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## Development and assessment of an interprofessional team facilitating a community-based diabetes program

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## ABSTRACT

**Purpose:** The purpose was to assess the efficacy of a unique, interprofessional collaborative team (IPCT) in educating patients with diabetes in self-management strategies.**Methods:** An urban, community/academic-based healthcare IPCT used a systems-based approach to develop a diabetes self-management education (DSME) program. Patients participated in pre and post self-care behavioral assessments. Two surveys investigated the growth of the individual IPCT members and perceptions of overall team effectiveness.**Results:** The majority of patients self-reported meeting a minimum of two goals. Patients' clinical markers of A1C, BMI and blood pressure decreased from pre-program to post. The overall team self-rating was 3.84 on a 1 (poor) – 4 (excellent) scale.**Conclusions:** Moving from autonomous practitioners to an effective IPCT required using succinct communication and collaboration strategies, a systems approach, attaining diabetes education certification, and a community/academic partnership. These factors contributed to an effective IPCT and enabled patients to reach self-selected, behavior change goals.

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## 1. Introduction

When a patient is diagnosed with diabetes, the required lifestyle changes can be overwhelming. This chronic disease can leave the patient feeling fearful, stressed, and isolated from their support network of family and friends.<sup>1</sup> A diagnosis of diabetes, specifically, requires patients to make significant changes to diet, exercise, and medication regimen.

In order to support patients on this journey of behavior change, a healthcare team must work collaboratively to enable patients to reach their health goals. Characteristics of healthcare teams that benefit the newly diagnosed patient include two key factors. One, described by Stone, is an interprofessional collaborative team (IPCT) which is a collection of individuals from diverse backgrounds

who come together to solve complex problems or provide services.<sup>2</sup> The other involves a systems approach with shared perspectives across multiple team members representing disciplines who have a stake in the outcome.<sup>3</sup> These key factors are essential in order to achieve a successful outcome.

To understand the scope of the work that lies ahead for IPCTs who work with patients with diabetes, the prevalence of patients with diabetes includes over 29.1 million individuals nationwide, 850,000 of which reside in the state of Ohio and 300,000 living in Cincinnati.<sup>4–6</sup> To respond to this need, an urban, community and academic-based healthcare IPCT used a systems-based approach to develop a patient-centered diabetes self-management education (DSME) program. Thus, the purpose of this paper is to describe the assessment of this IPCT's approach educating patients with diabetes utilizing both of the key factors identified above and to share the successful patient and IPCT outcomes associated with this unique program.

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## 2. Background

### 2.1. Interprofessional team characteristics

The evidence from published literature provides inconsistent information relating to interprofessional (IP) team characteristics, how to build an IP team, and the IP team's ability to achieve positive outcomes when working with patients with diabetes. Beginning with the characteristics of a highly effective IP team, Stone suggests through collaboration and communication, the team will be able to set and meet common goals.<sup>2</sup> Zwarenstein and Reeves added that in order to improve patient adherence to lifestyle changes, the team must agree upon best practice interventions through examination of the current evidence to establish what should be taught in educational programming.<sup>7</sup> A potential roadblock to best practice clinical translation is the very IP nature of healthcare delivery. Zwarenstein and Reeves emphasized the importance of improving the dynamics of an IP team by collaboratively involving each profession within the team.<sup>7</sup> Therefore, support and respect for team members must occur in order to have the collaborative, communicative environment needed to reach common goals.

The next issue to consider is how to build and maintain an IP team as it relates to diabetes education. According to the National Institutes for Health (NIH), several factors must be in place.<sup>8</sup> This includes support from organizational leadership; identification of team members; usable resources; team mission and vision; coordination and reassessment of the program. The literature cites various disciplines may serve as IP team members.<sup>7–9</sup> The traditional disciplines include nursing, physicians, pharmacists, and nutritionists. Dental hygienists and physical therapists, together, have not been standard members on IP teams who support diabetes self-care management.

