

# SPECIAL SUPPLEMENT

## Diabetes práctica

Update and Skills in Primary Care

Supplement n.º 2 - 2021



## Type 2 Diabetes Mellitus in the Age of COVID. Reflections on telemedicine and patient education

**Coordinator:**

Enrique Carretero Anibarro

**Authors:**

Antonio Hormigo Pozo

Francisco Javier García Soidán

Josep Franch-Nadal

Noelia Sanz Vela



# SPECIAL SUPPLEMENT

## Diabetes práctica

Update and Skills in Primary Care



**Journal co-editors:**  
Enrique Carretero Anibarro  
Laura Romera Liébana

**Editorial committee:**  
Antonieta Vidal Tolosa  
Juan Martínez Candela  
Enrique Carretero Anibarro  
Laura Romera Liébana

**Honorary committee:**  
Sara Artola Menéndez  
Josep Franch Nadal  
Francisco Javier García Soidán  
Javier Díez Espino

**Web redGDPS:**  
[www.redgdps.org](http://www.redgdps.org)



Passeig de Gràcia, 101, 1.º 3.ª  
08008 Barcelona  
[www.euromedice.net](http://www.euromedice.net)

Legal deposit: B-21312-2012  
ISSN: 2013-9071

© 2021: Copyright belongs to the authors.  
© of the 2021 edition: Fundació Redgdps.  
All rights to the edition reserved. The total or partial reproduction of this material, photographs and tables of contents, either mechanically, by photocopy or any other reproduction system is prohibited without the express approval of the copyright owner.

The editor accepts no responsibility or legal obligation resulting from errors or omissions that might occur with respect to the accuracy of the information contained in this work. Furthermore, it is assumed that the reader has the expertise necessary to interpret the information provided in this text.

The general illustration shows telemedicine, defined by the World Health Organisation as «the delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities».

The objectives of redGDPS are to develop and promote training and research activities that contribute to the understanding of the disease and to improving the quality of care for individuals with diabetes.

RedGDPS does not promote any activity that can induce the prescription of drugs or the use of glucose measurement systems or dietary products. In the event this situation is detected, we ask that you contact us by email at [diabetespractica@redgdps.org](mailto:diabetespractica@redgdps.org).

## SUMMARY:

- Type 2 diabetes mellitus in the age of COVID. Reflections on telemedicine and patient education** 2
- Diabetes and COVID, a significant negative syndemic** 4
- The growing importance of telemedicine and remote telephone visit: utility... and disadvantages** 8
- Ethical and legal aspects of remote visits** 10
- Decision algorithms: which patients should be given priority?** 13
- Empowering patients with diabetes to assume self-control. Checklist of important items in remote visits** 15
- Elderly/frail patients and controlling type 2 diabetes mellitus in the post-COVID era** 21
- Ideas for the future. The things that should stay with us** 24

## Type 2 diabetes mellitus in the age of COVID. Reflections on telemedicine and patient education

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>,  
Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

Keywords: COVID-19, telemedicine.

### ABSTRACT

The COVID-19 pandemic has abruptly changed the way primary care centres work. Our manner of addressing patients has changed from the classic in-person care model to telemedicine.

What has the COVID pandemic meant for practitioners, patients and diabetes? Has it changed how we address patients? What do the patients think of these changes?

It might seem easy at first to answer these questions. Perhaps all that is needed is to relate what we do every day in our consultations and ask our patients directly; however, they represent many faces and viewpoints, in some cases with very different perceptions.

The COVID-19 pandemic has abruptly changed the way primary care centres work. Our manner of addressing our patients with in-person care in almost its entirety, with a few experiences of healthcare by telephone or email and in telemedicine (TeleDerma, retinography, virtual consultations with certain specialties, etc.), has transitioned to healthcare by telephone to avoid the potential spread of the disease in healthcare centres. This abrupt change, in some cases without the appropriate technical means and with primary care centres lacking sufficient telephone lines and Internet connections, has resulted in an urgent need for patients and practitioners to adapt.

The incidence of COVID-19 has for months dominated the work of primary care practitioners, occupying a large portion of their activity and generating exclusive care circuits in health centres. We have therefore been forced to

cease certain activities, which we understood could be delayed, especially in chronic diseases such as diabetes, hypertension and chronic obstructive pulmonary disease, both in preventive activities and in monitoring and education. For some authors, this situation in the medium term will mean the development of the so-called “third wave” as a result of the lack of care for these chronic diseases, which could affect the development of complications specific to each disease and, in the case of diabetes, complications from both the microvascular and macrovascular standpoints. This situation, coupled with the lack of literature that can help us perform proper telephone care, has led to initiatives, such as the one in question, to generate guidelines to help provide appropriate, comprehensive care with quality criteria.

On the other side of the problem, there are the individuals with diabetes, who have seen their health care (let us call it traditional) change considerably, along with all of the prevention and avoidance measures indicated by the health authorities, given that these patients are considered at risk. This significantly limited their presence in health centres and diverted their care to a telephone/telematic system for which many had neither the means nor the skills.

From that moment, there was a change in healthcare systems for patients with the addition of telemedicine calls, which include not only care over the phone but also the

use of other communication systems that should be incorporated into our daily work, such as video consultations, e-consultations, virtual consultations with specialists, healthcare centre websites, specific applications of pathology and social networks and all those that can facilitate the relationship, communication, education and training of our patients.

With this document, we aim to provide continuity to the “protocol of care through telemedicine to individuals with diabetes”, which we recently included in our website and will only indicate a starting point for developing a new form of assessing, addressing and educating individuals with diabetes. To our understanding, this new approach is here to stay and will, of course, be developed.

# Diabetes and COVID, a significant negative syndemic

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>,  
Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

Keywords: syndemic, SARS-CoV-2.

## ABSTRACT

A syndemic is defined as the coexistence of 2 or more diseases that extend among the population by the interaction or synergy of biological and societal factors. Diabetes mellitus changes the progression and prognosis of COVID. Metformin has been shown to improve the prognosis of COVID-19. There are promising results with DPP4i and GLP-1RA.

*They've promised that dreams can come true, but forgot  
to mention that nightmares are dreams, too.*  
Oscar Wilde

Over the past few months, we have experienced unique and unexpected times. The SARS-CoV-2 virus has shaken our world and forced us out of our comfort zone. We can no longer visit as we did before and, consequently, cannot care for patients with diabetes as before. This has forced us to come up with new options and to implement them... with uneven results.

We are facing a worldwide syndemic (the coexistence of 2 or more diseases that extend among the population due to the interaction or synergy of biological and societal factors), which we do not know how long will last, although we do know that individuals with diabetes are at greater risk... or are they?

## THE EXTENSION OF THE TWO EPIDEMICS

For many years, we have known that the prevalence of diabetes mellitus (DM) is increasing spectacularly. According to the International Diabetes Federation,<sup>1</sup> there were 460 million adults with diabetes worldwide in 2019 (9.3% of the population), a figure that will increase to 700 million by 2045 (51% increase), although in some regions such as Africa the increase will be 143%. In 1 year, DM kills 4.2 million people and results in expenditures of \$760 billion (USD).

On the other side, we have the unstoppable COVID epidemic. At the time this text was written (right in the third wave, in mid-April 2021), the pandemic has affected more than 136 million people and has caused more than 2.9 million deaths.

## RISK OF COVID INFECTION IN INDIVIDUALS WITH DIABETES

We know that individuals with diabetes have greater susceptibility to infectious diseases. In general, they have delayed activation of immune mechanisms.<sup>2</sup>

The method for studying this risk has been to compare the prevalence of type 2 DM (DM2) in hospitalised patients with the prevalence of DM2 in the general population. Studies and meta-analyses in China,<sup>3</sup> Italy<sup>4</sup> and Spain<sup>5</sup> have found somewhat higher prevalence rates in hospitalised patients. In the case of Spain, with an estimated populational prevalence of DM2 of 13.8%,<sup>6</sup> we see that among the hospital admissions registered by the Spanish Society of Internal Medicine, the prevalence of DM was 19.4%.

In the United States, a review studied the prevalence of DM among COVID-19 patients who were not hospitalised (6%), those who were hospitalised (24%) and those admitted to intensive care units (32%).<sup>7</sup> In the US general population, the prevalence is 13.3%.<sup>1</sup>

In summary, these data seem to indicate that the risk of presenting COVID-19 infection is somewhat higher in individuals with diabetes; however, this fact might be due to the bias of age or the presence of other common comorbidities in individuals with DM2. More precise cohort and case-control studies are needed with real world data whose main objective should be to confirm this hypothesis.

### **DIABETES MELLITUS CHANGES THE PROGRESSION AND PROGNOSIS OF COVID**

There is little doubt about this point. The prognosis of COVID-19 is determined in large part by the body's inflammatory response. All those clinical entities that involve chronic low-grade inflammation contribute to a poorer prognosis. Individuals with DM2 in reality are patients with chronic inflammation, poor resolution of oxidative stress, hypercoagulability, high insulin resistance and a frequent association with other comorbidities,<sup>8</sup> all of which contributes to worsening the prognosis of any infection, as confirmed by the clinical data.

