

# Enabling telemedicine for people living with diabetes:

## Focus on South Africa



**In South Africa, covid-19 put a spotlight on the dangers of diabetes and enabled remote patient consultations for the first time. As the pandemic subsides, there will be an opportunity for the country to build on that experience to expand the use of telemedicine in diabetes management to improve patient care.**

The burden of non-communicable diseases (NCDs) such as diabetes has been growing in South Africa since the 1990s.<sup>1</sup> Twenty years ago that rise was obscured by burgeoning morbidity and mortality from HIV/AIDS and tuberculosis (TB), but these are now falling due to the health system's focus on tackling them and the roll-out of antiretroviral therapy.<sup>2</sup> There now needs to be a similar focus from government and the health system on NCDs,<sup>3</sup> with a shift within the country from an acute care model to a chronic care model that is better suited to managing their growing burden.<sup>4,5</sup>

### Burden of disease

The prevalence of diabetes is growing across the globe, but fastest in Africa. The number of people living with diabetes in Africa is expected to increase by 48% by 2030 and by 143% by 2045, the highest predicted increase of any region.<sup>6</sup>

Comparing prevalence between countries in the region is difficult, due to the lack of good quality data, but the International Diabetes Federation (IDF) estimates that South Africa not only has the highest prevalence among 20 to 79-year-olds at 12.7% (Figure 1), but also

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<sup>1</sup> Gouda HN, Charlson F, Sorsdahl K, Ahmadzada S, Ferrari AJ, Erskine H, Leung J, Santamauro D, Lund C, Aminde LN, Mayosi BM, Kengne AP, Harris M, Achoki T, Wiysonge CS, Stein DJ, Whiteford H. Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017. *Lancet Glob Health*. 2019 Oct;7(10):e1375–e1387. doi: 10.1016/S2214-109X(19)30374-2. PMID: 31537368.

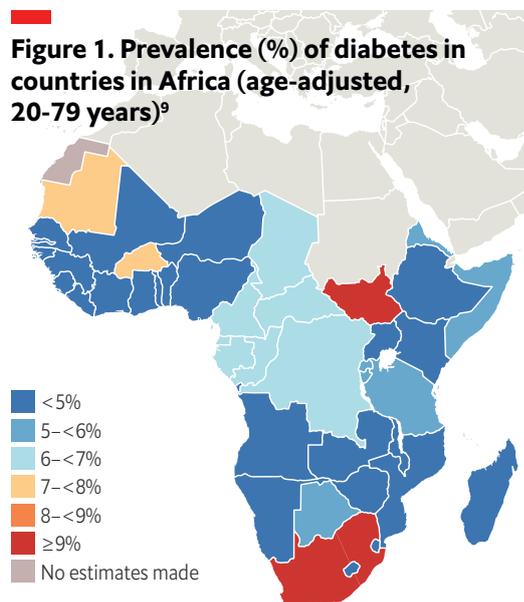
<sup>2</sup> Mayosi BM, Flisher AJ, Lalloo UG, Sitas F, Tollman SM, Bradshaw D. The burden of non-communicable diseases in South Africa. *Lancet*. 2009 Sep 12;374(9693):934–47. doi: 10.1016/S0140-6736(09)61087-4. Epub 2009 Aug 24. PMID: 19709736.

<sup>3</sup> Gouda HN, Charlson F, Sorsdahl K, Ahmadzada S, Ferrari AJ, Erskine H, Leung J, Santamauro D, Lund C, Aminde LN, Mayosi BM, Kengne AP, Harris M, Achoki T, Wiysonge CS, Stein DJ, Whiteford H. Burden of non-communicable diseases in sub-Saharan Africa, 1990–2017: results from the Global Burden of Disease Study 2017. *Lancet Glob Health*. 2019 Oct;7(10):e1375–e1387. doi: 10.1016/S2214-109X(19)30374-2. PMID: 31537368.

<sup>4</sup> Mayosi BM, Flisher AJ, Lalloo UG, Sitas F, Tollman SM, Bradshaw D. The burden of non-communicable diseases in South Africa. *Lancet*. 2009 Sep 12;374(9693):934–47. doi: 10.1016/S0140-6736(09)61087-4. Epub 2009 Aug 24. PMID: 19709736.

