Health Authority – Abu Dhabi

هيئة الصحة - أبوظبي
HEALTH AUTHORITY - ABU DHABI

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1. Purpose

This standard establishes the requirements for childhood and young adult immunization to ensure quality and safety of the immunization service in Emirate of Abu Dhabi and to achieve and maintain high immunization coverage and reduce, eliminate and maintain elimination of vaccine preventable diseases in the community.

2. Scope

2.1. This standard applies to all HAAD licensed Healthcare providers involved in administering vaccines to children (age 0 to <13 years old), and young adults (>13 to 18 years old) in the Emirate of Abu Dhabi.

2.2. This standard must be applied in conjunction with the HAAD standards for safe vaccine handling and cold chain maintenance in Emirate of Abu Dhabi.

3. Duties of Healthcare Providers

3.1. Healthcare providers (facilities and professionals) providing immunization services must:

3.1.1. Provide clinical services in accordance with the requirements of this standard, the HAAD Standard for Vaccine Cold Chain and the relevant HAAD clinical care standards and ensure their practices follow internationally recognized evidence based clinical care pathways;

3.1.2. Submit e-Claims data for vaccination services in accordance with the Data Management Policy, Chapter VI, Healthcare Regulator Manual Version 1.0 (http://www.haad.ae/HAAD/LinkClick.aspx?fileticket=VyAME-Ojlm8%3d&tabid=1276) and as set out in the HAAD Data Standards and Procedures (www.haad.ae/datadictionary).

3.1.3. Report and submit immunization data to HAAD using the HAAD electronic Immunization information system, when and as directed by HAAD; reportable data fields include but not limited to identifiers such as name, medical record number, health insurance and emirates identity numbers; date and place of birth; gender; parents' names; vaccination details such as date and purpose of vaccination, vaccine type, dose, lot number, and manufacturer; adverse events following immunization (AEFI); other vaccine related information. Mandated reportable data fields are specified in the HAAD IIS;

3.1.4. Ensure that data entered are accurate and validated prior to submission to HAAD. Data entry validation remains the responsibility of the healthcare professional responsible for screening; data entered by clerks must not be changed or edited without the approval of the healthcare professional responsible for the case;

3.1.5. Comply with HAAD policies and standards on managing patient medical records, including developing effective recording systems, maintaining patient records, maintaining confidentiality, privacy and security of patient information and Patient Rights and Responsibilities charter;

3.1.6. Obtain consent to be vaccinated from the patient, and where the patient is a minor obtain the consent from the parent or guardian in accordance with the HAAD Consent Policy;

3.1.7. Where a patient, or their consenting parent or guardian, refuses vaccination, inform the patient/parent/guardian of the potential consequences of not being vaccinated. Refusal to be vaccinated must be documented on the patient's medical record;

3.1.8. Comply with HAAD requests to inspect and audit records and cooperate with HAAD authorized auditors, as required for inspections and audits by HAAD.

4. HAAD Role

4.1. HAAD will:

4.1.1. Develop, and from time to time revise, the standards for childhood and young adult immunization;

4.1.2. Provide guidance, recommendations and training to support effective implementation of the standard and services;

4.1.3. Monitor the immunization program and healthcare facilities compliance by using variety of means including information reported by providers via HAAD IIS and audits;

4.1.4. Receive notification of all Adverse Events Following Immunization (AEFI) as per HAAD Standard for Pharmacovigilance and provide feedback and recommendations;

4.1.5. Provide regular update of the EPI and School immunization schedules based on best available scientific evidence and on local, national and international immunization data;

4.1.6. Conduct regular assessments of vaccination coverage rates in the Emirate of Abu Dhabi and create action plans to address and rectify issues identified in order to assure achieving high vaccine coverage; and

4.1.7. Continuously evaluate the immunization program in the Emirate of Abu Dhabi to maximize efficient use of vaccines and to deliver the target public health outcomes (reduce/prevent communicable disease in the community).

5. Enforcement and Sanctions

5.1. Healthcare providers must comply with the terms and requirements of this Standard, the HAAD Standard Contract and the HAAD Data Standards and Procedures. HAAD may impose sanctions in relation to any breach of requirements under this standard in accordance with the Complaints, Investigations, Regulatory Action and Sanctions Policy, Chapter IX, Healthcare Regulator Policy Manual Version 1.0.

