



## THE FUTURE BEGINS TODAY



PHARMACY



E-PAPERWORK



DIAGNOSTICS / PACS



LIS

### THE PATH TO INNOVATION IN MEDICINE

6 YEARS  
ON THE  
MARKET



+7 (771) 811-73-04

+7 (777) 112-78-88

+7 (7172) 77-97-21



office@avicenna.online





## What is Medical Information System "Avicenna"?

MIS "Avicenna" is a solution for the automation of medical activities for organizations of any type, scale and form of ownership.

The system allows you to combine into a single information system all medical diagnostic processes, to create a single mechanism for managing, monitoring, accounting and planning activities of the institution.

As a web-based application MIS "Avicenna" can run on any technical platform from workstations and terminals to mobile devices.

## Our partners:

Kazakhtelecom;  
InformConsulting;  
K-Lab;  
NovaLab;  
ADIS;  
IRM Korea



Tengizchevroil



BTS·Digital



## Why is MIS Avicenna the best choice for your organization?



### Terms of purchase

Medical information system "Avicenna" can be purchased:

- ✓ as a "Boxed Solution" with pre-selected modules
- ✓ as a "Platform" for deep customization, as a permanent license with a certain or unlimited number of users on your local, corporate, regional server
- ✓ As a "Cloud Solution" online service.



### Solution

The solution can be built on the existing infrastructure or implemented from scratch, providing any required level of security and fault tolerance



## Why is MIS "Avicenna" the best choice for your organization?



### Smart

We are pioneers in the implementation of smart technologies in medicine in the EAEC:

- Voice input
- Voice control
- Computer vision
- Introduction of the best western practices and techniques through MIS (Triage System, EmergencyRoom)
- Implementation of paperless technology in the MoD.



### Cross platform technology

Avicenna MIS is a cross-platform. We offer a choice of:



- Option with the placement of a physical server inside your organization, which will make the system fully autonomous and independent from external factors.



- Option with cloud solution. This solution does not require a server and complex network infrastructure. All you need is access to the Internet channel.

As a web application, MIS "Avicenna" can run on any technical platform from workstations and terminals to mobile devices.

## Why is MIS "Avicenna" the best choice for your organization?



### Finance

MIS "Avicenna" has a powerful financial unit through integration with "1C platform".

The automation of the financial block allows:

- ✓ Automatically calculate the cost of treatment for each patient. The system allows you to calculate the actual cost of treatment of each patient, taking into account all the costs of treatment from drugs to medical devices (medical devices). Also personalized cost accounting prevents the inappropriate use of medicines.
- ✓ Keep records of revenues from paid services. The system automates the process of billable admissions and shows what income comes from a particular unit, a particular doctor for specific services.



### Integration Capabilities

Currently MIS "Avicenna" has integration with the following systems:

- ✓ Ministry of Health portals (RPN, RMS, BG, ERSB, EPS,...);
- ✓ MHIF systems;
- ✓ Laboratory information systems; PACS system;
- ✓ Smart Astana IS;
- ✓ Ambulance Information System;
- ✓ 1C-Enterprise platform.

The main integration with other MIS is through the Interoperability Platform. At the moment there is an exchange of information through other portals of the MoH: Unified payment system (in terms of data on services rendered and diagnoses), BG (in terms of data exchange on hospitalizations), ERSB (in terms of final clinical data at discharge), RPM (in terms of primary patient data).

## Why is MIS "Avicenna" the best choice for your organization?



### Implementation experience and technical support

The presence of an experienced support team in each region allows you to respond quickly to emerging issues and challenges, to make any changes to meet the practice of the customer.

Proven implementation methodologies allow you to deploy and launch a solution for informatization of medical organization, corporate network and even regional healthcare in a matter of weeks.

