SIVAC
Supporting Independent Immunization and Vaccine Advisory Committees

Desk Review of Decision-Making Tools on Disease Burden

2010

Agence de Médecine Préventive

AMP at Institut Pasteur
25-28 rue du Dr Roux - 75724 Paris cedex 15 - France
Tel: (33) 1 53 86 89 20
Fax: (33) 1 53 86 89 39
Website : www.aamp.org

INTERNATIONAL VACCINE INSTITUTE

IVI
SNU Research Park
San 4-8 Bongcheon-7 dong
Kwanak-gu, Seoul
Korea 151-919
Tel: (82) 2 872 2801
Fax: (82) 2 872 2803
Website : www.ivi.org

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Contents

1. INTRODUCTION

The main issue of activity 4 of the SIVAC program is to provide information, tools, and training through a technical resource & training center to ITAGs and to the global immunization community, so as to improve evidence-based decision making processes. The desk review of disease specific documents and existing disease burden decision-making tools aims to draw a detailed picture of the disease burden of listed infectious diseases and of already existing tools as well as their availability, development, and usage. Together with the needs assessment work, it will provide input on how to develop specifications of the services of the technical resource and training center.
According to the given terms of reference, the objectives, scope, and expected results of the desk review are as follows:

1.1. Objective of the desk review of tools regarding disease burden

The main objectives of the desk review concerning disease burden are to draw a picture of disease specific documents and existing decision-making tools. Furthermore, partnerships for SIVAC and experts who would be interested to work with SIVAC should be identified and developed.

The specific focus is on:
- Collection of information on those tools which already exist and which are under development
- Identification of areas to be addressed in the needs assessment process

1.2. Scope of the desk review of tools regarding disease burden

The main topic of this desk review is the disease burden of the following infectious diseases caused by: *H. influenzae* type b, *N. meningitidis*, *S. pneumoniae*, Rotavirus, Yellow fever Virus, *S. typhi*, *V. cholerae*, HPV, Influenza Virus, JE, Hepatitis A Virus, Measles Virus, Mumps Virus, Rubella Virus, and Neonatal *C. tetani*. Logistic, programmatic, and economics of immunization will be taken into account in another desk review.

The decision making tools are:
- Guidelines, papers, and templates to conduct analysis
- Specific tools to carry out analysis (models, assessments, tools, templates, check lists etc.)

These tools have been developed by international organizations (such as UNICEF, WHO and GAVI), universities, scientific NGOs, Ministries of Health, or others.

The existing desk review does not claim to be completed. Since the collection of appropriate documents and decision-making tools is a continuous process, the desk review will be updated continuously during the SIVAC program. Furthermore, this desk review does not aim to be a critical review of the collected tools, guidelines, and training. This will be done at a further stage and presented in another report.

1.3. Expected results of the desk review

The expected results are:

1. A catalogue of existing tools and disease specific documents with basic information and if possible further information. Documents and tools will be listed according to the following specific classification:

    - Basic information will include:
        - A short summary of what the tool does or what the topic of the document is

- The author(s) and the institution(s)
- The year of creation
- Name and type of the document or tool
- Accessibility of the document or tool
- The status of development (developed and tested/ developed/ under development)

- Further information , if available, will include:
  - Some information about the development context
  - How accessible (on the internet) the tool is, how often it is accessed and by whom
  - Intellectual property
  - More technical information
  - Feed-back information from users about the tool (ease of use, quality)
  - Contact details of authors
  - Any other useful information

- One (or several) classification(s) to file the tools (this should not be limited to existing tools).

- An analysis on the findings of the desk review:
  - A summary of existing tools and tools under development
  - A list of potential partners (author and institution) where the tools can be found
  - Tools which appear to be interesting to use within SIVAC (with or without adaptation) and to put on the platform
  - Tools which appear to be missing

- Some specific elements to submit to the 'needs assessment' process, based on the analysis (see bullet point 4). These can be specific questions or areas which need to be addressed during the needs assessment process (survey with questionnaire + workshop).

One additional result of this exercise could be a list of contacts who may be interested to work for SIVAC on specific topics according to requirements (tools development , information collection).

2. METHODOLOGY

The desk review of disease specific documents and existing decision making tools regarding disease burden is based on internet-based research. The list below, which includes each institution's abbreviation, institution's full name, and institution's hyperlink, indicates the main websites that were accessed:

- ACCP (Alliance for Cervical Cancer Prevention): http://www.alliance-cxca.org/
- AIM (Advanced Immunization Management): http://aim.path.org/
- CDC (Centers of Disease Control and Prevention): http://www.cdc.gov/
- inVS (French Institute for Public Health Surveillance): http://www.invs.sante.fr/presentations/edito_en_.htm
- GAVI (The Global Alliance for Vaccines and Immunization): http://www.gavialliance.org/
- IOM (Institute of Medicine): http://www.iom.edu/
- IVR (Initiative for Vaccine Research): http://www.who.int/vaccine_research/diseases/alphabetical/en/index.html
- KIPHS (KIPHS, Inc.; Development of Public Health Software Applications): http://www.kiphs.com/
- Measles Initiative: http://www.measlesinitiative.org/
- Neisseria.org (Serving the Neisseria Research Community): http://neisseria.org/
- NSW health: http://www.health.nsw.gov.au/
- PATH (A catalyst for global health): http://www.path.org/
- PneumoADIP: http://www.preventpneumo.org/
- PubMed: http://www.ncbi.nlm.nih.gov/pubmed/
- RHO Cervical Cancer: http://www.rho.org/
- The Hib Initiative: http://www.hibaction.org/

- World Health Organization: http://www.who.int/en/
- World Health Organization-Global Health Atlas: http://apps.who.int/globalatlas/
- World Health Organization-Immunization, Vaccines, Biologicals: http://www.who.int/immunization/en/
- World Health Organization/ IARC: http://www.who.int/bulletin/volumes/84/2/news_fig_0206/en/
- World Health Organization/ ICO: http://www.who.int/hpvcentre/en/

Regarding the literature search on PubMed for appropriate publications focusing on the impact of new vaccines, we performed a systematic review of literature twice. Within the scope of the first search, we used the following keywords: 'vaccine', 'introduction', 'impact', and/or 'Haemophilus influenzae type B', 'Neisseria meningitidis', 'Streptococcus pneumoniae', 'Rotavirus', 'Yellow fever Virus', 'Salmonella typhi', 'Vibrio cholerae', 'Japanese Encephalitis', 'Human Papillomavirus' or 'Influenza Virus'. For the second search, however, 'Haemophilus influenzae type B', 'Neisseria meningitidis', 'Streptococcus pneumoniae', 'Rotavirus', 'Yellow fever Virus', 'Salmonella typhi', 'Vibrio cholerae', 'Japanese Encephalitis', 'Human Papillomavirus' or 'Influenza Virus' and/or 'postvaccination' were used as keywords.

At the end of the report, a catalogue of relevant disease burden documents and existing decision-making tools is added. See annexes A and B.

3. CATALOGUE OF DISEASE SPECIFIC DOCUMENTS AND EXISTING DECISION-MAKING TOOLS: New Vaccines

In this catalogue the following types of disease specific documents were differentiated:
- Guidelines
- Manuals
- Generic protocols
- Fact sheets
- Standard protocols
- Maps
- Reports
- Papers
- Reviews

In addition the following types of existing decision-making tools were categorized:
- E-learning modules
- Excel spreadsheets
- Rapid assessment Tools

3.1 *Haemophilus influenzae* type b

3.1.1 Haemophilus influenzae type b: General information

Title of the document	*Haemophilus influenzae* type b (Hib)
Authors	----
Contact details of authors	----
Institution	The Hib Initiative
Year of issue	2008
Accessibility of the document	Internet: http://www.hibaction.org/resources/HibGlobalQuickFacts.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet aims to provide generic information concerning Hib such as: • Global burden of disease • The pathogen • Clinical picture • WHO's recommendations on Hib vaccines • Basic information about the Hib vaccine

Haemophilus influenzae type b: General information

Title of the document	*Haemophilus influenzae* type b (Hib)
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2005
Accessibility of the document	Internet: http://www.who.int/mediacentre/factsheets/fs294/en/index.html
Type of the document	Fact sheet
Status of development	Developed
Summary	The following information is provided in this fact sheet: • Global burden of disease • Comparison of disease burden in developing and industrialized countries • Clinical picture • WHO's recommendations on Hib vaccines • The pathogen • Modes of transmission • Treatment • Laboratory confirmation of Hib infection

3.1.2 *Haemophilus influenzae type b: Disease burden*

Title of the document	*Haemophilus influenzae* type b (Hib) meningitis in the pre-vaccine era: a global review of incidence, age distribution, and case-fatality rates
Authors	----
Contact details of authors	----
Institution	WHO Department of Vaccines and Biologicals
Year of issue	2002
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF02/www696.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The following information is given besides background information regarding the pathogen *H. influenzae* type b: • Methods for laboratory confirmation of *H. influenzae* type b • Trends of *H. influenzae* type b over the time • Ratio of Hib meningitis to pneumococcal meningitis • Age distribution of Hib meningitis • Age and incidence analysis • Risk of Hib meningitis by country • Regional comparisons

Haemophilus influenzae type b: Disease burden

Title of the document	Burden of disease caused by *Haemophilus influenzae* type b in children younger than 5 years: global estimates
Authors	Watt J.P., Wolfson L.J., O'Brien K.l., Henkle E., Deloria-Knoll M., McCall N., Lee E., Levine O.S., Hajjeh R., Mulholland K., Cherian T., the Hib and Pneumococcal Global Burden of Disease Study Team
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: http://www.ncbi.nlm.nih.gov/pubmed/19748399?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum The Lancet: Vol 374, September 12
Type of the document	Paper
Status of development	Developed
Summary	The objective of the publication is to assess the global burden of disease to help policy makers and international donors set priorities. To estimate the global burden of Hib, a comprehensive literature search of studies of Hib disease incidence, case-fatality ratios, age distribution, syndrome distribution, and effect of Hib vaccine was conducted. Major findings are: • Worldwide serious illnesses caused by Hib in 2000 • Hib caused deaths in children aged 1-59 months

Haemophilus influenzae type b: Disease burden

Title of the document	Global Invasive Bacterial Diseases (IBD) Information and Surveillance Bulletin Reporting Period: January through December 2008
Authors	-----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/nuvi/surveillance/Bulletin_IBD_Dec_09.pdf
Type of the document	Report
Status of development	Developed
Summary	This first twice-yearly Invasive Bacterial Disease (IBD) Global Surveillance and Information Bulletin describe sentinel surveillance for invasive bacterial diseases among hospitalized children under five years of age. IBD surveillance is used to provide data guiding use and impact of vaccines that target *Haemophilus influenzae* type b (Hib), *Streptococcus pneumoniae*, and *Neisseria meningitidis*.

3.1.3 *Haemophilus influenzae type b: Standard procedure for laboratory diagnosis*

Title of the document	Laboratory methods for the diagnosis of meningitis caused by *Neisseria meningitidis*, *Streptococcus pneumoniae*, and *Haemophilus influenzae*
Authors	Tanja Popovic, Gloria Ajello, Richard Facklam, and CDC Atlanta
Contact details of authors	----
Institution	WHO
Year of issue	----
Accessibility of the document	Internet: http://www.who.int/csr/resources/publications/meningitis/whocdscsredc997.pdf
Type of the document	Guideline/ Manual
Status of development	Developed
Summary	The guideline/manual presents laboratory techniques used in the isolation and identification of *N. meningitidis*, *S. pneumoniae*, and *H. influenzae* from cerebrospinal fluid and blood of patients with clinical meningitis. Even the procedures described require an array of laboratory capabilities, these procedures were selected because of their utility, ease performance, and ability to give reproducible results. In addition to the basic procedures, methods for subtyping and biotyping of these organisms are included. Major content of the manual related to the diagnosis of *H. influenzae* type b are: • Epidemiology of meningitis caused by *H. influenzae* • Collection and transport of clinical specimens • Primary culture, subculture and presumptive identification • Identification of *H. influenzae* such as identification of the *N. meningitidis* serogroup and identification of X and v Factor • Preservation and transport of *H. influenzae*

3.1.4 Haemophilus influenzae type b: Standard procedure for surveillance

Title of the document	Generic protocol for population-based surveillance of *Haemophilus influenzae* type B
Authors	Levine O.S., Schuchat A., Schwartz B., Wenger J.D., Elliot J.
Contact details of authors	----
Institution	WHO Vaccine Research and development
Year of issue	1996
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF/www9723.pdf
Type of the document	Generic protocol
Status of development	Developed
Summary	According to the generic protocol, following recommendations for surveillance of *H. influenzae* type b are given: • How to select a surveillance population • Surveillance for bacterial meningitidis in children < 5 years old • Laboratory procedures • Conducting data analysis and monitoring the quality of surveillance system • The total burden of severe Hib disease

3.1.5 *Haemophilus influenzae type b: Rapid assessment tool*

Title of the document	Estimating the local burden of *Haemophilus influenzae* type b (Hib) disease preventable by vaccination
Authors	Feikin D., Levine O., Nelson C., Mohsnie E., Watt J., Kou U.
Contact details of authors	----
Institution	WHO Department of Vaccines and Biologicals
Year of issue	2001
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF01/www625.pdf
Type of the document	Rapid Assessment Tool
Status of development	Developed
Summary	The main objective of the tool is to provide a methodology for countries to rapidly assess the burden of Hib disease using as much local data as possible. This document includes information on how to collect data from locally available sources and criteria for judging the quality of that data. It then details two methods for calculating the burden of Hib disease using this data. This tool was designed to allow a rapid assessment of Hib disease burden, requiring approximately 7-10 days for completing.

3.1.6 *Haemophilus influenzae type b: Vaccine introduction into immunization programs*

Title of the document	Introduction of *Haemophilus influenzae* type b vaccine into immunization programmes
Authors	----
Contact details of authors	----
Institution	WHO Department of Vaccines and Biologicals
Year of issue	2000
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF99/www9940.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The tool is structured as follows: Background information regarding Hib such as: • The pathogen • Clinical patterns • Mode of transmission • Age distribution Hib vaccine: • Generic information • Price of vaccine • Efficacy and safety Management decisions such as: • Which type of vaccine is most suitable? • How does Hib vaccine fit into the current immunization? • Who should be immunized with Hib vaccine? • Should boosters be given? • The multi-dose vial policy Management of operations such as: • Introduction of the Hib vaccine • Monitoring coverage and adverse events • Hib disease surveillance

3.1.7 Haemophilus influenzae type b: Decision making regarding Hib vaccine use

Title of the document	Supporting Country Decision Making Regarding Hib Vaccine Use
Authors	----
Contact details of authors	Rana A. Hajjeh Project Director, The Hib Initiative Johns Hopkins University 615 N. Wolfe Street Baltimore, MD 21205 Phone: 410-206-3391 Fax: 410-614-1419 Email: rhajjeh@jhsph.edu
Institution	The Hib Initiative
Year of issue	2006
Accessibility of the document	Internet: http://www.hibaction.org/hibinitiative/strategic_plan.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The Hib Initiative strategic plan provides a roadmap to fulfill the mission to expedite and sustain evidence-informed decisions regarding the use of Hib vaccination, in order to prevent childhood meningitis and pneumonia. The three strategic areas the strategic plan focuses on are coordination, communication, and research. Overall, the strategic plan aims at increasing country ability to recognize and/or measure disease burden, building capacity to make decisions about Hib vaccine and future new lifesaving vaccines, and ensuring sustainable decisions.

3.1.8 *Haemophilus influenzae type b: The impact of immunization with Hib*

Title of the document	The impact of routine infant immunization with *Haemophilus influenzae* type b conjugate vaccine in Malawi, a country with high human immunodeficiency virus prevalence
Authors	Daza P, Banda R, Misoya K, Katsulukuta A, Gessner BD, Katsande R, Mhlanga BR, Mueller JE, Nelson CB, Phiri A, Molyneux EM, Molyneux ME
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed Vaccine. 2006 Sep 11; 24(37-39):6232-9
Type of the document	Paper
Status of development	Developed
Summary	Following Hib conjugate vaccine introduction during 2002, the aim this study was to evaluate the vaccine impact by reviewing hospital surveillance data for acute bacterial meningitis in Blandtyre district among children age 1-59 months admitted during 1997-2005. Documented annual Hib meningitis incidence rates decreased from 20-40/100,000 to near zero among both rural and urban residents despite no change in pneumococcal meningitis incidence rates. Before vaccine introduction, an average of 10 children/ year had Hib meningitis and HIV infection compared to 2/ year during 2003-2004 and none during 2005. Vaccine effectiveness was high following two or more doses of vaccine. The most urgent future need is for a sustainable routine infant immunization program, including a less expensive vaccine that preferably is delivered in a multivalent form.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	*Haemophilus influenzae* type b conjugate vaccine impact against purulent meningitis in Rwanda
Authors	Muganga N, Uwimana J, Fidele N, Gahimbare L, Gessner BD, Mueller JE, Mhlanga BR, Katsande R, Herbinger KH, Rugambwa C
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed Vaccine. 2007 Sep 28:25(39-40):7001-5
Type of the document	Paper
Status of development	Developed
Summary	Rwanda introduced *Haemophilus influenzae* type b (Hib) conjugate vaccine in January 2002 and simultaneously implemented pediatric bacterial meningitis surveillance at a major referral hospital in the capital Kigali. The Proportion of cerebrospinal fluid with purulence decreased from 26.0% during 2002, to 15.9% during 2003, 9.7% during 2004 and 8.4% in 2005. Vaccine effectiveness of two or three doses of Hib vaccine against purulent meningitis was 52%.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Action for child survival: elimination of *Haemophilus influenzae* type b meningitis in Uganda
Authors	Lewis RF, Kisakye A, Gessner BD, Duku C, Odipio JB, Iriso R, Nansera D, Braka F, Makumbi I, Kekitiinwa A
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Bulletin of the World Health Organization 2008;86:292-301
Type of the document	Paper
Status of development	Developed
Summary	Objective of this study was to guide immunization policy. Therefore, we determined the public health benefit of introducing *Haemophilus influenzae* type b (Hib) vaccine in Uganda and estimate the vaccine effectiveness. As consequence of Hib vaccine introduction Hib meningitis incidence dropped from 88 cases per 100 000 children aged <5 years in the year before vaccine introduction to 13 within 4 years, and to near zero in the fifth year. Vaccine effectiveness for 2 or more doses was 93% against confirmed Hib meningitis and 53% against purulent meningitis of unknown cause. In Uganda, Hib vaccine prevents an estimated 28 000 cases of pneumonia and meningitis, 5000 deaths and 1000 severe meningitis cases each year. Therefore, the conclusion is that infant immunization with Hib vaccine has virtually eliminated Hib meningitis in Uganda within 5 years. Ensuring long-term benefits of Hib vaccine urgently requires sustainable vaccine financing, high-quality ongoing surveillance, and a health sector able to deliver a robust immunization program.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	*Haemophilus influenzae* type b conjugate vaccine is highly effective in the Uganda routine immunization program: a case-control study.
Authors	Lee E HJ, Lewis RF, Makumbi I, Kekitiinwa A, Ediamu TD, Bazibu M, Branka F, Flannery B, Zuber PL, Feikin DR
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Tropical Medicine and International Health, Vol. 13 No. 4 PP 495-502
Type of the document	Paper
Status of development	Developed
Summary	The objective of this case-control study was to study the effectiveness of *Haemophilus influenzae* type b (Hib) vaccination program in Uganda. Referring to the results presented by Ellen Hyun-Ju Lee et al, vaccine effectiveness for two or three doses vs. no dose was 99% and 96% when cases were compared with neighborhood and hospital controls, respectively. Therefore the conclusion is that in Uganda, Hib vaccine was highly effective in the context of the routine immunization schedule. Sustained routine use of Hib vaccine will contribute to the prevention of childhood morbidity and mortality.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	The impact of vaccines on pneumonia: Key lessons from *Haemophilus influenzae* type b conjugate vaccines
Authors	Gessner BD, Adegbola RA
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Vaccine 2008 Jun 16:26 Suppl 2:B3-8
Type of the document	Paper
Status of development	Developed
Summary	This article explores key lessons learned from vaccination with *Haemophilus influenzae* type b (Hib) conjugate vaccine and how these lessons may provide insight into the impact of emergent pneumococcal vaccines against pneumonia. The worldwide value of Hib vaccination for reducing Hib disease burden and carriage is reviewed. Using comparison of data for pneumococcus versus Hib, the article concludes that epidemiological and biological differences between these pathogens will complicate efforts to use results from the Hib vaccine experience to predict outcomes following pneumococcal conjugate vaccine introductions.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Impact of conjugate *Haemophilus influenzae* type b (Hib) vaccine introduction in South Africa
Authors	von Gottberg A, de Gouveia L, Madhi SA, du Plessis M, Quan V, Soma K, Huebner R, Flannery B, Schuchat A, Klugman KP, the Group for Enteric, Respiratory and Meningal disease Surveillance in South Africa
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed Bulletin of the World Health Organization 2006; 84:811-818
Type of the document	Paper
Status of development	Developed
Summary	Objective of this study is to analyze trends in reporting invasive *Haemophilus influenzae* disease in South Africa within the first years of introduction of conjugate *Haemophilus influenzae* type b (Hib) vaccine in the routine child immunization schedule. The absolute number of Hib cases among children below one year of age decreased by 65%, from 55 cases in 1999-2000 to 19 cases in 2003-2004. All in all, data from a newly established national laboratory-based surveillance system showed a decrease in Hib disease burden among South African children following conjugate vaccine introduction.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Elimination of *Haemophilus influenzae* type b (Hib) disease from The Gambia after the introduction of routine immunization with a Hib conjugate vaccine: a prospective study
Authors	Adegbola RA, Secka O, Lahai G, Lloyd-Evans N, Njie A, Usen S, Oluwalana C, Obaro S, Weber M, Corrah T, Mulholland K, McAdam K, Greenwood B, Milligan PJM
Contact details of authors	----
Institution	----
Year of issue	2005
Accessibility of the document	Internet: PubMed Lancet 2005 Jul 9-15;366(9480):101-3
Type of the document	Paper
Status of development	Developed
Summary	Aim of this study is to summarize results of the routine immunization of infants in The Gambia with a *Haemophilus influenzae* type b (Hib) in May 1997 conducted throughout the national expanded program on immunization. The annual incidence rates of Hib meningitis before any use of the vaccine dropped from over 200 per 100 000 children aged younger than 1 year to none per 100 000 in 2002, and from 60 to no cases per 100 000 in children younger than 5 years. The prevalence of Hib carriage decreased from 12% to 0.25%. Two doses of vaccine were needed for direct protection from Hib disease. Since most children received a protective dose after the age of greatest disease risk, indirect effects were important in reducing disease incidence. In conclusion, The Gambian Hib immunization program reduced the occurrence of Hib disease despite irregular vaccine supply. The effect of the program in The Gambia has important implications for the introduction of the vaccine into routine immunization program of other developing countries.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	*Haemophilus influenzae* type b vaccine impact in resource-poor settings in Asia and Africa
Authors	Gessner BD
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Expert Rev. Vaccines. 2009 Jan ;8(1) :91-102
Type of the document	Paper
Status of development	Developed
Summary	Recently, the vaccine has been introduced in resource-poor settings, mainly those in Africa. African countries have documented large declines in Hib-invasive disease following universal vaccine introduction based on evaluation of routine surveillance data. In 2007, only Mongolia in Asia had introduced the vaccine. Consequently, studies are limited to clinical trials in Bangladesh and Indonesia, and these also demonstrate substantial vaccine impact. To sum up, in all settings evaluated, Hib vaccine was shown to be cost effective, although the vaccine is not yet cost saving based on pentavalent vaccine prices in excess of US$3 per dose.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Impact of *Haemophilus influenzae* type b conjugate vaccine on bacterial meningitis in the Dominican Republic
Authors	Lee EH, Corcino M, Moore A, Garib Z, Pena C, Sanchez J, Fernandez J, Feris-Iglesias JM, Flannery B
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Rev Panam Salud Publica. 2008 Sep;24(3):161-8
Type of the document	Paper
Status of development	Developed
Summary	Widespread use of *Haemophilus influenzae* type b (Hib) vaccines has dramatically reduced the burden of Hib disease throughout the Americas. This study analyzed trends in probable bacterial meningitis before and after the introduction of Hib vaccine in the Domenican Republic and estimated vaccine effectiveness against Hib meningitis. Before vaccine introduction, annual rates of meningitis with probable bacterial etiology were 49 cases per 100,000 children < 5 years of age; Hib accounted for 60% of confirmed bacterial cases. During 2002-2004, after vaccine introduction, annual rates of probable bacterial meningitis ere 65% lower at 16 cases per 100,000, and Hib accounted for 26% of confirmed cases. The introduction of Hib vaccine substantially reduced the incidence of confirmed and probable bacterial meningitis in the Domenican Republic.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Effectiveness of *Haemophilus influenzae* type b conjugate vaccine on prevention of pneumonia and meningitis in Bangladeshi children: a case-control study
Authors	Baqui AH, El ArifeenS, Saha SK, Persson L, Zaman K, Gessner BD, Moulton LH, Black RE, Santosham M
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed Pediatr Infect dis J. 2007 Jul;26(7):565-71
Type of the document	Paper
Status of development	Developed
Summary	Only a few Asian countries have introduced *Haemophilus influenzae* type b conjugate vaccine because of its cost and uncertainty regarding disease burden. To estimate the effectiveness of Hib conjugate vaccine in preventing pneumonia and meningitis in children age < 2 years, an incident case-control study was conducted in a birth cohort of about 68,000 infants in Dhaka city, Bangladesh. All in all, the study documented that significant fraction of pneumonia and meningitis in Bangladeshi children aged < 2 years can be prevented by the Hib conjugate vaccine.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Introduction of *Haemophilus influenzae* type B conjugate vaccine into routine immunization in Ghana and its impact on bacterial meningitis in children younger than five years
Authors	Renner LA, Newman MJ, ahadzie L, antiwi-Agyei KO, Eshetu M
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed Pediatr Infet Dis J. 2007 Apr;26(4):356-8
Type of the document	Paper
Status of development	Developed
Summary	This report shows the impact of pentavalent vaccine that includes *Haemophilus influenzae* type b (Hib) conjugate vaccine on bacterial meningitis in children younger than 5 years in Ghana. A review of the first 3 years of a pediatric bacterial meningitis surveillance program, started in August 2001 in Accra, Ghana, was undertaken. There was a significant reduction in percentage of purulent meningitis in children younger than 1 year, comparing the first year when the vaccine was introduced, to the second and third year, respectively.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Impact of *Haemophilus influenzae* Type b conjugate vaccine in South Africa and Argentina
Authors	Martin M, Casellas JM, Madhi SA, Urquhart TJ, Delport SD, Ferrero F, Chamany s, Dayan GH, Rose CE, Levine OS, Klugman KP, Feikin DR
Contact details of authors	----
Institution	----
Year of issue	2004
Accessibility of the document	Internet: PubMed Pediatr Infet Dis J. 2004 Sep ;23(9) :842-7
Type of the document	Paper
Status of development	Developed
Summary	Aim of the study is to demonstrate the decrease in severe Hib disease after countries introduce Hib conjugate vaccine which will help to justify the resources necessary to purchase and provide the vaccine. After introduction of Hib conjugate vaccine, culture-confirmed Hib meningitis declined significantly. In conclusion, Culture-confirmed Hib meningitis declined after Hib vaccine introduction. Moreover, surrogate indicators of bacterial meningitis also declined and might be useful measures of Hib conjugate vaccine impact.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Community effect of *Haemophilus influenzae* type B vaccination in India
Authors	Verghese VP, Friberg IK< Cheriam T, Raghupathy P, Balaji V, Lalitha MK, Thomas K, John TJ, Steinhoff MC
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Pediatr Infet Dis J. 2009 Aug ;28(8) :738-55
Type of the document	Paper
Status of development	Developed
Summary	Major objective of the study was to assess the effect of distribution of *Haemophilus influenzae* type b vaccine in the private health care sector on Hib meningitis admissions at a referral hospital in India. Since the annual mean number of Hib cases was 10.7 before Hib vaccine introduction, falling to 2.8 cases following introduction, Hib vaccine has significant impact on Hib disease.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	*Haemophilus influenzae* Type b conjugate Vaccine Introduction in Mali: Impact on Disease Burden and Serologic Correlate of Protection
Authors	Sow SO, Tapia MD, Diallo S, Keita MM, Sylla M, Onwuchekwa U, Pasetti MF, Kotloff KL, Levine MM
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Am J Trop Med Hyg. 2009 Jun;80(6):1033-8
Type of the document	Paper
Status of development	Developed
Summary	In Bamako, Mali, where surveillance revealed a high incidence of *Haemophilus influenzae* type b invasive disease, Hib conjugate vaccine was introduced into the Expanded Program on Immunization and the impact assessed. Annual confirmed Hib hospitalizations for infants 0-11 months of age fell from 175/100000 to 44/100000; among infants 6-7 months of age Hib hospitalizations fell from 277/100000 to 69/100000. Referring to the given results, the introduction of Hib vaccine led to significant reductions in Hib disease.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Impact of the *Haemophilus influenzae* type b vaccination program on HIB meningitis in Brazil
Authors	de Souza Castro Miranzi S, de Moraes SA, de Freitas ICM
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed Cad Saude Publica. 2007 Jul;23(7):1689-95
Type of the document	Paper
Status of development	Developed
Summary	This study aimed to evaluate the impact of vaccination against *Haemophilus influenzae* type b in Brazil on the morbidity, mortality, and case fatality of HIB meningitis. The impact was evaluated through a time series analysis (1983-2002), using regression forecasting (RF) by dividing the time series into two periods: historical (1983-1998) and validation (1999-2002). Impact of the vaccination was positive, although more significant for incidence and mortality than for case fatality rates.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	*Haemophilus influenzae* meningitis 5 years after introduction of the *Haemophilus influenzae* type b conjugate vaccine in Brazil
Authors	Ribeiro GS, Lima JBT, Reis JN, Gouveia EL, Cordeiro SM, Lobo TS, Pinheiro RM, Ribeiro CT, Neves AB, Salgado K, silva HR, Reis MG, Ko AI
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed Vaccine. 2007 May 30;25(22):4420-8
Type of the document	Paper
Status of development	Developed
Summary	The long-term impact of *Haemophilus influenzae* type b conjugate vaccine, introduced throughout Latin America in the late 1990s, has not been evaluated. Active surveillance for *Haemophilus influenzae* meningitis was performed from August 9, 1996 to August 8, 2004 in Metropolitan Salvador, Brazil. Five years after the introduction of Hib conjugate vaccine, Hib meningitis incidence decreased from 2.39 to 0.06 per 100,000 population (98%) overall, and from 60.9 to 3.1 cases per 100,000 population (95%) in children < 1 year of age. These findings indicate that Hib immunization campaign has led to the virtual elimination of Hib disease in this region.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Vaccine-preventable *Haemophilus influenzae* type B disease burden and cost-effectiveness of infant vaccination in Indonesia
Authors	Gessner BD, Sedyaningsih ER, Griffiths UK, Sutanto A, Linehan M, Mercer D, Mulholland EK, Walker DG, Steinhoff M, Nadjib M
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Pediatr Infect Dis J. 2008 May;27(5):438-43
Type of the document	Paper
Status of development	Developed
Summary	Most of Asia, including Indonesia, does not use *Haemophilus influenzae* type b conjugate vaccines. Therefore, the aim of this study was to estimate the total vaccine-preventable disease burden and the cost-effectiveness of Hib conjugate vaccine in Indonesia. The overall conclusion is that routine infant Hib vaccination would prevent a large burden of pediatric illness and death in Indonesia. Even without external funding support, Hib vaccine will be a highly cost-effective interaction in either a monovalent or pentavalent presentation based on commonly used benchmarks..

