SUMMARY

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Many factors outline the strategy of immunization. The first requirement is for a national administrative organization that have responsibilities for carrying out planned immunization programmes and to review it periodically.

Safety is another factor where coordination of responsibility is of paramount importance.

Other factors play a vital part, such as financial provision for the enterprise, training of vaccinators, the use of simple and effective methds of vaccination and, above all, a system of surveillance to monitor the effect of vaccination.

Immunization can be defined as an effort to prevent or modify natural infection by administration of an antibody or an antigen.

Immunization can be achieved by either of two ways :

1- Passive immunization by administrationof antibody which give temporary protection lasts as long as the antibody survives (haltlife about 3 to 4 weeks)
2- Active immunization by administration of antigen which is intended to provide permanent immunity by stimulation of the individuals own immune system to produce antibody.

So active immunization can be achieved through vaccination. To be effective, a vaccine should not induce a simple immune response but it must evoke the quality and quantity of the immune response sufficient for effective resistance to the virulant agent.

Most vaccine schedules are determined by trial and error until an appropriate dose is selected.

The epidemiologic factors of the disease help to determine the timing of vaccine administration.

Vaccines are often combined to facilitate immunization.

Contraindication to vaccine administration include those conditions which are associated with high risk for replication of viruses. such as immunodeficiency conditions, certain skin diseases. Eczema, burns and allergic diseases.

The decision to use a vaccine should depend on a balance between the need for the vaccine and the risk of the vaccine. These general prineiples are particularly important in the evaluation of the indications for use of new vaccine.

The Need factors are :

- Severity of disease.
- Probability of exposure.
- immune status.
- Alternatives.
- Effectiveness of vaccine.

The risk factors are :

- Reactions to vaccine.
- ineffective vaccine.
- Host immunity defect.
- Postponement to worse time.
- Contamination.

The balance between need and risk may be shifted by changes in these factors, so that routine use of a vaccine may be discontinued.

The need and risk factors are also important in explaining to parents about the need for vaccines.

Unfortunately immunization frequantly fails at the village level either because of ignorance or indifference of the villagers or because the health services do not make vaccine available regularly. So often vaccines do not reach the village because of lack of transport. Another difficulty is that of maintaining the cold chain between the vaccine manufacturer and the village.

Vaccines are heat and light sensitive biological substances. Their efficicy depends on the production of potent vaccines in the first place and their supsequant correct storage.

So, the cald chain is the name given to the system used for storing and distributing vaccines in a potent state from the manufacturer to the person being immunized. It is a

supply system which is particularly critical because vaccines are spoiled by heat.

Each of the six obligatory vaccines in Egypt which giving as a primary and booster to the children in their 1st year of life had discussed in details. Which include, polio, Measles, Diphtheria perlussis, Tetanus and B.C.G. vaccines.

vaccination in Egypt began 1890 i.e. about a century age, with vaccination against Smallpox. So Egypt is considered as one of the leading countries in the application of public health measures.

In Egypt, the Expanded programe of Immunization (EPI) is fully integrated into the primary health care (PHC) and the services are being provided through 8its PHC workers.

The following is the schedule of immunization which had been stated as the routine one in Egypt for the infant and children in the 1st 2 years of life according to the order of the ministry of health in 1984.

	Age	vaccine	Route & Remark.
Primary	1st 3 Months	B C G	Intradermal
	2 M	Polio (sabin) DPT	oral } 1st dose. I M }
	4 M	Polio DPT	oral } 2nd dose. I M }
	6 M	Polio DPT	oral } 3rd dose. I M }

	Age	vaccine	Route & Remark.
	At 12 M	Measles	subcutaneous
Booster	18 - 24 M	Polio DPT	oral I.M.

Vaccine failure can be defined as the occurance of unmodified natural disease in vaccinated individuals. P.

It can be one of the following : 1- Failure to include all important antigens in the vaccine as has been observed in pertussis and influenza. 2- Inadequate preservation or freezing, as has been observed for measles and smallpox vaccines. 3- failure of vaccine virus infection because of the presence of antibodies in the person being immunized, as has been observed after measles immunization in the first year of life. 4- Loss of protection after a number of years, asmay occur after smallpox vaccination. 5- In case of polio vaccination other causes has reported to be the causes of vaccination failure such as . Failure to vaccination and persence of enterovirus or shigella infections can interfere with the uptake of the vaccines. Some factors which increase the risk of infection include the use of non municipal water supply or sharing the toilet with other families.

In Egypt there are a group of problems which play a role in vaccination failure include the following :

- Improper storage of vaccines.
- Improper packing of vaccines.

- Shortage of Immunization Equipment e.g. syringes and suitable sterilizers.
- Acute lack of supervision and training at all levels and especially the governorate, district and health centre levels.
- Vaccination coverage is very lower and the causes of this low coverage rate can be summarized in the following :
  a- lack of information.
  b- Obstacles such as : vaccines are not available on a regular basis, long distance to vaccination centre and the plastic syring not available especially formeasles vaccination.
  c- Lack of mativation.