FDA/CDRH perspectives on validation of IVD biomarkers

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Validation Testing should support the Intended Use of the device

An Intended Use statement should include the clinical indication in which the device will be used.

Recent example:

The Astute Medical NEPHROCHECK® Test System is intended to be used in conjunction with clinical evaluation in patients who currently have or have had within the past 24 hours acute cardiovascular and or respiratory compromise and are ICU patients as an aid in the risk assessment for moderate or severe acute kidney injury (AKI) within 12 hours of patient assessment. The NEPHROCHECK® Test System is intended to be used in patients 21 years of age or older.

Performance Information may include:

- Accuracy - demonstrated in a clinical trial or a method comparison study (for well established analytes)
- Precision
- Interference and cross reactivity
- Limits of Detection
- Measuring range of the device/Linearity (if applicable)
- Specimen stability

IVDs are subject to Labeling Requirements per CFR 809.10

21 CFR 809.10 establishes certain types of information that should be included in the labeling of IVDs such that a user will be able to interpret the results they obtain, including:

- **21 CFR 809.10(b)(3):** Summary and explanation of the test. Include a short history of the methodology, with pertinent references and a balanced statement of the special merits and limitations of this method or product. If the product labeling refers to any other procedure, appropriate literature citations shall be included and the labeling shall explain the nature of any differences from the original and their effect on the results.
- **21 CFR 809.10(b)(11):** Expected values: State the range(s) of expected values as obtained with the product from studies of various populations. Indicate how the range(s) was established and identify the population(s) on which it was established.
- **21 CFR 809.10(b)(12):** Specific performance characteristics: Include, as appropriate, information describing such things as accuracy, precision, specificity, and sensitivity. These shall be related to a generally accepted method using biological specimens from normal and abnormal populations. Include a statement summarizing the data upon which the specific performance characteristics are based.