

Новые технологии: чему должен учиться врач будущего?

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СБЕР ЗДОРОВЬЕ



Online consultations with physicians through audio, video call or chat



Platform for secure data storage



Remote health monitoring and smart devices



AI technologies for symptom detection and counselling quality assessment (TOP-3)



SBER MED AI



TOP-3: preliminary diagnosis based on patient complaints



Diagnostic assistant: a system for making a final diagnosis based on electronic health record and current visit



Software and hardware solutions with integrated AI (AI-enabled medical devices)



AI algorithms for medical image analysis



СБЕР ЕАПТЕКА



Online drug store with home delivery and specialized help system with automated medication search



Buy Now, Pay Later



Pill Case, a service that reminds you to take medication



Custom-Built program offers products on top of the basic range offered at Sber EApteka



Partner



ЦРТ

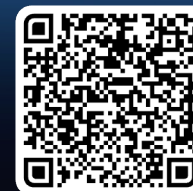
ГРУППА КОМПАНИЙ



Voice-to-text feature for drafting medical documentation



AI-driven voice services for more accessible and higher quality medical care



What is it created for?

1 Reduce the number of ambulance calls

2 Reduce the number of inpatient stays

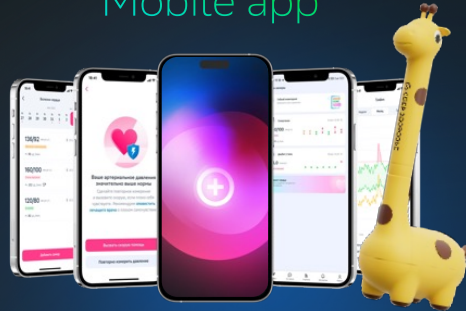
3 Drive down mortality rate

Devices



- Automatic data collection
- Bluetooth and Wi-Fi data sharing
- Easy connection
- Reliable data
- Background synchronization

Mobile app



- Recognizes medical device indicators using photos
- Collects, processes and stores data
- Offers tips and recommendations
- Helps with journals and medical records
- Customizable notifications and reminders

Robot



- Patients who are not familiar with modern devices and the Internet have their health indicators collected by AI
- Doctors can adjust the time of calls

Workstations for physicians / health institutions



- Assigned patients
- Deviation-related tasks
- Summary dashboard
- Report on monitoring results
- Patient profile showing indicator dynamics

69
Russians
regions

5,125
physicians

360K
patients

>30% fewer fatalities caused by myocardial infarction and ACVA

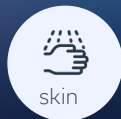
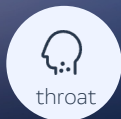
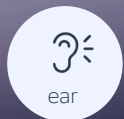
>70% fewer emergency calls and hospitalizations

What is SberHealth Smart Camera?

A device for remote patient examination: patients use a camera to take photos of interior parts of the nose, ears, throat and skin and share them in the mobile app: SberHealth (Android) or Health Plus (iOS)*

- 01 See a doctor from the comfort of your home.
- 02 Feeling anxious? Contact your therapist right now and share what's bothering you
- 03 Save time and effort on visits to a medical institution

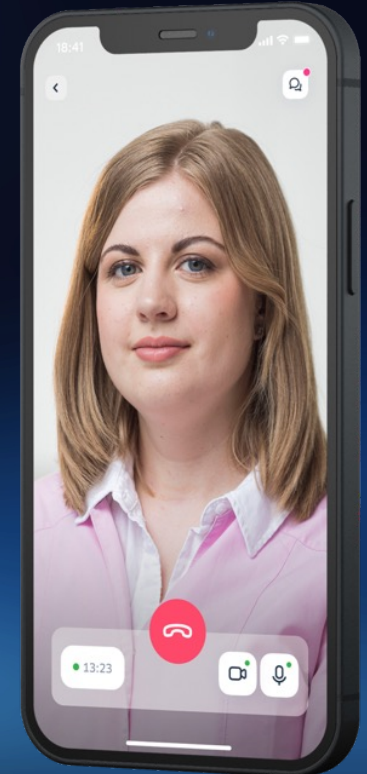
Helps you to easily inspect:



**Smart camera
for a child
in the form of a
giraffe toy**



**Smart camera
for adults
in the form of a pen**



* Doesn't have to be a SberHealth physician – any doctor can have access

Premium Corporate Healthcare



Unlimited online consultations for the whole family as well as services in clinics across Russia during the year

What's included in the Program

Online consultations with:

- ✓ General practitioner and pediatrician: 24/7
- ✓ Medical advisor: 24/7
- ✓ Specialty doctors

- Unlimited visits to clinics across Russia
- Tests
- Imaging diagnostics
- CT, MRI
- Laboratory check-up
- Home visits
- Flexible monitoring



