



SCIENTIFIC LETTER

The evaluation criteria of community protection on children's medical care in major pandemics

Los criterios de evaluación de la protección comunitaria en la atención médica infantil en grandes pandemias

Zhuo Zhao^a, Ruitong Liu^a, Bingqing Bi^a, Shugang Li^{b,*}

^a School of Public Health, Capital Medical University, Beijing 100069, China

^b School of General Practice and Continuing Education, Capital Medical University, Beijing 100069, China

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Children as a key kind of population of health services, children have a high demand for medical care and need to receive timely medical services and protection. However, due to the influence of COVID-19 prevention and control measures, the effect of medical care for children may be affected in community areas. National Health Commission of the People's Republic of China have formulated several documents for the protection of children and other key population and put forward guiding principles and requirements for different departments to be responsible for providing medical care for children. As the frontline department of pandemic prevention and control, the community bears the social restriction measures^{1,2} and sticks to the first line of defense for children's medical care, directly influencing the prevention and control effectiveness.³ Whether the community can implement these policy needs to be evaluated. There is still lack of specific tools to evaluate the community supply of medical care for children in the major pandemic prevention and control. So, this study aims to develop an indicator system for evaluating the community protection of children's medical care, based on the practice of COVID-19 prevention and control, to provide a reference for safeguarding children's health in response to similar pandemics.

The indicator framework was constructed based on the structure–process–result (SPO) three-dimensional quality model. An index pool was developed through literature analysis. A total of 32 experts from different fields such as clinical medicine, public health, health management, maternal and child health, theoretical research and community health from different provinces were consulted using the Delphi method through email. After two rounds of consultation, the indicator system for the evaluation of community protection of children's medical needs under the background of the COVID-19 pandemic was determined, and the weight of each indicator was established by Analytic Hierarchy Process. The importance, operability, and expert authority of the indicators were evaluated through Delphi expert questionnaire scoring. The result showed that the SPO framework based on the structure–process–result three-dimensional quality model was established. Through literature analysis, an index pool containing 62 indicators was developed. An indicator system including 4 first-level indicators, 11 second-level indicators and 38 third-level indicators was formed according to the index pool. The response rate of the two rounds of expert consultation was 100%, the coordination coefficients of importance were 0.607 ($P < 0.001$) of the first round and 0.554 ($P < 0.001$) of the second round, and the coordination coefficients of feasibility were 0.467 ($P < 0.001$) of the first round and 0.445 ($P < 0.001$) of the second round. The expert authority coefficient was

* Corresponding author.

E-mail address: lishugang@cmmu.edu.cn (S. Li).

Table 1 The weights of the indicators in the evaluation criteria of community protection on children's medical care in major pandemics.

Indicators	Weight
1 Prevention and preparedness	0.2556
1.1 <i>Human resources allocation for ensuring children's medical care</i>	0.0506
1.1.1 Staff of children's information management	0.0168
1.1.2 Staff of medical care service for children	0.0173
1.1.3 Staff of children's health education	0.0165
1.2 <i>Registration of information on child-related diseases</i>	0.0509
1.2.1 Registration of information on child-related diseases	0.0509
1.3 <i>Developing the document for children's health care</i>	0.0518
1.3.1 Formation of a system of child-directed docking in the medical cluster with higher-level hospitals and a system of docking and transfer response with the community	0.0173
1.3.2 Closed-loop management system for medical transport of children	0.0172
1.3.3 Preparation system for screening and diagnosis of pathogen infection in children	0.0173
1.4 <i>Materials preparation for child-health service</i>	0.0517
1.4.1 Special referral vehicles and escorts for children	0.0260
1.4.2 Stockpile of drugs related to common childhood diseases	0.0257
1.5 <i>Promotion and training of children's health care</i>	0.0506
1.5.1 Health education and training for community residents about children's health care	0.0506
2 Emergency response	0.2543
2.1 <i>Emergency response capability</i>	0.2536
2.1.1 Situation of staff on duty for emergency medical care for children	0.0852
2.1.2 Establishment of green channels for children's medical care	0.0855
2.1.3 Transmission of information on children's medical care services	0.0835
3 Evaluation and summary	0.2530
3.1 <i>Evaluation on the quality of children's medical care</i>	0.1276
3.1.1 Neonatal home visits' rate	0.0328
3.1.2 Family satisfaction	0.0297
3.1.3 Planned immunization coverage rate	0.0324
3.1.4 Supplementary vaccination rate	0.0327
3.2 <i>Summary of medical care services for children</i>	0.1254
3.2.1 Completion degree of children's medical care summary	0.0630
3.2.2 Discussion on the work of children's medical care	0.0624
4 Capacity improvement and reserve	0.2372
4.1 <i>The improvement of community supply capacity</i>	0.1245
4.1.1 Training of policy for community medical staff	0.0416
4.1.2 Learning about infectious disease pandemic detection techniques	0.0401
4.1.3 Personal protection learning	0.0427
4.2 <i>Ability of research for communities responding to similar pandemic</i>	0.1126
4.2.1 Number of scientific research achievements	0.1126

0.86. Finally, a three-level indicator system was determined, which includes 4 first-level indicators, 10 second-level indicators and 23 third-level indicators (Table 1), including prevention and preparation, emergency response, evaluation and summary, capacity improvement and reserve. The weights of first-level indicators were 0.2556, 0.2543, 0.2530 and 0.2372 respectively.

In summary, based on the SPO three-dimensional quality model and Delphi method, a simple and feasible indicator system for evaluating community children's medical care was established, focusing on prevention, preparation and emergency response, which can serve as a reference for relevant departments to evaluate community children's medical care in major pandemic.

Ethical considerations

This study has passed the review of the Medical Ethics Committee of Capital Medical University, and the review batch number is Z2023SY101. Written consent has been obtained from all participants.

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Conflict of interest

The authors and corresponding authors declare no competing interests.

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