

Increasing the effectiveness of the multidisciplinary hospital aimed at improving the quality and accessibility of medical care

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Current trends and principles of healthcare organization at the present stage

Global health in the 21st century is characterized by the principles of adherence to evidence-based medicine (evidence-based medicine), patient orientation and profitability (cost effectiveness).

The term Value Medicine, introduced at the beginning of the century (Brown M., et al., 2003), refers to the practice of medicine based on a quantitative assessment of changes in quality and longevity using the best principles and models of evidence-based medicine.

The paradigm shift in the organization of medical care and preventive interventions in the Russian Federation

The response to the paradigm shift in the beginning of the century was the transition in our country to predominantly single-channel financing, as a tool for effectively managing available resources, reducing inefficient spending, and actively using resource-saving technologies

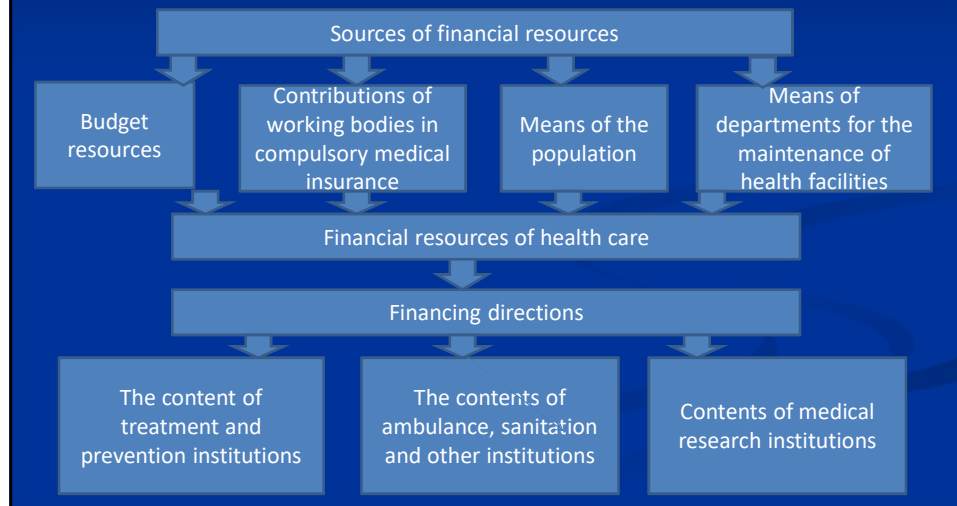
The main components that form the health care system in the Russian Federation at the present stage

Reforming the health care system, Russia went on the way

- Preservation of the public sector,
- Development of private medicine,
- Expansion and modification of health insurance.

This direction of reforms was due to the desire to expand the sources of health financing, to obtain new channels of stable receipt of additional funds.

The system of financing health care in the Russian Federation at the present stage



Legal regulation of the health care system in the Russian Federation

The fundamental normative legal act in the sphere of public health is the federal law No. 323 of 21.11.2011 "On the fundamentals of the health of citizens in the Russian Federation".

In accordance with Article 37 of this Law, "medical assistance is organized and is rendered in accordance with the **procedures for the provision of medical care** that are mandatory for execution in the territory of the Russian Federation by all medical organizations, and also on the basis of **medical care standards**."

Standard of medical care: existing content and use

The purpose of the Standard is to specify the model of the patient (the description of the "typical" case), the scope and conditions of application of the standard (diagnoses, outpatient or inpatient conditions, duration of treatment, etc.), the way of treatment, indicating specific recommendations for the use of technical and medication. The standard is intended for compulsory execution in the health care system, working under the program of implementing state guarantees for providing citizens with free medical care.

Clinical recommendations - an additional tool for standardizing medical care

The introduction of clinical recommendations (guidelines) was declared at the VII All-Russian Congress of Patients (2016). National guidelines will have legal force and become binding. Clinical recommendations based on the principles of evidence-based medicine, along with the procedures and standards of medical care, serve as the basis for the formation of criteria for assessing the quality of care.

