



# Effective Health Care

## Point-of-Care Testing for HbA1c Nomination Summary Document

### Results of Topic Selection Process & Next Steps

- Point-of-care testing for HbA1c was found to be addressed by an in-process review. Given that the in-process review covers this nomination, no further activity will be undertaken on this topic.
  - In preparation for publication (as of October 6, 2010) by Lubna Al-Ansary, Andrew Farmer, Jennifer Hirst, Nia Roberts, Paul Glasziou, Rafael Perera, Christopher Price. Point-of-Care Testing for HbA1c in the Management of Diabetes: A Systematic Review and Meta-analysis.

### Topic Description

**Nominator:** Health care professional association

**Nomination Summary:** The nominator is interested in a technology assessment and systematic review on point-of-care testing (POCT) for glycated hemoglobin (HbA1c) with immediate feedback of results to improve outcomes in the management of diabetes mellitus.

**Staff-Generated PICO:**

**Population(s):** Patients with diabetes mellitus, type 1 or type 2

**Intervention(s):** POCT for HbA1c

**Comparator(s):** Conventional testing done by a central laboratory

**Outcome(s):** Analytic performance, quality of care, clinical health outcomes (e.g., HbA1c values, rate (or incidence) of development of complications), patient involvement, economic outcomes (e.g., number of clinic visits, short- and long-term costs of management of complications)

**Setting(s):** Primary or secondary care settings

**Key Questions from Nominator:**

1. What are the analytical performance requirements for the HbA1c measurement used in management of diabetes?
2. In patients with diabetes, will the provision of HbA1c testing using point-of-care testing provide results of equivalent analytical performance to those obtained from a central laboratory?
3. In patients with diabetes managed in a secondary care setting, will the provision of the HbA1c result using point-of-care testing, with immediate feedback of results at the time of the analysis, compared with conventional testing by the central laboratory, lead to better clinical outcomes (e.g., leading to a lower HbA1c result, reduction in the rate (or incidence) of development of complications)?
4. In patients with diabetes managed in a primary care setting, will the provision of the HbA1c result using point-of-care testing, with immediate feedback of results at the time of the analysis, compared with conventional testing by the central laboratory,

- lead to better clinical outcomes (e.g., leading to a lower HbA1c result, reduction in the rate (or incidence) of development of complications)?
5. In patients with diabetes managed in a secondary care setting, will the provision of the HbA1c result using point-of-care testing, with immediate feedback of results at the time of the analysis, compared with conventional testing by the central laboratory, lead to better economic outcomes (e.g., leading to a reduced number of clinic visits, reduced cost of management of complications)?
  6. In patients with diabetes managed in a [primary] care setting, will the provision of the HbA1c result using point-of-care testing, with immediate feedback of results at the time of the analysis, compared with conventional testing by the central laboratory, lead to better economic outcomes (e.g., leading to a reduced number of clinic visits, reduced cost of management of complications)?

## Considerations

- The topic meets EHC Program appropriateness and importance criteria. (For more information, see <http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/>.)
- An in-process review by the University of Oxford, titled *Point-of-Care Testing for HbA1c in the Management of Diabetes: A Systematic Review and Meta-analysis*, addresses this nomination. This systematic review of clinical trials aims to determine if POCT for HbA1c in the management of patients with diabetes improves glycemic control, compared with the use of a laboratory-based testing service. The primary outcome measures included in the review are (i) the change in HbA1c level, (ii) the proportion of patients with an HbA1c  $\leq 7.0\%$ , and (iii) a measure of treatment intensification. Additional included outcome measures are emergency admissions, patient satisfaction as reflected in questionnaires, and costs. The review covers all areas for which there is available evidence, including diagnostic test properties of POCT versus standard testing, improved patient understanding, treatment compliance, intermediate outcomes such as HbA1c results, and economic outcomes. Areas that are not covered due to insufficient evidence include patient-centered outcomes and impact on therapeutic decision making.