I. INTRODUCTION

The Pediatric Allergy and Immunology (A&I) Fellowship Program at King Faisal Specialist Hospital and Research Center provides extensive clinical experiences that will lead to a bright/promising career.

A structured progressive training in interviews; physical examination, assessment, and diagnosis of allergic and immunological diseases will be emphasized.

The A&I Program offer in-depth clinical trainings (diagnosis and management) in allergic diseases and congenital immunodeficiency.

The program is recognized by the Saudi Commission for Health Specialties (SCFHS). On the successful completion of the program a certificate will be issued for the candidate.

II. GENERAL OBJECTIVES

The program Provides comprehensive training program in allergy and clinical immunology for pediatricians who have completed their pediatric residency training.

III. SPECIFIC OBJECTIVES

This program is designed to provide an understanding of allergic diseases, immunodeficiency syndromes, immune dysfunction diagnosis and management from infancy to adulthood.

Fellows will gain experience in allergic diseases such as allergic rhinitis, bronchial asthma, atopic dermatitis, food and drug allergies, and anaphylaxis, and become knowledgeable in the acute and long-term management of these diseases. The basis of immunotherapy and its clinical applications as well as the role of the skin test in diagnosis and its proper interpretation will be part of the training. Experience in interpretation of laboratory data, x-ray studies, and bronchial challenge will also be provided.

Fellows will be trained in the area of clinical immunology which includes variety of Primary immunodeficiency. He/she will be exposed to the care of bone marrow transplant patients and to be familiarized with the immunologic basis of transplants plus their complications and management.
IV. ADMISSION REQUIREMENTS

Prospective applicants should be board certified in an accredited pediatric residency training program. The applicant must be recommended by at least two senior staff consultants, one being his/her Program Director.

V. STRUCTURE OF TRAINING

A. DURATION

The fellowship extends for a minimum of two years. A third year is optional for interested fellows and may be granted if the Program Director thinks it would be in the interest of the fellows and supported by his sponsor. The content of the third year should be mainly based on the interest of the fellows with minimal coverage.

B. NUMBER OF FELLOWSHIP POSITIONS

Three fellows will be accepted, in each year.

C. QUALIFICATION OF THE PROGRAM STAFF

1. Program Director. The fellowship program is directed by a Consultant Allergist and Clinical Immunologist. He should have a minimum of five (5) years’ postgraduate experience in an academic institution or major teaching hospital and have a broad range of experience in allergy as well as various aspects and forms of immune disorders and congenital immune deficiency syndromes.

2. Other Staff Members. In addition to the Program Director, other consultants in the section of Allergy and Clinical Immunology will assist in the training and research activities of the fellows.

3. Other Hospital Staff. Other hospital staff members certified in disciplines relevant to allergy and clinical immunology, such as rheumatologists, pulmonologists, dermatologists, and scientists certified in basic immunology, may be involved in the training of fellows.

4. External Staff. With mutual agreement, and through special arrangements made by the Program Director, fellows may take one or two months of elective training in a program abroad or equivalent program with no financial obligations on our program.
5. **Supervisory committee**: SCFHS supervisory committee is formed of four members. The program director as the chairman (KFSHRC staff) and other three members one of which is a staff at KFSHRC, two are outside institution members. The committee meets at the SCFHS site quarter a year. The responsibility of the committee is to review the progress of the trainee, oversee the process of acceptance for new fellows, supervision of the educational activity and planning the format of all examination activity.

VI. PROGRAM CONTENT

A. **Details of Activity.** Fellows will have to attend and participate in three activities per week namely: Basic immunology, clinical immunology and Journal Club as per annual schedule. They are also required to attend 50% of the department of pediatrics weekly education activity. The morning report is mandatory to attend for all fellows who are on call.

Basic science training in immunology and allergy will provide background in the development, histology, physiology, pathology, genetics, cytology, and pharmacology of the immune system.

B. **Clinical Responsibilities.** Fellows will participate in all outpatient and inpatient clinical activities. A structured progressive training in interviews; physical examination, assessment, and diagnosis of allergic diseases; and clinical immunology will be emphasized. Fellows will be responsible for the care of patients under the supervision of the training staff. He/she is expected to gain experience in allergic diseases such as allergic rhinitis, bronchial asthma, atopic dermatitis, food and drug allergies, and anaphylaxis, and become knowledgeable in the acute and long-term management of these diseases.