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Reduction of meningitis and impact on under-5 pneumonia after introducing the Hib vaccine in the Kingdom of Tonga
Authors	Russel FM, Fakakovi T, Paasi S, Ika A, Mulholland EK
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Ann Trop Paediatr. 2009 Jun;29(2):111-7
Type of the document	Paper
Status of development	Developed
Summary	Aim of this study is to document the impact of Hib vaccine on *Haemophilus influenzae* invasive disease, meningitis and inpatient pneumonia in children under 5 in the Kingdom of Tonga. Major results are that prior to the introduction of Hib conjugate vaccine in 2005, there were, on average, 5.6 cases of invasive *Haemophilus influenzae* disease per year. In the 22 months after Hib vaccine introduction, there was only one case of invasive *Haemophilus influenzae* disease. This corresponds to a fall in the annual incidence of invasive Hib disease from 54.3 to 5.1/100,000 children under 5 years of age. The annual incidence of inpatient pneumonia has fallen by 28.3% from 1007.6 722.8/100,000 children under 5 in the 22 months after introducing the vaccine. All in all, Hib vaccine has reduced invasive *Haemophilus influenzae* disease and *Haemophilus influenzae* meningitis in Toga. The reduction in inpatient pneumonia is more likely a reflection of annual fluctuations in viral pneumonia than of a reduction in Hib pneumonia, but ongoing surveillance is recommended.

Haemophilus influenzae type b: The impact of immunization with Haemophilus influenzae type b

Title of the document	Effectiveness of *Haemophilus influenzae* type b vaccination against bacterial pneumonia in Colombia
Authors	de la Hoz F, Higuera AB, Di Fabio JL, Luna M, Naranjo AG, de la Luz Valencia M, Pastor D, Hall AJ
Contact details of authors	----
Institution	----
Year of issue	2004
Accessibility of the document	Internet: PubMed Vaccine. 2004 Nov 15;23(1):36-42
Type of the document	Paper
Status of development	Developed
Summary	The aim of this study is to assess the effectiveness of Hib vaccination program against x-ray defined bacterial pneumonia in children < 2 years in Colombia. Major results are that the risk of having x-ray confirmed pneumonia decreased with each Hib dose received; the vaccine effectiveness was 47% (2-72%) among those receiving one dose; 52% for two doses received, and 55% for three doses. In conclusion, this study indicates that trials may have underestimated the proportion of radiological pneumonia in the under 2s that is due to Hib. This suggests that the impact of the vaccination will be greater than expected if it can be extended to reach the poorest children, who are at the greatest risk.

3.2 *Neisseria meningitidis*

3.2.1 Neisseria meningitidis: General information

Title of the document	VPD Surveillance Manual, 4th Edition Chapter 8: Meningococcal Disease
Authors	Kimberly Cushing, Amanda Cohn
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt08-mening.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet gives an generic overview of meningococcal disease: The context of the fact sheet is: • Disease description • Background such as carriage, epidemiology, risk factors, clinical appearance, treatment, and chemoprophylaxis • Importance of rapid identification • Importance of surveillance • Disease reduction goals • Case definition such as confirmed, probable, primary, secondary, and co-primary case and close contacts • Laboratory testing as identification of *N. meningitidis*, susceptibility testing, and public health impact • Reporting • Vaccination concerning available vaccines such as polysaccharide and conjugate vaccines • Enhancing surveillance • Case investigation • Outbreak investigation attack rates, community and organization outbreaks, population at risk, decision to vaccinate, and other control measures

Neisseria meningitidis: General information

Title of the document	Bacterial Infections/ Meningococcal disease
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/vaccine_research/diseases/soa_bacterial/en/index1.html
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet provides general information regarding meningococcal disease: Those facts are given: • Generic overview, which makes information regarding incidence, risk groups, global epidemiology, and disease pattern available • Disease burden in terms of spread of meningococcal diseases in industrialized and developing countries, special focus on the African meningitis belt as well as on spread of *N. meningitidis* group A and B • Bacteriology concerning the bacterium *N. meningitidis*, criteria of classification, and virulence factors • Available vaccines such as monovalent or multivalent polysaccharide and conjugate vaccines • Vaccines against groups A, C, Y, and W135 meningococci • The meningitis vaccine project (Men A) • Vaccines against group B meningococci

3.2.2 *Neisseria meningitidis: Disease burden*

Title of the document	World/ Meningococcal disease
Authors	----
Contact details of authors	----
Institution	WHO: Global Health Atlas/ Global Health Observatory Map Gallery
Year of issue	2008
Accessibility of the document	Internet: http://gamapserver.who.int/mapLibrary/app/searchResults.aspx
Type of the document	Map
Status of development	Developed
Summary	The map shows which countries or areas were at high risk for meningococcal meningitis worldwide in 2008

Neisseria meningitidis: Disease burden

Title of the document	Africa/ Meningococcal disease
Authors	----
Contact details of authors	----
Institution	WHO: Global Health Atlas/ Global Health Observatory Map Gallery
Year of issue	2007-
Accessibility of the document	Internet : http://gamapserver.who.int/mapLibrary/app/searchResults.aspx
Type of the document	Maps
Status of development	Developed
Summary	The maps provided by the WHO's Global Health Atlas describe following data: • Africa: Incidence of reported meningitis among total population, 1995-2003 • Africa: districts crossing the epidemic thresholds in countries part of the African belt during the epidemic season 2006-2007 • Africa: Districts crossing the epidemic thresholds in countries part of the African belt during the epidemic season 2006 • Africa: Districts crossing the epidemic thresholds in Eastern African countries under enhanced surveillance during the epidemic season 2006 • Africa: Districts crossing the epidemic thresholds in Western African countries under enhanced surveillance during the epidemic season 2006 • Africa: Attack rate in districts crossing the alert and epidemic thresholds in African countries under enhanced surveillance during the epidemic season 2004-2005 • Africa: Attack rate in districts crossing the alert and epidemic thresholds in African countries under enhanced surveillance during the epidemic season 2003-2004 • Africa: Attack rate in districts crossing the alert and epidemic thresholds in African countries under enhanced surveillance during the epidemic season 2002-2003 • Africa: Meningitis belt 2003-2004

Neisseria meningitidis: Disease burden

Title of the document	Global epidemiology of meningococcal disease
Authors	Harrison LH, Trotter CL, Ramsay ME
Contact details of authors	----
Institution	-----
Year of issue	2009
Accessibility of the document	Internet : Pubmed: Vaccine. 2009 Jun 24;27 Suppl 2:B51-63. Epub 2009 May 27.
Type of the document	Paper
Status of development	Developed
Summary	This review summarizes the current status of meningococcal disease epidemiology and highlights that due to the dynamic nature of this disease ongoing surveillance both to provide data for vaccine formulation and vaccine policy and to monitor the impact of vaccines following introduction is required. The highest incidence of about 1000 per 100,000 population of meningococcal disease occurs in the meningitis belt of sub-Saharan Africa where serogroup A beside C, X and W-135 is most prevalent. Compared to the African region, an incidence of 0.3-4 cases per 100,000 population was reported in the Americas and it is known that most diseases are caused by serogroup C and B. However, the occurrence of serogroup Y and W-135 in this region is increasing. In European countries the incidence ranges from 0.2 to 14 cases per 100,000 and the majority of cases are caused by serogroup B. In Asia, however, serogroup A and C are mainly responsible for meningococcal diseases.

3.2.3 *Neisseria meningitidis: Standard procedure for laboratory diagnosis*

Title of the document	Laboratory methods for the diagnosis of meningitis caused by *Neisseria meningitidis*, *Streptococcus pneumoniae*, and *Haemophilus influenzae*
Authors	Tanja Popovic, Gloria Ajello, Richard Facklam, and CDC Atlanta
Contact details of authors	----
Institution	WHO
Year of issue	----
Accessibility of the document	Internet: http://www.who.int/csr/resources/publications/meningitis/whocdscsredc997.pdf
Type of the document	Guideline/ Manual
Status of development	Developed
Summary	The guideline/manual presents laboratory techniques used in the isolation and identification of *N. meningitidis*, *S. pneumoniae*, and *H. influenzae* from cerebrospinal fluid and blood of patients with clinical meningitis. Even the procedures described require an array of laboratory capabilities, these procedures were selected because of their utility, ease performance, and ability to give reproducible results. In addition to the basic procedures, methods for subtyping and biotyping of these organisms are included. Major content of the manual related to the diagnosis of *N. meningitidis*: • Epidemiology of meningitis caused by *N.meningitidis* • Collection and transport of clinical specimens • Primary culture, subculture and presumptive identification • Identification of *N. menigitidis* such as Kova's Oxidase test, identification of the *N. meningitidis* serogroup, carbohydrate utilization by *N. meningitidis* – Cystine Trypticase Agar method, and commercial identification kits • Preservation and transport of *N. meningitidis*

3.2.4 Neisseria meningitidis: Standard procedure for surveillance

Title of the document	WHO-recommended standards for surveillance of selected vaccine-preventable diseases
Authors	----
Contact details of authors	----
Institution	WHO Vaccine and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF06/843.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guideline is to provide recommendations on surveillance standards for selected vaccine-preventable diseases. The recommendations should be adapted according to the country's needs. Surveillance of *N. meningitidis* is based on the following criteria: • Clinical case description • Case classification such as suspected, probable, and confirmed cases • Surveillance of suspected and confirmed cases • Surveillance of probable cases • data elements for reporting and investigation

3.2.5 Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Meningococcal group C disease in Greece during 1993-2006: the impact of an unofficial single-dose vaccination scheme adopted by most pediatricians
Authors	Kafetzis DA, Stamboulidis KN, Tzanakaki G, Kremastinou JK, skevaki CL, Konstantopoulos A, Tsolia M
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed Clin Microbiol Infect. 2007 May;13(5):550-2
Type of the document	Paper
Status of development	Developed
Summary	The aim of this study was to evaluate the impact of the meningococcal C conjugate vaccine on the epidemiology of meningococcal C disease in Greece. Since the introduction of the vaccine in 2001, 72% of Greek pediatricians have administered it as one single dose to patients aged ≥ 12 months. This vaccination scheme has probably contributed to a dramatic decrease in the number of meningococcal C infections, which reached zero in 2004.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Impact and effectiveness of meningococcal C conjugate vaccine following its introduction in Spain
Authors	Larrauri A, Cano R, Garcia M, de Mateo S
Contact details of authors	----
Institution	----
Year of issue	2005
Accessibility of the document	Internet: PubMed Vaccine. 2005 Jul 14;23(32):4097-100
Type of the document	Paper
Status of development	Developed
Summary	This study describes the epidemiological impact of meningococcal C conjugate vaccine on age groups targeted by this vaccination program in Spain, and estimates high short-term vaccine effectiveness values under field conditions in the 4 years following its introduction. Meningococcal C conjugate vaccine has led to a substantial reduction in incidence of meningococcal serogroup C disease in Spain among age group targeted for intervention nationwide. Four years after vaccination, vaccine protection levels exceeded 94% in cohorts immunized during the campaign. Among children vaccinated in routine childhood immunization programs, however, long-term VE loss was greater.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Impact of meningococcal C conjugate vaccine in the UK
Authors	Balmer P, Borrow R, Miller E
Contact details of authors	----
Institution	----
Year of issue	2002
Accessibility of the document	Internet: PubMed J Med Microbiol. 2002 Sep;51(9):717-22
Type of the document	Paper
Status of development	Developed
Summary	This review details the impact of the introduction of meningococcal serogroup C conjugate (MCC) vaccines in the UK. An overall reduction of 86.7% in the incidence of serogroup C infection in the targeted age groups has been observed from 1999 to 2001, with a concomitant decrease in deaths, from 67 in 1999 to 5 in 2001. Efficacy estimates for England up to September 2001 were 91.5% in infants receiving three doses of MCC vaccine and 89.3% in toddlers receiving one dose of MCC vaccine (England). There is some evidence of herd immunity in unvaccinated cohorts of the target age groups, ranging from a reduction in disease incidence of 34% in 9-14 year olds to 61% in 15-17 year olds.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Bacterial meningitis: the impact of vaccination
Authors	Makwana N, Riordan FA
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed CNS Drugs. 2007;21(5):355-66
Type of the document	Paper
Status of development	Developed
Summary	Beside information regarding the use of Hib conjugate vaccine and pneumococcal conjugate vaccine, the paper highlights that since UK introduced the conjugate meningococcal C vaccine into its infant schedule, a corresponding reduction in *Neisseria meningitidis* group C disease appeared. A recent decrease in the effectiveness of the vaccine suggests a booster may be necessary in the future.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Herd immunity from meningococcal serogroup C conjugate vaccination in England: database analysis
Authors	Ramsay ME, Andrews NJ, Trotter CL, Kaczmarski EB, Miller E
Contact details of authors	----
Institution	----
Year of issue	2003
Accessibility of the document	Internet: PubMed BMJ. 2003 Feb 15;326(7385):365-6.
Type of the document	Paper
Status of development	Developed
Summary	In November 1999, the United Kingdom introduced routine meningococcal serogroup C conjugate vaccination for infants. The entire program was completed by the end of 2000. Referring to the given results, 67% reduction in the prevalence of nasopharyngeal carriage of serogroup C meningococci in adolescents before and after the vaccination program were described. A fall in meningococcal carriage would be expected to reduce exposure among unvaccinated children and therefore to enhance the effectiveness of meningococcal conjugate vaccine. Aim of this publication was to present rates of disease in vaccinated and unvaccinated children to provide the first evidence of an indirect effect from meningococcal conjugate vaccine.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Effectiveness of meningococcal serogroup C conjugate vaccine 4 years after introduction
Authors	Trotter CL, Andrews NJ, Kaczmarski EB, Miller E, Ramsay M
Contact details of authors	----
Institution	----
Year of issue	2004
Accessibility of the document	Internet: PubMed Lancet. 2004 Jul 24-30;364(9431):365-7.
Type of the document	Paper
Status of development	Developed
Summary	The meningococcal serogroup C conjugate vaccine program in England has successfully controlled the incidence of serogroup C disease, as a result of high short-term vaccine effectiveness and substantial herd immunity. Referring to data assessed during a four year surveillance, vaccine effectiveness remains high in children vaccinated in the catch-up campaign (5 months to 18 years). However, for children vaccinated in the routine infant immunization program, the effectiveness of the MCC vaccine fell to low levels after only 1 year. The number of individuals in these cohorts remains low, but alternative routine immunization schedules should be considered to ensure high levels of protection.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Modeling Future Changes to the Meningococcal Serogroup C Conjugate (MCC) Vaccine Program in England and Wales.
Authors	Trotter, CL, Edmunds WJ, Ramsay ME, Miller E
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed Hum Vaccin. 2006 Mar-Apr;2(2):68-73. Epub 2006 Mar 14.
Type of the document	Paper
Status of development	Developed
Summary	The UK meningococcal serogroup C conjugate (MCC) vaccine program has successfully controlled serogroup C disease, due to high vaccine effectiveness and substantial herd immunity. However, children immunized at 2, 3 and 4 months of age received only short-term direct protection and maybe at risk of disease 15 months after vaccination. To investigate this a mathematical model to predict the future epidemiology of serogroup C disease was applied, with and without changes to the immunization schedule. Only a few cases of serogroup C disease were predicted to occur over the next few years because of persisting herd immunity, even without a change to the vaccine schedule. The inclusion of a booster dose is likely to improve the impact of the MCC program and reducing the number of doses in infancy will improve cost-effectiveness and create space in the schedule for the addition of other vaccines.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Vaccination against meningococcal disease in Europe: review and recommendations for the use of conjugate vaccines
Authors	Trotter CL, Ramsay M
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed FEMS Microbiol Rev. 2007 Jan;31(1):101-7. Epub 2006 Dec 1.
Type of the document	Paper
Status of development	Developed
Summary	At the end of 2005, six European countries had implemented public immunization campaigns with serogroup C conjugate vaccines, and all had experienced substantial declines in the incidence of serogroup C disease. This paper outlines recommendations on the use of conjugate vaccines in Europe based on the experience with meningococcal C conjugate (MCC) vaccines.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Seroprevalence of Antibodies against Serogroup C Meningococci in England in the Postvaccination Era
Authors	Trotter CL, Borrow R, Findlow J, Holland A, Frankland S, Andrews NJ, Miller E.
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Clin Vaccine Immunol. 2008 Nov;15(11):1694-8. Epub 2008 Sep 30.
Type of the document	Paper
Status of development	Developed
Summary	The United Kingdom introduced meningococcal serogroup C conjugate (MCC) vaccines in 1999, resulting in substantial declines in serogroup C disease and carriage. Main objective was to measure the age-specific prevalence of serum bactericidal antibodies to Neisseria meningitidis serogroup C and immunoglobulin G concentrations to serogroup A, C, W-135, and Y in 2,673 serum samples collected in England between 2000 and 2004. In the postvaccination era, the prevalence of protective titers was high in children who had recently been offered routine immunization, but this fell to 36% more than 18 months after scheduled immunization. In the cohorts targeted in the catch-up campaign, the percentage achieving SBA titers of $\geq$ 8 was higher in children offered the vaccine at ages 5 to 7 years than in children offered the vaccine at ages 1 to 4 years.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Meningococcal vaccines and herd immunity: lessons learned from serogroup C conjugate vaccination programs
Authors	Trotter CL, Maiden MCJ
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Expert Rev Vaccines. 2009 Jul;8(7):851-61. Review.
Type of the document	Paper
Status of development	Developed
Summary	Effective vaccines provide direct protection to immunized individuals, but may also provide benefits to unvaccinated individuals by reducing transmission and thereby lowering the risk of infection. Such herd immunity effects have been demonstrated following the introduction of meningococcal serogroup C conjugate vaccines, with reduction in disease attack rates in unimmunized individuals and significantly lower serogroup C carriage attributable to the vaccine introduction.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Dynamic Models of Meningococcal Carriage, Disease, and the Impact of Serogroup C Conjugate Vaccines
Authors	Trotter CL, Gay NJ, Edmunds J
Contact details of authors	----
Institution	----
Year of issue	2005
Accessibility of the document	Internet: PubMed Am J Epidemiol. 2005 Jul 1;162(1):89-100.
Type of the document	Paper
Status of development	Developed
Summary	In this paper, the authors use data on immunization with serogroup C meningococcal conjugate vaccine in England and Wales to develop and apply a mathematical model to investigate the direct and indirect (herd immunity) effects of a conjugate vaccine program. This model can be used to help predict the potential impact of vaccine strategies both in the United Kingdom and elsewhere.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Meningococcal serogroup C conjugate vaccination in England and Wales: coverage and initial impact of the campaign
Authors	Trotter CL, Ramsay ME, Kaczmarski EB
Contact details of authors	----
Institution	----
Year of issue	2002
Accessibility of the document	Internet: PubMed Commun Dis Public Health. 2002 Sep;5(3):220-5
Type of the document	Paper
Status of development	Developed
Summary	The UK was the first country to introduce meningococcal serogroup C conjugate vaccination. The vaccine was incorporated into the routine infant immunization schedule and was offered to all under 18 years olds in a catch-up campaign. The incidence of serogroup C disease in the targeted age group fell by 80%, and the number of deaths in laboratory confirmed cases in 0-19 year olds decreased from 78 to 8 between 1998-99 and 2000-2001. The incidence of serogroup B disease in all age groups was slightly higher in 2000-2001 than previous years, and there was an increase in the incidence of serogroup C disease in those aged over 20 during the study period, leading to the extension of the vaccination campaign to 20-24 years olds.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	A surveillance network for meningococcal disease in Europe
Authors	Trotter CL, Chandra M, Cano R, Larrauri A, Ramsay ME, Brehony C, Jolley KA, Maiden MC, Heuberger S, Frosch M.
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed FEMS Microbiol Rev. 2007 Jan;31(1):27-36. Epub 2006 Dec 1.
Type of the document	Paper
Status of development	Developed
Summary	According to EU-IBIS (European Union Invasive Bacterial Infections Surveillance Network), 50,000 cases of meningococcal diseases from 27 participating countries were reported. All in all a major decline in the incidence of invasive disease in those countries that have introduced routine vaccination against serogroup C infection could be demonstrated. The present publication highlights the importance of close collaboration between networkd of epidemiologists, microbiologists, and the wider scientific and public health community in order to provide more information on rapid reporting systems and impact of vaccination studies.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	The epidemiological impact of antimeningococcal B vaccination in Cuba
Authors	Rodriguez AP, Dickinson F, Baly A, Martinez R
Contact details of authors	----
Institution	----
Year of issue	1999
Accessibility of the document	Internet: PubMed Mem Inst Oswaldo Cruz. 1999 Jul-Aug;94(4):433-40
Type of the document	Paper
Status of development	Developed
Summary	The incidence of invasive meningococcal disease (IMD) before (1984-1988) and after (1989-1994), a nationwide intervention with VA-MENGOC-BC vaccination started in 1989, was compared. The prevacciantion period incidence density was higher than the postvaccination. Comparison of ID using maps showed a decrease in IMD in all municipalities during the postvacciantion period. These findings support the epidemiological impact of VA-MENGOC-BC vaccination in the reduction of IMD morbidity.

