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Organization**

REGIONAL OFFICE FOR **Europe**

Improving Hospital Care for Children

Case study report
Armenia, Kazakhstan,
Turkmenistan and Uzbekistan

Abstract

Integrated Management of Childhood Illness aims to reduce child mortality and morbidity, and improve healthy growth and development of children. This requires a well-organized health system with high quality of care at all levels, including the referral level. This report summarizes the findings of a survey on the experience of improving hospital care for children in Armenia, Kazakhstan, Turkmenistan and Uzbekistan. The findings are presented using a health systems approach that considers stewardship, service delivery, resource creation and financing. Data analysis shows that, to improve the quality of child health services in district hospitals, supporting policies and strategies need to be in place, as well as up-to-date clinical guidelines, well trained staff and the rational use of drugs. The lessons learned from this case study should contribute to further development of strategies to improve delivery of child care at hospital level.

Keywords

INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS
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HOSPITALS
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ARMENIA
KAZAKHSTAN
TURKMENISTAN
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Abbreviations

ADB	Asian Development Bank
ARI	Acute respiratory infections
CAH	Children and adolescent health and development
CDC	Centers for Disease Control and Prevention (USA)
CFHI	Child-friendly Hospital Initiative
EBM	Evidence-based medicine
EPI	Expanded Programme of Immunization
GP	General practitioner
IMCI	Integrated Management of Childhood Illness
MCH	Maternal and child health
MDG	Millennium Development Goals
MoH	Ministry of Health
MPS	Making Pregnancy Safer
NPO	National professional officer
ORS	Oral rehydration solution
PHC	Primary health care
SES	Sanitary–epidemiological services
TB	Tuberculosis
UNFPA	United Nations Population Fund
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WHO Pocket Book	WHO pocket book on hospital care for children
WHO-Europe	WHO Regional Office for Europe

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1 Executive Summary

Integrated Management of Childhood Illness (IMCI) aims to reduce child mortality and morbidity and promote children's healthy growth and development¹. WHO Regional Office for Europe (WHO Europe) provides technical support for planning, implementation and monitoring of IMCI interventions in its Member States. The present report summarizes findings from the implementation process of hospital care for children in Armenia, Kazakhstan, Turkmenistan and Uzbekistan, based on a case study carried out at WHO-Europe between May and July 2008 and updated in July-August 2010. Findings are presented using a health system approach, and consider stewardship, service delivery, creating resources and financing².

➤ Stewardship

Orientation processes in the participating Member States appear to be in place, allowing the development of adequate national strategies for implementing paediatric hospital care. Less information is available regarding legislation needed to support adaptation of policies for improving hospital care for children. Technical support from WHO and other partners has been sufficient for the purposes of this study, but additional support will be needed for setting up well-defined multisectoral working groups and ensuring well-integrated stakeholder involvement. At this point, only a few initiatives for accreditation were identified.

➤ Service delivery

Although comprehensive hospital assessments have been made in selected hospitals of all participating countries, there is a gap when it comes to monitoring quality assurance. Evidence allowing definition and prioritization of interventions at country level remains an important factor to ensure continuity of the quality improvement of hospital care for children. During the IMCI expansion phase, strategy should focus on measures that will contribute to this factor. Results from this study found barriers to improving information systems that would allow sharing of knowledge between different levels of care. Adaptation and dissemination of clinical guidelines appear adequate.

➤ Creating resources

IMCI training activities are currently being introduced at hospital level, and priorities have been set, in the case study countries, to allow improvements in case management. The next step will be to integrate clinical case management into the curriculum of medical training facilities. Plans for revision and adaptation of paediatric facilities and hospital services for enhanced quality care for children are under development in a number of countries.

➤ Financing

In general, all countries reported limited funds to be available in national budgets for improving hospital facilities for children. Indicators need to be developed within the health system infrastructure to increase capacity for evaluating current coverage and utilization, care-seeking patterns, as well as the private health sector infrastructure to allow identification of financing options and incentive strategies.

➤ Lessons learned

Case fatality rates have been substantially reduced in hospitals that have introduced guidelines, accompanied by training, audit or other quality improvement measures³. Goals for strengthening national health systems need to be medium- to long-term. Without adequate manpower, drug and vaccine supply management, information systems and a functioning referral system, child health programmes for improving quality of health services cannot be sustained. The private sector should be involved, especially in ensuring and monitoring quality and equity. Continuing problems with incentive structures and staffing policies need to be addressed, and the effects from reform policies should be used as a basis for developing

interventions. The lessons learned from the present case study may contribute to build strategies for paediatric hospital care in countries integrating the IMCI strategy into primary health care (PHC) services.

2 Introduction

2.1 Reducing child mortality

It is the ambition of all countries to meet the United Nations Millennium Development Goal (MDG) on child survival (MDG 4 – *reduction of the mortality of children under five years of age by two thirds in 2015 compared to 1990*⁴) and some progress is being achieved⁵. Nevertheless, in many countries child mortality rates have stagnated or are even increasing⁶. Within the WHO European Region, a challenging situation is being encountered by countries emerging from the former USSR, especially in the Central Asian republics. Several countries report national rates for infant and under-5 mortality, reference point towards achieving MDG-4, to range from 16–33 per 1000 live births, while WHO estimates the range to be 30–51⁷. In order to reduce child mortality and morbidity, WHO-Europe promotes an integrated approach to the management of sick children, contributing to their healthy growth and development⁸.