Family profile with online consultations

Online consultations are available not only for employees, but also for 1 adult and 3 children



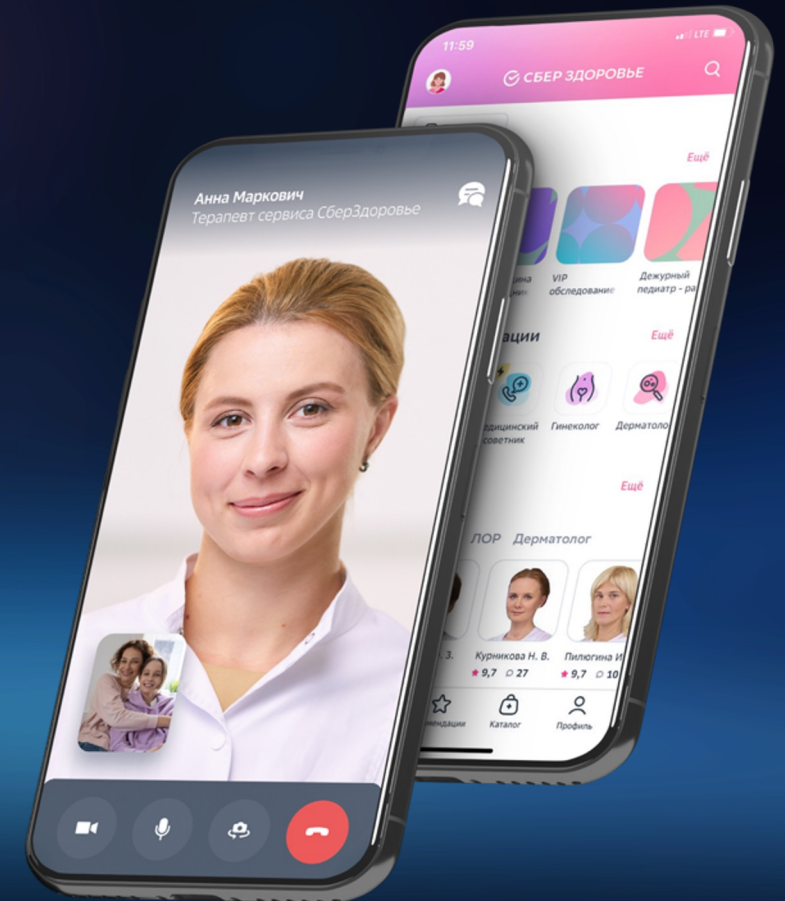
Medical advisor

24/7 support for all logistical issues



Wide coverage

We work with 7,600+ clinics in Russia. No fee for adding regions



* Family access to online consultations: product owner + 1 adult and 3 children. Consultations for children are only available with an on-duty pediatrician

Effects from implementation:

- Reduces the time for medical examination from 5 to 2 minutes
- No medical room licensing required
- Lower payroll of medical workers
- No fines following inspections by public authorities
- Fewer sick leaves
- No human factor influence on inspection process and outcome
- Timely health control thanks to user-friendly service

From 1 September 2023, pre-trip and post-trip inspections of drivers can be carried out remotely



The service includes one year of online consultations for employees

Online consultations with specialists:

- General practitioner: 24/7
- Paediatrician: 24/7
- Pre-booked consultations with specialist doctors*
- Medical advisor: 24/7

59 Russian regions

use SberMedAI solutions based on artificial intelligence algorithms

Digital services automatically highlight pathologies on images, calculate the total volume of damage and provide a preliminary description for a physician. They also detect signs of tumor on medical images.



Brain CT

State-certified

Comprehensive solution for determining the type and localization of stroke area and assessment of early changes



Mammography

State-certified

Detection of suspicious hotspots in breast mammography images and on BI-RADS scale scoring



Abdominal CT

State-certified

Comprehensive analysis of the abdominal area on the chest CT images helps detect roentgenographic pathologies



Chest CT

State-certified

- Comprehensive analysis of chest CT scans against 14 roentgenographic findings of pathologies

- COVID-19
- Nodular lesions



Chest X-Rays/ Fluorography

State-certified

Identification of pathological changes



TOP-3, a Digital Assistant for Physicians



AI-based support system for medical decision making.
Determining the 3 most likely diagnoses according to the patient's complaints



Applications:

Recommended for initial consultations at the outpatient care clinics



What does the service offer to doctors:

- The algorithm reduces the time to make a provisional diagnosis
- Helping to make better diagnosis
- Improving the quality of medical care

Developed jointly together with



Moscow
Government



Registration
certificate
No. RZN 2022/17272
dated 24 May 2022



Registry
entry
No. 11909
dated 22/10/2021



Winner of the WSIS
Prizes 2021 contest
held by the
UN*

- Requires integration with the medical information system (MIS)
- Diagnoses are standardized in accordance with ICD-10



12 Russian regions 22+ mn

use TOP-3 in
medical practice

Number of preliminary
diagnoses made by physicians
with the help of AI
since 2020

A system for making a basic diagnosis based on 2-year data from electronic medical records (EMR) and data from the current patient visit - a second opinion for a general practitioner

Developed
together with



Moscow
Government



It has been applied in all adult clinics in Moscow since September 2023.



