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“He just thought it up and did it.” – Apocalypse Now

**Milestones in the History of Vaccination**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>400BC</td>
<td>Hippocrates describes diphtheria, epidemic jaundice, and other conditions</td>
</tr>
<tr>
<td>1100s</td>
<td>Variolation for smallpox first reported in China</td>
</tr>
<tr>
<td>1721</td>
<td>Variolation introduced into Great Britain</td>
</tr>
<tr>
<td>1796</td>
<td>Edward Jenner inoculates James Phipps with cowpox, and calls the procedure vaccination (&quot;vacca&quot; is Latin for cow)</td>
</tr>
</tbody>
</table>
Table of Contents

1 Principles of Vaccination
   Immunology and Vaccine-Preventable Diseases ...................................... 1
   Types of Immunity ........................................................................... 2
   Classification of Vaccines .............................................................. 4
   Selected References ..................................................................... 7

2 General Best Practice Guidance for Immunization
   Timing and Spacing of Vaccines ...................................................... 9
   Doses ......................................................................................... 13
   Adverse Reactions Following Vaccination .......................................... 14
   Contraindications and Precautions to Vaccination ............................... 15
   Selected References ..................................................................... 27

3 Immunization Strategies for Healthcare Practices and Providers
   Standards for Child, Adolescent, and Adult Immunization Practices .......... 30
   The Guide to Community Preventive Services ...................................... 30
   Health Care Practice Quality Improvement Programs ............................ 31
   Essential Strategies for Health Care Practices ...................................... 33
   System-Based Barriers ..................................................................... 36
   Creating a Culture of Immunization within a Practice .......................... 37
   Selected References ..................................................................... 41

4 Vaccine Safety
   Adverse Events Following Immunization and Assessment of Causality .... 43
   Importance of Vaccine Safety Programs ............................................ 44
   Assessing and Monitoring Vaccine Safety ........................................... 45
   The Vaccination Provider’s Role in Vaccine Safety ............................... 50
   Selected References ..................................................................... 52

5 Storage and Handling
   Vaccine Cold Chain ........................................................................ 53
   Vaccine Storage and Handling Standard Operating Procedures (SOPs) .... 53
   Vaccine Storage and Temperature Monitoring Equipment ..................... 55
   Organizing and Storing Vaccine in Storage Unit .................................. 59
   Temperature Ranges ....................................................................... 60
   Vaccine Inventory Management ....................................................... 62
   Vaccine Transport ......................................................................... 65
   Selected References ..................................................................... 68

Milestones in the History of Vaccination

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1870</td>
<td>Louis Pasteur creates the first live, attenuated bacterial vaccine (chicken cholera)</td>
</tr>
<tr>
<td>1884-85</td>
<td>Pasteur creates the first live, attenuated viral vaccine for use in humans</td>
</tr>
<tr>
<td>1900</td>
<td>Paul Ehrlich formulates receptor theory of immunity</td>
</tr>
<tr>
<td>1901</td>
<td>First Nobel Prize in Medicine to von Behring for diphtheria antitoxin</td>
</tr>
<tr>
<td>1909</td>
<td>Theobald Smith discovers a method for inactivating diphtheria toxin</td>
</tr>
</tbody>
</table>
Table of Contents

6 Vaccine Administration
   Staff Training and Education ........................................... 69
   Before Administering Vaccine ........................................ 69
   Vaccine Administration .................................................. 72
   Patient Care after Vaccine Administration ....................... 88
   Selected References ...................................................... 93

7 Diphtheria
   Corynebacterium diphtheriae ............................................ 97
   Pathogenesis ............................................................... 97
   Clinical Features ......................................................... 98
   Epidemiology ............................................................ 101
   Secular Trends in the United States ................................. 102
   Diphtheria Toxoid-containing Vaccines ......................... 102
   Vaccination Schedule and Use ..................................... 103
   Contraindications and Precautions to Vaccination .......... 107
   Vaccine Safety .......................................................... 108
   Vaccine Storage and Handling ..................................... 109
   Surveillance and Reporting of Diphtheria Disease .......... 109
   Selected References .................................................... 110