2.2 Quality of health care

Quality of health care is an important factor in achieving MDG-4. IMCI^{9, 10} is an intervention strategy developed by WHO and the United Nations Children's Fund (UNICEF) in 1996 to strengthen child health care and reduce child mortality as against the projected global burden of childhood diseases¹¹. This requires countries to have a well-organized health system providing high quality of care at all levels, including the referral level. Over 100 countries worldwide have adopted IMCI¹². IMCI follows the Convention on the Rights of the Child that stipulates: *every child has the right to access care for the most prevalent causes of illness and death, as well as to measures that will prevent these*.

2.3 Hospital care for children

Improving quality of care for seriously ill children referred to hospitals in less-developed countries is a prerequisite for better outcomes, including reduced mortality¹³. Within the WHO European Region, the IMCI strategy is primarily aimed at improving care for children at PHC level and has been introduced in 14 countries since 1997. Almost all have moved into the expansion phase.¹ Starting in 2002, a process for hospital care assessment was carried out in nine countries with a view of identifying fundamental problems in this area. WHO has produced standard clinical guidelines for improving paediatric care at first level referral hospitals that can be adapted to local conditions. This includes a manual for caring for children at first-referral level and a WHO pocket book on *Hospital Care for Children* (WHO Pocket Book) targeting medical staff in settings with limited resources^{14, 15}. The WHO Pocket Book supports quality improvement of hospital child care, with a guide for treating major childhood diseases, such as diarrhoea, pneumonia and neonatal problems.

2.4 Aim of the study

WHO-Europe's programme Child and Adolescent Health and Development (CAH) has the objective of assisting Member States in adapting and implementing effective interventions that improve child health and can contribute to meeting the MDGs. WHO-Europe also follows up and supports the implementation process. The case study presented in this report has been carried out in Armenia, Kazakhstan, Turkmenistan and Uzbekistan, to identify progress and emerging priorities in this area and encourage

¹ Albania, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Russian Federation, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan.

intersectoral cooperation at national level. The study has the objective of disseminating best practices and lessons learned through national country experiences that can facilitate development or review of national strategies, while promoting use of the WHO Pocket Book.

➤ **Research question**

What is the current status of the improvement process of paediatric hospital care in selected countries and what are the lessons learned that could influence future action?

The results from the study are presented using a health system approach promoted by WHO and can assist countries currently implementing actions to improve paediatric hospital care, and in those that are still to initiate this process¹⁶. Its intent is to enable identification of where international partners can contribute and/or support countries in the development of national strategies and interventions for improving hospital care for children.

3 Methodology

3.1 Selection criteria

The case study involved four countries now in the process of implementing hospital care for children. Armenia, Kazakhstan, Turkmenistan and Uzbekistan are at comparable stages of implementing IMCI and paediatric hospital care activities. The investigation was designed to give insight in the process of implementation and where improvement of paediatric hospital care has been observed. The participating countries have adapted the WHO Pocket Book as a means of integrating clinical guidelines in hospitals providing care for children.

3.2 Framework for conceptualization

IMCI materials and key documents on quality improvement were used for conceptualization of the case study. *The framework for improving hospital care for children* was used as the basic document to develop the study questionnaire¹⁷. In addition, the WHO Pocket book and *Assessment of quality of hospital based paediatric care*¹⁸ served as reference documents to describe the implementation process.

3.3 Health system framework

The measurement framework was based on a comprehensive approach to capture the circumstances that influence implementation of paediatric hospital care, including *political* commitment, *structural* adaptations, *implementation* experience and *capacity* development. The objectives were then arranged in the context of the WHO health system framework outlined in 2000 and afterwards further developed at the 2008 WHO European Ministerial Conference on Health Systems: *Health Systems, Health and Wealth*¹⁹, covering : *stewardship*; *service delivery*, *creating resources*; and *financing*.

3.3.1 Stewardship

➤ **Definition:**

- Increasing *political* commitment for development of national strategies, policies and steering documents for improving hospital care for children, including hospital assessment and accreditation.

➤ **Objective**

- An overview of national implementation:
 - how strategies were translated into national policy, including country orientation, development and/or and adaptation of policy documents;
 - availability of technical support to facilitate implementation; and
 - identification of stakeholders with experience of multisectoral tasks and specific terms of references.

3.3.2 Creating resources

This section looks at whether there is a national plan of activities to improve hospital care for children, including incentive strategies, existing thematic steering committees and budgetary allocations

➤ **Definition:**

- Availability of technical structures and equipment to support improving paediatric hospital care, including training of staff.
- Integration of guiding principles, including full coverage, monitoring of outcomes and efficient information systems.

➤ **Objective**

- Understanding the national process:
 - how improvement of quality is measured;
 - adaptation of clinical guidelines; and
 - implementation of monitoring and supervision as strategies for measuring quality improvement based on information systems linking different levels of care.