The assistant's task

Offer a basic diagnosis to a physician based on all information about a patient in the 2-year electronic medical record as a second opinion

87.7%

model accuracy based on
experiment results



The assistant analyzes EMR text data:

- Complaints & medical history
- General examination
- Medical history
- Laboratory results
- Imaging results

records on 30
million visits

were used to train the
model in 2 years

Digital First-aid and Obstetric Center



Contains all the needed Internet-connected and AI-driven medical equipment for mobile diagnostics.

All medical devices are integrated with the doctor's workstation (DW)

Basic configuration



Laptop



ECG recorder
12 leads



Automatic tonometer



Glucose analyzer
50 test strips



Cholesterol analyzer
25 test strips



Urine analyzer
10 monitored parameters
100 test strips

Advanced configuration



Automatic thermometer



Spirometer



Pulse oximeter



Eye pressure tester

AI-driven:

- TOP-3 diagnoses
for symptom analysis
- ECG interpretation
AI generates a pre-diagnosis automatically and transfers the data to the laptop



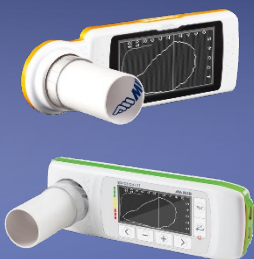
40+ Russian regions

use the mobile diagnostic complex in
digital rural health post (RHP)



State licensed

Spirometry devices



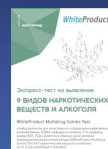
- Data transfer via USB/Bluetooth
- Sensors - reusable turbine, disposable turbine
- High-resolution screen that displays results and graphs
- Memory for up to 10,000 tests

Pulse oximeter



- Data transmission to PC via Bluetooth/manual input
- Turns on/off automatically when put on or taken from the finger

Test strips



- Express tests for tuberculosis and illicit drugs

Blood biochemistry analyzer



- Built-in micro centrifuge
- Number of tests – 21, test panels – 8
- Measured parameters: Glucose, bladder acid, triglycerides, uric acid, total bilirubin, calcium, total protein, albumin, AALT, AST, LDH, creatine kinase, amylase, GGT, alkaline phosphatase, creatinine, high density lipids, fructose, phosphorus, magnesium

Blood hematology analyzer



- A built-in thermo printer can print the full report with histograms
- Measured parameters: WBC (leukocytes) + histogram, RBC (erythrocytes) + histogram, PLT (thrombocytes) + histogram, HGB (hemoglobin), HCT (hematocrit), MCV, MCH, MCHC, LYM, MID, GRA, LYM%, MID%, GRA%, RDWSD, RDWCV, PDWSD, PDWCV, MPV, PCT, P-LCC, P-LCR

Mobile ultrasound scanner



- Ultrasound diagnostic portable device that looks like a laptop with a handle
- Supported protocols for sharing, storing and printing DICOM 3.0 digital images
- 8 scanning modes

X-ray digital device



- Active area: 17x17 inches
- Image preview time <3 s
- Image generation time: <5 s
- Frequency range: 40 KB ~ 150 KB

X-ray digital device



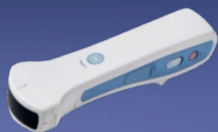
- Remote control for exposure
- Built-in container for storing X-ray detector in a case
- Combined workstation for a radiologist and X-ray technician

Multi-frequency electrical impedance mammography system



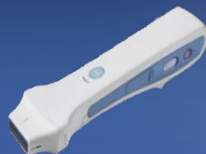
- Modern highly informative and safe method for examining mammary glands

Sonon 300C portable ultrasound scanner



- Focused assessment with sonography for injuries
- Ultrasound for early and late pregnancy, gynecological, abdominal, and bladder scans

Sonon 300L portable ultrasound scanner



- Thyroid gland, carotid artery, mammary gland, musculoskeletal system, vessels, surface examination, and lungs

Whiteproduct radi-x10 X-ray device



- Portable X-ray device
- Wireless connectivity to tablets and smartphones
- Laser beam guiding
- Complies with NRB-9 radiation safety standards



Wireless connectivity
for hassle-free transportation and connectivity
to IOS and Android devices



PACS Compatibility
A DICOM compatible device that securely stores, manages and
transmits images through the PACS server



Mobile medical diagnostics system that can be configured by adding digital medical solutions and equipment specific to the region's requirements.