<sup>5</sup> Abegunde DO, Mathers CD, Adam T, Ortegón M, Strong K. The burden and costs of chronic diseases in low-income and middle-income countries. *Lancet*. 2007; 370: 1929–1938

<sup>6</sup> International Diabetes Federation. *Diabetes Atlas*, 9th edition, 2019. [https://www.diabetesatlas.org/upload/resources/material/20200302\\_133351\\_IDFATLAS9e-final-web.pdf#page=68&zoom=auto](https://www.diabetesatlas.org/upload/resources/material/20200302_133351_IDFATLAS9e-final-web.pdf#page=68&zoom=auto)



Source: International Diabetes Federation. Diabetes Atlas, 9th edition, 2019.

the greatest number of people with diabetes at 4.6m.<sup>7</sup> South Africa also has the highest number of deaths due to diabetes in the region, with an estimated 89,800 in 2019.<sup>8</sup>

According to the most recent official figures (2017), diabetes is the second leading cause of death after TB in South Africa and the trend is upwards, suggesting that deaths due to diabetes are set to overtake those due to TB, if they have not already.<sup>10</sup> Diabetes has moved from the fifth most common cause of death in 2013 to the second in 2015.<sup>11</sup> Between 2015 and 2017, the proportion of deaths due to TB fell from 7.2% to 6.4% while the proportion due to diabetes rose from 5.4% to 5.7%.<sup>12</sup> (Table 1)

**Table 1. Ten leading underlying causes of death in South Africa, 2015–2017.**  
Diabetes is the second leading cause of death after TB.

| Causes of death                            | 2015 |                |              | 2016 |                |              | 2017 |                |              |
|--|------|----------------|--------------|------|----------------|--------------|------|----------------|--------------|
|  | Rank | Number         | %            | Rank | Number         | %            | Rank | Number         | %            |
| Tuberculosis                               | 1    | 34,106         | 7.2          | 1    | 30,441         | 6.5          | 1    | 28,678         | 6.4          |
| Diabetes mellitus                          | 2    | 25,805         | 5.4          | 2    | 25,799         | 5.5          | 2    | 25,336         | 5.7          |
| Cerebrovascular diseases                   | 3    | 23,540         | 5.0          | 4    | 23,695         | 5.0          | 3    | 22,259         | 5.0          |
| Other forms of heart disease               | 4    | 23,324         | 4.9          | 3    | 24,552         | 5.2          | 4    | 22,098         | 4.9          |
| Human immunodeficiency virus [HIV] disease | 5    | 22,594         | 4.8          | 5    | 22,483         | 4.8          | 5    | 21,439         | 4.8          |
| Hypertensive diseases                      | 7    | 19,876         | 4.2          | 6    | 20,289         | 4.3          | 6    | 19,900         | 4.5          |
| Influenza and pneumonia                    | 6    | 21,055         | 4.4          | 7    | 20,152         | 4.3          | 7    | 18,837         | 4.2          |
| Chronic lower respiratory diseases         | 9    | 13,031         | 2.7          | 10   | 13,040         | 2.8          | 8    | 13,167         | 2.9          |
| Ischaemic heart diseases                   | 10   | 12,726         | 2.7          | 9    | 13,269         | 2.8          | 9    | 12,766         | 2.9          |
| Other viral diseases                       | 8    | 16,501         | 3.5          | 8    | 16,877         | 3.6          | 10   | 12,622         | 2.8          |
| Other natural causes                       |      | 208,242        | 43.9         |      | 206,281        | 43.9         |      | 198,278        | 44.4         |
| Non-natural causes                         |      | 53,375         | 11.3         |      | 53,518         | 11.4         |      | 51,164         | 11.5         |
| <b>All causes</b>                          |      | <b>474,175</b> | <b>100.0</b> |      | <b>470,396</b> | <b>100.1</b> |      | <b>446,544</b> | <b>100.0</b> |

Source: Mortality and causes of death in South Africa: Findings from death notification 2017, Statistics South Africa <http://www.statssa.gov.za/publications/P03093/P030932017.pdf>

