

INNOVATIVE SOLUTION FOR THE AUTOMATION OF BREAST CANCER SCREENING

SYSTEM OF INTERPRETATION,
RECOMMENDATIONS AND STATISTICS
FOR MAMMOGRAPHIC SCREENING



YSAR+ Joint-Stock Company is the leading Russian developer and integrator of IT systems in the field of healthcare. The company have been working in the IT market has been for over 20.

Our partners from regions of Russia, CIS, Asia, the Middle East and Europe trust us.

The priority of **YSAR+** is the development, implementation and service maintenance of the newest IT systems in the sphere of healthcare. **YSAR+** – is the developer of software systems for the automation of screening programs: breast cancer, lung cancer, cervical cancer.

System-based approach, collaboration of highly qualified analysts, consultants and programmers under the leadership of experienced managers allow for implementation of projects of all difficulty levels, meeting the highest demands of customers.



GLOBAL TREND:

the growth of oncological diseases and increase mortality.
One way to deal with this – detection of diseases in the early stages, highlighting the need for diagnostics through implementation of screening programs.



COMPREHENSIVE PLATFORM FOR SCREENING MAMMOGRAPHY.

Competence Center – highly qualified specialists at regional and federal levels.

Quality control of diagnostics through the introduction of the second and third independent opinions.

Educational program for the primary X-ray diagnostic imaging specialists.

The system of diagnostic support for doctors via Formal Protocol framework implementation.

Auto mated data exchange through telemedicine.

A single database archive for all healthcare providers.

The formation of standardized statistical reporting using structured Protocol.



SORS-MS CONSISTS OF A SYSTEM PLATFORM AND FORMALIZED PROTOCOLS FOR X-RAY IMAGERY INTERPRETATION.

The system platform allows to:

- transfer medical data between different healthcare facilities;
- keep medical data in a single archive;
- receive independent second and third opinion remotely;
- provide remote access from workplaces to educational databases;
- generate statistical reports on any data, included in the Formalized Protocol of the diagnostics data;
- evaluate the quality of screening programs at all stages;
- create a unified national register of patient data.

The system is integrated with X-ray archive and hospital information system.



A FORMALIZED PROTOCOL consists of:

- a set of features to describe the screening and provide support for decision-making;
- a text editor that creates a printable form based on the completed data.

The Formalized Protocol, thanks to data standardization according to the generally accepted BI-RADS standards, allows to simplify and streamline radiologist workflow, and also improve the quality of X-ray imagery interpretation.

Automated screening using the SORS-MS software:

- accelerates the processing of examination results at all stages in X-ray imagery interpretation;
- reduces the time between examinations;
- performs subsequent previews of examinations in independent mode;
- facilitates workplace educational process.



Access and opportunities,
depending on the level
of competence



Knowledge
base



Users

PROJECT OBJECTIVES

Informational and educational support of medical professionals.

Standardization of breast cancer screening.

Improvement and acceleration of the educational process for radiologists.

The ability to instantly contact
an expert and get a second opinion.

Get access to the educational
knowledge databank.





Quality control quality control of interns
and young specialists.

Ability to independently create content in the
educational knowledge databank.

Access to financial statements.

SCOPE AND OBJECTIVES OF SOURCE-MS

Mass screening of healthy population to detect manifestation of early disease.

Increasing the number of preventive screenings aimed at turning morbidity into detectability.

Early cancer detection (for example, non-invasive cancers and growth no larger than 1 cm without positive lymph node metastasis).

Increasing the detectability rates, improving the breast cancer diagnostics.

Increasing life expectancy and quality of life of women suffering from cancer.

Reducing the breast cancer mortality.

Creating SOURCE-MS based systems to enable off-line processing of the data entered into the system («intelligent software»).