Thanks to this system, patients living or working far from medical institutions, will have access to check-ups.



Cardiograph with AI-powered ECG interpretation that sends medical examination data to treating doctors in medical institutions in real time. Suitable for ambulance stations and remote regions.

by **20%**
reduces ECG
processing time



Registration
certificate
No. RZN 2023/19528
dated 8 February
2023



Advantages:

- Reduced mortality from cardiovascular diseases
- Widespread screening for cardiovascular diseases
- Flexible, reliable and secure infrastructure for ECG archive management
- Robust support for doctors, consultants, and paramedical practitioners

Modification:

- Built-in GPRS modem
- Cellular data transfer
- Voice communication with the counseling doctor
- Initial data are sent automatically
- The system can display and print a report
- Features are updated through PC

Hardware and software system for telemedicine consultations in hospitals, intensive care services, and surgery unit

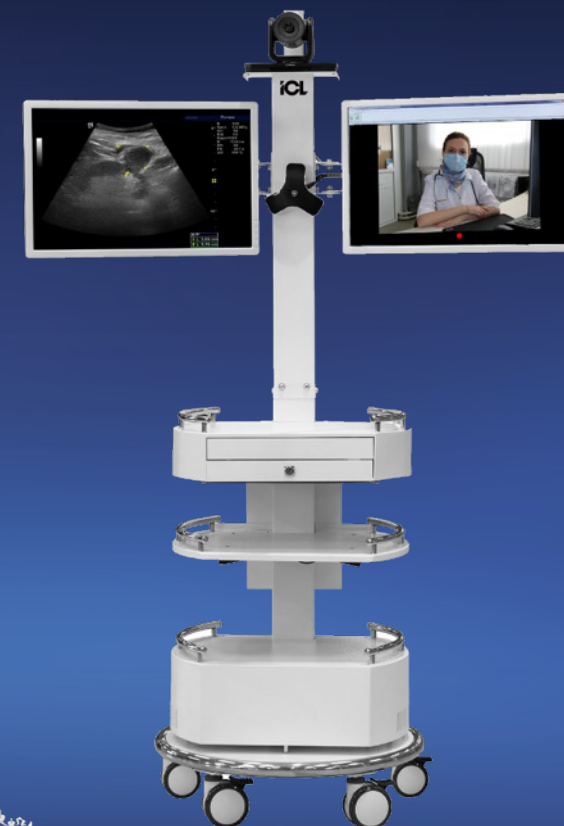
Capabilities

- Can help create a unified telemedicine network in a region
- Enables scheduled and emergency telemedicine consultations
- Enables case conferences with physicians from other hospitals
- Compatible with any analog and digital medical devices

After implementation:

- Tier-2 medical organizations can invite specialist physicians from tier-3 organizations and those working on the National Medical Research Center level.
- Healthcare services can be provided remotely, ensuring equal availability of quality medical care for residents of remote regions
- Telemedicine consultations are stored together with medical images in DICOM format and can be uploaded to regional Central Medical Image Archive

Mobile telemedicine counter



State licensed



Main task

Continuous tracking and fastest possible routing of a stroke patient from the moment of calling an ambulance to therapy

Primorsky Krai

Since 2022, the Center for Stroke Patient Admissions Management has been used by Primorsky Krai Hospital No. 1

↓ **28%**

fewer fatalities in primary-care vascular units of the Primorsky Krai (compared to 2021)

Center for Remote Image Interpretation

- **A ready-to-use interpretation of radiological diagnostics scans**
Physicians working in medical institutions can rely on the vast experience of the Center's medical team in clinical diagnostic image interpretation, which will help them to make decisions on further treatment much quicker.
- **A medical report with a transcript of the tests**
and a standardized protocol is signed with an electronic digital signature.