In some populations, diabetes is already the number one cause of death: it is the leading cause of death in the Western Cape region (responsible for 7.5% of deaths), of all South Africans aged 65 years and over (9.0% of deaths) and of all women (7.3% of deaths).<sup>13</sup> Diabetes-attributable mortality in Africa is almost 1.8 times higher in women than in men,<sup>14</sup> and this is in part driven by lifestyle factors as around 68% of women in South Africa are overweight or obese.<sup>15</sup>

But the problem of obesity in South Africa is particularly complex, explains Bridget McNulty, co-founder of the NGO Sweet

Life Diabetes Community, a community for South Africans living with diabetes. "Being overweight is a sign of prosperity in many South African cultures. Some believe that if you're thin, it means you can't afford to eat." Severe obesity is most common among coloured and black/African women (26% and 20%, respectively).<sup>16</sup>

Around 60% of adults with diabetes in Africa are undiagnosed, a greater proportion than anywhere else in the world. (Table 2).<sup>17</sup>

The growing burden of diabetes in South Africa comes as no surprise. The first South

**Table 2. Proportion of adults with undiagnosed diabetes by region in 2019.<sup>18</sup>**

| Rank | IDF region                   | Proportion undiagnosed (%) | Number of people with undiagnosed diabetes (millions) |
|------|------------------------------|----------------------------|---|
|      | <b>World</b>                 | <b>50.1</b>                | <b>231.9</b>  |
| 1    | Africa                       | 59.7                       | 11.6  |
| 2    | South-East Asia              | 56.7                       | 49.6  |
| 3    | Western Pacific              | 55.8                       | 90.8  |
| 4    | Middle East and North Africa | 44.7                       | 24.5  |
| 5    | South and Central America    | 41.9                       | 13.3  |
| 6    | Europe                       | 40.7                       | 24.2  |
| 7    | North America and Caribbean  | 37.8                       | 18.0  |

IDF: International Diabetes Federation

<sup>7</sup> Ibid

<sup>8</sup> Ibid

<sup>9</sup> Ibid

<sup>10</sup> Statistics South Africa. Mortality and causes of death in South Africa: Findings from death notification, 2017. P030932017.pdf (statssa.gov.za)

<sup>11</sup> Ibid

<sup>12</sup> Ibid

<sup>13</sup> Ibid

<sup>14</sup> International Diabetes Federation. Diabetes Atlas, 9th edition, 2019. [https://www.diabetesatlas.org/upload/resources/material/20200302\\_133351\\_IDFATLAS9e-final-web.pdf#page=68&zoom=auto](https://www.diabetesatlas.org/upload/resources/material/20200302_133351_IDFATLAS9e-final-web.pdf#page=68&zoom=auto)

<sup>15</sup> Statistics South Africa. South Africa Health Survey Demographic and Health Survey. Key indicators report, 2016. Report 03-00-092016.pdf (statssa.gov.za)

<sup>16</sup> Ibid

<sup>17</sup> International Diabetes Federation. Diabetes Atlas, 9th edition, 2019. [https://www.diabetesatlas.org/upload/resources/material/20200302\\_133351\\_IDFATLAS9e-final-web.pdf#page=68&zoom=auto](https://www.diabetesatlas.org/upload/resources/material/20200302_133351_IDFATLAS9e-final-web.pdf#page=68&zoom=auto)

<sup>18</sup> Ibid

African Health and Nutrition Examination Survey of 25,000 people in 2012 found that 5% of all adults (older than 15 years) reported diabetes, with more than 16% of those aged 55 years or older.<sup>19</sup> At the time the survey was published, South Africa's health minister Aaron Motsoaledi warned that the findings signalled a "projected tsunami" of diabetes "in a continent with the lowest number of health professionals per capita, and the most fragile of health systems in the world".<sup>20</sup>

Sub-Saharan Africa has a high burden of disease, a limited number of healthcare workers and few medical educators. Away from urban centres, health services are provided through simple clinics run by GPs but more often nurses, and there is limited access to specialist medical expertise and services due to the vast distances often needed to be travelled to access them. E-health has long been seen as a possible solution by enabling telemedicine, distance education of health staff and computerised health information systems.<sup>21</sup>

### Impact of covid-19 on people living with diabetes and telemedicine

Ms McNulty says covid-19 has brought diabetes "into the spotlight" in South Africa. "It is one of the top comorbidities worldwide, and definitely one of the top comorbidities in South Africa," she says.