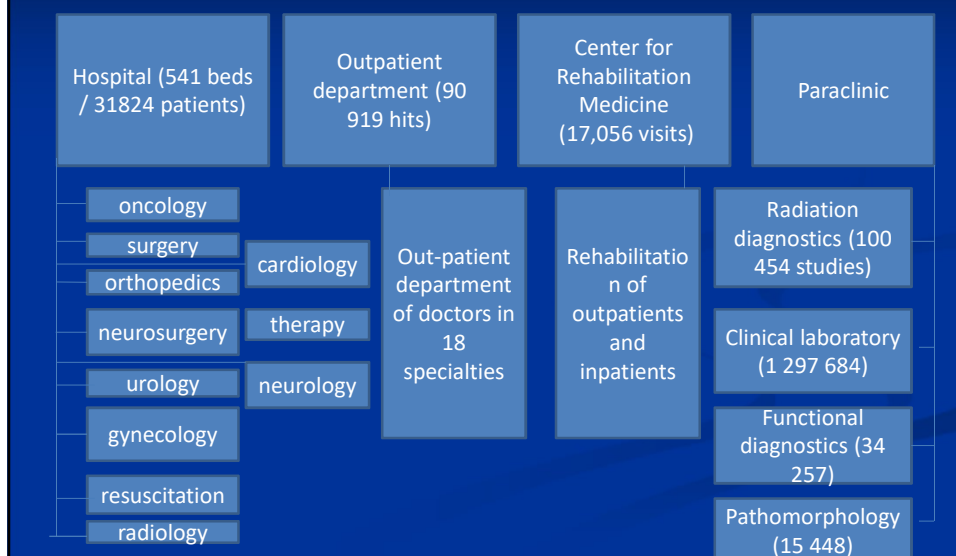


One of the largest multidisciplinary medical institution, equipped and operating at the level of world standards

The Center employs leading specialists of various profiles with many years of medical practice

When providing medical care to patients of our Center, a comprehensive approach is applied, including diagnostics, treatment of diseases and **rehabilitation process**

Structure of the Medical and Rehabilitation Center (2016)



Surgical oncology



The entire range of minimally invasive high-performance surgical operations for colon cancer, stomach cancer, liver cancer and metastatic liver damage, pancreatic cancer, breast cancer, prostate cancer, ovarian cancer.

Interdisciplinary approach:



All cancer patients are discussed on a consultation involving surgeons, oncologists, chemotherapists, radiologists, anesthesiologists. This approach is the standard of treatment Cancer patients in the world.

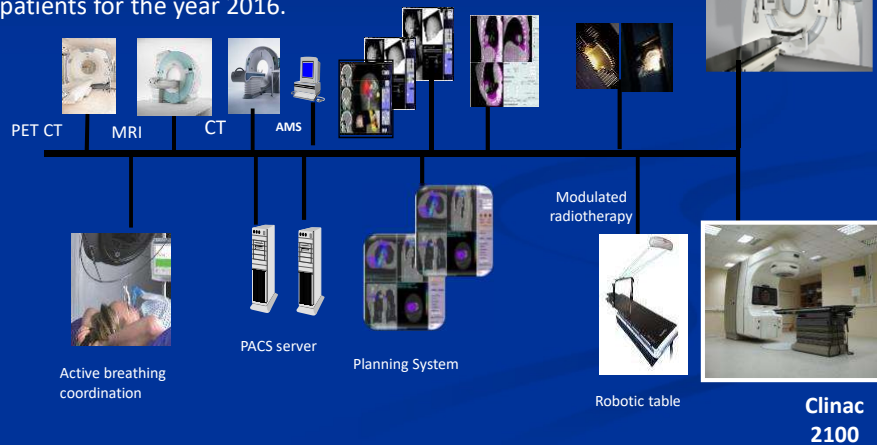
Chemotherapy



Drug therapy is conducted taking into account Russian and international recommendations using port-catheters. Actively applied modern method - intra-abdominal chemotherapy, which allows to significantly increase life expectancy compared with intravenous chemotherapy in patients after cytoreductive operations for ovarian cancer. Immunohistochemical and molecular genetic studies are the routine practice of the Center.

