



# *Country and Regional Examples of Hepatitis A Prevention - Israel*



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# *Pre-Vaccination Data*

- **Until 1999, Israel was considered a country with intermediate HAV endemicity**
- **Average annual incidence rate during the period from 1993-1998 was **50.4/100,000****

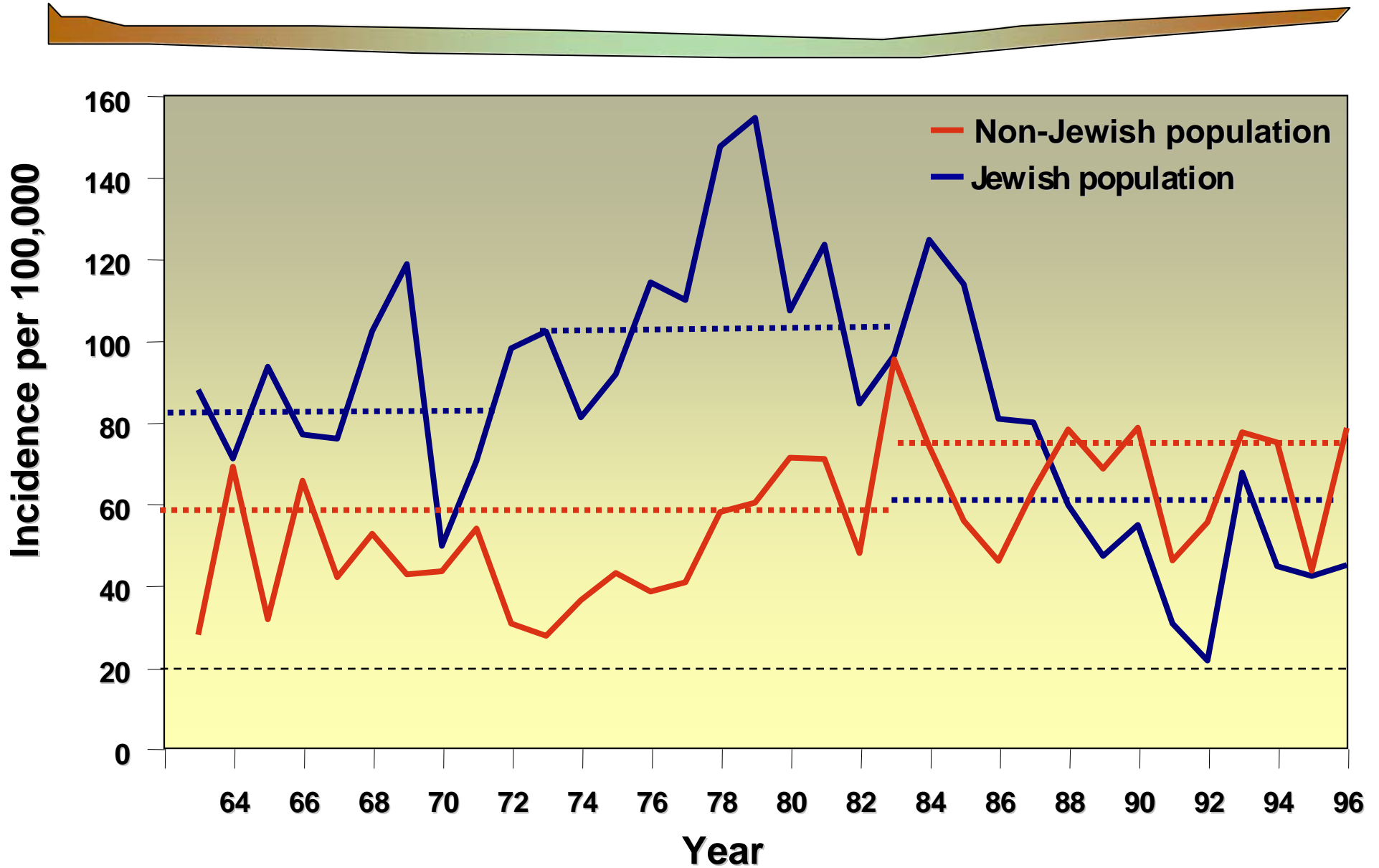


# *Differences between Jewish and Non-Jewish Populations in Israel*

- In theory, difference in socio-economic, sanitation and crowding conditions, even within the same country, could result in differences in HAV disease dynamics, leading to disparity between populations
- Israel's population: 6.29 million 2000:
  - \* Jewish population - 78%
  - \* Non-Jewish population - 22%
    - 82% Moslems
    - 9% Christians
    - 8.8% others
- In general, the non-Jewish population lives under lower socioeconomic conditions than the Jewish population
  - more crowded living conditions
  - a greater proportion of children < 15 years
  - a more rapid population growth



# Incidence of Viral Hepatitis in Israel 1963-1996 by Population



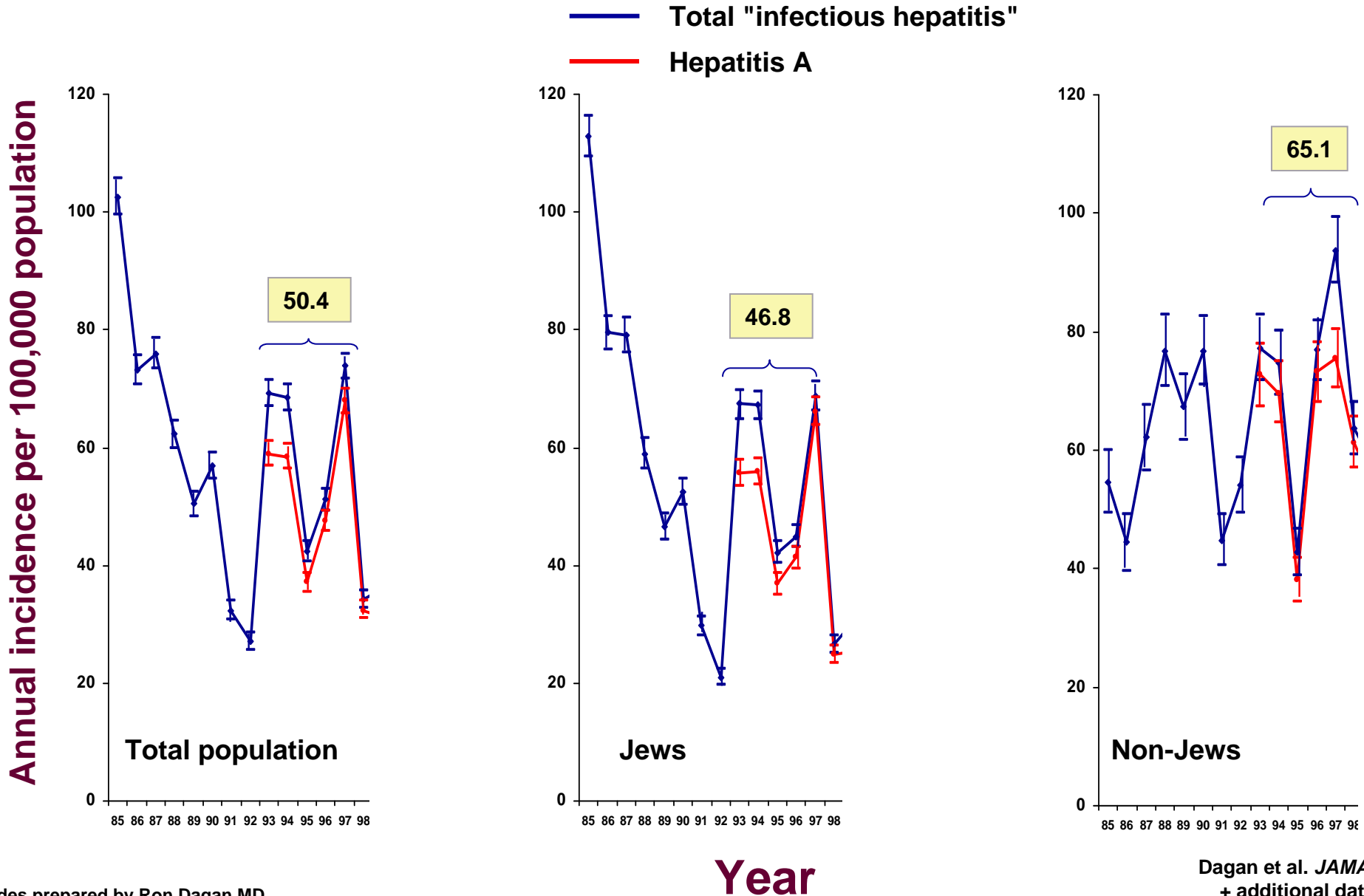


## *HAV Nationwide Vaccination in Israel*

- **Starting July 1999 all toddlers in Israel receive 2 doses of HAV vaccine at age 18 and 24m**
- **The vaccine is provided free of charge, as a part of the regular immunization program**
- **~ 90% receive 1 dose; > 80% receive 2 doses**
- **No Catch-up program beyond toddlers was introduced**

