

**107: AN INNOVATIVE METHOD FOR QUALITY ASSESSMENT:
THE USE OF LOT QUALITY ASSESSMENT SAMPLING FOR EVALUATING MEDICAL RECORDS**

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Objective:

To describe the use of the Lot Quality Assessment Sampling (LQAS) method for assessment of the quality of medical records.

Methods:

Lot Quality Assessment Sampling (LQAS), developed to meet industrial quality control needs, has been used in health care for health surveys. The WHO used this method to assess immunisation coverage. During the evaluation phase of a quality improvement program on medical records, LQAS was used to identify the major opportunities of improvement, in each department of 10 participating hospitals, with regards to statutory criteria. This method was thought to be an appropriate alternative to the standard sampling methods, because it provided results at the appropriate level (in each department) with a lower workload.

LQAS is identical to stratified sampling, but the samples are too small to provide what are usually considered acceptable narrow confidence intervals for stratum, or "lot", for specific parameter estimates. Rather, a decision is made about the quality of a particular lot based on the probability that the number of defective items, in the sample selected from that lot, is less than, or equal to, some critical value.

The LQAS method relies on the following statistical assumption: "with regard to a particular criterion (e.g. presence of operating report), a surgical department is considered as satisfactory if the proportion of defective records (without operating reports) is lower or equal to a critical value". If d is the number of defective medical records in a sample of size n , randomly chosen in a department of size N , the hypergeometric distribution is used to estimate the probability of observing d , and d^* is defined as $P(d \leq d^*) = \alpha$. Every sample of size n with more than d^* defective medical records will lead to a conclusion that the department is not satisfactory, with a error risk α : the department should be targeted for intervention regarding that criterion.

Results:

The maximum number of defective records to observe is rather low and does not vary noticeably according to the size of the study population. For example, this number was between 4 and 8 for two sample sizes $n=20$ and $n=25$, and for two critical values, proportion of defective records $P_0=5\%$ and $P_0=20\%$.

We developed a program for the calculation of d^* . It can be used without any specific training. The users choose the error risk α , the maximum number of records to analyse n , the population size N , and the program calculates d^* and statistical power $(1 - \beta)$.

Conclusion:

Because the statistical power is often poor, the LQAS is an effective method of prioritisation during quality improvement programs. In our experience, each department could rapidly identify the most defective statutory criteria and target improvement interventions.