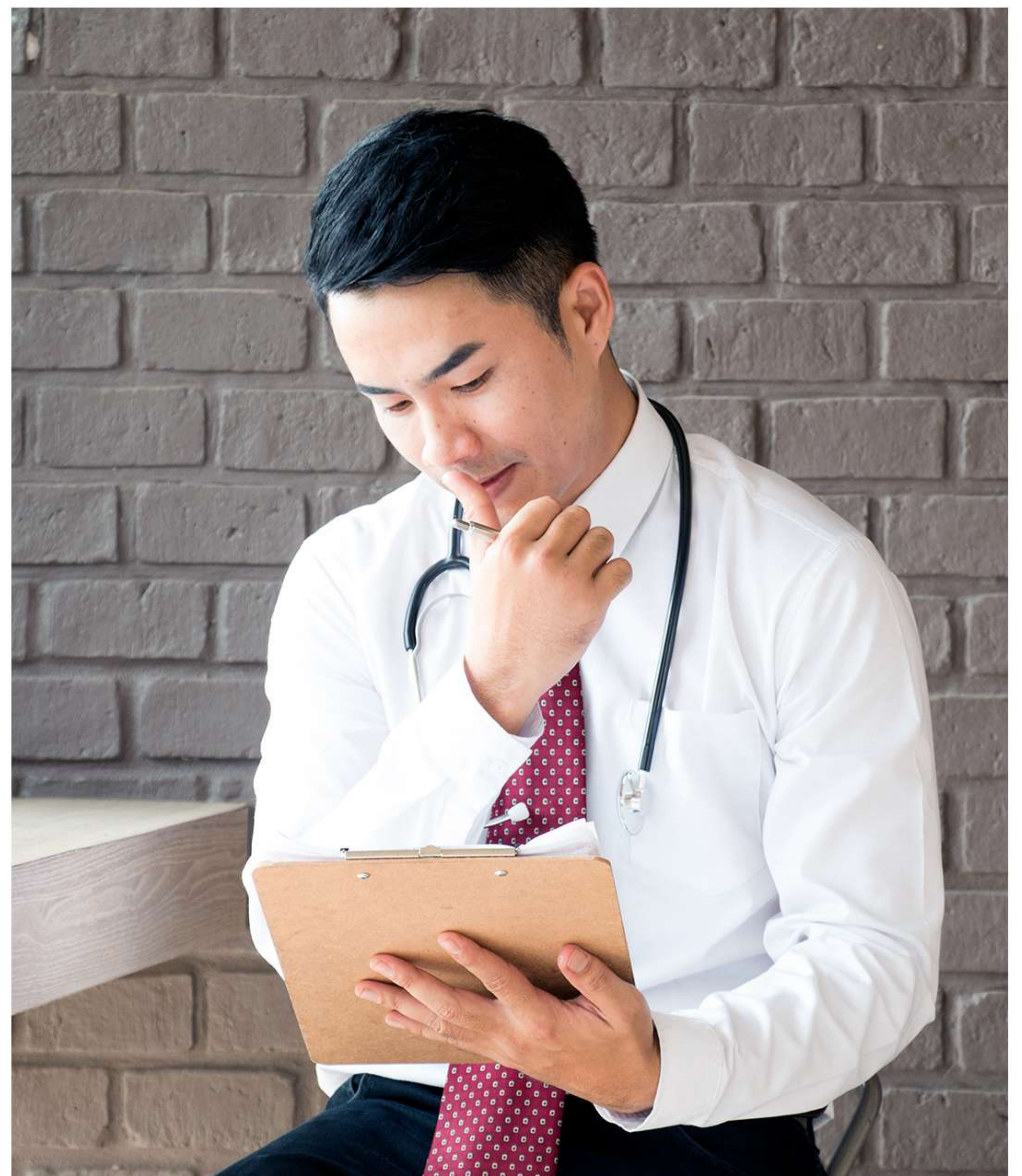
The experienced implementation team will not only provide personal training for the medical staff of the organization and technical personnel of the client, but will also prepare the whole process of further operation of the system and a roadmap for its development.