People living with uncontrolled diabetes, including those using insulin, are more likely to

have more severe covid-19 disease and die if they become infected with SARS-CoV-2.<sup>22</sup> In South Africa, an analysis of covid-19 patients in the Western Cape found that almost half of those who died had diabetes as a comorbidity.<sup>23</sup>



### Before covid-19, telemedicine, in terms of remote consultations with patients, essentially did not exist in South Africa.

*Dr Bruno Pauly, Department of Diabetes and Endocrinology at the Chris Hani Baragwanath Academic Hospital in Johannesburg, South Africa*

Covid-19 has also acted as an enabler for telemedicine in South Africa.

Before covid-19, telemedicine, in terms of remote consultations with patients, essentially did not exist in South Africa, says Dr Bruno Pauly, from the Department of Diabetes and Endocrinology at the Chris Hani Baragwanath Academic Hospital in Johannesburg, South Africa. There was no infrastructure, no legal framework and the Medical Aids schemes, which cover the 15% of the population under the private health system, would not pay for such consultations, he says.

<sup>19</sup> Shisana O, Labadarios D et al. South African National Health and Nutrition Examination Survey SANHANES-1. HSRC Press, 2014.

<sup>20</sup> Baleta A, Mitchell F. Country in Focus: Diabetes and obesity in South Africa. *Lancet Diabetes Endocrinol.* 2014 Sep;2(9):687-8. doi: 10.1016/S2213-8587(14)70091-9. Epub 2014 Jul 8. PMID: 25022975.

<sup>21</sup> Mars M. Building the capacity to build capacity in e-health in sub-Saharan Africa: the KwaZulu-Natal experience. *Telemed J E Health.* 2012 Jan-Feb;18(1):32-7. doi: 10.1089/tmj.2011.0146. Epub 2011 Dec 8. PMID: 22150714; PMCID: PMC3270048.

<sup>22</sup> Schlesinger S, Neuenschwander M, Lang A et al. Risk phenotypes of diabetes and association with COVID-19 severity and death: a living systematic review and meta-analysis. *Diabetologia* (2021). <https://doi.org/10.1007/s00125-021-05458-8>

<sup>23</sup> Department of Health, Western Cape Government. Analysis in comorbidities in adult COVID-19 deaths, 20 July 2020. News | Covid-19 Response ([westerncape.gov.za](http://westerncape.gov.za))

The Health Professions Council of South Africa (HPCSA), the statutory regulator of medical and allied professions in South Africa, did not allow teleconsultations, he says. “So if, for example, I offered support or advice through WhatsApp or email my patients with diabetes, it was a very tricky area. Only recently, as a response to covid-19, were these legal structures changed. The HPCSA now allows you to undertake remote consultations under certain circumstances, and the Medical Aids now have codes where they pay for them, but before that it was not possible. You could do it, but you wouldn’t be paid and it was at your own risk.”

The HPCSA announced in March 2020 that remote consultations could be performed if there was an existing practitioner-patient relationship, and that practitioners could charge for them. However, it added that this change was not permanent and that it “will inform practitioners when this guidance ceases to apply”.<sup>24</sup>

Many doctors working in the private sector are now holding remote consultations with their patients with diabetes, says Dr Pauly, and while some use Zoom, they are more likely to be by telephone or email. These doctors are also using SMS or WhatsApp to keep in touch with their patients with diabetes, which is what many healthcare professionals in the public sector have been using to keep in touch with their patients with diabetes. Most people in South Africa have access to mobile phones and the technology also has the advantage of allowing the same message to be sent to multiple patients at the same time.

### **Huge potential: the next steps for telemedicine and diabetes care**

Telemedicine, digitalisation and technology as a whole have huge potential to improve the care of people living with diabetes. The first steps to utilising telemedicine in the private sector have been made, but huge obstacles remain in building upon that and expanding use, particularly in the public sector, says Dr Pauly, who works primarily in the public health system but also does private work.

