

# SWEET-DM – Students Wearing External Glucose Monitors to Educate and Treat Patients with Diabetes Mellitus

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## Background

- Current accreditation standards require that health professional curricula incorporate interprofessional education (IPE) opportunities and utilization of digital health throughout the educational experience.<sup>1-3</sup>
- Existing IPE opportunities at the University of South Carolina incorporate Interprofessional Education Collaborative (IPEC) competencies with limited integration of clinical knowledge and skills application.<sup>4</sup>
- A new interprofessional experience was developed to enhance key interprofessional skills at a more clinical level through a case-based discussion regarding optimal care for a patient with diabetes and application of a continuous glucose monitor (CGM).

## Objective

Assess the impact of an interprofessional progressive diabetes case discussion which included collaborative development of disease state and therapy recommendations and application and wearing of a CGM.

## Methods

- Medical and pharmacy faculty members developed a progressive diabetes case to include a CGM wear experience for third-year medical and pharmacy students.
- This interprofessional experience was incorporated into a Personal and Professional Development course for pharmacy students and into the required Internal Medicine Rotation block for medical students.
- There were 5 learning outcomes and objectives for this interprofessional session.
- During a 1.5-hour class, students collaborated in small interprofessional teams that included educational content on CGMs with subsequent application.
  - Divided into 4 class sessions over the year
  - Held local classes in Columbia and Greenville
  - Connected virtually to Florence
- Students submitted an evaluation of the activity after the CGM sensor wear time ended.

### Case Scenario:

A 65-year-old woman with type 2 diabetes mellitus is admitted for right foot pain with dark discoloration of the great toe. She was last seen in clinic a year ago, with listed insulin doses of glargine 60 units daily and aspart 10 units three times daily with meals, plus metformin 1 gram twice daily. She lost her health insurance 9 months ago and has not been able to see her physicians since that time. She has tried to continue taking her medications as often as possible, but she is “stretching them out” by skipping or taking lower doses.

The right foot pain began 3 months ago but has been much worse for the past month. The discoloration has been present for several months. She denies fever/chills, cough, dyspnea, chest pain, abdominal pain, dysuria. X-ray suggests, and then MRI confirms, osteomyelitis in the right great toe. She is hospitalized on the internal medicine service, with a surgical consult for source control (to consider debridement vs. amputation).

### Small group discussions:

- Determine glycemic goals – inpatient and outpatient.
- Develop treatment plan – IV insulin, transition to SC insulin and home medications.
- Identify standards of care that should be met for patients with diabetes.
- Describe prescriptions needed for outpatient medications and testing supplies.
- List components of a CGM and analyze a CGM report.

## Results

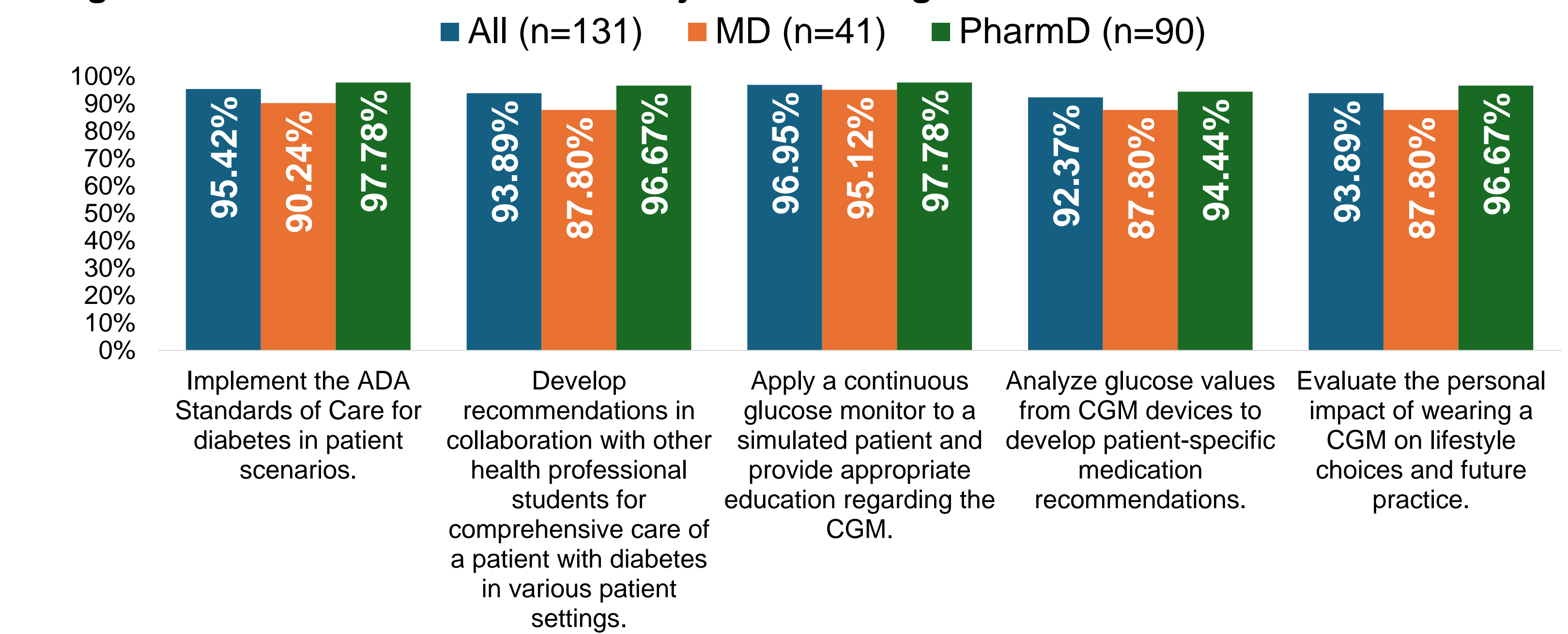
- 192 students participated in the interprofessional class
- Medical students = 96; Pharmacy students = 96

