

Vaccine supply seminar, 8 December 2003

Global production and availability of vaccines

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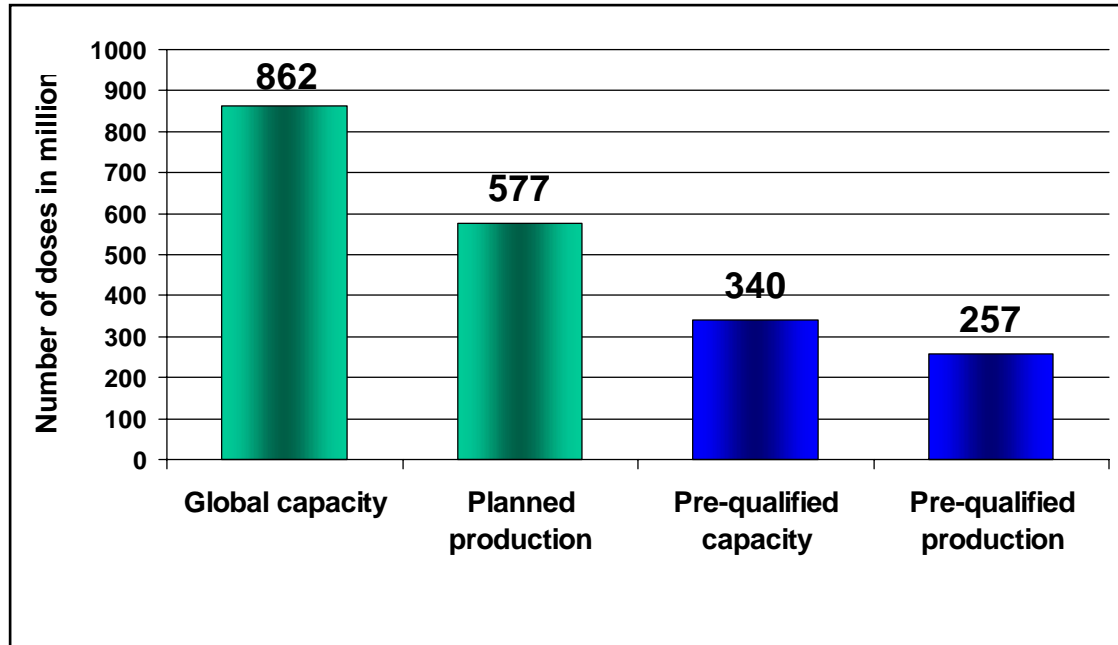
Global production

Vaccine production capacity database

- ◆ Total number of manufacturers: **98**
 - ◆ **66** we have regular updated production capacity information
 - ◆ **43** were visited
 - ◆ **28** we have their plans for the next 5 years
- ◆ Total number of vaccine in database: **36**



