



## Policy Brief # 27

# Situation analysis on appropriateness of hospitalization of children under 5 and pregnant women

This policy brief is prepared based on the research findings, the main aim of which was to undertake situational analysis on appropriateness of hospitalization of children under 5 and pregnant women to inform decision making on improving health care services for these categories of patients.

The following **survey questions** were specified:

- 1) What criteria are currently used as the basis for hospital admission of children under 5 and pregnant women?
- 2) What kind of conditions/diagnoses prevail among hospitalized patients?
- 3) What is the percentage of inappropriate hospitalizations among children under 5 and pregnant women?
- 4) To what extent does inpatient care delivered in hospital corresponds to international guidelines/recommendations?

### 1. Methodology

16 health organizations of Bishkek, Chui, Issyk-Kul and Osh oblasts participated in the research (Table1). Retrospective analysis of medical records for winter (January-February) and summer (July-August) months was done. Medical records were selected using random sampling method and averaged from 20 to 30% of total number of submitted medical records. Totally, the following were analyzed:

- 825 medical records of children under 5, hospitalized in pediatric departments of general profile, and
- 755 medical records of pregnant women, hospitalized in departments for pregnancy pathology.

**Table 1. Number of medical records in the sample**

Region	Children under 5	Pregnant women
Bishkek	150	172
Chui oblast	83	41
Issyk-Kul oblast	409	343
Osh oblast	183	199
<b>Total</b>	<b>825</b>	<b>755</b>

### 2. Analysis of hospitalizations among children under 5

- In all regions, patients hospitalized to general somatic departments were predominantly comprised of children with respiratory diseases (645 persons out of 825, or 78,2%) and aged from 0 to 1 year (418 persons out of 825, or 50,7%);
- High percentage of parents either practiced self-medication or did not take any actions (42,9%). In the opinion of hospital doctors, parents do not have sufficient knowledge and skills to recognize severity of condition and care over child in case of disease. There remains high percentage of self-referrals especially in hospitals on Bishkek city and Chui oblast;
- Current guidelines and clinical protocols identify conditions requiring hospitalization. In particular, these criteria were taken as a basis to assess hospitalization appropriateness of children under 5 in sampled hospitals of the KR. As of the time of doing research the formally approved list included 33 criteria. This list requires revision for the following reasons. First, many of them are rarely seen in daily practice, even with specificity of general somatic department. Thus, description of only 7 out of 33 approved criteria was found in the sample of 825 medical records. Second, it appears to be difficult to find objective verifications for some criteria because of lack of entries in medical records (e.g., unfavorable social factors). Third, analysis of hospitalizations among children under 5 showed large number of patients with obstructive syndrome (up to 46.1%) while therapeutic approach for this condition is not specified anywhere and same applies to clinical protocols. Yet, entries in medical records suggest that this condition was one of the decisive reasons to seek hospital care and, moreover, parents in such cases are poorly aware of therapeutic approach;

- Based on criteria for hospitalization verified by entries in medical records, namely (1) cramps, (2) stridor at rest, (3) fever above 37,5°C for more than 5 days and (4) ineffective outpatient treatment within 3 days after the initiation of antibacterial therapy it was identified that 298 children (46.2%) out of 645 children with bronchopneumonia diagnosis were hospitalized in accord with approved criteria and 347 children (53.8%) did not comply to these criteria;
- Medical procedures prescribed to hospitalized children require essential adjustment and control. Analysis of treatment (Table 2) for compliance to three indicators on appropriate prescription of drugs (WHO, 1997) revealed presence of the following:
  - polypragmasy, for example 13.5 different medicines were prescribed to children under 1 for bronchopneumonia;
  - irrational antibacterial therapy (prescription without indications, use of reserve medicines as first choice medicines, simultaneous prescription of antibiotics from the same group of drugs, nonobservance of drug administration frequency and dosage);
  - excessive administration of parenteral interventions – in 100% of cases in the context of current survey with 80% comprised of intravenous infusions (Osh oblast).