**Table 1: Demographics and Personal CGM Use**

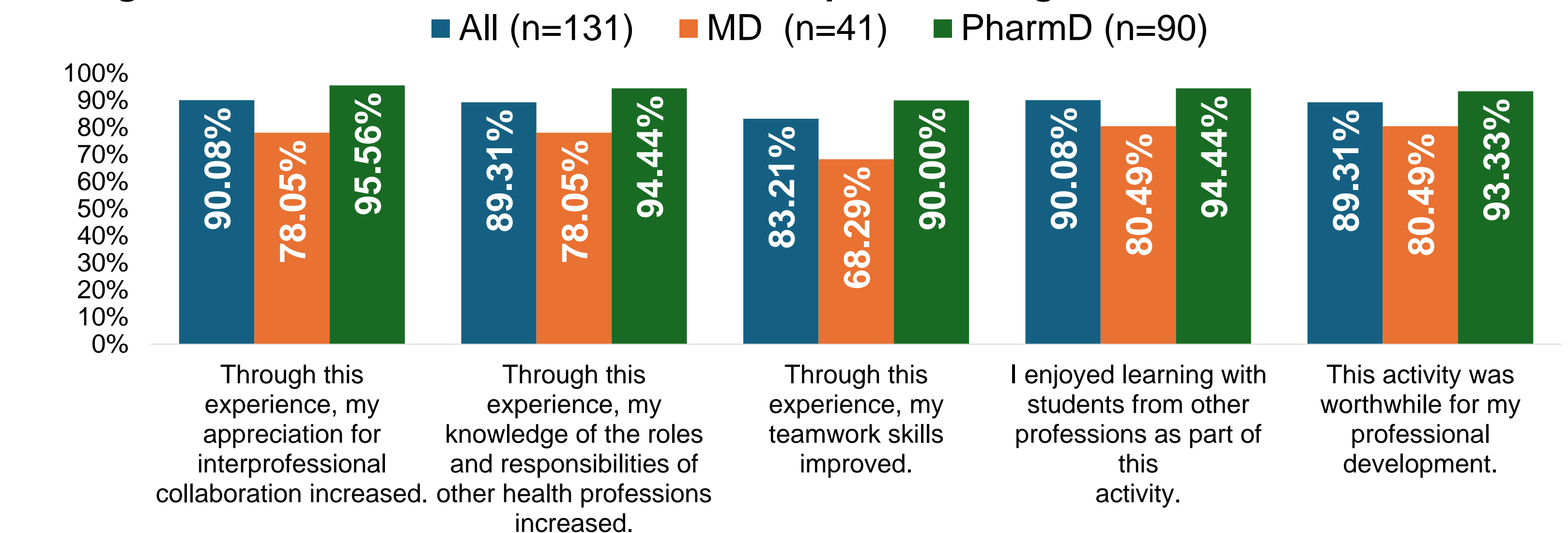
Survey Responses	Total	Medical	Pharmacy
Student response rate	131 (68.23%)	41 (42.70%)	90 (93.75%)
Location			
Columbia	164	85	79
Florence	11	11	--
Greenville	17	--	17
Previous personal application of CGM	19.23%	41.64%	8.99%
Ability to wear CGM for expected duration	68.46%	56.10%	74.16%
Utilization of edit feature of the CGM	24.62%	29.27%	22.47%
Average times per day CGM glucose values checked			
0	7.69%	10.00%	6.67%
1-3	9.23%	10.00%	8.89%
4-6	10.00%	10.00%	10.00%
7-9	20.77%	27.5%	17.78%
>10	52.31%	42.5%	56.67%

## Results

**Figure 1: Student Assessment of Objectives - % Agreement**



**Figure 2: Student Assessment of IPE Perceptions - % Agreement**



## Conclusions

- This interprofessional clinical experience simulation proved to be valuable to both medical and pharmacy students regarding their knowledge gained for collaborative diabetes management in both inpatient and outpatient care and use of CGMs for future practice experiences.
- Medical students rated satisfaction with clinical experience higher than IPE, and pharmacy students indicated a high rate of satisfaction with both.

## References

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