BCG production capacity-2003

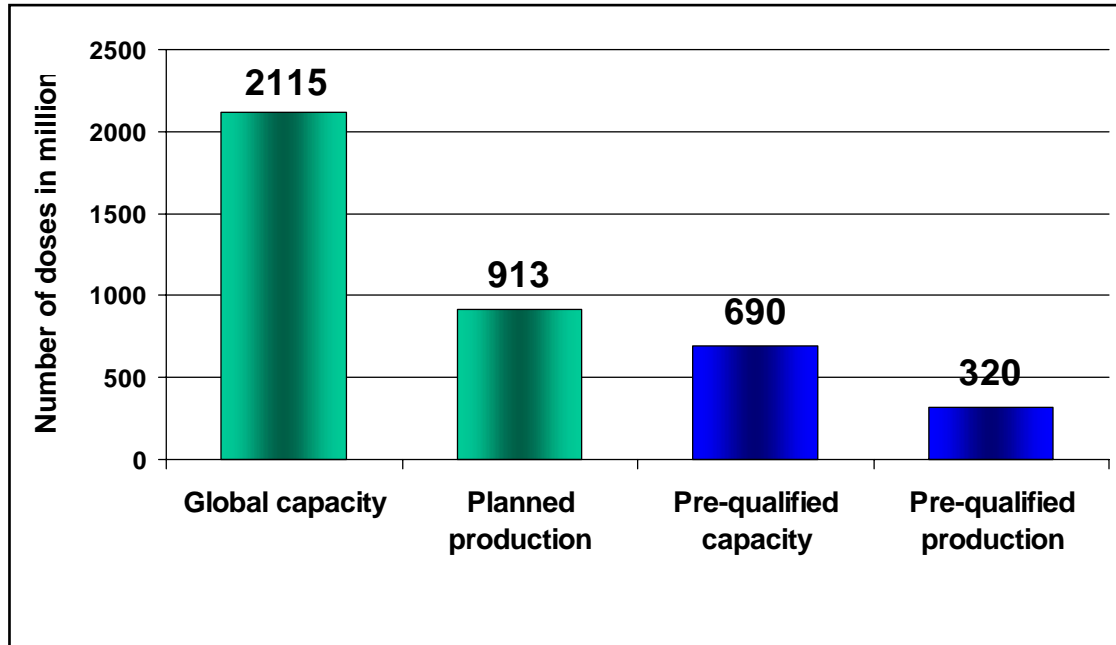


- ◆ **18 manufacturers**
- ◆ **4 pre-qualified**
- ◆ **44 % of current production is pre-qualified**

- ◆ **Bacterial vaccine production**
- ◆ **Old technology, relatively easy production**
- ◆ **Very low price, small international market**
- ◆ **Large capacity for local market. China, India, Brazil, Indonesia.**
- ◆ **Moderate capacity for international market**



DTwP/DT production capacity-2003

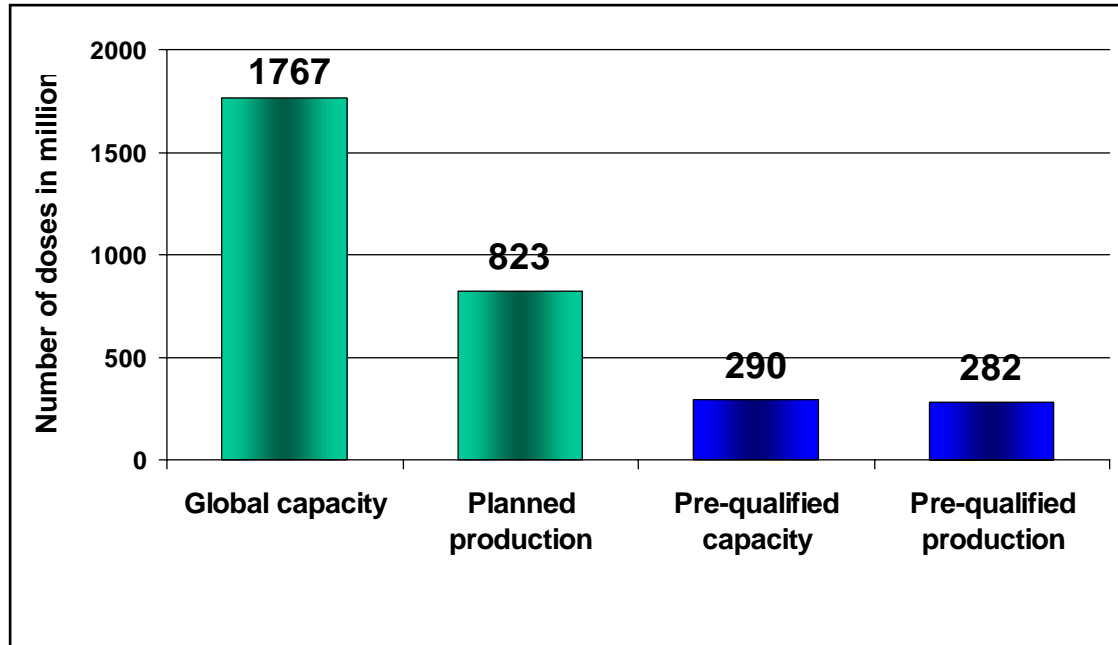


- ◆ **31 manufacturers**
- ◆ **9 pre-qualified**
- ◆ **35 % of current production is pre-qualified. Concentrated in 2 suppliers**

