

**Scottish Government International Development Programme  
End-Year Report**

<b>1. General project information</b>		
1.1	<b>Project reference Number</b>	MAL/18/04 - UoG
1.2	<b>Name of organisation</b>	University of Glasgow
1.3	<b>Lead partner(s) organisation</b>	University of Glasgow and University of Malawi College of Medicine
1.4	<b>Project title</b>	Towards a Dental School for Malawi – The MalDent Project
1.5	<b>Reporting period</b>	<b>From:</b> 01/04/2020 <b>To:</b> 31/03/2021
1.6	<b>Reporting year</b>	Year 3
1.7	<b>Project start date</b>	01/10/2018
1.8	<b>Project end date</b>	31/03/2023
1.9	<b>Total project budget*</b>	£3,892,424
1.10	<b>Total funding from Scottish Government*</b>	£1,312,424 (plus £25,300 in January 2020 as additional award for Phase 2 of refurbishment of Kamuzu Central Hospital Dental Department and £33,000 in August 2020 to support the procurement of digital devices to enable emergency on-line learning for College of Medicine students during the COVID-19 lock down)
1.11	<b>Provide a brief description of the project's aims, highlighting which of the Sustainable Development Goals (SDGs) your project is working towards? (200 words)</b>	<p><b>The aims of the project are threefold:</b></p> <ol style="list-style-type: none"> <li>1. To establish a successful Bachelor of Dental Surgery degree programme at the University of Malawi College of Medicine, to enable Malawi to train its own cadre of dental surgeons. This includes curriculum development, staffing strategy, support with delivery of teaching and the design of a building on the Blantyre campus which will accommodate dental student clinical instruction.</li> <li>2. To develop a national Oral Health Policy and Implementation Strategy for Malawi, through joint working between clinical academic staff in Scottish dental schools, the School of Public Health &amp; Family Medicine at the University of Malawi College of Medicine, WHO Africa and the Malawi Government Ministry of Health.</li> <li>3. To establish a programme for prevention of dental disease in children, based upon Scotland's Childsmile model. Development of the programme will be supported by an under-pinning research programme to evaluate models of delivery, with particular emphasis on supervised toothbrushing in schools. Following the appropriate proof of concept</li> </ol>

**Scottish Government International Development Programme  
End-Year Report**

	<p>work, the prevention programme will be integrated into the Oral Health Policy for Malawi.</p> <p>These aims address particularly the ‘<i>good health and well-being</i>’, ‘<i>quality education</i>’, ‘<i>reduced inequalities</i>’ and ‘<i>partnership for the goals</i>’ components of the Sustainable Development Goals.</p>
--	--

**2. Project progress and results**

*Please use this section to give an update on the progress the project has made during this reporting period.*

2.1	<p>Provide an update on the progress your project has made over the past 12 months. Use this space to update us on what has gone well and any challenges you have experienced, detailing how you have overcome these. (Max 500 words)</p> <p><b>i) Design of the new dental teaching facility / student hub on the Blantyre campus of the College of Medicine</b></p> <p>A consortium led by John McAslan + Partners was appointed to lead Stages 1 and 2 of the design. Multiple Zoom meetings and a visit by three members of the design team to Glasgow Dental School have taken place since June 2020. The accommodation schedule was finalised and a contract issued to a Malawian company to undertake a geophysical examination of the proposed site – now completed.</p> <p>At the Zoom meeting on Wednesday 9th September 2020, the Design Team presented the work completed for Stage 1 of the design process. A recording of the Zoom meeting was used by the Principal of the College of Medicine to run an information session in Blantyre with his senior staff and local stakeholders, allowing feedback to the architects. Work on Stage 2 then commenced with some involvement of a Malawian architecture practice (MOD Architects), based in Blantyre. MOD Architect’s knowledge of the campus site, gained during previous projects, has been very valuable to John McAslan + Partners. The draft Stage 2 report was presented via Zoom on 6<sup>th</sup> January 2021 and the completed report was forwarded on 9<sup>th</sup> February 2021. Final work to support application for a building warrant and bids to external sponsors for construction costs will be undertaken during April – June 2021.</p> <p>A University of Dundee dental student, who has been undertaking an intercalated BMedSc in Global Health during the 2020/2021 academic session, is completing a case study of this work stream as the subject of her degree dissertation.</p> <p><b>ii) PhD studentship - development of a national caries prevention programme for children</b></p> <p>The PhD studentship, which is jointly funded by the SGID MaIDent Project and the Borrow Foundation, is now underway and good progress is being made. Based in Malawi, the student is jointly supervised by Professors of Public Health</p>
-----	---

## Scottish Government International Development Programme End-Year Report

and Dental Public Health at the College of Medicine and University of Glasgow respectively. The work focuses on developing a dental caries prevention programme for children in Malawi. Currently, the student is undertaking a detailed situation analysis and literature review. He is a member of the Oral Health Policy Task Force (see below). We are about to commence planning of a national Child Oral Health Survey which we hope to undertake in early 2022, COVID-19 permitting.

