



**COLOURS
TO SAVE
HEARTS**

FIRST YEAR REPORT

**MAPUTO,
MOZAMBIQUE**

1 APRIL 2021 – 31 MARCH 2022



CONTENTS



2



Background	3
Launch	3
Main objective	3
Specific Objectives	3

ACTIVITIES	4
Increase awareness and knowledge of children, parents and teachers about RF and RHD	4
Build the capacity of health professionals in the diagnosis, management and surveillance of sore throat, RF and RHD	6
Strengthening of local structures to enable the management of children through screening campaigns and referral to the health centres involved	7
Increase the attention of health authorities on the effectiveness of a prevention campaign on RF and RHD	9
Support the local cardiac surgery capacity	10
Supporting component – Community outreach activities	12

CHALLENGES AND ADAPTATIONS	13
COVID-19 lockdowns	13
Education	13
Provision of drugs to the medical centers	13

PROJECT PARTNERS	14
Donors	14
In-kind donations	14
Local partner in-kind support	14

APPENDIX 1: COLOURS TO SAVE HEARTS VIDEOS	15
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THANKS & ACKNOWLEDGEMENTS

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Our Donors: La République et canton de Genève, Direct Relief, Fondation Le Petit Cœur, Edwards Lifesciences Foundation, The Heart Fund, Polar and Mended Hearts.

Our team in Mozambique led by Professor Ana Mocumbi, who has worked tirelessly to launch successfully CTSH despite COVID-19, recognizing our three core team members, Keila Jamal (Project Coordinator), Khelvon de Araujo (Communication and CEI officer) and Rolando Jive (Medical Officer).

The WHF team who leads and supports the project from the WHF headquarters in Geneva and in particular Céline Schulz, Emmanuel Chevron as well as Kate Ralston, who launched and designed the very first pilot project in 2019.

And finally, the WHF leadership who has supported and encouraged the development of CTSH, in particular Professor Karen Sliwa (Past President), Professor Fausto Pinto (President) and Jean-Luc Eiselé (CEO).

COLOURS TO SAVE HEARTS

BACKGROUND

In 2019, thanks to a donation from the Edwards Lifesciences Foundation, WHF designed an **easy-to-print colouring book**. It is a fun, educational resource that allows children to play and learn about the links between sore throats, Rheumatic Fever (RF) and Rheumatic Heart Disease (RHD), and the damage these can cause to heart valves. It aims to instill the right reflexes in children, their parents and teachers when a child has a sore throat.

WHF conducted a pilot project in Mozambique in September 2019 in partnership with the Mozambique Institute for Health Education and Research (MIHER) where 1,100 children and 44 teachers were educated on RF and RHD. This project, linked to Health and Education (UN Sustainable Development Goals 3 & 4), attracted the attention of the Ministries of Health and Education, which were involved in setting up the pilot and field activities. Subsequently, the local authorities invited WHF to launch a larger scale programme in the country.

The real challenge in the pilot project was to provide the children with crayons, which turned out to be a rare and valuable item in Mozambique. The gift of colour crayons was also a great source of motivation for the children and teachers. The enthusiasm that the gift generated contributed to the success of the pilot, as children and teachers were certainly more attentive to the messages and information received. This helped to link the issue of health with education.

Based on the success of the pilot project, the WHF launched in April 2021 a large-scale prevention programme for RF and RHD, “Colours to Save Hearts”.

LAUNCH

Colours to Save Hearts (CTSH) was officially launched on 01 April 2021. It is led by WHF in partnership with the National Health Institute of Mozambique (Instituto Nacional de Saúde, INS) and implemented by the Mozambique Institute for Health Education and Research (MIHER).

In Mozambique, the Programme Director is Professor Ana Mocumbi – Head of the Non-Communicable Diseases (NCD) Division at INS and Vice-President of MIHER.

An MOU between WHF and MIHER was signed in April 2021 outlining the project and funding allocations for the implementation of the project. MIHER hosts the Colours to Save Hearts local office and employs our local team. Later in 2021, MIHER applied for WHF membership and became a WHF member of October 2021.



MAIN OBJECTIVE

To support the elimination of Rheumatic Fever and Rheumatic Heart Disease in Mozambique.