SCOPE AND OBJECTIVES OF SOURCE-MS

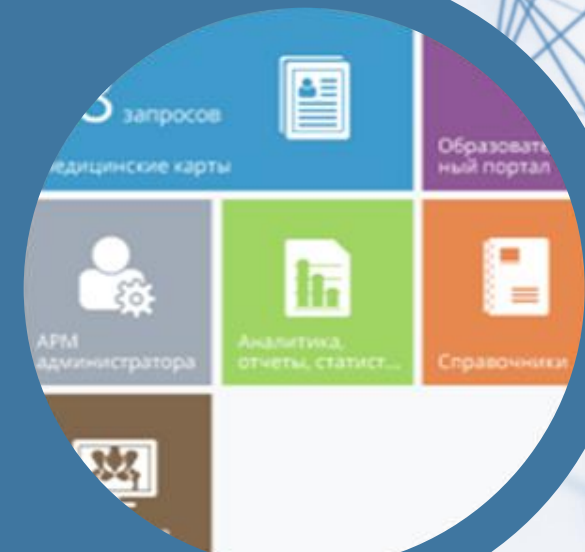
Standardization and formalization of the workflow of the radiologists (in accordance with the internationally accepted standards: BI-RADS, Lung-RAD, etc.).

On-site training (including access to the educational database).

Statistical reporting on results at the level of imaging room, healthcare facility, region, group of regions.

Providing assistance for radiologists and facilitating their work and at the same time enhancing accuracy of X-ray imagery interpretation and further reporting.

Creating the national patient registry.



TRAINING FOR SCREENING PROGRAMS



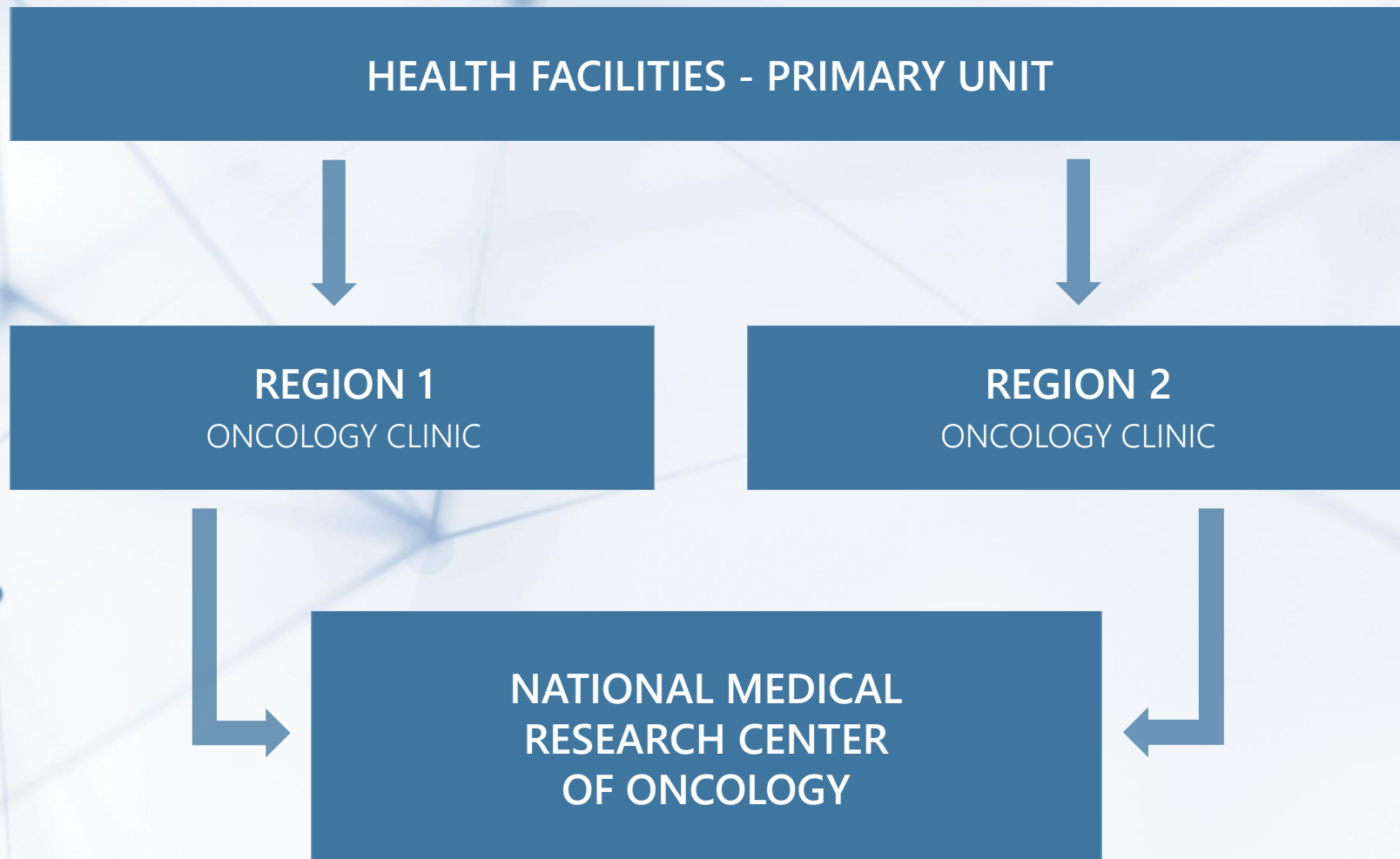
General training for X-ray diagnostic imaging specialists and technical assistants.