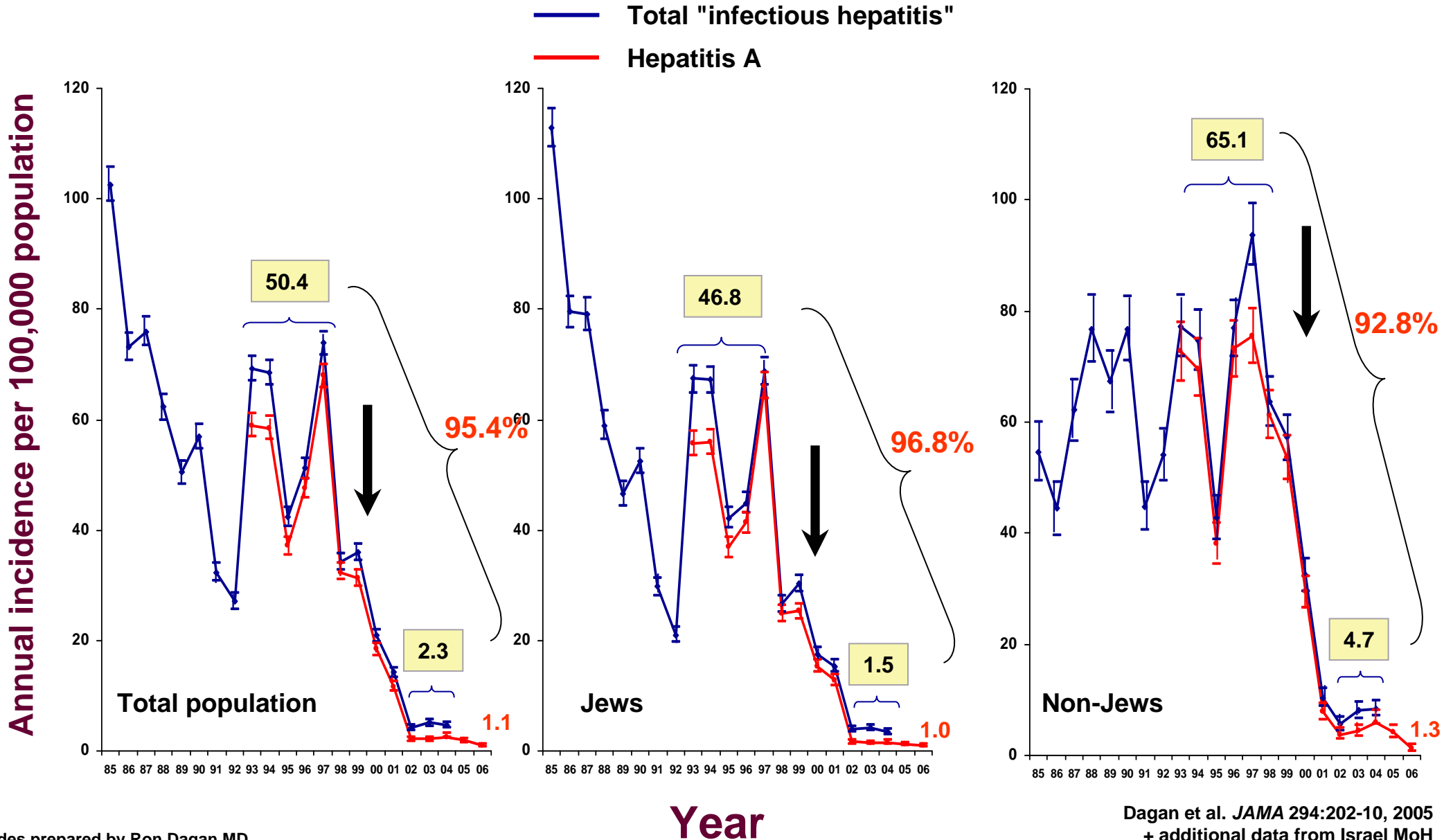


# HAV Incidence in Israel from 1985



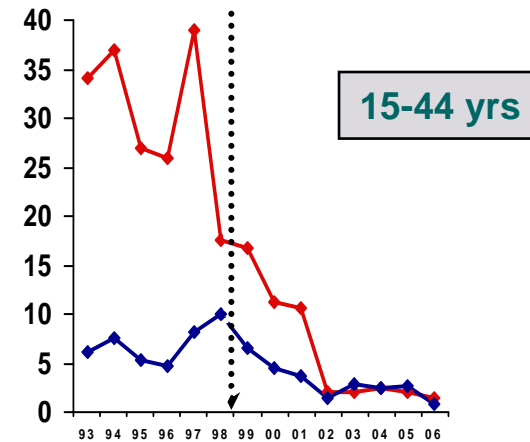
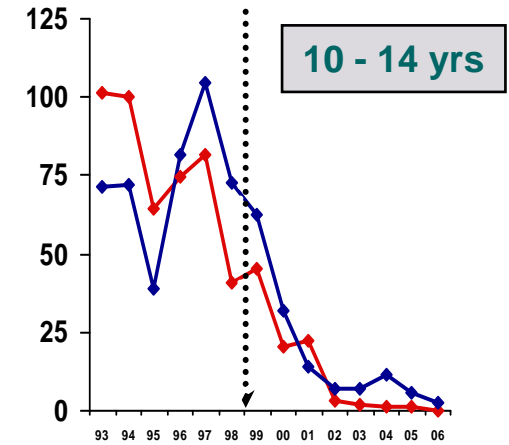
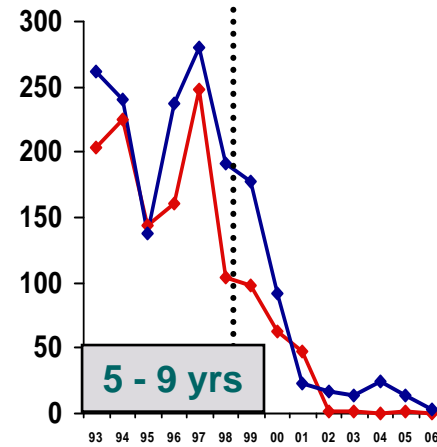
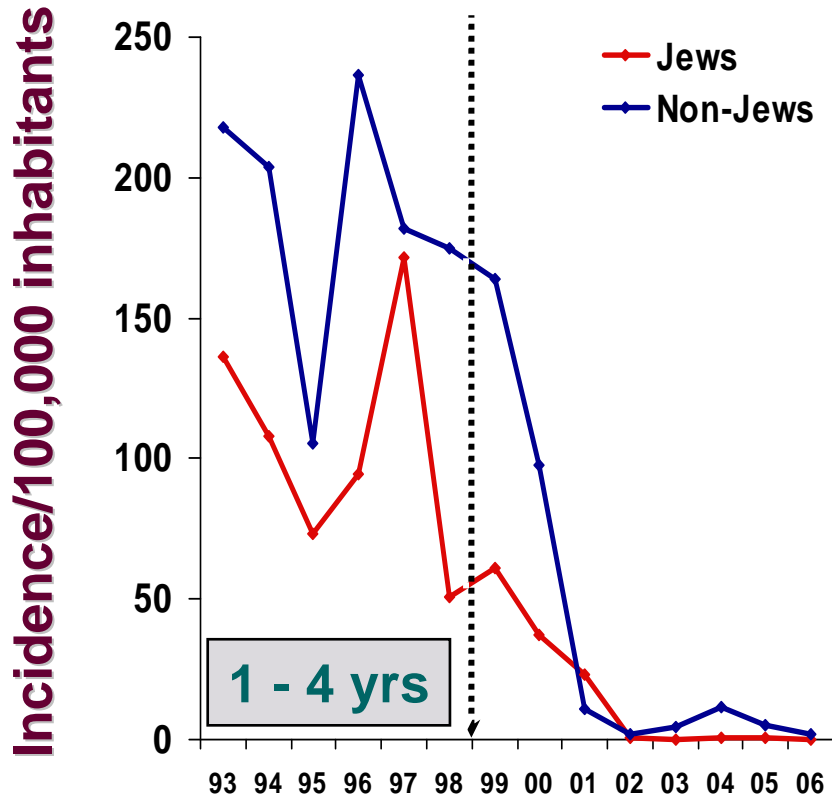