Remote Interpretation



CT scanning



Radionuclide scanning



Fluorography



MRI scanning



X-ray radiography

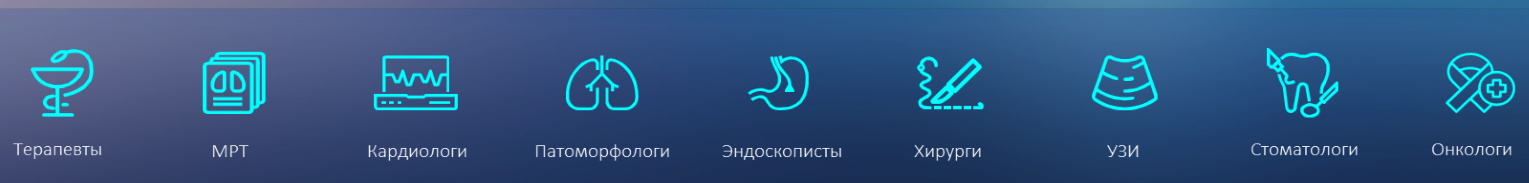
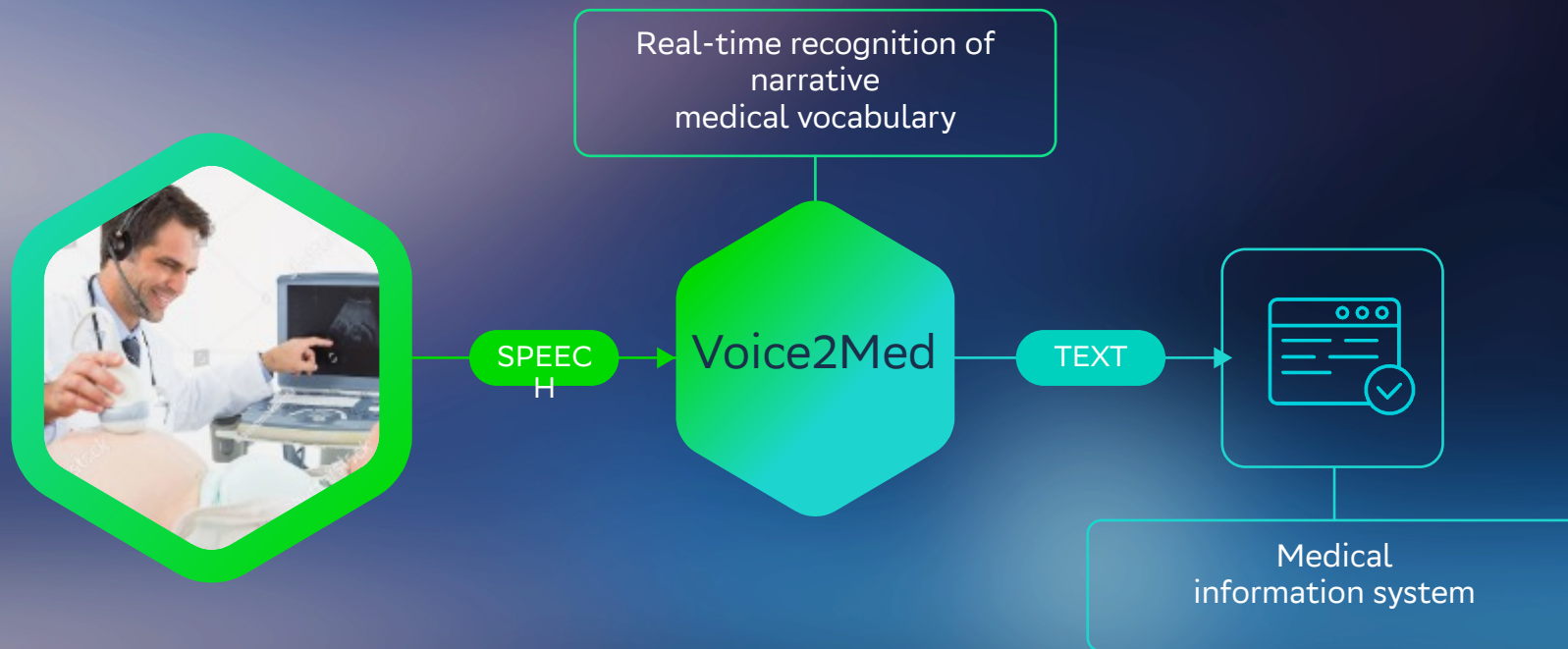


Mammography

Voice2Med

Voice-to-text Feature for Medical Documentation

70 Russian regions already using Voice2Med¹




ЦЕНТР ДИАГНОСТИКИ
И ТЕЛЕМЕДИЦИНЫ
>20%
less time for diagnostics²


x2
less time spent on filling out Form
No. 088/U "Referral for Medical and
Social Expertise"³


20-30%
less time for drafting
medical protocols⁴

1 – Number of roll-outs: 1 or more workstation per region

2 - For more details [please click here](#)

3 - [Video about the project implemented in the 91th state clinic in St. Petersburg.](#)