- ◆ **Bacterial vaccine production**
- ◆ **Old technology, relatively easy production**
- ◆ **Very low price, small international market**
- ◆ **Large capacity for local market, India, Indonesia, China, Brazil**
- ◆ **Part is used for DTwP combos**
- ◆ **Less than 50 % is used, India and China**



TT production capacity-2003

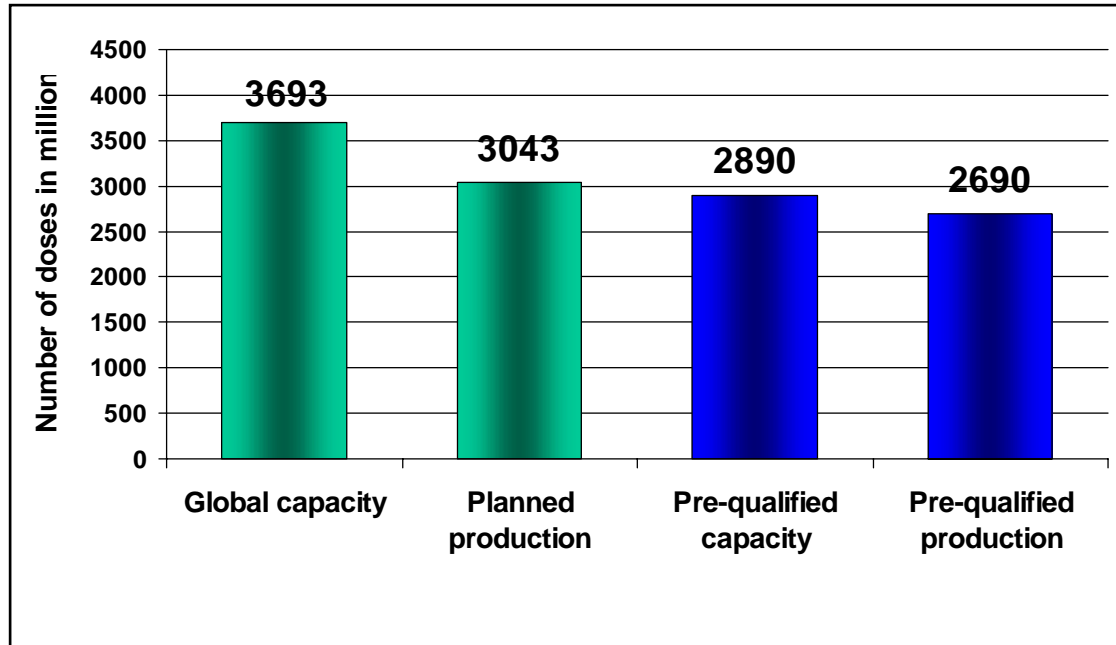


- ◆ **30 manufacturers**
- ◆ **4 pre-qualified**
- ◆ **16 % of current production is pre-qualified**

- ◆ **Bacterial vaccine production**
- ◆ **Old technology, relatively easy production**
- ◆ **Very low price, small international market**
- ◆ **Large capacity for local market**
- ◆ **Less than 50 % is used, India and China**