### **Telemedicine, digitalisation and technology as a whole have huge potential to improve the care of people living with diabetes.**

Even within the private sector, diabetes care at the primary care level is highly variable, he says. “Some patients referred to me have been seen by the same doctor for 15 years and never seen an ophthalmologist or a podiatrist and or not had their medicines fully optimised.” Doctors are also starting to see the use of new innovations in diabetes care, which can complement telemedicine services, such as smart glucose monitors which have made continuous glucose monitoring available to some patients with diabetes in the private sector.<sup>25</sup> These devices collect data on glucose levels which is shared with healthcare professionals in real-time enabling

<sup>24</sup> Medical Protection Society. COVID-19 medico-legal dilemmas for South African practitioners. 25 March 2020. COVID-19 medico-legal dilemmas for South African practitioners - Medical Brief

<sup>25</sup> Technology treating diabetes - Mediclinic (mediclinicinfohub.co.za)

them to monitor their patients remotely. “These devices can open up the potential for telemedicine because remote consultations are made so much easier then,” says Ms McNulty.

Meanwhile, in the public sector patients are “lucky” if their glucose levels are monitored at all, Dr Pauly says, with many receiving only one glucose assessment—and not even a fasting measure—at their clinic visit, which will drive subsequent care.

South Africa is set to implement a National Health Insurance (NHI) scheme to provide universal health coverage for all South Africans,<sup>26</sup> and an accompanying electronic records system,<sup>27</sup> which will ultimately provide the infrastructure and the necessary patient data to enable telemedicine for patients, including those living with diabetes, but implementation has been slow and challenging.<sup>28</sup> Under the proposed NHI scheme, every South African, irrespective of their socio-economic status, will have access to comprehensive healthcare services free at the point of use at accredited health facilities using an NHI card funded primarily through general taxation.<sup>29</sup> Electronic records systems improve documentation of care and communication of clinical information between sites and allow outcomes and variations in care to be assessed to improve diabetes care.<sup>30,31</sup>

At the moment, says Ms McNulty: “There’s just no patient data, because there’s no diabetes

registry, as most clinics are paper based. Some clinics can pull data on patients and other clinics only have the basic information and can’t access it easily. Ultimately, you want all these datasets joined up electronically so that you can not only target patients with diabetes appropriately for better care, but can also be aware of other relevant health conditions so you can treat each patient holistically.”

IT infrastructure is “patchy” in many areas, says Dr Pauly. “I’ve been to rural clinics where there’s not a single computer in the clinic. I’ve seen clinics where there might be a computer, but they only use the computer to transmit a little bit of data once a month to management.”

The internet is difficult to access and expensive in many areas. As a result, attempts to provide online diabetes training to nurses in rural clinics have failed. “They just can’t take part because the internet is too expensive for them and the government doesn’t provide it in these rural areas,” Dr Pauly says.

The need for this training is “great”, he adds, because knowledge about diabetes management amongst these nurses is often “very poor”, as their training has been focused on communicable diseases, such as HIV, TB and malaria, for which they also have much better management protocols.

Even where computers and the internet are available in clinics, there are other issues. Clinic staff often have poor, limited or absent computer literacy, and there is often no IT

<sup>26</sup> National Health Insurance | South African Government ([www.gov.za](http://www.gov.za)) and <https://www.uhc2030.org/blog-news-events/uhc2030-news/south-africas-path-to-universal-health-coverage-a-new-presidential-health-compact-555310/>

<sup>27</sup> National Department of Health Republic of South Africa. National Digital Health Strategy for South Africa 2019 – 2024, May 2019.

<sup>28</sup> Katurura MC, Cilliers L. Electronic health record system in the public health care sector of South Africa: A systematic literature review. *Afr J Prim Health Care Fam Med.* 2018 Nov 20;10(1):e1-e8. doi: 10.4102/phcfm.v10i1.1746. PMID: 30456963; PMCID: PMC6295973.

