

## **ANALYSIS OF CONDITIONS FOR MAMMOGRAPHIC SCREENING IMPLEMENTATION IN THE SLOVAK REPUBLIC, FOR EARLY BREAST CANCER DETECTION**

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### **INTRODUCTION**

Breast cancer is the most common cancer in women, especially in developed countries. The scientific evidence reviewed in many publications available worldwide, shows, that the breast cancer screening is one of the major advances in the women's health, in the last 25 years. In countries where women has an access to the modern screening, has appeared continuous fall of fewer dying of breast cancer each year.

The aim of our contribution to the planned webinar is to analyze the possibilities of implementing mammographic screening in Slovakia and to present the proposed details of methodologies, as well as the guidance for clinical audit realisation. Recommended procedures for evaluation of the best available quality of mammographic units and precision of clinical trials have been tested by a pilot research carried out in the years 2018 and 2019 at 43 mammography units, of which 28 were tested according to the newly adopted Slovak National Standard for Screening Mammography, which corresponds to the latest International Guidance documents. In the framework of this pilot study, 16 mammography units were recommended for inclusion in mammographic screening. According to the required sustainable level of high quality of the screening mammography workplaces, as well as the precise and qualified clinical practice of the staff, the inspection performed through audits must take place at regular intervals and should be stepped up in line with the requirements of the EU Recommendations.

Some of the results achieved during our pilot research are given in the following tables and diagrams.

### **MATERIAL AND METHODS**

Workplaces that expressed interest in being included in the network of screening mammography workplaces sent an introductory questionnaire, published on the website of the Ministry of Health of the Slovak Republic. The sent questionnaires were assessed by the working group for screening mammography. The working group consisted of experts authorized by the Ministry of Health of the Slovak Republic to

perform inspections of mammographic workplaces: a radiologist, a radiological technician and an expert on radiation protection.

The basic conditions for the first selection of the Screening mammography workplace and its visit by the working group were: digital mammography device, not older than 8 years and workstation for evaluation of the examination. Performance of at least 3000 mammographic examinations per year. was verified by the working group of the Ministry of Health of the Slovak Republic. The working group consisted of experts authorized by the Ministry of Health of the Slovak Republic to perform inspections of mammography workplaces (radiologist, radiological technician and radiation protection expert).

In agreement with most EU countries the reduction in breast cancer mortality due to the screening mammography has been confirmed for woman in the age between 50 and 69 years.