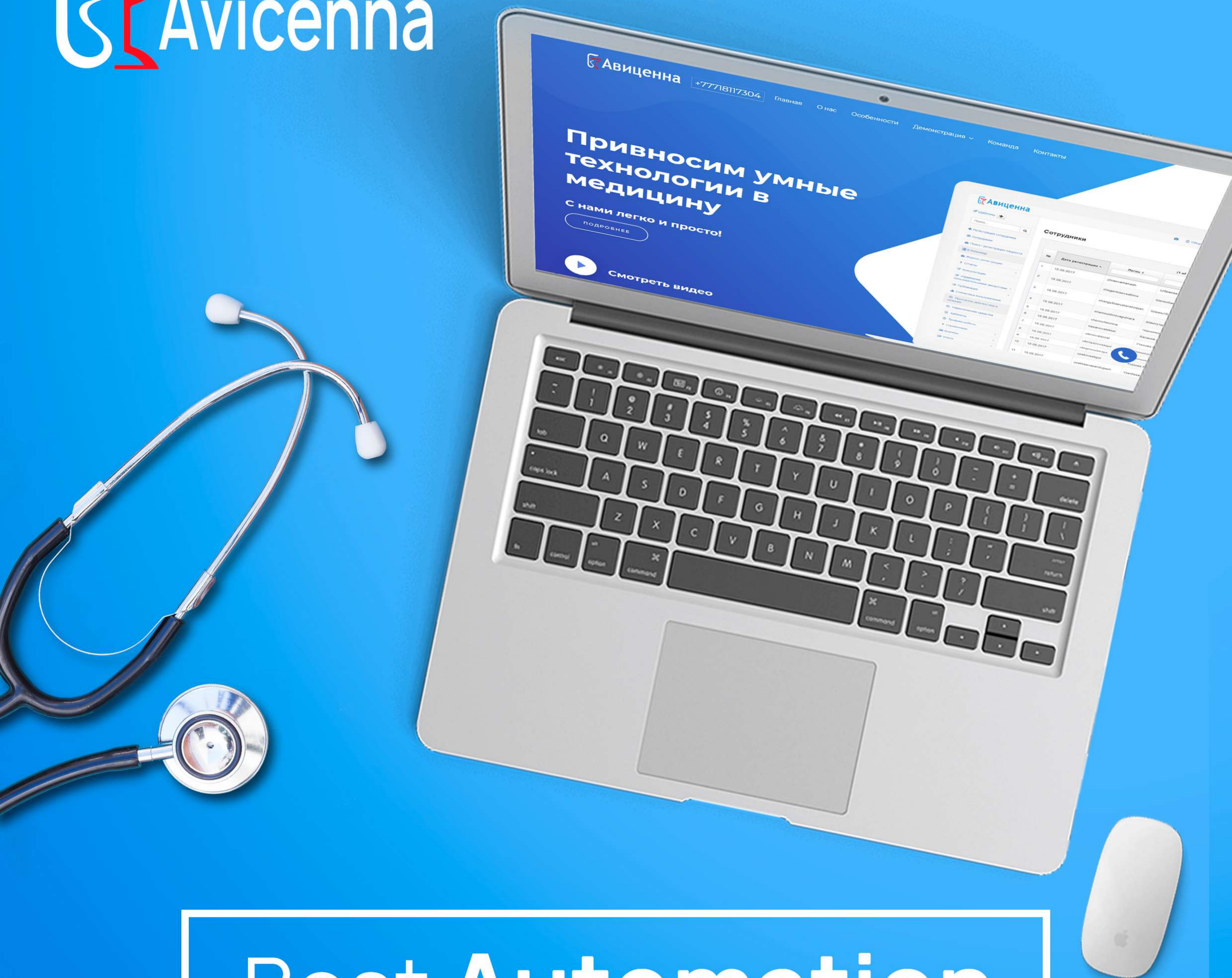


### Turnkey Solution

Our solution is suitable for the scale: a single MO, a cluster of MOs, the entire region.

And everything is tailored individually on a turnkey basis based on the customer's needs!





# Best Automation Solution

## Our partners:

Internet company;  
Kazakhtelecom;  
InformConsulting;  
K-Lab;  
NovaLab;  
ADIS;  
IRM Korea

## Our contacts:

+ 7 (771) 811-73-04;  
+ 7 (771) 112-78-88  
+7 (7172) 77-97-21  
office@avicenna.online

## MIS "Avicenna" - a comprehensive approach to solving problems



### For management:

- ✓ Control of all departments of the clinic;
  - ✓ Separation of powers;
  - ✓ Tracking abuses;
  - ✓ Falsification of documents;
  - ✓ Analytics, operational reporting;
  - ✓ Quality Control;
  - ✓ Performance analysis;
  - ✓ Prestige, success, manageability.
- ✓ MIS "Avicenna".  
Your guide to OSMS.  
We can help you implement OSMS in your organization.



### For the doctor:

- ✓ Detailed medical history;
- ✓ Individual templates, protocols;
- ✓ Minimization of errors;
- ✓ Informative, quick search;
- ✓ Treatment planning, control of appointments;
- ✓ Convenient generation of check-ups, diaries, extracts, certificates;
- ✓ Printing and examination of certificates of incapacity for work;
- ✓ SMS-notifications;
- ✓ Ease of use and training.



### For the patient:

- ✓ Quality service;
- ✓ Convenience of making an appointment with a doctor;
- ✓ Optimization of the patient's movement around the clinic;
- ✓ Promptness of billing and payment acceptance.



### For diagnostics:

- ✓ Integrated LIS for in-house lab with large volumes of tests;
- ✓ Integration with external LIS;
- ✓ PACS system for viewing and archiving images.



INNOVATION IS THE KEY TO  
**SUCCESS**

\* [www.avicenna.online](http://www.avicenna.online)

## Completion of the MIS "Avicenna"



### Finance and Economics profile

- ✓ Accounting for paid services;
- ✓ Settlements with patients;
- ✓ Statistical and economic reports;
- ✓ Integration with cash registers;
- ✓ Integration with 1C.



### Medical-diagnostic profile

- ✓ Complete electronic medical records;
- ✓ Inpatient;
- ✓ Polyclinic;
- ✓ Laboratory information system;
- ✓ PACS system;
- ✓ Forms and Journals Designer;
- ✓ Triage System;
- ✓ Templates, prompts, voice input;
- ✓ Electronic referrals, prescriptions;
- ✓ Diagnostic and treatment standards;
- ✓ Disability Sheets.