<sup>29</sup> National Health Insurance | South African Government ([www.gov.za](http://www.gov.za))

<sup>30</sup> Electronic Medical Records and Diabetes Quality of Care: Results From a Sample of Family Medicine Practices

Jesse C. Crosson, Pamela A. Ohman-Strickland, Karissa A. Hahn, Barbara DiCicco-Bloom, Eric Shaw, A. John Orzano, Benjamin F. Crabtree *The Annals of Family Medicine* May 2007, 5 (3) 209-215; DOI: 10.1370/afm.696

<sup>31</sup> Cebul RD, Love TE, Jain AK, Hebert CJ. Electronic health records and quality of diabetes care. *N Engl J Med.* 2011 Sep 1;365(9):825-33. doi: 10.1056/NEJMsa1102519. PMID: 21879900



**The government either doesn't have a full vision for using telemedicine or if they do, they don't communicate it well to the healthcare professionals, and they don't back it with funding.**

*Dr Bruno Pauly, Department of Diabetes and Endocrinology at the Chris Hani Baragwanath Academic Hospital in Johannesburg, South Africa*

support, and little incentive to engage with new systems, he adds.

The diabetes clinic at the Chris Hani Baragwanath Academic Hospital tried to use telemedicine to connect to community clinics in Soweto township on the outskirts of Johannesburg to offer specialist support. "It was never fully embraced by the clinics," he explains. "If you start a new system of working, you have to put extra resources into setting it up and capturing the data. There was never a buy in by the clinic management or nursing staff. We were not able to explain the benefits that they would reap in the longer term and subsequently it was abandoned."

A similar initiative to provide advice and support to a community clinic through Zoom or over the phone during a weekly hourly slot also did not take off.

Further direction from government around telemedicine would help, experts say. "The government either doesn't have a full vision for using telemedicine or if they do, they

don't communicate it well to the healthcare professionals, and they don't back it with funding. If the government puts in a bit more awareness into it and creates policies that have to be implemented at the lower management structure that will definitely help. They need to push people to do it or reward them to do it. There will need to be buy in from lots of different people before we see change," says Dr Pauly.

The biggest opportunities for telemedicine in diabetes in South Africa are provision of specialist support to community clinics, particularly in rural areas; electronic records systems and data sharing allowing patient outcomes to be tracked more easily to improve care; and an electronic register of diabetes patients enabling patient support and education through mobile phone-based platforms, experts told the EIU.

One initiative which has potential is "Screen for Life", a diabetic retinal



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*Bridget McNulty, co-founder of the NGO Sweet Life Diabetes Community.*

screening programme developed by the Ophthalmological Society of South Africa.<sup>32,33</sup> There is little or no access to retinal screening in some areas of South Africa due to the lack of ophthalmologists. The “Screen for Life” initiative trains GPs to take a retinal photograph using a fundus camera, and the images are sent to a specialist centre for analysis. In some cases, images are assessed using artificial intelligence which flag up images of concern for further assessment by ophthalmology staff.

“You can screen a lot more patients than what we do at the moment, and of course in rural areas that means you can access specialists, so that definitely has huge potential,” Dr Pauly says.

Not only will electronic patient records enable patient outcomes to be better tracked to improve care, they are also likely to help engage nurses in primary care as they will be able to see patient improvements from their direct interventions, points out Ms McNulty.

Engagement with patients is also another important consideration. When a link to a two-minute educational video was sent by SMS to 800 Type 1 diabetes patients registered with the diabetes clinic at Chris Hani Baragwanath Academic Hospital, it received just 18 views, Dr Pauly reports. But this is not problem unique to South Africa, he adds, patients living with diabetes in other countries also don’t want to be confronted with their diabetes all the time.

One educational platform that has been successful in South Africa is the South African

National Department of Health MomConnect initiative,<sup>34</sup> which supports maternal health through mobile phone based technologies integrated into maternal and child health services. The South African Diabetes Alliance is working with the National Department of Health to develop a similar WhatsApp based diabetes educational platform called DiabetesConnect for patients with diabetes.

Expectant mothers registered with MomConnect are sent targeted health promotion messages to improve their health and that of their infants. These are available in all 11 official languages. Originally delivered via SMS, the service is now on the chat-based platform WhatsApp, which allows expectant mothers to ask questions.<sup>35</sup> Potential answers are automatically generated by the technology but checked by nursing staff before to ensure they are appropriate before they are sent.