3.3.3 Financing

➤ **Definition:**

- Availability of an ongoing and sustainable improvement process based on incentive mechanisms and appropriate funding.

4 Data collection and presentation

The case study questionnaire and key concept documents (in Russian and English) were sent to WHO national professional officers (NPO) in Armenia, Kazakhstan and Uzbekistan, and to the head of the WHO country office in Turkmenistan. The WHO country offices identified national technical counterparts already involved in IMCI implementation who would complete the questionnaire. Analysis would form the basis for assessing country activities in improving quality of hospital care for children. To ensure the quality and validity of data, a direct communication system was set up between NPOs and technical counterparts for clearing of possible doubts.

- Time frame:
 - May to July 2008: data collection;
 - June–July 2010: revision of data by WHO country offices (Armenia, Kazakhstan, Uzbekistan); and
 - revised data incorporated into case study analysis.

5 Findings

5.1 Armenia

An assessment of paediatric hospital care was conducted in July 2005. A recent internal report on the country's strategic health needs found that MCH has improved over the last years, as required by Strategic Objective 4 of the Medium-term Strategic Plan for 2008–2013. However, it was also found that access to, and quality of, antenatal, perinatal and newborn care could be further improved by introducing standards that meet national requirements. IMCI needs to be scaled up and other components incorporated in order to achieve further improvements in hospital-based quality of care. This would include adaptation of the WHO Pocket Book and organizing training workshops. Interventions should target the hospitals most in need of upgrading.

5.1.1 Stewardship

➤ Progress

- 2005: outcome of hospital care for children discussed at country orientation. Panel consisted of representatives from Ministry of Health (MoH), donor agencies, hospital administrators and clinical staff.
- A national strategy for improving hospital care for children being developed by a national working group set up at request of Minister of Health:
 - objective: prepare national situation analysis, including available resources, and plan of action for 2010–2015, as part of ongoing processes initiated by implementing national MCH strategies and operational plans, to include CAH and reproductive health; and
 - working group: head of MoH MCH, national IMCI coordinator, leading specialists in neonatology and paediatrics, representative from Institute of Child and Adolescent Health and specialist from Yerevan Health Department..
- National expert meetings held on adaptation of WHO Pocket Book.
- MoH adopted WHO Pocket Book as standard for hospital care for children.
- August 2007: *training of trainers* courses for national capacity building, focusing on use of adapted WHO Pocket Book, followed by training courses in pilot district hospitals conducted by national master trainers.
- Legislation updated for improving hospital care for children.

➤ Limitations

- No recent changes in employment and nutrition policies.
- No focus on management, surveillance and monitoring, or quality assurance mechanisms in paediatric care.
- No policy action to set standard definitions of primary, secondary and tertiary levels of health care and specific functions of each.

5.1.2 Service delivery

➤ Progress

- Armenian hospitals assessed using WHO-Europe assessment tool and adapted WHO Pocket Book, as part of process for developing a National Strategy for Improving Paediatric Hospital Care. WHO Pocket Book available in Armenian, printed with support of NOVA programme/ United States Agency for International Development (USAID), and distributed at regional trainings.
- Children's referral guidelines adapted and reviewed, except for chapters on HIV/AIDS and tuberculosis (TB) that are part of the national programme.
- Health Minister ordered IMCI guidelines, with hospital components and an updated algorithm for infants aged 0–2 months, implemented nationwide (material available in hard copy and as CD-Rom). WHO materials regularly updated in accordance with evidence-based medicine (EBM) guidelines.

➤ Limitations

- No monitoring of results from implementing WHO Pocket Book.
- Quality improvement not part of national action plans.
- No ongoing initiatives to support quality improvement.
- Insufficient feedback between hospital and PHC levels and no link between ambulatory and hospital care.

5.1.3 Creating resources

➤ Progress

Partial national plan for reform of clinical facilities, enlargement of hospitals, and merging children and adult facilities in the framework of health sector reform.

- 2008: assessment of quality of child care revealed satisfactory availability of basic equipment in most hospitals assessed; however, many hospitals still lack resuscitation capacity and/or intensive care for critically sick children.
- Partial national plan for improving availability of medical equipment, without including paediatric services.
- Committees on quality control at each hospital and PHC facilities to control the rational use of drugs, contributing to quality treatment based on EBM approaches and reducing polypharmacy.
- Partial review of laboratory services based on hospital needs to define laboratory equipment requirements.
- In-service training for 73 hospital paediatricians from nine counties, who were given the WHO Pocket Book, also distributed to Admission Departments of regional hospitals.
- National CAH Strategy (2007-2015) and MCH National Programme (2003-2015) define national priorities in case management of major childhood illnesses, including implementation of IMCI, programmes on anaemia control and nutrient-deficiency disorders, breastfeeding and the Expanded Programme of Immunization (EPI).

➤ Limitations

- Paediatric services not seen as country priority.
- Lack of adequate paediatric services in regional hospitals; limited resuscitation capacity and/or intensive care for very sick children in majority of hospitals.
- Limited clinical skills and capacities of medical staff, a serious issue due to hospitals' modest resources. National working group set up to develop a strategy for paediatric hospital care.

