### Significance
- Approximately 28.8 million Americans (or 8.3% of the population) are affected with diabetes, and an estimated one-third more of the U.S. population has pre-diabetes (American Diabetes Association, 2014).
- Seven of every 10 adults with diabetes never reach target goals for disease management (American Diabetes Association, 2014).

### Review of Literature
#### Key terms:
- Diabetes OR "diabetes self-management" AND "short message service" OR "SMS" OR "text message" AND "web-based intervention"

#### Inclusion Criteria:
- Peer-reviewed research published in English between 2007-2014 that included adults with diabetes type 2, aged 18-75, with primary focus on web-based messaging interventions that assist in self-management education.

### Synthesis of Evidence
#### Samples:
- Adult patients with diabetes type 2, ages 18-65
- Design: Qualitative, quasi-experimental, systematic reviews, meta-analysis, environmental scan, clinical guidelines.

#### Outcomes:
- Diabetic Education via SMS can improve A1C values.
- Diabetic Education via SMS can improve self-care skills.
- Diabetic Education via SMS can eliminate participation barriers of time and location.
- Patients are satisfied with SMS interventions.

### Implementation
#### Sample:
- Adult patients with diabetes type 2 (N = 16)

#### Design:
- 30-day SMS program with glucose log and pre/post-intervention DSMQ

#### Theoretical Model:
- Chronic Care Model

#### Evidence-based Practice Model:
- Rogers' Diffusion of Innovation Theory

#### Practice/Protocol Change:
- Development of 30-Day Diabetes Education Program
- Enrollment of EBP project participants from target clinic, community presentation, and peer-providers
- Delivery of daily SMS messages from patient portal to participants' web-enabled device of choice
- Two-way SMS communications to respond to patient needs
- Pre- and post-intervention DSMQ

#### Time:
- 30 Days

### Evaluation of Changes
#### DSMQ:
- Self-management questionnaire completed pre- and post-intervention
- Pre-DSMMP A1C: Provides by participant PCP prior to enrollment in program and converted to A1C using the ADAAS formula
- SMBG Log: 30-day log of daily SMBG values converted to 30-day mean and compared to pre-DSMMP eAG
- Participant Satisfaction Survey: Likert Scale of 0-4, 8 questions, completed at end of 30-day program

### Decision to Change Practice
- **Best Practice Recommendation:**
  - The use of a web-enabled technology to deliver diabetes self-management support and education, in a SMS platform, can reduce A1C values and improve self-reported self-care knowledge and behaviors.
  - According to the ADA Guidelines, diabetes self-management education content should consist of the following components:
    - diabetes disease process,
    - nutritional management,
    - physical activity,
    - medication adherence,
    - SMBG,
    - prevention of acute and chronic complications, and
    - health behavior modification.

  - Two-way SMS communication increases patient satisfaction with intervention, enhances their feelings of support, and improves communication efforts between patient and provider.

### Project Outcomes
- **SMBG:**
  - Pre-Intervention (m = 38.58, sd = 28.07)
  - Post- (m = 28.07, p < 0.001)
  - Statistically Significant (m = 28.07, p < 0.001)

- **DSMQ Sub Scales:**
  - SMBG Pre-Intervention (m = 7.33, sd = 1.33)
  - Statistically Significant (m = 7.33, p < 0.001)

- **Practice/Protocol Change:**
  - Integration with existing EHR
  - Complies with meaningful use requirements
  - Participants' eager adoption of innovation

### Conclusions
- **Effectiveness of EBP Project:**
  - This EBP project was a successful implementation of a diabetes education program delivered from a patient portal to a web-enabled device in the form of SMS, to adult patients with diabetes type 2, resulting in SMBG value reduction and improved self-reporting of self-care management skills and behaviors.

### Recommendations
- **Practice:**
  - Asynchronous delivery of chronic disease education removes barriers of time constraints and attendance conflicts and encourages learning and participation.
  - Using two-way SMS education via a patient portal using technology required for "meaningful use" in an innovative way to disseminate educational content that positively impacts chronic disease outcomes.

- **Theory:**
  - The Chronic Care Model provides a complete framework for diabetes education and management.