He/she is expected also to gain experience in the area of clinical immunology which includes variety of Primary immunodeficiency. Fellows will be exposed to the care of bone marrow transplant patients in order to become familiar with the immunologic basis of transplants plus their complications and management.

The basis of immunotherapy and its clinical applications as well as the role of the skin test in diagnosis and its proper interpretation will be part of the training.

Experience in interpretation of laboratory data, x-ray studies, and bronchial challenge will also be provided.

C. **Structure of Training Program** (Rotation):
<table>
<thead>
<tr>
<th><strong>1st Year</strong></th>
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<tr>
<td>Ward and in patients</td>
<td>3 months</td>
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<tr>
<td>consults</td>
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<tr>
<td>Clinics*</td>
<td>3 months</td>
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<tr>
<td>Day service**</td>
<td>3 months</td>
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<tr>
<td>Immunopathology and</td>
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<tr>
<td>pulmonary function</td>
<td>1 month</td>
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<tr>
<td>Adult allergy/</td>
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<tr>
<td>immunology</td>
<td>1 month</td>
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<tr>
<td>Vacation</td>
<td>1 month</td>
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<tr>
<th><strong>2nd Year</strong></th>
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<td>Ward and in patients</td>
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<td>consults</td>
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<tr>
<td>Clinics*</td>
<td>3 months</td>
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<tr>
<td>Day service**</td>
<td>2 months</td>
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<tr>
<td>Bone Marrow</td>
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<td>Transplantation</td>
<td>1 month</td>
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<td>Rheumatology</td>
<td>1 month</td>
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<td>Community allergy</td>
<td>1 month</td>
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<tr>
<td>Elective ***</td>
<td>1 month</td>
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<tr>
<td>Vacation</td>
<td>1 month</td>
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</tbody>
</table>

* Clinics are Sunday (am: adult and pm: Protocol) Monday (am: Peds allergy and pm:
Peds allergy) Tuesday ( am: Peds immunology and pm: Peds allergy) Wednesday (am: peds immunology and pm: BMT) Thursday (am adult allergy).

** Day service: ER, day medical unit (DMU), BMT day treatment area and BMT Nurse Clinic)

*** Dermatology, Pulmonology or Infectious Disease.

**Fellow needs to complete work log** sheets including Skin Prick Test (minimum of 10 cases), Immunotherapy (minimum of 5 cases), Pulmonary Function Test (minimum of 10 cases), and Bone Marrow Harvesting (minimum of 2 cases) per year.

D. **Lectures and Conferences.** Fellows will be required to attend lectures and seminars in the field of allergy and immunology given by staff and visiting professors as well as attend regional meetings related to the specialty. Attendance of at least one international conference on allergy and immunology will be encouraged. To gain experience in teaching and presentation, fellows will be required to present lectures and organize topics for discussion in workshops, conferences, and teaching seminars.

E. **Research.** Fellows will engage in ongoing clinical research projects in allergy and clinical immunology. Each fellow will be encouraged to prepare at least one manuscript during the fellowship and should be submitted. Fellows are encouraged to present their work in international meetings.

F. **RECOMMENDED BOOKS/LITERATURE**

I. **TEXTBOOKS (The Latest Edition)**

*Clinical*

**Allergy: Principle and Practice (2 Volume), (Middleton & Others), 8th Edition, 2013**

**Primary Immunodeficiency Diseases Molecular and Genetic Approach, 3rd Edition 2013**


*Allergic Diseases: Diagnosis and Management (Roy Patterson), 7th Edition, 2009

** Primer on allergy and immunology diseases, JACI sup. Vol 125(2) 2010
1. **Cellular and Molecular Immunology (Abdul Abbas), 6th Edition, 2010
2. **Basic Immunology (Abdul Abbas) 4th edition 2012

**High priority
* Priority

II. JOURNALS

1. The Journal of Allergy and Clinical Immunology
2. Nature Immunology
3. Blood
4. European Journal of Allergy and Clinical Immunology
5. Clinical Experimental Allergy
7. Allergy
8. Current Opinion in Immunology
9. Immunology Today
10. Clinical Immunology
11. Journal of Experimental Medicine
12. Bone Marrow Transplantation
13. Science
14. Journal of Immunology
15. Human Genetics
16. Nature Reviews Immunology
17. American Journal of Human Genetics
18. Annals of Allergy, Asthma and Immunology
19. Nature
20. Nature Genetics
21. Journal of Clinical Immunology, etc.

