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**Support to Secondary Health Care Reform
in Ukraine**

**Сприяння Реформі Вторинної Медичної Допомоги
в Україні**



The project is implemented
by EPOS Health Consultants
in consortium with NICO/ECORYS

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Information technologies and economic analysis respondent to new organizational models of Ukrainian healthcare

Dyachenko S.

Expert on information technologies and
the economic-statistical analysis

Project mid term conference

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Agenda:

1. Basic objectives of information technologies
2. Directions of quality analysis of healthcare services
3. Objectives of modern economic analysis



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Basic objectives of information technologies:

1. Support to operating basis for approval of **management decisions**
2. Service **cost efficiency** and expediency analysis
3. Support to **quality control system** of healthcare services
4. Decrease in probability rates for a **medical error**



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Management components of a healthcare facility reforming:

1. Patients' "**health**" analysis rather than "stock pile" of services
2. Service **cost efficiency** and expediency analysis
3. HR management rather than general HR records
4. Autonomy in resource management planning
5. Operational (**daily**) analysis of a HC facility activities



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Directions of quality analysis of HC facility activities:

1. Organizational structure
2. Management system
3. HR management efficiency and cooperation
4. Process structure: planning, control, analysis, changes
5. Organization of control over utilization of **clinical protocols**
6. **Indicator-based** assessment of treatment process results
7. **Real-time** information exchange



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Economic and statistical analysis of a HC facility activities

Aim: provide operative basis for approval of
grounded management decisions

Objectives:

1. Efficiency assessment of resource factual use
2. Grounding for resource pooling
3. Calculation of quality and efficiency indicators
4. Comparison between a regional and average Ukrainian HC facility
5. Calculation and analysis of HC services cost structure



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Indicator patterns:

HC service quality:

- *percentage of neglected cases on sites*
- *percentage of ambulance call-outs on sites*
- *readmission*
- *length of stay pattern*
- *Decubitus rate*
- *internal hospital infection*

Overall performance:

- *load on different levels of HC services*
- *working load*
- *surgical activity, diagnostic coverage*
- *bed performance*
- *factual structure of HC services cost*

Others:

- *hospitalization rate up to 24 hours, 48 hours, etc.*



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Economic and statistical analysis of a HC facility activities

Example 1: Central rayon hospital HR management indicators (annual)

dpt.	beds			patients			bed-days		
	doctor	nurse	others	doctor	nurse	others	doctor	nurse	others
Surgery	14.0	2.5	2.3	479.2	87.1	79.9	4'380	791	725
Infectious	16.7	2.1	1.9	596.0	74.5	68.8	5'796	724	669
Neurological	10.1	3.3	7.8	291.0	79.0	75.1	3'647	1'215	941



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Економіко-статистичний аналіз діяльності ЛПЗ

Example 2: Indicators of a central rayon hospital inpatient activities

1. Length of stay: up to 24 hours – 2.8%, up to 48 hours – 4.8%, total – **7.6%**
2. Inter-department transfers – up to **10%**
3. Internal hospital infections per department
4. Length of stay pattern per diagnostic case – from **1 to 23 days**
5. Readmission: **readmission of 13 patients:**
 - Day 2 – 2 patients
 - Day 4 – 4 patients
 - Day 5 – 2 patients



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Economic and statistical analysis of a HC facility activities

Example 3: Efficiency of resource allocation of a central rayon hospital (annual)

ENT department

annual budget	354 990.82 UAH	
hotel services	199 837.08 UAH	56.6%

Average cost of treatment **574.29 UAH**

including:

drugs	7.61 UAH	1.3%	
food	10.20 UAH	1.8%	
paraclinic	61.38 UAH	10.7%	
human resources	174.43 UAH	30.4%	
hotel services	330.87 UAH	56.6%	(facility maintenance)



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Economic and statistical analysis of a HC facility activities

Example 4: Regional resource allocation

CRH <----- 15 km -----> **Local district hospital**

<i>Visit</i>	<i>gynecologist</i>	2.12	56.21
	<i>phthysiologist</i>	6.74	66.09

Gynecologist			
budget	82'027.00 UAH		27'600.00 UAH
visits	40'594		491

doctor's qualification



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Economic and statistical analysis of a HC facility activities

Example 5: Comparatives of oblast CRH equal in capacity

Utility expenditure ratio	4.1% - 9.5%
<u>Cost-efficiency of a GP contract</u>	7.02UAH – 36.78 UAH
Average <u>length of stay</u> at an infectious disease department	8.8 days – 13.0 days
<u>Bed-day cost</u> at a gynecology department	60.35 UAH – 133.76 UAH
<u>Drug expenditures</u> per bed-day at a therapeutics department	0.70 UAH – 5.37 UAH
<u>Food</u> costs per bed-day	0.98 UAH – 4.45 UAH



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Economic and statistical analysis of a HC facility activities

Example 6: Comparison of a bed-day cost-efficiency at a HC facility and Hospital association

	<i>HCF-1b</i>	<i>HCF-2l</i>	<i>HCF-3g</i>	<i>Association (step 1, aim)</i>
Obstetrics	70,94	134,09		83,89
Children	99,24		110,93	95,82
Infectious diseases	72,33		129,19	68,78
ENT			87,89	88,00
Neurology	17,88		58,88	72,19
Ophthalmology			87,88	88,00
Пологове			110,03	112,70
Therapy	45,11	59,40	74,36	73,75
Traumatology		100,41		86,00
Surgery	101,47	100,24	87,89	119,95
Urology		79,56		110,00
-----	-----	-----	-----	-----
Average	72,13	102,19	80.62	87.82



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Main pre-requisites for utilization of hospital information systems

1. change in CE's **thinking** from a director to manager
2. HR **capacity building**
3. **training** for software users
4. implementation of **complex** systems



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Change in CE's **thinking** from a director to a manager

It is essential for analysis of a HC facility
activities to be real-time,
rather than quarterly (monthly, annually) results
based,
if it is still not too late to change something



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Hospital information system





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Information technologies, as an essential tool to provide support to healthcare reforming process, give us an opportunity to:

1. have a management tool for a HC facility manager and Consumer, while transferring to **global budget** and other result-oriented methods
2. carry out **quality analysis** for healthcare services
3. carry out transparent analysis for **efficiency** of resource allocation
4. step-by-step transfer to more advanced financial patterns (**DRG**)



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Contacts:

Mr. Dyachenko Sergy Olexandrovich

Tel: office **+38 (044) 288-08-66**
mob. **+38 (067) 404-10-57**

E-mail: dyachenko@eu-shc.com.ua

Web-site: www.eu-shc.com.ua