

Description and Preliminary Evaluation of a Diabetes Technology Simulation Course

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Abstract

Background:

We aim to provide data on a diabetes technology simulation course (DTSC) that instructs internal medicine residents in the use of continuous subcutaneous insulin infusion (CSII) and continuous glucose monitoring system (CGMS) devices.

Methods:

The DTSC was implemented during calendar year 2012 and conducted in the institution's simulation center. It consisted of a set of prerequisites, a practicum, and completion of a web-based inpatient CSII-ordering simulation. DTSC participants included only those residents in the outpatient endocrinology rotation. Questionnaires were used to determine whether course objectives were met and to assess the satisfaction of residents with the course. Questionnaires were also administered before and after the endocrine rotation to gauge improvement in familiarity with CSII and CGMS technologies.

Results:

During the first year, 12 of 12 residents in the outpatient endocrinology rotation completed the DTSC. Residents reported that the course objectives were fully met. The mean satisfaction score with the course ranged from 4.0 to 4.9 (maximum, 5), with most variables rated above 4.5. Self-reported familiarity with the operation of CSII and CGMS devices increased significantly in the postrotation survey compared with that on the prerotation survey (both $p < .01$).

Conclusions:

In this pilot program, simulation-based education increased the perceived familiarity of residents with CSII and CGMS technologies. In light of these preliminary findings, the course will continue to be offered, with further data accrual. Future work will involve piloting the DTSC approach among other types of providers, such as residents in other specialties or inpatient nursing staff.

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Abbreviations: (CGMS) continuous glucose monitoring system, (CSII) continuous subcutaneous insulin infusion, (DTSC) diabetes technology simulation course

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