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- Hospital clinical guidelines not incorporated into medical training; no medical textbooks adapted or revised to date.
 - Monitoring indicators not approved; lack of unified method for measuring case management skills.
 - Accreditation process not initiated.

5.1.4 Financing

➤ Progress

- Continuous technical support from WHO.
- 2005: participation of national experts in *Capacity Building Intercountry Workshop on Improving Paediatric Hospital Care* supported by WHO-Europe.
- Training courses held with UNICEF financial aid and WHO technical support.
- 2009: paediatricians from hospitals in nine regions trained.

➤ Limitations

- No budgetary allocations.
- No stakeholder support.
- No strategies for incentives or supervision.

5.2 Kazakhstan

Kazakhstan has a well-developed health system and relatively low fatality rates, but little attention is paid to hospital care for children, except in the newborn period. A 2002 assessment identified deficiencies in standard case management²⁰. Critical areas in care were identified and priorities seen as revision of definitions and clinical guidelines for the most common conditions, elimination of obstacles to evidence-based practice and improving training of paediatric staff. The WHO Pocket Book has been adapted and is being implemented in several pilot districts.

5.2.1 Stewardship

➤ Progress

- 2002: country orientation on situation of hospital care for children.
- Technical briefing workshop recommendations based on WHO assessment.
- April 2007: national adaptation and planning meetings.
- Improving hospital care for children included in National MCH Strategy (2008–2010 and 2011–2015).
- 2005-2010 National Programme For Health System Reform and Development increased salaries of health providers at PHC level.
- Improvement of paediatric hospital care initiated at one pilot site, with WHO support, including adoption of recommendations from the WHO Pocket Book and its application to clinical practice at first level children's hospitals.
- March 2003: national working group set up by MoH with members from key Ministry departments (MCH, Infection Control and Prevention, and Sanitary–Epidemiological Services (SES)), leading national experts from pre-service and postgraduate medical training institutions (chairs of neonatology, childhood infectious diseases, general paediatrics), and from national centres for HIV/AIDS, IMCI, TB, and National Institute for Paediatrics and Child Surgery. The group will adapt WHO guidelines to improve hospital care and develop national protocols.

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- Implementation of the Making Pregnancy Safer (MPS) strategy improved neonatal care through standardization of clinical management of major neonatal health problems, development of protocols, and training of neonatologists on essential newborn care and resuscitation.
 - Legislative base for improving hospital care being revised.
 - Regionalization of perinatal care under way.

➤ **Limitations**

- No changes in legislation covering hospital care for children, although MoH plans major reform of hospital care at national level, with technical support from World Bank.
- No certification or accreditation parameters set.
- No changes in nutrition policy for hospital care for children.

5.2.2 Service delivery

➤ **Progress**

- Among the first countries to adapt and test the WHO hospital assessment tool in 2002, found to be helpful as a quality assessment instrument. Detailed assessment report available on selected Almaty oblast hospitals.
- 2010: quality of paediatric hospital care assessed in three regions: Karaganda, South Kazakhstan and Aktobe (total: 15 hospitals) using updated assessment tool. Results presented to hospital staff, local administration and MoH.
- Quality improvement included in National Health System Development Action Plan for 2011–2015, to be supported at hospital level (hospital quality groups). Information systems reported as adequate.
- WHO recommendations introduced in pre- and postgraduate curricula, with WHO technical support.
- Health Minister supported in bid to update legislative basis for improving child hospital care and development.
- Improving hospital care for children included in National MCH Strategy (2011–2015).
- 2006–2007: Review of guidelines for first level referral care.
- Clinical guidelines for all common conditions adapted from reference guidelines in line with national conditions.
- After adaptation, 220 copies of WHO Pocket Book printed and distributed among key professionals, including faculty of medical educational institutions and health providers. All regions briefed and provided with electronic copy: three regions printed and distributed copy to all health providers using local government funds. Guidelines available in hard copy and CDROM.
- 2008: WHO Pocket Book distributed to all participants, including regional chief paediatricians, in National Workshop in Astana on IMCI Technical Updates and Planning for country-wide IMCI strategy implementation.
- 2002: WHO-Europe paediatric hospital care assessment identified widespread misdiagnosis and/or mismanagement of infant and child neurological disorders. Among main causes, WHO experts identified;
 - low compliance with international classification systems;
 - lack of evidence-based clinical guidelines;
 - out of date training; and
 - inadequate health system and welfare regulations.
- 2010: MoH set up national experts group to review, develop and implement strategy addressing above challenges. WHO-Europe and international experts developing handbook on neurological assessment of infants to support MoH and group experts. National experts closely involved in process.

➤ **Limitations**

- Hospital assessments results not fully used for developing an improvement process.
- Due to lack of funds, implementation of changes in clinical practice only partially monitored.
- In general, access to international EBM information still very limited due to irregular access to Internet and language barriers.

