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QUALITY OF PARAMETERS MEASUREMENT IN PRIMARY CARE

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Abstract

Linearity and Sensitivity is useful for primary care due to its good accuracy and linearity regarding the reference method. We emphasize the need for quality control either internal or external to investigate its limitations when the results are analyzed. To date, studies measuring medication error have been limited as they have focused on specific errors, such as prescribing or administration errors, rather than on the whole system of the use of medicines. Consequently, solutions to medication errors have concentrated on just one part of the whole system, such as prescribing or dispensing errors. Patients seen in primary care practices seem to be variably connected with a specific physician, and less connected patients are less likely to receive guideline-consistent care.

Keywords: Instruments, primary care, physician, kit method

INTRODUCTION

Two surveys were made of the quality of plasma cholesterol, triglycerides, creatinine, alkaline phosphotase measurements performed with a commercial desktop, and Manual kit methods. It was found that common sources of error were poor technique and the use of outdated reagent strips. Users of

such instruments outside the laboratory need help and advice with training, and guidelines for this are provided. The main recommendations are that users should establish contact with a local clinical chemistry laboratory for training and support and should participate in external quality assessment schemes. Linearity and Sensitivity is useful for primary care due to its good accuracy and linearity regarding the reference method. We emphasize the need for quality control either internal or external to investigate its limitations when the results are analyzed **[1-3]**.

We conclude that, in the present economic environment there is little incentive for general practitioners to carry out their own diagnostic tests. The accuracy and precision of desk top analysers operated by unskilled personnel are problematical, but with adequate back-up from the centralised hospital laboratory such equipment could be useful for the diagnosis and control of such problems as diabetes and anaemia. However, the most important factors necessary for the spread of desk top analysers are the availability of more tests, guarantees of reliability, and competitive prices **[4-5]**. Desk top analysers could fulfil a role in practices which control their own budgets, but this would depend on the costs of hospital laboratory tests compared with those performed in the surgery **[6-9]**.

DISCUSSION

Desk-top analysers that are simple to use, portable and free from technical requirements are now widely used. The precision of each desk-top analyser was within acceptable limits, defined as a coefficient of variation less than 5 per cent. The Mini lab showed least agreement with the routine laboratory method and caution should be taken in the interpretation of cholesterol estimations made with this device. Graphical display of results from each laboratory aided fault diagnosis and allowed the detection of between-run standardisation differences. 3. Method comparison studies were made: the only highly significant result being lower precision achieved by enzymatic cholesterol methods compared with other colorimetric methods. In triglycerides and Creatinine also higher precission achieved by colorimetric methods. For alkaline phosphatase desktop analyzer is useful to analyze the samples for the purpose of quality. But the thing technical staff and trained laboratory staff handling is more important in these type of instruments for giving quality report **[8-13]**.

Though several recent reports indicate that most of these instruments are satisfactory when used by trained

laboratory staff, it should not be assumed that they are equally reliable when used by non-technical personnel. Indeed, there is evidence that the quality of measurements made in primary care is often inferior to that obtained by laboratories. In each survey a few participants consistently failed to obtain results which agreed with the majority of the results. The commonest causes of error appeared to be poor technique and the use of reagent strips that had passed their expiry date. Most of those who performed the test were nurses, with little or no laboratory experience or awareness of the need for quality assurance, and few seemed to have any contact with a recognised laboratory. Some of them were without experience, proper knowledge and contamination of kits, they were performing biochemical tests **[10-16]**.

Technical staff or lab incharge should have (1) Contacts with clinicians with proper clinical history (2) To understanding the problems in laboratory like contamination and pippeting. (3) Quality control of external and internal (4) If kits are expiry or any other problems with the kit,contacts with manufacturers (5) fore more attentionable care in enzyme assays **[8-10, 17-18]**.

Most specimens used in these two surveys were reconstituted lyophilised serum, which can show matrix effects with the reagent strips used with this instrument. Thus these must not be used for comparisons of accuracy with that of conventional laboratory methods: fresh human serum must be used for this. External quality assessment of tests done in primary care presents several technical and organizational difficulties but is especially valuable to users who may be unaware of the need for quality assurance or of the techniques used for this. This is likely to become more important as cholesterol, Creatinine, alkaline phosphatase and other measurements become more widespread and other instruments come into general use.We are doing monthly external quality control and daily internal quality control for all the biochemical parameters **[16-19]**.

However, in plasma samples with predominantly elevated bone or placental isoenzyme and other enzymes the desk top model measured lower or higher activities, respectively. It shows a good precision and agreement with the comparison method, although the systematic differences for placental and bone ALP isoenzymes and other enzymes like Aspartate transaminase (AST), Alanine transaminase (ALT) have to be considered.

Pre-Analytical Issues

Collecting, handling, shipping, and storing of samples are potential sources for variation of lipid and lipoprotein

measurements that laboratories must take into account. Effects from storage of serum on TC, TG, HDLC, and LDLC are minimal within 4 days if
stored in the liquid state at 08 ˚C, within 6 months if stored at -20˚C and for years if stored at -80˚C.