Ms McNulty says that there is a large amount of diabetes educational information available but it is not always consistent. Sweet Life asked diabetes experts in South Africa: “What are the most important things that you think people with diabetes need to know?” Their responses have been distilled down to

**There is huge potential for telemedicine in South Africa, but also huge obstacles, particularly in rural areas, although it is likely that it will be patients in urban areas that will benefit first.**

<sup>32</sup> Khan T, Bertram MY, Jina R, Mash B, Levitt N, Hofman K. Preventing diabetes blindness: cost effectiveness of a screening programme using digital non-mydratic fundus photography for diabetic retinopathy in a primary health care setting in South Africa. *Diabetes Res Clin Pract.* 2013;101(2):170–176. doi: 10.1016/j.diabres.2013.05.006.

<sup>33</sup> Cook S. Challenges facing SA in the fight against diabetic retinopathy. *Diabetes Focus eMag*, November 1, 2019. Challenges facing SA in the fight against diabetic retinopathy (diabetessa.org.za)

<sup>34</sup> MomConnect – National Department of Health

<sup>35</sup> Toby Shapshak T. South African Messaging Wonder MomConnect Launches on WhatsApp. *Forbes* 4 December, 2017.

TEEL<sup>36</sup>—Take your medication as your doctor prescribes, Eat healthy food, Exercise a little each day, and Lose weight if you need to—with one tip for each letter of TEEL. “The great potential of telemedicine for patients is that it can offer a constant daily support, rather than just seeing a doctor once every three months,” she says.

There is huge potential for telemedicine in South Africa, but also huge obstacles,

particularly in rural areas, although it is likely that it will be patients in urban areas that will benefit first.

“Here in Johannesburg,” says Dr Pauly, “I think the opportunities are there and if someone in government decides it is the right thing to do, at least we have the infrastructure here in many of the community clinics, and we could start.” He adds: “Then it’s just overcoming the resistance of the people working in the system.”

### Summary points

- **Diabetes burden is high in South Africa.** The prevalence of diabetes is growing in South Africa and a large proportion of patients are undiagnosed which will have significant implications for population health and health service use in the future. That rise was initially obscured by the burden of communicable diseases such as HIV/AIDS and TB, but as the burden of communicable diseases falls within South Africa, there needs to be a shift in emphasis from government and the health system to tackling NCDs. Covid-19 put the spotlight on diabetes as a danger to health because almost 50% of patients who died from covid-19 had diabetes as a comorbidity. This creates an opportunity to emphasise the risks of living with diabetes to general health and to encourage improved detection and management. Telehealth can support this.
- **Covid-19 as an enabler for change.** Covid-19 highlighted the potential benefits that telemedicine can have in South Africa and acted as an enabler. Prior to covid-19, medical practitioners undertook remote consultations at their own risk and without payment. In March 2020, the Health Professions Council of South Africa said that during the pandemic remote consultations would be allowed with patients that practitioners already had a relationship with, and that practitioners could charge for them. However, this change is not permanent and could cease. The mechanisms to allow remote consultations are in place, efforts should be made to make those mechanisms permanent by demonstrating the benefits and future potential of telemedicine, especially for those living with diabetes.
- **Clearer vision for telemedicine would help.** South Africa is set to implement a National Health Insurance scheme to provide universal health coverage for all South Africans, along with an electronic records system. Implementation of the electronic records system has been slow and there has been little communication on how this system can be used to underpin improvements in care, including through use of telemedicine. A clear vision for telemedicine is needed from the government along with an implementation strategy, and this needs to be communicated to healthcare staff on the ground. That strategy needs to include mechanisms to engage and incentivise healthcare staff to use telemedicine.

<sup>36</sup> <https://sweetlife.org.za/what-is-teel-a-simple-way-to-manage-your-diabetes/>

- **Infrastructure and better patient targeted communication needed.** Infrastructure to enable the use of telemedicine, including free or affordable WiFi, computers in community clinics, IT support, and training for staff in the use of computers and telemedicine is needed, particularly in rural areas. An electronic patient records system will enable educational materials to be targeted towards people living with diabetes. Chat-based features of platforms such as WhatsApp provide the opportunity for patients to have specific questions answered and to receive personalised advice.

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