Neisseria meningitidis: The impact of vaccination with Neisseria meningitidis

Title of the document	Molecular epidemiological analysis of the changing nature of a meningococcal outbreak following a vaccination campaign
Authors	Shlush LI, Behar DM, Zelazny A, Keller N, Luypski JR, Beaudet AL, Bercovich D
Contact details of authors	----
Institution	----
Year of issue	2002
Accessibility of the document	Internet: PubMed J Clin Microbiol. 2002 Oct;40(10):3565-71
Type of the document	Paper
Status of development	Developed
Summary	A serogroup C meningococcal outbreak that occurred in an Israeli Arab village led to massive vaccination campaign. During the subsequent 18 months, new cases of type B Neisseria meningitidis infection were revealed. To investigate the influence of vaccination on bacteriological epidemiology, bacteria were isolated from individuals at the outbreak location, patients with several additional other sporadic cases, and patients involved in another outbreak. The occurrence of type B Neisseria meningitidis in the postvacciantion period might be attributed to the selection pressure applied to the bacteria by vaccination, suggesting a possible unwarranted outcome of vaccination with the quadrivalent vaccine for control of a serogroup meningococcal outbreak.

3.2.6 Neisseria meningitidis: Existing decision-making tool

Title of the document	Advanced Immunization Management (AIM) e-Learning Website: Meningitis: Meningococcal meningitis in Africa
Authors	Berlier M, LaForce FM, Mort M
Contact details of authors	AIM e-Learning Project Bâtiment Avant Centre 13 Chemin du Levant 01210 Ferney Voltaire France Fax: +33 450 28 04 07 info@aim.path.org
Institution	PATH
Year of issue	2009
Accessibility of the document	Internet: http://aim.path.org/en/vaccines/mening/index.html
Type of the document	E-learning module
Status of development	Developed
Summary	This module will help senior health officials deepen their understanding of meningococcal meningitis and its impact on public health in Africa's meningitis belt. The module addresses disease surveillance, meningococcal vaccines, and the way a new groups A meningococcal conjugate vaccine could be used to reduce morbidity in the meningitis belt. In addition, it provides information about adding a new vaccine to vaccination programs and ensuring a smooth introduction The e-learning module deals with following major topics: • The disease • Meningitis surveillance • Control strategies for epidemics • Vaccine considerations • Economic and cost considerations • Implement program • Evaluation

Neisseria meningitidis: Existing decision-making tool

Title of the document	Vaccines for the 21st Century: Vaccine candidates: N. meningitidis b
Authors	----
Contact details of authors	Institute of Medicine 500 Fifth Street NW Washington DC 20001 iomwww@nas.edu Phone: 202.334.2352 Fax: 202.334.1412
Institution	Institute of Medicine of the National Academies
Year of issue	2003
Accessibility of the document	Internet: http://www.iom.edu/?id=12276
Type of the document	Excel spreadsheet
Status of development	Developed
Summary	The decision-making tool provides an analytical framework and quantitative model for evaluating disease conditions that can be applied by those setting priorities for vaccine development over the coming decades. Moreover, the main approach of the decision-making tool is to compare potential new vaccines based on their impact on morbidity and mortality and on the costs of both health care and vaccine development. Some main required data for decision-making are: • Incidence rates • Mortality rates • Population • Data on HUI (Health Utility Index) • Morbidity scenarios • Cost of care • Cost of vaccine program

3.3 *Streptococcus pneumoniae*

3.3.1 Streptococcus pneumoniae: General information

Title of the document	VPD Surveillance Manual 4th Edition Pneumococcal Disease
Authors	Tamara Pilishvili, Brendan Noggle, Matthew R. Moore
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt11-pneumo.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet provides a general overview of pneumococcal disease: Following information regarding *S. pneumoniae* is available: • Disease description • Background such as pneumococcal vaccines, trends in invasive pneumococcal disease, and antimicrobial resistance trends • Importance of surveillance in terms of goals of surveillance and reportable conditions • Disease reduction goals • Case definition such as clinical description • Case classification of probable and confirmed cases • Case definition and case classification of invasive *S. pneumoniae* (children younger than 5 years of age) • Laboratory testing • Recommendations regarding an adequate reporting system • General facts concerning vaccination • Enhancing surveillance • Case investigations

Streptococcus pneumoniae: General information

Title of the document	*Streptococcus pneumoniae*
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/vaccine_research/diseases/ari/en/index3.html#disease burden
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet informs about following facts: • Global disease burden • Disease burden in developing and industrialized countries • Modes of transmission • Generic information regarding the pathogen • Risk groups • The clinical picture • Basic information on available vaccines such as 23-valent polysaccharide vaccine, conjugate vaccines, and protein vaccines

3.3.2 *Streptococcus pneumoniae: Disease burden*

Title of the document	Total mortality rate from *Streptococcus pneumoniae* in children under 5 for the year 2000
Authors	----
Contact details of authors	----
Institution	PneumoADIP
Year of issue	----
Accessibility of the document	Internet : http://www.preventpneumo.org/data-tools/upload/pcvintro_overlay_GDBmort.pdf
Type of the document	Map
Status of development	Developed
Summary	The map pictures the mortality rate from *S. pneumoniae* in children under 5 for the year 2000. Moreover, it shows data on pneumococcal deaths in children aged 1-59 months per 100,000 population and the status of conjugate pneumococcal vaccine introduction in 2009.

Streptococcus pneumoniae: Disease burden

Title of the document	Burden of disease caused by *Streptococcus pneumoniae* in children younger than 5 years: global estimates
Authors	O'Brien KL, Wolfsan LJ, Watt JP, Henkle E, Deloria-Knoll M, McCall N, Mulholland K, Levine OS, Cherian T, Hib and Pneumococcal Global Burden of Disease Study Team
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T1B-4X6FRG4-Y&_user=198559&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_acct=C000013398&_version=1&_urlVersion=0&_userid=198559&md5=503364fc93280c190aa9832ea83e428b Lancet: 2009 Sep 12; 374 (9693):854-6
Type of the document	Paper
Status of development	Developed
Summary	The objective of the publication of O'Brien et al is to support local and global policy decisions on pneumococcal disease prevention and treatment by estimating country-specific incidence of serious cases and deaths in children younger than 5 years. Findings in 2000 were that about 14-5 million episodes of serious pneumococcal disease were estimated to occur. Pneumococcal disease caused about 826 000 deaths in children aged 1-59 months.

3.3.3 *Streptococcus pneumoniae: Standard procedure for laboratory diagnosis*

Title of the document	Laboratory methods for the diagnosis of meningitis caused by *Neisseria meningitidis*, *Streptococcus pneumoniae*, and *Haemophilus influenzae*
Authors	Tanja Popovic, Gloria Ajello, Richard Facklam, and CDC Atlanta
Contact details of authors	----
Institution	WHO
Year of issue	----
Accessibility of the document	Internet: http://www.who.int/csr/resources/publications/meningitis/whocdscsredc997.pdf
Type of the document	Guideline/ Manual
Status of development	Developed
Summary	The guideline/manual presents laboratory techniques used in the isolation and identification of *N. meningitidis*, *S. pneumoniae*, and *H. influenzae* from cerebrospinal fluid and blood of patients with clinical meningitis. Even the procedures described require an array of laboratory capabilities, these procedures were selected because of their utility, ease performance, and ability to give reproducible results. In addition to the basic procedures, methods for subtyping and biotyping of these organisms are included. Major content of the manual related to the diagnosis of *S. pneumoniae*: • Basic epidemiology • Collection and transport of clinical specimens • Primary culture, subculture and presumptive identification • Identification of *S. pneumoniae* such as susceptibility to Optochin and bile and slide agglutination test • Preservation and transport of *S. pneumoniae*

3.3.4 *Streptococcus pneumoniae: Standard procedure for surveillance*

Title of the document	WHO-recommended standards for surveillance of selected vaccine-preventable diseases
Authors	----
Contact details of authors	----
Institution	WHO Vaccine and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF06/843.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guideline is to provide recommendations on surveillance standards for selected vaccine-preventable diseases. The recommendations should be adapted according to the country's needs. Surveillance of *S. pneumoniae* is based on the following criteria: • Clinical case description • Case classification such as suspected, probable, and confirmed cases • Surveillance of suspected and confirmed cases • Surveillance of probable cases • data elements for reporting and investigation

Streptococcus pneumoniae: Standard procedure for surveillance

Title of the document	GAVI's PneumoADIP
Authors	----
Contact details of authors	----
Institution	GAVI
Year of issue	2007
Accessibility of the document	Internet: http://pneumoadip.org/results/pneumoadip_activities/surveillance_and_research/upload/RS-Report-Final1207.pdf
Type of the document	Report
Status of development	Developed
Summary	Besides other information such as about basic data on pneumococcal disease, and pneumococcal conjugate vaccines, the report describes surveillance methods conducted by PneumoADIP. First, information is given concerning the representativeness of surveillance and standardization of surveillance methods, and second, the report pictures the location and different types of hospitals, specimens and diagnostic methods for surveillance.

3.3.5 *Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae*

Title of the document	Pneumococcal conjugate vaccines for preventing vaccine-type invasive pneumococcal disease and pneumonia with consolidation on x-ray in children under two years of age
Authors	Lucero MG, Dulalia VE, Parreno RN, Lim-Quianzon DM, Nohynek H, Makela H, Williams G
Contact details of authors	----
Institution	----
Year of issue	2004
Accessibility of the document	Internet: PubMed Cochrane Database Syst. Rev. 2004 Oct 18;(4):CD004977
Type of the document	Report
Status of development	Developed
Summary	The objective of the study is to determine the efficacy of PCV in reducing the incidence of IPD due to vaccine serotypes and x-ray confirmed pneumonia with consolidation of unspecific etiology in children who received PCV before 12 months of age. Major results are that the pooled vaccine efficacy for vaccine-type invasive pneumococcal disease was 88%, the pooled vaccine efficacy for all serotype invasive pneumococcal disease 66%, and the pooled vaccine efficacy for x-ray confirmed pneumonia was 22%. All in all, PCV is effective in reducing the incidence of invasive pneumococcal disease from all serotypes.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Impact of pneumococcal conjugate vaccine on the prevention of invasive pneumococcal diseases
Authors	Bricks LF, Berezin E
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed J Pediatr (Rio J). 2006 Jul; 82(3 Suppl): S67-74
Type of the document	Paper
Status of development	Developed
Summary	Objective of this study is to evaluate the impact of heptavalent pneumococcal conjugate vaccine in invasive pneumococcal diseases in the United States, and to analyze the potential impact of this vaccine in Brazil. Referring to the results of this study, the introduction of heptavalent pneumococcal conjugate vaccine caused a dramatic reduction in the incidence of invasive pneumococcal diseases in American children, reduced antibiotic use and the number of medical visits due to otitis media and pneumonia by children. The incidence of invasive pneumococcal diseases caused by resistant strains declined in immunized children, adults and elderly individuals. Since the mortality rate of pneumococcal meningitis is very high and the resistance to antibiotics has increased over the last 5 years, the heptavalent pneumococcal conjugate vaccine can benefit not only children, but the entire community and should therefore be included in the Brazilian routine immunization schedule.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Efficacy of nine-valent pneumococcal conjugate vaccine against pneumonia and invasive pneumococcal disease in The Gambia: randomized, double-blind, placebo-controlled trial.
Authors	Cutts FT, Zaman SM, Enwere G, Jaffar S, Levine OS, Okoko JB, Oluwalana C, Vaughan A, Obaro SK, Leach A, McAdam KP, Biney E, Saaka M, Onwuchekwa U, Yallop F, Oierce NF, Greenwood BM, Adegbola RA, Gambian Pneumococcal Vaccine Trial Group
Contact details of authors	----
Institution	----
Year of issue	2005
Accessibility of the document	Internet: PubMed Lancet. 2005 Mar 26-Apr1;365(9465):1113-4
Type of the document	Paper
Status of development	Developed
Summary	Aim of this study is to assess the efficacy of a nine-valent pneumococcal conjugate vaccine in children. Referring to the results of this randomized, placebo-controlled, double-blind trial, pneumococcal conjugate vaccine has high efficacy against radiological pneumonia and invasive pneumococcal disease, and can substantially reduce admissions and improve child survival.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Efficacy of pneumococcal vaccination in children younger than 24 months: a meta-analysis
Authors	Pavia M, Bianco A, Nobile CG, Marinelli P, Angelillo IF
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Pediatrics. 2009 Jun;123(6):e1103-10
Type of the document	Paper
Status of development	Developed
Summary	Major focus of this study was to determine the efficacy in reducing the incidence of invasive disease caused by Streptococcus pneumoniae. The efficacy of PCV in the reduction of invasive penumococcal diseases was 89%, the efficacy to prevent acute otitis media was 55%, to prevent clinical pneumonia was ~ 7%, and to prevent radiograph-confirmed pneumonia was ~ 31%. Referring to the presented results, the PCV produces a significant effect regarding the prevention of invasive pneumococcal disease and has therefore a remarkable impact on the health of infants in developing and industrialized countries.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Impact of infant pneumococcal vaccination on invasive pneumococcal diseases in France, 2001-2006
Authors	Lepoutre A, Varon E, Georges S, Gutmann L, Levy-Bruhl D
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Euro Surveill. 2008 Aug28;13(35). Pii: 18962
Type of the document	Paper
Status of development	Developed
Summary	The impact of PVC introduction on the incidence of pneumococcal meningitis and bacteraemia and on the serotype distribution in French children and other age-groups was assessed using laboratory surveillance data. In 2006, the coverage with the three doses of PCV was 44% in children aged 6-12 months. As a consequence, from 2001/2002 to 2006, the incidence of pneumococcal meningitis decreased from 8.0 to 6.0 cases per 100,000, and the incidence of pneumococcal bacteraemia decreased from 21.8 to 17.5 cases per 100,000 in children under the age of two years.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	National impact of universal childhood immunization with pneumococcal conjugate vaccine on outpatient medical care visits in the United States
Authors	Grijalva CG, Poehling KA, Nuorti JP, Zhu Y, martin SW, Edwards KM, Griffin MR
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed Pediatrics. 2006 Sep;118(3):865-73
Type of the document	Paper
Status of development	Developed
Summary	In 2000, the heptavalent pneumococcal conjugate vaccine was introduced in the United States. Subsequent, rates of invasive pneumococcal disease have declined. However, the national impact of heptavalent pneumococcal conjugate vaccine on pneumonia and otitis media remains unknown. Referring to the results of this study, otitis media rates declined by 20% in children aged < 2 years after introduction of the vaccine. However, there is no significant decrease for pneumonia or other acute respiratory infections for children aged <2 years.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Impact of the introduction of pneumococcal conjugate vaccine on rates of community acquired pneumonia in children and adults.
Authors	Nelson JC, Jackson M, Yu O, Whitney CG, Bounds L, Bittner R, Zavitkovsky A, Jackson LA
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed Vaccine. 2008 Sep 8;26(38):4947-54
Type of the document	Paper
Status of development	Developed
Summary	In the United States, pneumococcal conjugate vaccine use among young children has led to significant declines in invasive pneumococcal disease, but the impact on community-acquired pneumonia is unknown. Therefore, in 2000, population-based pneumonia surveillance among 794,282 subjects before and after infant vaccine introduction was conducted. Episodes of pneumonia were identified, and 17,513 outpatients and 6318 hospitalized events were confirmed. There was evidence for a decline in rates of both outpatients and inpatients pneumonia in children less than 1 year of age following vaccine introduction but there were no consistent reductions in pneumonia rates among older children and adults.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Pre- and postvacciantion clonal compositions of invasive pneumococcal serotypes for isolation collected in the United States in 1999, 2001, and 2002
Authors	Beall B, McEllistrem MC, Gertz RE Jr, Wedel S, Boxrud DJ, Gonzalez AL, Medina MJ, Pai R, Thompson TA, Harrison LH, McGee L, Whitney CG; Active Bacterial Core Surveillance Team
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed J Clin Microbiol. 2006 Mar;44(3):999-1017
Type of the document	Paper
Status of development	Developed
Summary	1,476 invasive isolates from the Active Bacterial Core surveillance of the isolates obtained from children <5 years of age and 771 of the isolates obtained from individuals >5 years of age in 2001 and 2002 (after the introduction of PCV7) were genotyped. The data were compared to the results for 1,168 invasive isolates of the isolates obtained from children < 5 years of age collected in 1999. Among children < 5 years of age, the incidence of invasive disease due to non-PCV7 serotypes together with serogroup 19A increased.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Vaccine preventable diseases and vaccination policy for indigenous populations
Authors	Menzies R, McIntyre P
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed Epidemiol. Rev. 2006;28:71-80
Type of the document	Paper
Status of development	Developed
Summary	Compared with nonindigenous people, indigenous people in first-world countries have experienced much higher rats of many vaccine preventable diseases. This systematic review of published scientific literature, government reports, and immunization guidelines from Australia, Canada, New Zealand, and the United States compares pre- and postvacciantion disease rates and vaccination policy for indigenous people in these four countries.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Impact of pneumococcal vaccination on pneumonia rates in patients with COPD and asthma
Authors	Lee TA, Weaver FM, Weiss KB
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: PubMed J Gen Intern Med. 2007 Jan;22(1):62-7
Type of the document	Paper
Status of development	Developed
Summary	Patients with chronic obstructive pulmonary disease (COPD) are included in several national pneumococcal vaccination recommendations whereas asthma patients are not. The objective of this study was to evaluate pneumonia-related hospitalization risk in patients with COPD or asthma and vaccination impact. This study supports the value of vaccinating COPD patients; however, the value of vaccination for asthma patients is less certain.

Streptococcus pneumoniae: The impact of vaccination with Streptococcus pneumoniae

Title of the document	Nasopharyngeal carriage of streptococcus pneumoniae in Gambian children who participated in a 9-valent pneumococcal conjugate vaccine trial and in their younger siblings
Authors	Cheung YB, Zaman SM, Nsekpong ED, Van Beneden CA, Adegbola RA, Greenwood B, Cutts FT
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Pediatr Infect Dis. 2009 Nov;28(11):990-995
Type of the document	Paper
Status of development	Developed
Summary	Nasopharyngeal carriage of Streptococcus pneumoniae is extremely prevalent in the Gambia. Aim of this study was to study the effects of vaccination with pneumococcal conjugate vaccines on the carriage of individual serotypes and on antimicrobial resistance in vaccinated children and their younger siblings. The effects of 9-valent pneumococcal conjugate vaccines on carriage of pneumococci persisted for at least 16 months postvaccination in Gambian children. Vaccination had no indirect effect on carriage in younger siblings and there was limited impact on antibiotic resistance.

3.3.6 *Streptococcus pneumoniae: Existing decision-making tool*

Title of the document	Vaccines for the 21st Century: Vaccine candidates: *S. pneumoniae* b
Authors	----
Contact details of authors	Institute of Medicine 500 Fifth Street NW Washington DC 20001 iomwww@nas.edu Phone: 202.334.2352 Fax: 202.334.1412
Institution	Institute of Medicine of the National Academies
Year of issue	2003
Accessibility of the document	Internet: http://www.iom.edu/?id=12282
Type of the document	Excel spreadsheet
Status of development	Developed
Summary	The decision-making tool provides an analytical framework and quantitative model for evaluating disease conditions that can be applied by those setting priorities for vaccine development over the coming decades. Moreover, the main approach of the decision-making tool is to compare potential new vaccines based on their impact on morbidity and mortality and on the costs of both health care and vaccine development. Some main required data for decision-making are: • Incidence rates (age groups: <5, 5-64, > 65 years of age) • Mortality rates (age groups: <5, 5-64, > 65 years of age) • Population (age groups: <5, 5-64, > 65 years of age) • Data on HUI (Health Utility Index) • Morbidity scenarios • Cost of care • Cost of vaccine program

3.3.7 Streptococcus pneumoniae: Investment case

Title of the document	GAVI Alliance investment case: Accelerating the introduction of pneumococcal Vaccines into GAVI-eligible countries
Authors	----
Contact details of authors	Contact person: Dr. Orin Levine, Executive Director , GAVI's PneumoADIP Johns Hopkins Bloomberg School of Public Health 615 N. Wolfe St. Baltimore, MD 21205 Phone: + 1 443 287 2019 E-mail: olivine@jhsph.edu http://www.preventpneumo.org
Institution	GAVI
Year of issue	2006
Accessibility of the document	Internet: http://www.gavialliance.org/resources/Pneumo_Investment_Case_Oct06.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The objective of the investment case is to prevent deaths in children under age 5 years by accelerating developing countries' access to and uptake of new, life-saving pneumococcal vaccines. The main context of the existing investment case is: • Disease burden of *S. pneumoniae* • Basic facts concerning vaccines licensed and under development, vaccine supply and costs • Economic analysis of cost-effectiveness and cost-benefits • Monitoring and evaluation

3.4 Rotavirus

3.4.1 Rotavirus: General information

Title of the document	VPD Surveillance Manual 4th Edition Rotavirus
Authors	Daniel C. Payne, Lauren J. Stockman, Jon R. Gentsch
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt13-rotavirus.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The Fact sheet makes following information available: • Disease description • Background information on disease burden, the pathogen, and vaccination • Importance of surveillance • Case definition and Laboratory testing • Recommendations for reporting • Case Investigation • Disease control

3.4.2 Rotavirus: Disease burden

Title of the document	Rotavirus Under-5 mortality rate due to rotavirus disease per 100,000 population (<5 years of age)
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/nuvi/rotavirus/en/ http://www.who.int/nuvi/rotavirus/21_main_rota.jpg
Type of the document	Map
Status of development	Developed
Summary	The map pictures the globalunder-5 mortality rate due to rotavirus disease per 100,000 population

Rotavirus: Disease burden

Title of the document	Global Rotavirus Surveillance
Authors	----
Contact details of authors	----
Institution	CDC
Year of issue	2007
Accessibility of the document	Internet: http://www.cdc.gov/rotavirus/global_surveillance/surveillance.htm http://www.cdc.gov/rotavirus/global_surveillance/afro.htm http://www.cdc.gov/rotavirus/global_surveillance/searowpro.htm http://www.cdc.gov/rotavirus/global_surveillance/emro.htm http://www.cdc.gov/rotavirus/global_surveillance/euro.htm http://www.cdc.gov/rotavirus/global_surveillance/paho.htm
Type of the document	Maps
Status of development	Developed
Summary	The provided maps show the global burden of rotavirus as well as the burden by AFRO, SEARO, EMRO, EURO, and PAHO region:

Rotavirus: Disease burden

Title of the document	Global Illness and deaths caused by rotavirus disease in children
Authors	Parashar U. D., Hummelman E. G., Bresee J. S., Miller M. A., Glass R. I.
Contact details of authors	CDC, Atlanta, Georgia and Fogarty International Center, National Institutes of Health, Bethesda, Maryland, USA
Institution	CDC
Year of issue	2003
Accessibility of the document	Internet: http://www.cdc.gov/ncidod/EID/vol9no5/pdfs/02-0562.pdf Emerging Infectious Diseases: Vol.9, No. 5, May 2003
Type of the document	Paper
Status of development	Developed
Summary	The paper provides the estimated global illness and deaths caused by rotavirus disease by reviewing studies published from 1986 to 2000 based on deaths caused by diarrhea and on rotavirus infections in children. Results sum up those data: • Rotavirus disease in children in developing countries • Illness from rotavirus disease in children in industrialized countries • Overall deaths and illness from rotavirus worldwide

Rotavirus: Disease burden

Title of the document	Rotavirus surveillance: Worldwide, 2001-2008
Authors	
Contact details of authors	CDC, Atlanta, Georgia and Fogarty International Center, National Institutes of Health, Bethesda, Maryland, USA
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5746a3.htm
Type of the document	Report
Status of development	Developed
Summary	This report presents an analysis of results from WHO surveillance networks for 2001-2008, which indicated that approximately 40% of diarrhea hospitalizations among children aged <5 years worldwide were attributed to rotavirus infection. The most common rotavirus strains found were G1, G2, G3, G4, and G9, and the distribution of strains varied markedly across regions. These data demonstrate the substantial burden of rotavirus diarrhea worldwide and highlighted the potential health impact of vaccination

Rotavirus: Disease burden

Title of the document	Global Rotavirus Information and Surveillance Bulletin Reporting Period: January through December 2008
Authors	-----
Contact details of authors	
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/nuvi/surveillance/Bulletin_Rota_Dec_09.pdf
Type of the document	Report
Status of development	Developed
Summary	This is the first twice-yearly WHO Global Rotavirus Surveillance Bulletin to describe sentinel surveillance for rotavirus infection among hospitalized children under five years of age and to summarize collated surveillance data for 2008. This Bulletin is the culmination of years of effort by many partners to provide such routine and standardized information.

