

EXPANDED PROGRAM FOR IMMUNIZATION (EPI)

By

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The Expanded program for immunization (EPI) is a preventive health program adopted by the world health organization (WHO) in 1974.

EPI strengthening the immunization program by:

1. Expanding the number of diseases to be covered.
2. Expanding the number of children and target population to be covered.
3. Later this was extended to cover the females in fertile age group with tetanus toxoid.
4. Farther expansion to include any diseases and any population

- **Vaccines used by EPI at 1974**

- BCG
- Polio.
- DPT
- Measles

- **Added later**

- Hepatitis B
- MMR
- Homophilus influenza type B

Objectives:

- To deliver an integrated immunization services through health centers as PHC service package.
- To achieve 100% coverage for eligible children.
- To develop a surveillance system which will collect adequate information on the disease preventable by immunization.
- To reduce the morbidity and mortality of major childhood diseases.
- To minimize the efforts and cost of treatment.
- To promote a new healthy generation.

Target:

- Immunization of children in age group of 0-1 year with basic immunizing agents (BCG, DPT, Polio, HBV and measles).
- Booster immunization with appropriate antigens (polio, DPT, MMR) at age of one and half year.
- Immunization of all women in the childbearing age (15-45) with tetanus toxoid.

Immunization and supplementation schedule in Egypt:

Age	Vaccine	Route	Dose
At birth	BCG OPV	ID Oral	0.1ml (0.05 mg) 2 drops
2 nd month	OPV Pentavalent*	Oral IM	2 drops 0.5 ml
4 month	OPV Pentavalent*	Oral IM	2 drops 0.5 ml
6 month	OPV Pentavalent*	Oral IM	2 drops 0.5 ml
9 month	OPV Vitamin. A	Oral Oral	2 drops One capsule (100,000 IU)
12 month	MMR OPV	SC Oral	0.5 ml 2 drops
18 month	OPV DPT MMR Vitamin. A	Oral IM SC Oral	2 drops 0.5 ml 0.5 ml 2 capsule (200,000 IU)

* Pentavalent: A combination of vaccines against diphtheria, tetanus, whooping cough, hepatitis B and Haemophilus influenzae type b (Hib).

Tetanus immunization schedule for women in childbearing period:

Dose	When to give	Percent of protection	Duration of protection
TT1	As first contact or as early possible during pregnancy	0%	0%
TT2	4 weeks after TT1	80%	3 years
TT3	6 months after TT2 or during subsequent pregnancy	95%	5 years
TT4	One year after TT3 or during subsequent pregnancy	99%	10 years
TT5	One year after TT4 or during subsequent pregnancy	99%	Life long

- The above five doses schedule will protect the women for life and would guarantee against Tetanus neonatorum in the newborn.
- The women who have already received five doses of TT do not need further doses in subsequent pregnancies.

Contra indications to vaccination:

- Fever, mild respiratory infection and other minor illness are not Contra indications to vaccination.
- Presence of malnutrition is also not a contraindication.
- Diarrhea is not a contraindication for OPV immunization, however the dose of OPV given during episodes of diarrhea should not be counted and another dose given at the earliest opportunity.

- Breast-feeding prior to or after OPV administration is not forbidden nor contraindication. Only avoid giving hot liquid or food for $\frac{1}{2}$ hour after OPV
- Tuberculin testing is not required prior to administration of BCG till the age of 12 years.
- Listening too many contraindications may leave many children unvaccinated and if ill or malnourished, they are more likely to die from a vaccine preventable disease.

Strict contraindication include:

- Very ill children who need hospital admission.
- BCG is contraindication in AIDS and immune deficiency diseases.
- Pertussis component of DPT is contraindicated under the following conditions.
 - Children with neurological disorders.
 - Severe reactions to previous DPT dose.
 - Children over the age of five years.