OPV production capacity-2003

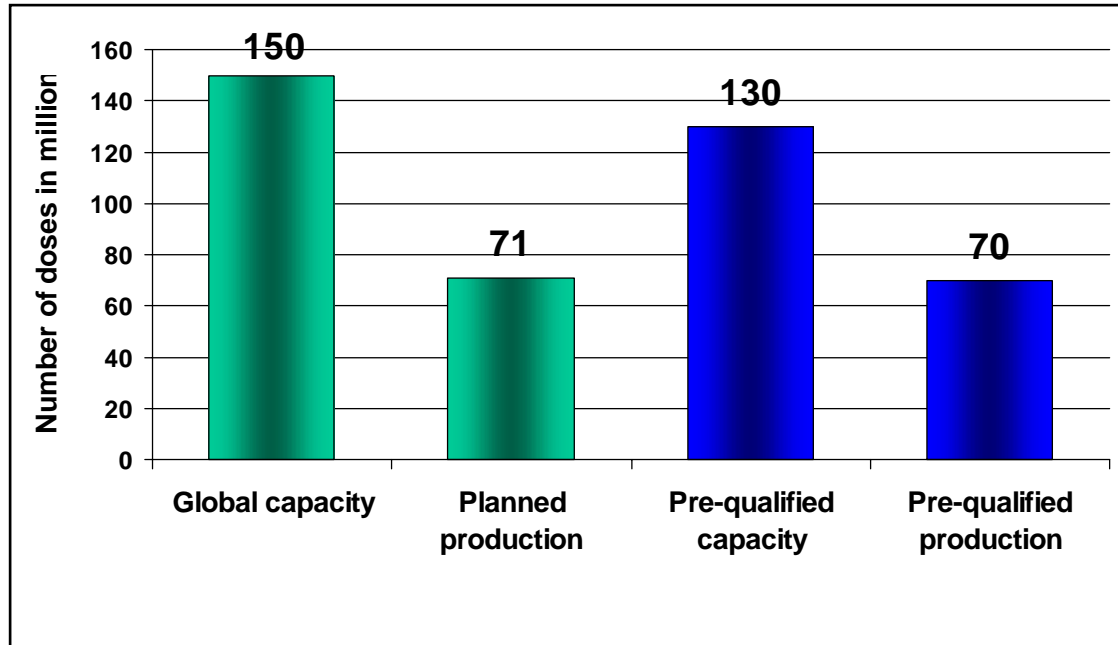


- ◆ **20 manufacturers, 50 % are fillers**
- ◆ **4 pre-qualified bulk and finished**
- ◆ **1 pre-qualified filled vaccine**
- ◆ **78,5 % of current production is pre-qualified**

- ◆ **Viral vaccine production**
- ◆ **Old technology, but not easy to produce in large scale**
- ◆ **Very low price, but very high and secure international demand**
- ◆ **Large capacity for local and international market**