3.4.3 Rotavirus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	Generic protocols for hospital-based surveillance to estimate the burden of rotavirus gastroenteritis in children and a community-based survey on utilization of health care services for gastroenteritis in children
Authors	----
Contact details of authors	----
Institution	WHO Department of Vaccines and Biologicals
Year of issue	2002
Accessibility of the document	Internet: http://whqlibdoc.who.int/hq/2002/WHO_V&B_02.15.pdf
Type of the document	Generic protocol
Status of development	Developed
Summary	The document has been developed so that countries can obtain data on the local disease burden attributable to rotavirus in young children. Furthermore, this generic protocol summarizes guidelines for laboratory diagnosis and surveillance. Besides detailed instructions for adequate surveillance systems, the recommended laboratory procedures for confirmation of rotavirus are: • Enzyme immunoassay • Electron microscopy • RNA electrophoresis • PCR (Polymerase Chain Reaction)

3.4.4 Rotavirus: Standard procedure for surveillance

Title of the document	Generic protocol for monitoring impact of rotavirus vaccination on gastroenteritis disease burden and viral strains
Authors	----
Contact details of authors	----
Institution	WHO Department of Immunization, Vaccines and Biologicals
Year of issue	2008
Accessibility of the document	Internet: http://whqlibdoc.who.int/hq/2008/WHO_IVB_08.16_eng.pdf
Type of the document	Generic protocol
Status of development	Developed
Summary	This generic protocol outlines a uniform approach to monitoring the impact of rotavirus vaccines that can be modified by countries to meet their specific needs. The objectives of this protocol include the following: • To determine vaccine impact • To determine vaccine effectiveness • To monitor for possible changing strain patterns in vaccinated populations Moreover, this protocol includes recommendations on how an active surveillance system should be structured, which case definitions for rotavirus gastroenteritis should be used, and which factors should be considered in terms of the surveillance location.

3.4.5 Rotavirus: The impact of immunization with Rotavirus

Title of the document	Decline and change in seasonality of US rotavirus activity after the introduction of rotavirus vaccine.
Authors	Tate JE, Panozzo CA, Payne DC, Patel MM, Cortese MM, Fowlkes AL, Parashar UD
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Pediatrics. 2009 Aug;124(2):465-71
Type of the document	Paper
Status of development	Developed
Summary	The paper summarizes results of the initiation of routine immunization of US infants against rotavirus in 2006. Main result is that during 2007-2008, the US rotavirus season seems to be substantially delayed, shortened, and diminished in magnitude compared with the seasons before vaccine implementation.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Burden of rotavirus gastroenteritis and potential benefits of a pentavalent rotavirus vaccination in Belgium
Authors	Dhont P, Trichard M, Largeron N, Rafia R, Benard S
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: PubMed J Med Econ. 2008;11(3):431-48
Type of the document	Paper
Status of development	Developed
Summary	The pediatric rotavirus gastroenteritis burden and potential benefits associated with the introduction of a pentavalent rotavirus vaccine in Belgium was assessed with an analytical model. To sum up the results, in the absence of a rotavirus immunization program, pediatric rotavirus gastroenteritis was estimated to account for about 5,860 hospitalizations, 1,720 cases of nosocomial infections, 9,410 cases treated by general practitioners, and 10,790 cases not seeking medical care. However, given a 90% rotavirus vaccination coverage rate, the pentavalent rotavirus vaccine would have a high impact on the rotavirus burden by preventing more than 4,850 hospitalizations, 995 cases of nosocomial infections, 7,145 cases treated by general practitioners, and 8,190 cases not seeking medical care.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Rotavirus vaccines – early success, remaining questions
Authors	Parashar, UD, Glass RI
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed N Engl. J. Med. 2009 Mar 12;360(11):1063-5
Type of the document	Paper
Status of development	Developed
Summary	Before the introduction of rotavirus vaccine in the national routine immunization program, the US had an estimated 3 million cases of rotavirus caused diarrhea. Subsequent to the vaccine introduction in 2006 and 2008, the number of positive rotavirus tests in 2008 decreased by 67%. The proportion of all performed rotavirus tests in 2008 that were positive, were 69% lower than the mean proportion of all performed rotavirus tests during 2000 through 2006. Since the observed change in the rotavirus activity appears to be much greater than what would have been expected, these findings suggest that vaccination of a proportion of the population could be conferring indirect benefits on unvaccinated persons, thanks to reduced viral transmission in the community.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Uptake of Rotavirus Vaccine and National Trends of Acute Gastroenteritis among Children in Nicaragua
Authors	Orozco M, Vasquez J, Pedreira C, De Oliveira LH, amador JJ, Malespin O, Andrus J, Tate J, Parashar U, Patel M
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed J. Infect. Dis. 2009 Nov 1;200 Suppl.1:S125-30
Type of the document	Paper
Status of development	Developed
Summary	In October 2006, a new rotavirus vaccine was introduced in Nicaragua and was available free to all age-eligible children, Aim of the study was, to asses the vaccine impact. Main results are that a 12% decrease in the number of all-cause hospitalizations for acute gastroenteritis was noted among children aged 0-11 months, whereas an approximately 5% increase was observed among children aged 12-59 months. Moreover, the high rate of vaccination among age-eligible children soon after vaccine introduction in Nicaragua indicates an efficient immunization program. However, in the age group at risk of rotavirus disease, vaccine coverage during the 2007 rotavirus season had yet to reach a level sufficient for making firm conclusions about vaccine impact.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	How Much Could Rotavirus Vaccines Reduce Diarrhea-Associated Mortality in Northern Ghana? A Model to Assess Impact
Authors	Arvay ML, Curns AT, Terp S, Armah G, Wontuo P, Parashar UD, Binka F, Glass RI, Widdowson M-A
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed J Infect. Dis. 2009 Nov1;200Suppl.1:S85-91
Type of the document	Paper
Status of development	Developed
Summary	Effective rotavirus vaccines could substantially reduce the ~ 500,000 deaths due to rotavirus disease per year worldwide, although the impact will depend on vaccine effectiveness, timing of administration, and coverage. Objective of this study is to model vaccine impact on rotavirus-associated mortality in rural Ghana. Based on the assumption that rotavirus vaccine would be included in the current EPI schedule, the reduction in rotavirus-associated mortality with use of the current coverage and timing of diphtheria, tetanus, and pertussis vaccine administration and various age-restricted schedules were used. A 90% efficacious 3-dose rotavirus vaccine would prevent 70% of deaths due to rotavirus infection if administered without age restrictions, 53% if only initiated among children <12 weeks of age, and 52% if the course also was completed by 32 weeks of age. In conclusion, rotavirus vaccine has the potential to subsequently reduce rotavirus-associated mortality in rural Ghana. Although timely vaccination should be encouraged, extending the current age recommendation for initiation of rotavirus vaccination could increase the coverage and impact of vaccination.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Rotavirus Vaccination: Cost-Effectiveness and Impact on Child Mortality in Developing Countries
Authors	Atherly D, Dreibelbis R, Parashar UD, Levin C, Wecker J, Rheingans RD
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed J Infect. Dis. 2009 Nov1;200Suppl.1:S28-38
Type of the document	Paper
Status of development	Developed
Summary	Aim of this study is to project the uptake, health impact, and cost-effectiveness of introducing rotavirus vaccination in GAVI-eligible countries to help policymakers in prioritizing resources to gain the greatest health improvements for their constituencies. Based on results of a demand forecast model, vaccination would prevent 2.4 million rotavirus deaths and >82 million disability-adjusted life-years in 64 of the 72 GAVI-eligible countries introducing vaccine from 2007 through 2025. The conclusion is that the introduction of rotavirus vaccines into the world's poorest countries is projected to substantially reduce childhood mortality.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Burden of rotavirus disease and cost-effectiveness of universal vaccination in the Province of Genoa (Northern Italy)
Authors	Panatto D, Amicizia D, Ansaldi F, Marocco A, Marchetti F, Bamfi F, Giacchino R, Tacchella A, Buono SD, Gasparini R
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Vaccine. 2009 May 26;27(25-26):3450-3
Type of the document	Paper
Status of development	Developed
Summary	To evaluate the benefits of new borne vaccination by using data collected in the Province of Genoa (Italy), the burden of rotavirus was investigated and a cost-effectiveness analysis was developed. In conclusion, a rotavirus immunization program would have a great impact on disease burden, in that 90% coverage would reduce the number of severe cases by more than 85%. Moreover, vaccination against rotavirus would be highly cost-effective.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Rotavirus Disease Burden and Impact and Cost-Effectiveness of a Rotavirus Vaccination Program in Kenya
Authors	Tate JE, Reingans RD, O'Reilly CE, Obonyo B, Burton DC, Tornheim JA, Adazu K, Jaron P, Ochieng B, Kerin T, Calhoum L, Hamel M, Laserson K, Breiman RF, Feikin DR, Mintz ED, Widdowson M-A
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed J Infect Dis. 2009 Nov 1;200 Suppl1:S76-84
Type of the document	Paper
Status of development	Developed
Summary	Main objective of this study was to calculate the impact of vaccination on health burden and on the cost-effectiveness per disability-adjusted life-year and lives saved. Annually, in Kenya, rotavirus infection causes 19% of hospitalizations and 16% of clinic visits for diarrhea among children <5 years of age and cause 4471 deaths, 8781 hospitalizations, and 1,443,883 clinic visits. Routine vaccination with a 2-dose rotavirus vaccination series would avert 2467 deaths, 5724 hospitalizations, and 852,589 clinic visits. All in all, a rotavirus vaccination program would reduce the substantial burden of rotavirus disease and the economic burden in Kenya.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Project Impact of the New Rotavirus Vaccination Program on Hospitalizations for Gastroenteritis and Rotavirus Disease among US Children <5 Years of age during 2006-2015
Authors	Curns AT, Coffin F, Glasser JW, Glass RI, Parashar UD
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed J Infect Dis. 2009 Nov 1;200 Suppl1:S49-56
Type of the document	Paper
Status of development	Developed
Summary	Aim of this study is to forecast the potential reduction in the number of hospitalizations for rotavirus disease and acute gastroenteritis among US children during 2006-2015 as a result of the new rotavirus vaccine introduced in 2006. During 2006-2015, 313,000 of an estimated 703,190 hospitalizations for rotavirus disease would be directly prevented by vaccination. Therefore, vaccination is expected to substantially reduce the health burden of hospitalizations for rotavirus disease among US children during 2006-2015.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Early evidence for direct and indirect effects of the infant rotavirus vaccine program in Queensland
Authors	Lambert SB, Faux CE, Hall L, Birrell FA, Peterson KV, Selvey CE, Sloots TP, Nissen MD
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Med J Aust. 2009 Aug3; 191(3):157-60
Type of the document	Paper
Status of development	Developed
Summary	Objective of this study is to assess the impact of introducing a publicly funded infant rotavirus vaccination program on disease notifications and on laboratory testing results. Trends before and after the introduction of rotavirus vaccination was monitored by using routinely collected data. In the 2 years age group, rotavirus notifications declined by 53% (2007) and 65% (2008). In conclusion, the rotavirus vaccination program has an early impact on rotavirus disease.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Effect of rotavirus vaccination program on trends in admission of infants to hospitals for intussusception
Authors	Simonsen L, Morens D, Elixhauser A, Gerber M, Van Raden M, Blackwelder W
Contact details of authors	----
Institution	----
Year of issue	2001
Accessibility of the document	Internet: PubMed Lancet. 2001 Oct13; 358(9289):1197-8
Type of the document	Paper
Status of development	Developed
Summary	Referring to this publication, several studies have reported a temporal association between a first dose of rotavirus vaccine (Rotashield) and infant intussusception. Aim of this study was to investigate the effect of Rotaschield vaccination use on intussussception admissions in 10 US states. No evidence of increased infant intussusception admissions during the period of Rotashield availability was found. The total intussusception admission risk attributable to Rotashield was substantially lower than previous estimates based on studies focusing on the immediate postvaccination weeks.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Demographic variability, vaccination, and the spatiotemporal dynamics of rotavirus epidemics
Authors	Pitzer VE, Viboud C, Simonsen L, Steiner C, Panozzo CA, Alonso WJ, Miller MA, Glass RI, Glasser JW, Parashar UD, Grenfell BT
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: PubMed Science. 2009 Jul17;325(5938):274-5
Type of the document	Paper
Status of development	Developed
Summary	Historically, annual rotavirus activity in the United States has started in the southwest in late fall and ended in the northeast 3 months later; this trend has diminished in recent years. A transmission model calibrated against epidemiological data shows that spatiotemporal variation in birth rate can explain the timing of rotavirus epidemics. The recent large-scale introduction of rotavirus vaccination provides a natural experiment to further test the impact of susceptible recruitment on disease dynamics. The model predicts a pattern of reduced and lagged epidemics post vaccination, closely matching the observed dynamics. Armed with this validated model, the relative importance of direct and indirect protection, a key issue in determining the worldwide benefits of vaccination, was explored.

Rotavirus: The impact of immunization with Rotavirus

Title of the document	Rotavirus vaccination and intussusception: can we decrease temporally associated background cases of intussusception by restricting the vaccination schedule?
Authors	Tai, JH, Curns AT, Parashar UD, Bresee JS, Glass RI
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed Pediatrics.2006 Aug:118(2):e258-64
Type of the document	Paper
Status of development	Developed
Summary	The objective of this study was to model and compare the number of temporally associated intussusception events that are expected by chance alone under 2 rotavirus vaccination strategies. Although an age-restricted vaccination schedule substantially reduced the number of intussusception events that were observed in the 2-week postvaccination window when compared with a schedule with fewer restriction, this decrease was attributable to a lower rate of vaccine coverage rather than a safer schedule of vaccination. The risk for intussusception did not differ significantly between vaccination strategies. Public Health policy and education messages for physicians and parents should be developed t anticipate intussusception events that will occur by chance alone but are temporally related to rotavirus vaccination.

3.4.6 Rotavirus: Existing decision-making tool

Title of the document	Advanced Immunization Management (AIM) e-Learning Website: Rotavirus
Authors	Berlier M, LaForce FM, Mort M
Contact details of authors	PATH AIM e-Learning Project Bâtiment Avant Centre 13 Chemin du Levant 01210 Ferney Voltaire France Fax: +33 450 28 04 07 info@aim.path.org
Institution	PATH
Year of issue	2009
Accessibility of the document	Internet: http://www.path.org/publications/details.php?i=1707
Type of the document	E-learning module
Status of development	Developed
Summary	This module provides comprehensive information from basic rotavirus disease characteristics through immunization decision planning for rotavirus vaccine introduction. It is designed to: • Assist informed decision-making when considering introduction of a rotavirus vaccine into a national immunization program. • Ensure smooth introduction of rotavirus vaccine. • Assist with planning for program sustainability. • Promote further strengthening of the immunization program. It can be used: • Before introducing rotavirus vaccine in the immunization program, to help assess whether the introduction is feasible. • After deciding to introduce rotavirus vaccine, to design and implement the introduction plan. • After introducing rotavirus vaccine, to monitor the implementation and to evaluate the impact. It is equally useful: • As a technical tool to plan, implement, and monitor the vaccine introduction. • As a supporting tool, to help inform policy decision-makers and donors about how to introduce rotavirus vaccine and support costs for the vaccine. The major topics are: • The disease, disease burden and surveillance • Control strategies • Vaccine, economic, and cost considerations • Implementation and evaluation of the program

Rotavirus: Existing decision-making tool

Title of the document	Vaccines for the 21st Century: Vaccine candidates: Rotavirus
Authors	----
Contact details of authors	Institute of Medicine 500 Fifth Street NW Washington DC 20001 iomwww@nas.edu Phone: 202.334.2352 Fax: 202.334.1412
Institution	Institute of Medicine of the National Academies
Year of issue	2003
Accessibility of the document	Internet: http://www.iom.edu/?id=12280
Type of the document	Excel spreadsheet
Status of development	Developed
Summary	The decision-making tool provides an analytical framework and quantitative model for evaluating disease conditions that can be applied by those setting priorities for vaccine development over the coming decades. Moreover, the main approach of the decision-making tool is to compare potential new vaccines based on their impact on morbidity and mortality and on the costs of both health care and vaccine development. Some main required data for decision-making are: • Incidence rates • Mortality rates • Population • Data on HUI (Health Utility Index) • Morbidity scenarios • Cost of care • Cost of vaccine program

3.4.7 Rotavirus: Investment Case

Title of the document	Accelerating the introduction of rotavirus vaccines into GAVI-eligible countries
Authors	----
Contact details of authors	----
Institution	PATH
Year of issue	2006
Accessibility of the document	Internet: http://www.gavialliance.org/resources/Rotavirus_Investment_Case_Oct06.pdf
Type of the document	Guideline
Status of development	Developed
Summary	Objective of the investment case: In GAVI-eligible countries, vaccination against rotavirus can prevent childhood deaths caused by the severe diarrhea and dehydration associated with rotavirus disease. By establishing a financing policy for the subsidization of vaccine purchase by GAVI, the number of child's deaths as well as the costs of care caused by rotavirus can be reduced. The overall objective of this investment case is to accelerate the introduction of rotavirus vaccines in most of the world's poorest countries. Besides generic information on the burden of rotavirus, major criteria of the investment case are efficacy and safety, vaccine supply, and cost-effectiveness of vaccines against rotavirus.

3.5 Yellow fever Virus

3.5.1 Yellow fever Virus: General information

Title of the document	Yellow fever
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2001
Accessibility of the document	Internet: http://www.who.int/mediacentre/factsheets/fs100/en/
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet provides following generic information: • The pathogen • Modes of transmission/ specific transmission cycles • Clinical picture/ symptoms • Global disease burden • Treatment • Prevention such as mosquito control • Basic information concerning yellow fever vaccination • Recommendations on surveillance

Yellow fever Virus: General information

Title of the document	Yellow fever
Authors	Susan Robertson
Contact details of authors	----
Institution	WHO Global Program for vaccines and immunization expanded program on immunization
Year of issue	1993
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF-IBI-e/mod8_e.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The following information were prepared for audiences like immunization program managers, consultants and advisers on immunization activities, participants of workshops, medical and nursing students, laboratory scientists: • The pathogen and the disease • Immunization to yellow fever/ immune response • Implications for EPI managers

3.5.2 Yellow fever Virus: Disease burden

Title of the document	Yellow fever: a current threat
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009/ 2005
Accessibility of the document	Internet: http://www.who.int/csr/disease/yellowfev/impact1/en/index.html http://www.who.int/csr/disease/yellowfev/risk/en/index.html
Type of the document	Fact sheet/ maps
Status of development	Developed
Summary	The fact sheet shows the global geographical distribution of yellow fever. Moreover, it describes which countries and areas are at high risk for yellow fever. Following available maps picture the burden of yellow fever: • Global overview of areas at risk of yellow fever • Yellow fever epidemiology in Africa (1995-2004) • Yellow fever epidemiology in Latin America (1950-2004) • Risk of international spread

Yellow fever Virus: Disease burden

Title of the document	Epidemiological trends and current situation of yellow fever
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2004/ 2009
Accessibility of the document	Internet: http://www.who.int/csr/disease/yellowfev/surveillance/en/index.html http://www.who.int/csr/disease/yellowfev/westafrica/en/index.html http://www.who.int/csr/disease/yellowfev/trends/en/index.html
Type of the document	Fact sheet
Status of development	Developed
Summary	Following data are given: • Yellow fever epidemiological data in Africa, 2004 • Yellow fever epidemiological data in South America, 2004 • Number of yellow fever cases reported by country in Africa, 200-2004 • Number of yellow fever cases reported by country in South America, 2000-2004 Furthermore, data on the situation in West Africa are provided: • % of countries with yellow fever notification in West Africa, 1950-2004 • Number of yellow fever reported cases in West Africa, 1950-2004 Finally, trends from 1950-2004 are presented: • Number of yellow fever reported cases in Africa and South America • Country profiles for yellow fever of African countries (from Angola to French Guinea)

3.5.3 Yellow fever Virus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	District guidelines for yellow fever surveillance
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	1998
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF/www9834.pdf
Type of the document	Guideline
Status of development	Developed
Summary	Besides basic information on the yellow fever virus, modes of transmission, clinical features, disease burden, and strategies for control and prevention, the guideline presents above all procedures for yellow fever surveillance and laboratory diagnosis. The diagnosis and confirmation of suspected cases of yellow fever is based on: • Isolation of yellow fever virus • Presence of yellow fever specific IgM • Adequate increase of IgG levels • Positive post-mortem lever histopathology • Detection of yellow fever antigen in tissues by immunohistochemistry • Detection of yellow fever virus RNA genomic sequences in blood and tissues

3.5.4 Yellow fever Virus: Standard procedure for surveillance

Title of the document	WHO-recommended standards for surveillance of selected vaccine-preventable diseases
Authors	----
Contact details of authors	----
Institution	WHO Vaccine and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF06/843.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guideline is to provide recommendations on surveillance standards for selected vaccine-preventable diseases. The recommendations should be adapted according to the country's needs. Surveillance of yellow fever is based on the following criteria: • Clinical case description • Laboratory criteria for diagnosis • Case classification such as suspected and confirmed cases • Specific recommended types of surveillance

Yellow fever Virus: Standard procedure for surveillance

Title of the document	Yellow fever
Authors	Jari Vainio, Felicity Cutts
Contact details of authors	London School of Hygiene and Tropical Medicine
Institution	WHO Division of emerging and other communicable diseases surveillance and control
Year of issue	1998
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF/www9842.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the is, based on a literature review of yellow fever, to provide background material for assessment of the current strategies, focusing on the following: • The epidemiology of yellow fever, particularly in Africa • A review of yellow fever surveillance systems and their effectiveness • A review of studies examining the cost-effectiveness of preventive yellow fever vaccination programs versus emergency vaccination programs.

3.5.5 Yellow fever Virus: The impact of immunization with Yellow fever Virus

Title of the document	Yellow fever in Africa: public health impact and prospects for control in the 21st century
Authors	Tomori O
Contact details of authors	----
Institution	----
Year of issue	2002
Accessibility of the document	Internet: PubMed Biomedica. 2002 Jun;22(2):178-210
Type of the document	Paper
Status of development	Developed
Summary	The paper summarizes control measures for yellow fever in Africa,using the example of Gambia and Senegal. Between 1939 and 1952, yellow fever virtually disappeared in parts of Africa, where systemic mass vaccination programs were in place. More recently, following the 1978-1979 yellow fever epidemics in the Gambia, a mass yellow fever vaccination program was carried out, with 97% coverage of the population over 6 months of age. Subsequently, yellow fever vaccination was added to the EPI program. The Gambia has since then maintained coverage of over 80%, without a reported case of yellow fever.

Yellow fever Virus: The impact of immunization with Yellow fever Virus

Title of the document	Current assessment of yellow fever and yellow fever vaccine
Authors	Lefeuvre A, Marianneau P, Deubel V
Contact details of authors	----
Institution	----
Year of issue	2004
Accessibility of the document	Internet: PubMed Curr Infect Dis Rep. 2004 Apr;6(2):96-104
Type of the document	Paper
Status of development	Developed
Summary	Although a very safe and efficient vaccine (17D) is available, it is underused. An estimated 200,000 people are still infected annually, and YF remains a major public health concern. This article reviews the recent data on YF epidemiology, virology, and immunity, and analyzes the rare postvaccination adverse effects that have been recently reported. YF vaccine should be included in the expanded program of immunization for children and sustained for people living in or traveling to endemic areas.

3.5.6 Yellow fever Virus: Decision-making tool

Title of the document	Assessment of yellow fever epidemic risk – a decision-making tool for preventive immunization campaigns Weekly epidemiological record (No. 18)
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2007
Accessibility of the document	Internet: http://www.who.int/wer/2007/wer8218.pdf
Type of the document	Report
Status of development	Developed
Summary	The report describes the challenge to prioritize immunization of the populations at highest risk and intensify surveillance of the epidemiological situation with a view to possible follow-up action. Main focus of the decision-making tool is on risk assessment parameters. Risk assessment is thus a decision-making tool enabling public health authorities to devise a quick risk-monitoring strategy based on reliable scientific data. Furthermore, the tools can also be used to monitor situations during the implementation phase of campaigns. Major components are: • Calculation of vulnerability of the population to vector-borne diseases gives an insight into the current dynamics of the disease and the risk of epidemic. • Mathematical modeling such as multiple correspondence analysis that enables a range of interrelated risk variables to be handled simultaneously in order to give decision-makers a reliable albeit simplified snapshot of the level of vulnerability of communities.

3.5.7 Yellow fever Virus: Investment case

Title of the document	Independent Review Committee report on the yellow fever stockpile investment case
Authors	----
Contact details of authors	----
Institution	GAVI
Year of issue	2005
Accessibility of the document	Internet: http://www.gavialliance.org/resources/17brd_7_YellowFever_ICreview_6Dec2005.pdf
Type of the document	Review
Status of development	Developed
Summary	It's a review of an investment case for a yellow fever stockpile from 6 million doses to 12 million doses per year for five years in twelve GAVI eligible countries in Africa.