### **iii) Taskforce to establish a National Oral Health Policy for Malawi**

The first meeting of the Task Force, chaired by the Deputy Director of Clinical Services at the Ministry of Health & Population, took place on 27<sup>th</sup> August 2020 via Zoom. Since then, work has progressed via twice monthly minuted Zoom meetings of the taskforce (15 meetings now completed).

A senior official from the Planning and Policy Development Department in the Ministry has ensured that we follow the steps prescribed by the Malawi Government for policy development. A **Concept Note**, based upon the content and outcomes of the National Oral Health Policy Workshop, held in February 2020 in Lilongwe, has been prepared together with a detailed **Narrative Review** on oral health in Africa. In March 2021 we completed the drafting of a comprehensive **Situation Analysis**, incorporating data from a wide variety of sources and based upon a template provided by the Community Oral Health Research Unit at the University of Glasgow. These three documents, supported by a PowerPoint slide deck, were then presented to the Ministry of Health Essential Health Package Technical Working Group, which approved them and recommended moving to the final stage of policy writing. We aim to complete the policy writing process by the end of June 2021. The policy development process includes production of an Implementation Plan.

A dentist from Zimbabwe, funded by the Beit Trust, who is completing a Masters degree in Global Health at the University of Glasgow during the 2020/2021 academic session, is completing a case study of this work stream as the subject of her dissertation.

### **iv) First on-line 'Flying Faculty' week**

The 'Flying Faculty' teaching that was originally scheduled to be delivered in country in March 2020, but was cancelled in light of COVID-19, was delivered successfully on-line during the week beginning 1<sup>st</sup> February 2021. Three senior University of Glasgow staff provided on-line sessions covering communication skills, patient safety, aspects of paediatric dentistry, infection control, oral infections, antimicrobial drug use / abuse and antimicrobial stewardship. The sessions were well received. The digital devices that had been purchased by the College of Medicine with Scottish Government support facilitated the sessions (<https://themaldentproject.com/2021/02/07/successful-on-line-flying-faculty-delivery-of-introduction-to-dentistry-teaching/>).

**Scottish Government International Development Programme  
End-Year Report**

2.2

Has the focus or plans for delivery changed significantly during the last year? Please highlight what issues or challenges prompted this change and how you anticipate any changes in focus will impact on the previously agreed outcomes (Max 500 words)

The focus of the project has not changed at all during the past year. Establishing and supporting the new BDS programme at the College of Medicine, together with development of a national Oral Health Policy and Implementation Plan with the Ministry of Health & Population (MoHP), remain the two over-arching aims. The importance of prevention of oral and dental diseases is a core philosophy running through both streams of work. However, two additional components, in addition to the original aims of the MalDent Project, have proved both important and successful:

**Task-shifting emergency dentistry to Medical Assistants / development of digital learning resources for Malawian Dentists and Dental Therapists**

The success of the grant applications made by our partner charities Bridge2Aid (to THET) and Smileawi (to SGID) in the last year to fund the pilot training programme in emergency dentistry for Medical Assistants opened up another valuable contribution to workforce development. The 'task-shifting' model offers the potential to improve access to emergency dental care, particularly in rural areas, over a short timeframe. However, COVID-19 forced the cancellation of the pilot training programme scheduled for June 2020.

Subsequently, Smileawi was advised in the Autumn of 2020 that it should reconfigure the use of the Scottish Government Small Grant it had been awarded for this work, to allow spend by 31<sup>st</sup> March 2021. Through rapid working with Bridge2Aid, the Dental Association of Malawi, ProDental CPD and the MalDent Project, together with support from the Corra Foundation, this was achieved. The re-configured project produced 12 modules of dental education hosted on the ProDental CPD platform. Tablet computers have been purchased for 25 Malawian dental professionals, together with data bundles, and arrangements made for verifiable CPD credits to be awarded. This pilot project will be assessed and has significant potential for wider roll-out

(<https://smileawiblog.blogspot.com/2021/03/what-good-can-come-of-pandemic.html>).

**Refurbishment of the Kamuzu Central Hospital Dental Department, Lilongwe**

Phase 1 of this work stream, completed in May 2019 by two engineers from DentaId, a Henry Schein engineer and the Scottish MalDent Project Lead, was very successful and subsequently Phase 2 was planned.

