

*Ministry of Health and Medical Education
Deputy of Educational Affairs
Secretariat of the Council for Undergraduate Medical Education
JPRM 2008-2009 Final Report*

***The Core Curriculum of Pediatrics Clerkship of
Undergraduate Medical Education***

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Preface

A word with the educational authorities, faculty members, and medical students

The curriculum of the clerkship of internal medicine is prepared based on the consensus of the faculty members of universities of medical sciences and vast inquiry from experts of medical education in the universities of medical sciences and deputy of health affiliated to ministry of health and medical education.

Obviously curricular communication with the students, faculty members, educational authorities, and other members of the medical school and university and providing appropriate educational environment is of a considerable importance. At the end, we bring to your notice that the secretariat of the council for undergraduate medical education welcomes all suggestions and viewpoints of the connoisseurs of universities of medical sciences regarding improvement of the curriculum of undergraduate medical education.

Thus, please kindly communicate your valuable opinions to us at the following address:

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Secretariat of the council for undergraduate medical education

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1- Length of the course: 3 months

2- Effective teaching hours during the course: 390 hrs

Timing of the lecture-based courses and clinical rotations is generally determined according to the educational program of the clerkship course. All medical students are required to attend in the hospital ward at least since 7:30 AM to 2:00 PM each day and 5 days per week.

3- Program manager: to be filled by medical school.

4- Faculty members: to be filled by medical school.

5- The expected outcome of the program:

a- knowledge:

number	outcome
1	understanding of physiopathological basis of common pediatric disorders
2	Acquisition of the basic knowledge of normal physical and psychological growth and development of children from birth to adolescence and ability to apply this knowledge in clinical setting
3	Knowledge of abnormal physical and psychological growth and development processes from birth to adolescence
4	Knowledge of normal child health care strategies and monitoring children's growth and development
5	Knowledge of epidemiological aspects of diseases and children's mortality rate in Iran
6	Knowledge of screening programs and disease monitoring at birth and the other life stages of children according to the national criteria
7	Knowledge of national vaccination program and familiarity with the indications and contraindications of the vaccines
8	Knowledge of health improvement strategies regarding disaster prevention (trauma , poisoning, burn, etc)
9	Knowledge of principles of control and prevention of infectious diseases in patients and health care personnel
10	Knowledge of nutritional care including breast milk, nutritional supplements, school nutrition, and nutrition during infancy
11	Knowledge of signs and symptoms of malnutrition and obesity in the infants and children
12	Knowledge of the contents of the national guideline of integrated health care of pediatric disorders (Mana)
13	Knowledge of differential diagnoses and complications of common newborn problems
14	Knowledge of problems of babies born from high- risk pregnancies (multiple pregnancy, pre-maturity, etc)
15	Knowledge of principles of clinical genetics and semiology of chromosomal syndromes

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16	Knowledge of effects of maternal diseases and teratogenic factors on the health of fetus and newborn
17	Knowledge of common complaints in pediatrics and the differential diagnoses
18	Knowledge of common emergencies in pediatrics
19	Knowledge of common chronic diseases in pediatrics
20	Acquiring the knowledge of cardiopulmonary resuscitation in the newborn and child
21	Knowledge of clinical physiopathology of fluid and electrolyte imbalance in pediatrics
22	Knowledge of different therapeutic fluids and products available in the national market and their ingredients
23	Knowledge of content and method of prescription of fluids in special disorders that need specific intravenous therapy(vomiting and diarrhea, heart and kidney failure, inappropriate ADH secretion, etc)
24	Knowledge of principles of reasonable application of drugs in common pediatric disorders
25	Knowledge of method of prescription of drugs for mother in nursing period (indications and contraindications)
26	Knowledge of method and indications of referral to the higher levels of health care in common pediatric problems

b- Skill

27	Acquiring the ability to perform clinical examination of the newborn, infant, child and adolescent
28	Acquiring the ability to establish relationship with children and adolescents and their families for obtaining accurate necessary clinical data
29	Acquiring the ability for recording clinical evidences (clinical history, clinical course, requesting laboratory investigations, writing consultation letter, medical record summary , etc)
30	Ability to measure growth indices including height, weight, head circumference, and BMI and interpretation of results according to standard growth charts
31	Acquiring the ability to evaluate different aspects of development by means of available tools (Denver development screening test, etc)
32	Acquiring the Ability to establish relationship with other members of health care team
33	Acquiring the Ability to take nutritional history in children's different age ranges and counseling the patient's family
34	Acquiring the Ability to counsel for disaster prevention (poisoning , burn, fall, near drowning, and risk reduction in driving, etc)
35	Accurate application of screening tests and protocols in order to maintain children's health
36	Ability to counsel the newborn's family about breast feeding, natural patterns of sleep and wakefulness, voiding and defecation, screening tests, vaccination, nutritional supplements and vitamins and counseling