3.6 Salmonella typhi

3.6.1 Salmonella typhi: General information

Title of the document	Typhoid fever
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/vaccine_research/diseases/diarrhoeal/en/index7.html
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet focuses on generic information on *Salmonella typhi* such as: • The pathogen • Global burden of *S. typhi* • Clinical picture • Available vaccines such as the Vi polysaccharide vaccine, the live attenuated Ty21a vaccine and other live attenuated *S. typhi* vaccines

3.6.2 *Salmonella typhi: Disease burden*

Title of the document	The global burden of typhoid fever
Authors	Crump J. A., Luby S. P., Mintz E. D.
Contact details of authors	----
Institution	----
Year of issue	2004
Accessibility of the document	Internet: http://www.who.int/rpc/TFDisBurden.pdf Bulletin of the World Health Organization: May 2004, 82(5)
Type of the document	Paper
Status of development	Developed
Summary	Main objective of the paper is to make a revised estimate of the global burden of typhoid fever to guide public health decisions for disease control and prevention efforts. Following global data on typhoid fever are available: • Regions with high incidence of typhoid fever • Regions with medium incidence of typhoid fever • Regions with low incidence of typhoid fever

Salmonella typhi: Disease burden

Title of the document	A study of typhoid fever in five Asian countries: disease burden and implications for controls
Authors	Ochiai R.L., Acosta C.J., Danovaro-Holliday M.C., Baiqing D., Bhattacharya S.K., Agtini M.D., Bhutta Z.A., Canh D.G., Ali M., Shin S., Wain J., Page A.-L., Albert M.J., Farrar J., Abu-Elyazeed R., Pang T., Galindo C.M., von Seidlein L., Clemens J.D., Domi Typhoid Study Group
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: http://www.who.int/bulletin/volumes/86/4/06-039818.pdf Bulletin of the World Health Organization: May 2008, 86(4)
Type of the document	Paper
Status of development	Developed
Summary	The objective is to inform policy-makers about the introduction of preventive interventions against typhoid, including vaccination: Findings regarding the burden of *S. typhi* are: • Total episodes • Annual typhoid fever incidence among 5-15 year-olds in Viet Nam, China, Indonesia, Pakistan, and India

3.6.3 Salmonella typhi: Standard procedure for laboratory diagnosis and surveillance

Title of the document	Background document: The diagnosis, treatment and prevention of typhoid fever
Authors	----
Contact details of authors	----
Institution	WHO Communicable Disease Surveillance and Response Vaccines and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://whqlibdoc.who.int/hq/2003/WHO_V&B_03.07.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The guideline provides besides generic information on the pathogen, the clinical picture, modes of transmission, treatment, and prevention strategies following procedures for laboratory diagnosis and surveillance: Diagnosis of typhoid fever: • Collection of specimens of blood, stool, and serum • Microbiological procedures such as blood culture, stool or rectal swab culture, and biochemical identification • Serological procedures like Felix-Widal test • Antimicrobial susceptibility Surveillance: • Case definition of confirmed and probable cases as well as chronic carriers

3.6.4 Salmonella typhi: Standard procedure for surveillance

Title of the document	Typhoid
Authors	----
Contact details of authors	----
Institution	NSW Health
Year of issue	2004
Accessibility of the document	Internet: http://www.health.nsw.gov.au/factsheets/guideline/typhoid.html
Type of the document	Fact sheet
Status of development	Developed
Summary	Key facts of the existing fact sheet are following: • Reason for surveillance • Case definition • Notification criteria and procedure • Managing single notifications such as response time, data entry, response procedure, case management, education, isolation and restriction, environmental evaluation, and contact management

Salmonella typhi: Standard procedure for surveillance

Title of the document	Typhoid fever investigation guidelines
Authors	----
Contact details of authors	----
Institution	KIPHS
Year of issue	2006
Accessibility of the document	Internet: http://www.kdheks.gov/epi/download/Disease_Protocols/Disease_Protocols_With_Forms/Typhoid_Fever_Disease_Investigation_Guideline.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The guideline provides following information: • Generic surveillance criteria such as laboratory criteria for diagnosis and case classification • Investigator responsibilities • Epidemiology • Disease overview • Standard case investigation and control methods such as identification of potential source, identification of potential exposed individuals or populations, follow-up of contacts , protection of contacts, environmental measures, and health education • Managing cases which could work at health care facilities or as food handler as well as managing of chronic carriers

3.7 *Vibrio cholerae*

3.7.1 Vibrio cholerae: General information

Title of the document	Cholera
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2008
Accessibility of the document	Internet: http://www.who.int/mediacentre/factsheets/fs107/en/index.html
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet presents generic information such as: • The Pathogen • Modes of transmission • Incubation period • Most vulnerable population • Clinical picture • Risk factors • Prevention and control of the extremely virulent disease • Cholera pandemics • Global burden of cholera • Cholera vaccines such as the parenteral and the oral cholera vaccine

3.7.2 *Vibrio cholerae: Disease burden*

Title of the document	Cholera surveillance and number of cases in 2005
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/topics/cholera/surveillance/en/index.html
Type of the document	Map
Status of development	Developed
Summary	The map shows which countries/ areas reported cases of cholera in 2005. Moreover, annual summaries of cholera cases in 2005, 2004, 2003, 2002, 2001, 2000, 1999, 1998, 1997, 1996, and 1995 are provided.

Vibrio cholerae: Disease burden

Title of the document	Cholera
Authors	----
Contact details of authors	----
Institution	WHO/ Global Health Atlas
Year of issue	2007, 2008, 2009
Accessibility of the document	Internet: http://gamapserver.who.int/mapLibrary/app/searchResults.aspx
Type of the document	Map
Status of development	Developed
Summary	The maps picture following global burden of *V. cholerae*: • Countries reporting outbreaks and imported cases, 2006-2008 • Countries reporting cholera cases in 2007 • Notified cholera cases to WHO during the period 2004-2007

Vibrio cholerae: Disease burden

Title of the document	Cholera: global surveillance summary, 2008 Weekly epidemiological record: No. 31
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/wer/2009/wer8431.pdf
Type of the document	Report/ map
Status of development	Developed
Summary	The reports sums up the following: • Globally reported cases and deaths, case-fatality rate • A map of the distribution of countries reporting cholera cases to WHO in 2008 • A table of cholera cases and deaths reported to WHO in 2008 by region: Africa, Asia, Europe, and North-America

3.7.3 *Vibrio cholerae: Standard procedure for laboratory diagnosis*

Title of the document	Laboratory Methods for the Diagnosis of Epidemic Dysentery and Cholera
Authors	----
Contact details of authors	----
Institution	CDC
Year of issue	1999
Accessibility of the document	Internet: http://www.cdc.gov/ncidod/dbmd/diseaseinfo/cholera_lab_manual.htm
Type of the document	Manual
Status of development	Developed
Summary	This manual focuses on the epidemiology of *Shigella*, *V. cholerae*, and *Escherichia coli* and the laboratory methods used to identify them. The laboratory techniques and study methodology described provide accurate and useful information for the control of epidemics using a minimum of resources. The laboratory diagnosis is based on: • Isolation methods • Serologic identification of *V. cholerae* • Media and reagents used for laboratory diagnosis

3.7.4 *Vibrio cholerae: Standard procedure for surveillance*

Title of the document	Cholera outbreak Assessing the outbreak response and improving preparedness
Authors	----
Contact details of authors	----
Institution	WHO Global Task force on Cholera Control
Year of issue	2004
Accessibility of the document	Internet: http://whqlibdoc.who.int/hq/2004/WHO_CDS_CPE_ZFk_2004.4_eng.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The guideline generally focuses on medical aspects that are important for lowering mortality and offers a framework for the assessment of a cholera outbreak response. It is primarily for technical staff of ministries of health, health professionals, and consultants responsible for undertaking a cholera outbreak assessment. Besides case definition for suspected and confirmed cases, basic recommendations for surveillance are given to monitor the cholera situation (attack rate, case-fatality rate).

3.8 Japanese Encephalitis Virus

3.8.1 Japanese Encephalitis Virus: General information

Title of the document	Japanese Encephalitis
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2008
Accessibility of the document	Internet: http://www.who.int/nuvi/je/en/
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet gives a summary of following generic information: • The pathogen • Transmission cycle • Global burden of disease • Hyperendemic countries • Recommendations for surveillance • Available vaccines

Japanese Encephalitis Virus: General information

Title of the document	More about Japanese Encephalitis
Authors	----
Contact details of authors	----
Institution	PATH
Year of issue	2008
Accessibility of the document	Internet: http://www.path.org/vaccineresources/japanese-encephalitis-info.php
Type of the document	Fact sheet
Status of development	Developed
Summary	The present fact sheet provides information concerning: • The pathogen • Modes of transmission • Global burden of disease • High risk countries • Clinical patterns • Generic information concerning vaccines

3.8.2 Japanese Encephalitis Virus: Disease burden

Title of the document	Japanese Encephalitis
Authors	----
Contact details of authors	----
Institution	WHO Global Health Atlas
Year of issue	2006
Accessibility of the document	Internet: http://gamapserver.who.int/mapLibrary/app/searchResults.aspx
Type of the document	Fact sheet
Status of development	Developed
Summary	The map show countries or areas at risk for Japanese encephalitis in 2007

Japanese Encephalitis Virus: Disease burden

Title of the document	Japanese Encephalitis reported cases
Authors	----
Contact details of authors	----
Institution	WHO Department of Immunization, Vaccines, and Biologicals
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencejap.htm
Type of the document	Report
Status of development	Developed
Summary	The report presents worldwide reported cases of Japanese encephalitis during 2006 to 2008 by country (all countries)

Japanese Encephalitis Virus: Disease burden

Title of the document	Japanese Encephalitis in depth
Authors	----
Contact details of authors	----
Institution	PATH
Year of issue	1995-2009
Accessibility of the document	Internet: http://www.path.org/projects/JE_in_depth.php
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet describes besides basic information regarding the pathogen, clinical symptoms and signs, diagnosis and treatment, control strategies, and available vaccines the distribution of Japanese encephalitis across Asia and parts of the western Pacific region.

3.8.3 Japanese Encephalitis Virus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	Manual for the Laboratory Diagnosis of Japanese Encephalitis Virus Infection
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2007
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/Manual_lab_diagnosis_JE.pdf
Type of the document	Manual
Status of development	Developed
Summary	The purpose of this manual is to support the surveillance and control of Japanese encephalitis by: • Presenting accurate information on the epidemiology, pathology, and clinical features of the disease • Describing the expected role of the laboratory in disease surveillance • Presenting detailed and general description of procedures recommended for effective laboratory diagnosis of Japanese encephalitis infection The manual is intended for use by virologists and technologists working in laboratories collaborating in Japanese encephalitis control. It may also be of interest to managers of Japanese encephalitis control programs and field staff, who will be better able to appreciate the role of the laboratory and us it appropriately. Concerning laboratory diagnosis, following information is provided: • Choice of specimen and safe specimen transportation • IgM assay • RT-PCR • Virus isolation Regarding surveillance, clinical case definition and case classification is given.

3.8.4 Japanese Encephalitis Virus: Standard procedure for surveillance

Title of the document	Japanese encephalitis surveillance standards (from WHO-recommended standards for surveillance of selected vaccine-preventable diseases)
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2006
Accessibility of the document	Internet: http://www.path.org/files/WHO_surveillance_standards_JE.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The primary goal of disease surveillance regarding Japanese encephalitis is to characterize the epidemiology and burden of JE so as to advocate for and guide programmatic interventions. JE surveillance is critical to characterize the epidemiology and burden of the disease, identify high risk areas for appropriate public health response and document the impact of control measures. Surveillance should be conducted according to given: • Clinical case definition • Case classification • Laboratory criteria for confirmation Recommended types of surveillance are: • JE surveillance should be conducted year round • Should be performed within the context of integrated disease surveillance and linked synergistically with similar surveillance activities

3.8.5 Japanese Encephalitis Virus: The impact immunization with Japanese Encephalitis Virus

Title of the document	Immunization against Japanese encephalitis in China: A policy analysis
Authors	Liu W, Clemens JD, Yang J, Xu ZY
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: PubMed Vaccine: 2006 Jun 12;24(24):5178-82
Type of the document	Paper
Status of development	Developed
Summary	The study examined the impact of Japanese Encephalitis immunization policies on disease trends in China. Through a document review and key source interviews in eight provinces, the study found, JE immunizations were provided via a combination of fee-for-service and government funding. Despite unequal funding, the nationwide JE incidence declined by >90%.

3.8.6 Japanese Encephalitis Virus: Existing decision-making tool

Title of the document	Advanced Immunization Management (AIM) e-Learning Website: Japanese Encephalitis
Authors	Berlier M, LaForce FM, Mort M
Contact details of authors	PATH AIM e-Learning Project Bâtiment Avant Centre 13 Chemin du Levant 01210 Ferney Voltaire France Fax: +33 450 28 04 07 info@aim.path.org
Institution	PATH
Year of issue	2009
Accessibility of the document	Internet: http://aim.path.org/en/vaccines/je/index.html
Type of the document	E-learning module
Status of development	Developed
Summary	This module will help senior policymakers understand Japanese encephalitis and how immunization programs can decrease JE infection among people. It also provides information on how to add JE vaccine to an immunization program and how to manage the addition of a new vaccine by: • Recognizing the importance of JE as a public health problem • Assessing JE disease burden an control strategies • Designing a JE immunization program • Evaluating the impact of a JE immunization program • Accessing resources for further study of JE The e-learning module deals with following major topics: • The disease • Meningitis surveillance • Control strategies for epidemics • Vaccine considerations • Economic and cost considerations • Implement program • Evaluation

3.9 Human Papillomavirus

3.9.1 Human Papillomavirus: General information

Title of the document	VPD Surveillance Manual 4th Edition Human Papillomavirus
Authors	Datta S.D., Dunne E., Saraiya M, Unger E., Markowitz L.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt05-hpv.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	Following information is provided by the fact sheet: • Different types of human papillomavirus differentiated according to her ability to cause cervical cancer • Modes of transmission • Clinical picture • Laboratory diagnosis • Treatment of HPV-associated diseases • HPV vaccine • Recommendations on surveillance • Case definitions • Efforts for disease reduction

Human Papillomavirus: General information

Title of the document	Cervical cancer quick facts
Authors	----
Contact details of authors	----
Institution	PATH/ RHO Cervical Cancer
Year of issue	1997-2009
Accessibility of the document	Internet: http://www.rho.org/about-cervical-cancer-quickfacts.htm
Type of the document	Fact sheet
Status of development	Developed
Summary	Following information were made available: • Global spread of cervical cancer related to HPV infection • Modes of transmission • Age-groups at high risk • Clinical patterns • Prevention of HPV infection • Generic information on HPV vaccines

Human Papillomavirus: General information

Title of the document	WHO/ ICO (Institut Catala d'Oncologia) Information Centre on HPV and Cervical Cancer
Authors	----
Contact details of authors	----
Institution	WHO/ ICO
Year of issue	----
Accessibility of the document	Internet: http://www.who.int/hpvcentre/en/
Type of the document	Tool
Status of development	Developed
Summary	Following information are available: • Burden of HPV-related cancers • HPV prevalence and type distribution in women with normal cytology, precancerous cervical lesions and invasive cervical cancer • HPV in cancer of the anus, vulva, vagina, and penis • HPV in men • Statistics on facts that contribute to cervical cancer • Preventative practices: screening and HPV vaccination • Prevalence of male circumcision and condom use • HPV vaccine licensure and introduction • Data on immunization coverage and practices • Socio-demographic characteristics • Sexual behavior and reproductive health indicators

3.9.2 Human Papillomavirus: Disease burden

Title of the document	About cervical cancer
Authors	----
Contact details of authors	----
Institution	PATH/ RHO Cervical Cancer
Year of issue	1997-2009
Accessibility of the document	Internet: http://www.rho.org/about-cervical-cancer.htm
Type of the document	Fact sheet
Status of development	Developed
Summary	Besides generic information regarding the pathogen, risk factors, prevention strategies, vaccination strategies and available vaccines, and recommended screening methods, the documents provides an overview of the global estimated number of cases and incidence of cervical cancer related to HPV. Moreover, the highest number of cervical cancer deaths caused by HPV occurs in developing countries.

Human Papillomavirus: Disease burden

Title of the document	Human Papillomavirus (HPV) Vaccine Background Paper
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2008
Accessibility of the document	Internet: http://www.who.int/immunization/sage/hpvbgpaper_oct08.pdf
Type of the document	Manual
Status of development	Developed
Summary	This generic manual provides following information regarding the burden of cervical cancer caused by HPV: • Cases of cervical cancer in 2005 • Deaths of cervical cancer in 2005 • Global highest incidence rate • Spread of cervical cancer in developing countries • Population at high risk for cervical cancer (specific age group and immunocompromised)

Human Papillomavirus: Disease burden

Title of the document	Global incidence of cervical cancer, projections for 2005
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2006
Accessibility of the document	Internet: http://www.who.int/bulletin/volumes/84/2/news_fig_0206/en/
Type of the document	Map
Status of development	Developed
Summary	The map provides information on incidence of global cervical cancer in 2006

3.9.3 Human Papillomavirus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	Comprehensive cervical cancer control/ A guide to essential practice
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2006
Accessibility of the document	Internet: http://www.rho.org/files/WHO_CC_control_2006.pdf
Type of the document	Guideline
Status of development	Developed
Summary	This guide is intended to help those responsible for providing services aimed at reducing the burden posed by cervical cancer for women, communities and health systems. It focuses on the knowledge and skills needed by health care providers, at different levels of care, in order to offer quality services for prevention, screening, treatment and palliation of cervical cancer. The guide presents guidelines and up-to-date, evidence-based recommendations covering the full continuum of care. Besides generic information such as background information concerning HPV, cervical cancer related to HPV infection, health promotion, and health education, the guideline provides following recommendations for diagnosis and surveillance of HPV: • Cytological identification using Pap smear and liquid-based cytology • HPV DNA-based screening • Visual methods such as VIA (visual inspection with acetic acid) and VILI (visual inspection with Lugo's iodine)

Human Papillomavirus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	Cervical cancer prevention 10Key findings and recommendations for effective cervical cancer screening and treatment programs
Authors	----
Contact details of authors	----
Institution	ACCP (Alliance for Cervical Cancer Prevention)
Year of issue	2007
Accessibility of the document	Internet: http://www.alliance-cxca.org/files/ACCP_recs_2007_factsheet_final.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet makes information regarding health education, disease protection, and screening methods such as Pap smears, HPV DNA testing, and visual inspection available.

Human Papillomavirus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	IARC Screening group/ International Agency for Research on Cancer
Authors	----
Contact details of authors	IARC, 150 Cours Albert Thomas 69372 Lyon CEDEX 08 France Tel: +33 (0) 472738485 Fax: +33 (0) 472738575
Institution	IARC
Year of issue	-----
Accessibility of the document	Internet: http://screening.iarc.fr/index.php (http://www-dep.iarc.fr/)
Type of the document	Tool
Status of development	Developed
Summary	Core function of the screening group is to provide data on the accuracy, reproductively, efficacy, benefits, harmful effects and cost-effectiveness of different screening interventions for cervical, oral and breast cancers, in reducing deaths and in improving quality of life in different setting, leasing to rational utilization of health care resources in designing, implementing, monitoring and evaluation of screening programs. The ultimate objective is to guide the development of public health policies in implementing screening in a range of health care settings, particularly in low-resourced countries.

3.9.4 Human Papillomavirus: The impact of immunization with Human Papillomavirus

Title of the document	Estimating the long-term clinical impact of cervical cancer vaccination in Taiwan
Authors	Yen MS, You SL, Ferko N, Debicki D, Chen YC, Chou CY
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: Pubmed Int J Gynecol Cancer. 2009 Feb;19(2):281-8
Type of the document	Paper
Status of development	Developed
Summary	This study adapted a computer-based health economic model to Taiwan to project the clinical impact of the introduction of a prophylactic vaccine against persistent HPV 16/18 infection on cervical disease. With 100% vaccine coverage in a 13-year-old cohort of females, there is estimated to be a 71% reduction in cervical cancer cases and deaths due to all HPV types and substantial reductions in the prevalence of precancerous lesions and screening outcomes.

Human Papillomavirus: The impact of immunization with Human Papillomavirus

Title of the document	Human Papillomavirus vaccines and vaccine implementation
Authors	De Sanjose S, Alemany L, Castellsague X, Bosch FX
Contact details of authors	----
Institution	----
Year of issue	2008
Accessibility of the document	Internet: Pubmed Womens Health (Lond Engl.). 2008 Nov;4(6):595-604
Type of the document	Paper
Status of development	Developed
Summary	This article summarizes the burden of HPV preventable disease worldwide and briefly describes the impact of secondary prevention and the most relevant aspects of the current available vaccines. Furthermore, some major aspects that are likely to impact the introduction of theses vaccines around the world are outlined.

Human Papillomavirus: The impact of immunization with Human Papillomavirus

Title of the document	Assessing the introduction of universal human papillomavirus vaccination for preadolescent girls in the Netherlands
Authors	Boot HJ, Wallenburg I, de Melker HE, Mangen M-JM, Gerritsen AA-M, van der Maas NA, Berkhof J, Meijer CJLM, kimman TG
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: Pubmed Vaccine. 2007 Aug14;25(33):6245-56
Type of the document	Paper
Status of development	Developed
Summary	Clinical trials with HPV-vaccines have been very successful in preventing persistent HPV 16/18 infections. In the Netherlands, an universal HPV-vaccination for preadolescent girls in the Dutch National Immunization Program was introduced. Long-term vaccine efficacy, the need and extent of a catch-up program for young women, and the impact of vaccination on the cervical cancer screening program are major unresolved issues. Preliminary conservative estimates an 80% vaccine efficacy.

Human Papillomavirus: The impact of immunization with Human Papillomavirus

Title of the document	Strategies for the introduction of human papillomavirus vaccination: modeling the optimum age-and sex-specific pattern of vaccination in Finland
Authors	French KM< Barnabas RV, Lehtinen M, Kontula O, Pukkala E, Dillner J, Garnett GP
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: Pubmed Br J Cancer:2007 Feb 12;96(3):514-8
Type of the document	Paper
Status of development	Developed
Summary	Results of the present study are based on a mathematical model of HPV type 16 infection and progression to cervical cancer, parameterized to represent the infection in Finland, to explore the optimal age at vaccination and pattern of vaccine introduction. In the long-term, the annual proportion of cervical cancer cases prevented is much higher when early adolescents are targeted. Vaccinating against hr HPV generates greater long-term benefits if vaccine is delivered before the age at first sexual intercourse. However, vaccinating 12 year olds delay the predicted decrease in cervical cancer, compared to vaccinating older adolescents or younger adults. Vaccinating males as well as females has more impact on the proportion of cases prevented when vaccinating at younger ages. Implementing catch-up vaccination at the start of a vaccination program would increase the speed with which a decrease in HPV and cervical cancer incidence is observed.

Human Papillomavirus: The impact of immunization with Human Papillomavirus

Title of the document	Quadrivalent human papillomavirus vaccine
Authors	Barr E, Tamms G
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: Pubmed Clin Infect Dis.2007 Sep 1;45(5):609-7
Type of the document	Paper
Status of development	Developed
Summary	The lifetime risk of human papillomavirus (HPV) infection exceeds 50%. HPV infection causes > 550,000 cases of cervical and anogenital cancer worldwide annually. HPV types 16 and 18 cause approximately 70% of HPV-related cancers, genital warts, and vulvar and vaginal precancerous lesions. Prophylactic vaccination of young women was 96%-100% effective in prevening HPV 6/ 11/ 16/ 18-related cervical and anogenital precancers and genital warts. Efficacy remained high for at least 5 years following vaccination. Vaccination was generally well tolerated. The vaccine is licensed in >80 countries. It has been added to national vaccination programs, including that of the United States. Widespread use of HPV 6/ 11/ 16/ 18 vaccine is expected to greatly reduce the incidence of HPV-related cancers, precancers, and genital warts.

Human Papillomavirus: The impact of immunization with Human Papillomavirus

Title of the document	Fostering acceptance of human papillomavirus vaccines
Authors	Dekker AH
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: Pubmed J Am Osteopath Assoc.2006 Mar;106(3 Suppl 1):S14-8
Type of the document	Paper
Status of development	Developed
Summary	Multivalent prophylactic human papillomavirus (HPV) vaccines currently in th elate stages of clinical testing are safe, immunogenic, and efficacious; and phase 3 tests of a quadrivalent vaccine show that it is 100% effective at preventing HPV types 16 and 18-associated cervical intraepithelial neoplasia grades 2 and 3, adenocarcinoma in situ, and cervical cancer through 2 years of postvaccination follow-up. These vaccines promise to reduce the burden of HPV-related disease.

3.9.5 Human Papillomavirus: Existing decision-making tool

Title of the document	Vaccines for the 21st Century: Vaccine candidates: Human Papillomavirus
Authors	----
Contact details of authors	Institute of Medicine 500 Fifth Street NW Washington DC 20001 iomwww@nas.edu Phone: 202.334.2352 Fax: 202.334.1412
Institution	Institute of Medicine of the National Academies
Year of issue	2003
Accessibility of the document	Internet: http://www.iom.edu/?id=12269
Type of the document	Excel spreadsheet
Status of development	Developed
Summary	The decision-making tool provides an analytical framework and quantitative model for evaluating disease conditions that can be applied by those setting priorities for vaccine development over the coming decades. Moreover, the main approach of the decision-making tool is to compare potential new vaccines based on their impact on morbidity and mortality and on the costs of both health care and vaccine development. Some main required data for decision-making are: • Incidence rates • Mortality rates • Population • Data on HUI (Health Utility Index) • Morbidity scenarios • Cost of care • Cost of vaccine program

3.10 Influenza Virus

3.10.1 Influenza Virus: General information

Title of the document	VPD Surveillance Manual, 4th Edition Influenza
Authors	Brammer L., Bresee J., Smith N., Ktjmov A., Cox N.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt06-influenza.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet presents information regarding: • The pathogen • Generic information concerning vaccination as well as importance of vaccination • Available antiviral drugs • Importance of rapid case identification, surveillance, and reporting • Case definition • Laboratory diagnosis for identification of influenza virus

Influenza Virus: General information

Title of the document	Influenza (seasonal)
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/mediacentre/factsheets/fs211/en/index.html
Type of the document	Fact sheet
Status of development	Developed
Summary	Following information is provided by the fact sheet: • The pathogen • Global burden of influenza • Clinical picture • Population at risk • Modes of transmission • Strategies for treatment • Prevention of influenza virus infection

3.10.2 Influenza Virus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	A practical guide for designing and conducting influenza disease burden studies
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.wpro.who.int/internet/resources.ashx/CSR/Publications/GuideforDesigningandConductingInfluenzaStudies.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The guideline aims to convey health professionals how to measure the burden of influenza either directly or indirectly. For acquisition of appropriate data, the following is necessary according to the guideline: • Case definition • Data of population, socioeconomic data, etc. • Collection and handling of specimen • Laboratory diagnosis for confirmation of infection with influenza virus • Data analysis to calculate specific rates, which are essential for estimating the burden of influenza

Influenza Virus: Standard procedure for laboratory diagnosis and surveillance

Title of the document	Global surveillance during an influenza pandemic
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/csr/disease/swineflu/global_pandemic_influenza_surveilance_apr09.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guidance document is to enable all countries to participate in the global surveillance effort. This document outlines the critical information that should be collected during different time periods in the course of an influenza pandemic. Moreover, this guideline aims to identify a minimum set of data which will be feasible to collect and useful to guide countries in managing the pandemic. Following major components for surveillance of influenza virus are given: • Early detection and investigation • Comprehensive assessment • Pandemic monitoring

3.10.3 *Influenza Virus: The impact of immunization with Influenza Virus*

Title of the document	Mass vaccination of Schoolchildren against Influenza and Its Impact on the Influenza-Associated Mortality rate among Children in Japan
Authors	Sugaya N, Takeuchi Y
Contact details of authors	----
Institution	----
Year of issue	2005
Accessibility of the document	Internet: PubMed Clin. Infect. Dis.. 2005 Oct. 1;41(7):939-47
Type of the document	Paper
Status of development	Developed
Summary	In conclusion, discontinuation of mass vaccination of schoolchildren in Japanese children was responsible for the increase in influenza-associated deaths among young children in the 1990s. However, the recent increase in influenza vaccination among young children (together with therapeutics) has led to a decrease in the influenza-associated mortality rate.

