-expert). Sustainability is furthered when the six member Rwandan Core Team trains the first cohort of the Certified Conference Presenters. The Certified Conference Presenters are Noncommunicable Disease Nurses working in District Hospitals. The educational goals are to bring them from “competent” to proficient levels. The third step towards sustainability of this 2024 project is the four conferences led by a mix of the Core Team and the first cohort of Certified Conference Presenters. (The audience at the four conferences is District Hospital and Health Center nurses). Each Certified Conference Presenter will have all conference materials and presentations so they can present at their hospitals. This process will create a ripple effect across District Hospital catchment areas. Lastly, this VTT has added a training for community health workers and teachers so they can be the voice on RHD in the rural community settings with advocating to take sick children to a trained nurse. It is hoped that by Health Center nurses continue to teach community health workers and school teachers so that the community

awareness of RHD can be increased and the importance of treating Strep Throat and Impetigo can be better understood.

## 2. Measurable — Sponsors need to set targets and identify measurements to track project outcomes.

Each aspect of the project has a set of measurable outcomes. The training of the Core Team, their training of the first cohort of Certified Conference Presenters, and the implementation of the four conferences are part of a doctoral research project and are designed to meet the rigors of graduate-level research. Data on knowledge and skills will be measured through pre and post testing. Both qualitative and quantitative data will be obtained. The HC nurses will be asked to log data weekly for 8 weeks. There will be After Action meetings for the development of presenters, conference content, and conference management. Longitudinal studies concerning disease incidence and entry into the health systems will be conducted by our partner, Team Heart Inc., however that data is outside the scope of this grant with an estimated 2 to 5 years of data collection.

## 3. Community-driven — Projects meet the needs identified by the host community.

This project need was identified by the mastered-prepared Rwandan nurses attending a Specialized Cardiac Nurse Program in 2022 during their clinical rotations in District Hospitals. These Rwandan nurses completed the community assessment concerning nursing education, nursing roles in Health Centers, knowledge of nurses in District Hospitals and data concerning Strep throat and RHD in Rwanda. There is no published data on ARF concerning incidence and prevalence in Rwanda. The Rwandan Core Team concurs with the knowledge and skills assessment of nurses in their clinical and workplace settings. The Rwandan core team has been actively engaged since September 2023 in the development of the educational materials that will be used. It must be noted that there are no educational manuals concerning ST, ARF, and RHD focused on nursing knowledge and skills written in English as a third language. In addition, the Rwandan Nurses Saving Lives pilot was presented at the 2023 RHD World Congress and was found to be the only project that focused on frontline nurses to make clinical diagnosis of ST, and improve the assessment and diagnostic skills to improve earlier recognition and treatment of ARF and RHD. All educational materials are being developed through extensive review of literature and discussions with the Rwandan Core Team. The additional educational tools will be translated into Kinyarwanda. The primary manual and

educational tool development is by Dr. Maria Kidner, who is a Lander Rotarian and thus has volunteered the time for the manuals and educational tools to be developed.