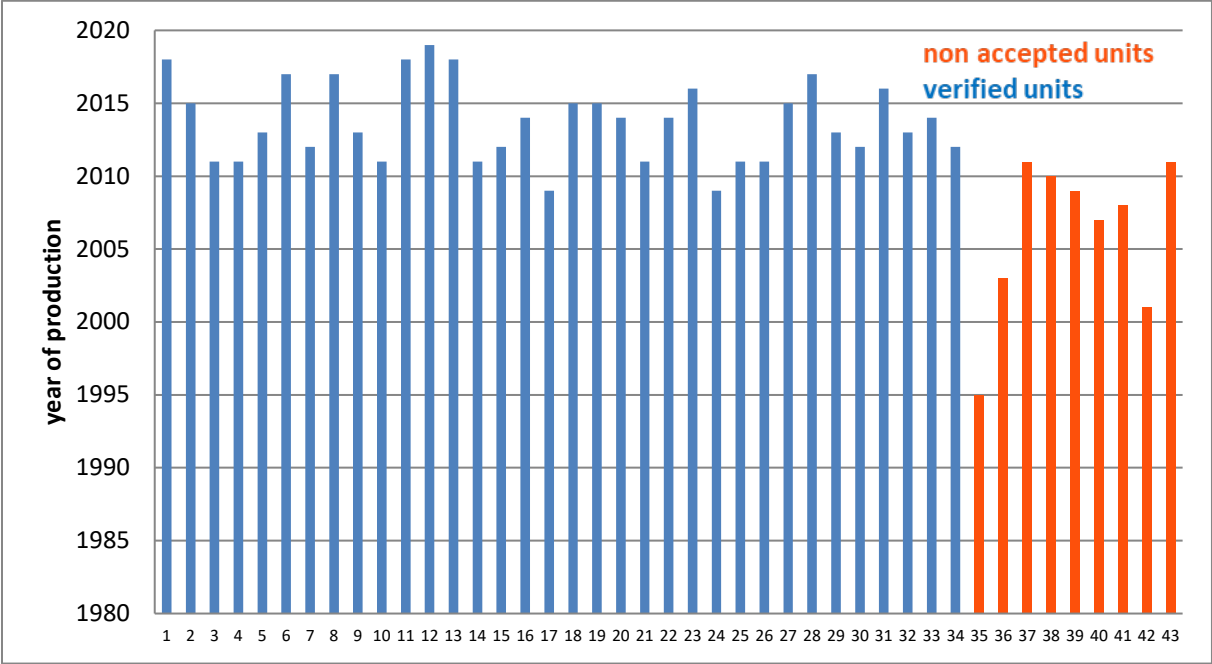


Figure 1 Distribution of mamography units by year of production

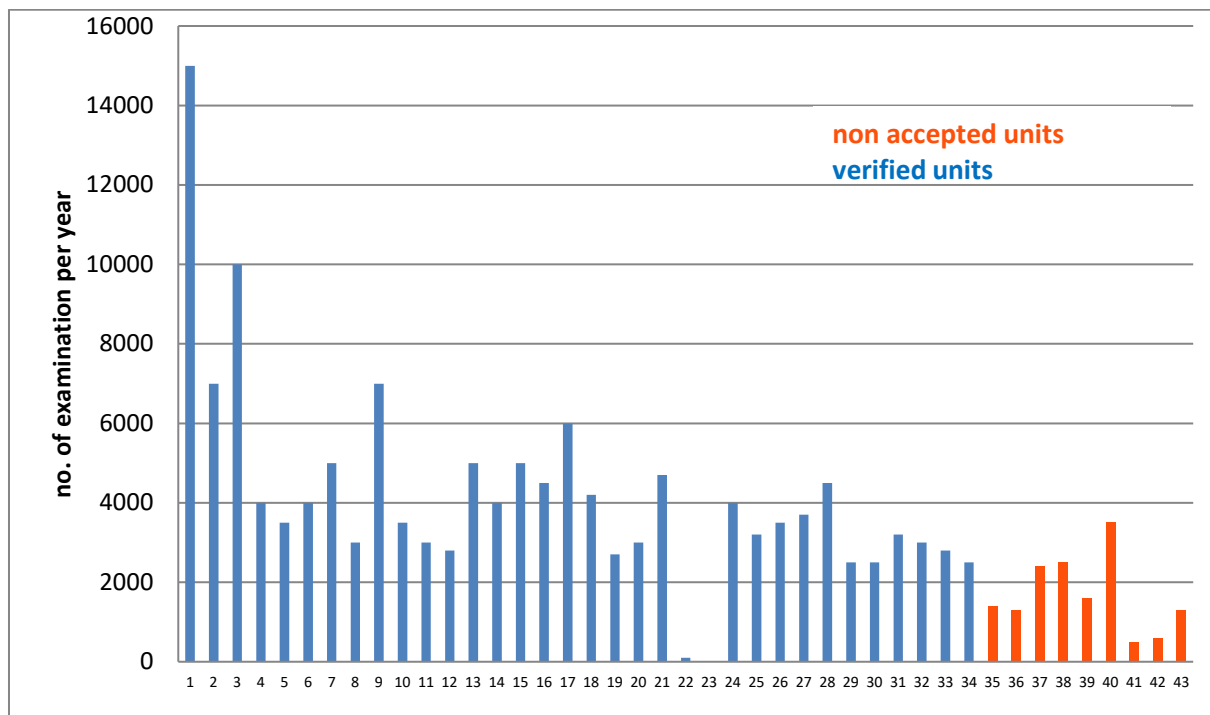


Figure 2 Distribution of mamography units by number of examination per year

Criteria and indicators for mammography screening are divided into two categories, which are evaluated separately and in each of the categories the workplace must obtain a minimum number of points:

- Process management control, where the workplace must obtain at least 80 points out of a maximum of 125,
- Control of performance indicators, where the workplace must obtain at least 500 points out of a maximum of 649.