Basic course of screening.

Mammography training course.

2 week on-the-job-training in the Competence center or Assistant center of the National Medical Research Center of Oncology.

Further upgrade training course every two years.
Regular monitoring of the workflow.

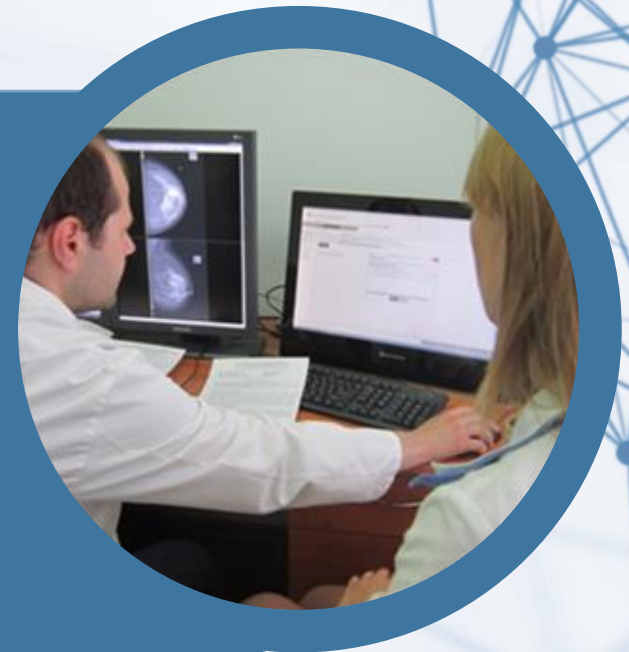


Information on each patient is registered in the Competence Center – Regional Breast Cancer Screening Center.

The report is based on the interpretations of the two radiologists who have read the mammogram independently.

Then the woman is examined by a radiologist of city, local or regional oncology clinic, which has received the mammogram along with the formalized report via tele-healthcare system.

Women are notified of the results of a mammogram, which has been interpreted twice, within two weeks.



Jemys: COPC-MC

Оценка качества маммограмм

Общие данные исследования

Общее описание молочных желез

Образование

Уплотнение

Кальцинаты

Изменение (нарушение) архитектуры ткани железы

Лимфатические узлы

Дополнительные признаки

Сравнение с предыдущим исследованием

Заключение

Левая молочная железа

состояние в процессе или после лечения ^

Состояние в процессе лечения

Гормонотерапии

Состояние после лечения (оперативное лечение)

Секторальной резекции левой молочной железы

Состояние после лечения (гормонотерапия, химиотерапия, лучевая терапия)

Выбрать из списка

наличие инородных тел ^

Наличие имплантов

Поврежденные импланты

Описание...