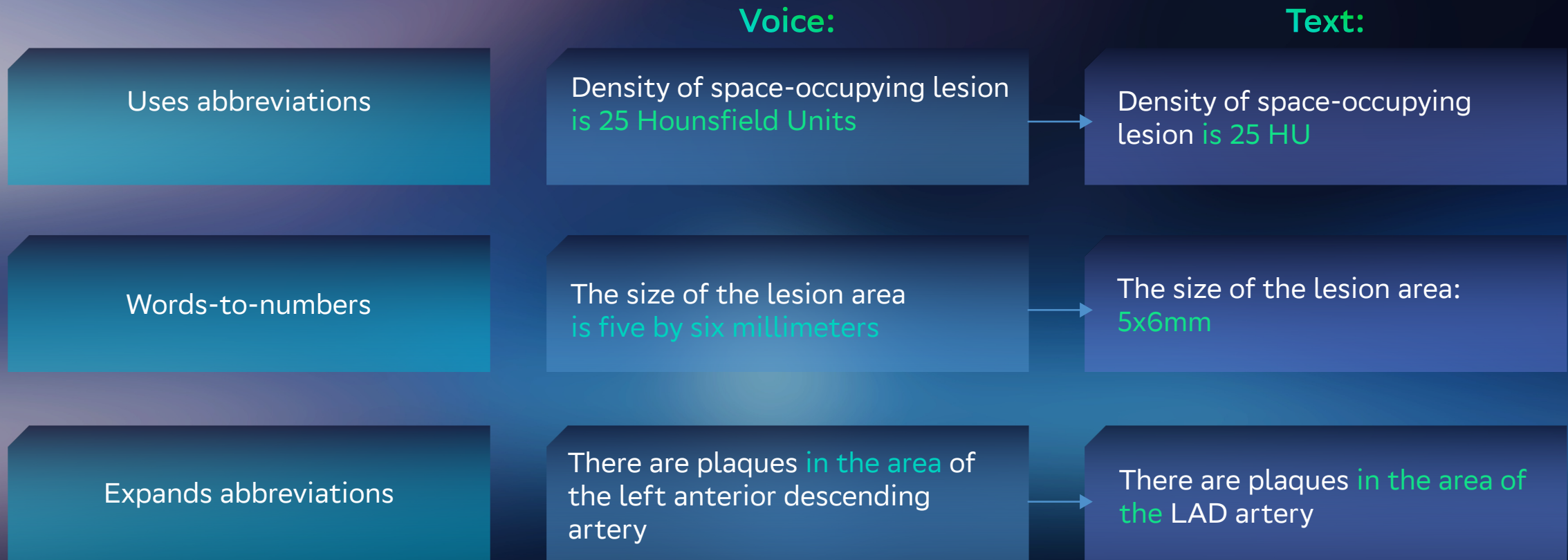
4 – [Voice-to-text is successfully used in the Almazov Center](#)



Properly Drafted Medical Document



Formalized Recording of Recognized Text



Nestor.BRIEF

A system for entering meeting minutes during calls and case conferences with physicians



- Automatically drafts verbatim reports
- Safely saves the results and important decisions following physicians' meetings
- Streamlines the process of managing meeting minutes for assistants/interns
- Digitizes healthcare processes

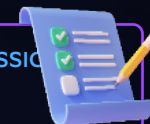


Online Advanced Training Programs for Physicians

continuing professional education

A product jointly created by scientific and business communities

FURTHER PROFESSIONAL
EDUCATION
CERTIFICATE



DIGITAL SKILLS FOR PHYSICIANS
IN TODAY'S HEALTHCARE

TELEMEDICINE TECHNOLOGIES
IN HEALTHCARE

ARTIFICIAL INTELLIGENCE
IN HEALTHCARE AND ACTUAL WORK OF PHYSICIANS

16 ac. hours / **16** credits

WHAT'S THE PROGRAM ABOUT?



LECTURE (CUT)



СЕЧЕНОВСКИЙ
УНИВЕРСИТЕТ



ОБРАЗОВАНИЕ



индустрия
здоровья
#КОМАНДАСБЕРА



ГРУППА
КОМПАНИЙ



Target audience of the programs

Healthcare managers, physicians and students

Portal of the Continuous Medical and Pharmaceutical Education under the Ministry of Health of Russia