In the case of COVID infection, it has also been observed that the prognosis especially worsens in those with marked hyperglycaemia at admission.<sup>9,10</sup> However, no clear relationship has been observed with deficient metabolic control previously measured by glycated haemoglobin (HbA<sub>1c</sub>). A systematic review found a nonsignificant relationship between HbA<sub>1c</sub> and COVID-19 infection severity,<sup>11</sup> which does not mean that it does not exist or that we should neglect HbA<sub>1c</sub> control.

Virtually all systematic reviews and meta-analyses have shown that patients with DM who presented COVID infection have increased mortality (odds ratio [OR], 1.90), more ICU admissions, a greater likelihood of mechanical ventilation and longer hospital stays. This increased severity has an approximate combined OR of 2.75.<sup>12-14</sup> Obesity is also an important factor.<sup>15</sup>

### **CERTAIN DRUGS TAKEN REGULARLY BY PATIENTS WITH TYPE 2 DIABETES MELLITUS CAN CHANGE THE PROGRESSION AND PROGNOSIS OF COVID-19**

At the start of the first wave of the pandemic, one of the potential pathophysiological mechanisms of SARS-CoV-2 toxicity was through the pathway of the angiotensin-converting enzyme 2 receptor. It was therefore feared that the drugs that blocked this pathway were associated with increased

mortality. Subsequently, several meta-analyses ruled out this possibility and recommended maintaining their use.<sup>16,17</sup>

With regard to statins, a number of studies such as the one conducted in Spain by Lluís Massana et al.<sup>18</sup> observed lower COVID mortality among patients who took statins before their hospital admission, which led to raised hopes with this drug family. Subsequently, the CORONADO study not only was unable to confirm these results but also found higher mortality among statin users.<sup>19</sup>

In terms of antidiabetic drugs, there are a number of timely studies, but there is a lack of clear evidence. Metformin has been shown to improve the prognosis of COVID-19.<sup>20</sup> The role of sodium-glucose cotransporter-2 inhibitors<sup>21</sup> has also been studied, and it has been observed that they do not worsen the prognosis of COVID-19 but also do not improve it.

Currently, hopes are pinned on the family of incretins.<sup>22</sup> For dipeptidyl peptidase-4 inhibitors (DPP4i) in particular, the study by Solerte<sup>23</sup> was the first to show that patients who took sitagliptin before hospital admission had lower COVID-19 mortality (OR, 0.23) and better clinical progression, with fewer ICU admissions (OR, 0.51) and less mechanical ventilation (OR, 0.27). Proposed explanations for these results include the effect of DPP4i on cytokines by mainly preventing the pulmonary inflammatory storm. This beneficial effect has been observed in other studies<sup>24</sup> but not in all.<sup>25</sup>

It is possible that receptor agonists of the glucagon-like peptide-1 (GLP-1RA) also have a potential role in stabilising the barriers that prevent the action of proinflammatory mechanisms, slowing the progression of the virus and improving the clinical results.<sup>26</sup>

Pending the results of studies designed to provide a specific answer regarding the protective or harmful effects of various families of antidiabetic drugs, the most logical approach appears to be to continue with the same treatment philosophy for DM2 currently in use.

### **REPERCUSSIONS OF COVID-19 ON THE METABOLIC CONTROL OF DIABETES MELLITUS**

One of the most significant problems caused by this COVID-19 epidemic is the lack of control of chronic diseases such as diabetes, most likely due to the lack of resources and time. A number of studies have remarked on the

diabetogenic role of the SARS-CoV-2 virus.<sup>27</sup> In our daily consultations, however, the problem has much simpler causes: an overload of people with COVID-19 infection requiring care has resulted in less care for individuals with chronic diseases such as DM2.

This fact has been demonstrated very recently in a study with data from actual practice on approximately 6 million patients of the Catalan health system, which analysed the impact of the COVID epidemic on the progression of 34 indicators of quality care.<sup>28</sup> In terms of DM2, the requests for HbA<sub>1c</sub> measurements decreased 17% during the first wave (February to April 2020), and the percentage of patients with HbA<sub>1c</sub> <8% decreased 2.5 points. The rates of diabetic foot screening (by 10 points), retinopathy (by 5 points) and oral health (by 1.3 points) also decreased.

## CONCLUSIONS

The COVID-19/DM2 syndemic has presented severe repercussions and major issues. Individuals with DM2 very

likely have a greater risk of infection (although it needs to be studied with a rigorous methodology). Patients with DM who experience SARS-CoV-2 infection definitely have a greater risk than the general population of COVID-19 progressing more poorly (more hospital admissions, longer ICU stays, greater need for mechanical ventilation and higher mortality).

We are unsure whether some of the antidiabetic drugs such as metformin, DPP4i and GLP-1RA have a protective role in COVID-19 infection, but we do know that unfortunately our patients' metabolic control worsens and is accompanied by an increased presence of diabetic complications.

The COVID-19 pandemic has undoubtedly changed our lives and that of our patients. We cannot have visits as we did before, and it is much more difficult to conduct preventive medicine for chronic non-COVID diseases. The patients are also disoriented. We do not know how long this situation will last nor how future consultations of health professionals in health centres will be conducted. Telemedicine and remote visits are being promoted, but will this philosophy become permanent?

## REFERENCES

- International Federation of Diabetes. Atlas of Diabetes of the IFD. Update. [Internet]. Atlas of Diabetes of the IFD. 2019. 1-169 p. Available at [http://www.idf.org/sites/default/files/Atlas-poster-2014\\_ES.pdf](http://www.idf.org/sites/default/files/Atlas-poster-2014_ES.pdf)
- Muller LMAJ, Gorter KJ, Hak E, Goudzwaard WL, Schellevis FG, Hoepelman AIM, et al. Increased risk of common infections in patients with type 1 and type 2 diabetes mellitus. *Clin Infect Dis*. 2005;41(3):281-8.
- Yang J, Zheng Y, Gou X, Pu K, Chen Z, Guo Q, et al. Prevalence of comorbidities and its effects in coronavirus disease 2019 patients: A systematic review and meta-analysis. *Int J Infect Dis* [Internet]. 2020;94:91-5.
- Grasselli G, Zangrillo A, Zanella A, Antonelli M, Cabrini L, Castelli A, et al. Baseline characteristics and outcomes of 1591 patients infected with SARS-CoV-2 admitted to ICUs of the Lombardy Region, Italy. *JAMA*. 2020;323(16):1574-81.
- Casas-Rojo JM, Antón-Santos JM, Millán-Núñez-Cortés J, Lumberas-Bermejo C, Ramos-Rincón JM, Roy-Vallejo E, et al. Clinical characteristics of patients hospitalized with COVID-19 in Spain: Results from the SEMI-COVID-19 Registry. *Rev Clin Esp*. 2020;220(8):480-94.
- Soriguer F, Goday A, Bosch-Comas A, Bordiú E, Calle-Pascual A, Carmena R, et al. Prevalence of diabetes mellitus and impaired glucose regulation in Spain: the Di@bet.es Study. *Diabetologia*. 2012;55(1):88-93.
- Chow N, Fleming-Dutra K, Gierke R, Hall A, Hughes M, Piliushvili T, et al. Preliminary Estimates of the Prevalence of Selected Underlying Health Conditions Among Patients with Coronavirus Disease 2019 — United States, February 12–March 28, 2020. *MMWR Morb Mortal Wkly Rep*. 2020;69(13):382-6.
- Domingueti CP, Dusse LMSA, Carvalho MDG, De Sousa LP, Gomes KB, Fernandes AP. Diabetes mellitus: The linkage between oxidative stress, inflammation, hypercoagulability and vascular complications. *J Diabetes Complications*. 2016;30:738-45.
- Carrasco-Sánchez FJ, López-Carmona MD, Martínez-Marcos FJ, Pérez-Belmonte LM, Hidalgo-Jiménez A, Buonaiuto V, et al. Admission hyperglycaemia as a predictor of mortality in patients hospitalized with COVID-19 regardless of diabetes status: data from the Spanish SEMI-COVID-19 Registry. *Ann Med*. 2021;53(1):103-16.
- Sardu C, D'Onofrio N, Balestrieri ML, Barbieri M, Rizzo MR, Messina V, et al. Outcomes in patients with hyperglycemia affected by COVID-19: can we do more on glycemic control? *Diabetes Care*. 2020;43(7):1408-15.
- Chen J, Wu C, Wang X, Yu J, Sun Z. The impact of COVID-19 on blood glucose: a systematic review and meta-analysis. *Front Endocrinol (Lausanne)*. 2020;11:574541.
- Kumar A, Arora A, Sharma P, Anikhindi SA, Bansal N, Singla V, et al. Is diabetes mellitus associated with mortality and severity