8 Haemophilus influenzae
   Haemophilus influenzae ............................................... 111
   Pathogenesis ............................................................. 112
   Clinical Features ......................................................... 113
   Epidemiology ............................................................ 114
   Secular Trends in the United States ................................. 115
   Haemophilus influenzae type b Vaccines ...................... 116
   Vaccination Schedule and Use ..................................... 117
   Contraindications and Precautions to Vaccination .......... 122
   Vaccine Safety .......................................................... 122
   Vaccine Storage and Handling ..................................... 123
   Surveillance and Reporting of Hib Disease ................... 123
   Selected References .................................................... 124

Milestones in the History of Vaccination

1919 Calmette and Guerin create BCG, the first live attenuated bacterial vaccine for humans
1923 First whole-cell pertussis vaccine tested
       Gaston Ramon develops diphtheria toxoid
1926 Ramon and Christian Zoeller develop tetanus toxoid
1931 Goodpasture describes a technique for viral culture in hens' eggs
1936 Thomas Francis and Thomas Magill develop the first inactivated influenza vaccine
Milestones in the History of Vaccination

1965
Bifurcated needle for smallpox vaccine licensed

1966
World Health Assembly calls for global smallpox eradication

1967
Maurice Hilleman develops Jeryl Lynn strain of mumps virus

1969
Stanley Plotkin develops RA 27/3 strain of rubella vaccine virus

1971
MMR vaccine licensed
15 Mumps
Mumps Virus ................................................................. 225
Pathogenesis ................................................................. 225
Clinical Features ............................................................ 226
Epidemiology ................................................................. 228
Secular Trends in the United States ......................... 228
Mumps Vaccine ............................................................ 229
Vaccination Schedule and Use ................................ 230
Contraindications and Precautions to Vaccination ...... 233
Vaccine Safety ............................................................. 235
Vaccine Storage and Handling ................................ 237
Surveillance and Reporting for Mumps ................. 237
Selected References .................................................... 238

16 Pertussis
Bordetella pertussis ......................................................... 239
Pathogenesis ................................................................. 239
Clinical Features ............................................................ 240
Epidemiology ................................................................. 243
Secular Trends in the United States ......................... 244
Pertussis-containing Vaccines ................................. 245
Vaccination Schedule and Use ................................ 246
Contraindications and Precautions to Vaccination ...... 250
Vaccine Safety ............................................................. 251
Vaccine Storage and Handling ................................ 252
Surveillance and Reporting of Pertussis .................. 252
Selected References .................................................... 253

Milestones in the History of Vaccination

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1977</td>
<td>Last indigenous case of smallpox (Somalia)</td>
</tr>
<tr>
<td>1979</td>
<td>Last wild poliovirus transmission in the U.S.</td>
</tr>
<tr>
<td>1981</td>
<td>First hepatitis B vaccine licensed</td>
</tr>
<tr>
<td>1983</td>
<td>Smallpox vaccine withdrawn from civilian market</td>
</tr>
<tr>
<td>1986</td>
<td>First recombinant vaccine licensed (hepatitis B) National Childhood Vaccine Injury Act passed</td>
</tr>
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</table>
Milestones in the History of Vaccination

1989  
Two-dose measles vaccine recommendation

1990  
First polysaccharide conjugate vaccine licensed 
(Streptococcus pneumoniae)

1994  
Polio elimination certified in the Americas

1995  
Varicella vaccine licensed

1996  
Acellular pertussis vaccine licensed for infants

Table of Contents

17 Pneumococcal Disease  
*Streptococcus pneumoniae* ........................................ 255  
Pathogenesis ...................................................... 256  
Clinical Features ............................................... 256  
Epidemiology .................................................... 259  
Secular Trends in the United States ....................... 260  
Pneumococcal Vaccines ......................................... 261  
Vaccination Schedule and Use .............................. 262  
Contraindications and Precautions to Vaccination .... 270  
Vaccine Safety ................................................... 270  
Vaccine Storage and Handling .............................. 271  
Surveillance and Reporting of Pneumococcal Disease 271

