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*The Virtual Doctors is the UK’s leading primary health care International Telemedicine Charity and the largest charitable telemedicine provider in Zambia. Following a small pilot, we are about to expand our service across Malawi. The organisation’s principal aim is to improve primary healthcare and prevent unnecessary referrals to hospitals. Using a Smartphone App, the service connects isolated health centres in rural Zambia with volunteer doctors, based predominantly in the UK.*

## Introduction

In our last update we reported some good progress during the first six months of 2021. YOUR support has enabled the organisation to move forward considerably. We are energised and very excited for the future as we continue to transition our service to an institutionalised service in Zambia and look forward to the further expansion of our service in Malawi. Your personal or organisational support has made, and will continue to make, a significant difference to our work. The following report shares some of the developments over the past six months and sets out some of the exciting things ahead.

## Update on our Operations

We continue to support **233** health facilities across **37** Districts in Zambia and six health facilities in Malawi with our telemedicine service covering a population catchment area of 3.5 million people. The service connects clinical officers (COs) faced with complex cases with over **240 volunteer Doctors**, most of them UK based, who support them with diagnosis and treatment advice for their patients. This leads to more patients being treated in their own communities, **a reduction in referrals** to distant and hard to reach hospitals and improvement in the **skills and knowledge** of clinical officers. This means that the next time a complex case presents, they can deal with it on their own.

Over **10,000 patient cases** have been handled by our volunteer doctors, many of them **life changing** for the patients. The work of the Virtual Doctors continues to drive the narrative around telemedicine in Zambia most significantly in support of the improvement of primary health care for rural communities.

Our team in Lusaka have been working very closely with the district health directors (DHDs) and clinical care offices (CCOs) of each district we work with in the process of **change management** to ensure they take on more responsibility for the operational oversight of the Virtual Doctors service in their Districts as well as training new COs onto the Virtual Doctors telemedicine platform. The team monitor the number of cases and the number of COs consulting on the platform weekly. They share the monthly performance data of each District with the DHDs and CCOs keeping them up to date with the overall **impact of the Virtual Doctors** service in their Districts and where usage of the service is low for example. They can follow up with their COs to understand and address any issues. Technical issues are passed onto the team in Lusaka to address and the team continue to run a clinical officer and CCO support WhatsApp group for both tech troubleshooting and solidarity building and sharing of non-case specific medical discussions.

## Healthcare show and tell sessions (HCST)

The HCST sessions ran until the end of October. We had a 60% turnout rate of COs taking part as well as several CCOs. This is a platform (via Zoom) for clinical officers to showcase their referrals, interact and share their knowledge with colleagues from other districts across the country as well as benefitting from feedback from their peers and volunteer Doctors from Zambia and the UK. The Lusaka team hosted **13 successful shows** and plan to start them again in January next year.

CO and CCO feedback included the following:

- Participants look forward to the HCST because gives them an **opportunity to learn** beyond their telemedicine consultations with doctors on how to **better manage cases**. Since users don't have access to each other's cases (that are consulted on via the telemedicine app), the HCST session helps them to see and learn about the conditions their peers are handling in other districts.
- Some of the cases presented are very complex and new to the clinicians. The HCST sessions gives them enough to be able **handle such cases** when they are confronted with them.
- It was during a case presentation about a breast abscess that clinicians learnt that they could use locally sourced honey to clean the wound because It has great antiseptic properties and **promotes healing**.
- The HCST was also an opportunity for the team to encourage users to make better use of the telemedicine service for early treatment and diagnosis of **complex patient conditions**.

## Tech update

Our volunteer tech development team has been working – harder than ever – in preparation for the **handover to the Zambian MoH**, more specifically to engineer the telemedicine app to be available via Google Play so that COs can download it on their personal devices. The team carried out a survey of the ownership of smartphones by COs with 90% of respondents stating they owned a smartphone. If we can achieve a shift from the provision of smartphones devices to providing the telemedicine app directly to COs own devices for future expansion it will not only save us considerable costs and logistical challenges of maintaining and replacing faulty devices, but it will allow **considerable scaling up of the service**.

## Monitoring & Evaluation

In 2020 the Chalker Foundation for Africa kindly provided the finance for the VDr's to conduct a professional and comprehensive Monitoring and Evaluation (M&E) study of the service.

