

ABSTRACT FORM ECAT SYMPOSIUM 8 – 9 NOVEMBER 2018

Name:

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Title:

How to evaluate your z-score?

Abstract:

An External Quality Assessment (EQA) organization reports z-scores as a performance measure for a participating laboratory. In this talk we will explain from a statistical perspective what is the concept of a z-score and what is the story that one can/cannot tell.

The goal is to highlight two main aspects of z-score(s) evaluation: **(1) transient** and **(2) longitudinal**. Specifically we will cover:

(1a) Single z-score: We will start by describing the statistical concept of a single z-score along with its assessment related to standard confidence zones.

(1b) Multiple z-scores analysis: A medical laboratory receiving several z-scores needs to adjust appropriately the confidence zones used for evaluation, based on the number of tests, allowing proper comparison among laboratories.

(1c) Analysis of correlated Z-scores: when judging pairs of correlated tests via their respective z-scores the concept of an appropriate bivariate confidence zone can be quite informative

(2) Z-score history: considering that we have available a series of consecutive z-scores (say over a period of 1, 2 or even more years) an interesting question is how one can gain information from the way these z-scores evolve over time.

The statistical concepts will be covered in a non-technical manner conveying the message via illustrations.