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EXPERIENCE NEW HORIZONS IN DIABETES

Welcome!
A Social Media Learning Collaborative Approach to Competency-Based Training in Diabetes

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Disclosures

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Purpose/Objectives

• Translating medical research into clinical practice is challenging, especially when the focus is on glycemic control and patient-centered outcomes

• Objectives
  – Design a social-media learning collaborative to improve personalized medicine and reduce health disparities in clinical practice through enhanced dissemination and implementation educational strategies
  – Develop an online case-based, interactive training toolkit to improve clinical competency in adhering to the ADA and AACE guidelines for individualizing HbA1c targets based on patient demographic, clinical, psychological and socio-economic factors
Materials/Methods

• Pooled Randomized Clinical Trials (High Benchmark Reference):
  – 19 clinical trials with 6,954 patients from 1,002 clinics on 38 different diabetes treatment regimens
  – Clinical, laboratory, demographic, socio-economic, and quality of life assessments

• Electronic Health Records (Clinical Practice Reference):
  – 233,627 patients with type 2 diabetes, including 43,294 who were naïve to medication, followed by primary care physicians from 2000 - 2014

• Methods:
  – Develop a model to predict the probability of achieving HbA1c < 8% or < 7% using individual patient characteristics in the RCTs
  – Test and verify the model in the EHR clinical practice database
  – Develop calculators that employ case-based exercises, allowing the learner to modify patient characteristics to explore how individual patient profiles influence the probability of reaching target glycemic goals
Results—Personalizing Target Goals

Example: Probability of achieving HbA1c < 8% after 12 weeks on diet and exercise or a sulfonylurea

By including the following data for each patient, we can personalize a “High Benchmark” target prediction:

• Age
• Sex
• Race/Ethnicity
• Body Mass Index (BMI)
• Current Fasting Plasma Glucose
• Current HbA1c
• Duration of Diabetes (yrs.)
• Previous Diabetes Treatment
• Socio-Economic Status
Example:

- What is the probability of achieving HbA1c goals of < 8% (or < 7%) using a sulfonylurea vs. metformin in a type 2 diabetes patient who was previously untreated?
- Interactive calculator illustrates how probabilities change based on patient's age, gender, race, BMI, HbA1c, FPG, duration of diabetes, socioeconomic status....

Probability that HbA1c is:

- Female Age = 65, BMI = 24, HbA1c = 9.5
  - < 8%: 69%
  - < 7%: 49%
- Male, Age = 35, BMI = 36, HbA1c = 9.5
  - < 8%: 58%
  - < 7%: 39%

Interactive Exercises

Case Descriptions and Pre-Test

2. Please answer the following questions regarding the hypothetical clinical case described below:

In your general practice, a 50-year old African American women is newly diagnosed with type 2 diabetes. She has a BMI of 36 kg/m², a fasting blood glucose of 150, an HbA1c of 9.5. Even though she is in poor control, she wants to try diet and exercise before going on oral medication. Assume that she is a typical patient with these characteristics. She visits the nutritionist and she also receives exercise counseling. She returns to have her HbA1c checked after three months. Answer the following questions.

After three months on diet and exercise only, enter your estimate of the probability of her HbA1c being... (enter a probability between 0 and 1.0)

HbA1c < 8% ___________________________
HbA1c < 7% ___________________________
Conclusions

- **Dissemination and implementation** of research results into practice involves translating findings into meaningful concepts for patient care.
- **Clinical trials** tell us how to care for the “average patient,” but that patient does not exist in practice. Each patient responds very differently based on demographic, clinical, socio-economic and behavioral characteristics.
- **RCTs and EHR data** can be used to **personalize therapeutic options** to fit the individual needs of patients and **reduce health disparities**.
- **Interactive case-based toolkits** can be developed as part of a social media learning collaborative that broadens dissemination beyond research journals, helping the learner visualize how new findings might be implemented in clinical practice.
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