The Impact Evaluation was developed to assess the extent to which the VDr's service was **Relevant, Effective, Efficient, Impactful, and Sustainable**.

Study Populations included Primary and Secondary Beneficiaries. Front line health care workers (FHCW) were the top recipients of the evaluation, and these included DHDs, CCOs, COs, and nurses. Patients were also Interviewed.

### Programme Relevance

Overall, the study found the Virtual Doctors (VDr's) service to be **extremely relevant to humanity's needs**, particularly in improving human health. The service was deemed well-aligned with national and global instruments on E-Health, inequality reduction, and high-quality Primary Health Care (PHC) services. Due to its mandate of providing quality health care in rural communities, the **VDr's' importance cannot be overstated**, given that Sub-Sahara African countries struggle to implement policies and legislative frameworks aimed at improving PHC quality, as evidenced by the 2014 Zambia public health sector profile, which states that only 50% of public health facilities have qualified personnel in Zambia. The common occurrence of a lack of diagnostic equipment, qualified staff, and technology underscores the need for programme implementation in Sub-Saharan Africa.

### Programme Demand

There is sufficient demand for the VDr's service, according to nearly all the respondents. Non-participating Health Care Workers (HCWs) inquired (the bulk of which were not recorded) about joining the service, indicating a **high level of interest**. Further, nearly all the respondents feel other governments other than Zambia and Malawi should adopt the VDr's programme, there by demonstrating the services usefulness once again. The number of community members who used the service in the year 2020 alone demonstrated demand. In the period under evaluation, the programme assisted 2,977 community members. It is reasonable to assume that the same number of community members (including their dependents) would suffer from ill health or worse if the service were to be terminated.

### Programme Effectiveness

At least 93 percent of HCWs have improved their ability to diagnose difficult and chronic cases through interaction with VDr's service, therefore showing effectiveness in this sector. Furthermore, results show that 92 percent of HCWs consulted on the initiative, leading to the treatment of complex chronic conditions for approximately 2,918 community members. Evaluation results further show that roughly **851 referrals to distant hospitals were prevented** (in the visited locations only, otherwise the figure is greater at the programme level). The study concludes that the initiative is on track to mainstream telemedicine into the Ministry of Health (MoH), having been implemented in over 233 sites across Zambia and 6 in Malawi.

### Programme Impact

The service's impact has been positive. At least 91 percent of HCWs believe the program has **aided in the provision of high-quality Health Care in Zambia and Malawi**. The impact was measured in terms of the number of successful consultations, client satisfaction, and averted health care costs. Based on successful consultations, a 100% impact was realized. From the perspective of the HCWs, all consultations were successful.

Nevertheless, it was up to the community members to follow the supplied advice and obtain the essential medication, which proved to be difficult in most cases. Furthermore, 100% of the patients were satisfied with the healthcare advice they received. They stated that they had been able to save resources by avoiding being referred and traveling vast distances to the hospital. HCWs **gained expertise in diagnosing complex chronic situations**, in addition to being satisfied that they had assisted their patients. Several situations were highlighted as some of the cases that HCWs have learned to diagnose, including general medicine, neurology, gynaecology, and paediatrics,' among others.

The Ministry of Health defined satisfaction as the ability to reduce referral cases to the district hospital, which they asserted was being accomplished. 'We (the district hospital) used to receive **50 to 100 referrals every week**, putting a strain on our staff and requiring a lot of resources, which have now been **reduced to less than 10 thanks to the VDr's program**', stated the Katete district CCO in Zambia. This comment from the Katete CCO demonstrates the program's importance, which cannot be emphasized enough.

### Programme Sustainability

The service is in the process of **reinforcing its sustainability** in its current operating countries. The evaluation highlighted how some actions were implemented, especially just before the period under investigation. These included holding meetings with the MoH & HQ to advocate for the programme. The VDr's board of directors' sustainability aspiration is to have the programme integrated into the mainstream MoH of Sub-Saharan African nations.