### Warehouse accounting

- ✓ Stocks of medicines, drugs and consumables;
- ✓ Calculation of costs for medical therapy;
- ✓ Calculation of costs for operations and manipulations;
- ✓ Calculation of test costs;
- ✓ Individual calculation of costs for each patient;
- ✓ Integration with 1C.



### Online services

- ✓ Remote appointment;
- ✓ Notifications to clinic management, patients;
- ✓ Integration of schedules with the clinic's website;
- ✓ Sending information by email.



## Avicenna: Stationary

This module is the main and connecting link of the entire system.

The module concentrates all work with the patient from the moment of his registration to discharge. It meets the standards of the orders of the Ministry of Health of the Republic of Kazakhstan. There is integration with e-Health services (NRS, CRS, BG, ERS, EPS, and others).

The hospital automates the work of the emergency room and clinical departments. Automation of hospital work is achieved by eliminating manual duplication of passport and other repetitive data of the patient from document to document.

All work is based on electronic medical record of the patient, where the necessary information is automatically taken when it is necessary and inserted into other documents.

## Emergency Room

The automated registration process, filling out of initial documents, requests to paraclinical services (radiology and functional diagnostics, laboratory, etc.), as well as a triage system for sorting patients and a functionality for sending assets of outpatients to relevant organizations are built into the admission ward functionality.

Registration automation is achieved by automatically obtaining data from the Information System "Register of Attached Population".



## Clinical departments

The department automates the work of the physician and nursing staff. Doctors and nurses use in their work the medical records that have been created in the admission ward during the registration of the patient.

The doctor is able to review the existing data and add new entries to the medical records and generate documents that are needed in the course of treatment.

In order to speed up the work of physicians there are technologies such as:

- Voice data entry;
- Automatic insertion of duplicate data;
- Templates ;
- Smart fields.

Nurses are able to view and mark the execution of appointments, data registration, the formation of nursing documentation.



## Avicenna: Polyclinic

This module automates all work with outpatients. It has integration with e-health services.

### Registry

The functionality of the Registrar's Office is designed to issue vouchers for the current day's appointments with the specialists of the treatment facilities. The database of electronic patient cards and doctors' work schedules are used for issuing the vouchers.

The following functions are automated in the Registrar's Office:

- Creation of an electronic outpatient card;
- Issuing an electronic coupon to a patient for an appointment with a specialist;
- Recording of issued and free coupons for each specialist;
- Recording in the patient's card the received coupons for the appointment with a specialist and referrals for consultation;
- Keeping a journal for an appointment with a specialist.

### Outpatient Clinic Doctor Workstation

The workplace is designed for making records of the results of medical appointments in the outpatient record, based on the electronic coupon received at the Registration Desk.

## The following functions are automated:

### Recording the results of examinations and doctor's prescriptions to the card:

- complaints;
- Medical history and illnesses;
- results of tests and examinations;
- diagnosis of the disease;
- appointments;
- recommendations.

### Forming a list of visits to the patient in chronological order with the ability to view the results:

- doctor's appointment;
- passing of tests;
- examination / dispensary registration.

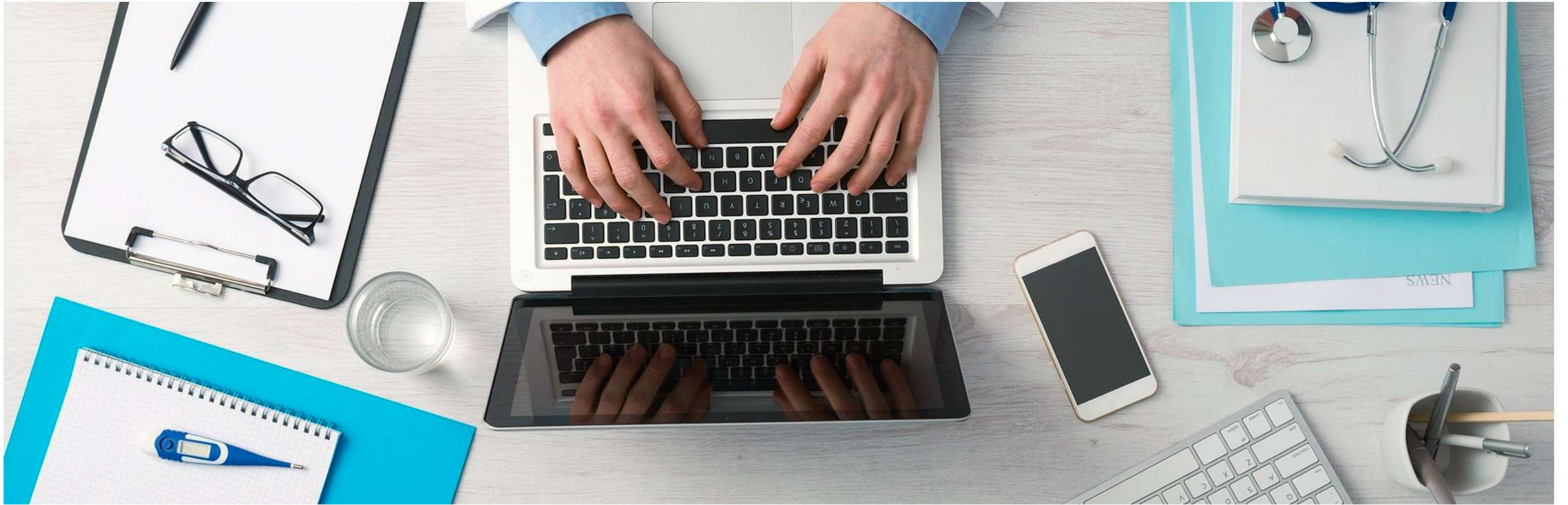
### Printing of documents:

- doctor's examination;
- doctor's record;
- referral to hospitalization;
- prescription;
- referrals for tests and examinations;
- statistical card;
- discharge, epicrisis.

The system supports the common practice of working with an assistant (nurse), when the functions of filling out documentation are delegated to the assistant, but require revision and approval by the doctor.



## Avicenna: Laboratory Information System



The laboratory information system "Avicenna" is a set of software and hardware designed to automate various processes taking place in the laboratory and to ensure the need for laboratory specialists in the systematic information on all aspects of their activities to make decisions that improve laboratory performance, including improving the quality of laboratory analytical results.

The main purpose of LIS are management, collection, processing, analysis and automation of laboratory technological processes' information.

With the introduction of LIS the following objectives are achieved:

- ⊗ Virtual elimination of the erroneous influence of the human factor on the reliability of the performed analyses;
- 📈 Increased productivity of performed analyses;
- ⚙️ Full automation of material, information and financial flows in laboratory's diagnostics department;
- 💰 Reducing the financial costs of tests;
- 🏢 Radical increase in accounting efficiency and control of material flows.

## Architecture

The architecture of the system is based on the block-module principle, which ensures high reliability since each laboratory department can operate autonomously, as well as "flexibility" is ensured in both adaptation and acquisition.

The software of the system is developed by the method of "CASE-technology", in other words, for each laboratory program is collected on the order specification sheet and it is unique, containing only the necessary functions, which increases reliability and ensures free update and support of the software.





If necessary, modules of interaction with the existing information system of the institution along with the information systems of health insurance companies are developed.

The system offers a wide range of configuration and administration options for the user.

Each LIS object (a personal computer with a set of equipment connected to it - analyzers and/or workstations for manual methods of research) is fully functional and has the ability to work offline, printing results, working with the archive, maintaining statistical reporting and dynamic processing of results, maintaining statistics of research quality control.

The system provides full automation of the laboratory workflow which can be divided into the following main stages:



-  Material and patient registration in LIS, labeling, primary material processing;
-  Execution of tests;
-  Processing of examination results;
-  Archiving and reporting results.

## Avicenna: PACS

Avicenna: PACS is a complex of hardware and software (computer networks, servers, workstations, software) designed to perform the following tasks:



Organization of storage and archiving of digital diagnostic images in the MO (Medical Organization)



Organization of image transfer through the network, both within the MO and between different MOs of the department. For example, an image taken at a regional Ministry of Health can be quickly transferred via the network for consultation to the central Ministry of Health, where the specialists are present.