SPECIFIC OBJECTIVES

1. Increase awareness and knowledge of children, parents and teachers about RF and RHD

Health education (of teachers, students, and parents) for early detection and prevention of Strep infection and heart disease, reinforcing the existing school health program, as well as the extension of these educational activities to the neighbourhoods and community of the KaMavota District. Activities such as lectures, recreational games, meetings, distribution of information material, as mechanisms to reinforce the education activities to be developed in the school space.

Educate **60,000 children (30,000 per year)** on what to do if they experience sore throat symptoms

By educating the children, we will also indirectly reach their families with an estimated **200,000 people (100,000 per year)**

Train 600 schoolteachers (300 per year) in understanding, identifying, and managing suspected sore throats.

2. Build the capacity of health professionals in the diagnosis, management and surveillance of sore throat, RF and RHD

Training **50 health professionals (25 per year)** in the screening, diagnosis, management and monitoring of sore throat, RF and RHD

3. Strengthening of local structures to enable the management of children through screening campaigns and referral to the health centres involved

4,000 children are screened (2,000 per year)

Creation of a system of surveillance and reference of children from schools to health units, ensuring support in medicines for children detected with RHD

4. Increase the attention of health authorities on the effectiveness of a prevention campaign on RF and RHD

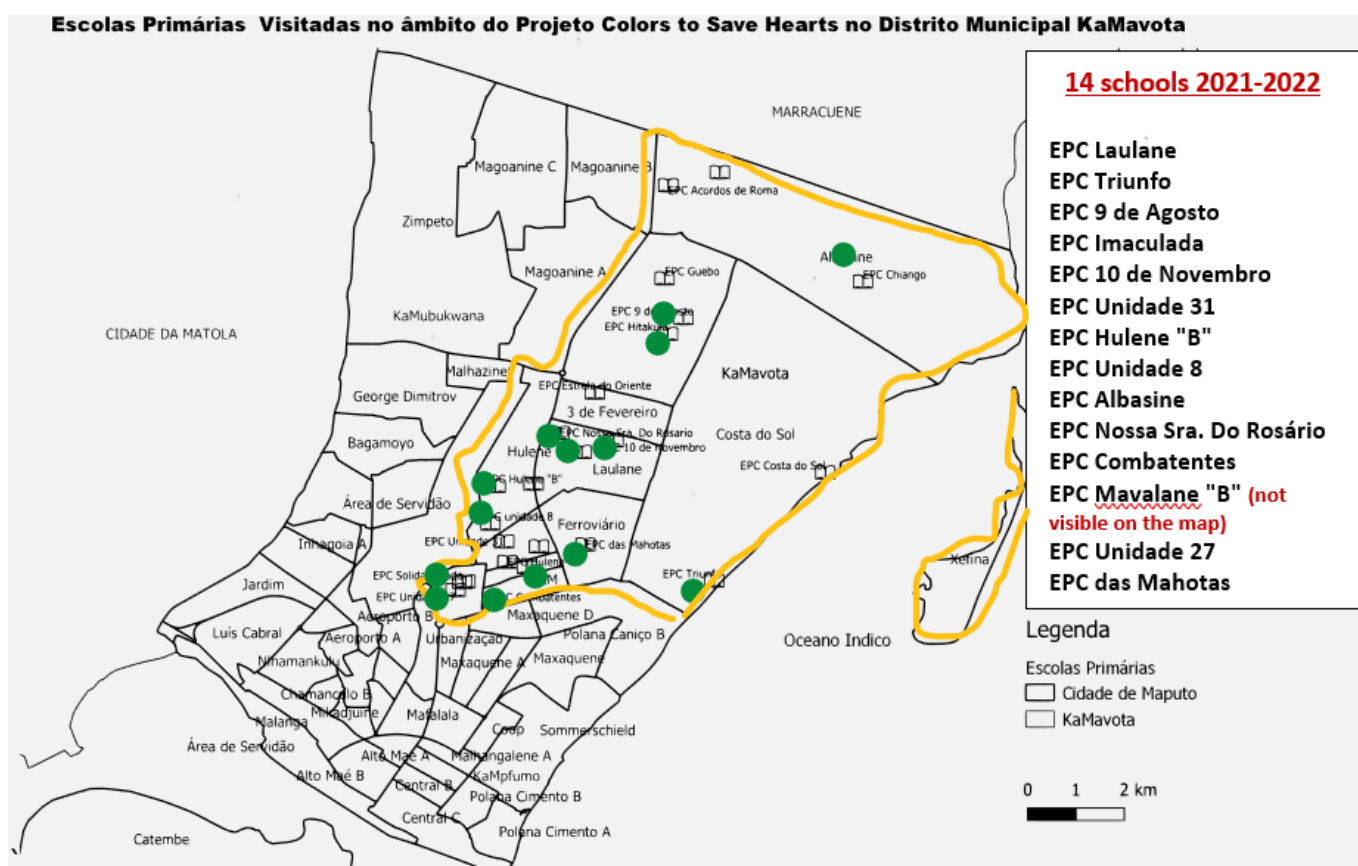
5. Support the local cardiac surgery capacity