- of COVID-19? A meta-analysis. *Diabetes Metab Syndr*. 2020;14(4):535-45.
13. Abdi A, Jalilian M, Sarbarzeh PA, Vlaisavljevic Z. Diabetes and COVID-19: A systematic review on the current evidences. *Diabetes Res Clin Pract*. 2020;166:108347.
  14. Huang I, Lim MA, Pranata R. Diabetes mellitus is associated with increased mortality and severity of disease in COVID-19 pneumonia – A systematic review, meta-analysis, and meta-regression: Diabetes and COVID-19. *Diabetes Metab Syndr*. 2020;14(4):395-403.
  15. Tamara A, Tahapary DL. Obesity as a predictor for a poor prognosis of COVID-19: A systematic review. *Diabetes Metab Syndr*. 2020;14(4):655-9.
  16. Pirola CJ, Sookoian S. Estimation of renin-angiotensin-aldosterone-system (RAAS)-inhibitor effect on COVID-19 outcome: A meta-analysis. *J Infect [Internet]*. 2020;81(2):276-81.
  17. Flacco ME, Acuti Martellucci C, Bravi F, Parruti G, Cappadona R, Mascitelli A, et al. Treatment with ACE inhibitors or ARBs and risk of severe/lethal COVID-19: A meta-analysis. *Heart*. 2020;106(19):1519-24.
  18. Masana L, Correig E, Rodríguez-Borjabad C, Anoro E, Arroyo JA, Jericó C, et al. Effect of statin therapy on SARS-CoV-2 infection-related mortality in hospitalized patients. *Eur Hear J Cardiovasc Pharmacother*. 2020;pvaa128.
  19. Cariou B, Goronflot T, Rimbart A, Boullu S, Le May C, Moulin P, et al. Routine use of statins and increased COVID-19 related mortality in inpatients with type 2 diabetes: Results from the CORONADO study. *Diabetes Metab*. 2020;S1262-3636(20)30153-1.
  20. Crouse A, Grimes T, Li P, Might M, Ovalle F, Shalev A. Metformin use is associated with reduced mortality in a diverse population with Covid-19 and diabetes. *medRxiv Prepr Serv Heal Sci*. 2020;(205).
  21. Sainsbury C, Wang J, Gokhale K, Acosta-Mena D, Dhalla S, Byne N, et al. Sodium-glucose co-transporter-2 inhibitors and susceptibility to COVID-19: A population-based retrospective cohort study. *Diabetes Obes Metab*. 2021;23:263-9.
  22. Morin N. Response to COVID-19 and diabetes: Can DPP4 inhibition play a role? – GLP-1 might play one too. *Diabetes Res Clin Pract*. 2020;164:108160.
  23. Solerte SB, D'Addio F, Trevisan R, Lovati E, Rossi A, Pastore I, et al. Sitagliptin treatment at the time of hospitalization was associated with reduced mortality in patients with type 2 diabetes and COVID-19: a multicenter, case-control, retrospective, observational study. *Diabetes Care*. 2020;43(12): 2999-3006.
  24. Schlicht K, Rohmann N, Geisler C, Hollstein T, Knappe C, Hartmann K, et al. Circulating levels of soluble dipeptidylpeptidase-4 are reduced in human subjects hospitalized for severe COVID-19 infections. *Int J Obes (Lond)*. 2020; 44:2335-8.
  25. Strollo R, Maddaloni E, Dauriz M, Pedone C, Buzzetti R, Pozzilli P. Use of DPP4 inhibitors in Italy does not correlate with diabetes prevalence among COVID-19 deaths. *Diabetes Res Clin Pract*. 2020;171:108444.
  26. Hanchard J, Capó-Vélez CM, Deusch K, Lidington D, Bolz SS. Stabilizing cellular barriers: raising the shields against COVID-19. *Front Endocrinol (Lausanne)*. 2020;11:583006.
  27. Somasundaram NP, Ranathunga I, Ratnasamy V, Wijewickrama PSA, Dissanayake HA, Yogendranathan N, et al. The impact of SARS-Cov-2 virus infection on the endocrine system. *J Endocr Soc*. 2020;4:bvaa082.
  28. Coma E, Mora N, Méndez L, Benítez M, Hermosilla E, Fàbregas M, et al. Primary care in the time of COVID-19: Monitoring the effect of the pandemic and the lockdown measures on 34 quality of care indicators calculated for 288 primary care practices covering about 6 million people in Catalonia. *BMC Fam Pract*. 2020;21(1):208.

# The growing importance of telemedicine and remote telephone visits: their utility... and disadvantages

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>, Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

**Keywords:** teleconsultation.

## ABSTRACT

Due to the COVID-19 pandemic, there has been an exponential growth in teleconsultations, which has helped maintain continuity of care. However, this tool needs optimising.

During the COVID-19 pandemic, we have witnessed an exponential increase in the use of telemedicine, within a very short period and with inadequate preparation. However, the tool has helped us maintain continuity of care with patients, despite major restrictions on mobility imposed to reduce the risk of infection.

According to figures from CatSalut, 135,000 in-person visits were conducted daily in primary care centres before the health crisis, as well as 14,500 telephone consultations and approximately 1000 e-consultations. Now, the in-person visits are estimated at 18,000 daily, while telephone consultations are at 86,000 and e-consultations are approximately 17,000, which shows the considerable transformation that has taken place.<sup>1</sup>

There are several telemedicine modalities, which in turn encapsulate 2 modalities<sup>2</sup>:

- **Synchronous:** These are consultations performed in real time. This approach allows for direct contact between the healthcare practitioner and patient. The most common are telephone consultations and videoconferencing.
- **Asynchronous:** These are online consultations for connecting medical personnel to patients in a deferred manner. This approach is typically used to share information on the digital medical history, images and other clinical reports. The most widely used are email, blogs, social networks and applications.

Currently in Spain, the most widely used system is the telephone consultation; however, there are projects in the near future for expanding the use of videoconferencing and the other modalities of telemedicine.

## OBJECTIVES OF TELECONSULTATION FOR INDIVIDUALS WITH DIABETES<sup>3</sup>

When conducting a remote clinical interview with an individual with diabetes, we need to keep the following objectives in mind:

1. Perform a clinical assessment of the patient's health state in relation to their diabetes.
2. Prescribe or modify treatments for treating decompensations or improving control of the disease.
3. Assess potential comorbidities and their treatments. The patient might consult for some other health problem that we can solve or guide them as to the possible steps to follow.
4. Provide personal support to the patient and their family, calmly communicate the possible measures of confinement and answer questions regarding diabetes management.
5. Conduct an interview that is directed, at this time, to possible questions and the risk of exposure to the coronavirus, as well as inform the patient about alarm symptoms, measures and healthcare.

## THE UTILITY AND DISADVANTAGES OF TELECONSULTATION

As with any other activity, teleconsultation has adherents and detractors, advantages and disadvantages. Teleconsultation is a highly useful tool but one that is not valid for all types of patients, for all conditions, or for all types of healthcare acts. It is therefore essential that teleconsultations coexist with in-person consultations. All patients should know that in-person consultations will always be available for those cases in which it is necessary.

Table 1 summarises the main advantages and disadvantages of teleconsultation.<sup>1-5</sup>

A vitally important element for successfully consolidating teleconsultations is for them to be of good quality, from the connection standpoint and in terms of the contents and preparation. To this end, an evaluation system should be implemented, through the creation of good practice indicators to be met in most consultations.<sup>1</sup>

## CONCLUSIONS

Due to the COVID-19 pandemic, we have witnessed an exponential growth in teleconsultation, using the currently available means, which has helped maintain the continuity

**Table 1.** Advantages and disadvantages of teleconsultation

Advantages	Disadvantages
Reduces the risk of infection	Requires technological resources
Saves travel time and resources	Requires training in teleconsultation for healthcare practitioners and patients
Reduces lost work hours	Limitations in the physical examination
Facilitates access for individuals with mobility problems	Incurs information security and confidentiality problems
Enables the selection of the type of consultation	Lacks human warmth
Improves the continuity of care	Can be limiting for individuals with sensory problems
Immediacy	Loss of non-verbal language (except in videoconferencing)

of care despite the training and technological limitations of healthcare practitioners and patients.

Once this first phase of teleconsultation expansion has been completed, this tool will need to be optimised. To this end, it is essential to improve the supply of technological resources, as well as training for health professionals and even patients, with the aim of improving the quality of teleconsultations, without overlooking their limitations, which will require the coexistence of in-person consultations.