6. Abbreviations and Definitions

BCG	Bacillus Calmette-Guerin
DT	Diphtheria Tetanus (children)
DTaP	Diphtheria, Tetanus, acellular Pertussis
DTP	Diphtheria, Tetanus, Pertussis
EPI	Expanded Program on Immunization EPI was initiated in 1974 by the World Health Organization (WHO) with the goal of making vaccines available to all children throughout the world. They established a standardized vaccination schedule against 6 most serious diseases; this schedule is expanding to protect against more diseases.
Flu	Seasonal Influenza vaccine, not otherwise specified
HBIG	Hepatitis B Immune Globulin
HBs Ag	Hepatitis B surface antigen
Hep B	Hepatitis B vaccine
Hib	Hemophilus influenza type b
HPV	Human Papilloma Virus (2 or 4 valent)
IPV	Inactivated Polio Vaccine
MCV4	Meningococcal (*Neisseria meningitidis*) conjugate vaccine, serogroups A, C, Y, W-135
MMR	Measles, Mumps, Rubella
MPSV4	Meningococcal (*Neisseria meningitidis*) polysaccharide vaccine, serogroups A, C, Y, W-135
NIP	National Immunization Program
OPV	Oral Polio Vaccine
PCV	Pneumococcal Conjugate (7,13 or 10 valent)
PPSV 23	Pneumococcal polysaccharide vaccine 23
Pre-term	Born below 37weeks gestation
RV	Rotaviruses (1 or 5 valent)
SEHA	Abu Dhabi Health Service Company
Td	Tetanus, diphtheria (adults)
Tdap	Tetanus , reduced Diphtheria, reduced Pertussis
Var	Varicella (chickenpox) (*varicella zoster*) vaccine

WHO	World Health Organization
YF	Yellow fever vaccine

7. Standard 1 - Vaccine Service specification

7.1. HAAD licensed healthcare facilities involved in providing vaccination for children and immunization services must:

7.1.1. Make vaccinations available by:

7.1.1.1. Ensuring the vaccination services are continuous and uninterrupted throughout their facilities; including:

7.1.1.1.1. the supply of vaccines is adequate at all times; and

7.1.1.1.2. the resources (equipment and personnel) are available to support continuity of services.

7.1.2. Have in place standard operating procedures for administration of vaccines including;

7.1.2.1. Assessment of child's vaccination status;

7.1.2.2. Review of the vaccination status of the child including vaccine uptake;

7.1.2.3. Screening for contraindications to and precautions for immunization and referring the child to the doctor if required for further advice in accordance with Appendix 1;

7.1.2.4. Administration of appropriate vaccines in accordance with vaccination schedule; and

7.1.2.5. Updating the vaccination status using electronic and hard copy systems;

7.1.3. Implement strategies to improve vaccination coverage in the community including:

7.1.3.1. Development and implementation of recall systems to remind parents/guardians and healthcare professionals when vaccinations are due and/or overdue;

7.1.3.2. Regular assessment of vaccination coverage levels in the provider's specific facility(s);

7.1.3.3. Development and implementation of action plans to improve the vaccination coverage among their specific patient population;

7.1.4. Adhere to appropriate procedures for safe vaccine handling and cold chain maintenance in compliance with the Standard for Safe Vaccine handling and Cold Chain Maintenance in the Emirate of Abu Dhabi,

8. Standard 2 – Vaccine Administration Specifications

8.1. Healthcare providers must ensure safe and appropriate administration and documentation of vaccinations provided at their facility(s), including the following:

8.1.1. Have standard operating procedures for administration of vaccines, including written vaccination protocols available at all locations where vaccines are administered. Vaccination protocols must include clear guidance for healthcare professionals on vaccine administration, such as:

8.1.1.1. The reconstitution of vaccines where required;

8.1.1.2. The route of administration

8.1.1.3. The choice of needle size; and refer to Appendix 2;

8.1.1.4. The injection technique for all categories of vaccines administered;

8.1.1.5. The cleaning of the skin and preparation of the child; and

8.1.1.6. Post immunization advice for parents; refer to Appendix 5.

8.1.2. Ensure healthcare professionals responsible for and engaged in administering vaccines communicate effectively with patients and their parents/guardians, including to inform and advise on:

8.1.2.1. risks and benefits of vaccination in a culturally appropriate manner and in easy-to-understand language;

8.1.2.2. The benefits of preventing disease;

8.1.2.3. The risks of not taking the vaccines;

8.1.2.4. Any known side effects and the management of any such side effects;

8.1.2.5. The type of vaccines to be administered;

8.1.2.6. The right for informed consent and obligation to immunize children under the EPI program;

8.1.3. Ensure healthcare professionals employed in their facility(s) who are responsible for and engaged in administering vaccines:

8.1.3.1. utilize all clinical encounters to screen for needed vaccines and, when indicated, vaccinate children,

8.1.3.2. provide pre-vaccination assessments for children in accordance with Appendix 1, including a) observing the child's general state of health and b) asking the parent or guardian if the child is well;

8.1.3.3. question the parents or guardians about potential contraindications and follow only valid contraindications,

8.1.3.4. where appropriate, co-schedule immunization appointments in conjunction with appointments for other child health services.

8.2. Maintain patient related immunization records in a confidential and easily accessible place;

8.3. Healthcare professionals responsible for and engaged in providing immunization services must:

8.3.1. Be licensed by HAAD;

8.3.2. Comply with the HAAD Standard for Clinical Privileging framework, including limiting their practice to their job duties, and to their skills and competencies and the privileges granted to them within the particular facility with which they are associated;

8.3.3. ensure they are operating within their competence at all times; and

8.3.4. ensure they have the appropriate training to deliver services included in this standard (Section 10);

8.3.5. follow vaccine administration standard operating procedures, in particular:

8.3.5.1. check the patient information to ensure that the patient is correctly identified and vaccinated;

8.3.5.2. check which vaccines are required to be administered;

8.3.5.3. check their expiry date, opening / reconstitution date and time;

8.3.5.4. inspect the vaccine for any foreign particulate matter and / or variation of physical aspect.