The Scottish Project Lead and the DentaId team identified further items of donated dental equipment (particularly dental chairs and pre-clinical skills units) across the UK, which were collected and delivered to the DentaId HQ in Southampton for servicing and repair as necessary. Generous grants from Scottish Government International Development and the RCPSG HOPE Foundation supported purchase of a shipping container and will in due course fund the shipping and equipment installation costs. The installation was originally planned for June 2020, but has had

**Scottish Government International Development Programme  
End-Year Report**

	<p>to be postponed because of the COVID-19 situation. Current estimates are for this work to be completed in Spring 2022, COVID-19 restrictions permitting. Dentaid and Henry Schein have pledged continuing support.</p>
2.3	<p>Taking into consideration what you have achieved during the last 12 months, along with any challenges you have experienced, please highlight to us what lessons you have learned, and how these will be applied in the project in the future. (Max 500 words)</p> <p>Much has been achieved during Year 3 of the MalDent Project, despite the challenges of the COVID-19 pandemic.</p> <p>There have been some challenges in relation to changes to the Ministry of Health representation on the Oral Health Policy Task Force, following the last presidential election. The Deputy Director of Clinical Services, who was co-chair of the Task Force, left the Ministry, whilst the member from the Ministry of Health Policy Development Office was promoted to another role. However, replacement representatives have now been appointed by the Ministry, all of whom have proved equally enthusiastic and supportive of the oral health policy work-stream.</p> <p>Communication channels have been even more critical than usual during the past year. Perversely, the recognition by both the Malawian and Scottish teams that video-conferencing tools such as Zoom provide excellent platforms for discussion has probably resulted in more frequent 'face-to-face' interaction than in previous years. The use of 'WhatsApp' is very widespread among Malawian colleagues and we have been making extensive use of this social media tool, particularly for the policy work. This has required some adaptation by the Scottish team, but we are all now well used to WhatsApp as an adjunct to e-mail.</p> <p>Flexibility and lateral thinking have been essential ingredients of our joint response to the COVID-19 pandemic. This extends to our funders (e.g. Scottish Government support for re-profiling of 'Flying Faculty' budget to allow purchase of digital devices), College of Medicine and University of Glasgow staff, students, the Ministry of Health and charitable sector partners. The reconfiguration of the Scottish Government Small Grant to Smileawi, pivoting away from the cancelled task-shifting pilot to delivery of on-line teaching materials, is an excellent example of a flexible and nimble response.</p> <p>Regardless of COVID, the lessons we continue to learn include the importance of patience, good humour and a recognition of the individual skill sets of the different members of the team. The critical importance of the sequence of 'Listen, Respond, Partner' from both the Malawian and Scottish teams is constantly reinforced and has resulted in a relationship based squarely on trust.</p>

## Scottish Government International Development Programme End-Year Report

### 3. Partnerships and collaboration

*This section allows you to discuss how partnership working is progressing on the project, as well as wider collaboration and sharing of learning.*

3.1

Provide an update on how partnership working has gone in the past 12 months. Let us know about any highlights, challenges or changes to roles and responsibilities. (Max 350 words)

Partnership working has continued to be an essential component of this project. The close collaboration between the University of Malawi College of Medicine and the University of Glasgow is working extremely well. Shared experiences between the two organisations have been valuable in establishing on-line teaching and assessment at the College of Medicine.

Other examples include:

1. Very close working between the Ministry of Health & Population, the University of Malawi College of Medicine, WHO Africa and the University of Glasgow Dental School on the work to develop the Oral Health Policy. The Group is co-chaired by representatives from the Ministry and the University of Glasgow.
2. The design team (itself a partnership), led by John McAslan + Partners, has developed an excellent working relationship with the Malawian local architects and quantity surveyors, University of Malawi College of Medicine and the University of Glasgow.
3. The supervision of the PhD student based in Malawi by senior staff from both the University of Malawi College of Medicine and the University of Glasgow is working very well.
4. There is continuing joint working between the University of Glasgow, University of Malawi College of Medicine and Dental Association of Malawi with our charity partners, DentaId, Smileawi and Bridge2Aid.
5. The Borrow Foundation, which has provided \$75K to support the child caries prevention work, with a pledge of a further \$25K for a follow-up oral health conference at the College of Medicine once the work is complete, has proved an excellent partner. The Foundation has established a page on its official web-site which features the MalDent Project and their involvement in it.
6. Joint working between the MalDent Project and the Scottish Government funded Climate Justice Fund Water Futures Programme (CJF WFP) is resulting in some valuable research findings linked to fluoride in groundwater and dental fluorosis. This joint working will provide added value to the planned national child oral health survey and potentially inform some of the activities of the CJP WFP.