Strategies of EPI:

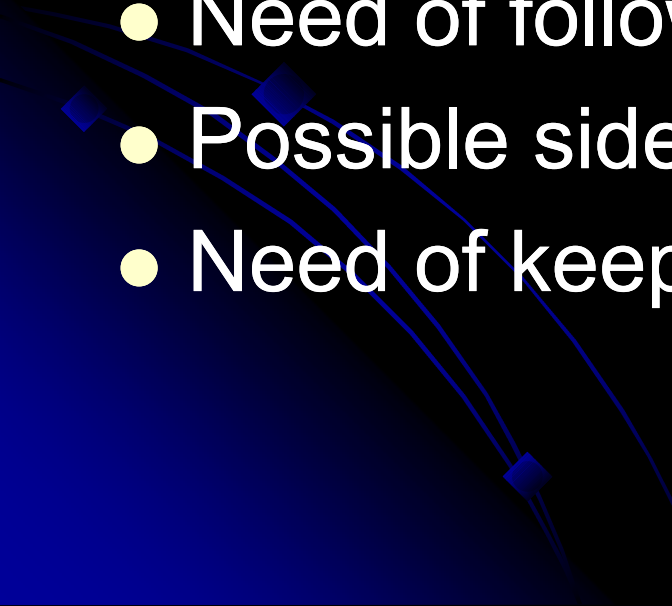
- Integrate vaccination sessions with PHC services.
- Appropriate measure to expand vaccination coverage of eligible population.
- Ensuring regular supply of potent vaccine.
- Safe guarding vaccine potency by strengthening cold chain.
- Developing of feasible and reliable surveillance system
- Training of health personnel.

Strategies of EPI:


- Promotion of community participation.
- Incorporating health education activities related to EPI.
- Ensuring logistic support.
- Introducing a system for continuous monitoring.
- Undertaking operational research to find out deficiency and difficulties in the program and suggest methods for improvement.

Health education in immunization sessions:

Mothers accompanying the children for immunization should be educated as a routine regarding in:

- Importance of immunization.
 - Need of follow up visit.
 - Possible side effects.
 - Need of keeping immunization card.
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Importance of record in immunization program:


- Monitoring of program progress.
 - Verification of schedule completion.
 - Identification of defaulters.
 - Comparing with EPI related disease situation.
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What damages vaccines:

- **Heat:** Polio, measles, MMR, vaccines.
- **Sunlight:** BCG, DPT.
- **Chemicals:**
 - Disinfecting and antiseptics, including spirits, are damaging to vaccines.

The site of injection should be left for a while after sterilization with alcohol to dry before injecting the vaccine.

What damages vaccines:

- **Time:** All vaccines lose their potency after certain time. This is recorded on the vaccine as expiry date.
 - **Reconstitution:** Reconstituted vaccines like (BCG, measles, MMR) are damaged after few hours from reconstitution.
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Vaccine handling and storage:

- Assign one person to be responsible for the vaccine handling and documentation.
- Educate the personnel and place the standard procedures for storage and handling beside the vaccine refrigerator.
- A thermometer should be located at the center of the storage compartment.

Vaccine handling and storage:

- Keep temperature record of the refrigerator. Record temperature daily on the morning and at the end of vaccination session.
- Vaccines taken out but not used should be kept in a special container in the refrigerator.
- Equip the refrigerator with several bottles of cold water.

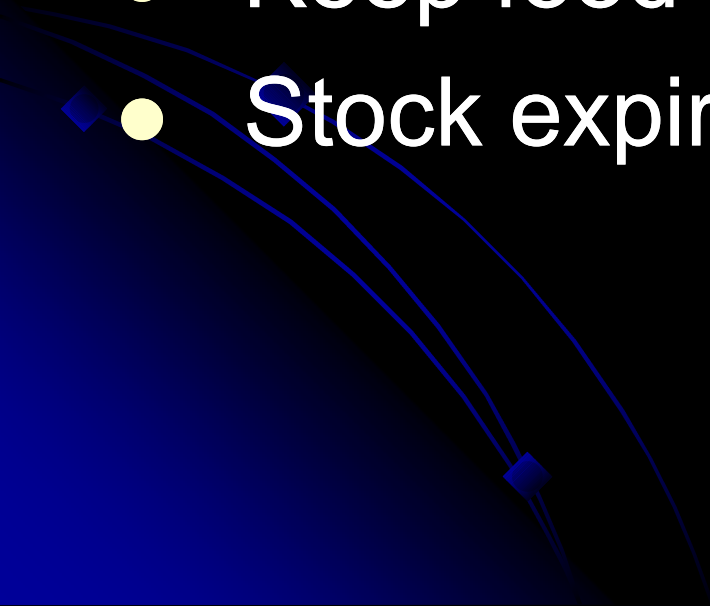
Vaccine handling and storage:

- Put cold chain card monitor.
- Remove expired vaccines from refrigerator.
- During vaccination session, keep the vaccines required in a container with ice.
- MMR, Measles and OPV below the freezer (upper shelf) and BCG and HBV next then DPT in the middle compartment.