8.3.5.5. if change or particles observed, the vaccine must be labeled "not for use", kept in the refrigerator and HAAD informed;

8.3.5.6. check the vaccine label and any additional manufacturer's instructions to ensure the product is used appropriately; and

8.3.5.7. document vaccine administration appropriately as required (hard copy, child vaccination card and electronically).

9. Standard 3 – Monitor, Manage and Report Vaccine Adverse Events (AEFI)

9.1. HAAD licensed healthcare providers responsible for and engaged in administration of vaccines, must:

9.1.1. Observe the vaccine recipients for 20 minutes in the healthcare facility for immediate adverse events following immunization (AEFI);

9.1.2. Recommend and provide the appropriate treatment for the type of AEFI observed, where necessary;

9.1.3. Have the necessary emergency support and assistance in accordance with the HAAD Standard for Minimum Preparedness for emergency response in the in-patient setting or the HAAD Standard for Minimum Preparedness for emergency response in the ambulatory setting including identification of roles for staff working in the immediate area where vaccines will be administered) to manage emergency situations, such as anaphylaxis;

9.1.4. Report AEFI following vaccination promptly, accurately, and completely in accordance with the Health Protection Policy, Chapter VII, Healthcare Regulator Policy Manual Version 1.0 and the HAAD Pharmacovigilance Standard; and

9.1.5. Document clearly any adverse reactions on the child's medical records and vaccination card.

10. Standard 4- Immunization Training Requirements

10.1. The content of immunization training must comprise of the following areas of knowledge:

10.1.1. The aims of immunization including public health goals, national policy and the vaccination schedules;

10.1.2. the children eligibility criteria for immunization;

10.1.3. vaccine safety, the different types of vaccines used in HAAD program and their antigenic composition;

10.1.4. communication skills with children;

10.1.5. screening for contraindications and precautions of vaccination in each children in accordance with the needs identified in this standard and Appendix 1;

10.1.6. maintaining the Vaccine Cold Chain;

10.1.7. vaccine dosages, including interpreting recommended immunization schedules in case of defaulters and filling the children immunization records and determining proper dosing intervals and feasibility of simultaneous administration of multiple vaccines;

10.1.8. correct preparation and administration of vaccines and injection technique and the safe handling and disposal of biologic-waste and blood;

10.1.9. signs and symptoms of adverse reactions to vaccines, anaphylaxis, adverse reaction reporting, and emergency procedures to manage adverse reactions such as basic and advanced cardiac life support (BCLS and ACLS);

10.1.10. documentation, record keeping and reporting;

10.1.11. procedures and criteria for referral to medical practitioner;

10.1.12. vaccine practice management including workflow, staff roles and responsibilities; and

10.1.13. Strategies for improving vaccination coverage rates.

11. Standard 5: Immunization for children and young adults :

11.1. Parents may have their children vaccinated at SEHA and non-SEHA facilities, under the following HAAD rules:

11.1.1. Parents are not required to pay for HAAD vaccine Schedules (Appendix 3, 4 and 6) offered at SEHA facilities and schools. Parents may request additional vaccines to those listed at Appendix 1; where they do so, additional vaccines must be covered by the parents.

11.1.2. Parents are required to pay for HAAD vaccines Schedules (Appendix 3, 4 and 6) offered at non-SEHA facilities. Parents may request additional vaccines to those listed at Appendix 1; where they do so, the additional vaccines must also be covered by the parents.

11.1.3. Providers must administer monovalent Hepatitis B and BCG to all newborns before hospital discharge unless it is contraindicated; if the vaccines are not available the healthcare provider must inform and refer the parents or guardian to a SEHA facility where the vaccines are available. Providers must administer HBV and 0.5 ml of Hepatitis B immune globulin (HBIG) within 12 hours of birth if mother is Hepatitis B surface antigen (HBs Ag)-positive or unknown status.

11.1.4. Providers must administer the Injectable Polio Vaccine (IPV) instead of the Oral Polio Vaccine (OPV) to a child presenting for Oral Polio Vaccine (OPV) who lives with a person who has impaired immunity.

11.1.5. Defaulters who did not complete their immunization schedule as indicated by HAAD schedule Appendix 3 must be vaccinated using the catch-up schedule as early as possible, using the minimum recommended interval between doses; refer to Appendix 4.