**Scottish Government International Development Programme  
End-Year Report**

3.2	<p>Have any Scotland-based staff visited the project in the past 12 months? Give details including key activities and outputs of these visits.</p> <p>As a result of the COVID-19 pandemic, no international visits to the project have been possible during this reporting period.</p>	
<b>Date of visit</b>	<b>Key achievements / outputs of visit</b>	<b>Follow-up actions</b>
Not applicable because of COVID-19 pandemic		
3.3	<p>Please tell us about any dissemination and learning throughout this reporting period. How have you promoted effective learning across the project? Please explain what processes you have used both internally and externally to share learning from the project so far, and how this learning is being used. (Max 500 words)</p>	
<p><b>MalDent blog and Twitter</b> The regular posts on our blog (1383 subscribers), which cover all significant activities and achievements in virtually real time, have been a very effective vehicle for dissemination of the project. This has resulted in some excellent new contacts internationally who have shared interests in a multi-sectoral approach to oral health and the Sustainable Development Goals in low and middle-income countries.</p> <p><b>Royal College of Physicians &amp; Surgeons of Glasgow Global Health Group.</b> A detailed progress report is provided by the Scottish Project Lead at all meetings of the GHG.</p> <p><b>Scottish Government ‘Contribution to international development report: 2019-2020’.</b> The MalDent Project was privileged to be included as a featured project in the COVID-19 section of this report from Scottish Government International Development <a href="https://www.gov.scot">International Development 2019-2020: contribution report - gov.scot (www.gov.scot)</a>.</p> <p>The project is to be presented as a case study in a forthcoming e-book called ‘<i>Oral Health Action. New Ways of Thinking, New ways of Working</i>’.</p> <p>The MalDent Project was featured as an exemplar in a publication from the International Dental Federation (FDI) entitled ‘<i>Vision 2030: Delivering Optimal Oral Health for All</i>’ (<a href="https://themaldentproject.com/2021/02/01/the-maldent-project-is-cited-in-a-recent-fdi-world-dental-federation-report/">https://themaldentproject.com/2021/02/01/the-maldent-project-is-cited-in-a-recent-fdi-world-dental-federation-report/</a>) .</p> <p>On 28<sup>th</sup> and 29<sup>th</sup> September we participated in a WHO Africa webinar on continuity of essential oral health care services during the COVID-19 pandemic and were specifically asked to include coverage of the MalDent Project (<a href="https://themaldentproject.com/2020/10/23/a-pot-pourri-of-recent-maldent-project-activities/">https://themaldentproject.com/2020/10/23/a-pot-pourri-of-recent-maldent-project-activities/</a>).</p>		

**Scottish Government International Development Programme  
End-Year Report**

	<p>On 17<sup>th</sup> and 18<sup>th</sup> November we participated in an international virtual conference entitled <i>Global Remote and Rural Healthcare - How Can We Do It Better?</i> We delivered a session with a radiation oncologist from the University of Toronto, on <i>Partnerships in Health Education</i> (<a href="https://themaldentproject.com/2020/12/27/the-maldent-project-presents-on-partnerships-in-health-education-at-bridge2aid-conference-global-remote-and-rural-healthcare/">https://themaldentproject.com/2020/12/27/the-maldent-project-presents-on-partnerships-in-health-education-at-bridge2aid-conference-global-remote-and-rural-healthcare/</a>).</p> <p>Henry Schein Dental is a significant commercial supporter of the MalDent Project. A short video piece was prepared for Henry Schein's Quarterly Global Management Meeting on 6 November 2020, which updated senior management on progress with the MalDent Project.</p> <p>The MalDent Project is a leading contributor to the <i>Zero Water Day Partnership</i>, which is engaging children in schools in 14 countries and dental students in 20 countries in joint project work based around the UN SDGs, climate change and sustainability. The project will be showcased as an official two-day University of Glasgow COP26 satellite event in November 2021 (<a href="https://themaldentproject.com/2020/12/02/zero-water-day-partnership-is-engaging-schools-and-youth-around-the-world-to-take-action/">https://themaldentproject.com/2020/12/02/zero-water-day-partnership-is-engaging-schools-and-youth-around-the-world-to-take-action/</a>).</p>
3.4	<p>If the project has been able to complete a mid-term project evaluation in the past 12 months, please provide detail of the outcome of the evaluation. (Max 500 words).</p>
	<p>A detailed external mid-term audit commenced in March 2021, established by the University of Malawi College of Medicine Finance Officer. Following a formal procurement process, led by the College of Medicine and in compliance with the procurement laws of Malawi, Ernst &amp; Young Malawi Ltd was identified from the five audit firms that were shortlisted for the assignment. We have been informed that this has resulted in a clean outcome and the final report will be presented at the next on-line project steering group meeting. A copy of the report will be lodged as evidence within our project log-frame.</p>
3.5	<p>Please highlight how you are maintaining an awareness of others working in this region, giving details of collaboration, joint working or partnerships with others. (Max 500 words)</p>
	<p><b>Scotland Malawi Partnership</b> events are very valuable for hearing about others working in Malawi, and the Health Forum and Scottish Government Cross Party Parliamentary Group meetings are of particular benefit.</p> <p>Members of the Malawi-based MalDent Project team attend the meetings held by the <b>Malawi Scotland Partnership</b> in Lilongwe.</p> <p>Social media channels, particularly <b>Twitter</b>, are a rich source of information. The frequent and varied tweets from Scottish Government International Development and the Corra Foundation provide regular updates on SG funded projects in Malawi. By following other significant players in the field, a constant drip-feed of information can be sourced. It is a two-way benefit, since regular use of Twitter by partners in both Scotland and Malawi to publicise our own project, linked to our blog site, has resulted in others contacting us.</p>