18 Poliomyelitis  
*Poliovirus* ....................................................... 275  
Pathogenesis ...................................................... 275  
Clinical Features ............................................... 275  
Epidemiology .................................................... 277  
Secular Trends in the United States ....................... 278  
Poliovirus Vaccines ............................................. 280  
Vaccination Schedule and Use .............................. 282  
Contraindications and Precautions to Vaccination .... 285  
Vaccine Safety ................................................... 285  
Vaccine Storage and Handling .............................. 286  
Surveillance and Reporting of Poliomyelitis ............ 286

19 Rotavirus  
*Rotavirus* ....................................................... 289  
Pathogenesis ...................................................... 289  
Clinical Features ............................................... 290  
Epidemiology .................................................... 291  
Secular Trends in the United States ....................... 292  
Rotavirus Vaccines ............................................. 293  
Vaccination Schedule and Use .............................. 293  
Contraindications and Precautions to Vaccination .... 295  
Vaccine Safety ................................................... 295  
Vaccine Storage and Handling .............................. 298  
Surveillance and Reporting of Rotavirus ................. 298

Selected References .............................................
20 Rubella
Rubella Virus ........................................................................................................... 301
Pathogenesis ............................................................................................................. 301
Clinical Features ....................................................................................................... 301
Epidemiology ............................................................................................................. 303
Secular Trends in the United States ........................................................................... 304
Rubella Vaccines ........................................................................................................ 304
Vaccination Schedule and Use .................................................................................. 305
Contraindications and Precautions to Vaccination ................................................. 308
Vaccine Safety ........................................................................................................... 311
Vaccine Storage and Handling ................................................................................. 312
Surveillance and Reporting for Rubella .................................................................... 312
Selected References .................................................................................................. 313

21 Tetanus
Clostridium tetani .................................................................................................... 315
Pathogenesis ............................................................................................................. 316
Clinical Features ....................................................................................................... 316
Epidemiology ............................................................................................................. 318
Secular Trends in the United States ........................................................................... 319
Tetanus Toxoid-containing Vaccines ......................................................................... 319
Vaccination Schedule and Use .................................................................................. 320
Contraindications and Precautions to Vaccination .................................................. 324
Vaccine Safety ........................................................................................................... 326
Vaccine Storage and Handling ................................................................................. 327
Surveillance and Reporting of Tetanus ...................................................................... 327
Selected References .................................................................................................. 327

Milestones in the History of Vaccination

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1997</td>
<td>Sequential polio vaccination recommended</td>
</tr>
<tr>
<td>1998</td>
<td>First rotavirus vaccine licensed</td>
</tr>
<tr>
<td>1999</td>
<td>Exclusive use of inactivated polio vaccine recommended; Rotavirus vaccine withdrawn</td>
</tr>
<tr>
<td>2000</td>
<td>Pneumococcal conjugate vaccine licensed for infants</td>
</tr>
<tr>
<td>2003</td>
<td>Live attenuated influenza vaccine licensed</td>
</tr>
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Milestones in the History of Vaccination

