



Impact of COVID-19 on Diabetes Health Care and Service Provision in Australian Diabetes Centers

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Coronavirus disease 2019 (COVID-19) has mandated substantive changes in health care provision to minimize the risk of transmission within health care facilities. Introduction of physical distancing, a heightened focus on hand hygiene and workplace cleanliness, and widespread moves to telehealth provision have been observed (1,2). However, little is known about the impact of the pandemic on provision of diabetes care in countries like Australia with universal health care coverage.

Because of mandated changes in clinical environments, we were unable to administer the scheduled Australian National Diabetes Audit (ANDA), a national annual benchmarking audit of diabetes center performance. In lieu of ANDA, we developed and administered the ANDA–COVID-19 service survey in consultation with the National Association of Diabetes Centres. The survey examined seven areas of service delivery: preparedness and ability to adapt to a crisis such as COVID-19; changes made to the health service space; challenges in delivery; changes in access to services from other health professionals and shortages of medications; and the impact on staffing as a result of COVID-19, workload in key clinical areas, and different modes of health care delivery. A health

professional from each participating site was invited to complete the survey. Monash Health Human and Research Ethics Committee approved the study as an amendment to ANDA (LNR/17/MonH/123, amendment number AM/35106/MonH-2020-212691). The same survey was administered three times between May and November 2020; this letter reports results from the data collection completed in May 2020, when Australia was experiencing its first wave of COVID-19 infections. In addition, we also present temporal comparisons for centers that provided complete follow-up data at 3 and 6 months using the McNemar test.

Seventy-one diabetes centers across Australia responded (response rate 47% [71 of 152]). These were a mix of primary and secondary care centers ($n = 41$) and tertiary care centers ($n = 30$), with 31 centers from metropolitan areas and 40 from regional/rural areas. Metropolitan centers were mainly tertiary care centers (68%), while regional/rural centers were predominantly primary and secondary care centers (78%). No differences were observed for location (metro/regional) ($P = 0.07$) or service type (primary and secondary/tertiary) ($P = 0.186$) between responders and nonresponders by χ^2 test.

Despite the rapid nature of changes required to mitigate COVID-19 risks, only 32% of respondents reported that their diabetes center was unprepared to deal with the COVID-19–related service changes. Similarly, only 34% of diabetes centers found it difficult to adapt to the required changes. However, 45% reported staffing shortages because of self-isolation or quarantine requirements, and 97% reported staffing concerns about exposure to COVID-19. A total of 73% of centers reported that staff had experienced stress as a result of staffing changes, and 86% reported that staff experienced stress because of work practice changes. For these centers, factors that contributed to these difficulties can be inferred from their responses to subsequent questions (Table 1). These findings suggest that adaptation to telehealth and access to other clinical services have impacted staff stress along with staff shortages and additional workplace requirements as a result of COVID-19. Our findings mirror work in other clinical areas that describe heightened psychological distress among clinical staff during the COVID-19 pandemic (3).

The main change to diabetes care reported was widespread uptake of

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Table 1—Results of questions related to staff stress as a result of staffing changes and work practice changes and ease of adaption to necessary changes because of COVID-19

Survey item	Affirmative, %
Centers that reported stress as a result of staffing changes at baseline (<i>n</i> = 52) also reported that	
Staff contracts were terminated	6
Staff used available leave	12
Staff self-isolation because of symptoms/infection	50
Staff redeployed	54
Staff deferred leave	68
Centers that reported stress because of work practice changes at baseline (<i>n</i> = 61) also reported that	
Staff have been required to use PPE as part of their patient interactions	71
Staff have been trained in how to conduct telehealth consultations	90
COVID-19 posters are displayed at the center outlining guidelines and recommendations for patients	92
Floor markings indicating 1.5-m physical distancing	92
Staff have adequate access to PPE	95
Increased sanitizer stations and/or the use of sanitizer at the center	97
Staff have received training on COVID-19 guidelines and recommendations	98
Restrictions on the number of patients allowed in the center	98
Patients asked screening questions prior to entry	98
Centers that reported finding it difficult to adapt to the changes to practice required because of COVID-19 at baseline (<i>n</i> = 24) also reported difficulties with	
Shortages of oral glucose-lowering medications	14
Shortages of blood glucose monitoring supplies	26
Shortages of insulin	28
Shortages of insulin pump supplies	29
Access to diabetes education	31
Access to pathology	38
Access to allied health services	38
Access to multidisciplinary high-risk foot services	40
Access to other specialties/services	50
Access to interpreters	56
Phone consultation/telehealth funding	82
Phone consultation/telehealth setup	94

Percentages are provided for affirmative responses only. PPE, personal protective equipment.

telehealth, with a majority of centers (97%) reporting some degree of difficulty with telehealth setup. This may reflect logistical difficulties across Australia at this time, such as funding difficulties, technological challenges, lack of telehealth training, and limited logistical support to move entire health care workforces to virtual delivery (4). Centers reporting an increase in telehealth appointments commonly saw increases for general diabetes care (84%), diabetes education (80%), and gestational diabetes mellitus (69%).

Changes in hospital and emergency presentations were also seen: 42% of centers reported decreases in inpatient admissions, while 20%, 17%, and 16% reported decreases in presentations for

diabetic ketoacidosis, hypoglycemic emergencies, and hyperosmolar hyperglycemic state, respectively. In an analysis of a subset of centers with data for all three survey periods, there were significant increases in inpatient admissions from baseline to 3 months ($P = 0.001$) and baseline to 6 months ($P = 0.007$) and for presentations for diabetic ketoacidosis from baseline to 3 months ($P = 0.03$). While global trends are toward decreased presentations during the pandemic (5), these findings suggest that decreases in presentations were not maintained for the entire 6-month period. This raises concerns about possible undertreatment of serious diabetic complications in the first wave of COVID-19.

This work shows that most Australian diabetes centers were able to respond and

adapt to unforeseen changes in service delivery early in the COVID-19 pandemic, despite staff shortages, concern regarding exposure to COVID-19, decreases in emergency presentations, and difficulties with telehealth setup.

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