**Scottish Government International Development Programme  
End-Year Report**

	<p>Membership by the Scottish Lead Partner of the <b>Global Health Group</b> of the <b>Royal College of Physicians &amp; Surgeons of Glasgow</b>, has provided a strong line of communication and source of information and support. The MalDent Project Lead has recently been appointed as Global Health Director of the RCPSG, which will increase further our awareness of other ongoing activities in Malawi.</p> <p>There is close joint working and collaboration between the University of Glasgow teams involved in the Scottish Government funded Blantyre-Blantyre Project and the MalDent Project. This includes not only sharing of information and, when possible, practical support but also links into other University facilities and groups such as the Glasgow Centre for International Development, the Sustainable Futures in Africa Network and the recently established Malawi Glasgow Network for Interdisciplinary Collaboration (MaGNetIC) (<a href="https://www.gla.ac.uk/researchinstitutes/iii/magnetic/">https://www.gla.ac.uk/researchinstitutes/iii/magnetic/</a>).</p> <p>The charity partners with whom we work (Dentaid, Bridge2Aid and Smileawi) are all very knowledgeable about the challenges of dental care provision in sub-Saharan Africa and Malawi in particular. The MalDent Project benefits greatly from their input on many counts, particularly their experience of delivering dental care in rural environments, but equally they benefit by virtue of interacting with us.</p>
<p><b>4. Safeguarding and fraud</b></p> <p><i>Please ensure you complete questions 4.1 and 4.2 even if you have no incidents to report.</i></p>	
4.1	<p>Have there been <b>any</b> safeguarding incidents, either relating to staff/volunteers or beneficiaries of the Grant or the Project, in the last 12 months?</p> <p>No</p>
4.2	<p>Have these incidents reported at 4.1 been reported to relevant authorities, and if so, to whom?</p> <p>N/A</p>
4.3	<p>Describe what action has been taken, and highlight any lessons learned.</p> <p>N/A</p>
4.4	<p>Have there been any incidents in the last 12 months of financial mismanagement, theft, fraud etc, either relating to the Grant or the Project or which affects the organisation?</p>

**Scottish Government International Development Programme  
End-Year Report**

	No		
4.5	Have these incidents reported at 4.1 been reported to relevant authorities, and if so, to whom?		
	N/A		
4.6	Describe what action has been taken, and highlight any lessons learned.		
	N/A		
<b>5. Risk assessment</b>			
5.1	Have any issues materialised during this reporting period? If so, how were they addressed?		
	<i>Please refer to risk assessment provided at application stage.</i>		
<b>Assumption</b>	<b>Risk</b>	<b>Action taken</b>	<b>Was this included in the Risk Assessment Table in your application?</b>
<p>The risk assessment provided with the End of Year 2 Report in April 2020 has proved accurate. The elements of the project which we anticipated could proceed in the face of COVID-19 have progressed well.</p> <p>The willingness of the Scottish Government to re-purpose £20K of the MalDent Project budget towards purchase of digital devices for students at the UoM College of Medicine, and the generous augmentation of those funds to allow access of all healthcare students on the campus to on-line learning, represented a watershed in allowing on-line teaching to be delivered in an equitable way. This overcame the major risk previously identified that the first cohort of BDS 1 students would not be able to complete their first academic year without requiring an additional year of study.</p> <p>The delay in transportation of the container of dental equipment that is stuck at Dentaid HQ in Southampton pending a loosening of COVID-19 restrictions and an ability of our team to visit Lilongwe to install the replacement equipment is frustrating. However, it is not a serious threat to the project. A decision on the end-date of the current academic session at the College of Medicine is still to be finalised, but the existing BDS 2 students are unlikely to progress to BDS 3 until January 2022. There is already sufficient simulation equipment and dental chair capacity for this first small cohort of students, who will benefit from the equipment we installed in May 2019.</p>			
<b>6. Inclusion &amp; accountability</b>			