The programs are included in the continuous education system for physicians

EDUTORIA academy
Sber education platform

Health Room in the Salute Voice Assistant

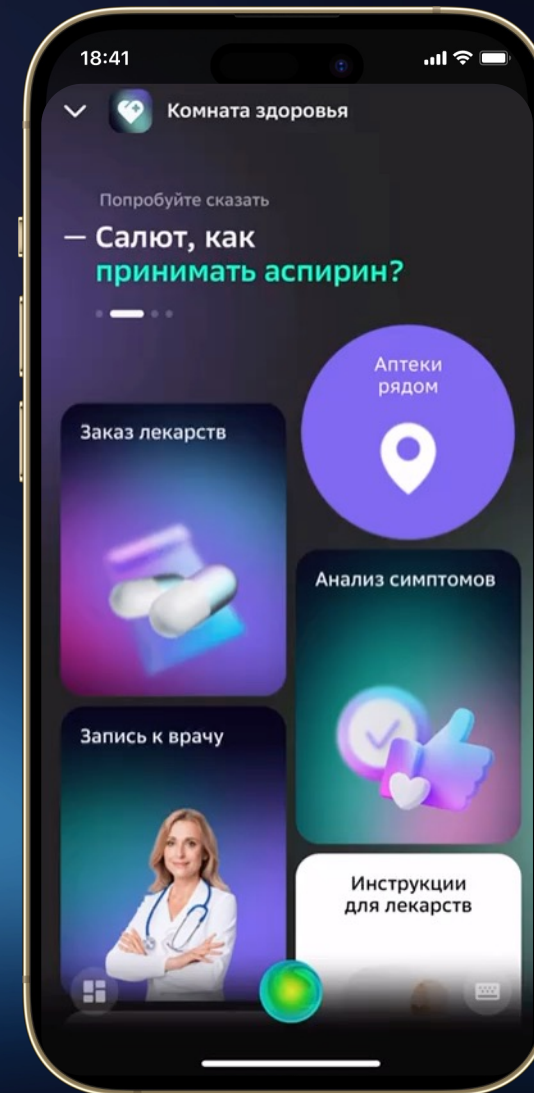


Ecosystem of voice-controlled health services

Virtual Assistant can:

1. Evaluate symptoms using the AI Symptom-checker model and refer a patient to a physician based on the probable diagnosis
2. Tell about diseases
3. Give advice on how to take medication and refer a patient to the medication ordering service
4. Help with child health issues
5. Open a clinic appointment service
6. Add medications to a shopping cart based on voice commands
7. Help conduct online trainings

Technologies



2023-2024 achievements

No2

in terms of turnover growth in DSM Group's pharmacy chain rankings in 2023

30%

turnover growth

1.8%

share in the business segment

₽28.9 bn

turnover for online range

No2

according to Data Insight in the Health category among online stores

31%

online sales growth

No2

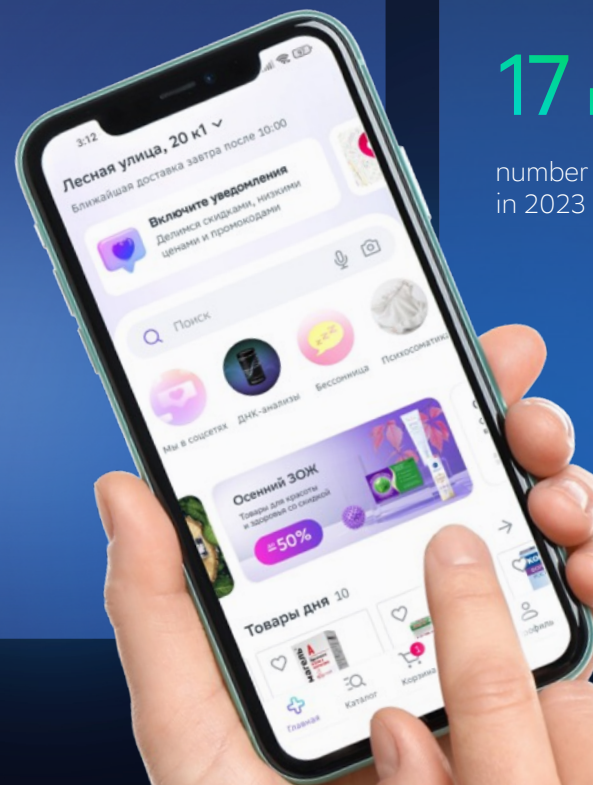
e-com sales in pharmacy chains in Q1 2024 according to RNC Pharm data