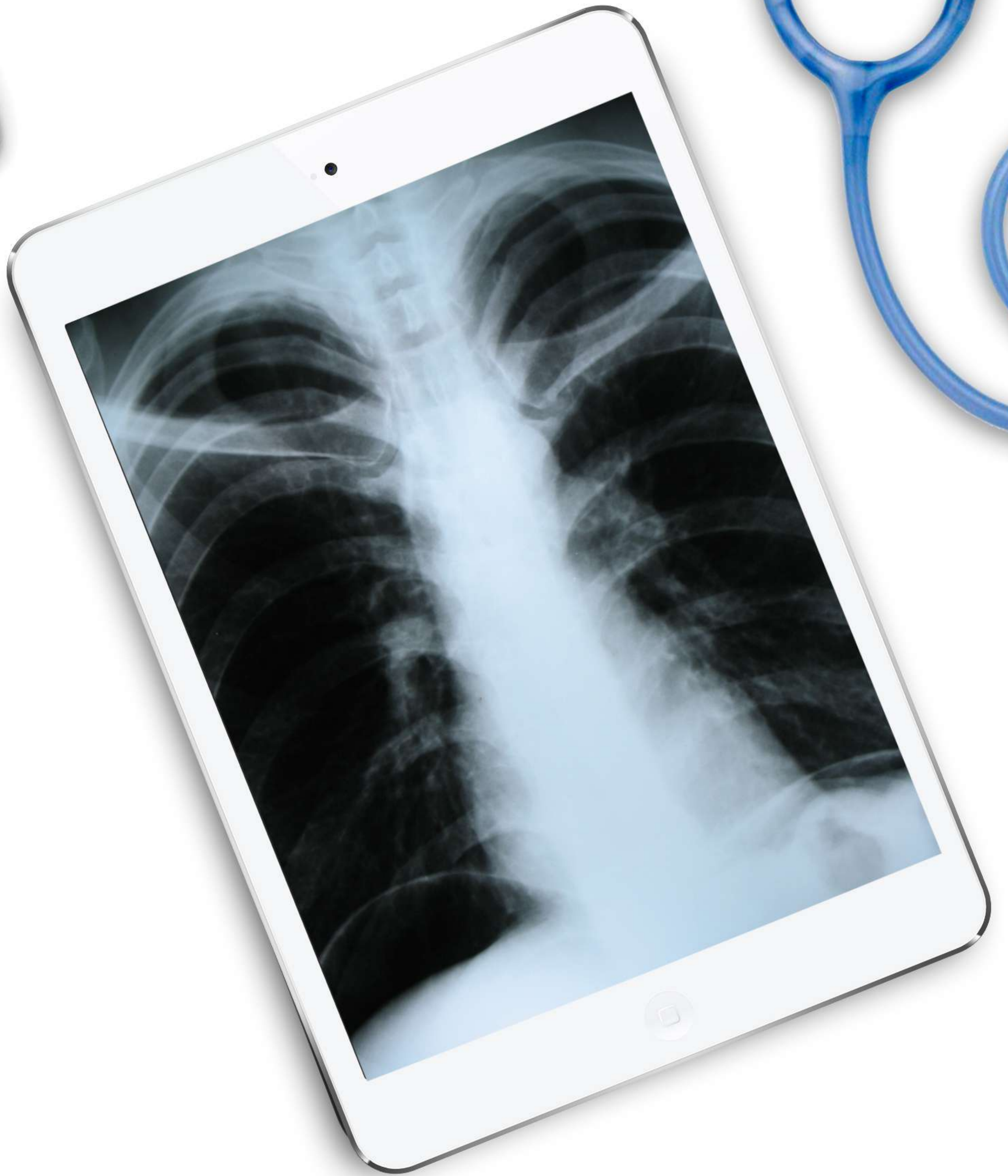
Creation of computerized workstations for specialists equipped with functions appropriate to their status (The radiologist should have a workstation equipped with high-contrast monitors for describing diagnostic images. The clinician may have a simple PC, etc.)

The system implements a system of electronic document management, including templates of examination protocols, directories of names of examinations/services, directories of referral diagnoses using ICD-10, directories of organizations, divisions and staff that sent for examinations, directories of medical staff that conducted the examination, directories of related information, statistical report forms, etc.

The expediency of equipping the Ministry of Health with the PACS system consists in the necessity of uniting all diagnostic equipment into a unified network, which will lead to the possibility of centralized image storage and optimization of the process of its transmission and processing.

The creation of digital archives will lead to significant savings in expendable materials (film and chemicals), as well as in the maintenance of large film fire-hazardous archives.





Avicenna:  
**PACS**

## Avicenna: Accounting of medicines and medical devices

"Avicenna: Accounting for drugs and medical devices" is a specialized solution designed to automate the pharmacy units operating within health facilities.

This solution provides an automated cost accounting system

within the framework of an electronic medical record to achieve the following objectives:

- Automating the warehouse accounting of medications movement;
- Accounting of the treated case of each patient;
- Immediate information about the availability of drugs at any time at all storage locations;
- Transparency of receipt and consumption of medicines, medical devices, etc;
- Reducing the cost of preparation of documentation and necessary reporting.

## Functional capabilities of this software solution:

- Calculation of the cost of medicines and medical devices, including the cost of operations and manipulations, tests, examinations, procedures, etc. per patient;
- Identification of the cost of each treated case;
- obtaining information on availability of medicines at any time in all places of storage (warehouse, department, post);
- generation of planned costs for drugs and medical devices;
- control over the movement of drugs, incoming to the warehouse, transfer between departments, write-offs;
- Generation of regulatory and standard reports on receipt, storage and consumption of medicines, including accounting of special control drugs.

A key component of this solution is the presence of integration with the 1C platform. The module allows you to integrate to interact with various configurations of the platform "1C: Enterprise" version 8.3.7.1901 and above through REST API platform.

Integration with MIS "Avicenna" is seamless (at system core level) and works as an integral part of the system. It allows you to use all the existing capabilities of the "1C" platform and complements the capabilities of the MIS "Avicenna" platform, which gives a big gain in terms of workflow, finances and time.



Accounting for medications  
and medical devices.

## Avicenna: Paid services

Avicenna: Paid Services is a specialized solution for automating the accounting of paid services and cash services for patients in medical organizations.