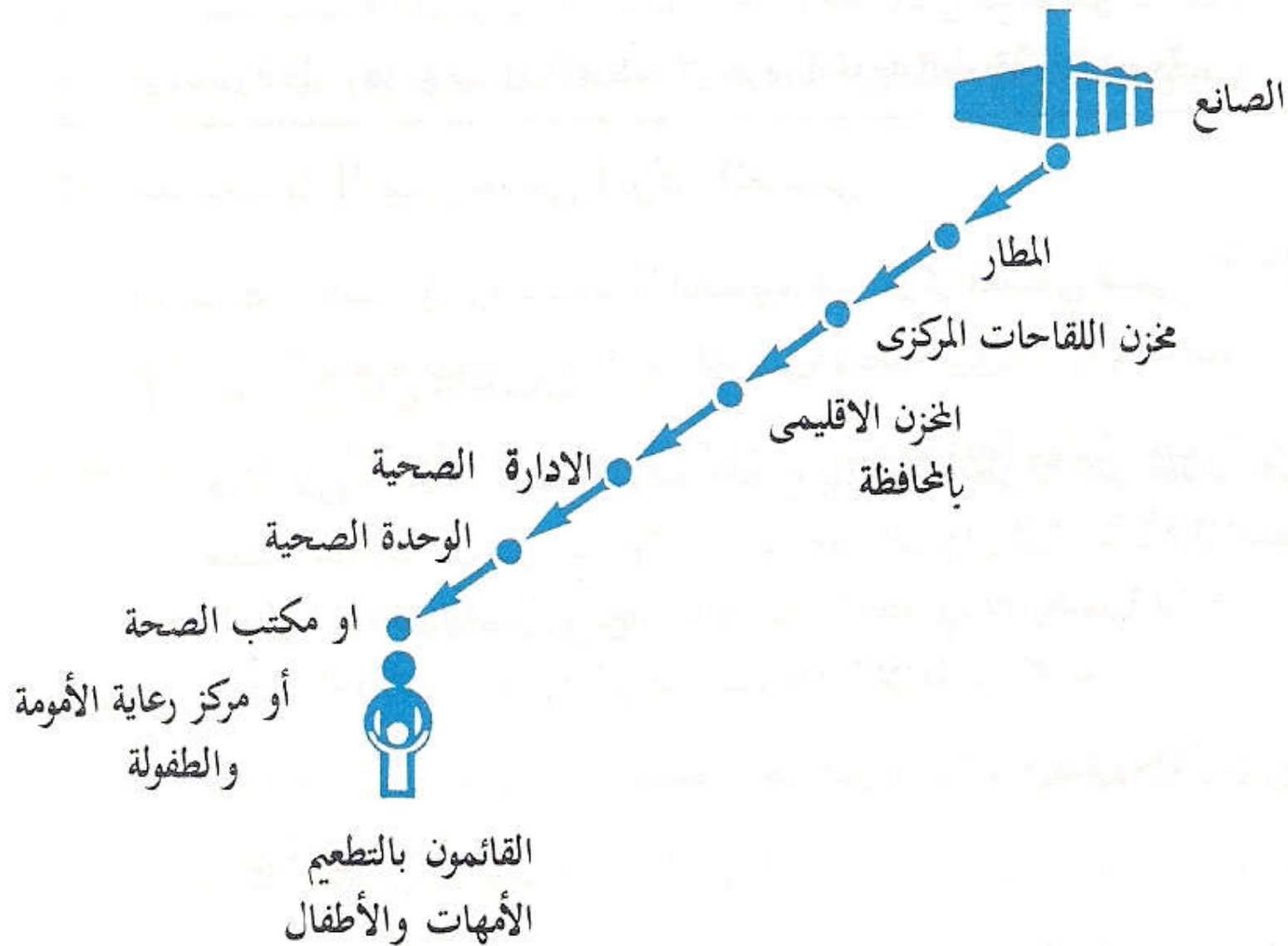
Vaccine handling and storage:

Do not:

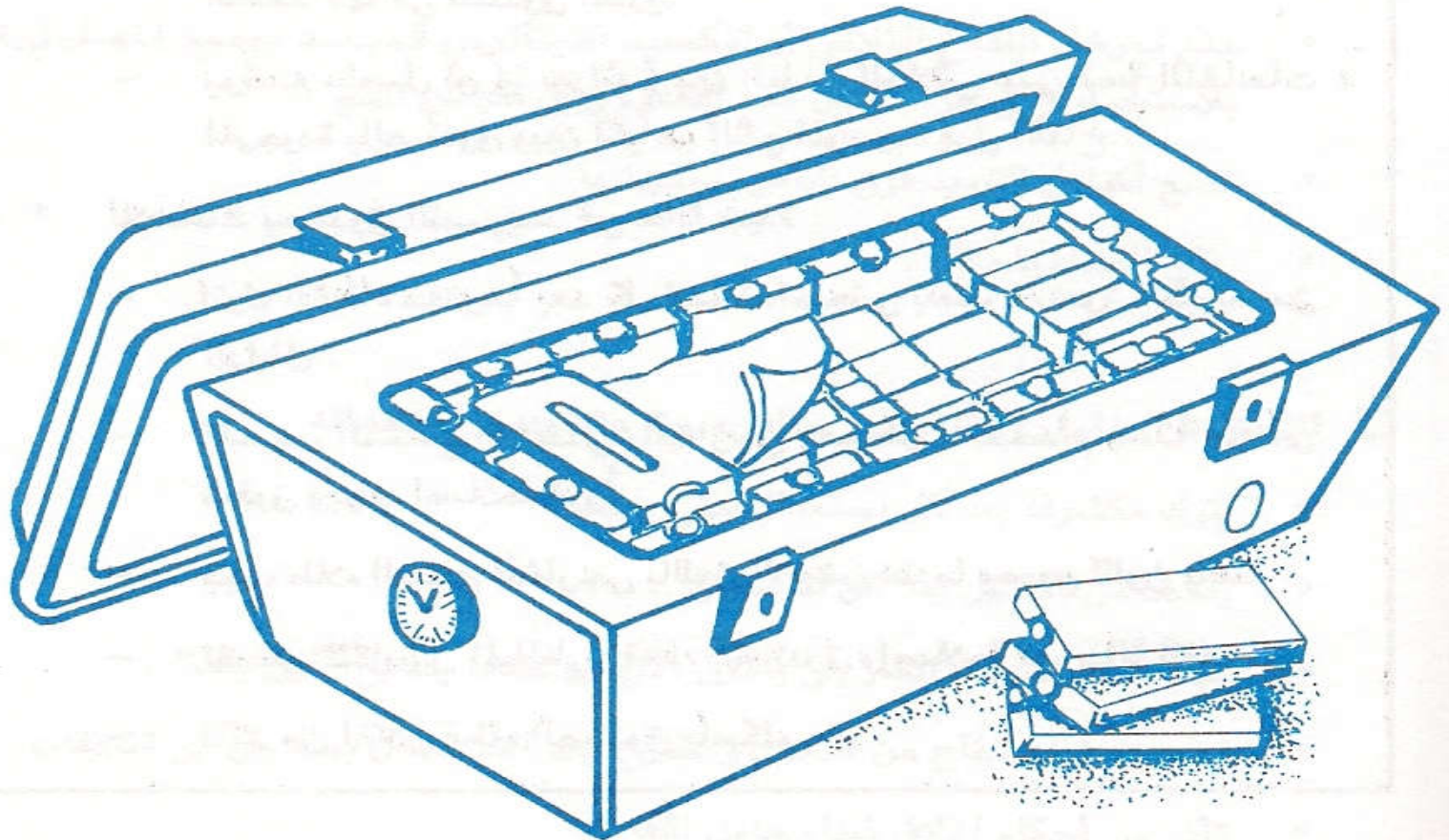
- Store the vaccine in the door.
 - Open the door frequently.
 - Keep food & drink in refrigerator.
 - Stock expired date vaccines
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What is the cold chain:

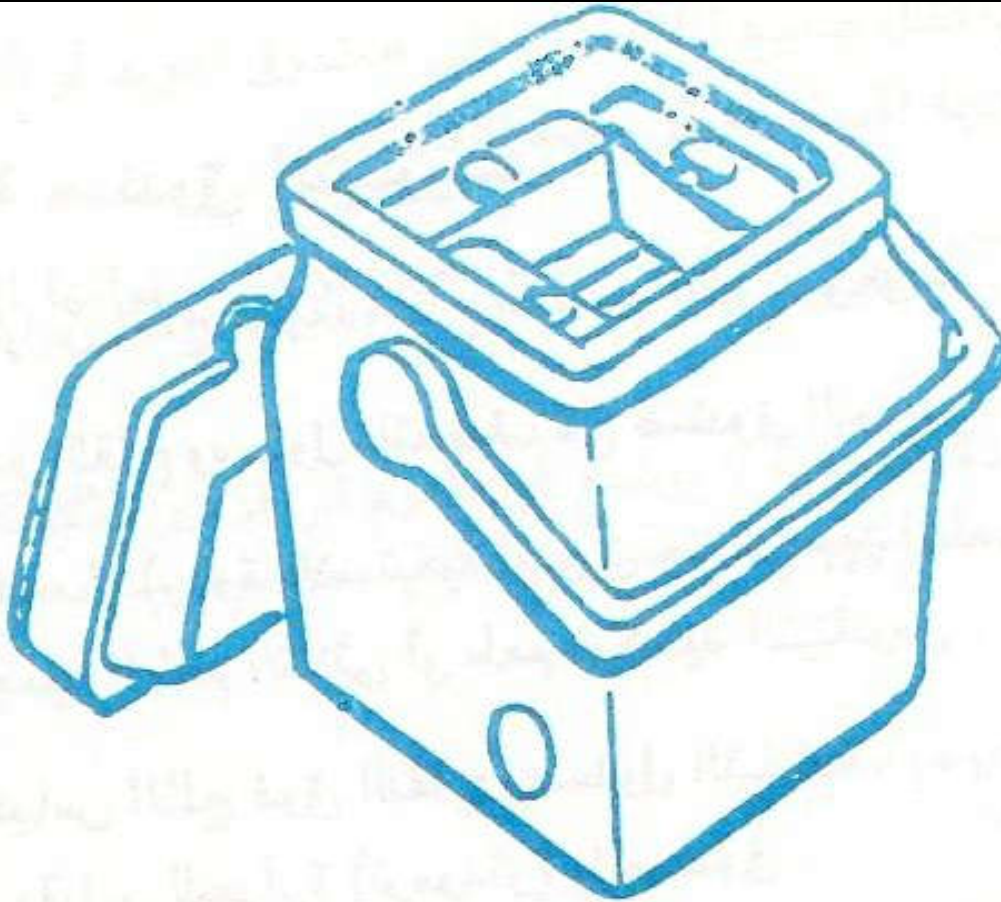
- It is a system of storage and transport of vaccines at low temperature (0-8°C). The cold chain system is necessary because vaccine failure may occur as a result of not storing or transporting them under strict temperature control.
- **Cold chain equipment at health center consist of:**
 - Cold box.
 - Vaccine container.
 - Ice packs.
 - Refrigerator.