3.10.4 *Influenza Virus: Existing decision-making tools*

Title of the document	Vaccines for the 21st Century: Vaccine candidates: Influenza
Authors	----
Contact details of authors	Institute of Medicine 500 Fifth Street NW Washington DC 20001 iomwww@nas.edu Phone: 202.334.2352 Fax: 202.334.1412
Institution	Institute of Medicine of the National Academies
Year of issue	2003
Accessibility of the document	Internet: http://www.iom.edu/?id=12270
Type of the document	Excel spreadsheet
Status of development	Developed
Summary	The decision-making tool provides an analytical framework and quantitative model for evaluating disease conditions that can be applied by those setting priorities for vaccine development over the coming decades. Moreover, the main approach of the decision-making tool is to compare potential new vaccines based on their impact on morbidity and mortality and on the costs of both health care and vaccine development. Some main required data for decision-making are: • Incidence rates • Mortality rates • Population • Data on HUI (Health Utility Index) • Morbidity scenarios • Cost of care • Cost of vaccine program

4. CATALOGUE OF DISEASE SPECIFIC DOCUMENTS AND EXISTING DECISION-MAKING TOOLS: Old Vaccines

In this catalogue we differentiated following types of disease specific documents:

- Guidelines
- Manuals
- Fact sheets
- Standard protocols
- Maps
- Reports

4.1 Hepatitis A Virus

4.1.1 Hepatitis A Virus: General information

Title of the document	VPD Surveillance Manual 4th Edition Chapter 3: Hepatitis A
Authors	Finelli L., Bell B.P.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt03-hepa.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet aims to provide following generic information concerning hepatitis A virus: • The pathogen • Mode of transmission • Incubation period • Clinical picture • Risk groups • Laboratory identification of hepatitis A virus • Case definition, reporting, and surveillance • Available vaccines and recommendations regarding vaccination

Hepatitis A Virus: General information

Title of the document	Hepatitis A
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2008
Accessibility of the document	Internet: http://www.who.int/mediacentre/factsheets/fs328/en/index.html
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet provides information concerning: • The pathogen • Global burden of hepatitis A • Mode of transmission • Clinical picture • Risk groups • Treatment and prevention • Efforts of immunization against hepatitis A virus

4.1.2 Hepatitis A Virus: Disease burden

Title of the document	Weekly epidemiological record No. 6, 2002, 77 (41-48)
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2002
Accessibility of the document	Internet: http://www.who.int/docstore/wer/pdf/2002/wer7706.pdf
Type of the document	Report/ Map
Status of development	Developed
Summary	The map pictures the global disease burden of hepatitis A in 2001 and shows which countries/areas are at moderate to high risk of infection with hepatitis A virus.

4.1.3 Hepatitis A Virus: Standard procedure for laboratory diagnosis

Title of the document	VPD Surveillance Manual 4th Edition Chapter 3: Hepatitis A
Authors	Finelli L., Bell B.P.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt03-hepa.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	According to the fact sheet, serologic testing of IgM and IgG anti-hepatitis A virus is recommended.

4.1.4 Hepatitis A Virus: Standard procedure for surveillance

Title of the document	WHO-recommended surveillance standard of acute viral hepatitis
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/diseases/hepatitis_surveillance/en/
Type of the document	Guideline
Status of development	Developed
Summary	Following criteria are listed for surveillance of acute viral hepatitis infection: • Clinical case definition • Laboratory criteria for diagnosis • Case classification such as suspected, probable, and confirmed cases • Recommended types of surveillance • Data required for decision-making

4.2 Neonatal tetanus

4.2.1 Neonatal tetanus: General information

Title of the document	Maternal and neonatal tetanus
Authors	Roper M.H., Weybridge V.T.
Contact details of authors	----
Institution	----
Year of issue	2007
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/resources/Maternal_and_neonatal_tetanus_Seminar.pdf The Lancet: 12 September 2007
Type of the document	Paper
Status of development	Developed
Summary	The paper provides a generic overview of maternal and neonatal tetanus. Following information is listed: • The pathogen • Clinical manifestation • Treatment • Distribution and risk groups • Disease control strategies • Global maternal and neonatal tetanus elimination status before 2000 and between 2000 and 2007 • Global burden of neonatal tetanus and estimated deaths during the period 1980 to 2005

4.2.2 Neonatal tetanus: Disease burden

Title of the document	Tetanus (neonatal) reported cases
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencente.htm
Type of the document	Report
Status of development	Developed
Summary	The report shows reported cases of neonatal tetanus during the period 1980 to 2008 by year. Moreover, cases were reported by country (all countries) for each year.

4.2.3 Neonatal tetanus: Standard procedure for surveillance

Title of the document	WHO-recommended standards for surveillance of selected vaccine-preventable diseases
Authors	----
Contact details of authors	----
Institution	WHO Vaccine and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF06/843.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guideline is to provide recommendations on surveillance standards for selected vaccine-preventable diseases. The recommendations should be adapted according to the country's needs. Surveillance of neonatal tetanus is based on the following criteria: • Clinical case description • Case classification such as suspected and confirmed cases • Recommended types of surveillance such as routine monthly surveillance, zero reporting and active surveillance

4.2.4 Neonatal tetanus: Elimination of neonatal tetanus

Title of the document	Neonatal tetanus elimination, flied guide
Authors	----
Contact details of authors	----
Institution	WHO Pan American Health Organization
Year of issue	2005
Accessibility of the document	Internet: http://www.paho.org/English/AD/FCH/IM/FieldGuide_NNT.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The guideline is based on the latest scientific information and it brings together the experience of prominent health professionals in the flied. As a result, the guideline is particularly suitable for promoting strategies that have already proven to be effective. The strengthening of prevention activities, the reduction of health inequities, and the promotion of technical expertise in vaccination services were the principles that guided the preparation of the existing guideline. Moreover, the most recent techniques presented in the guideline, coupled with useful illustrations, will help health workers in their efforts to control, eliminate, or eradicate diseases such as neonatal tetanus and other infectious diseases. The guideline also includes standardized methods and procedures for conducting epidemiologic surveillance and maintaining an up-date information system that makes it possible to take timely and effective decisions.

4.3 Mumps Virus

4.3.1 Mumps Virus: General information

Title of the document	VPD Surveillance Manual 4th Edition Chapter 9: Mumps
Authors	Dayan G., Bellini W., Barskey A., Reef S.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt09-mumps.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet provides following background information concerning mumps virus: • The pathogen • Mode of transmission • Incubation period • Clinical picture • Risk groups • Laboratory identification • Case definition, reporting, and surveillance • Available vaccines and recommendations regarding vaccination

4.3.2 Mumps Virus: Disease burden

Title of the document	Mumps reported cases
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencemum.htm
Type of the document	Report
Status of development	Developed
Summary	The report pictures the global burden of mumps during the period 1999 to 2008. Confirmed cases of mumps virus infection were reported by year and by country (all countries).

4.3.3 Mumps Virus: Standard procedure for laboratory diagnosis

Title of the document	VPD Surveillance Manual 4th Edition Chapter 9: Mumps
Authors	Dayan G., Bellini W., Barskey A., Reef S.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt09-mumps.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	According to the fact sheet, following tests for laboratory diagnosis of mumps virus are recommended: • Serological testing such as detection of IgM and IgG antibodies • Virus detection via RT-PCR and cell culture

4.3.4 Mumps virus: Standard procedure for surveillance

Title of the document	WHO-recommended standards for surveillance of selected vaccine-preventable diseases
Authors	----
Contact details of authors	----
Institution	WHO Vaccine and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF06/843.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guideline is to provide recommendations on surveillance standards for selected vaccine-preventable diseases. The recommendations should be adapted according to the country's needs. Surveillance of mumps is based on the following criteria: • Clinical case description • Laboratory criteria for diagnosis • Case classification such as clinical, laboratory-confirmed, and epidemiologically confirmed cases • Recommended types of surveillance

4.4 Rubella Virus

4.4.1 Rubella Virus: General information

Title of the document	VPD Surveillance Manual 4th Edition Chapter 14: Rubella
Authors	Reef S., Redd S., Abernathy E., Icenogle J.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt14-rubella.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet provides following background information concerning rubella virus: • The pathogen • Mode of transmission • Clinical picture • Risk groups • Global burden of rubella • Laboratory identification • Case definitions • Importance of reporting and surveillance • Outbreak control • Available vaccines and recommendations regarding vaccination

4.4.2 Rubella Virus: Disease burden

Title of the document	Rubella reported cases
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencerub.htm
Type of the document	Report
Status of development	Developed
Summary	The report pictures the global burden of rubella during the period 1999 to 2008. Confirmed cases of rubella virus infection were reported by year and by country (all countries).

4.4.3 Rubella Virus: Standard procedure for laboratory diagnosis

Title of the document	VPD Surveillance Manual 4th Edition Chapter 14: Rubella
Authors	Reef S., Redd S., Abernathy E., Icenogle J.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt14-rubella.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	According to the fact sheet, following tests for laboratory diagnosis of rubella virus are recommended: • Serological testing such as enzyme immunoassay, hemagglutination inhibition test, latex agglutination test, immunofluorescent antibody assay, and avidity test • Virus detection/isolation • Molecular typing to receive details information concerning the virus isolate • RT-PCR

4.4.4 Rubella virus: Standard procedure for surveillance

Title of the document	WHO-recommended standards for surveillance of selected vaccine-preventable diseases
Authors	----
Contact details of authors	----
Institution	WHO Vaccine and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF06/843.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guideline is to provide recommendations on surveillance standards for selected vaccine-preventable diseases. The recommendations should be adapted according to the country's needs. Surveillance of rubella is based on the following criteria: • Recommended case definitions such as suspected, laboratory-confirmed, epidemiologically-confirmed rubella cases • Recommended case definitions regarding suspected, clinically-confirmed, and laboratory confirmed congenital rubella syndrome cases • Definition of congenital rubella infection • Laboratory criteria for diagnosis • Recommended types of surveillance such as congenital rubella syndrome prevention stage and congenital rubella syndrome or rubella elimination stage.

4.5 Measles Virus

4.5.1 Measles Virus: General information

Title of the document	Measles
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2008
Accessibility of the document	Internet: http://www.who.int/mediacentre/factsheets/fs286/en/index.html
Type of the document	Fact sheet
Status of development	Developed
Summary	The fact sheet provides background information concerning measles virus such as: • The pathogen • Mode of transmission • Clinical picture • Risk groups • Global burden of measles • Treatment and Prevention • Available vaccines and recommendations regarding vaccination

Measles Virus: General information

Title of the document	VPD Surveillance Manual 4th Edition Chapter 7: Measles
Authors	Dayan G.H., Rota J., Bellini W., Redd S.B.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	Following generic information regarding measles virus is provided by the fact sheet: • The pathogen • Mode of transmission • Clinical picture • Risk groups • Global burden of measles • Burden of measles in developing and industrialized countries • Importance of rapid identification, reporting, and surveillance • Disease reduction goals • Case definition and laboratory testing • Outbreak investigation and control

4.5.2 Measles Virus: Disease burden

Title of the document	Key Statistics
Authors	----
Contact details of authors	----
Institution	Measles Initiative
Year of issue	----
Accessibility of the document	Internet: http://www.measlesinitiative.org/docs/mi-fact-sheet.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	Following information is provided: • Global measles mortality in all ages between 2000 and 2007 • Estimated deaths from measles by WHO regions in 2007 • Global routine immunization coverage between 2000 and 2007

Measles virus: Disease burden

Title of the document	Measles reported cases
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencemea.htm
Type of the document	Guideline
Status of development	Developed
Summary	The report pictures the global burden of measles during the period 1980 to 2008. Confirmed cases of measles virus infection were reported by year and by country (all countries).

4.5.3 Measles virus: Standard procedure for laboratory diagnosis

Title of the document	VPD Surveillance Manual 4th Edition Chapter 7: Measles
Authors	Dayan G.H., Rota J., Bellini W., Redd S.B.
Contact details of authors	----
Institution	CDC
Year of issue	2008
Accessibility of the document	Internet: http://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.pdf
Type of the document	Fact sheet
Status of development	Developed
Summary	Recommendations for laboratory diagnosis of measles virus are: • Serologic testing such as tests for IgM and IgG antibody detection • Enzyme immunoassay • Virus isolation

4.5.4 Measles virus: Standard procedure for surveillance

Title of the document	WHO-recommended standards for surveillance of selected vaccine-preventable diseases
Authors	----
Contact details of authors	----
Institution	WHO Vaccine and Biologicals
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF06/843.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of the guideline is to provide recommendations on surveillance standards for selected vaccine-preventable diseases. The recommendations should be adapted according to the country's needs. Surveillance of measles is based on the following criteria: • Clinical case description • Laboratory criteria for diagnosis • Case classification such as clinically confirmed, discarded, laboratory confirmed, and epidemiologically confirmed cases • Recommended types of surveillance during mortality reduction phase, low-incidence or elimination phase, or during all phases

Measles virus: Standard procedure for surveillance

Title of the document	Module on best practices for measles surveillance
Authors	Guirs, D.
Contact details of authors	----
Institution	WHO Department of Vaccines and Biologicals
Year of issue	2001
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF01/www617.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The objective of this document is to provide guidelines to public health workers at all levels on the best measles surveillance practice. Following information is provided for surveillance of measles: • Detecting and reporting • Collecting, consolidating, and interpreting of data • Investigating and confirming cases and outbreaks • Analyzing, producing routine reports and interpreting data • Feeding data forward to more central levels • Providing feedback to more peripheral levels • Enhanced surveillance for countries at the elimination stage

5. DECISION-MAKING GUIDELINES FOR VACCINE INTRODUCTION, WHO POSITION PAPERS AND GENERIC INFORMATION ON DISEASE SPECIFIC VACCINES

5.1 Generic and disease specific decision-making guidelines for vaccine introduction

5.1.1 Vaccine Introduction Guidelines

Title of the document	Vaccine Introduction Guidelines: Adding a vaccine to a national immunization programme: decision and implementation
Authors	----
Contact details of authors	----
Institution	WHO Department of Immunization, Vaccines, and Biologicals
Year of issue	2005
Accessibility of the document	Internet: http://www.who.int/vaccines-documents/DocsPDF05/777_screen.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The purpose of this guide: • To assist an informed decision-making process to add a vaccine • To ensure smooth introduction of the new vaccine • To promote further strengthening of the immunization program, taking the advantage of the newly added vaccine Need of this guide: • Before introducing a vaccine in the immunization program, to decide whether the introduction is feasible • After deciding to introduce a vaccine, to conduct the operations • After introducing a vaccine, to monitor the implementations and to evaluate the impact This guide can be used: • As a technical tool to plan, implement and monitor the vaccine introduction • As a supporting tool to advocate political decision-makers to introduce a vaccine This guide can be used by: • Country level decision-makers • National immunization program managers • Consultants working on immunization

5.1.2 New vaccines for national immunization programs

Title of the document	Assessing new vaccines for national immunization programmes: A framework to assist decision makers
Authors	----
Contact details of authors	----
Institution	WHO Immunization Focus Regional Office for the Western Pacific, Manila
Year of issue	2000
Accessibility of the document	Internet: http://www.wpro.who.int/NR/rdonlyres/280FF00E-D121-4C40-A41F-F55D0B08F61A/0/assessing_new_vaccines.pdf
Type of the document	Guideline
Status of development	Developed
Summary	The decision to add a new vaccine to an immunization program is often influenced by social values, perceptions, and political concerns and is not just a technical one. This document aims to help policymaker's decisions on new vaccines by clarifying the technical and operational issues through a series of technical questions. It is recognized that many other issues may influence the final decision. To assist the process of decision-making, those considerations are of main interest: • Is the disease a public health problem? • Is immunization the best control strategy for this disease? • Is the immunization program working well enough to add a vaccine? • What will be the net impact of the vaccine? • Is the vaccine a good investment? • How will the vaccine be funded? • How will the addition of the new vaccine be implemented?

5.1.3 Mathematical modeling

Title of the document	Mathematical modeling: a tool for decision making in situations of uncertainty
Authors	----
Contact details of authors	----
Institution	French Institute for Public Health Surveillance
Year of issue	2000
Accessibility of the document	Internet: http://www.invs.sante.fr/publications/2008/modelisation_mathematique/plaquette_modelisation_mathematique_eng.pdf
Type of the document	Guideline
Status of development	Developed
Summary	Mathematical models allow to establish scenarios and to virtually test the impact of public health actions, and more specifically immunization. Mathematical modeling represents an extremely valuable decision making tool. Following considerations are of major importance: • When should mathematical models be used? • What do they entail? • How do they facilitate the immunization decisional process? Construction of a mathematical model: • To reproduce the transmission pattern of the disease within the targeted population based on the disease's characteristics as well as the population's socio-demographic parameters which define contact rates between infected and susceptible individuals. • Calibrating the model • The model can be used for prediction purposes such as intervention strategies. As for immunization, parameters associated with the vaccine and the immunization program must be taken into account.

5.1.4 Preparing for the introduction of HPV vaccines

Title of the document	Cervical cancer, human papillomavirus (HPV), and HPV vaccines: Key points for policy-makers and health professionals (1) Human Papillomavirus and HPV vaccines: Technical information for policy-makers and health professionals (2) Preparing for introduction of HPV vaccines: Policy and programme guidance for countries (3)
Authors	----
Contact details of authors	----
Institution	WHO/ PATH/ UNFPA/ Flemish Government (1) WHO/ Department of Immunization, Vaccines and Biologicals (2) WHO/ UNFPA (3)
Year of issue	2007 (1), 2007 (2), 2006 (3)
Accessibility of the document	Internet: http://whqlibdoc.who.int/hq/2008/WHO_RHR_08.14_eng.pdf (1) http://whqlibdoc.who.int/hq/2007/WHO_IVB_07.05_eng.pdf (2) http://whqlibdoc.who.int/hq/2006/WHO_RHR_06.11_eng.pdf (3)
Type of the document	Guideline
Status of development	Developed
Summary	This booklet (1) summarizes and updates the two WHO documents. The document (2) provides key information on HPV, HPV-related diseases and HPV vaccines, and is intended to underpin the guidance note on HPV vaccine introduction. The guidance (3) intends to alert a broad array of stakeholders – in sexual and reproductive health, immunization, child and adolescent health, and cancer control programs – to some of the key issues surrounding the upcoming introduction of HPV vaccines against cervical cancer.

5.1.5 Decision support in vaccination policies

Title of the document	Decision support in vaccination policies
Authors	Piso B., Wild C.
Contact details of authors	----
Institution	----
Year of issue	2009
Accessibility of the document	Internet: http://www.ncbi.nlm.nih.gov/pubmed/19698809?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum Vaccine 27 (2009) 5923-5928
Type of the document	Paper/ Review
Status of development	Developed
Summary	The aim of this review is to identify decision aids and crucial criteria for a rational decision-making process on vaccine introduction and to develop a theoretical framework for decision-making based on available literature Overall, main criteria for decision-making are: • Burden of the disease • Vaccine characteristics • Cost-effectiveness analysis • Factors concerning the immunization program itself such as feasibility, acceptability, equity, and ethical, legal and political considerations

5.1.6 Vaccine evaluation model to support the decision making on national immunization programs

Title of the document	Developing a vaccination evaluation model to support evidence-based decision making on national immunization programs
Authors	Kimman T.G., Boot H.J., Berbers G.A.M., Vermeer-de Bondt P.E., de Wit G.A., de Melker H.E.
Contact details of authors	----
Institution	----
Year of issue	2006
Accessibility of the document	Internet: http://www.ncbi.nlm.nih.gov/pubmed/16616803?ordinalpos=7&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum Vaccine 24 (2006) 4769-4778
Type of the document	Paper
Status of development	Developed
Summary	In this paper, an evaluation model in the form of a checklist that may help in collecting relevant scientific information that is necessary for evaluation and decision making when considering changes in a national immunization program is presented. The checklist points to relevant information on the vaccine-preventable disease, the disease causing pathogen, the vaccine, and the cost-effectiveness ratio of the vaccine.

5.1.7 Schematic framework to aid decision analysis for the introduction of a new vaccine

Title of the document	A schematic framework to aid decision analysis for the introduction of a new vaccine into a national immunization programme
Authors	----
Contact details of authors	----
Institution	----
Year of issue	----
Accessibility of the document	----
Type of the document	Report
Status of development	Under development
Summary	The schematic framework consists of following considerations: • Is sufficient evidence to show that the proposed vaccine preventable disease is a priority public health concern? • Is there an alternative prevention tool or strategy other than vaccines, and has it been used optimally? • Is the available vaccine efficacious? • Is the vaccine being considered safe? • Does the national immunization program have a functioning surveillance system? • Is the vaccine being considered available in sufficient quantities? • Is the available vaccine affordable? • Does the national immunization program adequate cold chain space?

5.1.8 Key issues that need to be considered prior to introduce a new vaccine in the national immunization program

Title of the document	Key issues that need to be considered in the decision analysis prior to a final resolution on whether to introduce a new vaccine in the national immunization program or not
Authors	----
Contact details of authors	Regional Workshop on Vaccine Prioritization, Bangkok
Institution	----
Year of issue	2009
Accessibility of the document	----
Type of the document	Report
Status of development	Under development
Summary	According to the report, following main issues are considered to be of interest prior to introduce a new vaccine into a national immunization program: • Burden of the disease (cases, deaths, long term disability, etc.) • Impact of a particular vaccine in reducing the morbidity and mortality • Cost-effectiveness of the vaccination as the proposed intervention • Vaccine efficacy and safety • Availability of other interventions • Cost-effectiveness and sustainability of the immunization program • Cold chain and vaccine management

5.2 WHO position papers and generic information on disease specific vaccines

5.2.1 Summary of WHO position papers

Title of the document	Table 1 + 2: Recommended Routine Immunization – Summary of WHO Position Papers
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/immunization/policy/immunization_tables/en/ http://www.who.int/immunization/policy/Immunization_routine_table1.pdf (Table 1) http://www.who.int/immunization/policy/Immunization_routine_table2.pdf (Table 2)
Type of the document	Report/ Table
Status of development	Developed
Summary	The summary provides recommendations for vaccination in children, adolescents, and adults regarding immunization against BCG, DTP, *H. influenzae* type b, Hepatitis B, HPV, *S. pneumoniae*, Poliomyelitis Virus, Measles Virus, JE, Yellow fever Virus, Rotavirus, *S. typhi*, *V. cholerae*, *N. meningitidis*, Hepatitis A, Rabies, Mumps Virus, Rubella Virus, and Influenza Virus. Moreover, information concerning the age of 1st dose, and recommended intervals between further doses and booster dose are given.

5.2.2 WHO position paper on Haemophilus influenzae type b conjugate vaccines

Title of the document	WHO position paper on *Haemophilus influenzae* type b conjugate vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2006
Accessibility of the document	Internet: http://www.who.int/immunization/REH_47_8_pages.pdf Weekly epidemiological record (No. 47, 81, 445-452)
Type of the document	Report
Status of development	Developed
Summary	The position paper aims to provide background information with regard to burden of Hib disease, epidemiological data, and the pathogen. However, main objective of the paper is to impart knowledge concerning Hib conjugate vaccines in terms of availability of licensed vaccines, formulations, storage, administration, immunogenicity, safety, efficacy, and effectiveness. In addition, it reveals WHO's position that Hib vaccines should be included in all routine infant immunization programs.

5.2.3 WHO position paper on Neisseria meningitidis vaccines

Title of the document	Meningococcal vaccines: polysaccharide and polysaccharide conjugate vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2002
Accessibility of the document	Internet: http://www.who.int/immunization/wer7740meningococcal_Oct02_position_paper.pdf Weekly epidemiological record (No. 40, 77, 329-340)
Type of the document	Report
Status of development	Developed
Summary	The position paper summarizes essential background information on the respective diseases and vaccines, and concludes with the current WHO position concerning their use in the global context. The paper is designed for use mainly by national public health officials, immunization program managers, international funding agencies, the vaccine manufacturing industry, the medical community, and scientific media. Information concerning *N. meningitidis* and its public health aspects, the pathogen, and the disease burden is provided. Furthermore, generic information such as vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as available bivalent and tetravalent vaccines is given. In addition to this, WHO emphasizes the use of meningococcal vaccines in emergency mass campaigns, for groups known to be at particularly high risk of the disease, and for persons with immunological predisposition to meningococcal disease

5.2.4 WHO position paper on Streptococcus pneumoniae vaccines

Title of the document	Pneumococcal conjugate vaccine for childhood Immunization – WHO position paper
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2007
Accessibility of the document	Internet: http://www.who.int/immunization/wer8212pneumococcus_child_Mar07_position_paper.pdf (Additional: http://www.who.int/wer/2008/wer8342.pdf) Weekly epidemiological record (No. 12, 82, 93-104)
Type of the document	Report
Status of development	Developed
Summary	The position paper summarizes essential background information concerning *S. pneumoniae* and its public health aspects, the pathogen, and the disease burden. Furthermore, generic information such as vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as available 7-valent/23-valent vaccines and further under development vaccines is given. In addition to this, WHO considers that pneumococcal conjugate vaccine should be a priority for inclusion in national childhood immunization programs. Countries with mortality among children aged < 5 years of > 50 deaths/1,000 births or with more than 50,000 children's deaths annually should make the introduction of PCV-7 a high priority for their immunization programs.