## REFERENCES

- Asociación Salud Digital. Guía básica de recomendaciones para la teleconsulta. Mayo 2020. Available at [https://www.salud-digital.es/wp-content/uploads/2020/05/Guia\\_ASD\\_mayo2020.pdf](https://www.salud-digital.es/wp-content/uploads/2020/05/Guia_ASD_mayo2020.pdf)
- American Telemedicine Association. ATA'S quick-start guide to telehealth during a health crisis. Available at [https://www.jshfirm.com/wp-content/uploads/2020/04/ATA\\_QuickStart\\_Guide\\_to\\_Telehealth\\_4-10-20.pdf](https://www.jshfirm.com/wp-content/uploads/2020/04/ATA_QuickStart_Guide_to_Telehealth_4-10-20.pdf)
- Quinn LM, Davies MJ, Hadjiconstantinou M. Virtual consultations and the role of technology during the COVID-19 pandemic for people with type 2 diabetes: The UK perspective. *J Med Internet Res*. 2020;22(8):e21609.
- Bokolo AJ. Exploring the adoption of telemedicine and virtual software for care of outpatients during and after COVID-19 pandemic. *Ir J Med Sci*. 2020 Jul 8:1-10.
- Gorgojo Martínez JJ, Zugasti Murillo A, Rubio Herrera MA, Bretón Lesmes I. Teleconsulta en endocrinología y nutrición en tiempos de la pandemia COVID-19 y más allá. Sociedad Española de Endocrinología y Nutrición. Available at [https://www.seen.es/ModulGEX/workspace/publico/modulos/web/docs/apartados/1433/160620\\_105727](https://www.seen.es/ModulGEX/workspace/publico/modulos/web/docs/apartados/1433/160620_105727)

# Ethical and legal aspects of remote visits

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>, Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

Keywords: ethical aspects, legal aspects, medicine 3.0.

## ABSTRACT

The ethical aspects of telemedicine were covered in the World Medical Association Statement on the Ethics of Telemedicine. The World Medical Association recommends that telemedicine adapt to the local regulatory frameworks, promoting the creation of ethical standards, practice standards, national legislation and international resolutions regarding telemedicine, while protecting the physician-patient relationship, confidentiality and the quality of medical care.

## ETHICAL ASPECTS OF TELEMEDICINE

The ethical aspects of telemedicine were covered in the World Medical Association Statement on the Ethics of Telemedicine, adopted by the 58th General Assembly (Copenhagen 2007) and amended by the 69th General Assembly in 2018 (Reykjavik 2018). This statement indicates that the principles of medical ethics required of the profession for in-person consultations should also be respected in the practice of telemedicine, in accordance with the following standards:

1. The relationship between medical personnel, nursing and the patient should be based on a personal examination and a sufficient understanding of the patient's medical history. Telemedicine should be employed in situations in which healthcare practitioners cannot be present and in managing chronic diseases or following-up after the initial treatment.
2. This relationship between medical personnel, nursing and the patient is based on trust and mutual respect, and all should identify themselves when using telemedicine. If the consultation is being conducted by several health professionals, the physician is primarily responsible for this care.
3. An appropriate informed consent process should be performed using the necessary information on the aspects of the consultations conducted by telemedicine, including an explanation of how telemedicine

works and how to make appointments, as well as privacy aspects, possible technical and confidentiality failures, prescription policies and potential coordination with other practitioners without influencing the patient's decision.

4. Consider that certain technologies might be unaffordable for certain patients, which could therefore create unequal access to telemedicine and further widen the gap in health between the rich and poor.
5. Medical practitioners and nurses should, when practicing telemedicine, comply with the country's legal and ethical framework. They should inform patients of their scheduled availability to maintain the practitioner's privacy.
6. Medical practitioners and nurses should exercise their professional autonomy when deciding whether a consultation is in-person or by telemedicine. When using telemedicine, a detailed record should be kept of the advice delivered and information the patients receive, as well as ensuring that the patients have understood the advice and the treatment suggestions delivered, promoting the continuity of care.
7. We need to ensure that the users can handle the necessary telecommunication system and are aware of the difficulties and uncertainties that can occur when contacting patients through telecommunication.
8. Assessment measures for the quality of care should be employed to ensure the patient's safety, as well as

the best diagnosis and treatment possible. As with all health interventions, the efficacy, safety, feasibility and cost-effectiveness of telemedicine should be analysed.

### LEGAL ASPECTS OF TELEMEDICINE

The World Medical Association recommends that telemedicine adapt to the local regulatory frameworks, promoting the creation of ethical standards, practice standards, national legislation and international resolutions regarding telemedicine, while protecting the physician-patient relationship, confidentiality and the quality of medical care.

Performing a remote consultation entails the delivery of a healthcare service and an information society service. Therefore, guidelines need to include the free delivery of services within the regulations on electronic commerce and in accordance with the guidelines of the patients' rights in cross-border health care.

As a healthcare service, telemedicine is regulated by:

- Articles 56 and 57 of the Treaty on the Functioning of the European Union, given that, as a service, telemedicine is within the scope of these articles of the treaty.
- Directive 2011/24/EU on the rights of patients in cross-border health care; specifically, in Articles 3.d, 7.7 and 14.

Remote consultations as an information society service is governed by:

- Directive 2000/31/EC, on electronic commerce: Art. 2.a).
- Directive 98/34/EC, on information society services: Art. 1.2.

At present, there is no regulation in Spain specifically governing remote consultations. We also have to assume that transfers of these competencies occur at the autonomic level, for which a series of state regulations are applied that should be complied with:

- Law 16/2003 on the cohesion and quality of the Spanish National Health System.
- Organic Law 15/1999 of December 13 on the protection of personal data, and Royal Decree 1720/200.
- Law 34/2002 of July 11 on information society services and electronic commerce.
- Law 14/1986, General Health Law.
- Law 45/2007 of December 13 on the sustainable development of the rural environment.

- Law 44/2003 of November 21 on healthcare profession affairs.
- Law 41/2002, the basic regulatory law on patient autonomy and rights and obligations in terms of medical information and documentation.
- Law 34/1988, General Advertising Law; Royal Legislative Decree 1/2007, of the General Law for the Defence of Consumers and Users.
- Royal Decree 81/2014, of February 7, which establishes regulations to ensure the cross-border health care.
- Organic Law 3/2018 of December 5, on the protection of personal data and the guarantee of digital rights.

Europe also does not have a regulation for this type of medical care. Although its implementation is intended to promote both primary care and hospital care for those populations that can experience difficulties due to their remoteness, Directive 2011/24/EU regarding patient rights in cross-border health care, which governs the rights of individuals to healthcare beyond Spain's borders, is applied.

### SECURITY AND RECOMMENDATIONS OF MEDICINE 3.0

There is no prior experience with the pandemic situation we are experiencing or with the rapid progression of implementation of telemedicine; the literature is therefore scarce on the subject. We are aided by the general publication Patient Security Strategy of the Spanish National Health System (2015-2020) for the assessment of security aspects in the implementation of consultations and in the recent publication in Chile of The Good Practice Guidelines and Recommendations in Telemedicine during the COVID-19 epidemic in Chile.

In relation to security, the laws that take precedence are the Organic Law 15/1999 of December 13 on the protection of personal data, Royal Decree 1720/200 and Organic Law 3/2018 of December 5 on the protection of personal data and guarantee of digital rights, which demand compliance with the following sections:

1. Data protection.
2. Data privacy and confidentiality.
3. Regulatory aspects regarding data responsibility. Use of corporate mail and always with a secure Internet connection through the company's local network by means of a virtual private network (VPN).
4. Assess the patient's capabilities and the personal and technological limitations.

5. Verify the availability of the necessary material (fixed or mobile phone, computer, etc.).
6. Review the patient's history.
7. Report the teleconsultation agenda (day, time, duration, objectives, prior necessary examination data: weight, blood glucose, blood pressure, etc.).
8. Identification of the practitioner who will conduct the teleconsultation, maintaining privacy and confidentiality.
9. Bidirectional transmission of the information: practitioner-patient and patient-practitioner.
10. Check the comprehension of the recommendations, advice and prescriptions given.
11. Create a record of the consultation in the medical history.
12. Check the performing of prescriptions, additional tests and interconsultations that have been indicated.
13. Indicate new appointment information if necessary.

To complete the process, satisfaction surveys are recommended for all teleconsultations (both for patients and for practitioners), as well as studies on the quality of care provided as a mechanism for potential future improvement.

### RECOMMENDED REFERENCES

- Directive 2000/31/CE of the European Parliament and Council, 8 June 2000, regarding certain legal aspects of information society services, in particular electronic commerce in the interior market (Directive on electronic commerce).
- Directive 2011/24/UE of the European Parliament and Council, 9 March 2011, regarding the application of patient rights in cross-border health care.
- Directive 98/34/CE of the European Parliament and Council, 22 June 1998-M1, which establishes a informational procedure regarding the technical standards and regulations and the rules regarding information society services.
- Patient Security Strategy of the Spanish National Health System (2015-2020).
- Greenhalgh T, Koh GCH, Car J. Covid-19: a remote assessment in primary care. *BMJ*. 2020;368:m1182.
- Good Practices Guidelines and Recommendations in telemedicine during the COVID-19 epidemic in Chile (April 2020).
- Continuous design and improvement guidelines for healthcare processes. Ministry of Health of Andalusia; 2001.
- Lopez-Campos LL, Calle M, Cosío BG, González Villaescusa C, García River JL, Fernandez Villar A, et al. Soporte telefónico al paciente con EPOC en tiempos de la COVID-19. *Open Respir Arch*. 2020;2(3):179-85.
- Treaty on the Functioning of the European Union (30 March 2010).
- World Medical Association. Ethical aspects in the use of telemedicine. Available at <https://www.wma.net/policies-post/wma-statement-on-the-ethics-of-telemedicine/>

# Decision algorithms: which patients should be given priority?

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>, Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

**Keywords:** risk levels, Kaiser model, proactive recruitment.

## ABSTRACT

The first action should be to assess the risk levels of our patients with diabetes. The risk levels we should apply are based on the Kaiser model. Proactive recruitment is essential for resuming appropriate follow-up of our patients with diabetes.