5.2.3 Creating resources

➤ **Progress**

- National Health Reform Programme includes plan for reform of clinical facilities.
- Polypharmacy reduced by increased use of WHO Pocket Book and guidelines developed by National EBM Centre.
- 2008: Updating of MoH policy on infection control reduced number of stool tests for case management of children patients with diarrhoea.
- 2008: Workshop on Hospital Care Improvement: core group of teachers from seven medical universities trained in use of WHO Pocket Book for capacity building, inclusion of nationally adapted clinical guidelines into under- and postgraduate medical training curricula.
- No information available on adaptation of medical education textbooks.
- In-service paediatric hospital care training taking place in three pilot regions, funded by the European Commission, as part of WHO 2009–2011 project to support MCH in Kazakhstan. In-depth follow-up visits after training and assessments conducted in all three regions.
- Essential national paediatric protocols revised based on latest IMCI technical updates endorsed by MoH.
- 2010: Initiation of programme for improving neurological assessment of neonates and children and management of children with neurological problems.
- 2009–2010: measuring health provider case management skills through internal assessments at hospital level.

➤ **Limitations**

- Lack of national regulations on sale of antibiotics and aggressive marketing by pharmaceutical companies contributes to widespread irrational use of the drugs.

5.2.4 Financing

➤ **Progress**

- Revision of incentive strategy and structure for systematic and supportive supervision of child health services initiated.
- April 2010: First National Review Workshop.

➤ **Limitations**

- No increased stakeholder involvement in hospital care implementation; no budgetary allocations.
- Incentive strategies and structures for regular and supportive supervision not finalized.

5.3 Turkmenistan

IMCI guidelines have been successfully implemented in pilot districts as a tool for basic paediatric care at PHC level. However, health care at referral level is seen as inadequate. Emphasis is needed on

development of national strategies to scale-up and expand the IMCI approach. According to the 2005 WHO assessment report, the quality of paediatric hospital-based care needs improvements in the clinical management for childhood illness. Critical issues include integrating PHC services and providing guidance on IMCI programmes during the expansion phase.

5.3.1 Stewardship

➤ Progress

- 2005: Orientation for improvement of hospital care for children, followed by round table discussions with National MCH Research Centre specialists, Turkmen State Medical Institute, MoH and medical industry.
- National Strategy for Improving Hospital Care for Children developed, focussing on clinical guidelines for management of major childhood diseases, introduced low-osmolarity oral rehydration substitution (ORS) and zinc for diarrhoea management.² National strategy in line with IMCI implementation.
- WHO, UNICEF and USAID provided technical support for developing National Improvement Strategy.
- MoH set up national working group composed of ministry staff, specialists from National Child MCH Research Centre and Turkmen State Medical Institute. Group directly involved in developing and implementing National Strategy for Improvement of Hospital Care for Children.
- Child-friendly Hospital Initiative's (CFHI) breastfeeding programme will identify criteria and components for certification and accreditation of hospitals.

➤ Limitations

- Lack of information on:
 - amendments to legal acts;
 - policies and strategies for improving hospital care for children;
 - changes in employment policy for paediatric staff;
 - changes in nutrition for hospitalized children;
 - accreditation and certification of state medical educational institutions;
 - linkage of accreditation to hospital care improvement; and
 - adequate supervision mechanisms.

5.3.2 Service delivery

➤ Progress

- WHO guidelines for hospital assessment adapted to national conditions and used in selected children's hospitals. Results presented at national meetings and round tables, supporting hospital administrators and clinicians in identifying major problems in delivery of quality care. It is not known if monitoring takes place. Assessment findings influenced policy revision.
- Paediatric guidelines for first referral hospitals revised and adapted to include WHO Pocket Book and WHO guidelines for management of children with serious infections or severe malnutrition.
- Adaptation of clinical guidelines, especially specific types of immunization, tuberculosis, malaria, zinc and ORS, based on MoH prikaz and request from medical industry.
- Clinical guidelines used in family medicine at PHC level and first level hospitals. Guidelines and booklets available in paper and CD Rom format, and distributed at seminars, lectures and round-tables.

² Ministry of Health Decree No.291, August 24, 2007

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- Access to international EBM from Medline and Cochrane library has been strengthened through internet access at the MCH Research Centre. National hospital information systems aim at improving cooperation between different health care levels.

➤ **Limitations**

- Support from international partners for quality assurance projects and strategies not yet clearly defined.

5.3.3 Creating resources

➤ **Progress**

- Development of national Plan for Renovation and Construction of Institutions for Provision of Child Health Care based on actual needs.
- Plans to launch new diagnostic centres, overhaul existing ones and “children’s rehabilitation camps”.
- Development of national plans for upgrade and/or purchase of medical and diagnostic equipment and renovation of technical facilities.
- National MCH Research Centre to provide assistance in rational use of drugs in children’s hospitals, reducing overmedication and increasing evidence-based administration of antibiotics.
- 2005–2008: Lectures and practical counselling sessions organized.
- ZdravPlus provided technical support for revising national laboratory services through seminars on laboratory practice.
- Seminars for improving neonatal care: neonatal resuscitation and care for neonates, safe motherhood and live- and stillbirth criteria.
- Medical Institute and medical colleges introduced guidelines for hospital care for children into pre- and postgraduate training, with modules adapted or revised based on international guidelines.
- IMCI pilot regions selected for on-the-job training in hospital care for children and neonatal resuscitation, including paediatricians, neonatologists; exact numbers trained unknown.
- Centres for acute intestinal and respiratory infections set up in pilot districts, based on national priorities in improving case management.
- Clinical guidelines on management of pneumonia and diarrhoea revised. Positive outcomes in hospital care for children in general assessed by National MCH Research Centre through clinical discussions and interdisciplinary expert panels with participation of clinicians and pathologists.

