Barriers to Diabetes Technology in Low-Income Patients
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Objective
Identify and assess the barriers to successfully utilizing diabetes technology in low-income patients living with type 1 diabetes

Background
- Risk Factor | Low Socio-Economic Status (SES)
- Low SES | 3x Risk of Diabetes-Related Death
- Lower SES Children | Lower CGM Usage Rate
- CGMs Users | Report Lower (~1%) A1Cs
- CGMs | Add 0.54 Quality-Adjusted Life Years (QALYs)
- Cost of CGM vs. Manual Testing | $11,032 vs. $7,236

Results
- Exclusion Criteria
  - Not directly studying a SES/behavioral barrier
  - Duplication
  - Relevancy

- Additional Findings
  - 4x Day SMBG barrier imposed by public and private insurance
  - Lack of clinical trials looking at low SES and T1D
  - Lower clinical outcomes for Medicaid and CHIP patients
  - Few U.S.-based studies

Methodology
1. CMS Data Review
   - Overview of states that offer CGM coverage under public insurance
   - Review of states' per-capita spending on diabetes
   - Review of states' per-capita prevalence
   - Analysis of products covered/potential barriers to coverage
   - Comparison of public insurance options between states

2. Keyword Search
   - Identify
     - Potential barriers
   - Search
     - Keywords in ClinicalTrials.gov
   - Assess
     - Relevant studies related to barriers

3. Identified Barriers
   - SES
   - Low-Income
   - Minority
   - Health Literacy
   - Education Level
   - Insurance Type

Conclusions
A clinical trial keyword search and CMS data examination revealed:
- A lack of clinical trials examining access barriers for low-SES type 1 diabetes patients as indicated by 25 relevant results out of 184 total results
- A need for more research within the US for low SES type 1 diabetes patients
- That identified barriers include a lack of personal empowerment, access, and cost
- That CGMs can be used by low-income populations with high success
- That most state Medicaid programs spend around $18,000 on diabetes-related costs, and very few provide CGMs coverage

Therefore, adequate access to CGMs can increase health outcomes for low-SES patients, while simultaneously reduce state Medicaid programs costs for covering this population. Improved access and increased support associated with these devices is warranted, as well as further research in this field.

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Emily Donahue, BS ’21 is a rising senior at USC majoring in Pharmacology and Drug Development, with a minor in Business Law and is originally from Lake Tahoe, NV. She is planning on pursuing a career in patent law. On campus, Emily is involved in Undergraduate Student Government, with her most recent position serving as a Senator and a member of the Executive Committee, as Speaker of the Senate. Through her time in Student Government, she was able to work on many initiatives, including working with senior leadership on establishing a center for first-generation college students and expanding the Metro-U program to undergraduate students. Additionally, she serves as a senior health educator for Peer Health Exchange, where she teaches equity-based health education to local high school students. She is also involved in Society 53, Alpha Delta Pi, College Diabetes Network, and is a Norman Topping and USC Presidential scholar. She has held past work experiences within patient advocacy and governmental relations, as well as patent law and regulatory science. Outside of the classroom, she loves hiking, skiing, and walking her two dogs. She is passionate about regulatory science, type 1 diabetes research, politics, and the intersection of health sciences and socioeconomic status. She hopes to go into a career path that encapsulates these interests and allows her to impact individuals who have less access to health resources. emilydon@usc.edu