In the current epidemiological situation, the approach to chronicity has been affected by various factors:

- The difficulty in accessing health centres in-person, due to the restriction on visits.
- The lack of knowledge by users of the functioning of various circuits.
- Fear on the part of patients in terms of visiting health centres.
- Lack of knowledge on the care of their disease and, consequently, of the need and periodicity of visits (both telephone and in-person).
- The work overload on healthcare workers.
- Family and emotional situations and psychological aspects that, during the pandemic, have relegated the care of their chronic condition to a second priority for the patient and have led to neglecting aspects such as treatment compliance (drug and non-drug).
- Changes in the main caregiver in many families.

The first action, when the pandemic conditions allow for it, should be to assess the risk levels of our patients with diabetes. The various risk levels we should apply are based on the Kaiser Permanent stratification model, which differentiates 3 categories:

- Patients at low risk: patients with diabetes in initial stages. The objective for this level is to slow the disease progression and prevent patients from reaching higher risk levels. To this end, we should encourage

self-management of the disease, preventive education and healthy habits.

- Patients at medium risk: patients who represent a moderate approach complexity (longer disease progression time, difficulty with glycaemic control, lack of compliance, etc.). The objective, as with the low level, is to reduce progression through planning and management of the disease, which combines self-management and professional care (medical and nursing).
- Patients at high risk: patients with greater complexity who have comorbidities associated with the diabetes. The objective at this level is to reduce exacerbations and hospital admissions through comprehensive case management with care mainly by health professionals.

The majority of patients will probably not come to the centres after the pandemic, but many of the conditions in place at the beginning will persist: fears, ignorance, health-care limitations, etc. Therefore, it is essential to establish a recruitment strategy for users to prevent the potential complications in the short, medium and long term, thereby contributing to a better quality of life for our patients.

Proactive recruitment by medical practitioners and nursing is essential for resuming, in many cases, appropriate follow-up for our patients with diabetes (figure 1). Each autonomous community has its own peculiarities, given

that each uses different computer systems and databases. In those in which searches can be performed using patient list and can be narrowed using criteria, the priority should be:

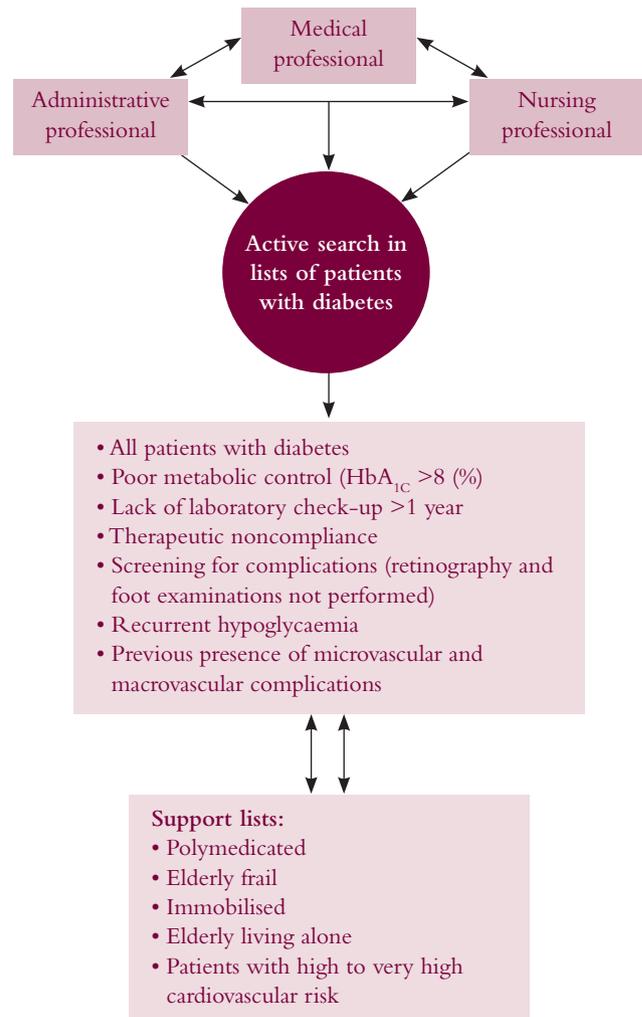
- List of all patients with diabetes by care quota (it is estimated that there are approximately 140–150 patients with diabetes per standard quota of approximately 1500 assigned individuals).
- Poor metabolic control (glycated haemoglobin [HbA<sub>1c</sub>] >8%).
- Lack of laboratory check-up in the past year: patients with diabetes versus HbA<sub>1c</sub> measurements performed.
- Probable therapeutic noncompliance: crossing electronic prescriptions with withdrawal of drugs for their chronic condition by the pharmacy.
- Evaluation and screening of complications: assess the lists of retinography not performed or foot examinations not conducted.
- Patients with a history of recurrent hypoglycaemia.
- Patients with microvascular–macrovascular complications.

We can also check for other lists that jointly facilitate the assessment of risk conditions in our patients with diabetes in which any of the following conditions coexist:

- Polymedicated.
- Elderly frail.
- Immobilised.
- Elderly living alone.
- Patients with high to very high cardiovascular risk.

Within the possible existing support systems in the health centre, the administrative type could be proposed for conducting telephone calls using the list of our patients with diabetes, thereby performing a first screening for the conditions specified in the preceding sections.

**Figure 1.** Proactive search for patients with diabetes



HbA<sub>1c</sub>: glycated haemoglobin.  
Own preparation.

## RECOMMENDED REFERENCES

- Feachem RG, Sekhri NK, Whitw KL. Getting more for their dollar: a comparison of the NHS with California's Kaiser Permanente. *BMJ*. 2002;324:135–41.
- Talbot-Smith A, Gnani S, Pollock AM, Gray DP. Questioning the calims from Kaiser. *Br J Gen Pract*. 2004;54:583–4.

# Empowering patients with diabetes to assume self-management. Checklist of important items in remote visits

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>, Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

**Keywords:** empowerment, self-control, checklist.

## ABSTRACT

Empowerment is a process by which individuals acquire greater control over the decisions and actions that affect their health. In a standardised remote visit, the healthcare practitioner should explore the various clinical aspects.

According to the World Health Organisation, empowerment “is a process through which people gain greater control over decisions and actions affecting their health”.<sup>1</sup> To achieve the final objective, “Empowering” our patients in managing their diabetes should involve training them and providing them with all the tools necessary through **therapeutic patient education (TPM)**.

It is recommended that TPM encompass the following concepts, which our patients should understand and know how to respond to adequately:

### 1. General concepts on their diabetes:

- Do they know what it means to have diabetes, or can they explain what their disease consists of?
- Do they know what happens if it is not adequately managed?
- Have they been informed of the microvascular and macrovascular complications that can occur and how to prevent them?

### 2. Self-management of the disease:

- Have they been informed of what to do in the event of hypoglycaemia?
- And in the event of hyperglycaemia?
- In the event of any infection, have they been informed of the signs that can appear most frequently (e.g., worsening glycaemic control) and how to handle them (e.g., the importance of hydration with non-caloric liquids)?

- Do they know how to recognise the alarm signs and symptoms during infection (e.g., sustained hyperglycaemia readings for more than 24 hours, nausea, vomiting that does not tolerate the intake of liquids or solids that lasts longer than 6 hours) and when to contact their healthcare practitioner?
- In the event of parties and alcohol consumption in patients taking hypoglycaemic drugs, have they been told what can happen and how to handle these situations?

### 3. Nondrug therapy:

#### a) Diet:

- Do they know the most appropriate nutritional therapy according to their preferences, circumstances and needs?
- Do they understand the importance of complying with a proper diet?
- Do they know how to recognise foods with a high glycaemic index?
- Can they recognise what types of food are recommended for a healthy diet?
- Do they know the change in glycaemic index for food based on their preparation (e.g., a raw or cooked carrot and the use of fried foods)?

#### b) Exercise:

- Have they been informed of the importance and benefits of physical exercise?