# HAV Incidence in Israel from 1985



Dagan et al. JAMA 294:202-10, 2005 + additional data from Israel MoH

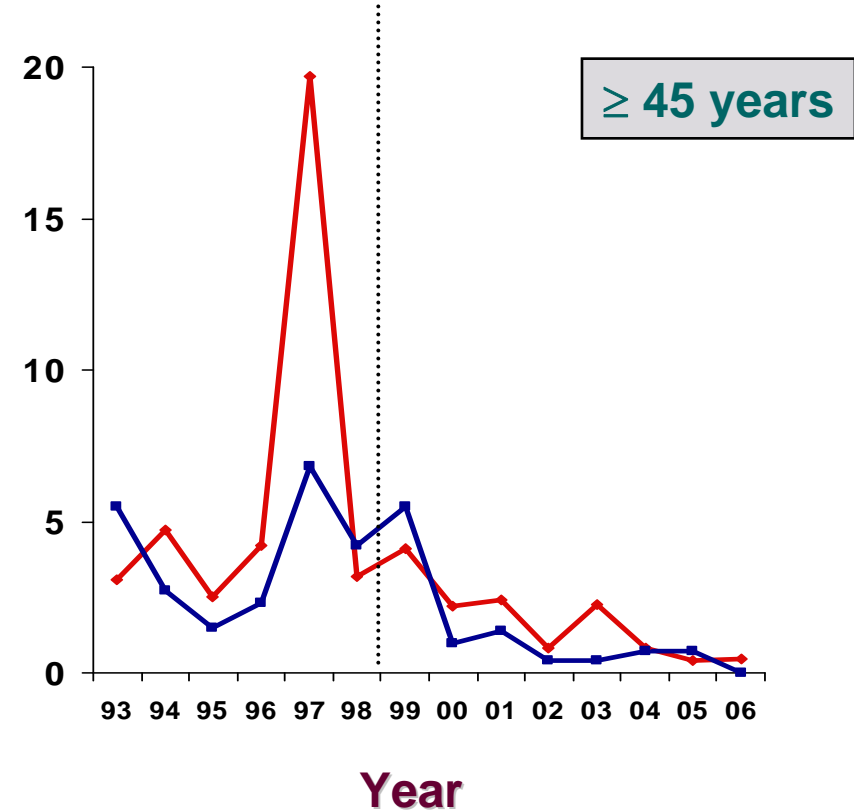
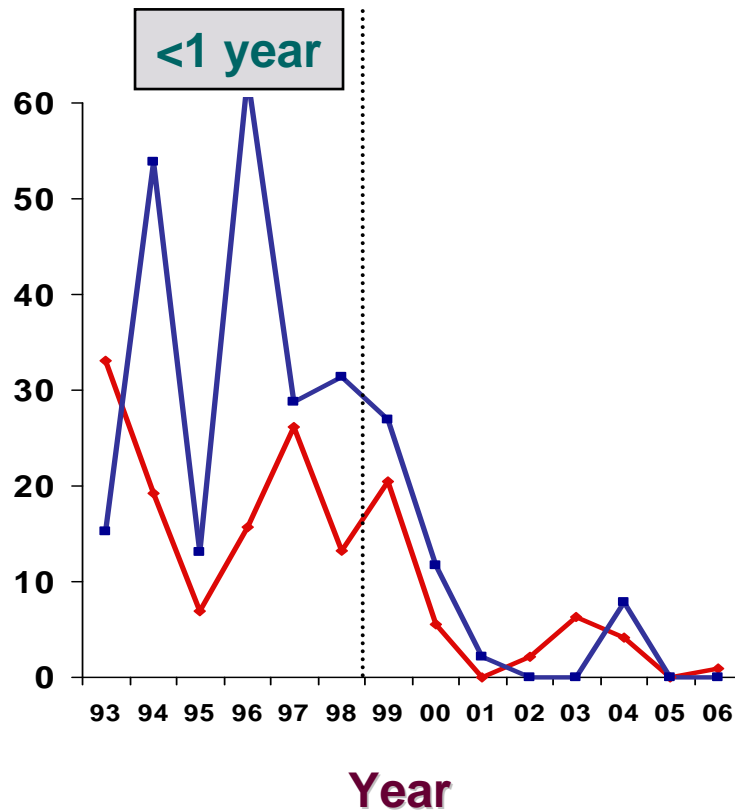
# Reporting of HAV Cases in Israel : 1993 Through 2006 by Age-Group and Ethnic Population





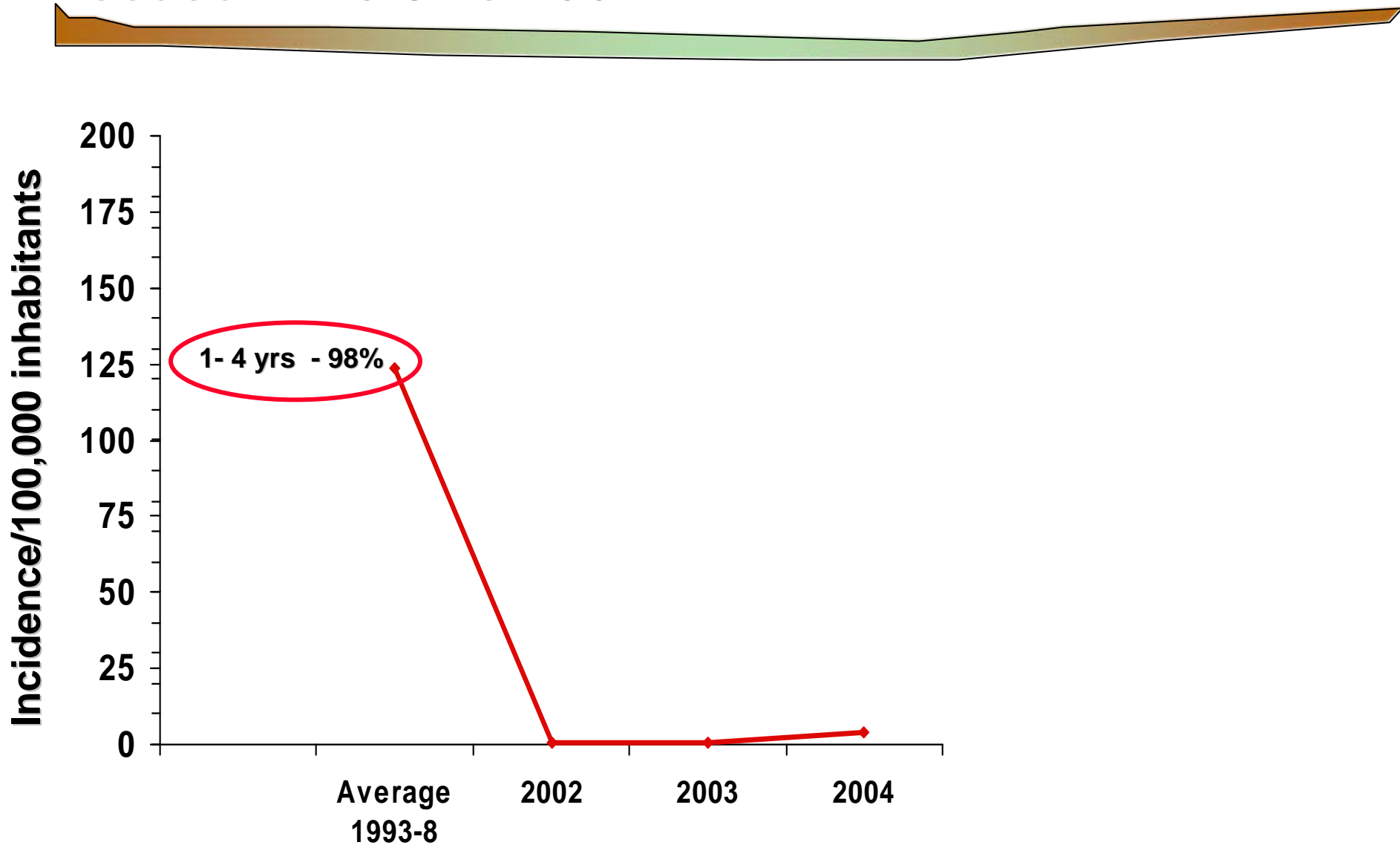
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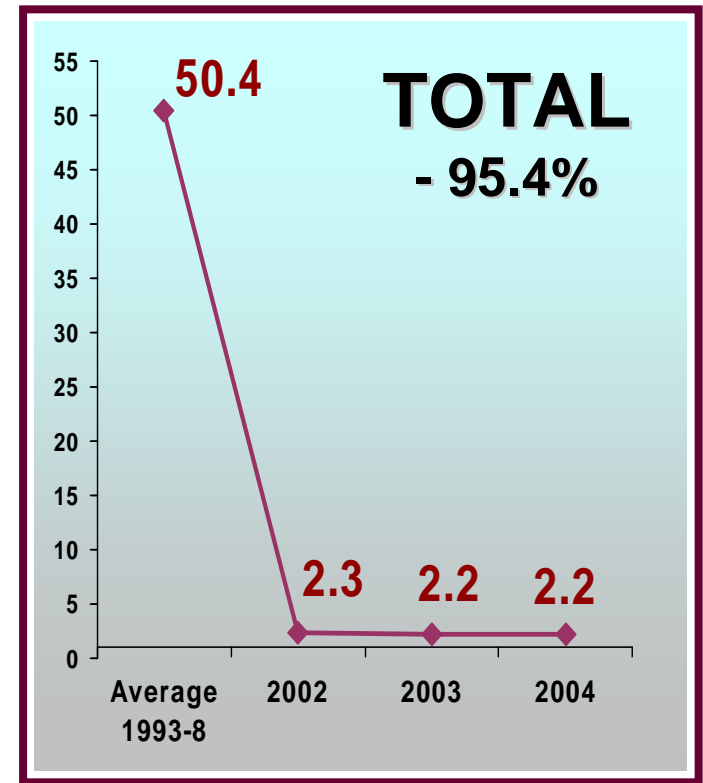
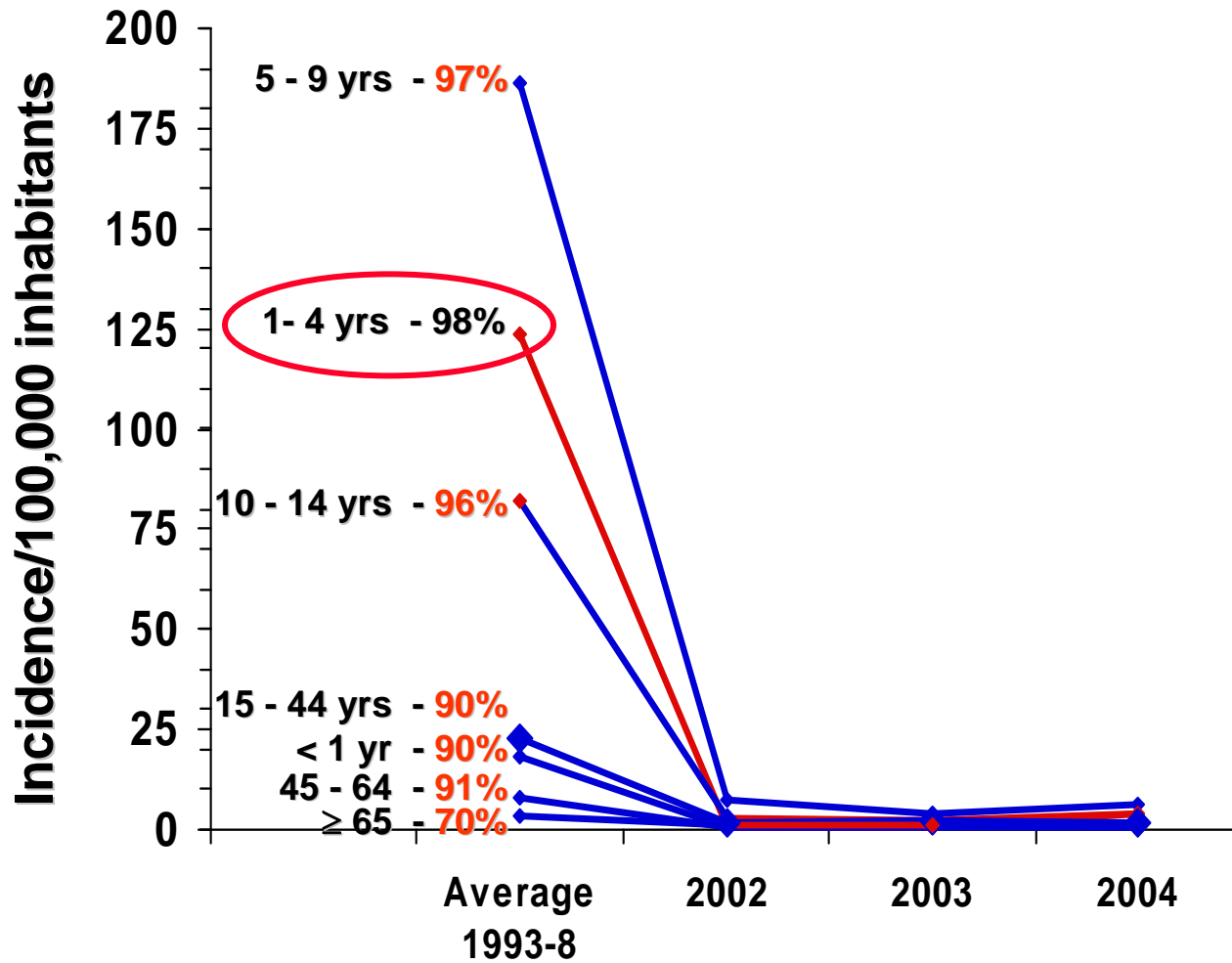