G. FACILITIES

1. Outpatient Clinics and Treatment Areas. Fellows will attend outpatient clinics supervised by the staff of the Allergy/Immunology section at King Faisal Specialist Hospital and Research Center.

   Currently there are ten (10) Allergy/Immunology Clinics including: seven (7) Allergy Clinics; two (2) Immunodeficiency Clinics; and one (1) Pediatric Stem Cell Transplant Clinic and two (2) clinics assigned for immunotherapy per week.

   Fellows will be providing daily clinical services in the Day Medical Unit, BMT Treatment Area, and BMT Nurse Clinic for patient evaluation and treatment.
2. **Inpatient Service.** Most inpatient admissions at King Faisal Specialist Hospital and Research Center are cases of severe asthma or immune deficiency. On the average, there are 10 to 15 patients with immunologic disorders hospitalized at any time in Pediatric Ward, 3-4 patients are in the Bone Marrow Transplantation Ward. Occasionally, there are 1-2 patients in the Adult Ward. In addition, consultations in Medicine, Pediatric, ICUs and other services.

3. **Immunology Laboratory.** The clinical immunology laboratory is well equipped, and staff will be available to train fellows to the following test: a) FISH, b) HLA typing; c) lymphocyte markers; d) lymphocyte blastogenesis, N.B.T test; e) Complement Assay and f) RAST test, etc as per schedule. Each fellow will rotate in the immunopathology laboratory for 1 month during his fellowship training.

4. **Other Laboratory and Diagnostic Facilities.** Other diagnostic facilities such as nuclear medicine, ultrasound, plain x-ray studies, CT scanning and MRI, pulmonary function tests (with and without challenge), chemistry, and hematology are available.

5. **Library.** The library at KFSHRC contains an extensive number of specialty journals and textbooks, including ones in the field of allergy and immunology. On-line literature search programs are also available.

### VII. EVALUATION AND PROMOTION

At three-month intervals the fellows’ level of competence and performance will be evaluated, based on their interaction with patients and staff in the clinical setting, including patient care and management, as well as level of knowledge displayed.

Mark distribution/ evaluation:

**First year:**
A first year fellow is promoted to second year if he/she scores equal or more than 60% in the total of evaluation plus the written exam.

<table>
<thead>
<tr>
<th>Exam format</th>
<th>Mark</th>
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<tbody>
<tr>
<td>50 MCQ</td>
<td>50 (1 mark each)</td>
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<tr>
<td>10 Short notes</td>
<td>50 (5 mark each)</td>
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Exam + Evaluation need to be equal or more than 60 % for promotion to second year

**Second year:**
Second year fellow is eligible for the final examination is upon his/her professional performance and evaluations.

Final exam format and marks:

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<thead>
<tr>
<th>Exam format</th>
<th>Mark</th>
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<tbody>
<tr>
<td>50 MCQ</td>
<td>25 mark (0.5 mark each)</td>
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<tr>
<td>10 Short notes</td>
<td>25 mark (2.5 mark each)</td>
</tr>
<tr>
<td>10 Oral cases (scenario, data and slides)</td>
<td>50 mark (5 mark each)</td>
</tr>
</tbody>
</table>

Final pass mark 70/100 (70%)

VIII. COMPLETION / CERTIFICATION

A certificate of fellowship training by KFSH&RC and SCFHS will be awarded upon successful completion of training and passing the final written and clinical examinations with score of > 70%.

IX. DUTIES, LEAVES & HOLIDAYS

Duties of a fellow are stated in the Article VI - Program Content. A fellow is entitled for 30 annual leave days, 10 days either Haj or Ramadan leave and one (1) national day leave. Fellows (non-KFSHRC) are entitled to professional leave (leave days only) on the 1st year and paid professional leave on the second year (maximum of 7 days). KFSHRC Sponsored Fellows, however, are entitled to take two (2) paid professional leave (each year) during their entire training period of their stay in the program. Carry-over of leave days of more than 14 days to the next year, and leave without pay, are not allowed. The fellow shall compensate any sick leave or maternity leave during or immediately after the training year. Sick leave policy is as stipulated in the training contract. The program follows the SCFHS rules and regulation in leaves and holidays.

REVISED: 3 December 2014