YF production capacity-2003

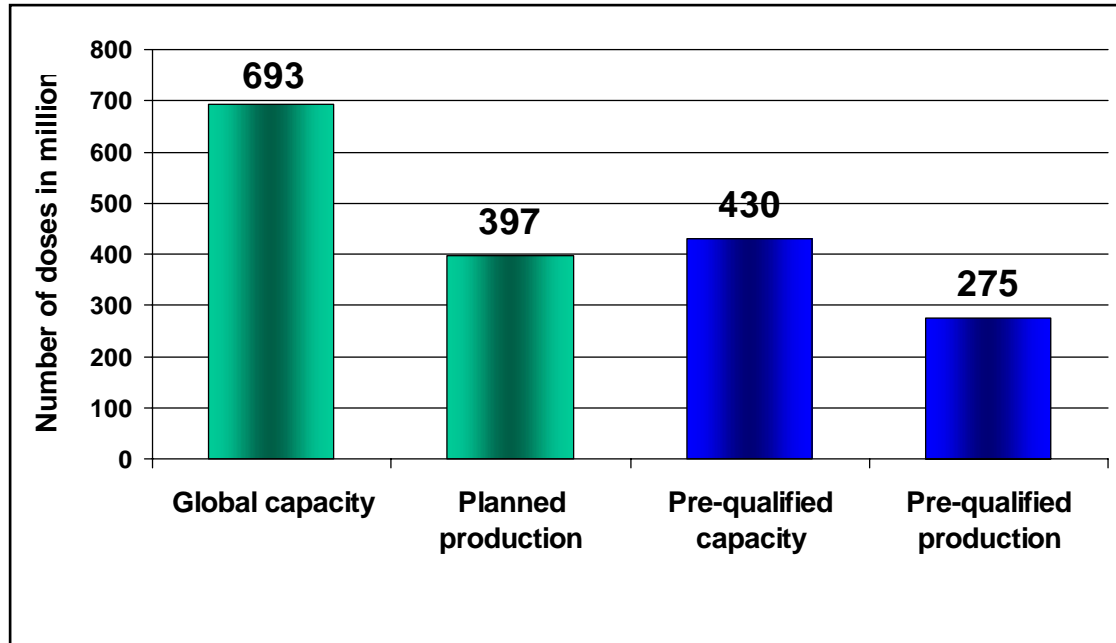


- ◆ **8 manufacturers**
- ◆ **4 pre-qualified**
- ◆ **99 % of current production is pre-qualified**

- ◆ **Viral vaccine production**
- ◆ **Relatively old technology, not easy to produce in large scale, freeze drying limitation**
- ◆ **Low price, low demand, small market**
- ◆ **Moderate capacity, but in large dose presentation**
- ◆ **Supply risk if mfrs decide to reduce the size presentation**



Measles production capacity-2003

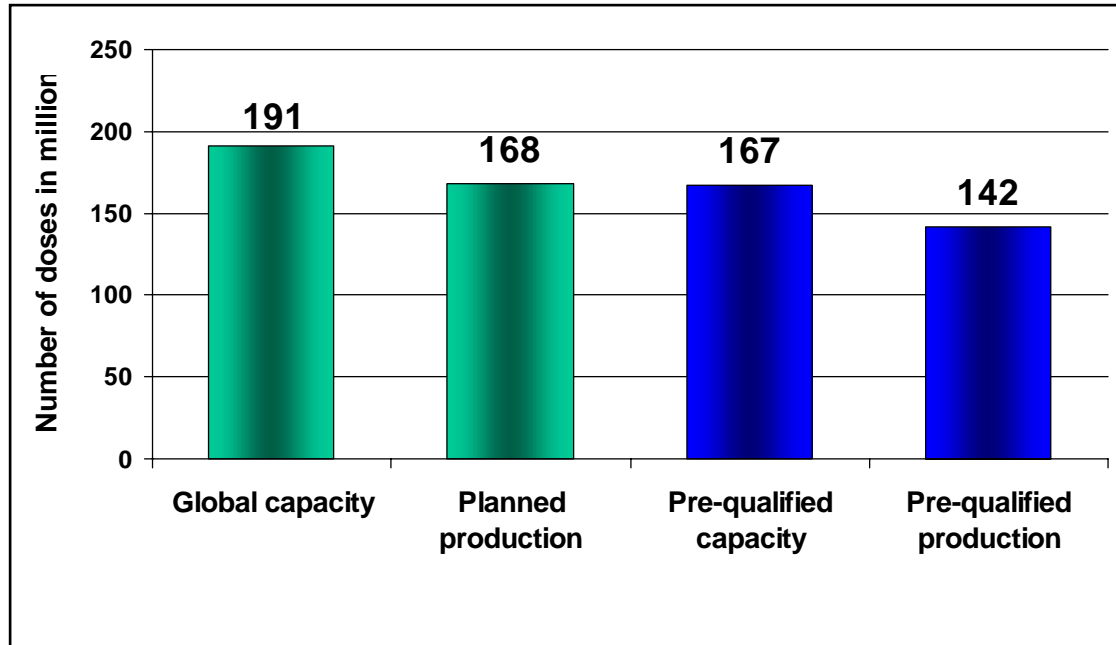


- ◆ **15 manufacturers**
- ◆ **6 pre-qualified**
- ◆ **69 % of current production is pre-qualified concentrated in 2 suppliers**