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	for circumcision
37	Ability to design the family tree in approach to a probable familial genetic disorder
38	Acquiring the ability to gather and integrate the evidences in order to make diagnostic and therapeutic decisions
39	Ability to suggest differential diagnoses for common complaints of children and suggest appropriate diagnostic plans
40	Acquiring the ability to follow up of common chronic diseases of children with taking into consideration the complications of the disease and its effect on the growth and development and emotional, social, and economic function of the family
41	Showing the ability to calculate accurate dose of drugs according to the weight and age of the child
42	Acquiring the ability in prescribing common medications as antibiotics and antipyretics
43	Acquiring the ability to teach the principles of drug consumption to the patient and his/her family and evaluate family's compliance
44	Showing the ability to evaluate severity of dehydration according to the history and clinical examination
45	Ability for fluid therapy and counseling the family
46	Acquiring the ability to calculate the dose and write medication order for admitted patients with diagnosis of dehydration and evaluation of quality of treatment
47	Acquiring the skill of application of Mana in approach to the children's common diseases
48	Showing the ability to approach to the common pediatric emergencies and deliver primary care (including CPR, etc)
49	Acquiring the ability to perform diagnostic and therapeutic clinical procedures in pediatrics(items 85 to 96 of the table of contents)

c- Attitude

number	outcome
1	understanding and taking into account the individual values, and patient's and family's beliefs and rights
2	understanding and taking into account the cost- efficient and quality health care
3	understanding and taking into account the role of the three axes of doctor, patient willingness and scientific evidences in clinical decision making
4	understanding and taking into account the physician's role as the coordinator or manager of the treatment team and understanding the role of the other members of the team
5	Understanding and taking into account the appropriate ethical conduct

6- The criteria and methodology for determining the core content ;

- prevalence of the disease and complaint in the domain of pediatrics

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- the needs of community
- influence on the children's and family's health
- preventability of the disease and availability of the screening tests
 - the national program of ministry of health including vaccination, Mana program, healthy child and breast feeding
- role of the graduates in the health system of the country

In order to prepare this curriculum, we have also taken advantage of the following references:

- resolutions of the supreme council of cultural revolution
- resolutions of deputy ministry educational affairs
- taking advantage of the experiences of the faculty members
- considering the objectives and needs of deputy ministry of health
- needs assessment of the graduates of the medical education program

7- The content to be taught to yield the stated outcomes:

number	content
1.	Definition of pediatrics, epidemiology and mortality of diseases
2.	Familiarity with the health system and children's health program in the country
3.	History taking and physical examination of the child
4.	Familiarity with disease screening according to the recommended national programs
5.	Familiarity with normal and abnormal growth patterns of children and the method of application of growth charts
6.	Familiarity with normal and abnormal developmental patterns and evaluation tools of children's growth considering the national program of healthy child and early childhood development
7.	Breast feeding, counseling the nursing mother, maternal diseases and drug consumption during nursing
8.	Nutrition during the different stages of life from 6 months to adolescence (evaluation and counseling) according to the national program of healthy child and early childhood development
9.	Familiarity with common nutritional problems in the childhood and adolescence according to the national program of Mana(FTT, obesity, deficiency of microelements)
10.	Familiarity with the national vaccination program
11.	Children's health improvement regarding disaster prevention, poisoning, burn, contagious and non-contagious diseases, and the physician's role
12.	Hospital infection control and epidemiologic control of infectious diseases in the community
13.	Child resuscitation
14.	Familiarity with evaluation of poor- conditioned child according to the national program of Mana
15.	Physical examination of full term newborn infant and primary care in delivery room
16.	teratogenes
17.	resuscitation of newborn infant