**Scottish Government International Development Programme  
End-Year Report**

*Thinking specifically about the past 12 months, please use this section to tell us how you are mainstreaming through your project, ensuring that you are aware of and actively working to reach vulnerable and marginalised groups.*

<b>6.1</b>	<p>Is the project still relevant for the beneficiaries you are working with? Please highlight how you ensure accountability on the project, ensuring beneficiaries have the opportunity to feedback on the project and influence its development? (max 350 words)</p>
	<p>We believe the project remains extremely relevant within the context of healthcare in Malawi. Our work to date has been with professional staff working in the university and health sectors in Malawi and, since August 2019, with students who have joined the BDS programme at the University of Malawi College of Medicine. The College of Medicine strives to attain a 50:50 gender balance when undertaking selection processes for students and staff. This is reflected in the gender split of the academic staff appointed to the dental programme.</p> <p>The project is led equally by the Scottish and Malawian partners. Regular minuted video calls are held involving the teams in both Glasgow and Blantyre and all decisions are taken jointly. The partnership working between the University of Glasgow and University of Malawi College of Medicine teams is both effective and very enjoyable for all parties. The mutual respect and skill-sharing have permitted significant progress in a relatively short period of time.</p> <p>An interim face-to-face course feedback session had been planned for the Flying Faculty week in March 2020, but this was cancelled because of the COVID-19 situation. More informal feedback from the students indicates that they are enjoying the programme but that there is a lot of work! Their fantastic involvement on social media during World Oral Health Day was testament to their enthusiasm</p> <p>The Malawi Government Ministry of Health &amp; Population is a major stakeholder and extremely supportive of the work of the MalDent Project. The College of Medicine MalDent Project Lead is in regular contact with the key players at the Ministry of Health &amp; Population, thereby acting as a very valuable intermediary. The ongoing work of the Oral Health Policy Task Force, which is bringing the MalDent team together with Ministry of Health officials every other week, has served to strengthen these links and reinforce commitment to achieve our ambitions.</p>
<b>6.2</b>	<p>Do you have an awareness of particularly vulnerable or marginalised groups within the community in which your project is working? Please give details on how you are disaggregating data to recognise these groups across the project. (Max 350 words)</p>
	<p>In the short term, our project is not interfacing directly with vulnerable or marginalised groups within the community. This is because at this stage we are focusing on delivering the recently launched Bachelor of Dental Surgery degree at the UoM College of Medicine and on producing a national Oral Health Strategy for Malawi under the aegis of the Ministry of Health &amp; Population.</p>

**Scottish Government International Development Programme  
End-Year Report**

	<p>However, the long-term aim is to enhance the oral and dental health of all Malawians, including those in vulnerable or marginalised groups. At present, the access to dental care is so poor for most of the population, especially in the rural areas, that in this context a high proportion of Malawians are disadvantaged.</p> <p>The research and development project, involving a Malawian PhD student, which seeks to establish a version of Scotland's Childsmile programme that is suitable for use in Malawi, will be undertaking field studies in schools and nurseries. This work with children undertaking supervised tooth brushing will be the precursor of a planned national programme that will benefit many who are disadvantaged.</p>
<b>6.3</b>	<p>How is your project working to actively meet the needs of these vulnerable and marginalised groups, ensuring they are benefiting from the project? Please outline any mechanisms you are using. (Max 350 words)</p>
	<p>One more general concern is that some of the students who study on degree programmes in Malawi face financial difficulties after paying their fees, accommodation and travel costs. As a result, they may not eat properly because they cannot afford food. For the medical students, there is a fund called '<i>Medic to Medic</i>', which can provide some financial support for students who are in this position. The programme is administered by the College of Medicine and the funds are donated by qualified doctors, including those based overseas e.g. in the UK.</p> <p>We are establishing a '<i>Dentist to Dentist</i>' programme that will run in parallel with the '<i>Medic to Medic</i>' scheme. In order to raise funds, we have set up a Scottish charity called '<i>MalDent Student Aid</i>' which gained OSCR approval in March 2020 (Charity number SC050001). We delayed launching the charity because of the COVID-19 situation but in January 2021 a website was developed (not yet live) and a bank account application lodged. The latter took a significant amount of time to be issued, because many of the bank employees are working from home, but was approved on 29<sup>th</sup> April 2021. This will allow us to make our website live. Regular donations will be made to the College of Medicine, which will administer student payments according to the existing mechanism for medical students</p>
<b>6.4</b>	<p>Taking into consideration some of the challenges of mainstreaming, please describe any challenges you have faced in reaching vulnerable and marginalised groups, how you have overcome these or plans you have developed to support inclusion on the project. (Max 350 words)</p>
	<p>To date, the project has not faced any specific challenges in reaching vulnerable and marginalised groups. However, this is a central consideration in the work now underway to develop a national Oral Health Policy.</p> <p>The Situation Analysis that we have undertaken to inform the policy development has highlighted some of the significant challenges that are faced in terms of suitable infrastructure and supply of consumables for delivery of oral health care in rural areas. Furthermore, the very low incomes of many Malawians severely restrict the amount of money they have to spend on healthcare (typically 2% of household income according to the United Nations). Under such circumstances,</p>

