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Do dietetic patients in a regional area attend a drop-in diabetes outpatient clinic? Proof-of-concept observational study*



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ABSTRACT

Background/Aims: Drop-in clinics may be an alternative patient-centred approach to traditional appointment systems. However patient uptake in Allied Health settings is unknown. Given the limited literature, this observational prospective project tested whether patients with diabetes would present to a drop-in clinic, and whether the types and volume of patients would change due to introduction of a drop-in clinic.

Methods: Alongside a referral-based booked individual appointment service (standard care (SC)), a drop-in clinic was introduced allowing patients to present without appointment. Patient data was collected from medical chart and outpatient appointment systems over 30 months. High category patient criteria included HbA1c>7.5%. Data was compared between drop-in and SC groups using chi-squared and ANOVA tests. Results: Of 150 eligible patients, more drop-in patients (n=76) presented over 15 months than SC patients booked in the 15 months before (n=41) or 15 months after (n=33) the drop-in clinic

patients booked in the 15 months before (n = 41) or 15 months after (n = 33) the drop-in clinic commenced. Drop-ins were 12 years older and less likely to have Type 1 Diabetes Mellitus (T1DM) than SC patients (p < 0.001), however the proportion of high category patients was similar across groups (54%, p = 0.731). SC patients were similar before and after drop-in clinic commencement (51%F, baseline HbA1c $9.5\% \pm 2.2$, 34% clinic non-attendance, P = 0.159 - 0.671).

Conclusions: Patients attended a drop-in diabetes outpatient clinic. This included high category patients. The weekday drop-in service may appeal to older patients with Type 2 Diabetes Mellitus, but not to younger patients or patients with T1DM. The types, volume, and attendance rates of SC patients was similar before and after commencement of the drop-in clinic.

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1. Introduction

In 2015, an estimated 1.6 million deaths were directly caused by diabetes and another 2.2 million deaths were attributable to high

blood glucose in 2012 [1]. Evidence-based research strongly suggests that Medical Nutrition Therapy provided by a registered dietitian who is experienced in the management of diabetes is clinically effective [2]. Dietitians are the recommended providers for all aspects of the nutrition management of people with diabetes [3,4]. A common diabetes model of care in Dietetics is an outpatient clinic where referrals are triaged and eligible patients offered booked individual appointments. However, non-attendance to diabetes outpatient clinics reportedly varies from 4 to 40% [5]. Non-attendance to Dietitian-specific clinics is reported as 36% of patients [6] and 33% of appointments offered [7].

Drop-in clinics (also known as walk-in clinics, with similar variants being open access or advanced access clinics) are a healthcare facility that provides patient management, education and advice without advance appointments or registration [8].

Abbreviations: D, drop-in; NPCDE, Diabetes Nurse Practitioner and Credentialed Diabetes Educator; SC, standard care; T1DM, Type 1 Diabetes Mellitus; T2DM, Type 2 Diabetes Mellitus.

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Drop-in clinics may be an alternative patient-centred approach to traditional appointment systems to reduce wait times, improve access to services and decrease non-attendance rates [5,9]. The limited literature on drop-in clinics focuses on physician clinics, rarely describes the patients who attend drop-in clinics, and reports that drop-in clinics may improve attendance and overall patient numbers [10], potentially at the expense of high category patients being seen [9]. Studies evaluating drop-in clinics have not been published to date in nutrition or even Allied Health settings.

Given the limited literature regarding drop-in clinics in Allied Health settings, this project tested whether patients with diabetes would present to a drop-in clinic commenced alongside an established standard care service to see the Dietitian. The primary hypothesis was that the number of eligible standard care patients will be unchanged in the 15 months before and after the drop-in clinic commenced, but in either period will be fewer than the total number of eligible drop-in patients.

This project also aimed to compare demographics, clinic information, medical history, and HbA1c between: drop-in and standard care patients; and between standard care patients before and after the drop-in clinic was commenced. The secondary hypotheses were that:

- drop-in and standard care patients will have similar demographics, medical history and HbA1c after the commencement of a drop-in clinic. The types of patients attending the different clinics will be similar; and
- 2) standard care patients will have similar demographics, medical history, HbA1c and clinic attendance before and after the commencement of a drop-in clinic. The introduction of a drop-in clinic will not change the types of patients referred to the standard care service.