5.2.5 WHO position paper on Rotavirus vaccines

Title of the document	Rotavirus vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2007
Accessibility of the document	Internet: http://www.who.int/wer/2007/wer8232.pdf Weekly epidemiological record (No. 32, 82, 285-296)
Type of the document	Report
Status of development	Developed
Summary	The paper provides following background information regarding rotavirus: epidemiological data, the pathogen, laboratory diagnosis of rotavirus, the pathogenesis, and the clinical picture. Besides generic information such as vaccine formulations, appropriate administration, safety, immunogenicity and efficacy, available vaccines such as the monovalent human rotavirus vaccine and the pentavalent bovine-human reassortant rotavirus vaccine are listed. Regarding the introduction of rotavirus vaccines to a national immunization program, WHO strongly recommends the inclusion of rotavirus vaccination into vaccination programs of regions and countries where vaccine efficacy data suggest a significant public health impact and where appropriate infrastructure and financing mechanisms are available to sustain vaccine utilization.

5.2.6 WHO position paper on Yellow fever Virus

Title of the document	Yellow fever vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2003
Accessibility of the document	Internet: http://www.who.int/wer/2003/en/wer7840.pdf Weekly epidemiological record (No. 40, 78, 349-360)
Type of the document	Report
Status of development	Developed
Summary	The WHO position paper summarizes following yellow fever virus specific information: generic public health aspects, ethiological and epidemiological data, the pathogen, and clinical features. Besides generic information such as vaccine formulations, adequate administration, safety, immunogenicity and efficacy, the only commercially available vaccine, the yellow fever 17D vaccine, is provided. According to WHO, introduction of the yellow fever vaccine to a country's national immunization program is recommended in countries at risk for yellow fever virus. Furthermore, the yellow fever vaccine is recommended for use in all children aged at least 9-12 months of age. In addition, preventive vaccination of older children and adults is recommended in at risk areas. Vaccination for yellow fever is also recommended for travelers aged above 9 months who plan to visit areas at risk for yellow fever.

5.2.7 WHO position paper on Salmonella typhi

Title of the document	Typhoid vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2000
Accessibility of the document	Internet: http://www.who.int/wer/2008/wer8306.pdf Weekly epidemiological record (No. 32, 75, 257-264)
Type of the document	Report
Status of development	Developed
Summary	The position paper provides following *S. typhi* specific information: generic public health aspects, data on disease burden, the pathogen, and clinical features. Moreover, generic information regarding vaccine formulations, adequate administration, safety, immunogenicity and efficacy, and available vaccines such as the Vi polysaccharide vaccine, the Ty21a vaccine, and the inactivated whole-cell vaccine is given. WHO recommends the immunization of school-aged children in areas where typhoid fever in these age group is a significant public health problem, and particularly where antibiotic-resistant *S. typhi* strains are prevalent.

5.2.8 WHO position paper on Vibrio cholerae

Title of the document	Cholera vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2001
Accessibility of the document	Internet: http://www.who.int/immunization/wer7616cholera_Apr01_position_paper.pdf Weekly epidemiological record (No. 16, 76, 117-124)
Type of the document	Report
Status of development	Developed
Summary	The position paper provides essential background information concerning *V. cholerae* such as its public health impact, the pathogen, the disease and the disease burden. Furthermore, generic information such as vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as available vaccines such as the killed WC/rBS vaccine, the parenteral vaccine, and the live, attenuated CVD 103-HgR vaccine is given. According to WHO, the main indication for vaccination against cholera is protection of the population at risk in endemic areas. For cost-effectiveness reasons, cholera vaccine should be considered only for pre-emptive use, not reactively as a method of containing an outbreak once it has started. Vaccination to prevent cholera outbreaks should be undertaken only in concert with other prevention and control measures currently recommended by WHP. In emergency situations, high-risk populations such as refugees in primitive camps and urban slum residents should be immunized.

5.2.9 WHO position paper on Japanese Encephalitis Virus

Title of the document	Japanese Encephalitis Vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2006
Accessibility of the document	Internet: http://www.who.int/immunization/wer8134japanese%20encephalitis_Aug06_position%20paper.pdf Weekly epidemiological record (No. 34/35, 81, 325-340)
Type of the document	Report
Status of development	Developed
Summary	The position paper provides generic information concerning Japanese encephalitis virus such as the pathogen, the disease, and the disease burden. In addition to this, further information such as vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as available vaccines such as the mouse brain-derived inactivated vaccine, the cell culture-derived, inactivated vaccine, and the cell culture-derived, live attenuated vaccine is provided. According to WHO's recommendation, with increasing availability of efficacious, safe, and affordable vaccines, JE immunization should be integrated into national immunization programs in all areas where JE constitutes a public health problem. The most effective immunization strategy in JE-endemic settings is one time catch-up campaigns including child health weeks or multi-antigen campaigns in the locally-defined primary target population, followed by incorporation of the JE vaccine into the routine immunization program.

5.2.10 WHO position paper on Human Papillomavirus

Title of the document	Human Papillomavirus Vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/wer/2009/wer8415.pdf Weekly epidemiological record (No. 15, 84, 117-132)
Type of the document	Report
Status of development	Developed
Summary	The position paper provides generic information concerning human papillomavirus such as the epidemiology of HPV, HPV-related diseases, and the pathogen. Moreover, specific information such as vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as available vaccines such as the quadrivalent, and the bivalent is available. WHO's recommendation regarding vaccination against the human papillomavirus is that routine HPV vaccination should be included in national immunization programs, provided that: prevention of cervical cancer or other HPV-relate diseases, or both, constitutes a public health priority; vaccine introduction is programmatically feasible; sustainable financing can be secured; and the cost effectiveness of vaccination strategies in the country or region is considered.

5.2.11 WHO position paper on Influenza Virus

Title of the document	Influenza Vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2005
Accessibility of the document	Internet: http://www.who.int/immunization/wer8033influenza_August2005_position_paper.pdf Weekly epidemiological record (No. 33)
Type of the document	Report
Status of development	Developed
Summary	Besides generic information concerning influenza virus such as the epidemiological data, the diseases, and the pathogen, specific information in terms of vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as available vaccines such as trivalent, inactivated influenza vaccines, and live, attenuated influenza vaccines is given. WHO recommends vaccinate particularly residents of institutions for elderly people, disabled, elderly people with chronic heart or lung disease, metabolic or renal disease, or immunodeficiences.

5.2.12 WHO position paper on Hepatitis A Virus

Title of the document	Hepatitis A Vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2000
Accessibility of the document	Internet: http://www.who.int/immunization/wer7505Hepatitis%20A_Feb00_position_paper.pdf Weekly epidemiological record (No. 5, 75, 37-44)
Type of the document	Report
Status of development	Developed
Summary	Besides generic information concerning hepatitis A virus such as the clinical picture, the pathogen, and specific epidemiological data, detailed information in terms of vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as the currently 4 inactivated available vaccines is given. WHO recommends for developing countries with low endemicity of hepatitis A and with high rates of disease in specific high-risk populations, the vaccination of these populations against hepatitis A. In areas of intermediate endemicity, where transmission occurs primarily from person to person in the general community, control of hepatitis A may be achieved through widespread vaccination programs.

5.2.13 WHO position paper on Mumps Virus

Title of the document	Mumps Virus Vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2007
Accessibility of the document	Internet: http://www.who.int/immunization/wer8207mumps_Feb07_position_paper.pdf Weekly epidemiological record (No. 7, 82, 49-60)
Type of the document	Report
Status of development	Developed
Summary	The position paper provides generic information concerning mumps virus such as the clinical picture, the pathogen, and specific epidemiological data. Moreover, detailed information in terms of vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as vaccines against the mumps virus such as the Jeryl-Lynn vaccine, the RIT 4385 vaccine, the Leningrad-3 vaccine, the Leningrad-Zagreb vaccine, the Urabe Am9 vaccine, the Rubini vaccine, and others is given. Routine mumps vaccination is recommended by WHO in countries with a well established, effective childhood vaccination program and the capacity to maintain high-level vaccination coverage with measles and rubella vaccination and where the reduction of mumps incidence is a public health problem. Based on mortality and disease burden, WHO considers measles control and the prevention of congenital rubella syndrome to be higher priorities than the control of mumps. In countries that decide to use mumps vaccine, the combination of mumps vaccine with measles and rubella vaccines is recommended.

5.2.14 WHO position paper on Rubella Virus

Title of the document	Rubella Virus Vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2000
Accessibility of the document	Internet: http://www.who.int/immunization/wer7520rubella%20_May00_position_paper.pdf Weekly epidemiological record (No. 20, 75, 161-172)
Type of the document	Report
Status of development	Developed
Summary	The position paper summarizes generic information concerning the virus such as the clinical picture, the pathogen, and specific epidemiological data. In addition, detailed information in terms of vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as vaccines against the virus such as single antigen vaccines or combined vaccines (combined with mumps or measles) is given. WHO recommends the use of rubella vaccine in all countries with well-functioning childhood immunization programs where reduction or elimination of congenital rubella syndrome is considered a public health priority, and where resources may be mobilized to assure implementation of an appropriate strategy..

5.2.15 WHO position paper on Measles Virus

Title of the document	Measles Virus Vaccines
Authors	----
Contact details of authors	----
Institution	WHO
Year of issue	2009
Accessibility of the document	Internet: http://www.who.int/wer/2009/wer8435.pdf Weekly epidemiological record (No. 35, 84, 349-360)
Type of the document	Report
Status of development	Developed
Summary	The paper provides generic information concerning the measles virus such as the clinical picture, the pathogen, and disease specific epidemiological data. Moreover, further information in terms of vaccine formulations, appropriate administration, safety, immunogenicity and efficacy as well as vaccines against the virus such as single or combined (measles + rubella or measles + mumps + rubella or measles + mumps + rubella + varicella) live, attenuated vaccines is given. WHO recommends the immunization against measles for all susceptible children and adults for whom measles vaccination is not contraindicated. Reaching all children with 2 doses of measles vaccine should be the standard for all national immunization programs.

6. ANALYSIS OF THE FINDINGS OF THE DECISION-MAKING DESK REVIEW

6.1 List of potential partners

The list below shows potential partners where decision-making tools, guidelines, manuals, generic protocols, fact sheets, and other documents can be collected.

Potential partners are:

- ACCP (Alliance for Cervical Cancer Prevention)
- AIM (Advanced Immunization Management)
- CDC (Centers of Disease Control)
- inVS (French Institute for Public Health Surveillance)
- GAVI (The Global Alliance for Vaccines and Immunization)
- IOM (Institute of Medicine)
- IVR (Initiative for Vaccine Research)
- KIPHS (KIPHS, Inc; Development of Public Health Software Applications)
- Measles Initiative:
- NSW health
- PATH (A catalyst for global health)
- PneumoADIP
- RHO Cervical Cancer
- The Hib Initiative
- World Health Organization

6.2 Documents which seem to be interesting to use within SIVAC

Besides collected disease specific documents concerning general information of the diseases, disease burden documents, and guidelines for laboratory diagnosis and surveillance, listed disease specific existing decision-making tools could be interesting within SIVAC. The existing decision making tools provided by PATH/ AIM serve as an overall guide to get to a final decision. The ready-for-use excel spreadsheets of the Institute of Medicine, however, require specific data entry to reach the concluding decision.

6.3 Documents which seem to be missing

Regarding existing decision-making tools, collected in the context of the desk review, disease specific decision-making tools for following diseases are missing:

- *Salmonella typhi*
- *Vibrio cholera*
- Mumps Virus
- Measles Virus
- Rubella virus
- Neonatal tetanus
- Hepatitis A Virus

Furthermore, decision-making tools developed by PATH/AIM lack in ready-for-use excel spreadsheets, whereas the tools provided by the Institute of Medicine require advanced knowledge to enter the appropriate data in order to get to the final decision whether to introduce a vaccine into a vaccination program.

7. ABBREVIATIONS AND ACRONYMS

AMP	Agence de Médicine Préventive
cMYP	comprehensive Multi Year Plan
C. tetani	Clostridium tetani
GAVI	Global Alliance for Vaccine and Immunization
Hep A	Hepatitis A
Hib	*Haemophilus influenzae* type b
H. influenzae type b	Haemophilus influenzae type b
HPV	*Human Papillomavirus*
ICO	Institut Catala d'Oncologia
IARC	International Agency for Research on Cancer
ITAG	Immunization Technical Advisory Group
IVB	Immunization, Vaccines and Biological
JE	Japanese Encephalitis
N. meningitidis	Neisseria meningitidis
PATH	Program for Appropriate Technology and Health
QUALY	Quality Adjusted Life Years
SIVAC	Supporting Independent Immunization and Vaccine Advisory Committees
S. pneumoniae	Streptococcus pneumoniae
S. typhi	Salmonella typhi
TB	Tuberculosis
V. cholerae	Vibrio cholerae
WHO	World Health Organization

8. ANNEXES

8.1 Catalogue of disease specific documents and existing decision-making tools: New vaccines

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Haemophilus influenzae **Type b**	*Haemophilus influenzae* type b (Hib)	----	The Hib Initiative	2008	http://www.hibaction.org/resources/HibGlobalQuickFacts.pdf	Fact Sheet
	Haemophilus influenzae type b (Hib)	----	WHO	2005	http://www.who.int/mediacentre/factsheets/fs294/en/index.html	Fact Sheet
	Haemophilus influenzae type b (Hib) meningitis in the pre-vaccine era: a global review of incidence, age distribution, and case-fatality rates	----	WHO/ Department of Vaccines and Biologicals	2002	http://www.who.int/vaccines-documents/DocsPDF02/www696.pdf	Guideline
	Burden of disease caused by *Haemophilus influenzae* type b in children younger than 5 years: global distribution	Watt J.P., Wolfson L.J., O'Brien K.l., henkle E., Deloria-Knoll M., McCall N., Lee E., Levine O.S., Hajjeh R., Mulholland K., Cherian T., the Hib and Pneumococcal Global Burden of Disease Study Team	----	2009	http://www.ncbi.nlm.nih.gov/pubmed/19748399?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum The Lancet: Vol 374, September 12	Paper
	Laboratory methods for the diagnosis of meningitis caused by *Neisseria meningitidis*, *Streptococcus pneumoniae*, and *Haemophilus influenzae*	Tanja Popovic, Gloria Ajello, Richard Facklam, and CDC Atlanta	WHO	----	http://www.who.int/csr/resources/publications/meningitis/whocdscsredc997.pdf	Guideline/ Manual

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Haemophilus influenzae **Type b**	Generic protocol for population-based surveillance of *Haemophilus influenzae* type b	Levine O.S., Schuchat A., Schwartz B., Wenger J.D., Elliot J.	WHO/ Vaccine Research and Development	1996	http://www.who.int/vaccines-documents/DocsPDF/www9723.pdf	Generic protocol
	Estimating the local burden of *Haemophilus influenzae* type b (Hib) disease preventable by vaccination	Feikin D., Levine O., Nelson C., Mohsnie E., Watt J., Kou U.	WHO/ department of Vaccines and Biologicals	2001	http://www.who.int/vaccines-documents/DocsPDF01/www625.pdf	Rapid Assess-ment Tool
	Introduction of *Haemophilus influenzae* type b vaccine into immunization programmes	----	WHO/ Department of Vaccines and Biologicals	2000	http://www.who.int/vaccines-documents/DocsPDF99/www9940.pdf	Guideline
	Supporting Country Decision Making Regarding Hib Vaccine Use	----	The Hib Initiative	2006	http://www.hibaction.org/hibinitiative/strategic_plan.pdf	Guideline
	The impact of routine infant immunization with *Haemophilus influenzae* type b conjugate vaccine in Malawi, a country with high human immunodeficiency virus prevalence	Daza P, Banda R, Misoya K, Katsulukuta A, Gessner BD, Katsande R, Mhlanga BR, Mueller JE, Nelson CB, Phiri A, Molyneux EM, Molyneux ME	----	2006	PubMed Vaccine. 2006 Sep 11;24(37-39):6232-9	Paper
	Haemophilus influenzae type b conjugate vaccine impact against purulent meningitis in Rwanda	Muganga N, Uwimana J, Fidele N, Gahimbare L, Gessner BD, Mueller JE, Mhlanga BR, Katsande R, Herbinger KH, Rugambwa C	----	2007	PubMed Vaccine. 2007 Sep 28;25(39-40):7001-5	Paper
	Action for child survival: elimination of *Haemophilus influenzae* type b meningitis in Uganda	Lewis RF, Kisakye A, Gessner BD, Duku C, Odipio JB, Iriso R, Nansera D, Braka F, Makumbi I, Kekitiinwa A	----	2008	Bulletin of the World Health Organization 2008;86:292-301	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Haemophilus influenzae **Type b**	*Haemophilus influenzae* type b conjugate vaccine is highly effective in the Uganda routine immunization program: a case-control study.	Lee E HJ, Lewis RF, Makumbi I, Kekitiinwa A, Ediamu TD, Bazibu M, Branka F, Flannery B, Zuber PL, Feikin DR	----	2008	Tropical Medicine and International Health, Vol. 13 No. 4 PP 495-502	Paper
	The impact of vaccines on pneumonia: Key lessons from *Haemophilus influenzae* type b conjugate vaccines	Gessner BD, Adegbola RA	----	2008	Vaccine. 2008 Jun 16;26 Suppl 2:B3-8	Paper
	Impact of conjugate *Haemophilus influenzae* type b (Hib) vaccine introduction in South Africa	von Gottberg A, de Gouveia L, Madhi SA, du Plessis M, Quan V, Soma K, Huebner R, Flannery B, Schuchat A, Klugman KP, the Group for Enteric, Respiratory and Meningal disease Surveillance in South Africa	----	2006	Bulletin of the World Health Organization 2006; 84:811-818	Paper
	Elimination of *Haemophilus influenzae* type b (Hib) disease from The Gambia after the introduction of routine immunization with a Hib conjugate vaccine: a prospective study	Adegbola RA, Secka O, Lahai G, Lloyd-Evans N, Njie A, Usen S, Oluwalana C, Obaro S, Weber M, Corrah T, Mulholland K, McAdam K, Greenwood B, Milligan PJM	----	2005	Lancet 2005 Jul 9-15;366(9480):101-3	Paper
	Haemophilus influenzae type b vaccine impact in resource-poor settings in Asia and Africa	Gessner BD	----	2009	Expert Rev. Vaccines. 2009 Jan;8(1):91-102	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Haemophilus influenzae **Type b**	Impact of *Haemophilus influenzae* type b conjugate vaccine on bacterial meningitis in the Dominican Republic	Lee EH, Corcino M, Moore A, Garib Z, Pena C, Sanchez J, Fernandez J, Feris-Iglesias JM, Flannery B	----	2008	Rev Panam Salud Publica. 2008 Sep;24(3):161-8	Paper
	Effectiveness of *Haemophilus influenzae* type b conjugate vaccine on prevention of pneumonia and meningitis in Bangladeshi children: a case-control study	Baqui AH, El ArifeenS, Saha SK, Persson L, Zaman K, Gessner BD, Moulton LH, Black RE, Santosham M	----	2007	Pediatr Infect Dis J. 2007 Jul;26(7):565-71	Paper
	Introduction of *Haemophilus influenzae* type B conjugate vaccine into routine immuni-zation in Ghana and its im-pact on bacterial meningitis in children younger than 5 years	Renner LA, Newman MJ, ahadzie L, antiwi-Agyei KO, Eshetu M	----	2007	Pediatr Infect Dis J. 2007 Apr;26(4):356-8	Paper
	Impact of *Haemophilus influenzae* Type b conjugate vaccine in South Africa and Argentina	Martin M, Casellas JM, Madhi SA, Urquhart TJ, Delport SD, Ferrero F, Chamany s, Dayan GH, Rose CE, Levine OS, Klugman KP, Feikin DR	----	2004	Pediatr Infect Dis J. 2004 Sep;23(9):842-7	Paper
	Community effect of *Haemophilus influenzae* type B vaccination in India	Verghese VP, Friberg IK< Cheriam T, Raghupathy P, Balaji V, Lalitha MK, Thomas K, John TJ, Steinhoff MC	----	2004	Pediatr Infect Dis J. 2009 Aug;28(8):738-55	Paper
	Haemophilus influenzae Type b conjugate Vaccine Introduction in Mali: Impact on Disease Burden and Serologic Correlate of Protection	Sow SO, Tapia MD, Diallo S, Keita MM, Sylla M, Onwuchekwa U, Pasetti MF, Kotloff KL, Levine MM	----	2009	Am J Trop Med Hyg. 2009 Jun;80(6):1033-8	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Haemophilus influenzae **Type b**	Impact of the *Haemophilus influenzae* type b vaccination program on HIB meningitis in Brazil	de Souza Castro Miranzi S, de Moraes SA, de Freitas ICM	----	2007	Cad Saude Publica. 2007 Jul;23(7):1689-95	Paper
	Haemophilus influenzae meningitis 5 years after introduction of the *Haemophilus influenzae* type b conjugate vaccine in Brazil	Ribeiro GS, Lima JBT, Reis JN, Gouveia EL, Cordeiro SM, Lobo TS, Pinheiro RM, Ribeiro CT, Neves AB, Salgado K, silva HR, Reis MG, Ko AI	----	2007	Vaccine. 2007 May 30;25(22):4420-8	Paper
	Vaccine-preventable *Haemophilus influenzae* type B disease burden and cost-effectiveness of infant vaccination in Indonesia	Gessner BD, Sedyaningsih ER, Griffiths UK, Sutanto A, Linehan M, Mercer D, Mulholland EK, Walker DG, Steinhoff M, Nadjib M	----	2008	Pediatr Infect Dis J. 2008 May;27(5):438-43	Paper
	Reduction of meningitis and impact on under-5 pneumonia after introducing the Hib vaccine in the Kingdom of Tonga	Russel FM, Fakakovi T, Paasi S, Ika A, Mulholland EK	----	2008	Am Trop Paediatr. 2009 Jun;29(2):111-7	Paper
	Effectiveness of *Haemophilus influenzae* type b vaccination against bacterial pneumonia in Colombia	de la Hoz F, Higuera AB, Di Fabio JL, Luna M, Naranjo AG, de la Luz Valencia M, Pastor D, Hall AJ	----	2004	Vaccine. 2004 Nov 15;23(1):36-42	Paper
	Global Invasive Bacterial Diseases (IBD) Information and Surveillance Bulletin Reporting period: January through December 2008	-----	-----	2009	http://www.who.int/nuvi/surveillance/Bulletin_IBD_Dec_09.pdf	Report

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Neisseria meningitidis	VPD Surveillance Manual 5th Edition: Meningococcal Disease	Kimberly Cushing, Amanda Cohn	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt08-mening.pdf	Fact Sheet
	Bacterial Infectious/ Meningococcal disease	----	WHO	2009	http://www.who.int/vaccine_research/diseases/soa_bacterial/en/index1.html	Fact Sheet
	World/ Meningococcal disease	----	WHO/ Global Health Atlas/ Global Health Observatory Map Gallery	2008	http://gamapserver.who.int/mapLibrary/app/searchResults.aspx	Map
	Africa/ Meningococcal disease	----	WHO/ Global Health Atlas/ Global Health Observatory Map Gallery	2007	http://gamapserver.who.int/mapLibrary/app/searchResults.aspx	Maps
	Global epidemiology of meningococcal disease	Harrison LH, Trotter CL, Ramsey ME	-----	2009	Vaccine. 2009 Jun 24;27 Suppl 2:B51-63	Paper
	Laboratory methods for the diagnosis of meningitis caused by *Neisseria meningitidis, Streptococcus pneumoniae*, and *Haemophilus influenzae*	Tanja Popovic, Gloria Ajello, Richard Facklam, and CDC Atlanta	WHO	----	http://www.who.int/csr/resources/publications/meningitis/whocdscsredc997.pdf	Guideline/ Manual
	WHO-recommended standards for surveillance of selected vaccine-preventable diseases	----	WHO/ Vaccines and Biologicals	2003	http://www.who.int/vaccines-documents/DocsPDF06/843.pdf	Guideline
	Meningococcal group C disease in Greece during 1993-2006: the impact of an unofficial single-dose vaccination scheme adopted by most pediatricians	Kafetzis DA, Stamboulidis KN, Tzanakaki G, Kremastinou JK, skevaki CL, Konstantopoulos A, Tsolia M	----	2007	Clin Mocrobiol Infect . 2007 May;13(5):550-2	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Neisseria meningitidis	Impact and effectiveness of meningococcal C conjugate vaccine following its introduction in Spain	Larrauri A, Cano R, Garcia M, de Mateo S	----	2005	Vaccine. 2005 Jul 14;23(32):4097-100	Paper
	Impact of meningococcal C conjugate vaccine in the UK	Balmer P, Borrow R, Miller E	----	2002	L Med Microbiol. 2002 Sep;51(9):717-22	Paper
	Bacterial meningitis: the impact of vaccination	Makwana N, Riordan FA	----	2007	CNS Drugs. 2007;21(5):355-66	Paper
	Herd immunity from meningococcal serogroup C conjugate vaccination in England: database analysis	Ramsay ME, Andrews NJ, Trotter CL, Kaczmarski EB, Miller E	-----	2003	BMJ. 2003 Feb 15;326(7385):365-6	Paper
	Effectiveness of meningococcal serogroup C conjugate vaccine 4 years after introduction	Trotter CL, Andrews NJ, Kaczmarski EB, Miller E, Ramsay M	-----	2004	Lancet. 2004 Jul 24-30;364(9431):365-7	Paper
	Modeling Future Chnages to the Meningococcal Serogroup C Conjugate (MCC) Vaccine Program in England and Wales	Trotter CL, Edmunds WJ, Ramsay ME, Miller E	-----	2006	Hum Vaccin. 2006 Mar-Apr;2(2):68-73	Paper
	Vaccination against meningococcal disease in Europe: review and recommendations for the use of conjugate vaccines	Trotter CL, Ramsay M	----	2007	FEMS Microbiol Rev. 2007 Jan;31(1):101-7	Paper
	Seroprevalence of Antibodies against Serogroup C Meningococci in England in the Postvaccination Era	Trotter CL, Borrow R, Findow J, Holland A, Frankland S, Andrews NJ, Miller E	-----	2008	Clin Vaccine Immunol. 2008 Nov;15(11):1694-8	Paper
	Vaccines for the 21st Century: Vaccine candidates: *N. meningitidis* B	----	Institute of Medicine	2003	http://www.iom.edu/?id=12276	Excel Spreadsheet