12. Standard 9: Post-vaccination procedures

12.1. If injectable vaccine volume is lost (for example if patient moves, syringe leaks) the dose must not be counted if the vaccine was:

12.1.1. An inactivated vaccine, (vaccine must be re- administered as soon as possible).

12.1.2. A Live vaccine (except BCG), (another dose must be administered after 4 weeks if the issue was identified on the same day);

12.2. If a patient spits out an oral vaccine (rotavirus), do not administer a second dose;

12.3. If volume is lost for the BCG do not repeat the vaccine; but ensure that Mantoux test is carried out when the child reaches one year of age;

12.4. Dispose of clinical waste, including sharps and vaccine vials, immediately after administration of the vaccine and at its point of use in accordance with HAAD standards for infection control and waste management;

12.5. Immunization After-care must be carried out in accordance with Appendix 5.

13. Standard 10: Groups with special vaccination requirements

13.1. Children/young adults who have special vaccination requirements, those who may experience more frequent adverse events, and who may have a suboptimal response to vaccination, must be referred to a HAAD Licensed pediatrician or infectious diseases consultant for review and recommendation or treatment in the following circumstances:

13.1.1. Those who have had a previous AEFI;

13.1.2. Preterm babies; these should be vaccinated at the standard recommended ages without correction for prematurity;

13.1.3. Children with impaired immunity due to disease or treatment;

13.1.4. child/ young adults presented for vaccination with oral live vaccines who live with a person who has impaired immunity;

13.1.5. Oncology patients;

13.1.6. Solid organ transplant recipients;

13.1.7. Children who have had Re-vaccination following hematopoietic stem cell transplantation (HSCT);

13.1.8. HIV-infected children;

13.1.9. Children with functional or anatomical asplenia;

13.1.10. Children with autoimmune diseases;

13.1.11. Recent recipients of normal human immunoglobulin;

13.1.12. Children following receipt of other blood products including blood transfusions;

13.1.13. Children with bleeding disorders; and

13.1.14. Children identified as having high risk of contracting infectious diseases (see Appendix 6).

14. Standard 6: Vaccinations for school –age children

14.1. The recommended immunization schedule for school age (Appendix3) must be followed by all governmental and private schools in Abu Dhabi.

15. Standard 7: Hajj and Umrah vaccination

15.1. Parents of children 9 months and above going to Hajj or Umrah are advised to have their children vaccinated with the Meningococcal conjugate vaccine (MCV4) as it is a requirement to enter the Kingdom of Saudi Arabia (KSA).

15.2. Parents of children going to Hajj or Umrah are advised to have their children vaccinated with the seasonal influenza according to age as per the manufacturer's recommendations.

15.3. Providers of vaccination services must issue a dated stamped certificate to document vaccination to the recipient to facilitate entry to KSA.

16. Standard 8: Payment Mechanism

16.1. Coding and billing for vaccination services must be in accordance with HAAD Claims and Adjudication Rules and e-claims requirements. Separate reimbursement for vaccine materials and vaccine administration shall be permitted if reported on the same date of service, and HAAD Drug codes must be used for billing vaccine materials.

16.2. Reimbursement of vaccination cost shall be in accordance with the health Insurance plan Schedule of Benefits approved by HAAD, the Mandatory Tariff, and the rate established in the "Standard Provider Contract" in effect at the date of service;

16.3. In the event that vaccination services are not covered under the health insurance plan, selected vaccination services can be accessed by the eligible members in SEHA facilities under the provisions of the Government Free Healthcare Programs (Activity Based Funded Mandates), subject to the program's eligibility requirement and Schedule of Benefits.

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Appendix 1

Pre vaccination screening

Key Interview Questions for All Vaccines: The nurse or doctor screens for the following to identify contraindications and precautions and refers the child to the doctor if required for further advice

1. Is the child sick today[i]?
2. Does the child have any allergies to medications, food, or any vaccine[ii]?
3. Has the child had a serious reaction to a vaccine in the past[iii]?
4. Has the child had a seizure or a brain (neurological) problem[iv]?
5. Does the child have cancer, leukemia, AIDS, or any other immune system problem[v]?
6. Has the child taken cortisone, prednisone, other steroids, or anticancer drugs, like chemotherapy or radiotherapy in the past 3 months[v]?
7. Has the child received a transfusion of blood or blood products, or been given a medicine called immune (gamma) globulin in the past year[v]?
8. Is the child/young adult pregnant or is there a chance she could become pregnant during the next month[v]?
9. Has the child received any vaccinations in the past 4 weeks[v]?
10. Does the child/ young adult has a past history of Guillain-Barre syndrome/ has a chronic illness/ has a bleeding disorder

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i. As a precaution with moderate or severe acute illness, all vaccines must be delayed until the illness has improved. Mild illnesses (such as otitis media, upper respiratory infections, and diarrhea) are NOT contraindications to vaccination.

ii. If a person experiences anaphylaxis after eating eggs, do not administer influenza vaccine, or if a person has anaphylaxis after eating gelatin, do not administer MMR or varicella vaccine. Local reactions (e.g., a red eye following instillation of ophthalmic solution) are not contraindications.

iii. History of anaphylactic reaction such as hives (urticaria), wheezing or difficulty breathing, or circulatory collapse or shock (not fainting) from a previous dose of vaccine or vaccine component is a contraindication for further doses.

iv. History of encephalopathy within 7 days following DTP/DTaP is a contraindication for further doses of pertussis-containing vaccine. Precautions to pertussis-containing vaccines include the following:

   a. seizure within 3 days of a dose,
   b. pale or limp episode or collapse within 48 hours of a dose,
   c. continuous crying for 3 hours within 48 hours of a dose, and
   d. Fever of 40°C within 48 hours of a previous dose.