**Scottish Government International Development Programme  
End-Year Report**

key preventive interventions such as purchase of toothbrushes and fluoride-containing toothpaste become challenging for families. It is clearly recognised in Scotland, as in many countries, that poor oral health is a common feature amongst the most disadvantaged in society and this will be especially accentuated in the rural areas of Malawi.

The work to be undertaken by the PhD student based in Blantyre will focus on identifying ways in which children can benefit from a scheme such as Scotland's Childsmile programme, providing it is modified to suit the Malawian environment. Set-up funding would be required, but the excellent health economics data and analyses based on the Childsmile programme in Scotland have proved beyond any doubt that investment to establish school toothbrushing programmes pays major dividends in significantly reducing both dental disease and treatment costs in the longer term. One further issue to consider in Malawi is that according to the most recent census data, 24% of children of primary school age do not attend school and would therefore miss out on school-based supervised toothbrushing programmes. All these issues are under active consideration by the Task Force.

**7. Financial information**

*This section will be reviewed alongside your budget report, which should be included alongside your narrative and logframe. Please ensure this spreadsheet is completed with both a detailed breakdown of expenditure for this financial year, along with your projected spend for the next financial year.*

*Please note carry-over of funds to the next financial year should have been agreed with the Scottish Government by January 31<sup>st</sup> of the current financial year.*

7.1 With reference to your budget spreadsheet, please give a detailed explanation of any variances between planned and actual expenditure, including reasons for the variances and whether these are as a result of COVID-19, timing issues, price achieved, quantity etc. If these are temporary variances, please outline plans for expenditure. (Max 500 words)

There are a few individual variances, most of which relate to timing of activities. Some of the delay in particular activities results from COVID-19 impact and there is also some re-configuration of modes of delivery as a result of potential continuing impact of the pandemic on international travel and face to face activities.

There are some small variances in salary costs, some of which we are querying with the College of Medicine and are classifying as delayed spend until we receive their response.

There has been a major impact on travel and subsistence costs. The re-profiling of £20K of travel and subsistence costs for Year 3 to support the purchase of digital devices for on-line learning of College of Medicine students was agreed with Scottish Government and enacted. There is £16,500 available. We have recently begun detailed planning of the national Child Oral Health Survey, which is a key component of the MalDent Project and have identified three UK dentists,

**Scottish Government International Development Programme  
End-Year Report**

all with experience of working in Malawi, who would be prepared to deliver training and calibration for the Malawian therapists who will undertake the oral examinations of the children. The Survey is projected to take place in the Spring of 2022, and we would wish to utilise this underspend towards defraying travel and subsistence costs of the three UK dentists.

In relation to Implementation Costs, we have already agreed with Scottish Government a re-profiling of £90K to continue the design project for the new dental teaching facility / student hub on the Blantyre campus of the College of Medicine to support application for a building warrant. This work is underway. £180,978 was spent on the Architect design during year 3 bringing the process to the end of Stage 2. This was funded by the £37,000 available in the Year 3 budget and £143,978 from the underspend of £208,907 from Year 2, leaving a further £64,929 and underspend from Year 3 to fund the next stage in the design as indicated.

The workstream to develop a national Oral Health Policy, which commenced with a workshop in Lilongwe in February 2020, was delayed by COVID-19 but is now moving forward swiftly. A meeting of the Ministry of Health Technical Working Group took place on 8<sup>th</sup> April 2021 and a three-day face to face meeting of the Malawian Task Force members is planned for May 2021. Both these events will be funded from delayed Year 3 funds.

Implementation of the forthcoming Child Oral Health Survey will have associated costs and we therefore request to use the ring-fenced sum from year 2 (£11,462) for this purpose.

The mid-project audit by Ernst & Young (Malawi) was undertaken in March 2021 but the costs have not yet been reclaimed – these will be covered by Year 3 underspend.

The training of two biomedical engineers on dental equipment maintenance and repair, planned to take place in the UK, has been delayed by COVID travel restrictions. We are now working with Henry Schein Dental and the charity Dentaaid on a blended learning programme, with hands-on experience to be gained in South Africa, rather than the UK. Many dental companies have developed on-line training materials for their own staff in response to COVID and we hope to source several programmes from them. We estimate that the costs will be similar to those estimated for the original UK programme and these are included in the delayed Year 3 funds.