The basic indicators of process management, which were evaluated by the working group, include the area of training and documentation, where the following are checked:

- certificate of professional competence of a professional representative and his regular retraining,
- certificate of completion of certification work (CPC) , radiological technician),
- regular training of health professionals performing LO,
- presence of a clinical physicist at the workplace,
- adherence to standard radiological procedures,
- recording of doses of ionizing radiation received by the patient and adherence to diagnostic reference levels (DRÚ),
- radiation protection program, its adherence and its topicality.

Another area evaluated during the inspection of the mammographic workplace are the technical conditions of the screening mammography workplace:

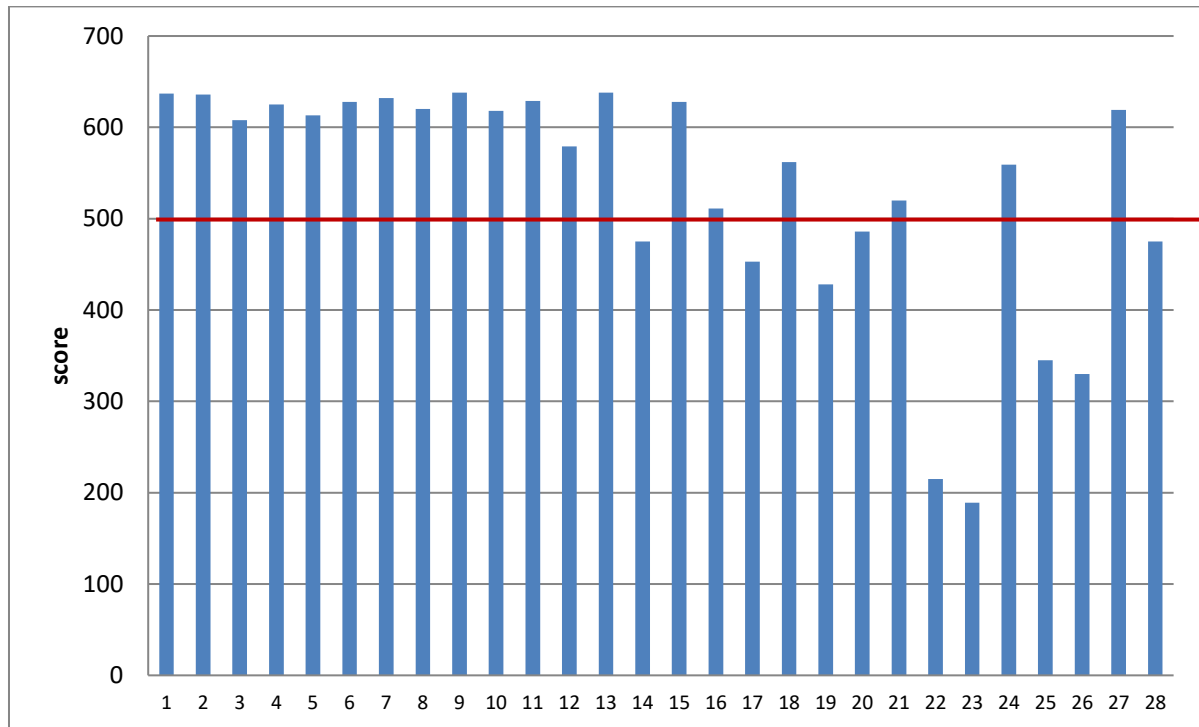


Figure 3 Performance indicator control – Clinical requirements (min score required 500)

Another area evaluated during the inspection of the mammographic workplace are the technical conditions of the screening mammography workplace:

- parameters of the mammography device (type technical documentation, year of manufacture, acceptance test),
- regularity of long-term stability tests for the last two years, identified deficiencies and their elimination),
- analysis of repeated exposures (recording, cause),
- implementation of operational stability tests (frequency, performance indicators include the area of clinical requirements, where the following are evaluated:
  - the method of processing and recording statistical data on examinations in preventive and diagnostic mammography,
  - the connection of the mammographic workplace to the workplace (surgical, gynecological) ensuring the follow-up of the patient's subsequent management,
  - follow-up of the mammography workplace to the breast commission and the patient's conciliar follow-up. workplace and completeness,
  - compliance with the comprehensive time solution of the patient within 15 days,
  - implementation of double reading documented by the signatures of both doctors,

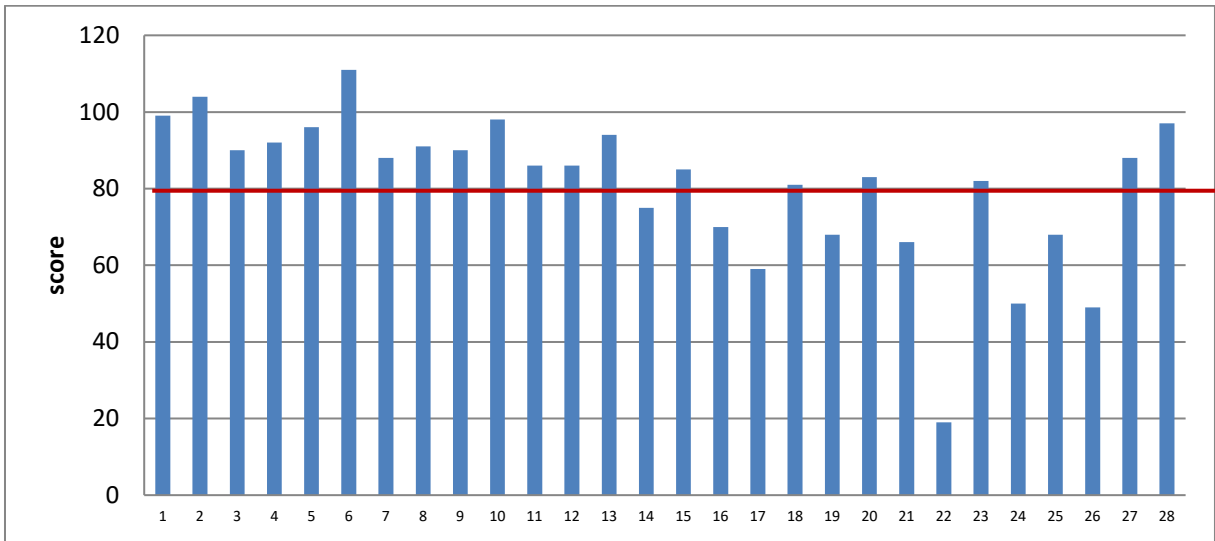


Figure 4 Process management control - Training and documentation (min score required 80)