   Vaccinate as usual children with stable neurologic disorders (including seizures) unrelated to vaccination, or children with a family history of seizure, but consider the use of paracetamol or ibuprofen to minimize fever.

v. Live virus vaccines (e.g., MMR, Rubella, Varicella):
   a. Usually contraindicated in immunocompromised person, refer to specialist for advice.
   b. must be postponed until after chemotherapy or long-term high-dose steroid therapy has ended.
   c. contraindicated prior to and during pregnancy because of the theoretical risk of virus transmission to the fetus.
   d. if live injectable vaccines are not given on the same day, the doses must be separated by at least 4 weeks. Inactivated vaccines may be given at the same time or at any spacing interval.

Appendix 2

Recommended injection sites and administration protocols

The choice of injection sites depends primarily upon the age of the individual being vaccinated. The two anatomical sites recommended as routine injection sites are the anterolateral thigh and the deltoid muscle.

All nurses must ensure that they are familiar with the landmarks used to identify any anatomical sites used for vaccination.

Recommended needle size, length and angle for administering vaccines

Injection type	Age	Needle type	Injection site	Angle of needle insertion
Intramuscular (IM)	Newborns (1st 28 days)	16 mm (5/8 inch) in length and 22-25 G	Anterolateral thigh muscle	90° to skin plane
	Infants (1-12 Months)	25 mm (1 inch) in length and 22-25 G	Anterolateral thigh muscle	
	Toddlers and children (12 -36 Months)	25-32 mm (1-1¼ inch) in length and 22-25 G	Anterolateral thigh muscle	
	Children >36 months and young adult	25-32 mm (1-1¼ inch) in length and 22-25 G	Deltoid muscle of arm	
Subcutaneous (SC)	<12 months	16 mm (5/8 inch) in length and 23-25 G	Fatty tissue over anterolateral thigh muscle	45° to skin plane
	Children >12 months young adult	16 mm (5/8 inch) in length and 23-25 G	Fatty tissue over triceps	
Intradermal (ID)	All	10 mm (7/8 inch) in length and 26–27 G Syringe with fixed needle recommended	BCG: about one third down the left upper arm over the insertion of the deltoid muscle	10-15° to skin plane

Notes

- Vaccine injections must **not** be given in the dorsogluteal site or upper outer quadrant of the buttock because of the possibility of a suboptimal immune response.
- If using a narrow 25 gauge needle for an IM vaccination, ensure vaccine is injected slowly over a count of 5 seconds to avoid injection pain and muscle trauma.
- The use of short needles for administering IM vaccines may lead to inadvertent subcutaneous (SC) injection and increase the risk of significant local adverse events (increased inflammation, induration or granuloma formation), particularly with aluminium-adjuvanted vaccines (e.g. hepatitis B vaccine, DTaP, DTP combinations or tetanus vaccine).

- If more than one injection is to be given in the same limb, they must be administered at least 2.5cm apart.
- Vaccines known to cause more stinging and /or pain should be given last
- Intradermal injection requires special training, and should be performed only by a trained provider
- When two injections are required to be administered together use different limbs DTP/DTaP and their combinations (Tetra, Penta, and Hexa) conventionally must always be administered on the left anterolateral thigh.

Appendix 3

HAAD Childhood and School Immunization Schedule

Vaccine / Age	BCG	PCV	DPT	Hib	Hep B	Polio	MMR	Varicella	Rubella (Female)	DTaP	Tdap	HPV (Female)
After Birth	BCG				Hep B							
End of 2 months		PCV	Hexavalent									
End of 4 months		PCV	Hexavalent									
End of 6 months		PCV	Pentavalent			OPV						
End of 12 months							MMR	Varicella				
End of 18 months		PCV	Tetravalent			OPV						
Grade 1						OPV	MMR	Varicella		DTaP		
Grade 9									Rubella			
Grade 11						OPV					Tdap	HPV (3 doses)

Legend:

BCG: Bacillus, Calmette and Guerin (against tuberculosis)

DTaP: Diphtheria, Tetanus and acellular Pertussis

DPT: Diphtheria, Pertussis and Tetanus

Hep B: Hepatitis B

Hexavalent: DTaP, Hib, Hep. B and IPV combination vaccine

Hib: Hemophilus Influenzae Type B

HPV: Human Papillomavirus

IPV: Inactivated Polio vaccine

MMR: Measles, Mumps and Rubella

PCV:Pneumococcal Conjugate Vaccine

OPV: Oral Polio Vaccine

Pentavalent: DPT, Hib and Hep. B combination vaccine

Tdap: Tetanus, reduced Diphtheria, and reduced Pertussis

Tetravalent: DTaP and Hib combination vaccine

Appendix 4

Catch-up Schedule for defaulters

Catch-up Immunization Schedule for Persons Aged 4 Months to 18 Years

This applies to children who have not had immunizations in accordance with the schedule at Appendix 3

General Principles for defaulter Children /Young adults Immunization:

1. WHO recommends immunize children and complete the schedule as early as possible;
2. To complete the immunization schedule (with minimum number of visits) of a defaulter, give as many vaccines as possible in single visit;
3. Giving a vaccine with less than the recommended interval will diminish the response and hence it is not advisable.
4. Doses given at the less than the minimum intervals must be repeated;
5. Giving the vaccine at more than the recommended interval will not diminish the response. Therefore there it is not necessary to restart an interrupted schedule, as even if the previous dose was given long time ago, the memory cells will remain active;
6. If two live parenteral vaccines (e.g. BCG, Measles, MMR, varicella, Etc.) are **not given on the same day**, they must have at **least four weeks interval between them.** The four weeks interval is not applied for others vaccines.
7. If two live parenteral vaccines are given in interval less than four weeks then the second vaccine must be repeated.
8. If the individual has not received vaccines scheduled in the HAAD Immunization Program appropriate for his/her age, the healthcare professional must plan and document a catch-up schedule and discuss this with the parents/guardian;
9. The objective of the catch-up vaccination is to complete a course of vaccination and provide optimal protection as quickly as possible;
10. The information and tables contained in this standard will assist in planning a catch-up schedule;
11. If the immunization service provider is still uncertain about how to plan the catch-up schedule, expert advice must be sought (refer to below table; contact HAAD for further clarification);
12. If written records are not available, the vaccines must be considered as not received, and the child must be offered a catch-up course of vaccination appropriate for age and circumstances.

Table 1

Catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed and below 7 years

PERSONS AGED 4 MONTHS THROUGH 6 YEARS			
Recommended and Minimum Ages and Intervals Between Doses			
Vaccine and dose number	Recommended age for this dose	Minimum age for this dose	Minimum interval to next dose
BCG[i]	Birth	Birth	---
Hepatitis B[ii] : - Birth Dose - HepB- 1 - HepB-2 - HepB-3	 - Birth - 2 months - 4 months - 6 months	 - Birth - Birth - 4 weeks - 24 weeks	 - 4 weeks - 4 weeks - 8 weeks[ii] - -----
Diphtheria, Tetanus, Pertussis: - DTaP1/DPT1 - DTaP2/DPT2 - DTaP 3/DPT3 - DTaP 4/DPT4 - DTaP 5/DT	 - 2 months - 4 months - 6 months - 18 months - Grade 1	 - 6 weeks - 10 weeks - 14 weeks - 12 months - 4 years	 - 4 weeks - 4 weeks - 6 months - 6 months - -------
Poliovirus[iii]: - IPV1/OPV1 - IPV2/OPV2 - IPV3/OPV3 - IPV4/OPV4 - IPV5/OPV5	 - 2 months - 4 months - 6 months - 18 months - Grade1	 - 6 weeks - 10 weeks - 14 weeks - 12 months - 4 years	 - 4 weeks - 4 weeks - 6 months - 6 months - ----------
Hemophilus influenzae type b	Refer to table 2		
Pneumococcal conjugate	Refer to table 3		
Rotavirus (RV)[iv]: - RV-1 - RV-2 - RV-3[iv]	 - 2 months - 4 months - 6 months	 - 6 weeks - 10 weeks - 14 weeks	 - 4 weeks - 4 weeks - ------
Measles, Mumps, Rubella - MMR1 - MMR2	 - 12 months - Grade1	 - 12 months - 13 months	 - 4 weeks - ------
Varicella: - Var1 - Var2	 - 12 months - Grade1	 - 12 months - 15 months	 - 12 weeks - ------

i. BCG vaccine:

- At birth: as soon as possible after birth within 1 month to provide maximum protection
- BCG is of no demonstrated benefit after 12 months of age (although it is not harmful or contraindicated).
- Must not be administered for babies <2.5 kg birth weight
- For children above age of 12months, do Mantoux test and if it is negative then eligible for vaccination.

ii. Hep. B vaccine:

- Birth dose: Mono- valent Hep. B vaccine must be given as soon as possible after birth and must not be administered for babies at <32 weeks' gestation or <2000 g birth weight
- Hepatitis B birth dose is cancelled if not given to the child within 7 days after birth
- HepB-3 must be administered at least 8 weeks after HepB-2 and at least 16 weeks after HepB-1, and must not be administered before age 24 weeks.
- Combination vaccines containing a hepatitis B component (Hexavalent, Pentavalent and tetravalent) are available. These vaccines must not be administered to infants younger than 6 weeks because of the other components (i.e., Hib, DTaP, and IPV)

iii. Polio vaccine

- The 1st and 2nd Polio doses in HAAD childhood immunization schedule are Injectable Polio Vaccine (IPV) and the 3rd, 4th and 5th Polio doses in HAAD childhood immunization schedule are oral poliovirus live vaccine (OPV).
- A fourth dose is not necessary if the third dose was administered at age 4 years or older and at least 6 months following the previous dose schedule

iv. Rota vaccine

- The pentavalent rotavirus vaccine requires three doses and the monovalent rotavirus vaccine requires two doses to complete the schedule
- The first dose of both rotavirus vaccines must be administered between 6 weeks 0 days and 14 weeks 6 days. The vaccine series MUST NOT be started after age 15 weeks 0 days.
- Rotavirus must not be administered to children older than 32 weeks (8 months 0 days), regardless of the number of doses received before that age.
- It is recommended that the rotavirus vaccine series be completed with the same product. However, vaccination should not be deferred if the product used for previous doses is not available or is unknown. In this situation, the provider should continue or complete the series with the product available. If any dose in the series was the pentavalent vaccine, or the product is unknown, a total of three doses of rotavirus vaccine should be given.
- not repeat the dose if the infant spits out or regurgitates the vaccine