- If they are willing to perform it, have they been prescribed physical exercise based on their baseline condition, preferences, and available time to perform exercise?
  - Have they been taught to intensify their exercise?
  - Do they know how to recognise alarm signs and symptoms while performing exercise?
  - Do they understand the relationship between physical exercise and the likelihood of delayed hypoglycaemia?
4. Drug treatment:
- Can the patient relate all the medications they are taking?
  - Do they know the indication for each prescribed drug?
  - Do they know the recommended dosage in their case?
  - Has the importance of not abandoning the treatment on their own decision been explained?
  - Do they know the potential adverse effects and when to contact their reference healthcare practitioner?
5. Treatment with injectable therapy:
- Do they know how to perform the injection technique?
  - Is the individual with diabetes trained in handling the device?
  - Do they know in what areas they should administer the indicated treatments?
  - Do they use the correct needle size?
  - Has the patient been told the importance of rotating the puncture area?
  - Has the importance of not reusing needles been explained?
  - Do they know that the needle should be placed in the device when performing the technique and should be removed immediately after?
  - Do they know the proper manner in which to store insulin/glucagon-like peptide-1 receptor agonists?
  - Have the concepts of lipodystrophy and lipoatrophy been explained?
  - Does the patient know how to examine the puncture areas to recognize their onset?
6. Need for follow-up:
- Does the patient know how often they should see the doctor?
  - Do they know why they should do it, regardless of whether they feel well?
7. Cardiovascular risk factors:
- Do they know what it means to have cardiovascular risk factors?
- Has the patient been told which they have?
  - Have I worked to modify the risk factors, providing regimens and recommendations, always individualized and agreed upon?
8. Performing self-monitoring and control objectives:
- Do they know the appropriate recommendations for performing self-monitoring? (e.g., the importance of properly washing and drying the hands before performing the technique).
  - Have I stressed not reusing lancets?
  - Do they know why self-monitoring is necessary?
  - Has the patient been told how often they should perform self-monitoring?
  - Do they know how to interpret the readings?
  - Do they know how to make decisions depending on the values obtained?
9. Hypoglycaemia:
- Has the patient been told what hypoglycaemia is?
  - Do they know what reading indicates hypoglycaemia?
  - Do they know the symptoms that can be associated with hypoglycaemia?
  - Do they know the concept of inadvertent hypoglycaemia?
  - Has the patient or a member of their family been instructed on the management of glucagon?
  - Do they know how to identify when they need to use it?
  - Can they deduce the causes that will produce hypoglycaemia so that it does not reoccur?
10. Foot care:
- Do they check their feet daily?
  - Have they been explained which footwear is the most appropriate for their condition?
  - Do they understand the need to check with the hand inside the footwear in the case of peripheral neuropathy?
  - Has the patient been given the necessary care recommendations to prevent the onset of lesions?
11. Travel:
- If the individual travels to countries in another time zone, have they been told or do they know how to administer the treatment?
  - Do they know how to transport insulin about an airplane?
- After the patient reaches the appropriate level of TPM, we will implement the main items that we should consider in a remote visit.

### **PATIENT RESPONSIBILITIES IN REMOTE VISITS**

Patients should be asked to have the latest values obtained for the variables listed in table 1 prior to the remote visit.

In addition to knowing these values, they should plan their visit according to the recommendations in table 2.

### **HEALTHCARE PRACTITIONER RESPONSIBILITIES IN REMOTE VISITS**

Table 3 lists the most important of these responsibilities.

### **STANDARDISED REMOTE VISITS**

In a standardised remote visit, the healthcare practitioner should explore the various clinical aspects, such as

the presence of possible complications and the follow-up of drug treatment and non-drug therapeutic measures (smoking cessation, diet and exercise), without forgetting to review the important concepts of TPM.

Therapeutic compliance can be performed indirectly, through specific tests of compliance with the therapeutic regimen, or directly by noting the withdrawal of drugs in the electronic prescription, although their withdrawal does not ensure compliance with this treatment.

These activities should be performed periodically to ensure metabolic control. The periodicity varies depending on the characteristics of each patient, the disease itself and its treatment. General standards on the activities and frequency with which they should be performed are reflected in tables 4 and 5.

With all of this, we seek to complement the in-person visits with remote visits to achieve the best metabolic control possible for each patient and at all times.

**Table 1.** Variables whose values the patient should know before the remote visit

<b>Before the visit, they should perform the following measurements</b>	<ul style="list-style-type: none"> <li>• Weight</li> <li>• Outpatient blood pressure measurement</li> <li>• Capillary blood glucose. If the patient is not undergoing treatment with a likelihood of hypoglycaemia (sulfonylureas, repaglinide, insulins), the patient will not have been provided capillary blood glucose self-monitoring meters, which could be a problem in the event that performing check-ups is indicated</li> </ul>
---	--

**Table 2.** Patient responsibilities in remote visits

<b>Before</b>	<ul style="list-style-type: none"> <li>• Reflect on the activities at the last meeting and the progress that has been made</li> <li>• Reflect on your general health and physical condition</li> <li>• Reflect on your mental health and quality of life</li> <li>• Which are your ideas, concerns and expectations?</li> <li>• Do you have any questions?</li> <li>• What technology do you have at your disposal (webcam, telephone, headphones, etc)?</li> <li>• Who would you like to be present during the virtual consultation? One or several members of your family?</li> <li>• Do you have an updated list at hand of the drugs you take?</li> </ul>
<b>Immediately before</b>	<ul style="list-style-type: none"> <li>• Configure the equipment: computer, telephone, video and audio</li> <li>• Prepare yourself for the consultation</li> </ul>
<b>During</b>	<ul style="list-style-type: none"> <li>• Describe your ideas, problems and expectations</li> <li>• Explain the reason for this consultation in your own words</li> <li>• If you do not understand something, ask</li> <li>• Formulate a future management plan along with medical/nursing staff that is valid for you</li> </ul>
<b>After</b>	<ul style="list-style-type: none"> <li>• Read the patient resources and information provided by the team</li> <li>• Read the summary of the consultation provided by the team</li> <li>• Contact the team to clarify any questions and details of future consultations or additional tests</li> <li>• Contact the team if you have any question or problem</li> </ul>

**Table 3.** Healthcare practitioner responsibilities in remote visits

<b>Before</b>	<ul style="list-style-type: none"> <li>• Review the electronic medical history</li> <li>• Review the results of the blood tests</li> <li>• Review the patient's notes</li> <li>• Review the latest consultations</li> <li>• Have the actions prescribed during the last visit been performed?</li> <li>• Review the changes in medication</li> <li>• Describe the reason for the consultation</li> </ul>
<b>Immediately before</b>	<p><b>Configure the environment and verify the technology</b></p> <ul style="list-style-type: none"> <li>• Identify the appropriate location for the video consultation</li> <li>• How many consultations are available with the appropriate technology?</li> <li>• Are the patients' notes available?</li> <li>• Prepare the system for the video consultation</li> <li>• Prepare the camera and audio</li> <li>• Start the session in the electronic history</li> <li>• What type of consultation is this? Are there more patients in the same consultation? Are other health professionals involved?</li> <li>• Has the scheduled time and location for the consultation been communicated to the patient?</li> </ul>
<b>During</b>	<ul style="list-style-type: none"> <li>• Follow the indications of a teleconsultation guide</li> <li>• Enter into the system the user identification, passwords and ID of the patient's electronic medical record</li> <li>• Request informed consent from the patient to perform the virtual consultation</li> <li>• Start the interview in a positive environment</li> <li>• Indicate the reason for the consultation and explore the patient's expectations</li> <li>• Establish the patients' ideas, concerns and expectations and understand this in light of the biopsychosocial context</li> <li>• Respond to problems</li> <li>• Provide and promote health education</li> <li>• Identify the key issues and problems</li> <li>• Formulate a management plan with the patient</li> <li>• Inform the patient of the available resources: diet, exercise, web pages, etc.</li> <li>• Inform the patient as to whether additional examinations are requested</li> <li>• Provide explanations that the patient can understand</li> <li>• Summarise and check that the patient has understood</li> <li>• Arrange the next visit</li> <li>• Final verification of potential questions and confirmation of the contact number, prescriptions, glucose meters, etc</li> <li>• Check and verify possible changes made to the patient's treatment and their understanding of the changes</li> <li>• Ask the patient to contact you in the event of any side effects of the drug, symptoms or any problem about which they wish to consult before the next consultation</li> </ul>
<b>After</b>	<ul style="list-style-type: none"> <li>• Reflect on the consultation and prepared yourself for the next one</li> <li>• Send the patient a summary of the consultation with resources and information they might find useful</li> <li>• Establish in-person visits, such as blood tests and imaging requests, and ensure that they are performed appropriately</li> <li>• Include potential results of research</li> </ul>