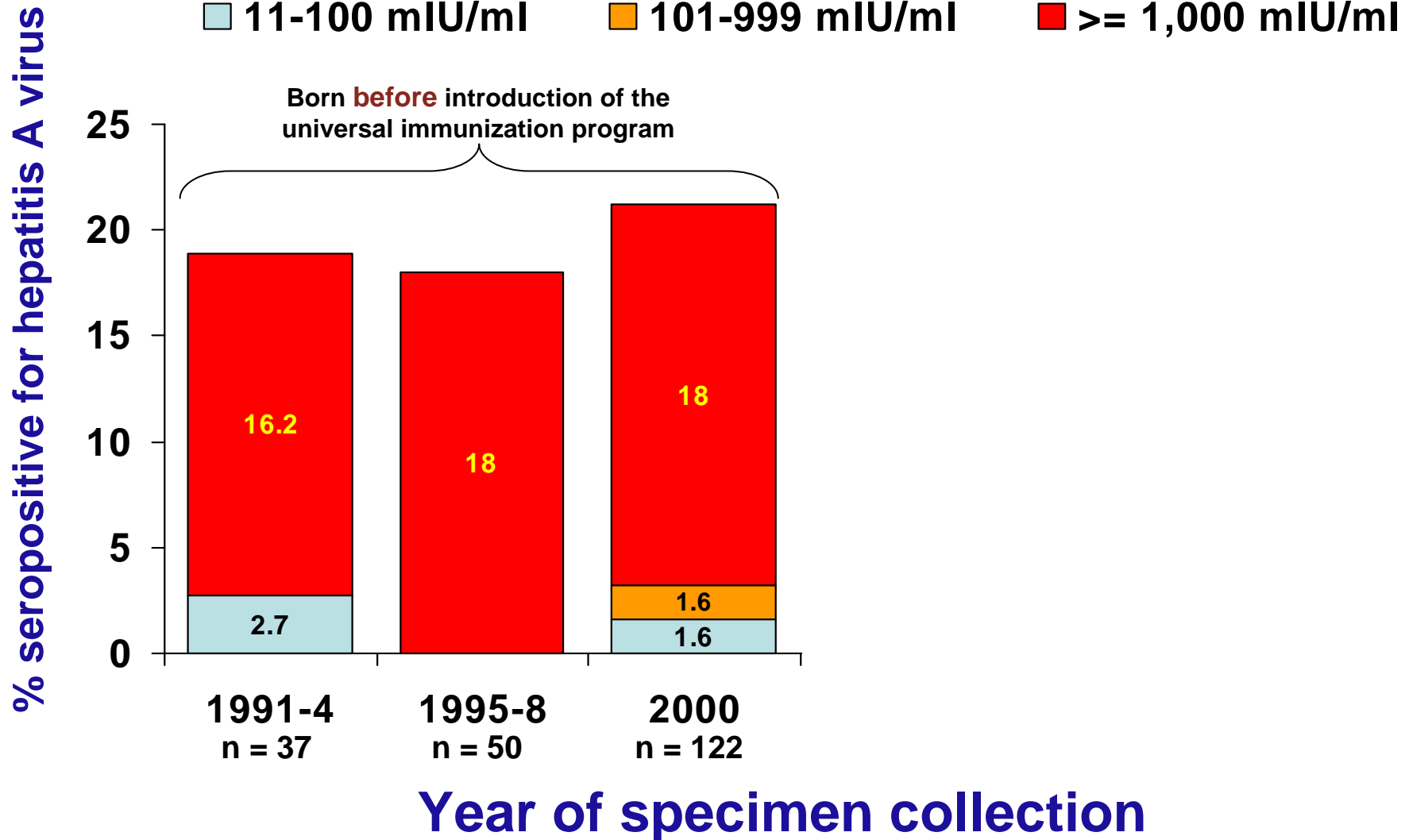
# Summary of Age-Specific Reduction in Reported HAV Disease 1993-8 vs 2002-4



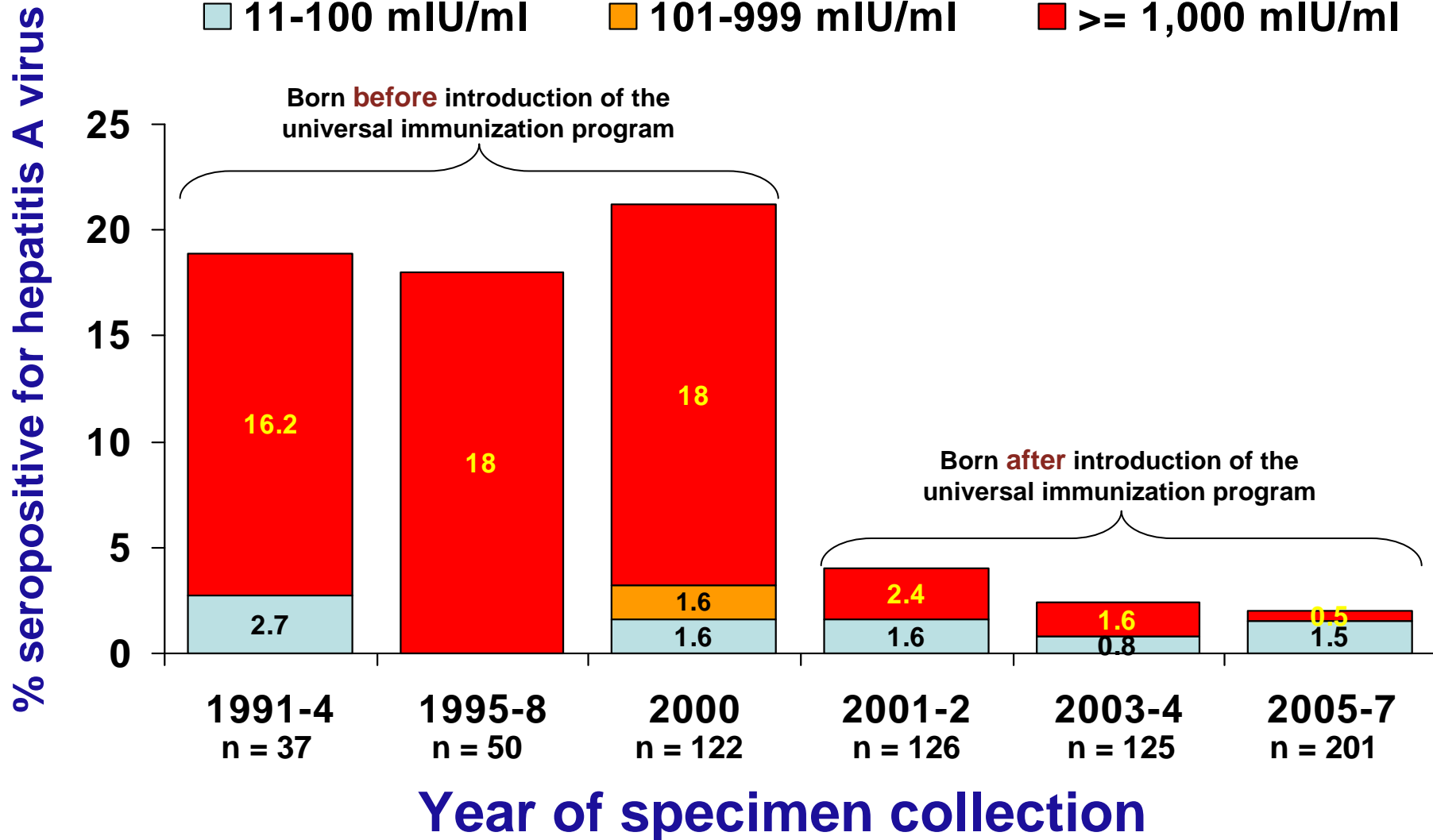
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# Seropositivity Rate in Non-immunized Bedouin Toddlers Aged 16-20 m from the *Town of Rahat* 1991-2007

