# PQS OOS Investigation Checklist

Practical learning aid for pharmaceutical QC and QA professionals

**Use:** Educational investigation framework

**Source basis:** FDA OOS Guidance (May 2022) and Health Canada GUI-0001

## 1. At OOS Detection

- [ ] Confirm the applicable specification or acceptance criterion and the reported result.
- [ ] Notify the appropriate supervisor and Quality function according to the approved procedure.
- [ ] Preserve samples, standards, solutions, raw data, metadata and instrument evidence where applicable.
- [ ] Do not perform undocumented repeat injections, informal retesting or selective data handling.

## 2. Initial Laboratory Investigation

- [ ] Review calculations, weights, dilutions, preparation steps, transcription and method execution.
- [ ] Review standards and reagents: identity, potency, expiry/retest status, preparation and storage.
- [ ] Review instrument status, calibration/qualification, alarms and system suitability.
- [ ] Review chromatograms or spectra, integration, sequence, audit trail, aborted or repeated injections.
- [ ] Review sample preparation: extraction, filtration, sonication, glassware, timing and sample integrity.
- [ ] Interview the analyst objectively while relevant evidence is still available.
- [ ] Test hypotheses with evidence; do not record 'analyst error' without scientific support.

## 3. Decision After Phase I

- [ ] If a clear laboratory cause is demonstrated, document the evidence and determine whether invalidation is justified.
- [ ] If laboratory cause is not conclusive, do not invalidate the OOS simply because a repeat result passes.
- [ ] Expand the investigation to manufacturing and other potential sources of the failure.

## 4. Full-Scale Investigation

- [ ] Review batch manufacturing and packaging records, in-process controls and process trends.
- [ ] Review equipment logs, maintenance, calibration, alarms and validated operating ranges.
- [ ] Review raw material, supplier and dispensing history where relevant.
- [ ] Review deviations, complaints, prior OOS/OOT events, stability data and historical performance.
- [ ] Evaluate whether other lots, products, methods, instruments or systems could share the same failure mechanism.
- [ ] Ensure any retest or resample plan is scientifically justified and approved in advance.

## 5. Before Closure

- [ ] Document the root cause or the most scientifically supported investigation conclusion.
- [ ] Consider all valid data - favorable and unfavorable - in the final evaluation.
- [ ] Assess product and batch impact and define the scope of potentially affected lots or systems.
- [ ] Ensure batch disposition is made by the authorized Quality function.
- [ ] Assign correction and/or CAPA when justified and define effectiveness verification.
- [ ] Include the event in appropriate trending and management-review processes.

**Red flags to avoid**
Testing into compliance; undocumented trial injections; invalidating because a retest passed; unsupported 'analyst error'; arbitrary retest counts; stopping at the laboratory when no conclusive laboratory cause exists.

**Educational note:** This checklist does not replace applicable regulations, an approved OOS SOP, product-specific requirements or Quality Unit decisions. Investigation phases, retesting, resampling, batch disposition and CAPA requirements must follow the applicable procedure and regulatory framework.