Recommendations for Hib* catch-up vaccination for children <5 years of age when doses have been delayed or missed

Age at attendance	Previous Vaccination history	1st dose	2nd dose	3rd dose	Booster dose
3–6 months	0 doses	Give now	1 month later	1–2 months later	18 months of age
	1 previous dose (given at least 4 weeks previously)	Previously given	Give now	1–2 months later	18 months of age
7–11 months	0 doses	Give now	2 months later	Not needed	18 months of age
	1 previous dose	Previously given	Give now at least 4 weeks after last dose	Not needed	18 months of age
	2 previous doses	Previously given	Previously given	At least 1 month after last dose	18 months of age
12–14 months	0 doses	Give now	Not needed	Not needed	18 months of age
	1 previous dose	Previously given below one year of age	Give now	Not needed	18 months of age
		Previously given above one year of age	Not needed	Not needed	18 months of age
	2 previous doses	Previously given	Previously given	Not needed	18 months of age
15–59 months	0 doses	Give now	Not needed	Not needed	Not needed
	1 previous dose	Previously given below one year of age	Give now	Not needed	Not needed
		Previously given above one year of age	Not needed	Not needed	Give now** at least 8 weeks after last dose
	2 previous doses	Previously given	Previously given	Not needed	Give now** at least 8 weeks after last dose

* Hemophilus influenza type b conjugate vaccine (Hib) conjugated to Tetanus toxoid

** Give the dose at the age of 18 months or older if the pervious dose given at the age of 12 months or older

Table 3

Recommendations for Pneumococcal conjugate for children <5 years of age when doses have been delayed or missed

Age at attendance	Previous Vaccination history	1st dose	2nd dose	3rd dose	Booster dose
3–6 months	0 doses	Give now	1 month later	1–2 months later	18 months of age
	1 previous dose (given at least 4 weeks previously)	Previously given	Give now	1–2 months later	18 months of age
7–11 months	0 doses	Give now	2 months later	Not needed	18 months of age
	1 previous dose	Previously given	Give now at least 4 weeks after last dose	Not needed	18 months of age
	2 previous doses	Previously given	Previously given	At least 1month after last dose	18 months of age
12–23 months	0 doses	Give now	Not needed	Not needed	8 weeks after last dose*
	1 previous dose	Previously given below one year of age	Give now	Not needed	8 weeks after last dose*
		Previously given above one year of age	Not needed	Not needed	8 weeks after last dose*
	2 previous doses	Previously given	Previously given	Not needed	Give now or at age of 18 if the child is <18 months **
24–59 months	0 doses	Give now	Not needed	Not needed	PCV7/13- Not needed PCV10 (one dose 8 weeks after the1st dose)
	1 previous dose	Previously given	Give now	Not needed	Not needed
	2 previous doses	Previously given	Previously given	Give now** at least 8 weeks after last dose	Not needed

* Give the dose at the age of 18 months if the child is age is less than 16 months

** Not required if the previous 2 doses administered at age 12 months or older.

Table 4

Catch-up schedules and minimum intervals between doses for children whose vaccinations have been delayed and above age of 7 years

PERSONS AGED 7 YEARS THROUGH 18 YEARS		
Vaccine	Minimum interval Between Doses	
	Dose 1 to Dose 2	Dose 2 to Dose 3
Measles, Mumps, Rubella (MMR)	4 weeks	---
Tetanus, Diphtheria (Td)/ Tetanus , reduced Diphtheria, reduced Pertussis (Tdap)	4 weeks	6 months If first dose administered at 12 months or older
Hepatitis B	4 weeks	8 weeks (and at least 16 weeks after first dose)
Varicella (Var)	12 weeks (If person is younger than age 13 years) 4 weeks (If person is aged 13 years or older)	---
Poliovirus (IPV/OPV)	4 weeks	4 weeks
Human Papilloma virus (HPV)[i]	4 weeks	12 weeks (and at least 24 weeks after the first dose)

i Human papillomavirus vaccine (HPV):

- Administer the series to females at Grade 11 if not previously vaccinated or have not completed the vaccine series.
- Use recommended routine dosing intervals for series catch-up (i.e., the second and third doses must be administered at 1 to 2 and 6 months after the first dose). The minimum interval between the first and second doses is 4 weeks. The minimum interval between the second and third doses is 12 weeks, and the third dose must be administered at least 24 weeks after the first dose.