Allocate 10% of all money fundraised to support heart valve surgeries (an estimated 3 patients per year).

ACTIVITIES

INCREASE AWARENESS AND KNOWLEDGE OF RF AND RHD AMONG CHILDREN, PARENTS AND TEACHERS

It is planned to roll out CTSH in 24 primary schools of the KaMavota district of Maputo. In the first year of operation, 14 schools have been reached.



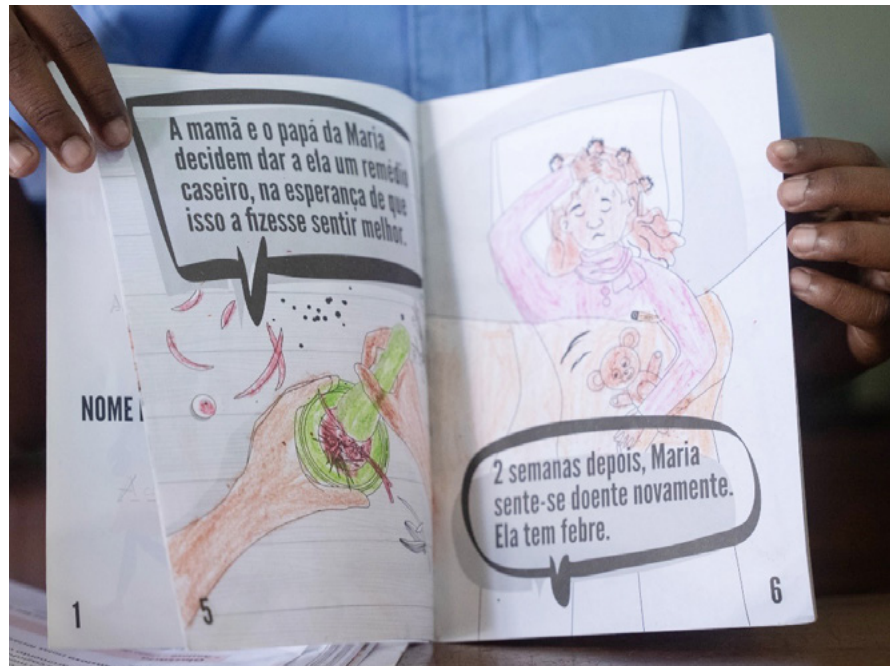
Colour crayons: 30,000 Colour Crayons boxes have been purchased. In addition, Edwards Lifesciences Europe conducted an employee engagement programme in October 2021, collecting Colours Pens for the project. An impressive 12,000 colour pens were collected.





Colouring Book:

The colouring book was revised, as planned, and translated into Portuguese. Initially we had planned to print in Mozambique, but local printing prices were prohibitive. WHF decided to print in South Africa and then ship to Mozambique.



Educational walls:

4 educational walls painted in 4 schools namely: EPC Laulane, EPC Triunfo, EPC 9 de Agosto, and EPC Imaculada. The remaining 20 walls in other schools are being painted in May and June 2022.



FIRST YEAR OUTCOMES:

School children educated:

21,181 which is 70.6% of the first-year objective. It should however be noted that, due to COVID-19, schools were closed almost three months between July and September 2021.

Schoolteachers trained:

481 which is 160% of the first-year objective. WHF trained the schoolteachers mainly between July and September 2021 when schools were closed.

Families reached:

~105,000 (21,181 x 5; >100%) including the additional component of the community and media outreach.

BUILD THE CAPACITY OF HEALTH PROFESSIONALS IN THE DIAGNOSIS, MANAGEMENT AND SURVEILLANCE OF SORE THROAT, RF AND RHD

Training of multidisciplinary teams on cardiac ultrasound

From 14 to 18 March 2022, 26 Health Professionals (annual objective of 25) were trained in abbreviated echocardiography. The course was organized by MIHER in partnership with the National Institute of Health (INS) and Eduardo Mondlane University (EMU).