Likewise, stakeholders' opinion of the programme's integration into the mainstream MoH in Zambia was 100% positive. Their rationale included the fact that the MoH is promoting E-Health through its E-Health strategy. The government's willingness to integrate Telemedicine technologies is evidenced by the integration of other programmes such as the University Teaching Hospitals ECHO health system.

### Conclusions

The initiative VDr's service is making a significant contribution to **providing quality PHC, reducing referrals, and reducing isolation** in Zambia and Malawi. Overall, the study found that the VDr's program is relevant, efficient, and effective, and that it has had a **positive impact on the lives of HCWs, patients, and the Zambian and Malawian governments**. While efforts to mainstream the program have begun, more work is needed in terms of advocacy and extension into other sectors. The study also noted areas of improvement for the service. Turnaround time of case consultations, being in constant contact with the MoH, replacement of users' devices when they become faulty, and consolidation of governance manuals are some of the areas where the service needs improvement.

### Medical Team

We have welcomed **34 new medical volunteers** into our ranks since the beginning of the year. As of November 2021, patient cases from Zambia and Malawi are now handled by more than **240 volunteer doctors** across the UK, covering **25 medical specialities**.

More than ever, we want to thank our volunteer doctors for their indefatigable support at an unprecedentedly challenging time for the NHS. They are the backbone of our **free telemedicine service**; we could not bring it to rural communities without them.

Two final year Cambridge University **medical students** have been taking their **electives** with us. In a normal year, final year medical students often take up the opportunity to travel abroad for their electives, which has not been possible under current Covid travel restriction. Our Medical Governance team focused their electives on supporting our **research and education projects for Zambia and Malawi**.

One of the students, Moe Takenoshita, embarked on a research project on infectious diseases mentored by Dr Graziella Quattrocchi from our Medical Governance team & Dr David Hettle an infectious disease consultant and a VDr's volunteer doctor. Moe's paper is on antimicrobial resistance (AMR) and is titled: 'Antibiotic prescribing practices in primary healthcare in sub-Saharan Africa: A systematic review and our experience on the use of telemedicine in Zambia'. The paper has been accepted by the **British Society for Antimicrobial Chemotherapy** and was presented at their annual conference in London on December 10<sup>th</sup>. The team also hope to publish the paper in a medical journal or similar.

Finally, don't miss this insightful account for doctors.net.uk, by volunteer Doctor Dr Kerry Greenan, of how the pandemic cut short her volunteering placement in Zambia but led her to join the ranks of our virtual doctors instead!

### Some challenges we have faced

Our resolve has been tested but remains undaunted. However, some issues have been beyond our control:

- Concerns around **Covid in Malawi** set back considerably the expansion of our service in Malawi. We had planned to commence expansion into 56 health facilities in the Central Province of Malawi this year, however, this will now be commencing in early 2022.



- A **shortfall in income** meant that we had to make the very difficult decision to lay off several staff in the UK and Zambia. We are a very small team, losing staff to save costs is always the last resort but was necessary to protect our remaining reserves to ensure we could continue to provide our service in Zambia and Malawi.
- We had planned field visits to all the health facilities we support in Zambia, however, these were put on hold as **Covid infection rates increased in Zambia** and our Zambia board took the decision to restrict staff travel outside of Lusaka until infection rates dropped in keeping with Zambian government guidelines.

### Spotlight

Musampi Zulu, registered Nurse at Kabunda Rural Health Centre in Mansa District, Luapula province.

Musampi has been using the Virtual doctors service since November 2020, when asked about her experience with the VDr's, this is what she had to say...

*"I remember seeking consultation on this platform on how to manage a patient who came in with pus discharge from the nose which was foul smelling. Previously the patient was put on various medication which included antifungals and both oral and intravenous antibiotics, despite being on that treatment regime, the patient's condition did not improve. But after consulting the Virtual Doctors platform I was advised to start the patient on doxycycline which was to be given 100 mg once a day for 6-weeks and to do nasal washout with normal saline or salty water. After using those recommendations from this platform, the patient is now fine. Thanks to Virtual Doctors platform for the help."*



Purity Wambinji, Clinical Nurse at Golden Valley Rural Health Centre in Chibombo District, Central province.

Purity has been in the service for 4 years and a VDr's beneficiary since March 2020. She is currently working in all departments at her facility such as OPD and MCH because she's alone. When asked about the importance of the service and her experience consulting on it, this is what she said...

