

# The Cold Chain is 40 years old!

The Expanded Program on Immunization was initiated by WHO in May 1974 with the objective to vaccinate children throughout the world.

Let's take a look back at the cold chain over last four decades.



1974-1976

1976-1985

1986-1995

1996-2005

2006-2015

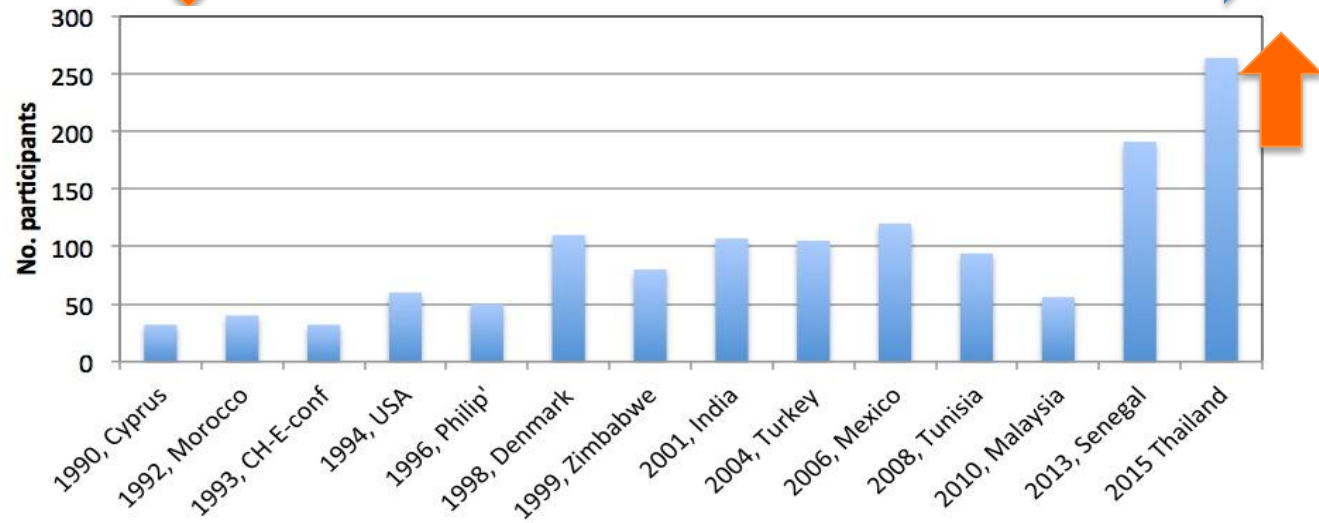
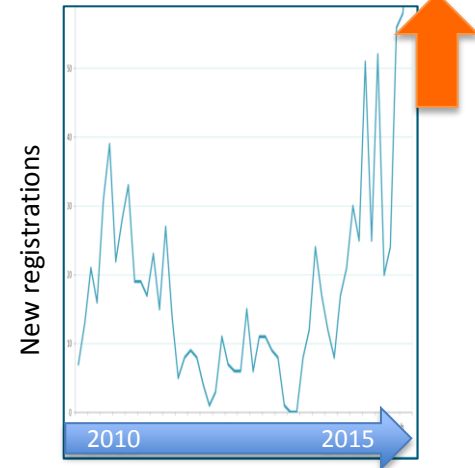
# EPI

