A study of cold Chian and new Vaccines which have appeared in the last five years against inaeectious disease review

Mohamed Farid Ebrahim Nada

In tropioal oountries with comprehensive immunisationprogrammes. vaccination tea.ms often wOl’k ino high ambient temperature that mayreach 400 or evenmore. Scinoe vaccines quiokly lose their potency ifstored or transported under such eonditions. it isessenoial to maintain uninterrupted coll ohain frommanufacturer to user. (WhO 1979).So the cold ohain is a system for distributingvaocine in a potent state from the manufacture.. to theactual vaocination site. ”(’here are two essential elementsfor the cold chain system.-1- People to manage the vaccine’s distributio~.2- Equipment to store and transport vaccine.The cold ohain system oonsists of a series oftransportation links during whioh adequate refrigerationis required to maintain vaccine potency. Theselinks are summarised as follow:-Manufacturer ----~ airport ----~ central store--ihealth oentre {-- district store ~-- regional store ~-~~ vaocinator (mother and child).To manage the cold ohain system certain ~ctivities~~should be adequatly performed throughout the lepgth of95 -The cold chain. these are IObta·’n vaCCinesJ4aintain equipment~a’il’ tain vaccines.Every vaccine require. adequate refrigerationduring it~s transportation to maintain it’s potencyas shownin the following table.1/ oX CO if og, 11001) Vaccinator And the cold oha.il’}-;-The primary responsibilities of the vaccinator;-a) obtain vaccines from the heulth centre.b) Maintain equipment which are available forhis use. They are The cold boxThe vaccine carrier!rhe flask.c) Main tain vaccines ;-the vaccinator must take great Ca2’e not to exposethe vaccine to heat and sunlight.2) Health centre and the cold chain:-The major duties of the manager ’l.r~:a) Obtain vaccines from the regional or distriotstore. He must estimate hiS amount ofvaccine depending on his previous experience ordepending on the number of ohildren and thetotal population living in the area ~o bevacoinated.b) I4a1ntain equippi8nt • which are: -The vaccine carrierThe cold boxThe refrege~ator and freezer. which areof 2 type,. . ;-1) absorption ,ype (powered by Kerosent. bottledgas pr electricity).2) compressio~ type (powered by electric~ty)98 -0) Maintain vaccines thro~ storing it in theretregerator in it’s sutable temperature.J) Distriot/ Regional Store And The Cold Chain :-.a;::==_==:==c:.c;;;:;;=a==_’:==_.ll: •• c_===::===a:z===·===;:;:;:::;The manager’s primary duties are Ia) Obtain vaccines from the oentral store.b) Maintain equipment. whioh areThe refregeratorThe cold boxThe vaccine carrier.C) Maintain vaccines Ithrough the contrel of temperature and timein whioh the vaccine is stored.4) Central store And

Cold Chain IThe manager’s responsibilities are Ia) Obtain vaccines ~rom the manufacturers ”ftercaloulating the national vaocine req~rements.b) Maintain equipment whioh are the cold rOR!lls0) Maintain vaccipes: by distributing the~ beforethe passage of their expiration date.5) Airport and the cpld chain l-It become an important link in the oold qhainJoining the vaoci~ manufacturer and the oen”ralstore.- 99 -The aim of immunisation in infancy and childhoodis to build up resistance in the child againstinfectious disease in advance. (Abbassy 1983).All children should receive immunisation duringthe first year of life against diphtheria, pertussis,tetanus (DTP) and polio~elitis. To ensure betterantibody response, measles, rubella and mumps vaccineshould not be given until about 15 mouthsunless there is measles epidemic.DTP and TOPV should be given again (boosterof agedose) at the age 18 months and 4 - 6 y. At 14-16,yeurs TD is given alone wixhout pertussis vaccinebecause of it’s complications which are worse thanthe disease.All children to be vaccinated against infec~iousdiseases should -have preliminary medical exami.>ation ’c/:for the purpose of discovering any contra inqicationsuch as acute infectious disease, any pyrex~a, acutegastroenteritis,nephritis, heart failure, activ~ T. B.or rhumatism, diabetes, eczema etc.If the child has an active clinical or subcLsinicalentric virus infection and is given ora+ly anattenuated entric virus like the live polio. v~ccineinterference takes place and no or little antibcdiesagainst polio. are thus elaborated. Under such circumstances”Salk” polio. vaccine by the I. M. route shouldbe administered and later on the live oral vaccinemay be given. Complications may follow theadministration of BeG vaccine. chief among which are.a) Persistant ulcer at the site of vaccination,b) Regional suppurative ly mphadenitis,c) Marked lymphadenitis with cold abscess and T. B.sinus. and.d) Generalised B. C. G. infection especially in infantwith deficient immune mechanisms:Certain new vaccines which have appeared in thelast 5 years - against infectious diseases. and nowavilable for use such as.1) Hepatitis B vaccine’(Heptavax - B)The licensure of an inactivated hepatitis B vaccinewas in Nov. 16. 1981.It is indicated to.Health care personnel.Selected patients in - hemodialysis and hematologyoncology units.Children with thalassemia and hemophillia.Residents anc staff of institutions for mentallyhandicapped and their classroom contacts.Household contacts of carriers.Classroom contacts of carriers.Homosexually active males.Prisoners.Prostitutes.Certain military personnel.Users of llicit drugsInfants and young children in high risk areas.2) Meningococcal vaccines;-vaccines against epidemic forms caused by meningococciof serogroup (A) and (C) have proved effectiveSerogroup (C) vaccine is recommended in addition torifampin in prophylaxis for children - 2 years of age andabove-who are exposed within the household or day-carenursery to a confirmed c&se of serogroup (C) lr.iningoocj’ccal disease.While serogroup (A) vaccine is recommended i~ additionto rifampin in prophylaxis for children ~ 3 lllonthsage and above-who are exposed within the householdor day-care nursery to a confirmed case of serogroupU) miningococcal disease.3) M. M. R. (combined trivalent vaccine agains~ measles,mumps, and rubella).M.M.R. Should be given at 18 months and 12years of age.All the clinical reactions which occurs followingthe administration of the triple vaccine are no greaterthose obtained when measles vaccine is given alone.Contra-indications to M.

M. R. are I Pregnancy. immunodifiencyor therapeutic immunosuppression and acutefebrile illness.4) Haemophilus influenzae type b. vaccine.H. influenzae b is an important cause of meningitisin the neonates. infants and children. So it’svaccine is -indicated in addition to rifampin forchildren under 4 years of age who are family con I -c t s OT’ .nursery school and day-care centre contactsof’ individuals with H. influenzae b disease.5) Influenza vaccines I These are:Split and subunit vaccinesInfluenza immunisation in Air force Recruits.Intranasal influenza vaccine.IndicationsInfluenza vaccines should be given to childrenat high risk from infections of the lower respiratorytract.Examples include children with susceptabi~ity topulmonary infeotions from oongenital or acquiredheart disease (such as loft to right shunts) disordersthat comprOmise pUlmonary function including cystic fibrosis,severe asthma, neuromuscular and orthopedicconditions that distort or weaken the thoracic cage,and pUlmonary dysplasia as a consequence of theneonatal respiratory distress syndrome, chronic azotendcrenal disease or the nephrotic syndrome, diabetesmellitus, and chronic severe anaemia such asthalassemia or sicklemia.