**Table 4.** Quarterly and biannual activities in remote visits

Date	Checklist for electronic consultations in well-controlled type 2 diabetes mellitus*	Response
Assessment	Question/advice	
	<b>Quarterly activity. Questions*</b>	
General	How do they feel?	
Symptoms of hyperglycaemia	Do they urinate more than usual? Are they often thirsty?	
Symptoms of hypoglycaemia (only for sulfonylureas and insulin)	Have they experienced dizziness, tremors, sweating or fainting? Have they presented blood glucose levels below 70 mg/dL? Do they know what to do in the event of hypoglycaemia?	
Diet	Do they believe that they have an adequate diet, based on the advice they have received?*** Do they find it difficult to follow the recommendations? Have they changed any of their eating habits? Do they have some question about their diet?	
Exercise	How often do they engage in physical exercise? What type of exercise do they engage in? Have they had an incident during exercise (dizziness, chest pain, hypoglycaemia, etc.)?	
Therapeutic compliance	Have they taken their medication properly? Have they had problems with any of them? (Check whether the patient has collected all prescribed drugs at the chemist's)	
Tobacco use	Have they managed to quit smoking? (only smokers)	
Weight***	Have they weighed themselves? How much do they weigh?	
Blood pressure***	Have they measured their blood pressure? What was the reading?	
Self-analysis*** (only if self-analysis is indicated)	Have they measured their blood sugar levels? What were the readings? Do they know the values that these readings should be between?	
	<b>Quarterly activity. Advice*</b>	
Therapeutic education	Perform educational activity	
Therapeutic education	Recommend support material***	
	<b>Biannual activity. Advice*</b>	
Glycaemic control	A reminder that it is time for a blood test. We have made them an appointment for a blood draw	
Glycaemic control	A week after the draw, we will make an appointment to give them the results and modify the treatment if necessary	
Renewal of the drug treatment	We will renew their drug treatment for a period of 6 months (In the event the treatment is changed, the renewal will be for only 3 months, given that a new laboratory test will need to be performed within that period)*	

\*For patients with poor control, the activities will be performed much more frequently.

\*\*Dietary recommendations: Mediterranean diet.

\*\*\*There are various applications and platform that enable downloading and manual or automatic sending of remote data. The quarterly activities will be preferentially performed by nursing.

The biannual and annual activities will be performed in coordination with medical and nursing personnel.

**Table 5.** Annual activities in the remote visit

Date	Checklist for electronic consultations in well-controlled type 2 diabetes mellitus	
Assessment	Question/advice	Response
	<b>Annual activity. Questions</b>	
Screening for retinopathy	Have they noticed any vision problems?	
Screening for ischaemic heart disease	Have they noticed chest pain at rest or with effort?	
Screening for arteriopathy	Have they noticed pain in the lower legs when walking?	
Screening for neuropathy	Do they feel dizzy when standing up?	
	Have they had diarrhoea or constipation?	
	Do they have erection difficulties? (only male patients)	
Screening for neuropathy/diabetic foot	Have they noticed loss of sensitivity, cramps or a prickling sensation in the feet? Do they have foot lesions?	
Screening for cognitive impairment	Do they often forget things that need doing?	
Psychomotor	Do they have difficulty walking or performing activities that they did before without problems?	
Social support	Who do they live with? If they feel bad, do they have someone they can call?	
	Do they have someone to help them take care of them? (if frail or dependent)	
	Is the caregiver trained in handling their condition?	
Screening for depression syndrome	How is their mood? Due to their mood, have they found it difficult to follow the recommendations on diet, exercise and drug treatment?	
	<b>Annual activity. Advice</b>	
	A reminder that they need to come to the health centre for:	
A blood glucose, lipid and kidney check-up	- Laboratory test	
Screening of diabetic foot	- Foot review	
Screening for retinopathy	- Vision review	
Screening for arrhythmia and ischaemic heart disease	- Undergo an electrocardiogram	
Prevention of infections	- Vaccination for influenza or pneumococcus (other vaccines might be included, depending on each community's vaccination calendar)	
A blood glucose, lipid and kidney check-up	A week after the blood draw, we will make an appointment to give them the results and modify the treatment if necessary	
Renewal of the drug treatment	We will renew their drug treatment for a period of 6 months (In the event the treatment is changed, the renewal will be for only 3 months, given that a new laboratory test will need to be performed within that period)	

## RECOMMENDED REFERENCES

- García Soidán J, coordinator. Fundación redGDPS. Guía de diabetes tipo 2 para clínicos: Recomendaciones de la redGDPS. España: Bello y Martínez; 2018. Available at <http://www.redgdps.org/guia-de-diabetes-tipo-2-para-clinicos>
- García Soidán J, Hormigo Pozo A, Sanz Vela N. Protocolo teleconsulta paciente con diabetes tipo 2. Available at <https://www.redgdps.org/protocolo-tele-consulta-paciente-con-diabetes-tipo-2>

# Elderly/frail patients and type 2 diabetes mellitus control in the post-COVID era

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>, Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

**Keywords:** elderly patient, frail patient.

## ABSTRACT

The elderly population with type 2 diabetes mellitus presents a greater risk of falls, cognitive impairment and reduced functional capacity, and therefore a large portion of this population is encompassed within the poly pathological patient group. The presence of frailty is a factor to consider in elderly patients. Due to their lower capacity for adapting to change, frail patients have suffered particularly from the emergence of teleconsultation.

Currently, most of the world's population has a life expectancy exceeding 60 years.<sup>1</sup> The Spanish population in particular is one of the most long-lived in the world, which entails an even greater aging of the population. According to data from the Spanish National Institute of Statistics, the life expectancy in Spain between 1999 and 2019 went from 75.4 to 80.9 years for men and from 82.3 to 86.2 years for women.<sup>2</sup>

Spain is rapidly heading towards an aging population; therefore, tools need to be developed to properly manage elderly patients and keep them healthy, thereby preventing, reversing or delaying their frailty.

According to data from the di@bet.es study, the prevalence of type 2 diabetes mellitus (DM2) in those older than 75 years is 30.7% for men and 33.4% for women, 10% of whom were not diagnosed.<sup>3</sup>

A comprehensive and holistic assessment is essential for the proper management of these patients. These patients need to be assessed in all of their spheres (cognitive, functional, social and nutritional) so as to perform proper screening, properly anticipate problems and provide better management.<sup>4</sup>

The elderly population with DM2 presents a greater risk of falls, cognitive impairment and reduced functional

capacity, and therefore a large portion of this population is encompassed within the poly pathological patient group.<sup>5</sup> Therefore, the following steps are recommended:

1. Clinical assessment that includes the search for the complications of diabetes:
  - Risk of hypoglycaemia (especially when taking secretagogues or insulin or when the renal function is reduced).
  - Diabetic foot.
  - Vision loss.
  - Erectile dysfunction.
  - Hearing loss.
  - Nutritional Assessment (Mini Nutritional Assessment [MNA]).
  - Associated comorbidities.
  - Inappropriate prescriptions.
  - Therapeutic compliance (Morisky-Green test, PREDIMED questionnaire, Rapid Assessment of Physical Activity scale and obtaining drugs at the chemist's).
2. Functional assessment:
  - Physical function (ability to perform basic activities: Barthel scale; instrumental activities of daily living: Lawton and Brody scale).
  - Mental function (cognitive aspects: Mini Mental Lobo; mood state: Yesavage and Goldberg scale).
  - Social function (Gijón scale).

Another factor to consider in elderly patients is the presence of frailty. An active search for conditions that increase their risk is therefore essential:

- Age over 80 years.
- Living alone.
- Loss of spouse/pair in the past year.
- Chronic disabling disease.
- Polypharmacy (four or more drugs).
- History of falls.
- Hospital admissions in the past year.
- Scarce socioeconomic resources.

Having a properly stratified and monitored elderly patient is a fundamental step for individualising and providing the best recommendations based on the crucial moments of their lives. Our work continues to be mostly by telephone. As mentioned in previous sections, we need to be proactive and have clear objectives and interventions.

The blood glucose objectives that we establish with elderly patients should be individualised and adapted to their physical and functional capacity. In frail elderly patients, we need to establish less strict objectives, with glycated haemoglobin levels between 7.6% and 8.5%.<sup>5</sup>

In elderly patients, therapeutic education is of special importance.<sup>6</sup> We should transmit the information in such a way that our patient can understand the information and assure us that they know how to manage themselves, anticipate or make decisions in situations of hypoglycaemia, hyperglycaemia, diet, exercise, etc. To this end, we should count on the collaboration of the main caregiver, if there is one.

Healthcare practitioners should direct the elderly population towards healthy aging, encouraging them to achieve a functional capacity that provides them the best wellbeing in this stage.<sup>6</sup> We should advise them to stay active and engage in regular physical exercise, to maintain a proper diet and empower them to prevent potential complications. A healthy elderly individual will thereby not become a frail elderly patient who ends up with a disability.

### THE FRAIL PATIENT DURING THE COVID-19 PANDEMIC

Due to their lower capacity for adapting to change, frail patients have suffered particularly from the emergence of teleconsultation. The sensory problems common in advanced ages, coupled with less knowledge of technological resources, have made many frail patients feel neglected by

health care, which has led to greater isolation and a risk of losing control of their chronic conditions, which include DM2.