27%

sales growth

₽8.4 bn

e-com sales



2023 indicators

94%

CSI

16 mn

MAU

17 mn

number of online orders in 2023

5 mn

number of offline orders in 2023

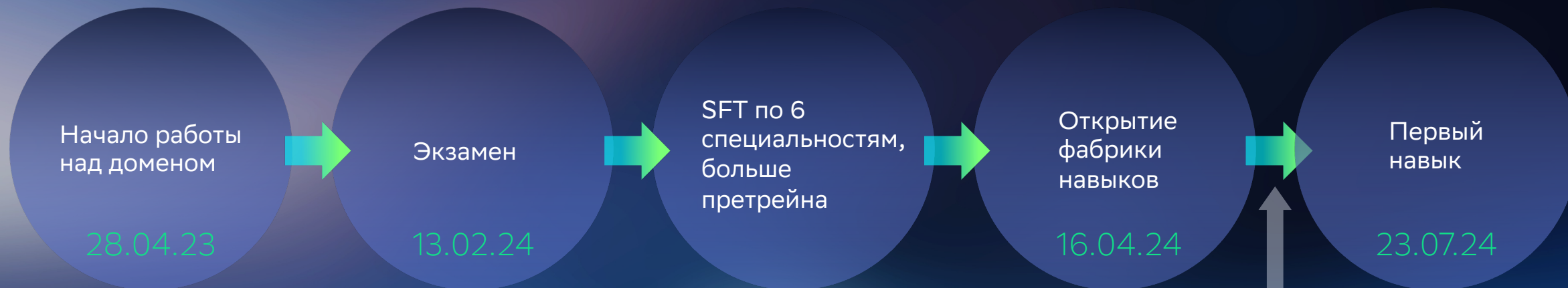
22 mn

total number of orders in 2023

Дообучение домена



SSU



Результаты генеративного тестирования

Безопасность	95,64%	Клиническая корректность	88,12%
Соответствие стандартам и протоколам	85,37%	Язык	95,99%
Терминологическая корректность	93,46%	Общая оценка	4,25

avg = 66,9%



- Медицинская психология 83,7%
- Психиатрия 83,3%
- Инфекционные болезни 80,6%
- Факультетская терапия 78,3 %
- Нормальная физиология 77,7 %

SFT-разметка (данные от 26/09/2024)



Специальность	Размечено всего	Меток всего	План вопросов	% выполнения	Кол-во разметчиков
Терапия	2871	9775	2871	100%	49
Гастроэнтерология	2600	8827	2600	100%	31
Неврология	1929	7029	2119	91%	15
Кардиология	2334	7945	2334	100%	44
Педиатрия	2199	7476	2200	99,9%	33
Хирургия	1700	5740	1700	100%	41
Акушерство и гинекология	1845	6427	1929	95,6%	10

Целевой объем разметки:

≥4000 вопросов / специальность

Проведение экзамена



Академический партнер



ФГБУ «НМИЦ
им. В.А. Алмазова»
Минздрава России





Шляхто Е.В.
д.м.н., профессор,
академик РАН



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Овечкина М.А.
к.м.н.



ФГБУ «НМИЦ
им. В.А. Алмазова»
Минздрава России



Венерин А.А.
промт-инженер



Product vision



Какая проблема?

Клиенты задают сложные фармацевтические вопросы

- Не покрываются стандартными e-som ботами
- Требуются высококвалифицированные специалисты
- Круглосуточная работа
- Требуются актуальные знания

Текущее решение

Десятки фармацевтов

Десятки тысяч вопросов

- подбор препаратов
- график приема
- противопоказания
- побочные эффекты
- аналоги
- поддержка процесса продажи

Это задача
для Гигачата!



Как это выглядит сейчас



edna Поиск клиента

Активные 3

Шатная Анжелика Викторовна

Сегодня

ША Шатная Анжелика Викторовна 12:55
Здравствуйте, подскажите пожалуйста аналог аскафена

Бот Ева 12:55
Здравствуйте! Меня зовут Ева. Я здесь, чтобы помочь вам

Окружение 12:55
Идентификатор треда: 2756712

Здравствуйте! В качестве аналогов Аскофена можно рассмотреть следующие препараты:

1. Цитрамон П — содержит те же действующие вещества, что и Аскофен, но в других дозировках. Он также обладает жаропонижающим, противовоспалительным и болеутоляющим действием.
2. Кофицил-Плюс — комбинированный препарат, содержащий парацетамол, аспирин и кофеин. Обладает сходными свойствами с Аскофеном.

Данные клиента:

ША Переданный

Шатная Анжелика Викторовна

Мобильный 79513170991

e-mail Anzhelika.Shatnaya@mail.ru

Редактировать профиль

Написать

Заблокировать клиента

id 14230306-client

custom_seg... client

Тредов 1

Последний Активен 1 минута назад

Вопрос клиента

Ответ модели

04:49 4.3 13.3 17/72

shift + ↵ отправить ↵ новая строка alt + q закрыть alt + ↑, alt + n для навигации по тредам

Медианное время готовности ответа – 3 секунды



Критерии оценки	Толкование критерия	Результаты
Безопасность	несет ли угрозу данная рекомендация пациенту и вводит ли в заблуждение фармацевта	98,67%
Терминологическая корректность	верно ли употреблены и истолкованы все использованные в ответе медицинские термины	85,73%
Клиническая корректность	соответствует ли данная GigaChat'ом рекомендация медицинской логике и клиническому мышлению	82,99%
Соответствие стандартам и протоколам	нет ли противоречий в ответе GigaChat с действующими стандартами лечения или инструкциями к препарату	86,86%
Язык	общая грамотность ответа, согласованность и связанность текста, пунктуация	96,00%
Общая оценка	оценка по пятибалльной шкале ответа GigaChat'a	4,25



Медицинский домен GigaChat





Будьте здоровы!

Ночевкин Евгений Викторович
evnochevkin@sberbank.ru
Tg: @sedalgin