2004
Inactivated influenza vaccine recommended for all children 6–23 months of age

2004
Indigenous transmission of rubella virus interrupted

2005
Acellular pertussis vaccines licensed for adolescents and adults

2005
MMR-varicella (MMRV) licensed

2006
Second generation rotavirus vaccine licensed
Appendix A: Schedules and Recommendations ........................................... A–1
Catch-up Schedule Job Aids for Persons Aged 0 Through 18 Years ...................... A–3
Diphtheria-, Tetanus-, and Pertussis-Containing Vaccines Catch-Up Guidance
for Children 4 Months through 6 Years of Age .................................................. A–3
Hib vaccine products: ActHIB, Pentacel, Hiberix, or unknown .......................... A–5
Hib vaccine products: PedvaxHIB vaccine only ..................................................... A–8
Inactivated Polio Vaccine (IPV) ........................................................................ A–10
Pneumococcal Conjugate Vaccine (PCV) Catch-Up Guidance for Children 4 Months through 4 Years of Age ......................................................... A–12
Tetanus-, Diphtheria-, and Pertussis-Containing Vaccines Catch-Up Guidance
for Children 7 through 9 Years of Age .............................................................. A–15
Tetanus-, Diphtheria-, and Pertussis-Containing Vaccines Catch-Up Guidance
for Children 10 through 18 Years of Age .......................................................... A–17
Healthcare Personnel Vaccination Recommendations ....................................... A–19
Recommended and Minimum Age and Intervals Between Doses
of Routinely Recommended Vaccines ............................................................. A–20
Recommended Intervals between Administration of Antibody-containing
Products and Measles- or Varicella-containing Vaccine ................................. A–23
Vaccination of Persons with Primary and Secondary Immune Deficiencies ......... A–24
Contraindications and Precautions to Commonly Used Vaccines ....................... A–26
Additional Resources for Schedules and Recommendations ............................. A–30

Appendix B: Vaccines .................................................................................. B–1
United States Vaccines ..................................................................................... B–3
Vaccine Excipient Summary ............................................................................ B–7
Latex in Vaccine Packaging ............................................................................. B–11
Vaccine-Preventable Disease Terms in Multiple Languages ......................... B–13
Resources for Vaccines .................................................................................. B–15

Milestones in the History of Vaccination

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2006</td>
<td>First human papillomavirus vaccine licensed</td>
</tr>
<tr>
<td>2006</td>
<td>First herpes zoster vaccine licensed</td>
</tr>
<tr>
<td>2009</td>
<td>H1N1 influenza pandemic declared</td>
</tr>
<tr>
<td>2010</td>
<td>Influenza vaccine recommended for all persons 6 months and older</td>
</tr>
<tr>
<td>2013</td>
<td>First quadrivalent influenza vaccine licensed</td>
</tr>
</tbody>
</table>
Appendices

Appendix C: Vaccine Information Statements ........................................ C–1
You Must Provide Patients with Vaccine information Statements – It’s Federal Law…… C–3
Instructions for the Use of Vaccine Information Statements ............................ C–5
Vaccine Information Statements: Frequently Asked Questions .......................... C–6
Additional Resources for Vaccine Information Statements ............................ C–10

Appendix D: Vaccine Safety ........................................................................ D–1
Vaccine Adverse Event Reporting System (VAERS) ...................................... D–3
Vaccine Administration: Preventing Vaccine Administration Errors ............... D–8
Vaccine Injury Compensation Program (VICP) ................................................ D–10
Countermeasures Injury Compensation Program (CICP) ................................. D–14
Additional Resources for Vaccine Safety .................................................... D–15

Note: Appendices are periodically updated. For the most recent versions, refer to the appendices found online at: https://www.cdc.gov/vaccines/pubs/pinkbook/appendix/index.html

Milestones in the History of Vaccination

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<tr>
<td>2014</td>
<td>First serogroup B meningococcal vaccine licensed</td>
</tr>
<tr>
<td>2014</td>
<td>First 9-valent recombinant protein subunit HPV vaccine licensed</td>
</tr>
<tr>
<td>2017</td>
<td>First recombinant zoster vaccine licensed</td>
</tr>
<tr>
<td>2017</td>
<td>2-dose HepB vaccine using a novel adjuvant licensed</td>
</tr>
<tr>
<td>2020</td>
<td>World Health Organization declares COVID-19 pandemic</td>
</tr>
<tr>
<td>2020</td>
<td>FDA authorizes the first COVID-19 vaccine through Emergency Use Authorization</td>
</tr>
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