Blood Glucose Meter Guidance Documents

FDA-Industry IVD Roundtable Meeting
May 30. 2014

Leslie Landree, Ph.D.
Division of Chemistry and Toxicology Devices
Office of In Vitro Diagnostics and Radiological Health
Center for Devices and Radiological Health
Food and Drug Administration

Overview

- Provide context for recently published draft guidance
- Overview of guidance documents
- Clarify FDA's thinking on key aspects of the guidance documents
- Preliminary look at types of comments received

FDA Clearance of Glucose Meters

- Glucose meters are Class II devices - require 510(k) clearance prior to marketing

- FDA clears glucose meters as aid in monitoring the effectiveness of diabetes control program

- Commonly used off-label:
  - Glucose measurement in hospitals (diabetics and non-diabetics)
  - To manage critically ill patients
  - For the screening and diagnosis of diabetes and gestational diabetes

Historically OTC

- Manufactures typically seek clearance for OTC use of glucose meters
- Majority of the meters on the market today were designed and validated only for OTC use
- OTC = CLIA waived by regulation

Call for Change

- Clinical use of meters changed – but meter design and validation have not considered those changes

- Numerous Groups have called for improved accuracy criteria
  - Revised ISO 15197:
    95% within +/- 15% ≥100 mg/dL, +/- 15mg/dL <100mg/dL of reference
  - College of American Pathologists (CAP):
    95% within +/- 10% of reference
  - American Diabetes Association (ADA):
    +/- 5% of reference
  - American Association of Clinical Endocrinologists (AACE):
    < 5% total analytical error, 3rd party testing overseen by FDA

Call for Change

- Letters from clinical groups: Patients are being put at risk

- Glucose meters = Most MDRs in CDRH (>25,000/year)

FDA Public Meeting on Blood Glucose Meters

March 2010

Goal = Obtain input from patients, clinical community and industry on what is needed for glucose meters

- Valuable feedback provided
- Call for tighter standards

Public Meeting - Feedback

- Intended Uses
  - Meters currently studied for home use – used in hospitals
  - Used in contraindicated populations (e.g., ICU, DKA) in hospitals
  - OTC and professional populations different

- Standards – different needs for OTC and POC uses
  - Tighter accuracy criteria needed
  - Glycemic control protocols may require more accurate performance

- Performance Studies
  - Studies not sized to assess true field performance
  - Little data in the critical hypoglycemic range
  - Specific standards needed for outliers - 95% may not be enough
    - 1% "outliers represent millions of data points" – not acceptable
  - Interfering substances - Vary by patient population, treatments
  - Limited hematocrit range (20-60%, 30-55%) – sufficient for hospital use?

Public Meeting - Feedback

- Human Factors
  - Improved assessment of human factors which affect accuracy
  - Shipping and Storage conditions
  - Better labeling/assessment

- Labeling
  - New labeling standards needed for analytical and clinical performance for OTC devices
  - Patients want to be able to choose an accurate meter
  - Use on multiple patients – risk of infection/transmission

Draft Guidance Documents

- Self-Monitoring Blood Glucose Test Systems for Over-the-Counter Use
- Blood Glucose Monitoring Test Systems for Prescription Point-of-Care Use
- Published in draft January 7, 2014
- Comment period closed May 7, 2014
- FDA currently analyzing all comments provided on the documents

Draft Guidance Documents

- 2 separate guidances: healthcare setting use (Rx) and home use (OTC)
  - Distinct patient populations
  - Allows delineation of the separate issues in these populations
  - One size does not fit all

- Accuracy (vs. reference)
  - Draft guidances propose new criteria
  - Size of accuracy study increased to optimize the balance between a reasonable sample size and confidence intervals

Draft Guidance Documents

- Guidance on studies for: precision, linearity, interference testing
- Hematocrit: minimal limits, study design, analysis, acceptance criteria
- Flex Studies, based upon risk analysis
- Test strip lot release criteria in 510(k)
- Cleaning and Disinfection guidance (single vs multiple patient use)
- Enhanced OTC Labeling
  - boxed warning
  - Outer box performance summary

FDA Perspectives on Key Points of the Guidance Documents

- Complexity and CLIA Waiver (BGMS)
  - FDA understands the importance of CLIA waived devices in professional settings
  - Studies in the guidance were designed to support both clearance and waiver simultaneously
  - Encourage manufacturers to discuss study conduct with us ahead of time

Alternate Standards

Comparison to related standards

- ISO 15197 (2013)
  - Not as comprehensive as FDA's draft guidances
  - Addresses OTC only
  - Not recognized by FDA
- POCT-12:
  - For healthcare professionals and hospitals to use for internal validation, not for device manufacturers
  - Published criteria (~+/- 12.5%) was decided on via the average between clinician/lab recommendations (+/- 10%) and industry recommendations (+/- 15%)

Some Comments: SMBG guidance

In general, patient comments are:

- In favor of tighter criteria
- In favor of the labeling – accuracy on the outer box
- In favor of post-market surveillance
- In favor of test strip lot release criteria
- In favor of a robust MDR policy
- Request same high accuracy standards as POC guidance

Some Comments: SMBG guidance

In general, industry comments:

- Support of FDA's effort to clarify expectations for premarket notifications
- Provide some comments on analytical studies and criteria
- Propose test strip lot release criteria not be included in premarket notifications

Some Comments: BGMS/POC Guidance

In general, health care professionals/industry comments:

- Support of FDA's effort to clarify expectations for premarket notifications
- Provide some comments on analytical studies and criteria
- Propose test strip lot release criteria not be included in premarket notifications
- Support infection control

BGMS/POC Guidance

In general, patient comments are in favor of:

- Tighter accuracy criteria
- Post-market surveillance
- A robust MDR policy
- Premarket FDA review of test strip lot release criteria

Thank you!

Questions?