Expanded Programme on Immunization

May 1974

WHO  
UNICEF  
CDC, Atlanta

**Technet** launched  
1989 : 1<sup>st</sup> Technet meeting  
Cyprus 1990



3

No. of International Organisations Participating

75

1976-1985

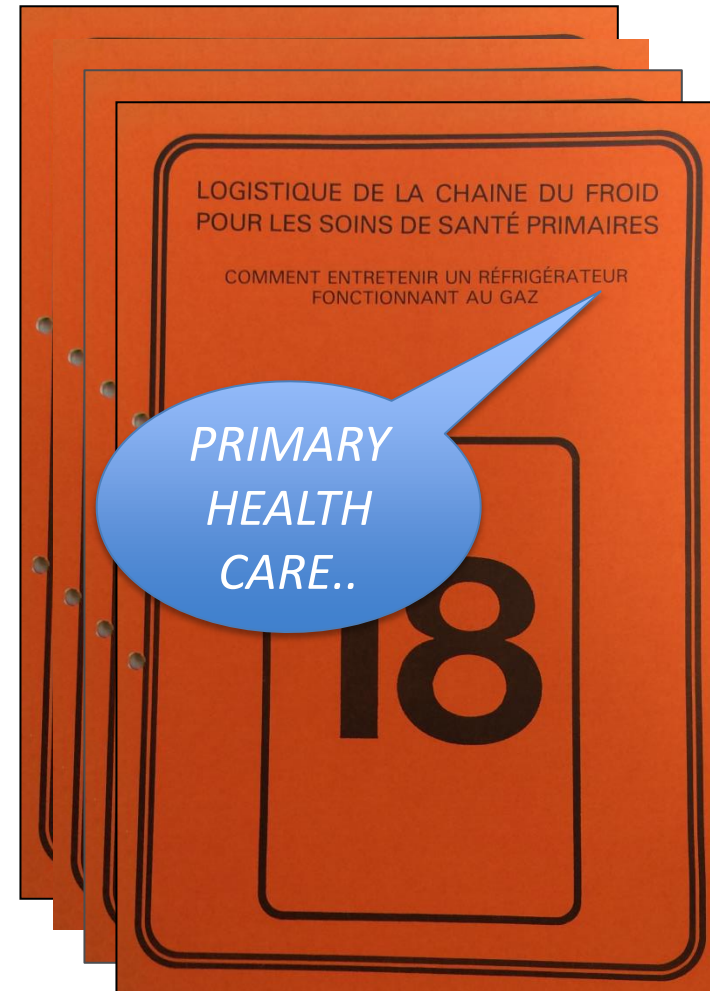
1986-1995

1996-2005

2006-2015

The first decade: Development of equipment & training

- **Cold chain equipment developed**
  - Existing equipment adapted / new products developed
  - Kerosene & gas refrigerators, ILRs, cold-boxes
  - Portable steam sterilizers + sterilizable plastic syringes
- **Training materials prepared & tested**
  - Refrigerator repair, logistics, vaccine handling
- **Scale-up not achieved... but research begun**
  - Strong collaboration between WHO, UNICEF, laboratories and manufacturers





1974-1976

1976-1985

1986-1995

1996-2005

2006-2015

The second decade: Implementation of cold chain infrastructure

Implementation driven by UNICEF / UCI

- Establishment and use of regional training centers
- Certified independent test laboratories
- Introduction of managerial tools

Scale-up of equipment supply to large countries

Operations research

- Incidence of freezing by cold chain monitor surveys
- Discovery of contamination with jet-guns
- Adaptation of motorcycles for outreach & vaccine supply in Africa
- Solar refrigerators; UNESCO summit + 'community' trials

First TechNet Consultation held in 1990

Participants	32	40	32	60
Year	1990	1992	1993	1994

1974-1976

1976-1985

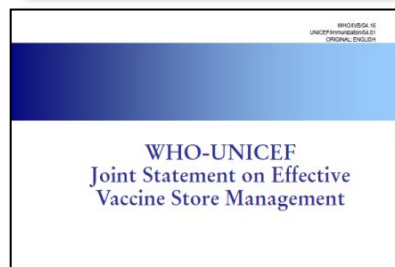
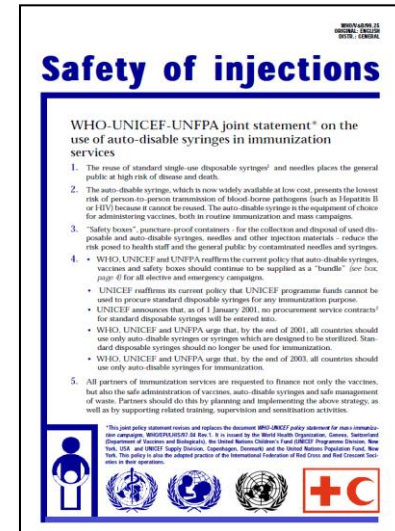
1986-1995

1996-2005

2006-2015

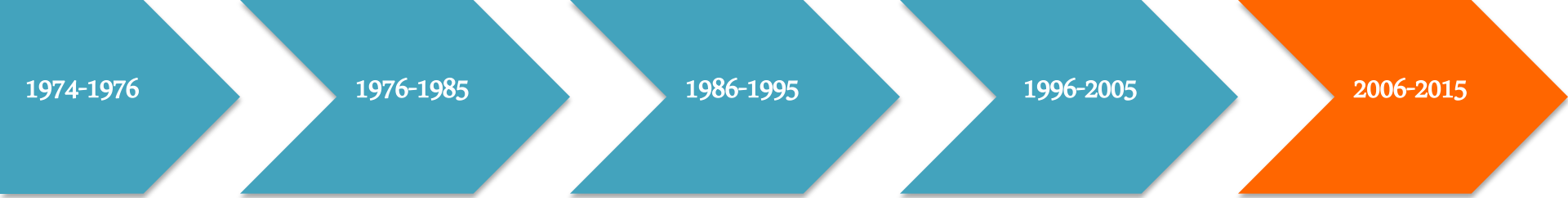
The third decade: 'Supply chain' management & quality

