Achievements of the Amosov National Institute of Cardiovascular Surgery

Director of Amosov National Institute of Cardiovascular Surgery of National Academy of Medical Science of Ukraine
Academician, Professor

Vasyl Lazoryshynets, MD, PhD
The capabilities of Amosov Institute as the leading cardiac surgery center

Year of foundation – **1955** year
National State Institution
Total experience – more then **200,000** operations

Areas of activity: medical, scientific, educational

Number of operations per year: **4,700 – 5,200**
Number of treated patients: **6,400 – 7,200**
Number of outpatient patients, who have been consulted: **43,700 – 45,000**
Number of employees: **1081**
Amosov Institute – main Cardio surgical centre of Ukrainian Leading

- 360 hospital beds
- 16 operating rooms
- 20 departments
- 1 polyclinic
- 5 laboratories
- 40000 patients are consulted
- 7500 surgical manipulations

Dynamic of quantity and quality of cardio-vascular operations

Amosov Institute in the framework of providing cardiac surgical care in Ukraine

- 23,5% of cardio-surgical care is provided by Amosov Institute (4652 operations in 2017)
- cardio-surgical care is provided by 39 cardio centers, of which 29 are operated on open heart (15381 operations in 2017)
Dynamic of quantity and quality of cardio-vascular operations
Amosov Institute – Ukrainian Leading Cardio surgical centre

- Unique professional staff
- 60 years experience cardiac surgery school
- Unique experience – 200,000 interventions
- The leader in all fields of Cardiac Surgery science and practice
- In Amosov Institute the most complex cardiac patients have been managed
- The cradle of the national cardiac surgery school (39 new cardiac surgery centers was founded by the staff of Amosov Institute)
- Unique scientific-practical potential of the national medicine is concentrated in Amosov Institute

- Academicians of NAMS of Ukraine 3
- Corresponding member of NAS of Ukraine 1
- Professors 7
- Doctoral of Sciences degree 16
- MD, PhD degree 52
IV level of accreditation as a Scientific-Educational Institution
There are 6 faculties in Amosov Institute:
1 Faculty of the National academy of postgraduate education
2 Faculty of National medical University
3 Faculty of bio-medical engineering of Kiev National Technical University “Igor Sikorskiy KPI”

Highest level of accreditation
of medical-diagnostic institution
All laboratories are certified
All departments of the institution are licensed

The Quality of Treatment is certified according ISO 9001
The capabilities of Amosov Institute as the leading cardiac surgery center

<table>
<thead>
<tr>
<th>36 INTERVENTIONS PER DAY</th>
<th>PER YEAR</th>
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<tbody>
<tr>
<td>15 cardiac surgeries</td>
<td>40,000 consultations in outpatient department</td>
</tr>
<tr>
<td>15 cardiac invasive procedures</td>
<td>5000 Cardiac operations</td>
</tr>
<tr>
<td>4 Urgent cardiac surgeries</td>
<td>3,000 Cardiac invasive procedures</td>
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<tr>
<td>2 pediatric cardiac surgeries</td>
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</tbody>
</table>
The capabilities of Amosov Institute as the leading cardiac surgery center

Off-pump CORONARY ARTERY BYPASS GRAFTING 95% of cases

• Unique experience – 11,000 of CABG patients
• Mortality – 0,5%
• New technology of CABG in patients with diabetes was created – 1,450 of CABG patients, mortality – 0,3%
Amosov Institute Off-pump CORONARY ARTERY BYPASS GRAFTING mortality level comparing with STS
The capabilities of Amosov Institute as the leading cardiac surgery center

Total number of HEART VALVES REPLACEMENTS – 50,000
The capabilities of Amosov Institute as the leading cardiac surgery center

The only one cardiac surgery institution in Ukraine, where routine and high quality care is provided to patients with PATHOLOGIES of the AORTA, including acute ANEURYSMS and its dissection and hybrid procedures.