Другие инородные тела

Шовный материал

Материал для разметки

Псевдокальцификаты

Неформализованное описание инородных тел

Описание...

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Описание...



**ФГБНУ «РОССИЙСКИЙ ОНКОЛОГИЧЕСКИЙ НАУЧНЫЙ ЦЕНТР
им. Н.Н. Блохина»**
Отделение рентгенодиагностическое НИИ КтЭР
115478, Москва, Каширское ш., 24

Дата исследования: 29.05.2015

Паспортные данные: 4505987367

Ф.И.О. пациента: Иванова Н. И.

Номер МК: 15/9573

Дата рождения пациента: 01.01.1956

Доза: 0,03 мЗв

МАММОГРАФИЯ

Цель маммографического исследования: Скрининговое исследование.

Вид маммографического исследования: Маммография в стандартных проекциях: прямая (кранио-каудальная), косая (медно-латеральная).

ЛЕВАЯ МОЛОЧНАЯ ЖЕЛЕЗА:
Молочная железа не деформирована. Кожа не изменена. Ареола деформирована. II тип плотности ткани молочной железы. Ретроареолярно (передний отдел) определяется гиперденсное образование овальной формы с четким контуром. Размеры образования составляют 4,5x3,5x3,3 см. В структуре образования выявляются доброкачественные кальцинаты по типу «поп-корна». В верхне-наружном квадранте (средний отдел) определяется изоденсное образование овальной формы со скрытым контуром. В структуре образования выявляются доброкачественные дистрофические кальцинаты. Злокачественных кальцинатов нет.

ПРАВАЯ МОЛОЧНАЯ ЖЕЛЕЗА:
Молочная железа не деформирована. Кожа не изменена. Сосок и ареола не изменены. II тип плотности ткани молочной железы. Образований в ткани молочной железы нет. Злокачественных кальцинатов нет.

ЗАКЛЮЧЕНИЕ:
Левая молочная железа: Категория BI-RADS 2 (фиброаденома).
Правая молочная железа: Категория BI-RADS 1.
Итоговая категория: Категория BI-RADS 2. Повторная маммография через 2 год.

Врач: _____ Петров А.Б.

Only high performance mammography units and monitor displays regularly inspected by independent national experts.

Regular monitoring of the screening procedures by the superior bodies.

Specially trained personnel for breasts screening who are regularly trained and whose competence is regularly assessed.

Mammograms are interpreted by highly experienced radiologists who evaluate no less than 5000 mammograms a year.





3440 mammograms interpreted twice by independent specialists.
Breast cancer detected (Oncology Dispensary) in 17 cases (0.5 %).

| | Health Facility | Work Experience | BI-RADS |
|----------------------|------------------------|-------------------------|----------------|
| Radiologist 1 | Primary Unit | About 1 year | 3 (8) |
| Radiologist 2 | National Center | 5 years And more | 17 |

Improved diagnostic level of breast cancer by **18-47%**.

Multi-level system architecture.

Universal integration gateway provides data exchange with external information systems.

The following tasks were solved:

- guaranteed delivery of digital format documentation;
- scalability of the system;
- built-in videoconferencing client;
- two-way exchange of DICOM data with PACS archive;
- automatic comparison of two formalized protocols;
- electronic digital signature of documents;
- flexible system of statistics and analytics.





On-line service 24 | 7.

Service can be rendered remotely.

Web-based registration database for users.

Access to YSAR+ technical support by phone.

Access to YSAR+ databases of advanced self-testing,
reporting problems online (Web, e-mail).

JSC YSAR+

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Thank you for your attention!

