Journal of Diabetes Science and Technology
2020, Vol. 14(4) 778–779

DOI: 10.1177/1932296820929389
journals.sagepub.com/home/dst
SAGE

COVID-19: The Underestimated Pandemic Impacting People With Diabetes

David Shearer, MD[1]

Keywords
COVID-19, Coronavirus, pandemic, diabetes, hospital preparedness

I have learned how well healthcare providers around the world engaged to empower, educate, and treat thousands of impacted patients, but how ill-prepared the world is for pandemics such as COVID-19. Many hospital clinics in large cities have closed and Endocrinology Fellows are forced to resort to telemedicine to renew medications because prescriptions for many clinic patients run out if their next appointment is missed. Telemedicine use in the United States increased by 50% compared to one month prior, while entire hospitals transition to full virus treatment facilities and specialists function as "Hospitalists" to handle the masses.[1] Triage and tent systems have been initiated but shortages in masks and hand sanitizers (personal protective equipments [PPEs]), ventilators, and tests have made patient interactions challenging. Education and awareness for diabetes communities is needed, so patients know what to do, how to prevent contamination, and incorporate these habits into their daily lives.

According to the World Health Organization, humans have dealt with Coronaviruses before; however, this aggressive form of Coronavirus was unexpected and can be especially harmful in immune-compromised patients exposed to COVID-19. These patients may display shortness of breath and pneumonia and often require artificial ventilation.[2] Patients with diabetes and/or obesity are presenting to hospitals at a higher rate, explained by an impaired immune system, poor cell memory, lesser antibody response, and reactive oxidative stress, making patients more likely to contract COVID-19.[3-6]

Hospital preparedness is a key unresolved issue. A study conducted in 2001 examining hospital preparedness concluded that fewer than 20% of respondent hospitals had plans for biological mass incidents and only 12% had one or more self-contained breathing apparatuses.[7] A United States General Accounting Office nationwide survey of hospital preparedness conducted in 2003 concluded hospitals are not prepared to manage mass causalities resulting from this type of infection which the US President described as a "War."[8]

In the future, I predict even more viral/bacterial pandemics with catastrophic levels of contamination occurring unless a realistic preparedness plan is put into effect and enforced. This must be taken seriously, realizing that global transportation can facilitate massive disease transmission.

Hospital systems must unite triage processes and share PPEs and ventilators. Countries, governments, states, hospitals, and supporting systems must realize the urgency for preparedness against the threat of deadly bacteria and viruses and align to work together to provide vital support across boundaries. Hospital systems should implement "Special Weapons and Tactics" processes to meet pandemic medical challenges such as triage, space, and quarantine procedures, to address the surge of care required for thousands of infected patients. As healthcare practitioners (HCPs) provide aid, many become ill themselves, reducing manpower availability. It is critical to have a plan to transport available practitioners across regions to provide assistance.

Back-up supplies are important for diabetes management; however, fear-driven purchases, often in bulk quantities, challenge manufacturing supply chains and exhaust availability of oral antidiabetic agents, insulins, monitoring devices, and other vital diabetic supplies. Pharmacies and manufacturers need ordering systems that can engage patients and ensure supplies are available, facilitating shipment of emergency kits, glucose monitoring devices, pumps, test strips, syringes, needles, and alcohol swabs. Patients with newly diagnosed and complex diabetes require innovative ways of providing support and training. Telemedicine and digital health solutions for remote monitoring must be introduced quickly, especially with complex

[1]LifeScan, Inc., Malvern, PA, USA

Corresponding Author:
David Shearer, MD, LifeScan, Inc., 20 Valley Stream Parkway, Malvern, PA 19355, USA.
Email: Dsheare1@lifescan.com

patients such as basal/bolus therapy coupled with significant comorbidities such as chronic kidney disease or extensive cardiovascular disease. Regardless of existence of pandemics, patients must be trained to utilize and practice glucose self-monitoring and self-care.

HCPs need to proactively have systems in place during pandemic times to quickly identify patients at higher risk, engage in follow-up, and ensure safe and effective self-care. Digital systems including electronic medical records, pharmacy/e-scripts, billing systems, and insurance providers require integration to alert the healthcare team of patients needing assistance and in danger of severe adverse event(s). Global positioning system may allow HCPs to identify locations of patients in need faster. Many digital applications offer tools for managing hypertension, lipids, obesity, depression, diet, exercise, and sleep, which aid in everyday lifestyles of people with diabetes.

As patients deal with the aftermath of COVID-19, they will need to be digitally and telephonically "plugged" into their diabetic healthcare team. Post-COVID-19, governments, hospital systems, and individual diabetic practices around the globe should be surveyed, and gaps areas of failed execution identified, in order to better prepare for the next occurrence. Patients need to know that they can trust their healthcare systems and that in times of urgent need there is a path to safety, wellness, and optimal care, which places the patient at its center.

Declaration of Conflicting Interests

The author declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: David M. Shearer, MD is a full-time employee of LifeScan Inc.

Funding

The author received no financial support for the research, authorship, and/or publication of this article.

References

1. Landi H. FCC chief unveils $200M program to boost telehealth services amid COVID-19 outbreak. *Fierce Health Care*, April 1, 2020. https://www.fiercehealthcare.com/tech/fcc-chief-unveils-200m-program-to-boost-telehealth-services-amid-covid-outbreak-0
2. World Health Organization. *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)*. Geneva: World Health Organization; 2020. https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf
3. Geerlings SE, Hoepelman AI. Immune dysfunction in patients with diabetes mellitus (DM) *FEMS Immunol Med Microbiol*. 1999;26(3-4): 256-265.
4. Muller LM, Gorter KJ, Hak E, et al. Increased risk of common infections in patients with type 1 and type 2 diabetes mellitus. *Clin Infect Dis*. 2005;41(3):281-288.
5. Peleg AY, Weerarathna T, McCarthy JS, Davis TM. Common infections in diabetes: pathogenesis, management and relationship to glycaemic control. *Diabetes Metab Res Rev*. 2007;23(1):3-13.
6. Moreno-Navarrete JM, Fernández-Real JM. Antimicrobial-sensing proteins in obesity and type 2 diabetes: the buffering efficiency hypothesis. *Diabetes Care*. 2011;34(suppl 2):S335-S341.
7. Wetter DC, Daniell WE, Treser CD. Hospital preparedness for victims of chemical or biological terrorism. *Am J Public Health*. 2001;91(5):710-716.
8. United States General Accounting Office. *Hospital Preparedness: GAO Report to the Congressional Committee*. Washington, DC: U.S. General Accounting Office; 2003.