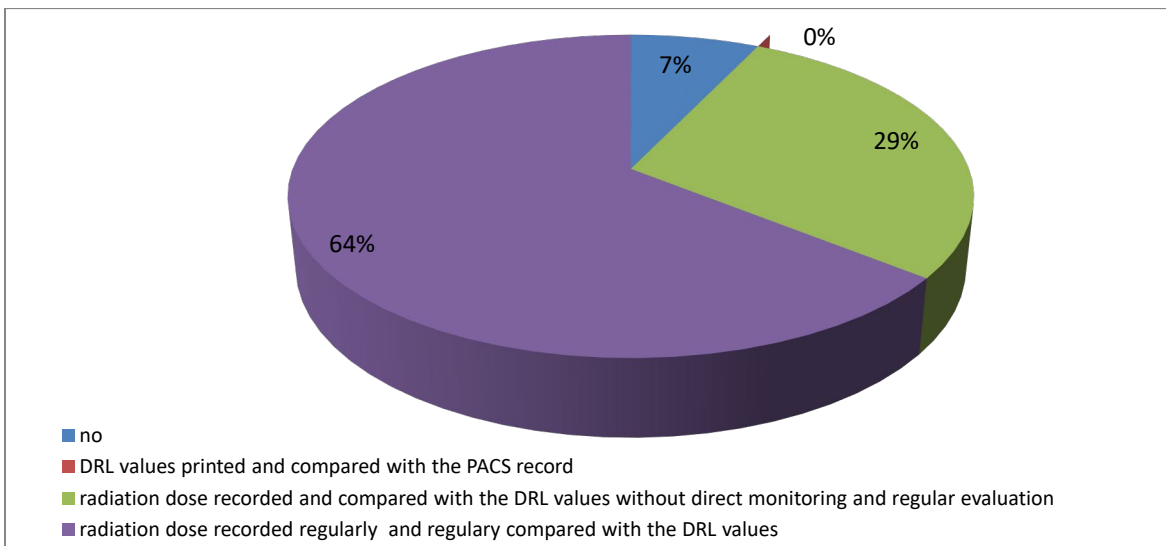


Figure 5 Dose reference level observation

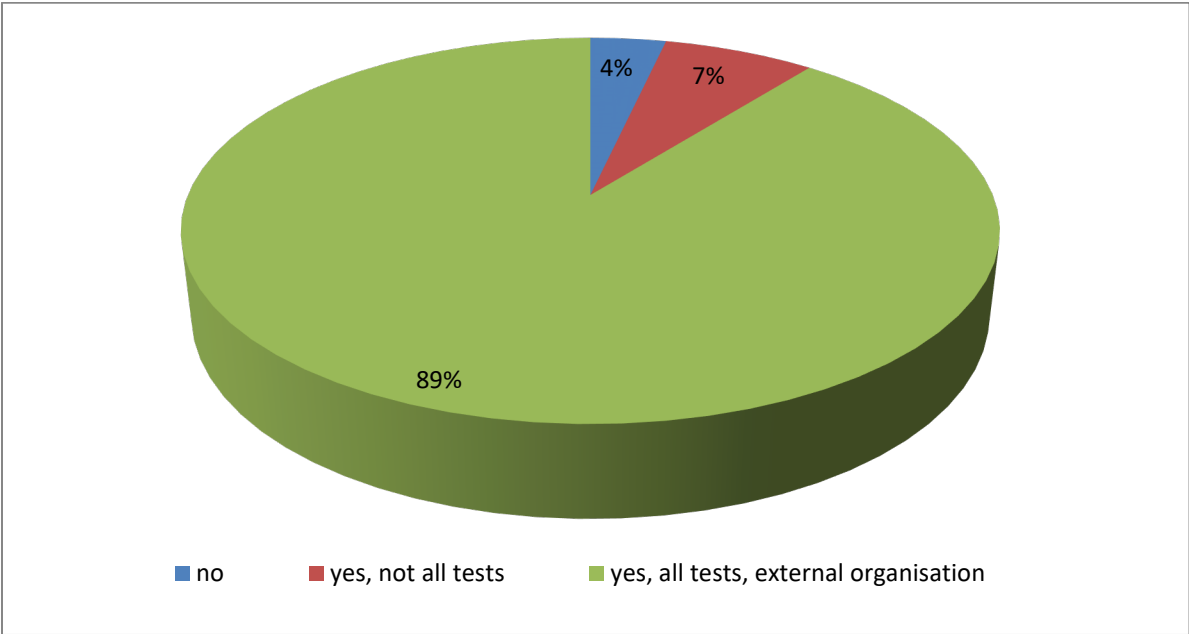


Figure 6 Operational stability tests performance