Once a team is in place, maintaining the strength of the team becomes the next challenge. The NIH suggests several components to engage all team members.<sup>8</sup> Technology should be used to enhance communication between members and serve as a process for recording patient outcome measures. The team should engage the community they serve and provide follow-up services. Lastly, the team should promote patient satisfaction for both health and financial outcomes as it relates to billing insurance or providing services on a pro bono basis. Thus, meeting these criteria leads to the maintenance of a strong IP team.

### 2.2. Systems approach to team building

One approach used for team building, as described by Leischow and Milstein, centers on a relationship-based, systems approach.<sup>3</sup> The systems approach considers the team's interactions across multiple levels of relationships including individual team member perceptions of the effectiveness of the team, team efficiencies, and patient perception of the team.<sup>10</sup> A noteworthy aspect of the systems approach is evident as it relates to reporting improved patient outcomes and community partnerships. Breslau et al. stated IP team collaboration with community partners has become a significant factor in health care delivery as it concerns patient care, outcomes, and economics.<sup>11</sup> This is primarily due to communication efforts, accessibility to services, and influence of community partners with patients.<sup>12</sup>

Taking a step further Breslau et al. found that issues arose when the community/academic partnership lacked a systems approach which resulted in a communication and collaboration breakdown. Thus, new program implementation faltered in a community-based education setting.<sup>13</sup> Becker similarly found word-of-mouth, trust, and having a "local leader champion" helps with community buy-in that is necessary for enhanced collaboration to meet team-

developed goals.<sup>14</sup>

In summation, there is a gap in the research relating to IP teams' ability to achieve outcomes in a community/academic partnership-based, DSME program. There is minimal evidence supporting an IP team including dental hygiene and physical therapy in diabetes education. Additionally, there is inconsistent reporting of utilizing an IP systems approach and how the translation of evidence-based interventions into clinical practice can occur. Therefore, our purpose was to assess the efficacy of a unique, interprofessional collaborative team (IPCT) in educating patients with diabetes in self-management strategies.

## 3. Materials and methods

### 3.1. Assembling the IPCT

The purpose of the IPCT at an urban, federally-qualified, health center was to serve patients with diabetes, both newly diagnosed and those living with the chronic disease, by facilitating successful lifestyle transition to autonomous diabetes self-management behaviors. This clinic averages 500 patients with diabetes within the population served and of those with the disease, about 25% have an A1C > 9, which is considered uncontrolled.<sup>15</sup> The unique team assembled included professionals from both the community and academy; with membership including a dental hygienist and dietitian from the clinic, and a nurse, pharmacist, and physical therapist from local universities.

### 3.2. The Living Well with diabetes program (LWWD)

The collaboration of the IPCT yielded the development and provision of a diabetes self-management program to the community, Living Well with Diabetes (LWWD). The IPCT's purpose was to use an evidence-based best practice approach to support patients in their decisions to modify their behavior. The team took a year to design the program by meeting monthly and communicating frequently via email in between meetings. Each team member had individual homework assignments to complete in order to be prepared for the next meeting. During this period, the team earned accreditation through the American Association of Diabetes Educators (AADE). As a result, each of the sessions were designed to incorporate the American Association of Diabetes Educators, AADE7 Self-Care Behaviors™ for diabetes education programming.<sup>16</sup> Table 1 displays the list of class sessions, interprofessional instructor, and learning objectives. Programming occurred weekly for four weeks then every other week for the remaining two months.

### 3.3. Participants

The average age of the participants was 57.8 years with 8 being female and 4 male. Eight participants self-identified their race as Caucasian and 4 as African American; one participant was diagnosed with Type 1 and 11 with Type 2 diabetes. Social characteristics included 2 patients who smoked and 4 patients who consumed alcohol on a regular basis.

### 3.4. Measurements

Assessments of outcomes for the 2015 LWWD program was completed at both the patient and IPCT level. Patient outcomes were measured using self-reported achievement of AADE 7 self-care behavior goals, which were set during Class 1 and revisited in Class 8. Clinical makers of A1C, BMI and blood pressure were also tracked at Class 1, Class 8 and 6 months post completion of the

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