SPECIALITY	NUMBERS	INSTITUTION
Dentist	1	INS
General Practitioner	14	11 INS/3 HGM
OB/GYN (obstetrician/gynaecologist)	5	HCM
Internist	1	HCM
Resident Paediatricians	2	HCM
Resident GYNOB	1	HGM
Maternal Health Nurses	2	HGJM
TOTAL	26	

Training of medical teams with digital stethoscopes provided by The Heart Fund

Eleven Health Professionals from INS were trained on the 18th of March. The digital auscultation component was facilitated by The Heart Fund (THF) through GRAM (Group for Research and Actions Against Cardiovascular Diseases) team to transfer technology and strengthen the project's local implementation capacity. INS was offered a portable ultrasound device, three digital stethoscopes and their phones, as well as 600 rapid antigen tests for detection of infection by group A streptococci.

GRAM is an Ivorian Coast based association who partners with The Heart Fund in Côte d'Ivoire on their core project "The Heart Mobile" with the ambition to implement in Mozambique as well.



STRENGTHENING OF LOCAL STRUCTURES TO ENABLE THE MANAGEMENT OF CHILDREN THROUGH SCREENING CAMPAIGNS AND REFERRAL TO THE HEALTH CENTRES INVOLVED



Echo performed on a school child in Maputo on 21 March 2022.

7

While initially two screenings campaigns were planned in the first year of the programme, only one could take place because of COVID19. The screening mission took place in March 2022 combined with the training activities described on pages 4 and 5.

A pilot was implemented to screen pharyngitis, fever and rheumatic heart disease using clinical evaluation, digital stethoscope (ED), abbreviated cardiac ultrasonography, and rapid tests for antigen detection of group A streptococci. The activity took place at the Triunfo Primary School, in KaMavota district, Maputo City from 21 to 24 March 2022, benefiting children aged 6-15 who attended between 1st and 6th grade. All participants had informed consent written provided by the guardian, and verbal assent provided by the students themselves. The screening activity was completed the last week of April by the INS team.

This activity aimed to evaluate the feasibility of a project to monitor the prevalence of fever/RHD using clinical criteria (cardiovascular and oral cavity clinical examination supported by digital stethoscopes), rapid tests for detection of streptococcal infection and abbreviated cardiac ultrasonography performed by non-

specialists. Data on demographic characteristics, level of education, previous medical history, status of the oral cavity and frequency of tooth brushing were also collected.

This activity aimed at supporting hospital- and school-based research to:

- a. Determine the prevalence of oropharyngeal and cutaneous infection by group A streptococcus**
- b. Measure of the prevalence of RHD using WHF standardized echocardiographic criteria**
- c. Establish a register of RF and RHD in the local health facilities**
- d. Determine the incidence of RF**
- e. Assess the occurrence of oral disease in schoolchildren (a risk for complication in RHD patients).**



OUTCOMES: 989 children screened

402 echoes performed

- 1 ventricular septal defect
- 23 mild mitral insufficiency
- 81 mild tricuspid regurgitation

125 strep tests: 6 positives
in total (4.8%)

389 dental cavities

989



INCREASE THE ATTENTION OF HEALTH AUTHORITIES ON THE EFFECTIVENESS OF A PREVENTION CAMPAIGN ON RF AND RHD

In March 2022, a WHF team visited Mozambique to assess the implementation of the program with the local team. The team included WHF President, Professor Fausto Pinto and Jean-Luc Eiselé, WHF CEO. This was the opportunity to meet with the local authorities and promote Colours to Save Hearts.

A series of meetings took place which included:

Meeting with the **KaMavota District Ministry of Education Representative** (District Director), Ms. Coleta Simango, to gain her feedback (positive) on the programme and understand her perspective on its potential integration into the existing school health programme.

Meeting with the **Director of National Health Service of the Ministry of Health (MISAU)** - Dr Luísa Panguene to promote CTSH and advocate towards the prioritization of RHD in the MISAU policy and practice.

Meeting with the **National Director of the School Health and Nutrition Programme of the Ministry of Education and Human**

Development, Dr Arlinda Chaquise, in the presence of the Head of the School Health Programme of MISAU, Dr Albertina Manhendje, to discuss the challenges for the integration of this activity in the school health program and the opportunities for its future expansion to other areas of the country.