Should this proof-of-concept project be successful, the efficacy of this model requires testing in a range of nutrition-related chronic disease settings and locations.

2. Methods

2.1. Design and setting

This observational, prospective project was conducted in Beaudesert, Queensland Australia, located approximately 58 km from Brisbane city, which services an inner-regional [11] population of approximately 13,583 people [12]. A Quick Access (*drop-in*) diabetes clinic was introduced in July 2015 to enhance patient-centred care. This was introduced alongside an established referral-based booked individual appointment diabetes outpatient service (known as *standard care*). There is no endocrinologist or medical staff involvement in the diabetes outpatient service. Both diabetes outpatient services are offered free of charge as part of the Australian public healthcare system. Ethical exemption approval for this project was obtained in January 2016 from the Metro South Human Research Ethics committee (HREC/16/QPAH/054). Patient consent for participation was not required.

2.2. Information about the diabetes outpatient clinics

A drop-in clinic for patients with diabetes was offered weekly on Wednesdays from 8:30 am–12 pm (3.5 h per week) within Beaudesert Hospital premises. Patients were assessed by both a Dietitian and a Diabetes Nurse Practitioner and Credentialed Diabetes Educator (NPCDE) and the patient's immediate concerns were addressed. A referral was not required and the initial appointment was not pre-booked. The drop-in clinic was for any adult with

diabetes and was marketed as such to general practitioners via general practitioner meetings and mailing out or faxing information flyers. A promotional presentation at a local health expo was conducted in March 2016 and information pamphlets were displayed in the hospital waiting areas and on the ward.

For eligible standard care patients a referral was received and triaged by the Dietitian and an initial appointment was booked. While the drop-in clinic had a set day and time, standard care appointments were not reserved for any one day or time during the week. Referrals were received from a range of sources, including the hospital's general ward and emergency department, diabetes educators and general practitioners. Where possible, the patient was given a choice of appointment times. Most standard care patients were seen by both the Dietitian and the NPCDE however not necessarily on the same day.

For both standard care and drop-in patients, a review appointment was booked outside of drop-in clinic times if clinically indicated and the patient agreed. For drop-in patients that did not require a review appointment, they were additionally informed that they could re-present to the drop-in clinic in the future if they were seeking further assistance with their diabetes. A diabetes group education session was offered to both drop-in and standard care patients with Type 2 Diabetes Mellitus (T2DM) when individual follow up was no longer or not required.

Patient care provided during standard care and drop-in clinics was similar. The NPCDE assessed the patient's current diabetes management and provided advice on medication management and diabetes self-management including annual cycle of care. The Dietitian assessed the patient's diet and effect on blood glucose levels and provided dietary and other diabetes self-management recommendations. Feedback was then provided to the General Practitioner for all patients. For drop-in patients a copy of the patient's clinical notes form outlining the assessment and plan was mailed or faxed, and an individualised letter was mailed for standard care patients.

2.3. Eligible participants

Eligible drop-in patients were all patients who initially presented to the diabetes Quick Access clinic between 22 July 2015—19 October 2016 (15 months) and consented to see the Dietitian.

Eligible standard care patients were all patients who had a referral to the Dietitian for diabetes care and were offered an individual appointment between 23 April 2014–19 October 2016 (30 months). As per the department's triage guidelines, referred patients were offered an individual appointment if they met high category outpatient criteria of having either: HbA1c >7.5% [13] or hypoglycaemia or were at risk of malnutrition or were commencing on insulin. Lower category patients were also offered individual appointments if they were not suitable for a group education session for people with T2DM (e.g. non-English speaking background requiring interpreter, or other forms of diabetes such as Type 1 Diabetes Mellitus (T1DM), latent auto-immune diabetes in adults, or diabetes post-whipples). All other referred patients were triaged to a once only group education session and were excluded from further analysis. See Fig. 1.

All eligible standard care and drop-in patients were included in the analysis. This included drop-in patients who dropped in (without a scheduled initial appointment) more than once (n=9). It also included standard care patients who were referred and offered an individual initial appointment more than once (n=6). Patients who accessed the clinic via both a referral pathway and drop-in clinic (n=8) during the data collection timeframe were also included. Patients who dropped in to the Quick Access clinic

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