Radiation therapy

Modern accelerators with a robotic stereotaxic guidance system. Use of PET-CT, MRI and CT, for pre-radial preparation. 3D-dosimetric control and high throughput of treatment. Protection against overexposure. 1300 patients for the year 2016.



Neurosurgery



MAIN DIRECTIONS OF THE NEUROSURGERY SERVICE

- TUMORS OF THE BRAIN AND SPINAL CORD
- TUMORS OF THE SKULL BASE AND SPINE
- DEGENERATIVE DISEASES OF THE SPINE
- CEREBROVASKULAR PATHOLOGY
- ANOMALIES OF NERVOUS SYSTEM
- POSTTRAUMATIC DEFECTS OF THE SKULL AND DEFORMATIONS OF THE SPINE
- HYDROCEPHALUS
- PAIN SYNDROME

In 2016, 782 patients were treated

Cardiology

- exploration, treatment and rehabilitation of patients with ischemic Heart disease, arterial hypertension, diseases Myocardium, heart failure
- Treatment of heart rhythm disturbances, including implantation Pacemakers
- endovascular surgery



Annually, the department carries out more than 2000 angiographic studies and over a thousand endovascular operations, including stenting of the coronary arteries, carotid arteries. Operations for aneurysms of the abdominal and thoracic aorta. Stenting of the renal arteries, arteries of the lower limbs, as well as embolization of the vessels of the brain and uterine arteries.

Surgery

Surgery of varicose veins and venous thrombosis

Minimally invasive operations using laser or radiofrequency radiation under ultrasound and endoscopic control.

The most modern methods of treatment of hernias

Endoscopic operations are performed using modern composite nets through punctures. Surgical inpatient treatment in these cases does not exceed a day, and after 2-3 days the patient starts to work.

LRC is a reference center for the treatment of large and giant postoperative hernia of the abdominal wall.



Center for Restorative Medicine and Rehabilitation

Restorative treatment at the Center is passed by patients with diseases of the musculoskeletal system, the consequences of cerebral circulation disorders, the pathology of the cardiovascular system, after the operations, including oncology, respiratory diseases and other functional and organic disorders.



Sports rehabilitation

The center of physical rehabilitation, having a number of unique methods for rehabilitation after sports injuries, actively cooperates with specialists from Germany, Austria, Italy and other countries of Europe and America.



Some approaches to the organization of an effective therapeutic-diagnostic process in a multidisciplinary hospital based on the example of the Medical and Rehabilitation Center

Radiation diagnostics in the Medical and Rehabilitation Center

The Center for Radiation Diagnostics of the LRC includes:

- 4 CT (one of them is 320-series, another is dual-energy)
- 4 MRI (one of them is 3-mesh)
- SPECT
- PET-CT (partnership with PET-technology)
- Digital x-ray machine for 3 workstations, 3 mobile devices, 4 C-arcs
- 2 digital mammographs
- Network of data storage and transmission (PACS), radiological information system (RIS), external server for teleradiological services



Standards in radiodiagnosis

The problem:

The growing volume of radiation research and the variety of methods that often give similar information - the choice of the best.

Standards and recommendations are needed, as:

- In 10-50% radiation studies are appointed unreasonably
- Unnecessary expenses, duplication of research
- Diagnostic errors when the method is incorrectly selected
- A huge number of random findings that do not affect the patient's treatment
- Radiation load
- A growing number of lawsuits against doctors

Russian standards. How to choose a method?