The £48K for dental chair purchase will be carried into Year 4 – purchase will take place as part of the construction phase of the dental teaching facility currently being designed by John McAslan + Partners.

7.2 Please give details of any capital expenditure in this reporting period. (Max 350 words)

**Scottish Government International Development Programme  
End-Year Report**

	<p>There has been no capital expenditure during the reporting period.</p>
7.3	<p>Please explain how you have worked to ensure cost effectiveness on the project in the past 12 months, whilst maintaining the quality of delivery. (Max 350 words)</p> <p>The COVID-19 pandemic forced a rapid re-consideration of those aspects of our planned MalDent Project activities for Year 3 that involved travel to Malawi. These included visits by academics to deliver ‘Flying Faculty’ teaching and our work to install new equipment at the Dental Department of Kamuzu Central Hospital in Lilongwe. However, through creative thinking and appropriate re-profiling of funding, with support of Scottish Government, we have been able to maintain cost-effectiveness. The following are two key examples:</p> <p><b>1. Re-profiling of travel and subsistence costs associated with cancelled ‘Flying Faculty’ visits to support purchase of digital devices to enable on-line teaching and assessment during COVID-19 pandemic.</b></p> <p>Face to face teaching at CoM ceased in March 2020, with eight weeks of teaching still to be delivered during the academic year. Academic staff had a portfolio of on-line digital learning materials for the medical, dental and other undergraduate healthcare students. However, there was a major issue of equity of access to on-line educational materials, since 267 of the 1076 students did not possess a suitable Wi-Fi enabled device. The BDS 1 students are taught jointly with the MB BS students, therefore until the MB BS course could resume, the dental students were not receiving any teaching.</p> <p>With approval of the Scottish Government, we re-profiled £20K of our MalDent Project grant Year 3 budget towards purchase of digital devices to help to bridge the digital divide and unblock the route to on-line learning for both the MB BS and the BDS students. The generous addition by Scottish Government of a further £33K resolved the problem and opened full access to on-line learning for all students at CoM. It would have been a significant blow to the fledgling BDS course if the first cohort of students who have joined it all had to repeat the year because of lost teaching time. The BDS 1 students have performed well in their examinations in December 2020 and have now progressed to BDS 2.</p> <p><b>2. Re-profiling of Year 3 underspend to support design of new dental teaching facility / student hub</b></p> <p>The design project has progressed well in 2020/2021 and the Stage 1 and 2 elements of the process are complete. Before a procurement process can begin in Malawi for the construction phase (to be externally funded) there are a small number of additional activities that our design consortium under leadership of John McAslan + Partners could undertake to permit application for a building warrant in Malawi. Scottish Government has approved our use of £90K of underspend to support these further design activities to allow the existing design team to complete these additional tasks.</p>

## Scottish Government International Development Programme End-Year Report

### 8. Any other information

Use this section to tell us any other relevant information regarding your project, including any information relevant to COVID-19 and how that has impacted project activities and/or budget. (Max 500 words)

Recent developments in the partnership between the Maldent Project and the work of the Climate Justice Fund Water Futures Programme (WFP), led by colleagues at Strathclyde University, have been particularly exciting. The WFP work on regional variations in the fluoride content of groundwater (and hence drinking water from boreholes) and the MalDent Project activities in oral health (dental caries and fluorosis) are proving to be mutually supportive and there is significant scope for joint working moving forward. The WFP team presented their data at a meeting of the Government of Malawi Oral Health Policy Taskforce on 5<sup>th</sup> November 2020, since their work related directly to the situational analysis we were undertaking to inform the policy development.

Both the University of Malawi College of Medicine and the University of Glasgow are keen to ensure that there is a research and scholarship component to the ongoing work of the Maldent Project. During Year 3, the first two manuscripts reporting project activities have been submitted as follows:

1. Addison MJ, Rivett MO, Phiri OL, Milne N, Milne V, McMahon AD, Macpherson LMD, Bagg J, Conway DI, Phiri P, Mbalame E, Kalin RM.  
Hidden hot springs as a source of groundwater fluoride and severe dental fluorosis in Malawi. *Water* **2021**, 13(8), 1106; [doi:10.3390/w13081106](https://doi.org/10.3390/w13081106)
2. Milne N, Milne V, Conway D, Bagg J, McMahon A, Chimimba P, Macpherson L.  
A pilot study of the prevalence of dental caries in a cohort of 5-12 year old children in Malawi. *Journal of Public Health in Africa* (Undergoing peer review)