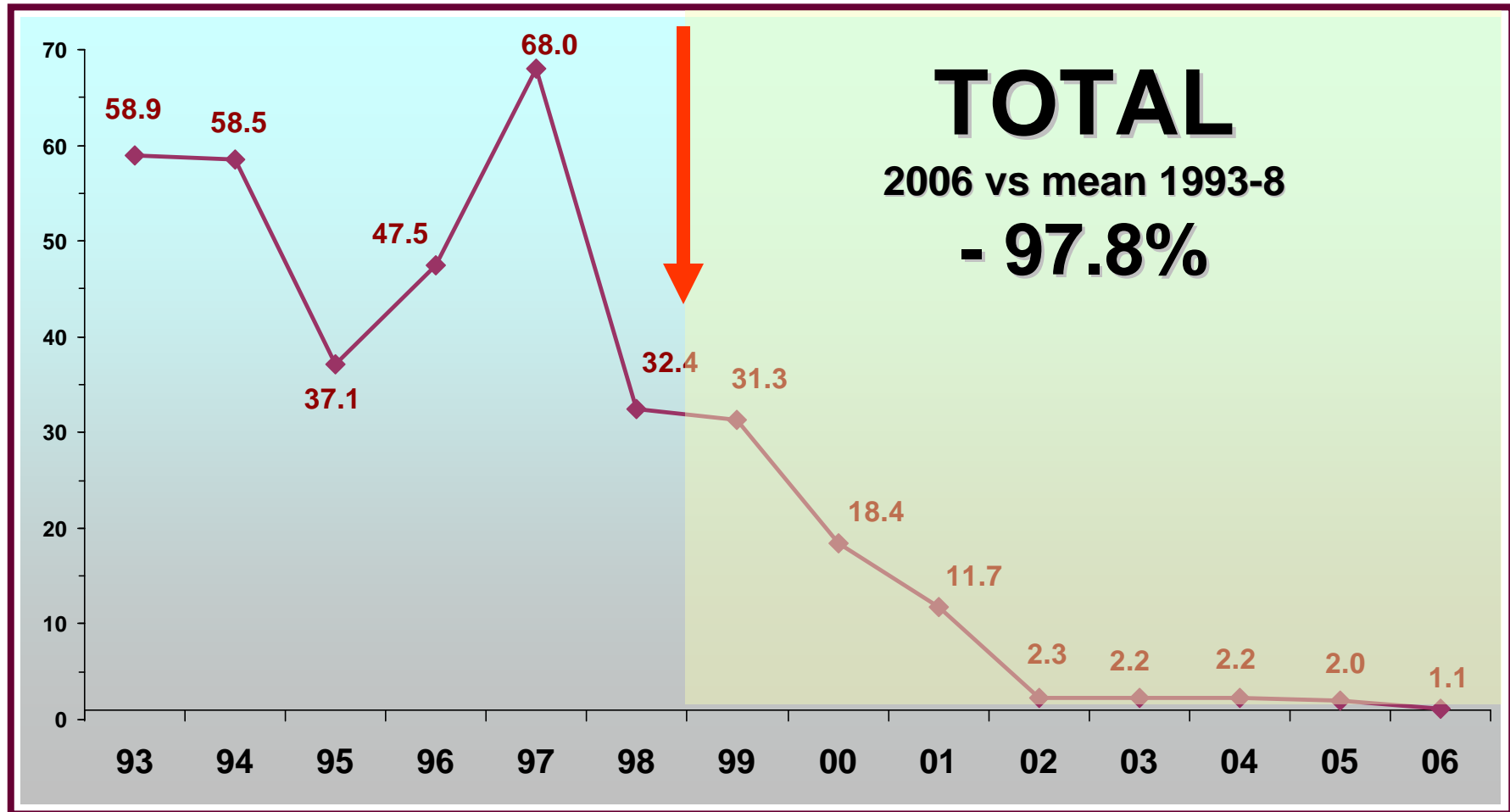


# Seropositivity Rate in Non-immunized Bedouin Toddlers Aged 16-20 m from the *Town of Rahat* 1991-2007



# Summary of Total Reduction in Reported HAV Disease 1993-8 vs 2002-6

Incidence/100,000 inhabitants



# *HAV Cases Occurring in 2002-6*

- Of the 681 cases reported nationwide, the vaccination status could be ascertained in 544 (95%)
- Of these
  - 529 (97.6%) received **no vaccine**
  - 14 (2.4%) received **1 dose**
    - 6 young adults (4 soldiers) who receive 1 dose in the past
    - 3 children aged < 10 received only 1 dose
    - 5 became sick only a few days after vaccination
      - 3 soldiers who received 1 dose a few days before symptoms and were part of a small food-borne outbreak (total of 7 cases, 4 of who were not vaccinated)
      - 1 child
      - 1 adult
  - **0 received 2 doses**

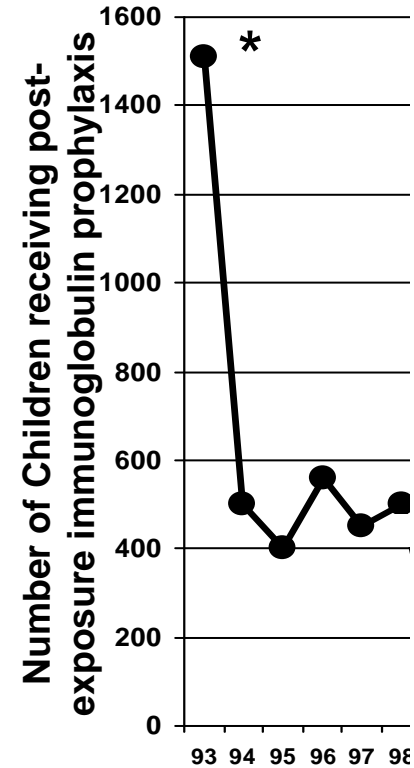
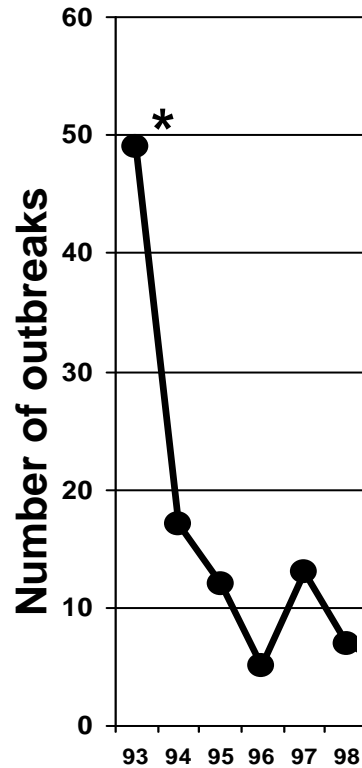
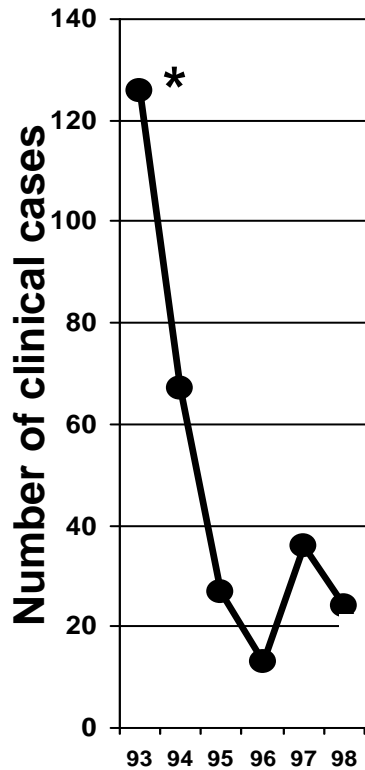