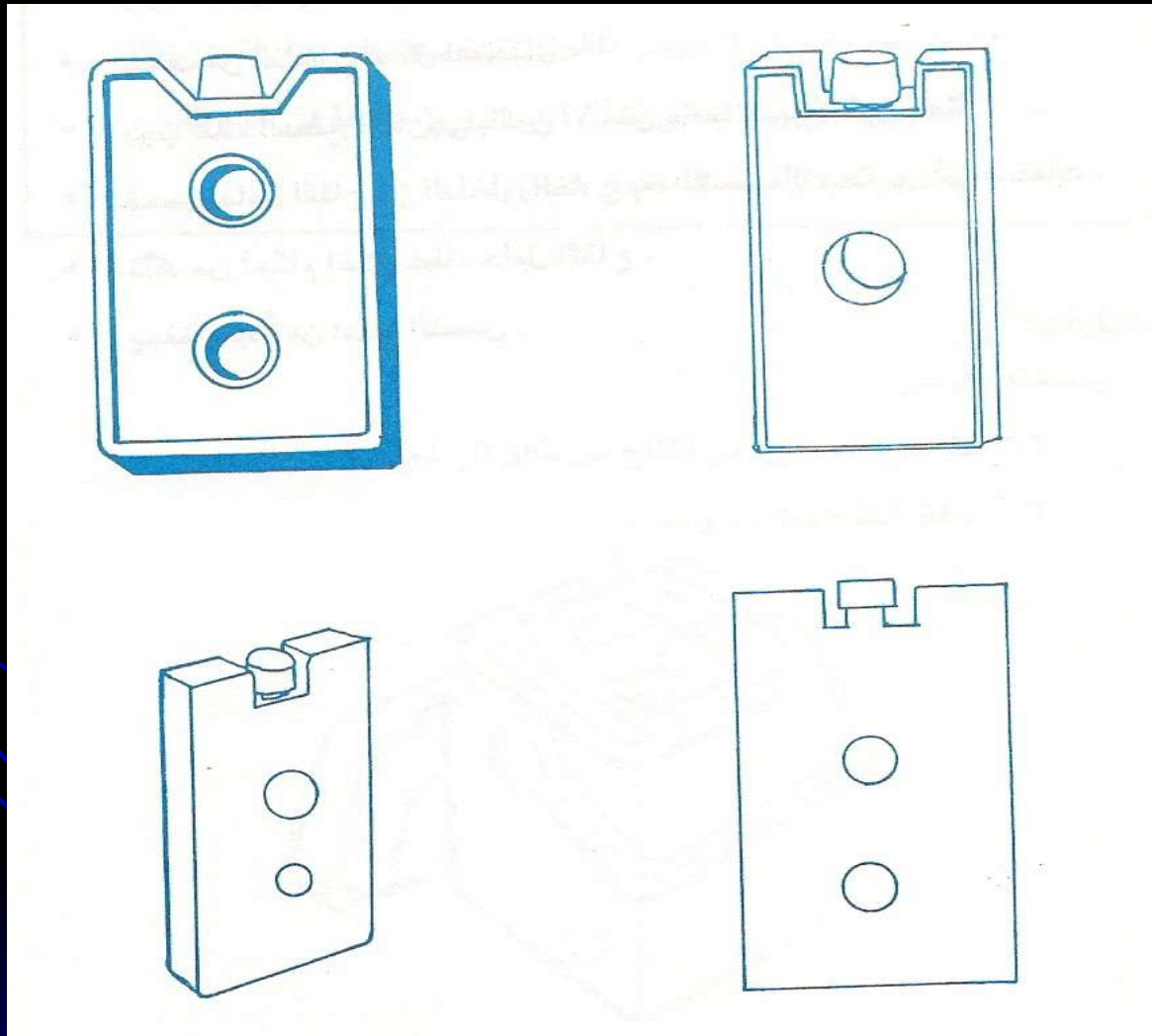
Cold box



Vaccine container



Ice packs.



Cold chain monitor:

- This is very useful device to detect any exposure of vaccine to high temperature, and also indicates the duration of exposure to such variations.
- It should accompany every pack of vaccine and should continue to stay with that pack, till the last dose of vaccine is used.
- It consists of paper stripes with windows specially treated with color labile chemicals (chemicals sensitive to temperature changes which change the color depending on the degree and duration of exposure) to respond to changes in temperature over different period of time.

اكتب هنا تاريخ ورود
اللقاح إلى المخزن

اكتب هنا الدليل الوارد

اكتب هنا اسم المخزن

اكتب هنا تاريخ صدور
اللقاح من المخزن

اكتب هنا الدليل الصادر

اقرأ الدليل

منظر سلسلة تبريد اللقاحات

الدليل	تاريخ الصدور	المكان	الدليل	تاريخ الورد

3M	INDEX / INDICE / دليل	10°C	34°C
MonitorMark™	A	B	C
Indicator	D		

إذا أزقت الفتحة A بكاملها	إذا أزقت الفتحة B بكاملها	إذا أزقت الفتحة C بكاملها	إذا أزقت الفتحات A و B و C بكاملها
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شغل الأطفال	يستخدم خلال ٣ شهور	اختبر القاح قبل استعماله
الحصبة	يستخدم خلال ٣ شهور	
اللقاح الثلاثي (ب ث ج)	يمكن استخدام هذه اللقاحات	
نوفان الكزاز واللقاح الثنائي		