Приложение к приказу Министерства здравоохранения Российской Федерации от _____ № _____			
Стандарт специализированной медицинской помощи при сердечной недостаточности			
Категория возрастов: взрослые			
Пол: любой			
Фаза: любая			
Стадия: вне зависимости			
Осложнения: вне зависимости			
Вид медицинской помощи: специализированная медицинская помощь			
Условия оказания медицинской помощи: стационарно			
Форма оказания медицинской помощи: плановая			
Средние сроки лечения (количество дней): 14			
Код по МКБ X*			
Нозологические единицы			
150 Сердечная недостаточность			
I25.5 Дисциркуляторная кардиомиопатия			
I42.0 Дисциркуляторная кардиомиопатия			
I51.4 Миокардит неуточненный			
Инструментальные методы исследования			
Код медицинской услуги	Наименование медицинской услуги	Усредненный показатель частоты предоставления	Усредненный показатель кратности применения
A04.10.002	Эхокардиография	1	2
A04.10.002.001	Эхокардиография траншеводная	0,05	1
A04.10.002.002	Эхокардиография трехмерная	0,05	1
A05.10.006	Регистрация электрокардиограммы	1	4
A05.10.007	Мониторирование электрокардиографических данных	0,05	2
7			
A05.10.008.001	Ультразвуковое мониторирование сердечного ритма (УМ-ЭКГ)	0,2	1
A05.10.009	Магнитно-резонансная томография сердца	0,05	1
A06.09.005	Компьютерная томография органов грудной полости	0,1	1
A06.09.007	Рентгенография легких	0,4	2
A11.10.001	Чрезкожная катетеризация сердца	0,01	1
A12.09.005	Пульсоксиметрия	0,05	2
A12.12.004	Суточное мониторирование артериального давления	0,3	1

The most well-known recommendations on the choice of methods of radiation diagnosis in the European Union





Professional organisations, radiation protection priorities and project collaboration

Clinical decision support for imaging referral guidelines

The CDS Project is managed by the European Society of Radiology (ESR).
contact: eu-affairs@myESR.org, www.myESR.org

Be part of the European Society of Radiology's radiation protection initiative, become a Friend of EuroSafe Imaging. www.eurosafeimaging.org

Rationale

The ESR considers European referral guidelines for medical imaging essential and that the improvement of guideline use is urgently needed. This can only be achieved through IT based solutions, i.e. embedding them in a Clinical Decision Support (CDS) environment. A CDS format would create the flexibility to adapt the guidelines to national, local, institutional or organisational needs.

ESR Vision

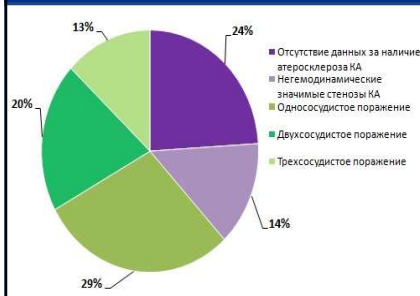
- » **Long-Term Objective:** ESR and ACR to develop a set of common evidence-based global imaging referral guidelines in CDS format to ensure a high quality standard for localisation
- » **IGuide:** development of an online Clinical Decision Support System available at the point-of-care to use evidence-based guidelines and aid patient-tailored decision support tools for imaging

ESR , 2015

Indications for the use of radiation methods for the diagnosis of IHD - the role of CT angiography (Recommendations ESC, 2010)

	Asymptomatic (screening)	Symptomatic			Prognostic value of positive result ^a	Prognostic value of negative result ^a
		Pretest likelihood ^b of obstructive disease				
		Low	Intermediate	High		
Anatomical test						
Invasive angiography	III A	III A	IIb A	I A	I A	I A
MDCT angiography	III B ^c	IIb B	IIa B	III B	IIb B	IIa B
MRI angiography	III B	III B	III B	III B	III C	III C
Functional test						
Stress echo	III A	III A	I A	III A ^d	I A	I A
Nuclear imaging	III A	III A	I A	III A ^d	I A	I A
Stress MRI	III B	III C	IIa B	III B ^d	IIa B	IIa B
PET perfusion	III B	III C	IIa B	III B ^d	IIa B	IIa B

Widespread use of coronary CT Angiography in practical cardiology - influence on the choice of treatment tactics



806 non-invasive coronary angiography to polyclinic patients over the past year.