# **HAV vaccine and outbreaks in school and day-care centers**





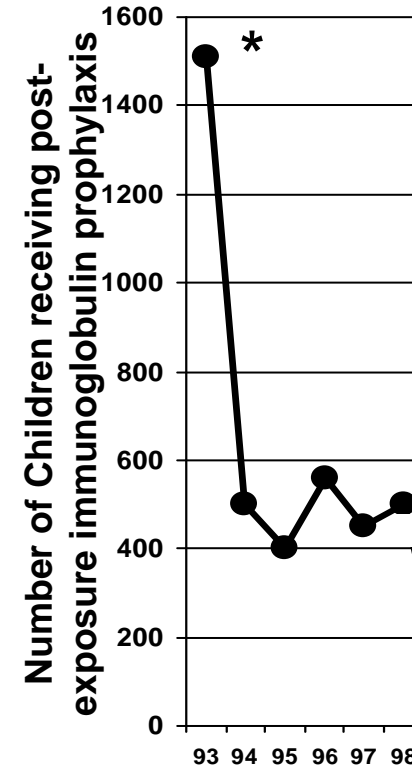
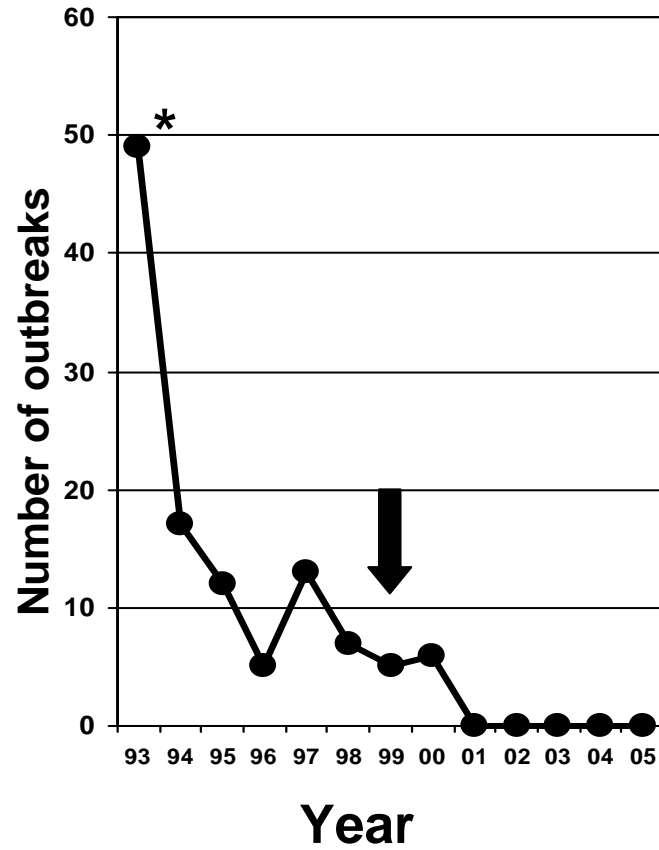
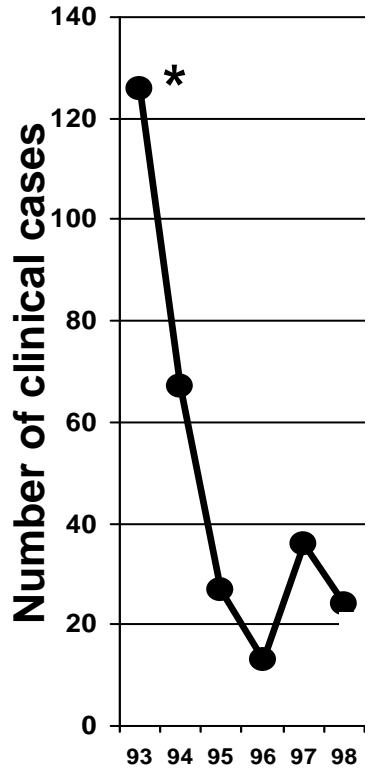
# HAV outbreaks in DCC and School Settings - Israel Southern Region 1993-2005



Year

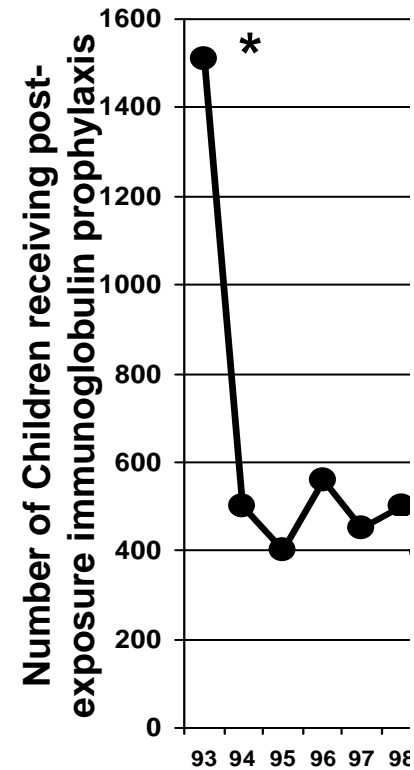
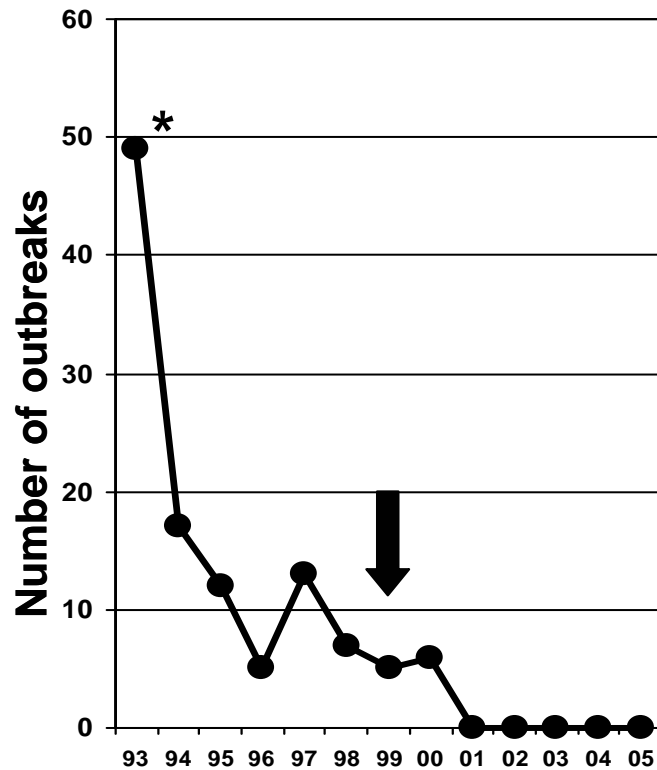
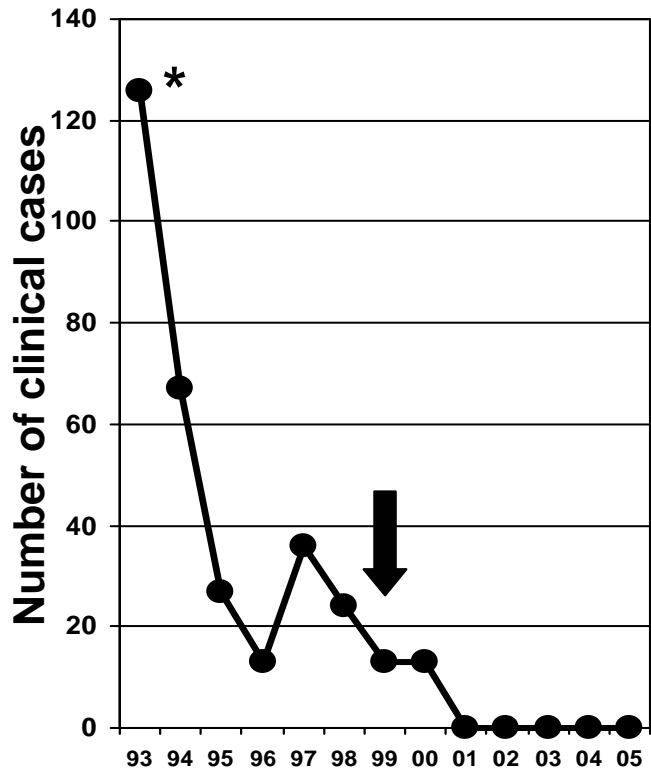