5.3.3.1 Limitations

- No information available on monitoring of case management skills.

5.3.4 Financing

➤ **Progress**

- National budget funds were allocated for improving hospital care for children through bidding mechanisms.

➤ **Limitations**

- No incentive strategies set up at national or institutional level.

5.4 Uzbekistan

Recent national reports show high child mortality rates and there is a perceived need for qualitative clinical management at hospital level. IMCI has been implemented in Uzbekistan since 2000 and continuously improves hospital care for children. In 2005, an intercountry workshop on Capacity Building for Quality Improvement of Paediatric Care in First Referral Hospitals was held. An IMCI hospital training program was initiated that same year to improve hospital care delivery systems for children.

5.4.1 Stewardship

➤ Progress

- Improving hospital care for children identified as a main priority in health care reform.
- Since 2004: national meetings and workshops focusing on adaptation of clinical guidelines and plans to improve paediatric hospital services, an MoH³ initiative with technical support from WHO, two USAID-funded projects, *Healthy Family* and *ZdravPlus*,
- MoH revised regulations on provision of paediatric hospital care, taking into account WHO recommendations, and issued ministerial decree⁴ on provision of hospital care to children. Revision process of ministerial decrees and other regulatory documents related to child health care services under way.
- MoH revised and issued regulations for strengthening regulatory framework for health care services in maternity and paediatric facilities, in accordance with WHO recommendations for improving maternal, neonatal and child care:

No.	Description	Date
500	<i>On reorganization of work of maternity facilities (units) aimed at strengthening perinatal care and prevention of hospital infections</i>	13 November 2003
425	<i>On introduction of modern technologies for strengthening maternity services in primary health care facilities in the Republic of Uzbekistan</i>	5 September 2005
176	<i>On the programme on further reduction of infant mortality</i>	22 April 2005
81	<i>On further dissemination of Baby-friendly Hospital Initiative</i>	19 March 2006
145	<i>On introduction of modern technologies for strengthening medical services for children at the primary level of the health care system</i>	30 March 2007
155	<i>On provision of hospital care for children in the Republic of Uzbekistan</i>	10 April 2007
277	<i>On prevention of mother-to-child transmission of HIV in maternity facilities belonging to the MoH system</i>	20 June 2007
1144	<i>Order of the President of the Republic of Uzbekistan: On programmes towards further improvement and increase of effectiveness of activities on reproductive health, birth of healthy</i>	

³ Decree of the President of the Republic of Uzbekistan No. 3923, 19 September 2007 and Resolution of the President of the Republic of Uzbekistan No. 700, 2 October 2007

⁴Ministry of Health Decree No 155, 10 April 2007

child, development of physical and mental wellness of generations

145 *On organization of activities of specialized Republican scientific-practical medical centres* 21 May 2009

1096 *On additional activities towards improvement of maternal and child health, development of healthy generation* 13 April 2009

- No changes in employment policy. Employment of paediatric staff follows current laws and regulations.
- Terms of reference for physician-nutritionist (dietologist) and nurse-nutritionist in health care facilities endorsed,⁵ supported by WHO recommendations on nutrition strategy for hospitalized children.
- Draft action plan on improving nutrition of general population, with measures for nutrition of hospitalized children.
- Orientation meetings on implementation of Ministry of Health decree No. 155.
- Development of a National Paediatric Hospital Care Strategy by MoH with technical support from WHO, *Healthy Family/USAID*, *ZdravPlus/USAID* and Asian Development Bank (ADB)–funded project *Women and Child Health Development*.
- 2005: MoH set up working group with MoH representatives, leading national paediatrics experts, health care managers, practising physicians, researchers and representatives of international organizations to:
 - carry out situation analysis of child hospital services;
 - review existing regulations for paediatric hospital care;
 - develop proposals for revising MoH regulations on child hospital care; and
 - planning of continuous training programmes for specialists.
- IMCI centre for outpatient and hospital levels organized based on National Paediatrics Institute recommendations.
- Chief specialists, National Paediatrics Institute and Drug Policy Centre participated in developing and implementing quality hospital care for children. National guidelines on hospital care for children (adapted from the WHO Pocket Book) endorsed, including list of essential drugs for paediatric hospitals.⁶
- No certification process set up; initiatives for accreditation being developed. *ZdravPlus* organized regional meetings in a number of Central Asian republics on strategies for introducing international standards on accreditation and certification of medical schools.
- 1 January 2004: MoH together with Centers for Disease Control and Prevention (CDC-USA) and UNICEF introduced international live births definitions.
- A total of 1253 professionals (obstetricians, neonatologists, statisticians, pathologists, forensic medicine experts, public health managers) trained in the Republic of Karakalpakstan, Fergana, Bukhara, Khoresm, Tashkent, Kashkadarya, Andizhan, Namangan, Surkhandarya, Samarkand regions and Tashkent city.
- UNICEF international experts certified 102 maternity facilities and 74 polyclinics and rural posts as baby-friendly.