The solution allows you to communicate and have up-to-date data on revenues of the hospital and each department in the medical organization, while the implementation does not disrupt the already established mechanism and workflow of the departments.

The module has a set of necessary reports on revenues in different sections for management:

- ✓ Paid services for the period by department;
- ✓ Paid services for the period by branches and services;
- ✓ Paid services for the period by branches, performers and services;
- ✓ Data on payment for services for the period rendered to the patient in the department;
- ✓ Paid services for the period by cashiers/services;
- ✓ Paid services for the period by cashiers/departments/services;
- ✓ Paid services for the period by cashiers/departments/units;
- ✓ Paid services for the period by department, referrer and service.

Each doctor has the ability to generate an electronic coupon with a list of services for the patient. Then the patient simply pays at the cash desk and receives the services. There is a possibility of viewing all the coupons (paid/unpaid) for transparency and control.

Due to integration with 1C software, this solution makes it possible to use all the existing features of the "1C" platform and complements the capabilities of the MIS "Avicenna" platform, which gives a big gain in terms of workflow, finances and time.





# PAID SERVICES

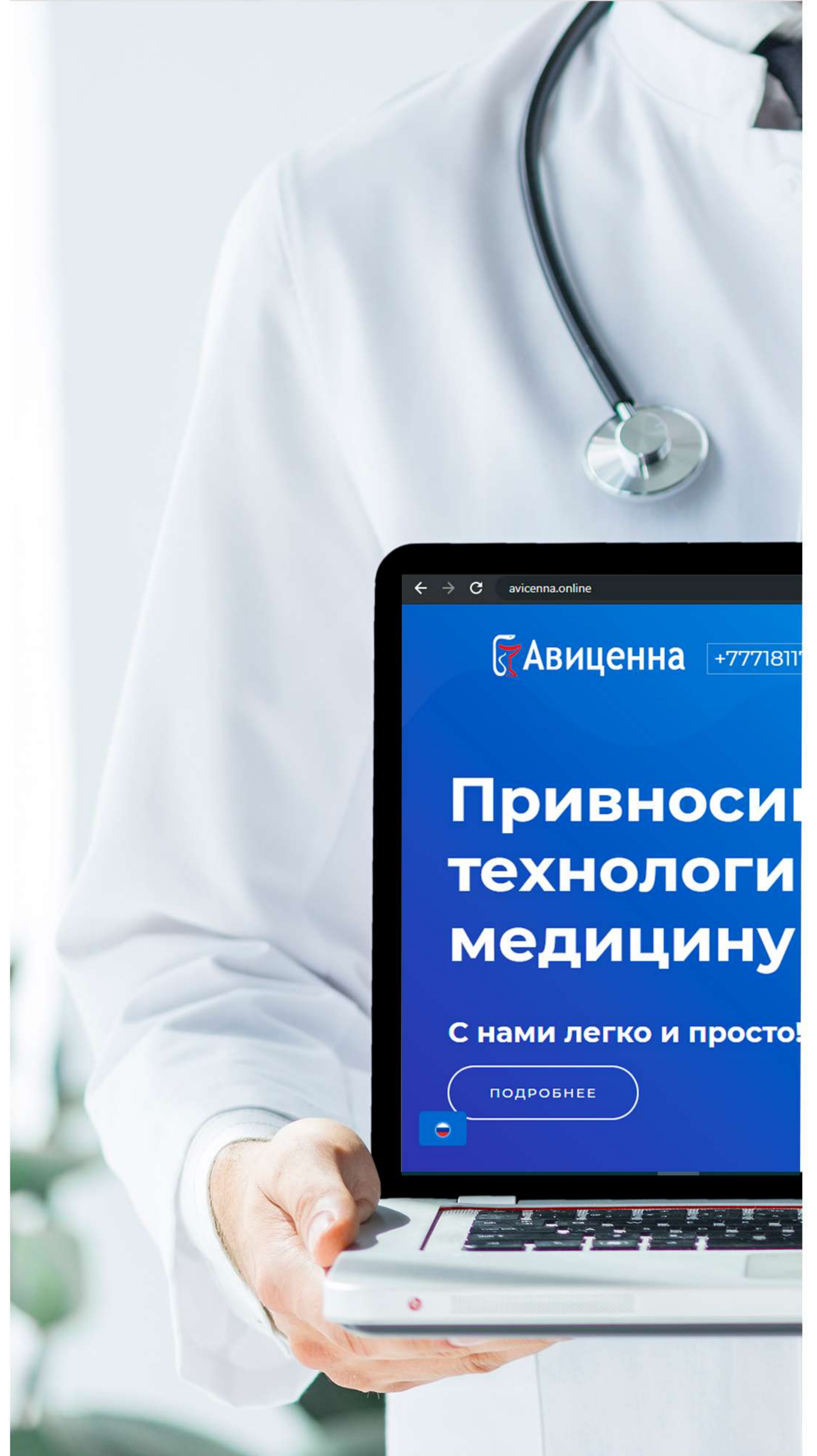
## Avicenna: Journal and Form Designer

"Avicenna: Journals and Forms Designer" allows you to create any medical documentation, journals, forms, etc. with a powerful editor and design functionality.