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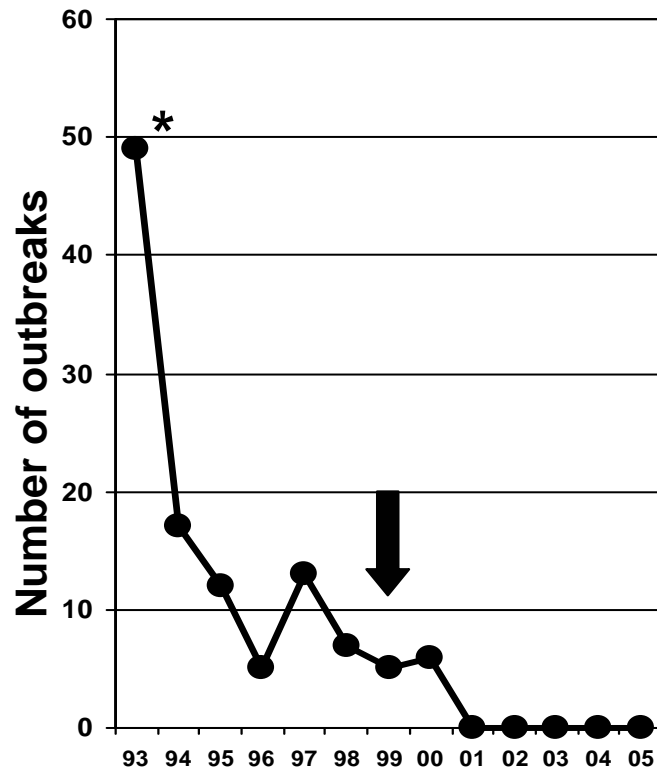
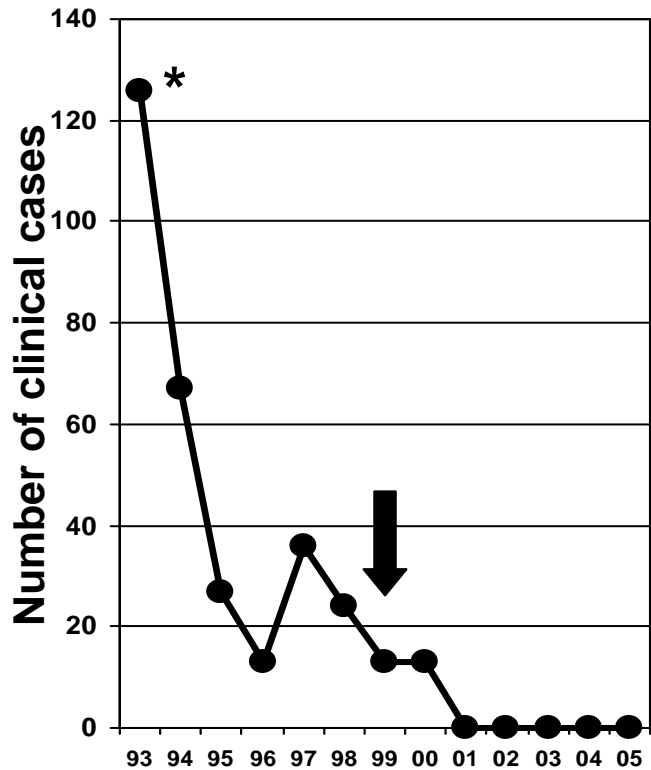
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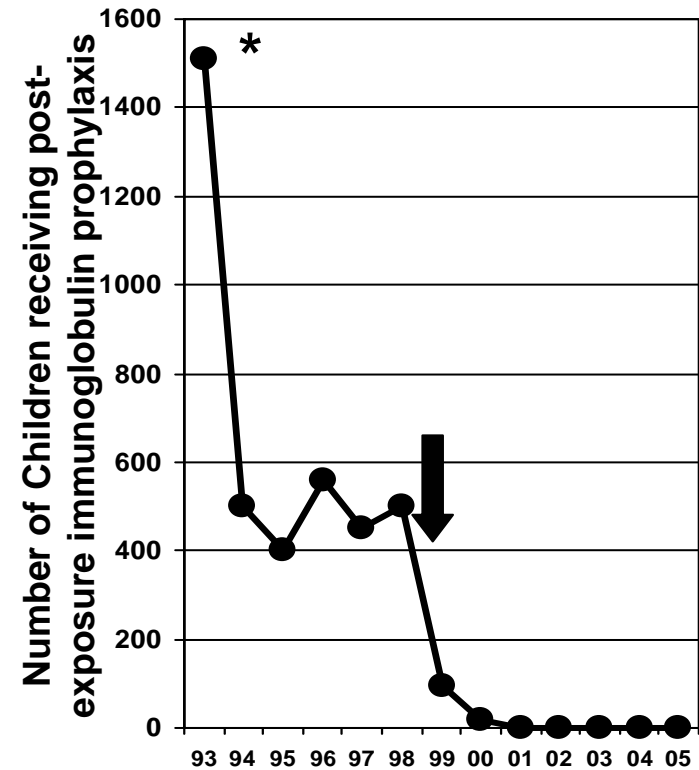
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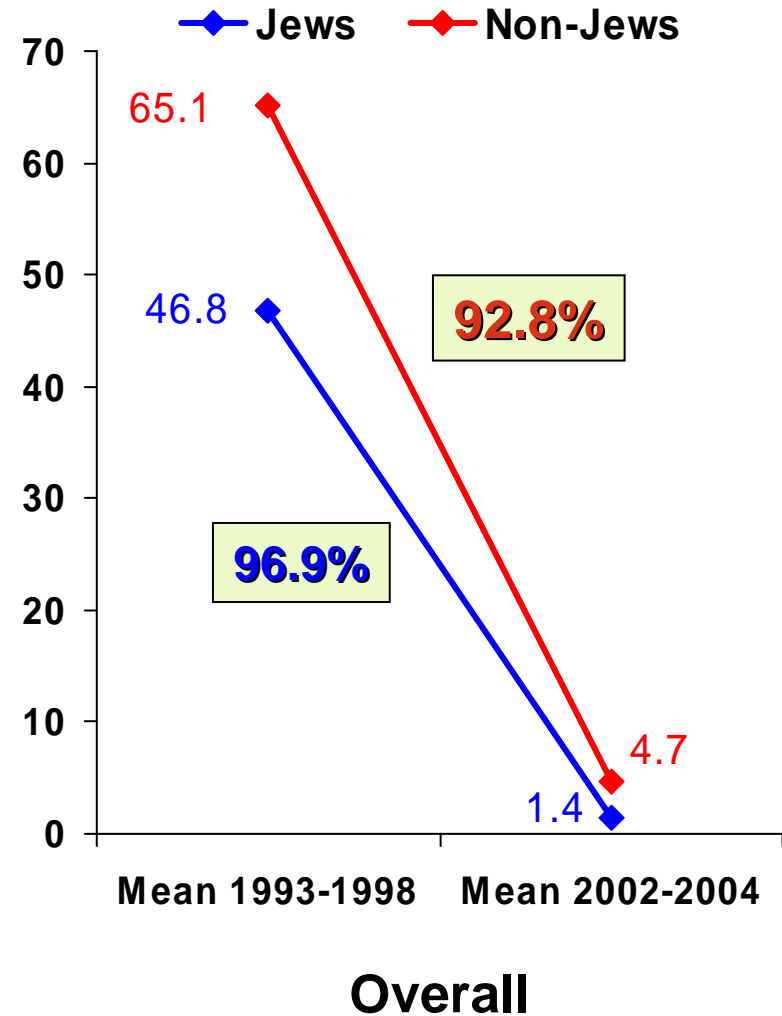
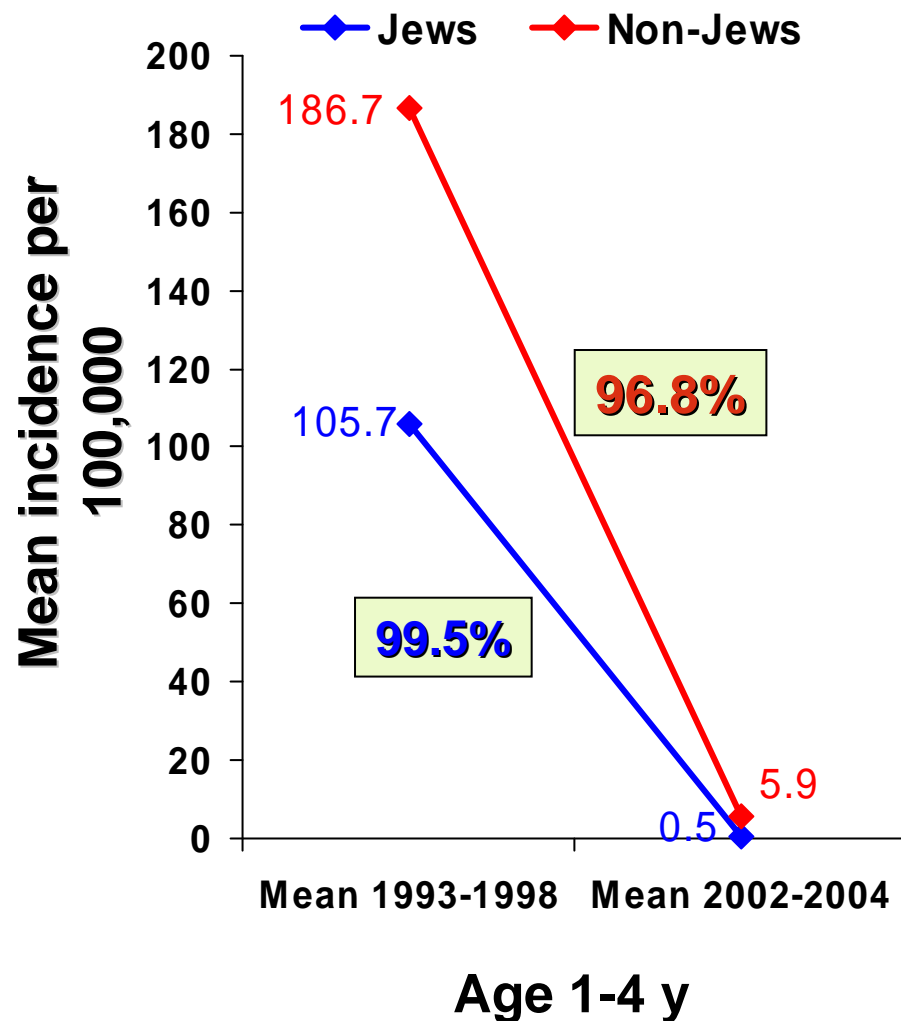
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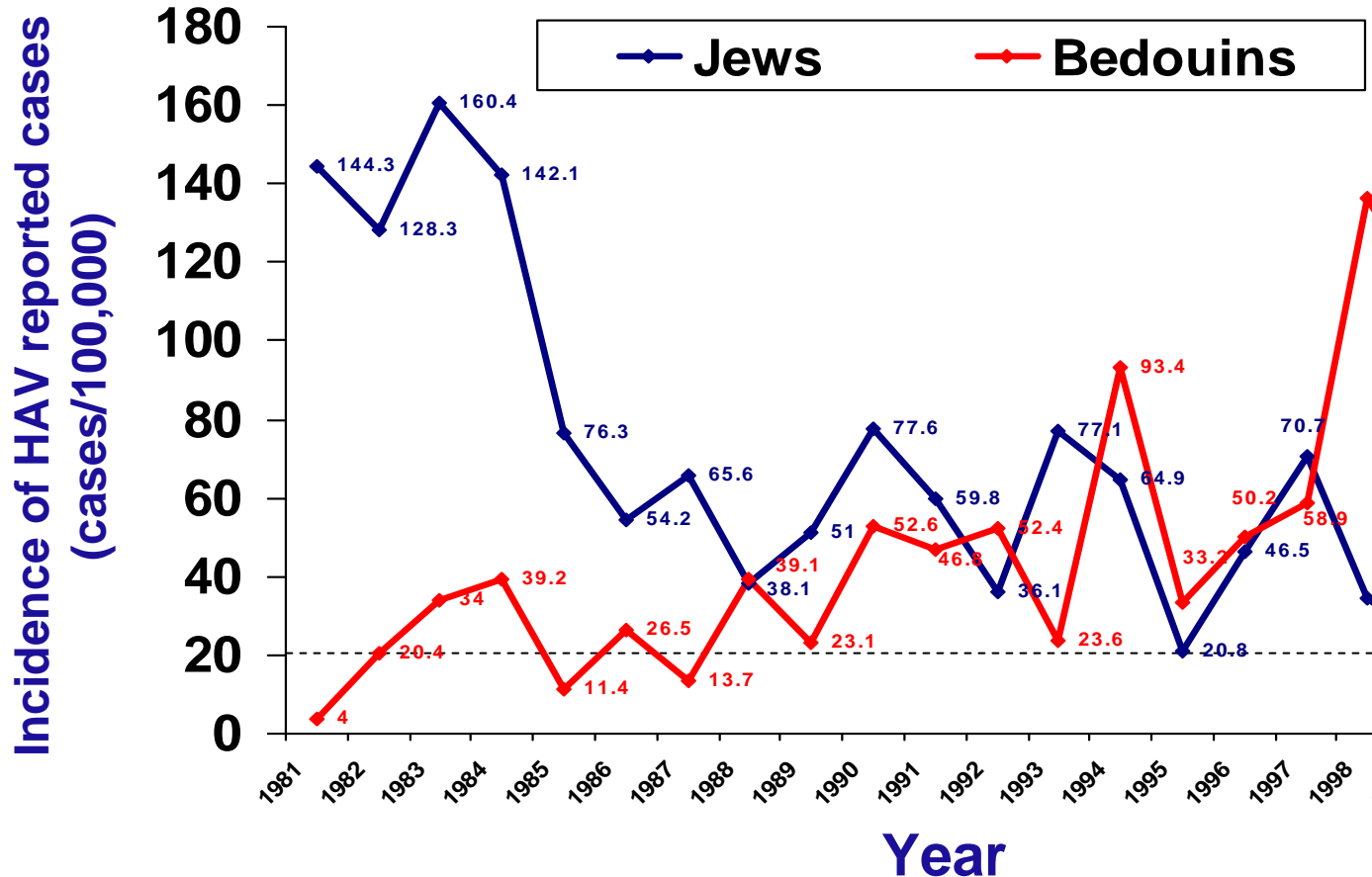
**An opportunity for the  
elimination of population  
disparity in disease incidence**