➤ **Limitations**

- No certification of hospitals.
- Initiatives for accreditation underway.

⁵ Ministry of Health Decree No. 155, 10 April 2007

⁶ Ministry of Health Decree No. 155, 10 April 2007

5.4.2 Service delivery

➤ Progress

- 2004-2008: integrated programme for improving quality of care in Fergana oblast children's hospitals implemented with ZdravPlus support. Results presented at national and regional conferences on quality improvement, at meetings with international partners, facilitating dissemination of best practices and introducing WHO standards to other regions of the country.
- 2008: assessments in selected hospitals of Tashkent and Syrdarya oblasts, with WHO-Europe support.
- Quality improvement section of national action plan,⁷ including training programmes for paediatricians, general practitioners (GP), obstetricians, and neonatologists. Support to quality improvement in health care institution medical services follows framework of *Health 2*, ADB's *Women and Child Health Development* and ZdravPlus project.
- Five national conferences on health care services quality improvement and development of EBM organized in collaboration with international organizations. Introduction of WHO standards in pilot areas monitored in the framework of ADB's *Women and Child Health Development* (2005-2010).
- Guidelines developed for quality audits on health services. MoH Control Inspection unit responsible for ensuring compliance. MCH Dept. also monitors implementation of MoH decrees and programmes in MCH. At institutional level, executive management responsible for monitoring.

➤ Limitations

- Improvements required in national hospital information system to ensure adequate communications between, and continued care provided at, different levels.

5.4.3 Creating resources

➤ Progress

- 2008: Cabinet of Ministers endorsed Presidential Decree on further health system reform: 2008–2012 National Plan of Renovation and Reconstruction of Paediatric Hospitals by regions, including section on provision of modern medical equipment to paediatric hospitals and renovation of technical facilities. A list of essential drugs developed with allocation of state budget funds.
- Training programmes on EBM available for practicing physicians and part of medical school curricula. In the framework of *Health-2*, training course developed for rural post physicians in rational use of drugs.
- National guidelines listing standard laboratory tests. In the framework of *Health 1*, *Health 2* and *Women and Child Health Development*, laboratories in rural and central district hospitals provided with modern equipment and supplies. Oblast (regional) training centres set up, and laboratory staff trained through Continuous Medical Education programme, with participation of over 250 hospital paediatricians.
- 2005: MoH, in collaboration with UNICEF, developed programme to reduce infant mortality through training workshops on resuscitation and basic newborn care in six pilot areas (Karakalpakstan, Khoresm, Bukhara, Fergana and Tashkent regions and city of Tashkent) with participation of 3000 neonatologists, obstetricians and midwives.
- Clinical recommendations on neonatal resuscitation are a separate manual and not included in the national adaptation of WHO Pocket Book.
- Clinical guidelines available for obstetricians-gynaecologists and GPs in different formats (hard copies, CDRoms), disseminated based on MoH distribution lists.

⁷ Decree of the President of Uzbekistan No. 3923, 19 September 2007, and Resolution of the President of the Republic of Uzbekistan No. 700, 2 October 2007

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- MoH endorsed updating and development of guidelines, such as *management of acute respiratory infections* (ARI) and pneumonia, diarrhoeal diseases, anaemia, newborn resuscitation and basic neonatal care.
 - WHO HIV/AIDS paediatric treatment protocols adapted.
 - 2009: Approval of protocols on helminthosis and manual on outpatient care for children based on WHO recommendations.
 - Access to EBM information has improved:
 - EBM centre set up as part of Tashkent Continuous Medical Education Institute, with technical staff and equipment, access to Cochrane library, sources and support staff; and
 - health care projects and international organizations provide information materials and training manuals.
 - Centres for continuous education of obstetricians–gynaecologists, paediatricians, neonatologists, GPs, home visiting nurses set up in all regions and districts, as part of *Women and Child Health Development* (ADB), with support from UNICEF, ZdravPlus and the United Nations Population Fund (UNFPA)
 - Since 2008: a total of 1115 health care workers from 80 facilities trained in using WHO Pocket Book through EU project *Improvement of Mother and Child Health Services in Uzbekistan*, implemented by UNICEF.
 - IMCI and hospital care manual incorporated in under- and postgraduate training curricula within available academic timing slots. Medical education textbooks partially adapted.
 - Changes in case management partially measured by external and internal monitoring of health facilities, through *Women and Child Health Development*, UNICEF and ZdravPlus.
 - Informative data delivered to MoH on achievements and challenges in improving hospital care based on monitoring and follow-up visits by 46 professionals.
 - 2005: Hospital care monitoring in Fergana oblast; results presented at National Conference on Quality Improvement.