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18.	Approach to the newborn infant with RDS, apnea, and cyanosis
19.	Approach to the newborn infant with jaundice
20.	Approach to the newborn infant with convulsion
21.	Approach to the premature newborn infant
22.	Approach to the newborn infant with poor feeding
23.	Approach to the newborn infant with ambiguous genitalia
24.	Approach to the newborn infant with vomiting, abdominal distention, and absent meconium
25.	Infection in the newborn infant
26.	Nutrition and fluid therapy in the newborn infant
27.	Approach to the child with irritability
28.	Approach to the child with earache, rhinorrhea, and sore throat according to Mana
29.	Approach to the child with cough (acute and chronic), wheezing, and tachypnea according to Mana
30.	Approach to the child with fever
31.	Approach to the child with pneumonia
32.	Approach to the child with signs of meningeal irritation
33.	Approach to the child with cyanosis
34.	Approach to the child with chest pain, palpitation, and cardiac murmur
35.	Approach to the child with diarrhea and evaluation of level of dehydration, oral rehydration therapy according to Mana
36.	Approach to the child with abdominal pain
37.	Approach to the child with vomiting
38.	Approach to the child with constipation
39.	Approach to the child with jaundice
40.	Approach to the child with hepatosplenomegaly
41.	Approach to the child with headache
42.	Approach to the child with convulsion
43.	Acute flaccid paralysis
44.	Approach to floppy baby
45.	Approach to the child with coagulation disorders
46.	Approach to the child with lymphadenopathy
47.	Approach to the child with limping and arthritis
48.	Approach to the child with short stature
49.	Normal puberty and approach to the child with puberty problems
50.	Approach to the child or newborn infant with hypoglycemia
51.	Approach to the child or newborn infant with hypocalcemia and rickets
52.	Approach to the child with edema and proteinuria
53.	Approach to the child with dysuria and urinary tract infection
54.	Approach to the child with urine control dysfunction
55.	Approach to the child with hematuria and glomerulonephritis
56.	Approach to the child with polyuria
57.	Approach to the child with oliguria and acute renal failure
58.	Approach to the child with common ophthalmologic problems
59.	Approach to the child with anemia

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60.	Approach to the child with respiratory distress and airway obstruction (croup, epiglottitis, and foreign body)
61.	Approach to the child with shock
62.	Approach to the child with GI bleeding(upper and lower GI tract)
63.	Approach to the child who has swallowed burning materials or foreign body
64.	Approach to the child with decreased level of consciousness (coma and delirium)
65.	Familiarity with the physiopathological principles of body fluids and evaluation of common electrolyte imbalances
66.	Evaluation of acid- base imbalances
67.	Intravenous fluid therapy in normal and abnormal conditions
68.	Asthma
69.	Salmonellosis- brucellosis
70.	Diphtheria- tetanus- pertussis
71.	Intestinal parasitic disorders
72.	Osteomyelitis and septic arthritis
73.	Common non eruptive viral diseases
74.	Urticaria- angioedema- anaphylaxis
75.	Food allergy and atopic dermatitis
76.	Hypothyroidism and hyperthyroidism in the newborn infant and child
77.	Tuberculosis
78.	Common parasitic disorders (kala azar and malaria)
79.	Common vasculitic disorders
80.	Diabetes mellitus and DKA
81.	hepatitis
82.	Rheumatic fever and endocarditis
83.	Common symptoms of hereditary metabolic disorders
84.	Familiarity with common principal congenital cardiac disorders
85.	Familiarity with common symptoms of malignant diseases of children
86.	Approach to the hypertension in children
87.	Familiarity with common findings of heart failure in children
88.	Familiarity with common radiographic findings in pediatrics
89.	Venous cannulation
90.	Arterial puncture (ABG, etc)
91.	venipuncture
92.	Insertion of urinary catheter
93.	Insertion of nasogastric tube
94.	Intraosseous injection

8- Teaching and learning method:

Medical schools are required to apply the most appropriate educational strategies and teaching and learning methods for each of the above-mentioned contents according to the subject and within the limits of available facilities. Some of these methods are noted below:

Role playing, role model, video presentation, small group discussion, bedside-teaching, procedural skill teaching, task- based teaching, case- based teaching, etc.

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9- Formative assessment of knowledge, skill, and attitude and feedback technique during the course (Timing and frequency of assessments must be stated.)

Formative and summative assessments must be done during and at the end of the course, respectively.

Assessment is required to target knowledge, skill, and attitude. Assessment tools must be valid and reliable

For instance, some assessment tools are mentioned below:

1- Logbook, 2- DOPS, 3- Mini CEX, 4- OSCE, 5- CBD (case based discussion), 6- descriptive written examination and MCQ, 7- oral examination,8- global rating form

10- Curricular communication

- The curriculum must be available to the learners, faculty members, and educational and executive authorities of medical school or university at the beginning of the course and reachable at the university website.

11- Curricular management

-For implementation of the program, the necessary preparations including faculty member education must be considered

- Continuous monitoring of the program by the deputy of undergraduate medical education is necessary.

- Department chair must report the program evaluation to the medical school in regular intervals.

- Dean of the medical school is required to resolve the problems regarding implementation of the program with joint work of the authorities of the faculty.

