Evidence-Based Laboratory reporting to clinicians

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The difference between an 'Information' and a 'notice' lies in the former's ability to remove or significantly reduce someone's uncertainty about something. In Laboratory Medicine, you have to know exactly how to ask a clinical question, i.e. what are you looking for, in order to get a plausible answer. A test result, the same test result, is going to get completely different information depending on the clinical context where you decided to order it, namely for screening or diagnosis rather than for monitoring or follow up. The first step in Evidence Based Laboratory Medicine is asking an answerable clinical question, e.g. using a popular tool as the Fagan's nomogram you have to get some clinical (pre-test) information in order to evaluate the post-test probability. As a laboratory physician you must understand the clinical question; the other way round, clinicians must be aware of the more relevant pre-analytical, analytical and post-analytical issues. How the laboratory reports its results is paramount for clinicians to understand their real meaning. A typical Laboratory report is made of a list of figures sided by reference intervals, set to dimension the biological signal. Common practice and professional standards such as ISO 15189 and CPA UK both suggest the application of appropriate comments, accuracy indicators, quality specifications, decision levels based upon biological variation or expert advice. Further improvements of Lab reports are expected adding information on pre-analytical issues, such as serum indices of hemolysis, lipemia and jaundice, managing analytical information about tests and their performance, add on testing (reflex), autoverification (faster reporting of results under defined conditions) delta checks or range checks (helping in detection of possible erroneous results), abnormality flags (high, low, critical results), correlation to other relevant results (both electronic and manual), interpretative comments, computerized decision supports (artificial intelligence). All suitable tools to generate added valuable clinical information in order to modify behavioral habits and favor a more efficient and appropriate use of lab test results. Unfortunately evidence supporting the clinical advantage of these tools are still fair. Most often added information derives from previous experience and is consensus-based. Sometimes local or national regulations and reccomandations from professional bodies help defining a more evidence based approach but up to now a clear benefit to the patient from an interpretative comment or by data on test accuracy has never been proved, even though the single physician likes to receive advice. In a survey about the order of multiple coagulation tests whose results were reported also by narrative interpretation, Laposata et al could demonstrate time savings and/or improved diagnostic workups in 80% of cases. While documenting clinician's needs is of importance, we still lack evidence that answering these needs will get improved clinical outcome fot the patient. In summary, Laboratory physicians are well aware that translational knowledge goes far beyond the analytical quality and a sound laboratory report will play a major role in the patient-centered healthcare of the near future.

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