Key Summary of Published Article

Diabetes Screening

Complementary Insights from Glucose and HbA_{1c} Tests

How often do patients with normal glucose levels on diabetes screening have elevated HbA_{1c}?

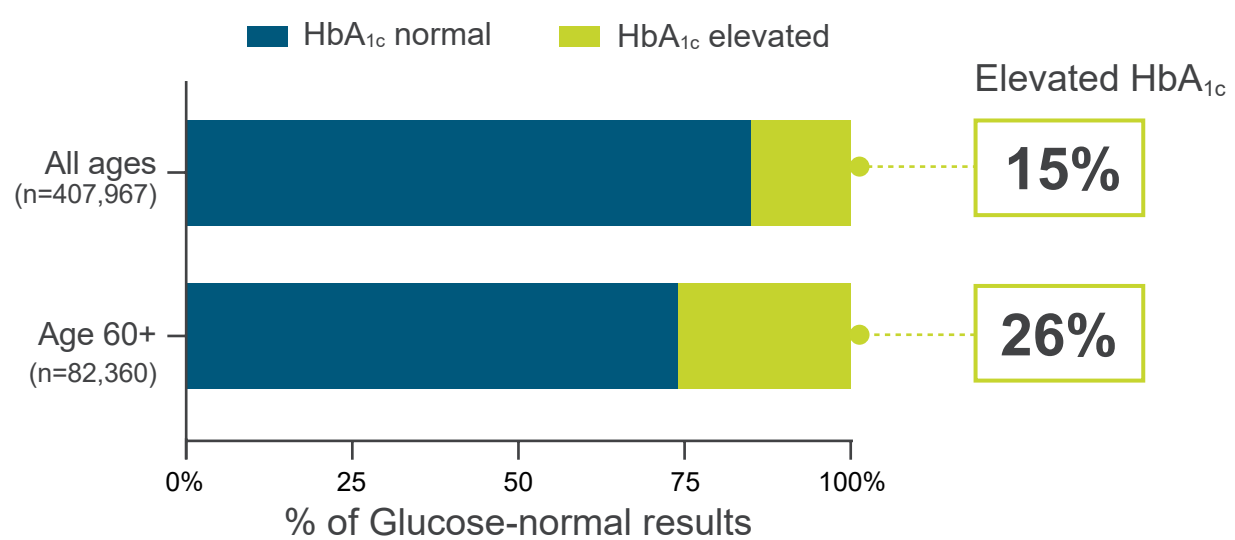
Background

Current guidelines for diabetes screening recommend use of either blood glucose or HbA_{1c} testing but may limit HbA_{1c} testing coverage for diabetes screening.

Methods and Results

Retrospective analysis of >500,000 pairs of simultaneous glucose and HbA_{1c} tests ordered for the purpose of diabetes screening in 2020.[1]

HbA_{1c} Test Results When Glucose Is Normal



Glucose and HbA_{1c} test results can be discrepant, especially in older adults. Measuring HbA_{1c} along with glucose may improve the clinical utility of diabetes screening.

1. Hilborne LH, Bi C, Radcliff J, et al. Contributions of glucose and hemoglobin A_{1c} measurements in diabetes screening. *Am J Clin Pathol*. Published online March 25, 2021. doi:10.1093/ajcp/a qab106

For more information about Quest Diagnostics publications, please visit the Clinical Education Center at Education.QuestDiagnostics.com/Publications.

Key Summary of Published Article

Diabetes Screening

Complementary Insights from Glucose and HbA_{1c} Tests

Article Title: Contributions of Glucose and Hemoglobin A_{1c} Measurements in Diabetes Screening

Lee H Hilborne,[1,2] Caixia Bi,[2] Jeff Radcliff,[2] Martin H Kroll,[2] Harvey W Kaufman[2]
[1]University of California, Los Angeles, CA, USA; [2]Quest Diagnostics, Secaucus, NJ, USA

Citation: *Am J Clin Pathol*. Published online August 31, 2021. doi:10.1093/ajcp/aqab106

Background

- Current guidelines for diabetes screening recommend use of either glucose or hemoglobin A_{1c} (HbA_{1c}) testing, and some health plans cover only glucose testing.
- However, HbA_{1c} levels reflect average glucose levels over several months and may therefore detect glucose abnormalities that could be missed by point glucose measurement alone.
- **Objective:** This study assessed the contributions of both glucose and HbA_{1c} testing to diabetes screening among patients tested for both at a large US clinical laboratory.

Methods

- Investigators retrospectively reviewed deidentified test results from patients who were screened for diabetes from January through December 2020.
  - Paired glucose and HbA_{1c} results were included if reported with ICD-10 code Z13.1, indicating that the patient had met diabetes screening inclusion criteria.
  - Test results were excluded if reported with an ICD-10 code suggesting a glucose abnormality (eg, known diabetes, out-of-range glucose, metabolic syndrome) or if a patient was identified as nonfasting.
- Denial rates for HbA_{1c} testing by payer type (Medicare, Medicare Advantage, Medicaid, Managed Medicaid, or commercial insurance) were explored using claims data.

Results

- There were 15.47 million paired test results for glucose and HbA_{1c} in 2020.
  - 672,467 (4.4%) paired results were from diabetes screening.
  - 116,585 (17.3%) paired results from diabetes screening were excluded because of previously identified glucose abnormalities or because the specimen was nonfasting.
  - 555,882 paired results remained for analysis.
- Among patients in all age groups, 15% with normal glucose had elevated HbA_{1c}.
  - Among patients ages 60 years or older, 26% with normal glucose levels had elevated HbA_{1c}.
- Medicare beneficiaries had the highest rate of denials for HbA_{1c} testing (59.6%).

Conclusions

- Although many health plans may limit HbA_{1c} testing coverage for diabetes screening, the findings of this study suggest that HbA_{1c} measurement may complement glucose testing and improve the clinical utility of diabetes screening.

Reference

1. National coverage determination (NCD) for glycated hemoglobin/glycated protein (190.21). Publication No. 100-3, version No. 1. Centers for Medicare & Medicaid Services Web site. Published November 25, 2002. Accessed March 21, 2021. www.cms.gov/medicarecoverage-database/details/ncd-details.aspx?NCDId=100