- EPI coverage 'slowdown', focus on PEI then GAVI / ISS
- NUVI debate of 1998 recognized issue of unsafe injections
  - Acceleration of the introduction of auto-disable syringes
  - Avocacy (African declaration against unsafe injections)
  - Disposal systems and field incineration testing & scale-up
- WHO/UNICEF Joint Statements: Injection Safety, EVSM
- Operations research and development/trials
  - Acceleration of solar direct-drive technolog
  - Uniject for MNT and CTC for better 'outreach'



TECHNET MEETINGS:

Participants	32	40	32	60	50	110	80	107	105
Year	1990	1992	1993	1994	1996	1998	1999	2001	2004



The fourth decade: Supply chain system performance

- **Accelerated introduction of new vaccines facilitated by many new partners**
  - Project Optimize resetting norms and questioning dogma
  - Managerial tools VSST and VSSM to enable store sizing up, more cold rooms
- **Optimization of vaccine distribution systems**
  - Reset 'cold chain' norms & streamline PQS
  - Evolution of EVSM to EVM multi-country assessment
  - Starting with model-assisted country system re-assessment
  - Growing focus on LMIS and Data for Management action
  - An integrated approach to vaccine & medicines

TECHNET MEETINGS: 1993 Entirely executed on-line using UNICEF list-server

Participants	32	40	32	60	50	110	80	107	105	120	94	56	191	265+
Year	1990	1992	1993	1994	1996	1998	1999	2001	2004	2006	2008	2010	2013	2015

1974-1976

1976-1985

1986-1995

1996-2005

2006-2015

Lessons learned

✓ **Power of collaboration and participation – an opportunity and a necessity**

- More participants for technical assistance, more transparency and mutual trust
- TechNet and 'Hub' to share global technical resources

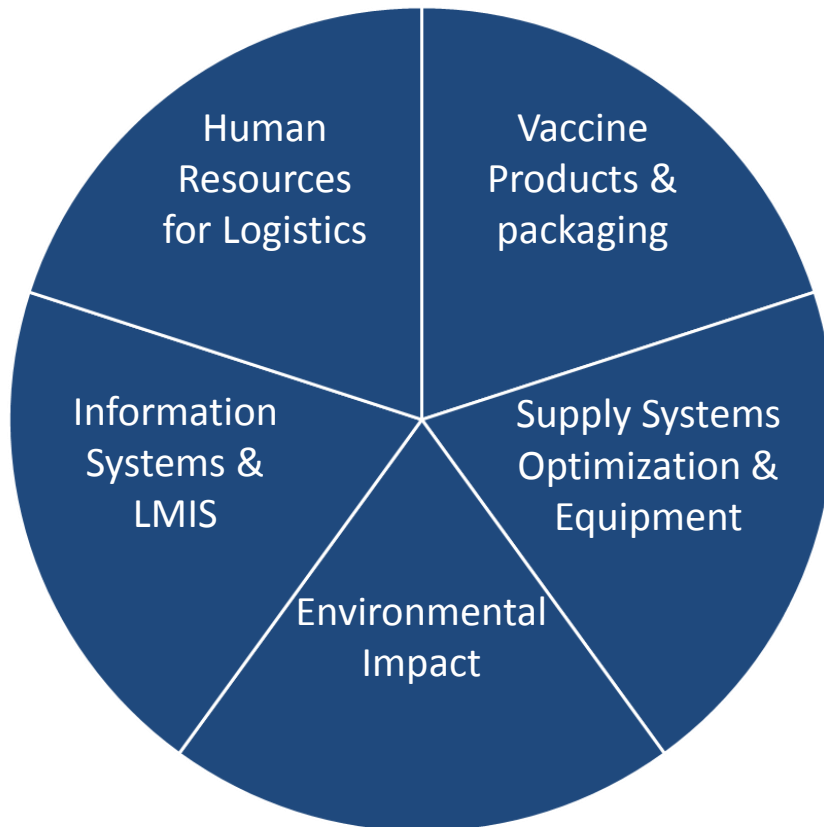
✓ **Pragmatism in leadership**

- We must strive to build more evidence, but act on the evidence available
- Challenge to retain programmatic control, integrate supply chain

❖ *Missing elements?*

- *Syringe/needle waste management – a part of the supply chain*
- *Transport management – shared throughout medical supply system*
- *Delivery systems R&D too fragmented to transform supply chain?*

***“By 2020, state of the art immunization supply chains meet the changing needs of a changing world in order to achieve the 6 rights”***



Six 'Rights'  
of an excellent  
supply chain

1. **Right products**
2. **Right quantities**
3. **Right place**
4. **Right time**
5. **Right condition**
6. **Right cost**