12- Principal examination resources:

Principal examination resources are the same as the comprehensive (pre- internship) examination , including:

1-Behrman Richard E, et al. Nelson Essential of Pediatrics. /5th edition. W.B. Saunders

2- vaccination chapter according to national vaccination notebook

References for more information:

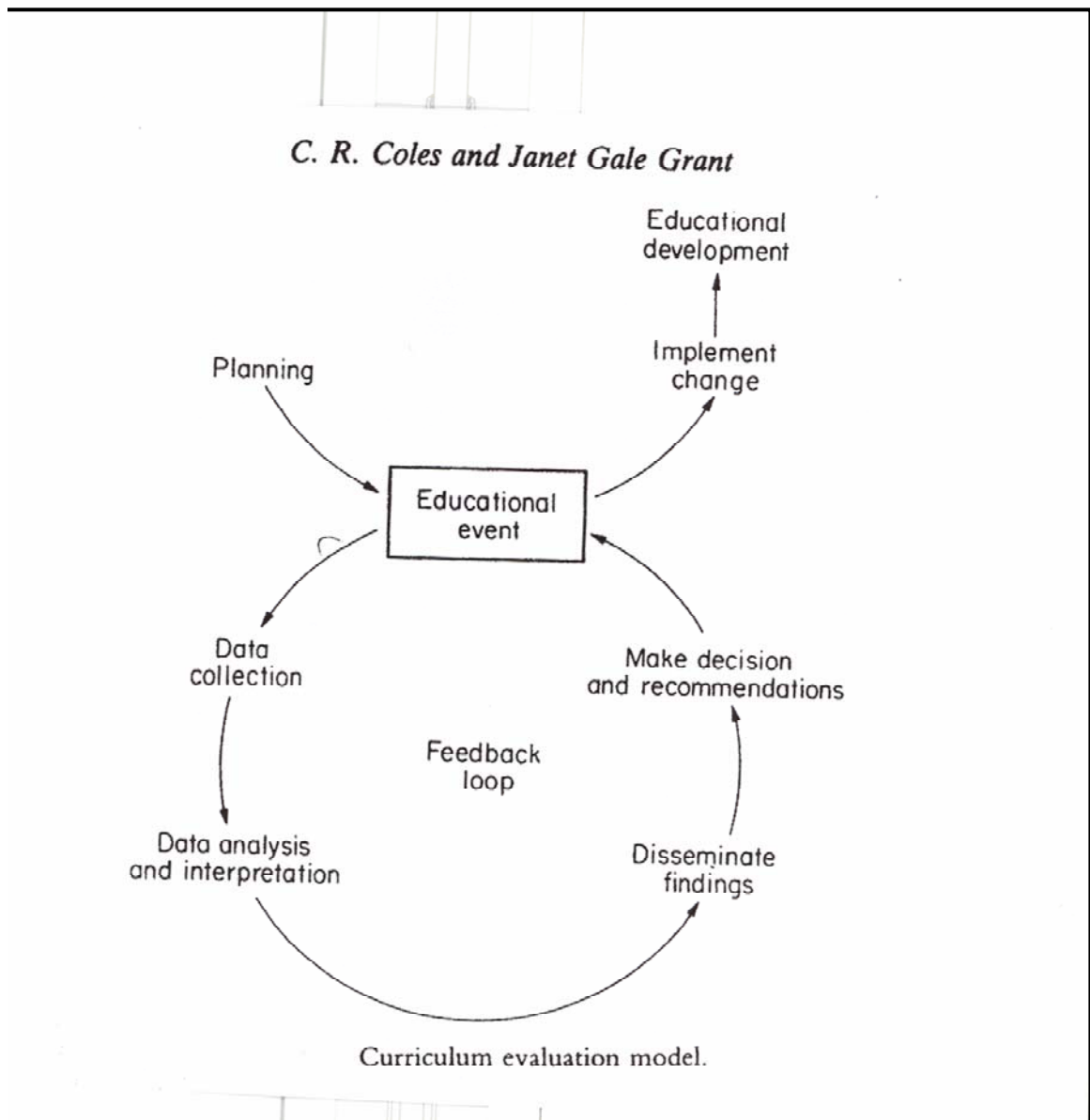
- Rudolph's Fundamentals of Pediatrics, 2002
- The national guideline of healthy child care
- The national guideline of Mana

13- Curriculum evaluation

For each course, the curricular program must be evaluated by the educational department and under supervision of the medical school, according to the following model. The results must be considered for quality improvement of the educational program in the future courses:

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- Educational department is required to submit the written report of the program evaluation to the medical school in regular intervals and also a copy of the report and actions taken to the members of the evaluation unit of secretariat of the council for undergraduate medical education in order to improve and ameliorate the program.

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