Diagnostic informativity (comparison with coronary angiography)

Sensitivity	Specificity	Predictable value «+»	Predictable value «-»	Accuracy
92,2%	98,5%	93,3%	98,3%	95,5%



With comparable accuracy of diagnosis, the cost of the study is half that of coronary angiography

Traumatology and orthopedics



- One of the Russian leaders in carrying out operations to replace hip and knee joints (endoprosthesis)
- More than 4,000 operations per year
- Using the most modern endoprosthesis of the world's leading manufacturers (Zimmer, Biomed, DePuy)

Prerequisites for FAST TRACK

The economic motivation for the introduction of the methodology - the costs of the medical institution for total hip replacement of the hip and knee joints exceeded financing.

Ways to solve the problem:

A.-Negotiations with producers on reducing the cost

Prosthesis

- Differentiated approach to the choice of model prosthesis

- Reduction of hospitalization (not including Clinical parameters, with an extract in Rehabilitation departments)

Ways to solve the problem

1.-Negotiations with manufacturers on lowering the cost of prostheses;

- Differentiated approach to the choice of the prosthesis model;

- Shorting of hospitalization deadlines (without taking into account clinical parameters, with discharge to rehabilitation departments).

2. An alternative path suggested by Professor H.Kehlet in 80-90s:

FAST TRACK

Basic principles of the program

- Standardized protocols for pre-, intra- and postoperative patient monitoring
- Adequate anesthesia to provide early (3-4 hours after surgery) patient mobilization
- Training and psychological preparation of the patient
- Early Mobilization and Rehabilitation
- Grouping of patients into groups
- Evaluation of program effectiveness and early planned discharge

Clinical effects of program implementation

For 2011-2015 years. After the introduction of the program:

- Mortality - 0%
- Pulmonary embolism - 0%
- Deep venous thromboses <1%

Our results correlate with the data given by Husted H. (2010), Jergensen C. (2013).

Multidisciplinary approach

- Transfer from operating room to intensive care unit
Anesthetist ↔ resuscitator
 - condition monitoring
 - correction of hemodynamics
 - Symptomatic therapy
- Inclusion of the rehabilitation specialist, the instructor of exercise therapy, the implementation of a set of exercises in bed (preparation for verticalization)
- 2-3 hours after surgery - decision-making on the verticalization and activation of the patient
Resuscitator ↔ Rehabilitologist ↔ Surgeon
- 4-6 hours after surgery - transfer to the department (1 for 5 - 7 patients) ↔ physical therapy instructor ↔ attending physician

Monitoring patient satisfaction with medical care

Factors affecting patient satisfaction:

- Awareness of the patient
- Care
 - Pain therapy
- Walking doctors
- Reduced hospitalization
- Conditions of stay in general
- Patient Expectations

Less satisfied subgroups:

- Older patients
- Patients with high comorbidity
- Patients taking opioids before surgery
- Patients after total knee arthroplasty

Economic aspects of the program

Distribution of costs for 6-day hospitalization with total knee arthroplasty

By Services :

49% - operating
9% - ICU
9% - pharmacology
12% - separation
4% - physiotherapy

By Days:

