Review Elements for COVID-19 In Vitro Diagnostic Tests

For Nucleic Acid Assays

	Guidance
Device Description	• Intended use • Testing setting • Extraction methods • Targeted sequence • Probes and primers sequences
Limit of Detection	• Spiking RNA / inactivated virus into clinical (preferred) or artificial matrix. • The matrix should represent the most challenging clinical matrix. **Initial study** • Dilution series including 3 replicates for each concentration. **Confirmatory study** • 20 replicates of the final concentration. • Acceptance criteria: 19/20 positive.
Inclusivity	• Provide results of in silico analysis including the % identity to published COVID-19 sequences. • 100% of the published sequences should be detectable.
Cross-Reactivity	• Provide results of in silico analysis of primers and probes against common respiratory flora, other viral infections. • Wet testing is recommended. • Cross-reactivity is defined as greater than 80% homology. • Matrix-specific cross-reactivity should be assessed.
Precision	• Conduct internal precision testing (i.e., at the manufacturer's site) in accordance with CLSI, EP5-A2. • In the context of SAP, the 3x5x5 (3 instruments x 5 days x 5 replicates) design is acceptable to provide preliminary estimates of the repeatability (within run) and reproducibility of the assay. • Full assessment of repeatability using the 20x2x2 (20 days × 2 run per day × 2 replicates) is expected at time of licensing.

Stability	• Briefly describe stability test plan. • Reagent stability studies do not need to be completed at the time of IO issuance, however the study design should be agreed upon during review and the stability studies started immediately following authorization.
Clinical Evaluation	• Known positive samples or contrived clinical samples. • Minimum of 30 reactive and 30 non-reactive specimens. • 20 samples at 1x-2x LoD (95% agreement). • Other concentrations and non-reactive (100% agreement).
Point of Care	• Near patient studies performed in clinical setting by intended users. • Minimum of 9 operators and questionnaire to assess IFU clarity.
Labeling	• Instructions for use • Reagent labels

Based on the Policy for Diagnostic Tests for Coronavirus Disease 2019 during the Public Health Emergency guidance issued by the US FDA on March 16, 2020, and on the EUA Interactive Review Template for Molecular-Based Tests for SARS-CoV-2 That Causes COVID-19 issued by the US FDA on March 12, 2020.

The requirements described in the Interim Order (IO) are also being evaluated.

For Serological Assays

For requirements related to serological tests submitted under the COVID-19 Interim Order (IO), please consult Health Canada's guidance document, "Requirements for Serological Antibody Tests".

Manufacturers submitting an application for a serological antibody test under the IO should confirm in their application e-mail that they have reviewed the requirements described in the guidance document above to ensure that they have sufficient supporting evidence.