Meeting with **National Director of Communication and Education at INS** to have insights on the local communication strategies to promote the project.

Meeting with the **Swiss Embassy, chargée d'affaires Ms Laila Sheikh Rüttiman**, to introduce Colours to Save Hearts. The Swiss Embassy has expressed interest in supporting financially an expansion of Colours to Save Hearts in the north of the county, Nampula Region, in 2023.

President of MIHER, Professor Alcido Nguenha and WHF President, Professor Fausto Pinto held a press conference on 25 March 2022. The press conference was aired on national TV that day reaching millions in Mozambique and further helped raising awareness on RHD.



SUPPORT THE LOCAL CARDIAC SURGERY CAPACITY



To increase the local capacity to respond with cardiac surgery for those with advanced RHD, the WHF has partnered with ICOR (the Heart Institute) in Maputo. The program had originally planned support to the Hospital Central de Maputo, the largest referral hospital in the public health sector in Mozambique. However, due to COVID-19 restrictions, this referral health facility had not yet started its surgical programme supported by the Cardiac Societies International Alliance.

ICOR was founded in 2001 and has the mission to give Mozambican cardiac children from the most disadvantaged sections of the population access to heart surgery and cardiac catheterization, often unaffordable to their families. Its mission is also to make Mozambique self-sufficient in clinical cardiology, interventional cardiology, and cardiac surgery techniques, by contributing to the training of Mozambican medical and paramedical personnel in these areas.

10

In addition to providing free of charge surgeries to underserves children and young adults, ICOR also provides accommodation to the families of patients who come from parts of the country with no surgical capacity.

WHF had committed to donate 10% of all money fundraised to support heart valve surgeries. Hence, WHF was very proud to

donate USD 46,000 to ICOR in March 2022. In addition, the Edwards Lifesciences Foundation donated medical equipment valued at USD 104,000. As a result of this support, to date (June 2022) **20 underserved patients** have been able to benefit from this in-cash and in-kind donation and an addition **26 underserved patients** will get surgery.



Professor Beatriz Ferreira, Founder & General Manager of ICOR, with the Edwards donated materials





16-year-old rheumatic heart disease patient at ICOR just before going through surgery



Heart valve replacement surgery at ICOR on 23 March 2022

SUPPORTING COMPONENT – COMMUNITY OUTREACH ACTIVITIES

An additional component was added to the project in response to COVID-19 lockdowns (from March to December 2021), mobility restrictions and reduction of time spent by children at schools (March 2021 until today).

Educational activities as originally planned could not take place in the schools, and to replace them community outreach activities were developed and implemented in the areas adjacent to schools, where most students reside (see next chapter: Challenges and Adaptations). The aim was to deliver education to children outside the school and to support the objective of reaching out to families.

For these outreach activities the team was supported by a group of trained RHD patients – acting as activists, patient ambassadors or peer-supporters for education – who provided information to the communities surrounding the schools, transmitting educational messages, and fostering discussions through door-to-door visits to households as well as informal face-to-face meetings in markets, public squares, and bus stations. The table below shows the results of the activities that were conducted in the first year of the project.

ACTIVITY	Quantity	People reached
Local Community Open Meetings (all community members)	4	1,061
Leaflets distributed	100	100
Wall Posters in Government Institutions	5	150
Lectured households (door-to-door)	144	720
RHD Talks at Administration (leadership/authorities)	4	72
Community-Based Organizations identified for partnership*	4	NA

*NGOs Kandlela, Aldeia S.O.S & Mass media – TVM national television, RM national radio



Community outreach activity led by an RHD ambassador

CHALLENGES AND ADAPTATIONS



Stakeholders' meeting for conversion of the training strategy and training-of-trainers

13

COVID-19 LOCKDOWNS

The school year in Mozambique starts in February and finishes in November. Since March 2020 until today, due to restrictions to meetings and the need for social distancing, the teaching schedule was changed to accommodate the need to reduce the number of children in the classrooms at once. To respond to the circulation of the COVID-19 delta variant all schools were closed in Mozambique from July to mid-September 2021. This full lockdown affected the project and delayed our ability to educate the targeted number of children for the first year (30'000) and delayed until March 2022 the first screening campaign and the WHF's team visit to Maputo.