*"The virtual doctors services helps me to gain more knowledge and understanding on how to manage conditions that I have little or no knowledge about, especially that I am alone at my facility, indeed the service is important, I remember seeking consultation on how to manage a patient who came with complaints of foul vaginal discharge which was long standing, gravindex was negative and she had used several antifungal medications before but not responding to treatment, after consulting from the VDr's I was guided on how to manage the condition and type of counselling to give the patient, after following the advice I was given, the patient is now completely fine. I am appreciating the VDr's for the selfless support that they are offering to us health providers and the Zambian Community at large".*

Joel Buleya, Registered Nurse at Luili Rural Health Centre in Mumbwa District, Central Province.

Joel has been using the Virtual doctors service since February 2020, when asked about his experience with the VDr's, this is what he had to say..." *A few months ago, I had an opportunity to attend to a patient who had male urethral discharge for a long period of time, and I had to give him some antibiotics. but the problem couldn't resolve. So, I had to consult from the Virtual Doctors platform and I was advised to put the patient on triple therapy and ceftriaxone injection, later on I had an opportunity to review the patient and he was completely healed... thanks a lot to the Virtual Doctors for the wonderful responses they have been giving on the platform."*



## Finally – from our Chair

I'm pleased to let you know that 2021 has been our biggest impact year ever as a charity thanks to you our donors, investors, volunteers, and our team led by Huw Jones your CEO and Founder.

With the backdrop of COVID travel restrictions, changing of governments in the countries in which we work in Africa and climate change impacting human health in our clinics the team have done an amazing job on your behalf. It's a good job we are the Virtual Doctors!

Together we have improved the health of over 3,200 patients attending rural clinics in Zambia and Malawi this year, up over 20% on 2020 numbers. This is our bread and butter and great to see our growth in impact this year.

The stories of our NHS volunteers working together with Clinical Officers always puts our essential service and its impact in perspective. On my mind when we are working through the day to day are families whose lives could have changed because of historically un-treated chronic conditions, snake bites, burns and complications in childbirth but didn't because of our volunteer's work.

Our doctor volunteers, many of them working in the NHS, have grown to 240 across the UK up from 191 in 2020. It continually amazes me that these professionals can finish their busy shifts in UK hospitals & GP surgeries then consult on cases via our Virtual Doctors telemedicine app to provide their advice and expertise to front line health workers in Africa. We are the biggest exporter of NHS knowledge and expertise out of the UK through our amazing volunteers. A massive thank you to Dr Daniel Grace and team who keep this wonderful volunteer workforce motivated, looked after, and growing in strength.

Thanks to you we have generated an income of £470k in 2021 which includes securing a major investment from Johnson & Johnson's Citizenship Foundation to accelerate our work in 2022 - 2024 in Malawian Health Centres. We work very hard to ensure that everything that you invest in us makes a difference to real people's lives in rural Africa.

In 2021 we also secured funding from the Chalker Foundation for Africa to carry out a comprehensive evaluation of our service. This enabled us to ask our beneficiaries, clinical officers across Zambia and Malawi and the ministries of health, how we were doing in supporting them with patient cases & improving primary health care. The clear message came back that enhancing their knowledge with doctors' knowledge in a timely manner on specific complex cases was key & we also know we have some adjustments to do on our processes and technologies to improve the service going forward.

So where are we heading in 2022? For sure is our Malawi expansion thanks to our funding partner Johnson & Johnson to improve the lives of 15,000 people over 3 years. We also have a number of provisional discussions ahead of us including with other countries such as Uganda, supporting refugee camps around the world as a support service after organisations like the Medicines Sans Frontiers have done their job and bringing our technology from Africa to benefit the NHS. But that's for another newsletter.

On behalf of the Board and team at Virtual Doctors I would like to wish you and yours a very Happy Holiday in December and thank you so much for your support in 2021. Here's to a very opportunistic 2022 ahead of us.