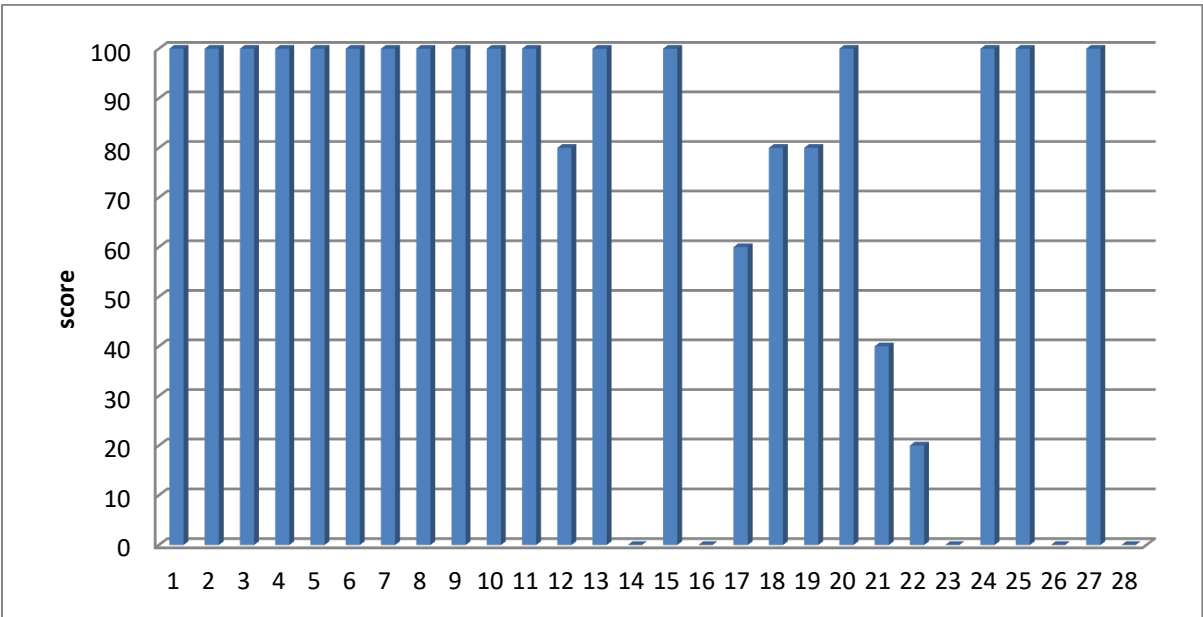


Figure 7 Double reading (5 woman per 20 points)

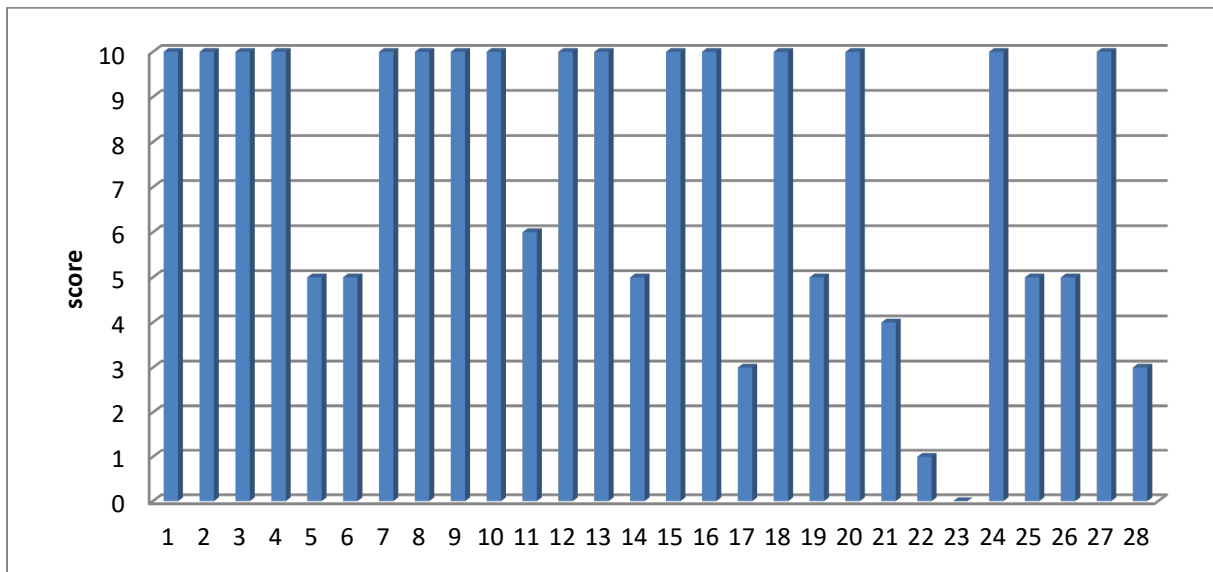


Figure 8 Availability of patient documentation (5 woman per max 2 points)