- ◆ **Viral vaccine production**
- ◆ **Require technology, not easy to produce in large scale, freeze drying limitation**
- ◆ **Low price, moderate and increasing demand**
- ◆ **Moderate capacity, but around 50% is used for MMR**
- ◆ **Supply risk, switch to MMR/MR**



MMR-MR production capacity-2003

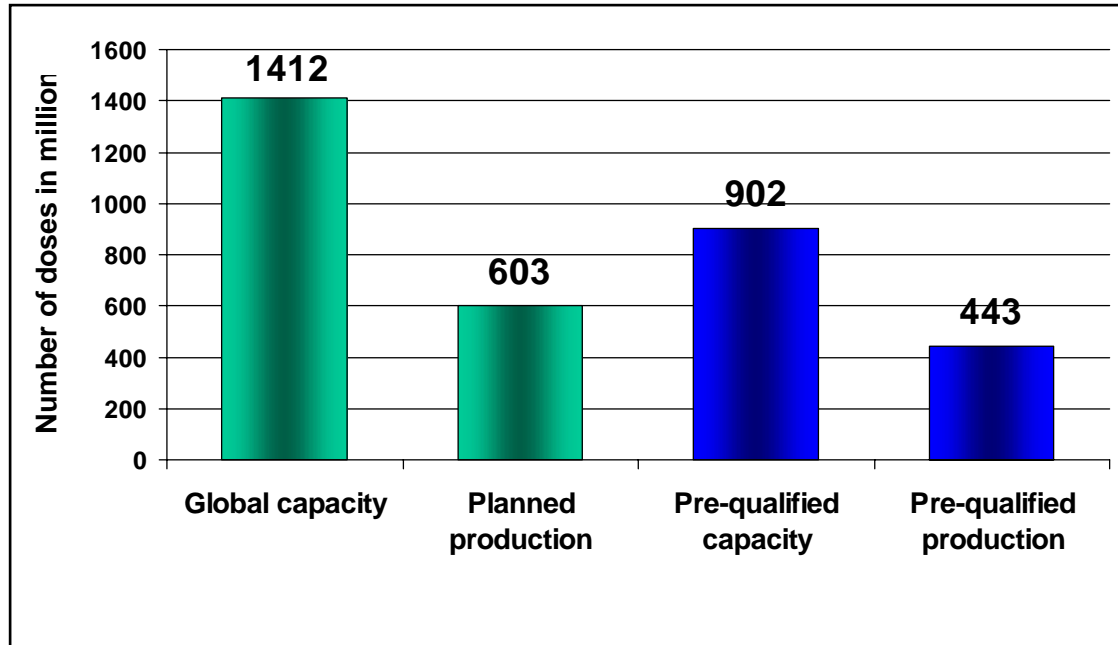


- ◆ **11 manufacturers**
- ◆ **3 pre-qualified MMR**
- ◆ **2 pre-qualified MR**
- ◆ **85 % of current production is pre-qualified**

- ◆ **Viral vaccine production**
- ◆ **Require technology, not easy to produce in large scale, freeze drying limitation**
- ◆ **High price, increasing demand**
- ◆ **Limited capacity, sheared capacity (measles, mumps and rubella)**