Unfortunately, in resource-limited laboratories, adequate refrigeration and freezer facilities for storage may not be available. Transport of samples from rural areas to a central facility may actually be the limiting step in obtaining a quality result. Care must be taken to insure the integrity of the sample during transit by using either ice or frozen coolant packs. Lot of laboratories were transporting the samples by icepack within a hours, and remote places to take place for one day. A new technique that may have application in resource-limited countries involves using filter paper to collect a blood spot(s), which can then be shipped under ambient conditions to a laboratory for analysis. selecting a suitable testing instrument; providing training for laboratory technicians; establishing a simple quality control plan; and instructing staff on how to prepare frozen serum control materials suitable for assessing accuracy of lipid and lipoprotein testing **[16-19]**.

In establishing the accuracy of cholesterol measurements, attention must be devoted to aspects of the pre-analytical phase, such as preparation of the patient and type of specimen used **[15-19]**.

With public and private sector policies increasingly emphasizing the importance of primary care, the need for tools to evaluate and improve primary care performance is clear. The PCAS has excellent measurement properties, and performs consistently well across varied segments of the adult population. Widespread application of an assessment methodology, such as the PCAS, will afford an empiric basis through which to measure, monitor, and continuously improve primary care. It may be feasible to study changes over time in cardiovascular disease risk factor levels in different socioeconomic groups using routine data sets; however, prior critical examination of measurement quality is necessary **[15]**.

To improve quality of care we will need adequate data and that will require patients to provide information about what happened to them and to allow people to abstract their medical records. It also will require that physicians provide patient information when asked. We also need a strategy to measure quality and then report the results and we need to place in the public domain tool kits that can be used by physicians, administrators, and patient groups to assess and improve quality**.** Each

country should have a national quality report, based on standardized comprehensive and scientifically valid measures, which describes the country's progress in improving quality of care. The growing use of evidence-based clinical guidelines for the Integrated Management of Childhood Illness, essential obstetric care, HIV/AIDS and other critical health services has heightened interest in systems to document compliance with guidelines and monitor healthcare quality. Written for midlevel managers in charge of improving the quality of care at the level of primary care facilities, this guide explains how to establish monitoring systems to assess the quality of primary care by measuring the performance of providers and how facilities comply with standards of care. The guide describes a three-step quality monitoring approach to assess the quality of patient care: (a) determining the systems of care to be monitored and defining performance standards and indicators, (b) choosing appropriate data collection methods and designing and testing monitoring tools, and (c) analyzing and applying quality data. Methods described in the guide include direct observation of service encounters, exit interviews with patients, interviews with service providers, and reviews of medical records. Each element of the quality monitoring approach is illustrated using a running case example of the design of a quality monitoring system for the case management of acute respiratory infections in children under five years of age **[15-18]**.

The establishment of an effective quality monitoring system depends on the involvement of local managers and providers in designing and assuming ownership of the monitoring process and commitment on the part of the leadership to use quality information to make improvements. Quality monitoring is only one part of a comprehensive approach to improving the quality of healthcare which must also include providing feedback to health workers, training and motivating staff to undertake quality improvements, and designing solutions to fill the quality gap **[16-18]**.

Quality of care is a priority concern all over the world. All countries are trying to improve the effectiveness and efficiency of the care that their medical systems deliver. As a result, the use of evidence-based clinical guidelines is becoming widespread. These guidelines explain the different steps of the process of managing specific health conditions. Clinical evidence-based guidelines have been developed for the Integrated Management of Childhood Illness (IMCI), sexually transmitted diseases (STDs), delivery of essential obstetric

care, and tuberculosis, among other health conditions. The official endorsement of clinical guidelines reinforces the need for healthcare facility managers to document compliance **[19]**.

Three of the major steps involved in establishing a quality monitoring system are to: (a) decide what information you need, (b) collect the data, and (c) use the information and results.

Most decisions involved in establishing a quality monitoring system require the involvement of several types of personnel. A team, rather than a single individual, should work on the design and establishment of a monitoring system. Consensus on topics and methods of monitoring will usually be reached through brainstorming sessions and discussions. Decisions can be facilitated by looking at existing data (e.g., service statistics) and comparing them to monitoring needs **[19]**.

It is generally accepted that errors are the result of the systems that produce them **[6]**. To date, studies measuring medication error have been limited as they have focused on specific errors, such as prescribing or administration errors, rather than on the whole system of the use of medicines. Consequently, solutions to medication errors have concentrated on just one part of the whole system, such as prescribing or dispensing errors. We have little idea how these errors interact or whether problems at one part of the system would have been significantly reduced by intervention at another part of the system. An example would be medicines reconciliation interventions, which have been recommended as good practice in the India. By adopting the whole system approach from a management perspective we have discovered where the failures in quality occur in medication use in primary care in the India, and where weaknesses lie in the associated evidence base. Quality management approaches allow for the prioritization of research and the coherent change and research agenda needed to tackle these, so far, fairly intractable problems.

Valid measurement of physician performance requires accurate identification of patients for whom a physician is responsible. Among all patients seen by a physician, some will be more strongly connected to their physician than others, but the effect of connectedness on measures of physician performance is not known. Patients seen in primary care practices seem to be variably connected with a specific physician, and less connected patients are

less likely to receive guideline-consistent care.

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