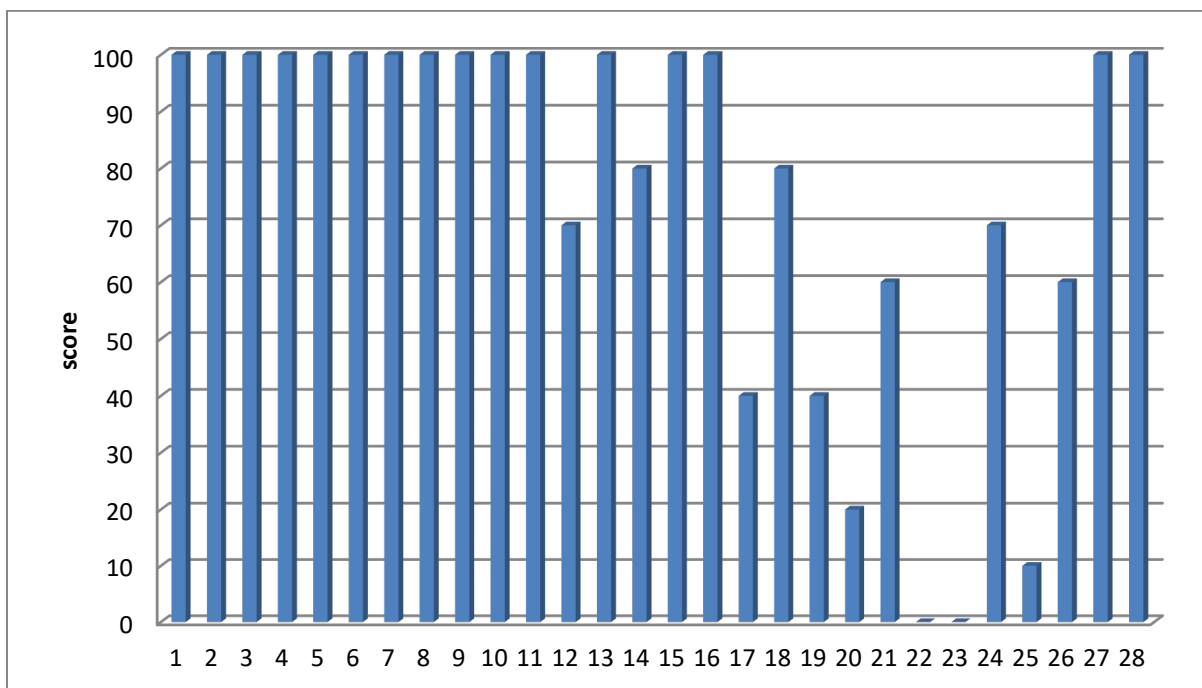


Figure 9 Fulfilment of the 15 days duration of the complex results of the examinaion (5 woman per 20 points)

## CONCLUSION

In addition to the requirements that the workplace had to meet when entering the network of screening mammography workplaces, the indicators are extended to control sonographic instruments and the imaging process. Preference is also given to needle sampling of breast lesion using core biopsy.

Greater emphasis will also be placed on the processing of statistical outputs, the monitoring of which is necessary to verify the effectiveness of screening. In order to maintain the quality of the work of screening mammography workplaces, The control of workplaces should be carried out during the first five years of work of the workplace every year; For these reasons, a permanent working group should be set up at the Ministry of Health of the Slovak Republic, which would regularly check mammographic workplaces included in the screening, as well as workplaces that would be interested in inclusion.