الاسم: _____

تاريخ الارسال: _____

اللقاح: _____

المورد

الجزء الخاص بالتسجيل يقوم بملئه
العامل الصحي

الدليل

دليل لما ينبغي عمله باللقاحات التي
تعرضت للحرارة

معلومات عن اللقاح

تزرق الفتحات A و B و C
عند درجة ١٠°م، ويترك
القرص D عند درجة ٣٤°م

يكتب مورد اللقاح معلومات
عنه هذا

احتفظ بمنظر سلسلة التبريد مع لقاحك

عند ورود الضابط

املا الجزء العلوى من البطاقة

- اكتب التاريخ
- املا الدليل (-, A, B, C, و/أو D)

- املا خانة المكان

عند صدور الضابط

املا الجزء العلوى من البطاقة

- اكتب التاريخ
- املا الدليل (-, A, B, C, و/أو D)

تعليمات بشأن كيفية استخدام المنظر

إذا كانت الفتحات A و B و C و D بيضاء جميعها، تستخدم اللقاحات كالمعتاد.
إذا كانت الفتحات A إلى C زرقاء تماما، بينما لا يزال القرص D أبيض، فمعنى ذلك أن اللقاح
تعرض لدرجة حرارة أعلى من 10°C ، ولكن أدنى من 24°C م لعدد من الأيام كما يلى:

	الدليل		
	A	A و B	A و B و C
في درجة حرارة 12°C م	٣ يوما	٨ يوما	١٤ يوما
في درجة حرارة 21°C م	يوما	٦ يوما	١١ يوما

إذا كان القرص D أزرق، فمعنى ذلك تسرب درجة حرارة أعلى من 24°C م، إلى سلسلة التبريد
مدة ساعتين على الأقل. عندئذ قم بفحص سلسلة التبريد.

لا تطبق التعليمات "يستخدم خلال ثلاثة أشهر"، إذا كان تاريخ انتهاء الصلاحية أو أى سياسة
محلية لسلسلة التبريد يقتضيان مرور مدة أقصر قبل استعمال اللقاح أو التخلص منه.

معلومات عن خصائص بطاقة المنظر من
حيث الوقت ودرجة الحرارة

Vaccine Vial Monitor



Stage 1 = good:
Utilize

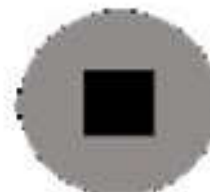


Stage 2 = good:
Utilize

The central square is lighter
than the surrounding circle



Stage 3 = bad:
Don't Utilize



Stage 4 = bad:
Don't Utilize

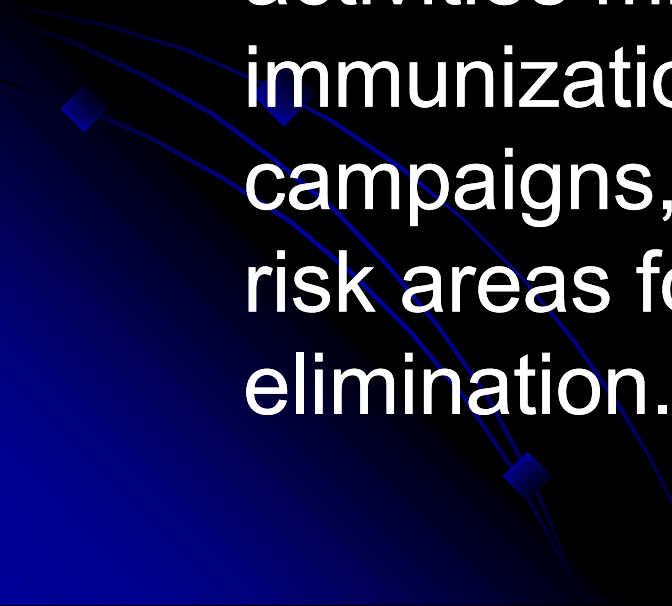


The central square is equal to, or
darker than the surrounding circle

Process indicators of vaccination program:

- **Immunization coverage:** most often presented as a proportion of the target population vaccinated. It is the key indicator of immunization service delivery.
- **Disease incidence:** is the measure of the impact of immunization programs. While reported cases represented only a fraction of actual number of cases occurring. These data may be used to monitor trends in diseases occurrence.

Process indicators of vaccination program:

- **Implementation of activities based on a strategic plan:** is recommended to make efficient use of resources while achieving programmatic goals. Such activities might include national immunization, urban measles campaigns, and the identification of high risk areas for neonatal Tetanus elimination.
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Thank you