**Table 2. Share of children receiving intravenous injections, in %, n-645**

Region	Acute bronchitis		Laryngotracheobronchitis		Acute obstructive bronchitis		Bronchopneumonia	
	Under 1 year	1-5 years	Under 1 year	1-5 years	Under 1 year	1-5 years	Under 1 year	1-5 years
	n-37	n-43	n-21	n-17	n-150	n-63	n-152	n-162
Bishkek	24	33	-	-	34	9,7	13	5,3
Chui	17	23	34	57	43	36	9	6,4
Issyk-Kul	57,1	36,4	33,3	44	44	49	66,2	62
Osh	54,2	34	-	71	76,3	77	80	78,3

### 3. Analysis of hospitalizations among pregnant women

- Women under 30 prevailed among pregnant women hospitalized in pregnancy pathology departments;
- There were also some difficulties with identification of criteria for hospitalization of women. Recent digest of clinical protocols

approved at the end of 2008 was in the process of revision in the middle of 2009. The bulk of protocols was designed for delivery of care at secondary and tertiary care levels. Approved criteria for hospitalization were rarely observed (2 out of 7 approved criteria). Moreover, there were some conditions without any reference found in official regulatory documents (for example, “Threatened miscarriage” and “Threatened premature delivery”).

- Leading causes of hospital admissions: “Threatened miscarriage or spontaneous abortion” – 12,8 – 42,4%; “Threatened premature delivery” – 15,7 - 56,1 %; “Pyelonephritis gravidarum” – 4,9 - 16,3%; “Gestational hypertension / preeclampsia” – 4,9 – 12,2 %;
- Poor quality of recording of medical charts of pregnant women comes under notice. Medical records contain scarce information both about medical history (what kind of therapeutic manipulations were undertaken before hospital admission, which doctor managed the case, i.e., continuity with PHC, etc.) as well as objective status at admission. As a result, medical records don’t always contain objective validation of clinical diagnosis (principal, concomitant, complications). For example, in the objective examination section under “Preeclampsy” or “Gestational hypertension” diagnosis there were no data of arterial blood pressure;
- There was overdiagnosis of some conditions (e.g., pyelonephritis (without fever and leukocyturia), threatened miscarriage and threatened premature delivery) and underdiagnosis of other (e.g., anemia);
- Diagnoses “Threatened miscarriage” and “Threatened premature delivery” were the most prevailing pathological conditions of pregnant women. Majority of cases (83,3 and 83,7% accordingly) did not have indications for hospitalization and could have been managed at outpatient setting. However, absence of approved standards/protocols on management of such conditions at primary care level facilitates referral of this category of patients for hospitalization without any particular need for it. Therefore, it is necessary to develop clinical protocols on management of these conditions at outpatient level with specification of explicit criteria for hospitalization of pregnant women;
- Appropriateness rate of hospitalization of pregnant women on hypertensive disorders constituted 64,8% and on pyelonephritis - 32,6%;

- Observations of therapeutic manipulations also revealed irrational antibacterial therapy of urogenital tract infections and high level of prescription of parenteral drugs often without evidence-based effectiveness.

## **Recommendations**

- Develop additional clinical protocols including criteria for hospitalization on most common pathological conditions among children under 5 and pregnant women. This will contribute to improved management of these conditions both at PHC level as well as at hospital level of service delivery;
- Bring to attention and improve quality of medical charts recording (especially with regard to pregnant women) including validation of clinical diagnosis, prescribed treatment and hospitalization in general;
- Design activities aimed at improvement of knowledge of medical staff on prescription of rational therapy based on evidence-based medicine including antibacterial therapy.

---

**Please, contact the consultant of the Health Policy Analysis Center Murzalieva Gulgun shall you need more detailed information or the full version of the report: [gulgun@hpac.kg](mailto:gulgun@hpac.kg)**