# Reduction Of Hepatitis A Disease





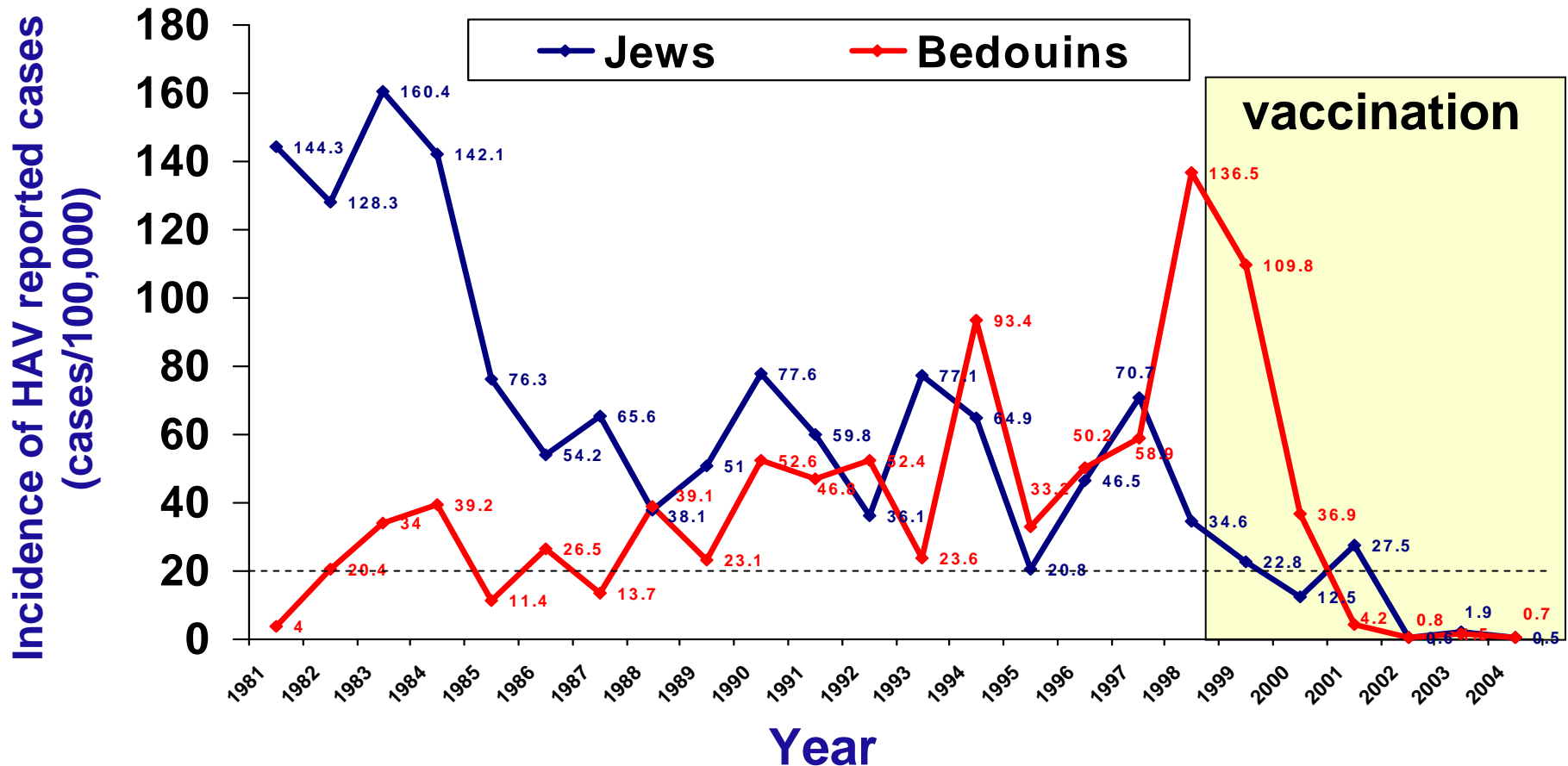
# Incidence of HAV Reported Cases\* among Jews and Bedouins in Southern Israel



\* Until 1993 all cases of "infectious hepatitis" were grouped. Reporting by virus type (hepatitis A, B or C) started in 1993



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# Conclusions



- **Israel was the first country to introduce hepatitis A vaccination to the Universal vaccination plan**
- **The Israeli universal toddler-only immunization program resulted in a dramatic reduction of HAV circulation and disease in all ages, demonstrating not only the high efficacy of the vaccine, but also a marked herd protection**
- **HAV vaccines can reduce disparities between populations**
- **Universal HAV vaccination may result in elimination of DCC and school-setting outbreaks, without the need of mandating pre-school vaccination**
- **The experience gained in Israel raises 2 important issues:**
  - **The need to plan for catch-up programs is questioned, if the toddlers-only approach is adopted**
  - **Cost-benefit studies must take in account that vaccination programs aimed at only a small fraction of the population (in the present case < 3%) can reduce profoundly disease in the entire population**