Hep B production capacity-2003

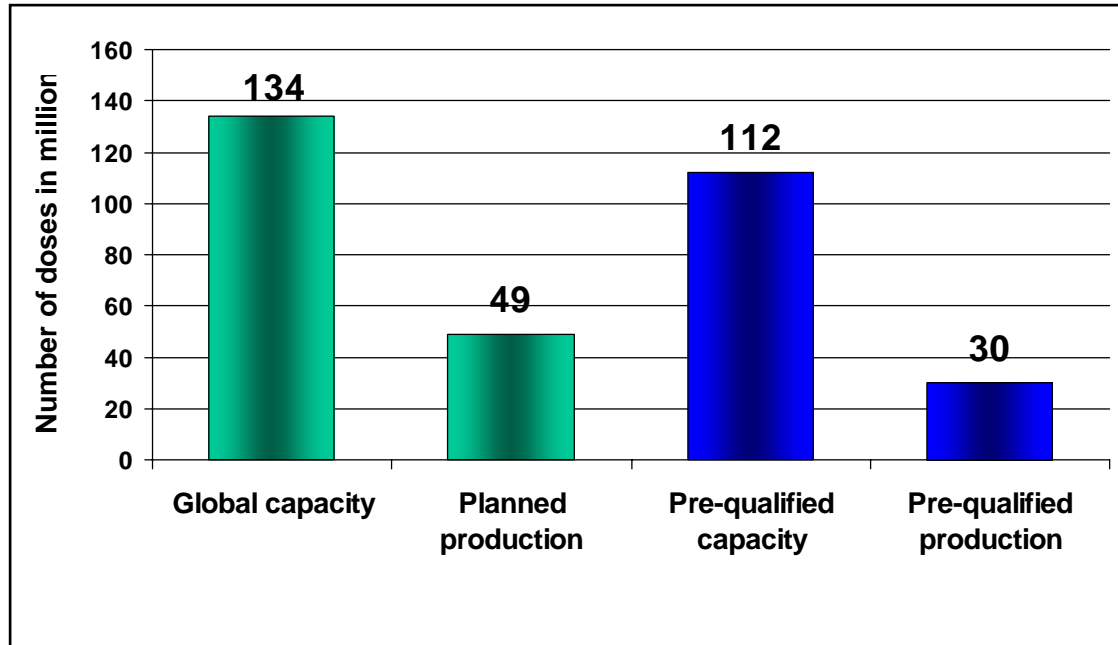


- ◆ **17 manufacturers**
- ◆ **6 pre-qualified**
- ◆ **73 % of current production is pre-qualified**

- ◆ **Recombinant vaccine production**
- ◆ **High technology, relatively easy to produce in large scale**
- ◆ **Low price, decreasing demand**
- ◆ **Increasing demand for DTwP-HepB**
- ◆ **Large capacity for local and international market**



Hib production capacity-2003



- ◆ **6 manufacturers**
- ◆ **5 pre-qualified**
- ◆ **62 % of current production is pre-qualified**

- ◆ **Conjugate vaccine production**
- ◆ **High technology, not easy to conjugate the antigen in large scale with high yield**
- ◆ **High price, increasing demand**
- ◆ **Limited capacity and more than 50 % of capacity is used for DTwP combos**



Summary - 3 groups

1- bacterial vaccines with old technology, low international demand, low price, over local capacity

Low % of pre-qualified vaccine
Very low interest, DTwP, DT, TT, BCG

2- viral vaccines, not easy to produce in large scale, opportunity costs, unsecured demand/financing, low price

High % of pre-qualified vaccine
Low interest, YF, measles

3- high tech vaccines, not easy to produce, unsecured international demand, limited capacity, high price

High % of pre-qualified vaccine
High interest, DTaP and combos



DTwP - Combination vaccines

Constrains:

- ◆ **DTwP global limited pre-qualified production, low interest for production**
- ◆ **Just one pre-qualified DTwP-HepB+Hib vaccine, limited production capacity for freeze drying Hib**
- ◆ **No developing country manufacturers currently produce DTwP combination vaccines**
- ◆ **Increase capacity takes time. No new pre-qualified vaccine before 2005**
- ◆ **Increasing demand for DTaP in middle income countries Korea, and private market in China, Indonesia**



DTwP - Combination vaccines

Supply 2004-2006:

- ◆ **Expected at least one DCVM get license for DTwP-HepB in 2004 and 2005. Cuba, Brazil, India.**
- ◆ **Expected at least one DCVM get license for DTwP-HepB-Hib in 2005 and 2006. Cuba, Brazil.**
- ◆ **China, Korea, Indonesia are working on DTaP/DTwP-HepB**
- ◆ **Current vaccine manufacturer is increasing freeze drying capacity for Hib, more vaccine available in 2004/2005**
- ◆ **More DTwP for combination will be available during 2004**