1. day -72%
2. day - 8.7%
3. day - 7%
4. day - 5%
5. day - 3%
6. day-2%

56% -operational and ICU

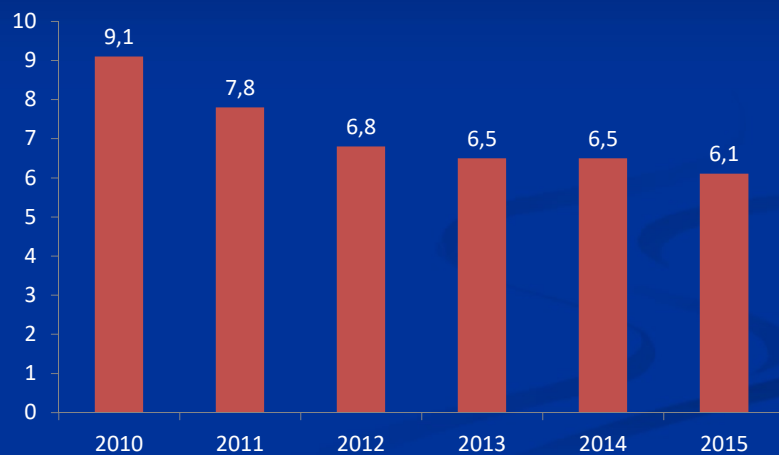
17% - cost of denture

27% stay in hospital

(Stern SH et al, Lorio R et al)

(Styron JF et al.) - an increase in the cost by 8% for each additional day in the hospital

The duration of hospitalization after endoprosthetics (in days)



Distant controlled rehabilitation



Inpatient rehabilitation



Home inaction

In 71.5% of patients during the period of home inactivity 6-8 months after the end of the course of rehabilitation, deterioration was observed in the Barthel, Rivermid, DAS

Algorithm for carrying out a rehabilitation program



PATIENT TRAINING
METHODOLOGY BEFORE
EXCEPT



CONSULTATION, TRAINING AND
COMPOSITION
PROGRAMS WITH SELECTION
EQUIPMENT



DELIVERY,
CONFIGURATION
SPECIAL
EQUIPMENT AND
SOFTWARE



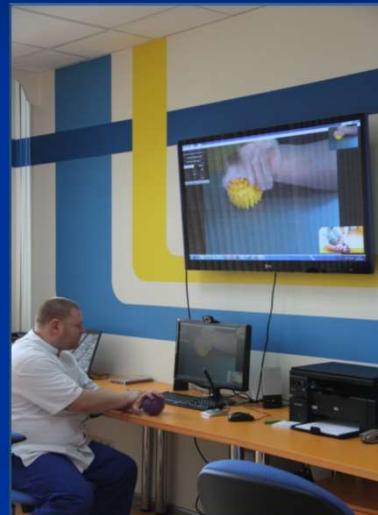
MONITORING



CLASSES

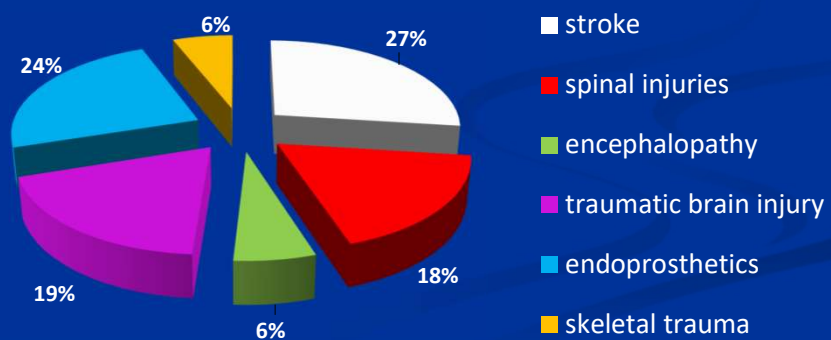


On-line kinesiotherapy classes



Volumes of assistance rendered in the distant form

More than 700 courses of distance rehabilitation were held in Medical and Rehabilitation Center over last 2 years



Evaluation of the effectiveness of remotely controlled rehabilitation

- increased motivation for recovery in 94% of patients
- Increasing the level of social adaptation (communication with relatives and medical staff)
- Increased tolerance to physical activity
- reduction of neurological and / or motor deficit

Patients report an improvement in the quality of life.

Conclusion

Thus, in the presented examples, we see the possibility of integrating different approaches (EBM, VBM) to optimizing the quality of care in a multidisciplinary hospital aimed at improving basic values-increasing the duration and / or improving the patient's quality of life.

Thank you for your attention!