EDUCATION

The initial project approach was based on **educational sessions delivered by two educators** that would go to schools to meet with the children. Due to COVID-19 crisis and because remote learning was impossible for most of the children, the educational program had fallen behind (due to less days of school and less time each day to accommodate the high numbers of children per classroom). Thus, the authorization initially granted by National, Provincial and District authorities to the local team to work in the schools was overturned. The local CTSH team engaged with authorities to convert the additional RF/RHD educational sessions delivered by the project educators into lectures delivered by the schoolteachers at different times during one or two weeks.

A **new education protocol** was therefore proposed by the local team. To put it in place, the team designed a "training-of-trainers" course for schoolteachers, which was a more in-depth training activity than initially planned. New training materials were developed to support the schoolteachers in delivering the educational sessions; these were distributed to the schoolteachers, supervision of the initial sessions was ensured by the INS team, and channels for communication between the schoolteachers and the CTSH team were created. This new education protocol has turned out to be a blessing in disguise. Schoolteachers have been very engaged in this new activity and are very motivated to continue this education beyond 2023. Additionally, a **training course for peer-educators** for people living with RHD (PLRHD) was designed were brought on board to meet with the children, communities, and their families outside of school hours.

PROVISION OF DRUGS TO THE MEDICAL CENTERS

Direct Relief, WHF Member, was planning to provide drugs and medical equipment to our partner medical centres. The plan was to assess the needs during the field visit in March 2022 that Direct Relief had planned to join.

Unfortunately, the Ukraine crisis has shifted Direct Relief priorities and they were unable to join the trip to Maputo in March 2022. WHF is assessing other solutions to provide drugs to the clinics.

PROJECT PARTNERS

DONORS

The following organizations have supported financially Colours to Save Hearts:



IN-KIND DONATIONS

WHF Member The Heart Fund (THF) is an operational partner of CTSH.

THF donated equipment (one portable ultrasound machine and three digital stethoscopes) and 600 rapid strep antigen tests to support the school-based screening. THF also mobilized a team of five cardiologists to Mozambique in March 2022: two were involved in the training of the local team to the use of the equipment and three were involved in the screening campaign in one school.

The **Edwards Lifesciences Foundation** has donated medical materials (Heart Valves) to ICOR in Maputo.

Colours pens that have been collected by **Edwards Lifesciences Europe** employees in October 2021, an initiative led by **Edwards Next Gen** which allowed the collection of 12,000 colour pens.

The **Swiss Embassy in Maputo** hosted a Colours to Save Hearts reception on 24 March 2022 which included 30 guests (project members and local stakeholders).

14



Training on cardiac ultrasound led by INS included distribution of manuals and stethoscopes

LOCAL PARTNER IN-KIND SUPPORT

The Mozambique National Health Institute (INS) has supported the project through the allocation of key personnel to design, implement and monitor important aspects of the programme. This support has been in the form of time-effort from one cardiologist, six researchers from the Division of Non-Communicable Diseases and two members of the National Direction of Communication and Information. Additionally, the leadership of the institution has supported the liaisons to health and education government authorities.

The INS team has developed/led i) **Orientation workshops** with health professionals from the three major first referral hospitals in Mozambique; ii) **Training material for training of health workers**: Manual de Febre Reumática e Cardiopatia Reumática (Training Manuals for Health Professionals on the Diagnosis and Management of RF/RHD) and Guião de Manejo de Febre e Cardiopatia Reumática (Clinical Protocols for the Management of RF/RHD); these are at final stages of edition for printing; iii) **Distribution of 25 stethoscopes (Litmann®)** to doctors and nurses who were trained to support diagnosis during screening campaigns and management of those presenting at Health Centres.

APPENDIX 1:

COLOURS TO SAVE HEARTS VIDEOS



In March 2022, WHF Communication Director and a cameraman joined the site inspection in Maputo and shot several videos. These videos are now used to communicate and fundraise for Colours to Save Hearts and support our national and global advocacy efforts.

Raising awareness of RHD with colouring books



Interview with Professor René Prêtre President of Fondation “Le Petit Coeur” Paediatric Cardiac Surgeon, Head of the Cardiac Surgery. Department of the CHUV



What is Colours to Save Hearts? WHF President, Professor Fausto Pinto



Interview with Professor Ana Olga Mocumbi Programme Director Colours to Save Hearts



Colours to Save Hearts: Raising Awareness of RHD



The Beat of Change: Celia's Story





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