We also need to consider that they are a population at greater risk of presenting complications and higher mortality should they be infected by the COVID-19 virus. In many cases, fear of this infection has contributed to promoting self-isolating behaviours, with all the negative consequences that these entail.

Health professionals should therefore have a differentiated approach with elderly and frail patients, promoting as much as possible the use of telemedicine options that provide greater direct contact, such as videoconferencing, but also promoting to a greater measure in-person consultations and, through the active search of those patients who have stopped contacting the healthcare system, to reconnect with them and restart their quality care.

Another issue of considerable importance for frail patients with diabetes is maintaining adequate control while minimising the risks. Recommendations have been developed on the use of drugs during the pandemic, which include a series by an international expert group belonging to 28 scientific societies (summarised in table 1).<sup>7</sup>

However, our understanding of COVID-19 changes so frequently that after this document was published, new studies and new recommendations emerged that, for example, recommended not discontinuing metformin, because it could have an additional beneficial effect. Therefore, prudence should be our main companion.

**Table 1.** Use of antidiabetic agents in patients with COVID-19

- **Metformin:** For the possibility of dehydration and lactic acidosis, the drug should be discontinued in infected patients.
- **SGLT2-i:** These increase the risk of ketoacidosis and should be discontinued in case of COVID or respiratory infections.
- **DPP4i:** These are generally well tolerated during the infection and can be maintained.
- **GLP-1RA:** These should be closely monitored, and hydration should be carefully maintained.
- **Insulin:** Should be maintained and monitored (if possible, every 2–4 hours or using continuous glucose monitors). We should be alert to increases in insulin requirements that can lead to the suspicion of worsening symptoms in a patient with COVID-19.

GLP-1RA, receptor agonists of the glucagon-like peptide-1; DPP4i, dipeptidyl peptidase type 4 inhibitors; SGLT2-i, sodium-dependent glucose cotransporter 2 inhibitors.

Along these lines, a recently published retrospective study observed that sitagliptin treatment at the time of hospitalisation for COVID-19 virus infection was associated with reduced mortality, improved clinical results and a higher number of discharges compared with standard treatment.<sup>8</sup>

To summarise, elderly and frail patients require differentiated care, promoting as much as possible direct contact and maintaining an active approach through the search for those patients who have become cut off from the healthcare system and using those therapeutic options that have been shown effective and safe in this patient subgroup.

## REFERENCES

1. World Health Organisation. Aging and health. Available at <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health> Last accessed: 11/12/2020.
2. Spanish Institute of Statistics. Life Expectancy. Available at [https://www.ine.es/ss/Satellite?L=es\\_ES&c=INSEccion\\_n\\_C&cid=1259926380048&p=1254735110672&pagename=ProductosYServicios/PYSLayout](https://www.ine.es/ss/Satellite?L=es_ES&c=INSEccion_n_C&cid=1259926380048&p=1254735110672&pagename=ProductosYServicios/PYSLayout). Last accessed: 11/12/2020.
3. Soriguer F, Goday A, Bosch-Comas A, Bordiu E, Calle-Pascual A, Carmena R, et al. Prevalence of diabetes mellitus and impaired glucose regulation in Spain: The Di@bet.es Study. *Diabetología*. 2012;55:88-93.
4. Vidán Astiz MT, Bretón Lesmes I, coordinadoras. Sociedad Española de Geriátría y Gerontología. Paciente frágil con DM2; 2020.
5. García Soidán J, coordinador. Fundación redGDPS. Guía de diabetes tipo 2 para clínicos: Recomendaciones de la redGDPS. España: Bello y Martínez; 2018. Available at <http://www.redgdps.org/guia-de-diabetes-tipo-2-para-clinicos>.
6. Martín Lesende I, Gorroñoigoitia Iturbe A, Gómez Pavón J, Baztán Cortés JJ, Abizanda Soler P. El anciano frágil. Detección y tratamiento en AP. *Aten Primaria*. 2010;42(7):388-93.
7. Bornstein SR, Rubino F, Khunti K, Mingrone G, Hopkins D, Birkenfeld AL, et al. Practical recommendations for the management of diabetes in patients with COVID-19. *Lancet Diabetes Endocrinol*. 2020;8(6):546-50.
8. Solerte SB, D'Addio F, Trevisan R, Lovati E, Rossi A, Pastore I, et al. Sitagliptin treatment at the time of hospitalization was associated with reduced mortality in patients with type 2 diabetes and COVID-19: a multicentre, case-control, retrospective, observational study. *Diabetes Care*. 2020;43(12):2999-3006.

# Ideas for the future. The things that should stay with us

Antonio Hormigo Pozo<sup>1</sup>, Francisco Javier García Soidán<sup>2</sup>, Josep Franch-Nadal<sup>3</sup>, Noelia Sanz Vela<sup>4</sup>

<sup>1</sup> Family doctor, UGC Puerta Blanca (Malaga, Spain), Member of the redGDPS Foundation. <sup>2</sup> Family doctor, Health Centre of Porriño (Pontevedra), Member of the redGDPS Foundation. <sup>3</sup> Family doctor, Primary care team Raval Sud (Catalan Health Institute). <sup>4</sup> Nurse, Health Centre of Prosperidad (Madrid, Spain), Member of the redGDPS Foundation

**Keywords:** patient-healthcare practitioner relationship, empowerment.

## ABSTRACT

The pandemic caused by the SARS-CoV-2 virus has represented a turning point in our approach to our patients, preventing us from continuing traditional consultations and forcing us to work in a remote manner.

As we have noted in the previous sections, the pandemic caused by the SARS-CoV-2 virus has shaken our world and has represented a turning point in our approach to our patients. The pandemic has prevented us from continuing traditional consultations and forced us to work in a remote manner, without being prepared, due to the lack of training, time and material resources.

Despite the disadvantages, it has also opened a door to other interesting alternatives. We need to seek a balance between in-person consultations and the remote visits of telemedicine, thereby not only saving resources but also providing certain advantages, both for practitioners and patients, without detracting from the quality of care.

Telemedicine can be of considerable usefulness in certain situations as a tool that can help us maintain the patient-healthcare practitioner relationship. Telemedicine can be a method for resolving questions in a timely manner with patients, requesting additional tests and providing the results of these tests and can be employed for potential readjustments or changes in treatment, thereby preventing unnecessary travel. Through telemedicine, we can also conduct interconsultations with other specialists.

In the management and follow-up of our chronic patients, telephone consultations can help us assess treatment compliance (drug and non-drug), reinforce achievements, resolve questions, redirect potential situations and promote

therapeutic education. We can also assess whether there is some indication of exacerbation of the patient's condition that requires a physical examination and, therefore, an in-person visit, without unnecessarily exposing them to potential sources of COVID-19 infection or other infections.

We should not forget that the ultimate objective for the patient is empowerment. An empowered patient is a patient who, as well as having appropriate knowledge of their chronic condition, is responsible and assumes control of their care, making decisions that positively affect their health. We need to leave behind the paternalistic model, in which the practitioner is limited to providing action guidelines with which the patient must comply. Therefore, as healthcare practitioners, we need to propose the most appropriate treatment based on the actual clinical evidence; however, it is the patient who needs to commit and has to want to comply.

We need to seek collaboration with the federations and associations of individuals with diabetes to assess the feedback of previously reviewed interventions, given that their view will help us determine whether our activities are effective and are perceived positively. In conjunction with these groups, we need to assess the use of information on the Internet, social networks, etc., always searching for information that will enable training and education controlled by health professionals and individuals with diabetes that ensures impartiality, up-to-date information and the scientific rigour essential for its use.

Some of these healthcare changes are probably here to stay or should remain part of our consultation routine, for example:

- Maintaining the option of patient-healthcare practitioner telephone connections to resolve timely questions.
- Request additional examinations.
- Provide results of additional examinations.
- Interconsultations with other specialists.
- Video consultations in certain clinical situations.
- Request for medical certificates.
- Modify or update long-term therapies.
- Maintain the electronic prescription and synchronization with the chemists.
- Follow-up of treatment compliance.
- The patient should be responsible for controlling their weight, blood pressure and blood glucose levels, as well as communicating this information to their healthcare practitioner, so as to make the best decision jointly.

- Compliance with dietary and physical exercise regimens.
- Patient education, reinforcement and improvement of their understanding of the disease and controlling their own disease.
- Prescription of digital tools to enable our patients
- And many other things.

We should also remember that, although we have the duty to adapt to the new normal, we cannot disregard our patients' chronic conditions, especially those of the frailest, the elderly, and those who go unnoticed. In this monograph, we have related a number of methods for recapturing and addressing these patients, but the main ingredient is the motivation to want to do so.

We do not know how this pandemic will evolve, how long it will last or whether it will force us to make new organisational changes, but we have learned things that we should not forget.