The designer allows you to create electronic forms, journals and their visualization of the printed version, as well as link fillable fields in the document for autofill.

In addition to adding documentation with standard fields, the builder has the ability to add automatic filling of the document, multimedia content, adding tables, etc. Also, built-in editor allows you to format the content of the document to the required format.

This constructor is intended for quick creation of necessary documentation by the administrator of the system without assistance of the developers of the system. This solution allows you to respond as quickly as possible to any legislative or internal orders to add or change medical documentation.



**ON THE GUARD**  
**FOR YOUR DATA**

## Avicenna: Information Security

MIS "Avicenna" meets the requirements of information security. Security is ensured through the integrated use of organizational measures, software and technical means of protection.

### WE DISTINGUISH THE FOLLOWING LEVELS OF SECURITY:

#### Level of protocols and encryption means

##### Secure Protocols and Encryption

Security at the level of exchange and transport using specialized secure protocols and encryption facilities on the basis of national Public Key Infrastructure (PKI).

#### Organization Layer

##### Management

Organization of measures to ensure compliance to information security rules by employees. As well as physical protection of infrastructure from unauthorized access, response to security breaches and other risks that may cause human factor.

#### Software layer

##### Software Security

Security at the software level, which involves the use of open source software, as well as complying with the requirements of information security, for example from the GNU/Linux family.

The main tasks:

- Data backup.
- Organization of authorized access to the data.
- Monitoring of "dangerous" events.
- Managing IIA user properties.
- Maintaining security logs.
- Firewall for traffic control.

#### Hardware level

##### Hardware Security

The level assumes the use of specialized hardware solution in a protected room in a physically isolated environment from external physical threats and possible damage, as well as redundancy means.

Hardware security refers to hardware and software solutions that provide storage media security:

- At the storage device level. RAID-technologies (mirroring, RAID, etc.).
- On the database server level (Standby, operational log archiving).



**WE ARE ALWAYS**

**READY TO ANSWER YOU**

## Avicenna: Technical Support

We provide technical support and individual support throughout the system's life cycle. If necessary, we perform individual adaptation of the system to the specific characteristics of each medical facility. Our technical support team provides information and technical support:

- **Remotely.** Our company has a call-center that can provide advice by verbal recommendations (by phone), written recommendations (email, Skype, WhatsApp), by demonstrating the necessary procedures to fix or prevent problems using remote access means (TeamViewer).
- **On-site.** Our experts will visit the client and help to solve any problem at the client's workplace. Also, if requested by the customer, it is possible to provide constant customer support at the customer site.

Technical support is provided in accordance with the following procedure:

- ✓ 1. In case of the need for technical support, the Customer's employee shall apply with the description of the problem to the responsible employee of the Contractor through one of the channels of application.
- ✓ 2. The Customer's employee registers the Requisition in the Requisition accounting system, communicates the Requisition ID to the responsible employee of the Customer;
- ✓ 3. The Executor:
  - receives the Requisition in the Requisition accounting system, studies it and begins to process it;
  - diagnoses the problem, involving the Executor's technical experts, if necessary, requesting additional information from the Customer, using the remote access means;
  - assigns the Requests the level of criticality and priority; determines and communicates the scheduled term of the Requests execution;
  - Executes the Application, interacts with the initiator of the Application and the responsible Employee of the Customer;
  - submits the results of the Application execution to the responsible Employee of the Customer, by sending a notice of the Application execution with a brief description of the measures taken to the email address of the responsible Employee of the Customer, or via other communication channels.
- ✓ 4. The responsible employee of the Customer accepts the results of the Application execution or reports the comments to the Contractor. If necessary, the Executor eliminates the remarks and re-submits the results to the responsible Employee of the Customer.
- ✓ 5. If the results are accepted (no remarks within 3 days from the date of delivery of the Order execution results), the Application is considered to be executed and closed.

All stages of work with the Application are recorded in the accounting system of Applications. At any time, the Customer's responsible employee may obtain information about the status of the Order execution through the Order accounting system by indicating the identifier of the Order or address questions regarding its execution through one of the communication channels.



BRINGING SMART TECHNOLOGY  
**INTO MEDICINE**



SAFE



PROMPTLY



EFFICIENT





807 office, 13/3 Dostyk str., Nur-Sultan,  
Republic of Kazakhstan

8 (7172) 77 97 21,  
**office@avicenna.online**  
**www.avicenna.online**

Download electronic  
presentation