Performed – 1217 operations with mortality 2,7%
362 dissection with mortality 3,3%
The capabilities of Amosov Institute as the leading cardiac surgery center

**UNIQUE** world’s experience in surgical treatment of **INFECTIVE ENDOCARDITIS**

- performed – more than **4,000** operations with unprecedented high levels of quality
- mortality – **1.2%**

![Graph showing mortality comparison between Amosov Institute and STS for 2017](image)
Value of surgical interventions for **Infective Endocarditis**, hospital mortality and reinfection
## Infective Endocarditis treatment result

<table>
<thead>
<tr>
<th>Authors, year</th>
<th>Quantity</th>
<th>Mortality</th>
<th>Recedeive Quantity</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Krykunov (NICVS Amosov), 2017</td>
<td>236</td>
<td>5</td>
<td>1,2</td>
</tr>
<tr>
<td>Pericart, 2016</td>
<td>249</td>
<td>9</td>
<td>4,0</td>
</tr>
<tr>
<td>Perrotta, 2016</td>
<td>254</td>
<td>22</td>
<td>8,7</td>
</tr>
<tr>
<td>Perrotta, 2016</td>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>F. van den Brink, 2016</td>
<td>84</td>
<td>16</td>
<td>19,0</td>
</tr>
<tr>
<td>Murai, 2016</td>
<td>103</td>
<td>6</td>
<td>5,8</td>
</tr>
<tr>
<td>Pang, 2015</td>
<td>191</td>
<td>12</td>
<td>6,3</td>
</tr>
<tr>
<td>Onorati, 2015</td>
<td>711</td>
<td>36</td>
<td>5,1</td>
</tr>
<tr>
<td>Wang, 2015</td>
<td>146</td>
<td>10</td>
<td>6,8</td>
</tr>
</tbody>
</table>
The capabilities of Amosov Institute as the leading cardiac surgery center

CONGENITAL HEART DISEASES high quality surgery

• All types of operations
• Hypoplasia of the left heart - treatment program started from 2010 year
• Annually 500-600 pediatric cases
• Performed – around 35,000 operations, 4,978 endovascular with mortality 0,1%
• Mortality had decrease from 27% (in 1983) to 1-2% (at present)

![Graph showing mortality rates](image)
The capabilities of Amosov Institute as the leading cardiac surgery center

• UNIQUE experience in heart rhythm disorders surgery on expert level, including newborns
• UNIQUE experience of 740 heart tumors surgery cases with 0% mortality from last 17 years.
• UNIQUE experience of circulatory assistance and mechanical heart-lung support.
• UNIQUE for Ukraine experience of cardiomiopathies surgical treatment
OBSTETRIC CARDIOLOGY AND CARDIOSURGERY

- Created multidisciplinary team (from 2013)
- Consulted more than 2,000 pregnant
- Open-heart, roentgen-endovascular and “Hybrid” more than 50 operations
- Emergency cardiac surgery in pregnant
- Cesarean section in pregnant from high-risk group by WHO classification “on-site” in the Institute (25 during last 2 years)
PROMOTION OF NEW TECHNOLOGIES IN UKRAINE & ABROAD

• Every year allukrainian and international congresses of cardio-vascular surgeons are performing
• Groups of medical staff from the Institute are visiting different regions of Ukraine for:
  - Consultations of patients (separately pediatric and adults)
  - Lectures and workshops for regional physicians
• 2015-2017:
  - 62 visits for all regions of Ukraine, including Mariupil, Kramatorsk, Severodonetsk
  - 48 colleagues from Institute took part in the project
  - consulted 2341 children and 1967 adults
• Annually 5 monographies, 100 manuscripts, 70 abstracts are printing
New scientific-practical topics of Amosov Institute

• OBSTETRIC CARDIOLOGY AND CARDIOSURGERY
• URGENT AND EMERGENCY CARDIOSURGERY (13-14% of pts annually)
• MINIINVASIVE and LOW-IMPACT CARDIOSURGERY (the best experience in Ukraine)
• ENDOVASCULAR SURGERY
• HYBRID OPERATIONS FOR THE TREATMENT of AORTICS ANEURISMS
• STEAM-CELL Therapy
• FETAL CARDIOSURGERY (in development)
• HEART TRANSPLANTATION AND HEART ASSIST DEVICES (in development)
• BIOMEDICAL ENGINEERING (an experience more than 8 years)
We were the first, we are the first and we have to remain being leaders.