Graham

Graham Precey, Chair, the Virtual Doctors

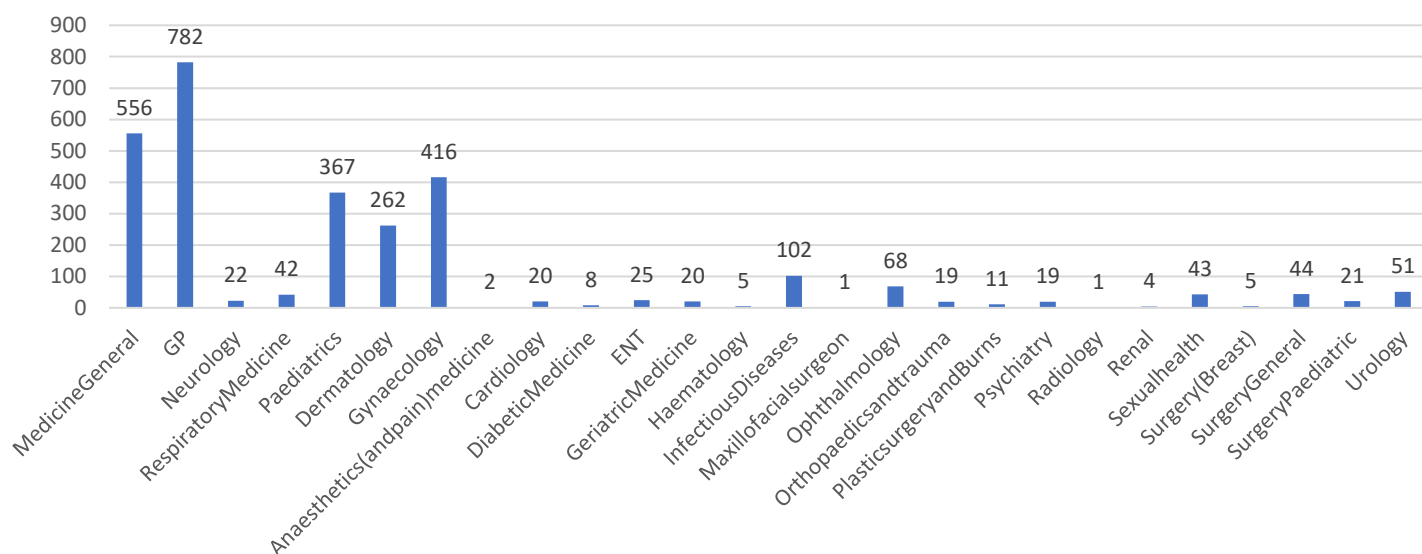
We hope you find this Report inspiring and if you do, we ask you to help us raise awareness by sharing with others: follow us on Twitter, LinkedIn, Instagram, and Facebook.

Huw Jones - Executive Director

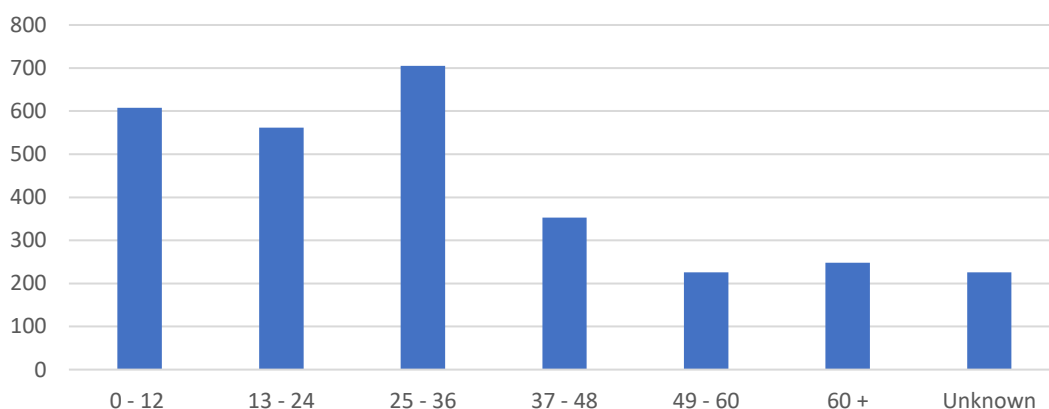
Graham Precey Chairman of Board of Trustees

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Doctor Speciality Total Year to Date



Age Range Total Year to Date



HIV % Total Year to Date