Appendix 5

Immunization After-care

1. Cover the site immediately with a dry cotton ball.
2. Gently apply pressure for 1 to 2 minutes.
3. Do not rub the site as this will encourage the vaccine to leak back up the needle track, which can cause pain and may lead to local irritation.
4. Remove the cotton wool after a few minutes and leave the injection site exposed to the air.
5. Paracetamol is not routinely used before or at the time of vaccination, but may be recommended as required for fever or pain.
6. To distract the individual and reduce distress, immediately change the position of the child/person after completing the vaccination, e.g. ask the parent/carer to hold the infant carefully and move around with them.
7. The vaccinated person and/or parent/carer must be advised to remain in a nearby area for a minimum of 20 minutes after the vaccination.
8. The area must be close enough to the immunization service provider, so that the individual can be observed and medical treatment rapidly provided if needed.
9. Take the opportunity to check the vaccination status of other family members (as appropriate) and provide (or refer) for catch-up vaccination.
10. Record the relevant details of the vaccines given in a record to be retained by the person or parent/carer, in the healthcare facility record and, HAAD immunization information system.
11. Before departure, inform the individual or parent/carer, verbally and in writing, of the date of the next scheduled vaccinations.

Appendix 6

The vaccination Schedule for Children and young adults at High Risk

Vaccine	Indication	Schedule
Seasonal Influenza (Flu)	▪ immunocompromising conditions ▪ Diabetes ▪ Chronic cardiovascular disease ▪ Chronic lung disease(including Asthma) ▪ Asplenia (including elective splenectomy and persistent complement component deficiencies) ▪ Chronic liver disease ▪ Kidney failure ,end stage renal disease, recipients of hemodialysis	- If a child under 9 years of age requires vaccination and has not previously received influenza vaccine, a two-dose series with doses one-month apart should be administered. - Annual re-vaccination in all individuals and initial vaccination in individuals 9 years of age or older require only a single dose. - Children aged 6-36 months should receive half the adult dose. - Using annual recommended vaccine formulation
Pneumococcal Conjugate 13-Valent/ polysaccharide 23 -Valent	▪ Immunocompromising conditions ▪ Diabetes ▪ Chronic Cardiovascular disease(except hypertension) ▪ Sickle cell anemia ▪ Chronic lung disease include asthma ▪ Asplenia (including elective splenectomy and persistent complement component deficiencies) ▪ Chronic liver disease ▪ Kidney failure ,end stage renal disease, recipients of hemodialysis ▪ Before or after a cochlear implant	- For children who have underlying medical conditions, a supplemental PCV13 dose is recommended through age 71 months - Administer PPSV at least 8 weeks after last dose of PCV to children aged 2 years or older with mentioned underlying medical conditions, including a cochlear implant - 6 through 18 years who are at increased risk for pneumococcal disease single dose of PCV13 regardless of their history with PCV7 or PPSV23
Haemophilus influenzae type b (Hib)	▪ The high risk group which include the following if they have not previously received Hib vaccine: → sickle cell disease → leukemia → HIV infection → who have had a splenectomy → Healthcare Professionals with unprotected exposure to the case's oral secretions	- Single dose if they have not previously received Hib vaccine.

Vaccine	Indication	Schedule
Hepatitis A	▪ Patients with Chronic liver disease ▪ Persons who receive clotting factor concentrates ▪ Outbreak control	- The minimum age to provide vaccine depends on manufacturer recommendation (either one or two years) - Two Doses 6-12 months apart
Hepatitis B	▪ Household contacts of Hepatitis B cases/chronic carries ▪ Post exposure immunoprophylaxis ▪ Patients with chronic liver disease ▪ Person beginning hemodialysis ▪ Diabetes Mellitus	- Three doses at, 0, 1, 6 months if they have not previously receive the vaccine
Meningococcal ACWY135	▪ Hajj and Umrah pilgrims ▪ Travelers to countries in meningitis belt ▪ Asplenia (including elective splenectomy and persistent complement component deficiencies)	- Meningococcal conjugate vaccine quadrivalent is preferred for children and young adults - Administer two doses of meningococcal conjugate vaccine quadrivalent ideally at ages 9 months and 12 months or at least 8 weeks apart with functional asplenia or persistent complement deficiencies. - For children with anatomic/functional asplenia, if MCV4-D (Menactra) is used, administer at a minimum age of 2 years and at least 4 weeks after completion of all PCV doses - Revaccination with meningococcal conjugate every 5 years is recommended to previously vaccinated with quadrivalent conjugate or polysaccharide who remain at increased risk of infection.
Rabies	▪ Persons with rabies-prone animal bite ▪ Travelers to high risk area (traveler who likely to get in contact with domestic animals particularly dogs and other rabies vectors)	- Pre-exposure: 3 doses at 0, 7, and 28 days, with periodic booster at 1 and 5 years. - Post-exposure: 4 doses two injections at 0 and one at 7 and 21 Days
Yellow Fever	▪ Travelers to countries in the Yellow Fever endemic zone	- Yellow fever vaccination is recommended for all travelers ≥ 9 months old in areas where there is evidence of persistent or periodic yellow fever virus transmission. - Single dose every 10 years

Note: The contacts will receive the vaccine as per HAAD contact definition in specified health care facilities in Emirate of Abu Dhabi