➤ **Limitations**

- Case management practices and overall hospital child care partially measured by international partners within the framework of the Time-Limited Projects.
- Regular, sustainable and supportive system for monitoring and assessment of quality of care in children's hospitals needed.

5.4.4 Financing

➤ **Progress**

- A total of €11.5 million provided by Germany (KWF Bank) through grant project *Providing Modern Medical Equipment to Teaching Hospitals of the Institute of Paediatrics and Tashkent Paediatric Institute and Paediatric Hospitals*, to be implemented in 2011–2012.
- €1.0 million allocated for training centres for hospital care professionals.
- Incentive strategies include licensing and certification of health professionals, based on MoH Decree No. 505 on continuous medical education.

6 Discussion Points

In **Armenia**, future actions will focus on further improving quality of hospital care for children through training of medical providers and adoption of the WHO Pocket Book as a standard for hospital child care. A National Strategy on Improving Hospital Care for Children will include monitoring and evaluation indicators, now under development, as a basis for streamlining coordinated actions by all major stakeholders in the period 2010–2015. Plans have been made for setting up committees on quality control, and integration of the WHO Pocket Book into medical educational programmes.

In **Kazakhstan**, future actions will include integration of the IMCI hospital component into the course for under- and postgraduate medical students, country-wide dissemination of best practices and lessons learned from the three pilot oblasts. CDROM versions of the WHO Pocket Book have been widely distributed among leading medical educational institutions, hospitals and oblast health authorities.

Indicators for certification and accreditation of hospitals are to be developed, as well as first referral level clinical protocols on main childhood illnesses; supportive supervision system and incentive mechanisms are under way. Equipment and supplies at health facilities will be inventoried to ensure essential support for implementation of recommended clinical practice.

In **Uzbekistan**, implementation of Presidential Decree in 2008–2012 will strengthen the physical infrastructure of all level paediatric hospitals by providing modern medical equipment. In-service training of health providers will continue, as will the introduction of updated clinical guidelines on management of common childhood illnesses. Strengthening the public health management information systems is planned, particularly in the area of MCH care.

In **Turkmenistan**, no specific actions are planned to improve quality of care. A follow-up to the assessment will be required to evaluate what activities are needed in the area of hospital care for children.

➤ Summation

Based on previous assessments and on the results from this case study, it is obvious that the priority would be to implement quality improvement processes in first referral-level paediatric hospitals through quality of care assessments and monitoring, quality improvement strategies and enhanced partnership with patients and between the various health sectors, as a collaborative approach to quality improvement is essential. Better communications and dissemination of best practices to all groups and institutions is key to improving hospital care for children. Leadership at different organizational levels, especially the institutional one, is central if the process for improving paediatric care for children is to be sustained. Delivery strategies need to be tailored to specific national and subnational health systems.

Results from the multicountry evaluation that measured the impact and effectiveness of IMCI show improvements in quality of care and reduction in under-5 mortality, if correctly implemented²¹. The implications of these findings suggest that implementation of child survival interventions needs to be complemented by activities that strengthen the support system.

6.1 Limitations of the study

Although data from questionnaires were validated by the NPOs as a process in analysis of results, the objective of producing a comprehensive approach resulted in the scope of the questionnaires becoming rather too broad to allow detailed discussions. Further steps are needed, specifically, the targets set out in the implementation process. The goal of this report is to act as a baseline for measuring requirements for strengthening health systems in participating countries. Direct country research will be essential to confirm national progress in hospital care for children. The experiences and lessons learned of the countries that have come up with recommendations and steps for improving paediatric hospital care can be shared with other member-states planning or initiating the process of strengthening paediatric care in hospitals.

7 Conclusion

The collective experience from implementation of the Hospital Improvement Strategy was evaluated in 2007 at a global WHO meeting in Bali²². Further initiatives were taken in collaboration with national authorities in countries such as Albania, China and Kazakhstan to revise, adapt and introduce guidelines for paediatric hospital care and assessment methods and strategies for improving quality of care. An important collaboration has been established with the International Paediatric Association (IPA), which has been increasing its efforts to promote quality of care concepts in national paediatric associations and proposes introductory workshops on EBM and quality improvement to national societies. The IPA website has a section devoted to quality of hospital care (www.ipa.org). Many national societies are now starting to address these issues. The 2010 Congress of the IPA in Johannesburg included two joint sessions with WHO: on quality of care and quality of care improvement.

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Integrated Management of Childhood Illness (IMCI) aims to reduce child mortality and morbidity and improve healthy growth and development. This requires a well-organized health system with high quality of care at all levels, including the referral level. This report summarizes the findings of a survey on the country experience of improving hospital care for children in Armenia, Kazakhstan, Turkmenistan and Uzbekistan. The findings are presented in the framework of a health systems approach, considering stewardship, service delivery, resource creation and financing. Analysis of data shows that, to improve the quality of child health services in district hospitals, supportive policies and strategies need to be in place, as well as up-to-date clinical guidelines, properly trained staff, and practices for the rational use of medicines. The lessons learned from this case study should contribute to the further development of strategies to improve the delivery of child care in hospitals.

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