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Neisseria meningitidis	Meningococcal vaccines and herd immunity: lessons learned from serogroup C conjugate vaccination programs	Trotter CL, Maiden MCJ	-----	2009	Expert Rev Vaccines. 2009 Jul;8(7):851-61	Paper
	Dynamic Models of Meningococcal Carriage, Disease, and the impact of Serogroup C Conjugate Vaccines	Trotter CL, Gay NJ, Edmunds J	-----	2005	Am J Epidemiol. 2005 Jul 1;162(1):89-100	Paper
	Meningococcal serogroup C conjugate vaccination in England and Wales: coverage and initial impact of the campaign	Trotter CL, Ramsay ME, Kaczmarski EB	-----	2002	Commun Dis Public Health. 2002 Sep;5(3):220-5	Paper
	A surveillance network for meningococcal disease in Europe	Trotter CL, Chandra M, Cano R, Larrauri A, Ramsay ME, Brehony C, Jolley KA, Maiden MC, Heuberger S, Frosch M	-----	2007	FEMS Microbiol Rev. 2007 Jan;31(1):27-36	Paper
	The epidemiological impact of antimeningococcal B vaccination in Cuba	Rodriguez AP, Dickinsin F, Baly A, Martinez R	-----	1999	Mem Inst Oswaldo Cruz. 1999 Jul-Aug;94(4):433-40	Paper
	Molecular epidemiological analysis of the changing nature of a meningococcal outbreak following a vaccination campaign	Shlush LI, Behar DM, Zelazny A, Keller N, Luypski JR, Beaudet AL, Bercovich D	----	2002	J Clin Microbiol. 2002 Oct;40(10):3565-71	Paper
	Advanced Immunization Management (AIM) e-Learning Website: Meningitis: Meningococcal meningitis in Africa	Berlier M, LaForce FM, Mort M	PATH	2009	http://aim.path.org/en/vaccines/mening/index.html	E-learning module

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Streptococcus pneumoniae	VPD Surveillance Manual 4th Edition/ Pneumococcal Disease	Tamara Pilishvili, Brendan Noggle, Matthew R. Moore	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt11-pneumo.pdf	Fact Sheet
	Streptococcus pneumoniae	----	WHO	2009	http://www.who.int/vaccine_research/diseases/ari/en/index3.html#disease burden	Fact Sheet
	Total mortality rate from *streptococcus pneumoniae* in children under 5 for the year 2000	----	PneumoADIP	----	http://www.preventpneumo.org/data-tools/upload/pcvintro_overlay_GDBmort.pdf	Map
	Burden of disease caused by Streptococcus pneumoniae in children younger than 5 years: global estimates	O'Brien KL, Wolfsan LJ, Watt JP, Henkle E, Deloria-Knoll M, McCall N, Mulholland K, Levine OS, Cherian T, Hib and Pneumococcal Global Burden of Disease Study Team	-----	2009	Lancet: 2009 Sep 12; 374(9693):854-6	Paper
	Laboratory methods for the diagnosis of meningitis caused by *Neisseria meningitidis, Streptococcus pneumoniae*, and *Haemophilus influenzae*	Tanja Popovic, Gloria Ajello, Richard Facklam, and CDC Atlanta	WHO	----	http://www.who.int/csr/resources/publications/meningitis/whocdscsredc997.pdf	Guideline/ Manual
	WHO-recommended standards for surveillance of selected vaccine-preventable diseases	----	WHO/ Vaccines and Biologicals	2003	http://www.who.int/vaccines-documents/DocsPDF06/843.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Streptococcus pneumoniae	GAVI's PneumoADIP	----	GAVI	2007	http://pneumoadip.org/results/pneumoadip_activities/surveillance_and_research/upload/RS-Report-Final1207.pdf	Report
	Pneumococcal conjugate vaccines for preventing vaccine-type invasive pneumococcal disease and pneumonia with consolidation on x-ray in children under two years of age	Lucero MG, Dulalia VE, Parreno RN, Lim-Quianzon DM, Nohynek H, Makela H, Williams G	----	2004	Cochrane Database Syst. Rev. 2004 Oct18;(4):CD004977	Paper
	Impact of pneumococcal conjugate vaccine on the prevention of invasive pneumococcal diseases	Bricks LF, Berezin E	----	2006	J Pediatr (Rio J). 2006 Jul;82(3Suppl);S67-74	Paper
	Efficacy of nine-valent pneumococcal conjugate vaccine against pneumonia and invasive pneumococcal disease in The Gambia: randomized, double-blind, placebo-controlled trial	Cutts FT, Zaman SM, Enwere G, Jaffar S, Levine OS, Okoko JB, Oluwalana C, Vaughan A, Obaro SK, Leach A, McAdam KP, Biney E, Saaka M, Onwuchekwa U, Yallop F, Oierce NF, Greenwood BM, Adegbola RA, Gambian Pneumococcal Vaccine Trial Group	----	2005	Lancer. 2005 Mar 26-Apr1;365(9465):1113-4	Paper
	Efficacy of pneumococcal vaccination in children younger than 24 months: a meta-analysis	Pavia M, Bianco A, Nobile CG, Marinelli P, Angelillo IF	----	2009	Pediatrics. 2009 Jun;123(6):e1103-10	Paper
	Impact of infant pneumococcal vaccination on invasive pneumococcal diseases in France, 2001-2006	Lepoutre A, Varon E, Georges S, Gutmann L, Levy-Bruhl D	----	2008	Euro Surveill. 2008 Aug28;13(35). Pii:18962	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Streptococcus pneumoniae	National impact of universal childhood immunization with pneumococcal conjugate vaccine on outpatient medical care visits in the United States	Grijalva CG, Poehling KA, Nuorti JP, Zhu Y, martin SW, Edwards KM, Griffin MR	----	2006	Pediatrics. 2006 Sep;118(3):865-73	Paper
	Impact of the introduction of pneumococcal conjugate vaccine on rates of community acquired pneumonia in children and adults.	Nelson JC, Jackson M, Yu O, Whitney CG, Bounds L, Bittner R, Zavitkovsky A, Jackson LA	----	2008	Vaccine. 2008 Sep 8;26(38):4947-54	Paper
	Pre- and postvacciantion clonal compositions of invasive pneumococcal serotypes for isolation collected in the United States in 1999, 2001, and 2002	Beall B, McEllistrem MC, Gertz RE Jr, Wedel S, Boxrud DJ, Gonzalez AL, Medina MJ, Pai R, Thompson TA, Harrison LH, McGee L, Whitney CG; Active Bacterial Core Surveillance Team	----	2006	J Clin Microbiol. 2006 Mar;44(3):999-1017	Paper
	Vaccine preventable diseases and vaccination policy for indigenous populations	Menzies R, McIntyre P	-----	2006	Epidemiol. Rev. 2006; 28:71-80	Paper
	Impact of pneumococcal vaccination on pneumonia rates in patients with COPD and asthma	Lee TA, Weaver FM, Weiss KB	-----	2007	J Gen Intern Med. 2007 Jan;22(1):62-7	Paper
	Nasopharyngeal carriage of streptococcus pneumoniae in Gambian children who participated in a 9-valent pneumococcal conjugate vaccine trial and in their younger siblings	Cheung YB, Zaman SM, Nsekpong ED, Van Beneden CA, Adegbola RA, Greenwood B, Cutts FT	-----	2009	Pediatr Infect Dis. 2009 Nov;28(11):990-995	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Streptococcus pneumoniae	Vaccines for the 21st Century: Vaccine candidates*: S. pneumoniae* b	----	Institute of Medicine	2003	http://www.iom.edu/?id=12282	Excel Spreadsheet
	GAVI Aliance investment case: Accelarating the introduction of pneumococcal Vaccines into GAVI-eligible countries	-----	GAVI	2006	http://www.gavialliance.org/resources/Pneumo_Investment_Case_Oct06.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Rotavirus	VPD Surveillance Manual 4th Edition/ Rotavirus	Daniel C. Payne, Lauren J. Stockman, Jon R. Gentsch	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt13-rotavirus.pdf	Fact Sheet
	Rotavirus under 5-mortality rate due to rotavirus disease per 100,000 population (<5 years of age)	----	WHO	2009	http://www.who.int/nuvi/rotavirus/en/ http://www.who.int/nuvi/rotavirus/21_main_rota.jpg	Map
	Global Rotavirus Surveillance	----	CDC	2007	http://www.cdc.gov/rotavirus/global_surveillance/surveillance.htm http://www.cdc.gov/rotavirus/global_surveillance/afro.htm http://www.cdc.gov/rotavirus/global_surveillance/searowpro.htm http://www.cdc.gov/rotavirus/global_surveillance/emro.htm http://www.cdc.gov/rotavirus/global_surveillance/euro.htm http://www.cdc.gov/rotavirus/global_surveillance/paho.htm	Maps

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Rotavirus	Global Illness and deaths caused by rotavirus disease in children	Parashar U. D., Hummelman E. G., Bresee J. S., Miller M. A., Glass R. I.	CDC	2003	http://www.cdc.gov/ncidod/EID/vol9no5/pdfs/02-0562.pdf Emerging Infectious Diseases: Vol.9, No. 5, May 2003	Paper
	Generic protocols for hospital-based surveillance to estimate the burden of rotavirus gastroenteritis in children and a community-based survey on utilization of health care services for gastroenteritis in children	----	WHO/ Department of vaccines and Biologicals	2002	http://whqlibdoc.who.int/hq/2002/WHO_V&B_02.15.pdf	Generic protocol
	Generic protocol for monitoring impact of rotavirus vaccination on gastroenteritits disease burden and viral strains	----	WHO/ Department of Immunization, Vaccines, and Biologicals	2008	http://whqlibdoc.who.int/hq/2008/WHO_IVB_08.16_eng.pdf	Generic protocol
	Decline and change in seasonality of US rotavirus activity after the introduction of rotavirus vaccine.	Tate JE, Panozzo CA, Payne DC, Patel MM, Cortese MM, Fowlkes AL, Parashar UD	----	2009	Pediatrics. 2009 Aug;124(2):465-71	Paper
	Burden of rotavirus gastroenteritis and potential benefits of a pentavalent rotavirus vaccination in Belgium	Dhont P, Trichard M, Largeron N, Rafia R, Benard S	----	2008	J Med Econ. 2008;11(3):431-48	Paper
	Rotavirus vaccines – early success, remaining questions	Parashar, UD, Glass RI	----	2009	N Engl J Med. 2009 Mar12;360(11):1063-5	Paper
	Uptake of Rotavirus Vaccine and National Trends of Acute Gastroenteritis among Children in Nicaragua	Orozco M, Vasquez J, Pedreira C, De Oliveira LH, amador JJ, Male-spin O, Andrus J, Tate J, Parashar U, Patel M	----	2009	J Infect Dis. 2009 Nov 1;200 Suppl. 1:s125-30	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Rotavirus	How Much Could Rotavirus Vaccines Reduce Diarrhea-Associated Mortality in Northern Ghana? A Model to Assess Impact	Arvay ML, Curns AT, Terp S, Armah G, Wontuo P, Parashar UD, Binka F, Glass RI, Widdowson M-A	----	2009	J Infect Dis. 2009 Nov 1;200Suppl.1:S85-91	Paper
	Rotavirus Vaccination: Cost-Effectiveness and Impact on Child Mortality in Developing Countries	Atherly D, Dreibelbis R, Parashar UD, Levin C, Wecker J, Rheingans RD	----	2009	J Infect Dis. 2009 Nov 1;200Suppl.1:S28-38	Paper
	Burden of rotavirus disease and cost-effectiveness of universal vaccination in the Province of Genoa (Northern Italy)	Panatto D, Amicizia D, Ansaldi F, Marocco A, Marchetti F, Bamfi F, Giacchino R, Tacchella A, Buono SD, Gasparini R	-----	2009	Vaccine. 2009 May26;27(25-26):3450-3	Paper
	Rotavirus Disease Burden and Impact and Cost-Effectiveness of a Rotavirus Vaccination Program in Kenya	Tate JE, Reingans RD, O'Reilly CE, Obonyo B, Burton DC, TornheimJA, Adazu K, Jaron P, Och-iengB, KerinT, Calhoum L, HamelM, Laserson K, Breiman RF, FeikinDR, MintzED,WiddowsonMA	----	2009	J Infect Dis. 2009 Nov1;200Suppl1:S76-84	Paper
	Project Impact of the New Rotavirus Vaccination Pro-gram on Hospitalizations for Gastroenteritis and Rotavirus Disease among USChildren < 5Years of age during 2006-15	Curns AT, Coffin F, Glasser JW, Glass RI, Parashar UD	----	2009	J Infect Dis. 2009 Nov 1;200suppl1:s49-56	Paper
	Early evidence for direct and indirect effects of the infant rotavirus vaccine program in Queensland	Lambert SB, Faux CE, Hall L, Birrell FA, Peter-son KV, Selvey CE, Sloots TP, Nissen MD	----	2009	Med J Aust. 2009 Aug 3;191(3):157-60	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Rotavirus	Effect of rotavirus vaccination program on trends in admission of infants to hospitals for intussusception	Simonsen L, Morens D, Elixhauser A, GerberM, Van Raden M, Blackwelder W	-----	2001	Lancet. 2001 Oct13; 358(9289):1197-8	Paper
	Demographic variability, vaccination, and the spatiotemporal dynamics of rotavirus epidemics	PitzerVE,ViboudC, Si-monsenL,SteinerC, Panozzo CA, AlonsoWJ, MillerMA, GlassRI, Glasser JW, Parashar UD, Grenfell BT	-----	2009	Science. 2009 Jul17;325(5938):274-5	Paper
	Rotavirus vaccination and intussusception: can we decrease temporally associated background cases of intussusception by restricting the vaccination schedule?	Tai, JH, Curns AT, Parashar UD, Bresee JS, Glass RI	-----	2006	Pediatrics. 2006 Aug:118(2):e258-64	Paper
	Advanced Immunization Management (AIM) e-Learning Website: Rotavirus	Berlier M, LaForce FM, Mort M	PATH	2009	http://www.path.org/publications/details.php?i=1707	E-learning module
	Vaccines for the 21st Century: vaccine candidates: Rotavirus	----	Institute of Medicine of the National Academics	2003	http://www.iom.edu/?id=12280	Excel Spreadsheet
	Accelerating the introduction of rotavirus into GAVI-eligible countries	----	PATH	2006	http://www.gavialliance.org/resources/Rotavirus_Investment_Case_Oct06.pdf	Guideline
	Rotavirus surveillance: Worldwide, 2001-2008	-----	CDC	2008	http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5746a3.htm	Report
	Global Rotavirus Information and Surveillance Bulletin Reporting Period: January through December 2008	-----	WHO	2009	http://www.who.int/nuvi/surveillance/Bulletin_Rota_Dec_09.pdf	Report

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Yellow fever Virus	Yellow fever	----	WHO	2001	http://www.who.int/mediacentre/factsheets/fs100/en/	Fact sheet
	Yellow fever	Susan Robertson	WHO/ Global Program for vaccine and immunization expanded program on immunization	1993	http://www.who.int/vaccines-documents/DocsPDF-IBI-e/mod8_e.pdf	Fact sheet
	Yellow fever: a current threat	----	WHO	2009/ 2005	http://www.who.int/csr/disease/yellowfev/impact1/en/index.html http://www.who.int/csr/disease/yellowfev/risk/en/index.html	Fact sheet/ Maps
	Epidemiological trends and current situation of yellow fever	----	WHO	2004/ 2009	http://www.who.int/csr/disease/yellowfev/surveillance/en/index.html http://www.who.int/csr/disease/yellowfev/westafrica/en/index.html http://www.who.int/csr/disease/yellowfev/trends/en/index.html	Fact sheet
	District guidelines for yellow fever surveillance	----	WHO	1998	http://www.who.int/vaccines-documents/DocsPDF/www9834.pdf	Guideline
	WHO-recommended standards for surveillance of selected vaccine-preventable diseases	----	WHO/ vaccine and Biologicals	2003	http://www.who.int/vaccines-documents/DocsPDF06/843.pdf	Guideline
	Yellow fever	Jari Vainio, Felicity Cutts	WHO/Division of emerging + other communi-cable diseases sur-veillance/ control	1998	http://www.who.int/vaccines-documents/DocsPDF/www9842.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Yellow fever Virus	Assessment of yellow fever epidemic risk – a decision-making tool for preventive immunization campaigns Weekly epidemiological record (No. 18)	----	WHO	2007	http://www.who.int/wer/2007/wer8218.pdf	Report
	Independent Review Committee report on the yellow fever stockpile investment case	----	GAVI	2005	http://www.gavialliance.org/resources/17brd_7_YellowFever_ICreview_6Dec2005.pdf	Review
	Yellow fever in Africa: public health impact and prospects for control in the 21st century	Tomori O	----	2002	Biomedica. 2002 Jun;22(2):178-210	Paper
	Current assessment of yellow fever and yellow fever vaccine	Lefeuvre A, Marianneau P, Deubel V	-----	2004	Curr Infect Dis Rep. 2004 Apr;6(2):96-104	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Salmonella typhi	Typhoid fever	----	WHO	2009	http://www.who.int/vaccine_research/diseases/diarrhoeal/en/index7.html	Fact sheet
	The global burden of typhoid fever	Crump J. A., Luby S. P., Mintz E. D.	----	2004	http://www.who.int/rpc/TFDisBurden.pdf Bulletin of the World Health Organization: May 2004, 82(5)	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Salmonella typhi	A study of typhoid fever in five Asian countries disease burden and implications for controls	Ochiai R.L., Acosta C.J., Danovaro-Holliday M.C., Baiqing D., Bhatta-charya S.K., Agtini M.D., Bhutta Z.A., Canh D.G., Ali M., Shin S., Wain J., Page A.-L., Albert M.J., Farrar J., Abu-Elyazeed R., Pang T., Galindo C.M., von Seidlein L., Clemens J.D., Domi Typhoid Study Group	----	2008	http://www.who.int/bulletin/volumes/86/4/06-039818.pdf Bulletin of the World Health Organization: May 2008, 86(4)	Paper
	Background document: The diagnosis, treatment and prevention of typhoid fever	----	WHO/ Communi-cable Disease Surveillance and Response/ Vaccines and Biologiclas	2003	http://whqlibdoc.who.int/hq/2003/WHO_V&B_03.07.pdf	Guideline
	Typhoid fever	----	NSW Health	2004	http://www.health.nsw.gov.au/factsheets/guideline/typhoid.html	Fact sheet
	Typhoid fever investigation guidelines	----	KIPHS	2006	http://www.kdheks.gov/epi/download/Disease_Protocols/Disease_Protocols_With_Forms/Typhoid_Fever_Disease_Investigation_Guideline.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Vibrio cholerae	Cholera	----	WHO	2008	http://www.who.int/mediacentre/factsheets/fs107/en/index.html	Fact sheet
	Cholera surveillance and number of cases in 2005	----	WHO	2009	http://www.who.int/topics/cholera/surveillance/en/index.html	Map

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Vibrio cholerae	Cholera	----	WHO/ Global Health Atlas	2007, 2008, 2009	http://gamapserver.who.int/mapLibrary/app/searchResults.aspx	Map
	Cholera: global surveillance summary, 2008 Weekly epidemiological record (No. 31)	----	WHO	2009	http://www.who.int/wer/2009/wer8431.pdf	Report/ Map
	Laboratory methods for the diagnosis of epidemic dysentery and cholera	----	CDC	1999	http://www.cdc.gov/ncidod/dbmd/diseaseinfo/cholera_lab_manual.htm	Manual
	Cholera outbreak Assessing the outbreak response and improving preparedness	----	WHO/ Global Task Force on Cholera Control	2004	http://whqlibdoc.who.int/hq/2004/WHO_CDS_CPE_ZFk_2004.4_eng.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Japanese Encephalitis Virus	Japanese Encephalitis	----	WHO	2008	http://www.who.int/nuvi/je/en/	Fact sheet
	More about Japanese Encephalitis	----	PATH	2008	http://www.path.org/vaccineresources/japanese-encephalitis-info.php	Fact Sheet
	Japanese Encephalitis	----	WHO/ Global Health Atlas	2006	http://gamapserver.who.int/mapLibrary/app/searchResults.aspx	Fact sheet
	Japanese Encephalitis reported cases	----	WHO/ Department of Immunization, Vaccines, and Biologicals	2009	http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencejap.htm	Report

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Japanese Encephalitis Virus	Japanese Encephalitis in depth	----	PATH	1995-2009	http://www.path.org/projects/JE_in_depth.php	Fact sheet
	Manual for the Laboratory Diagnosis of Japanese Encephalitis Virus Infection	----	WHO	2007	http://www.who.int/immunization_monitoring/Manual_lab_diagnosis_JE.pdf	Manual
	Japanese Encephalitis surveillance standards (from WHO-recommended standards for surveillance of selected vaccine-preventable diseases)	----	WHO	2006	http://www.path.org/files/WHO_surveillance_standards_JE.pdf	Guideline
	Advanced Immunization Management (AIM) e-Learning Website: Japanese Encephalitis	Berlier M, LaForce FM, Mort M	PATH	2009	http://aim.path.org/en/vaccines/je/index.html	E-learning module
	Immunization against Japanese encephalitis in China: A policy analysis	Liu W, Clemens JD, Yang J, Xu ZY	----	2006	Vaccine. 2006 Jun 12;24(24):5178-82	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Human Papillomavirus	VPD Surveillance Manual 4th Edition Human Papillomavirus	Datta S.D., Dunne E., Saraiya M, Unger E., Markowitz L.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt05-hpv.pdf	Fact sheet
	Cervical cancer quick facts	----	PATH/ RHO Cervical Cancer	1997-2009	http://www.rho.org/about-cervical-cancer-quickfacts.htm	Fact sheet
	About cervical cancer	----	PATH/ RHO Cervical Cancer	1997-2009	http://www.rho.org/about-cervical-cancer.htm	Fact sheet
	Human Papillomavirus (HPV) Vaccine background paper	----	WHO	2008	http://www.who.int/immunization/sage/hpvbgpaper_oct08.pdf	Manual
	Comprehensive cervical cancer control/ A guide to essential practice	----	WHO	2006	http://www.rho.org/files/WHO_CC_control_2006.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Human Papillomavirus	Cervical cancer prevention 10 Key findings and recom-mendations for effective cervical cancer screening and treatment programs	----	ACCP (Alliance for Cervical Cancer Prevention)	2007	http://www.alliance-cxca.org/files/ACCP_recs_2007_factsheet_final.pdf	Fact sheet
	Estimating the long-term clinical impact of cervical cancer vaccination in Taiwan	Yen MS, You SL, Ferko N, Debicki D, Chen YC, Chou CY	----	2009	Int J Gynecol Cancer. 2009 Feb;19(2):281-8	Paper
	Human Papillomavirus vaccines and vaccine implementation	De Sanjose S, Alemany L, Castellsague X, Bosch FX	----	2008	Womens Health (Lond Engl.). 2008 Nov;4(6):595-604	Paper
	Assessing the introduction of universal human papillomavirus vaccination for preadolescent girls in the Netherlands	Boot HJ, Wallenburg I, de Melker HE, Mangen M-JM, Gerritsen AA-M, van der Maas NA, Berkhof J, Meijer CJLM, kimman TG	----	2007	Vaccine. 2007 Aug14;25(33):6245-56	Paper
	Strategies for the introduction of human papillomavirus vaccination: modeling the optimum age-and sex-specific pattern of vaccination in Finland	French KM< Barnabas RV, Lehtinen M, Kontula O, Pukkala E, Dillner J, Garnett GP	----	2007	Br J Cancer. 2007 feb 12;96(3):514-8	Paper
	Quadrivalent human papillomavirus vaccine	Barr E, Tamms G	-----	2007	Clin Infect Dis. 2007 Sep 1; 45(5):609-7	Paper
	Fostering acceptance of human papillomavirus vaccines	Dekker AH	-----	2006	J Am Osteopath Assoc. 2006 Mar;106(3Suppl 1):S14-8	Paper
	Vaccines for the 21st Century: vaccine candidates: Human Papillomavirus	----	Institute of Medicine of the National Academics	2003	http://www.iom.edu/?id=12269	Excel spreadsheet
	IARC Screening Group/ International Agency for Research on Cancer	-----	IARC	-----	http://screening.iarc.fr/index.php (http://www-dep.iarc.fr/)	Tool

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Human Papillomavirus	WHO/ ICO Information Centre on HPV and Cervical Cancer	------	WHO/ ICO	-----	http://www.who.int/hpvcentre/en/	Tool
	Global incidence of cervical cancer, projections for 2005	-----	WHO	2006	http://www.who.int/bulletin/volumes/84/2/news_fig_0206/en/	Map

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Influenza Virus	VPD Surveillance Manual 4th Edition Influenza	Brammer L., Bresee J., Smith N., Ktjmov A., Cox N.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt06-influenza.pdf	Fact sheet
	Influenza (seasonal)	----	WHO	2009	http://www.who.int/mediacentre/factsheets/fs211/en/index.html	Fact sheet
	A practical guide for designing and conducting influenza disease burden studies	----	WHO	2009	http://www.wpro.who.int/internet/resources.ashx/CSR/Publications/GuideforDesigningandConductingInfluenzaStudies.pdf	Guideline
	Global surveillance during an influenza pandemic	----	WHO	2009	http://www.who.int/csr/disease/swineflu/global_pandemic_influenza_surveilance_apr09.pdf	Guideline
	Vaccines for the 21st Century: Vaccine candidates: Influenza	----	Institute of Medicine of the national Academics	2003	http://www.iom.edu/?id=12270	Excel Spreadsheet
	Mass vaccination of Schoolchildren against Influenza and Its Impact on the Influenza-Associated Mortality rate among Children in Japan	Sugaya N, Takeuchi Y	----	2005	Clin. Infect Dis. 2005 Oct1; 41(7):939-47	Paper

8.2 Catalogue of disease specific documents and existing decision-making tools: Old vaccines

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Hepatitis A Virus	VPD Surveillance Manual 4th Edition Chapter 3: Hepatitis A	Finelli L., Bell B.P.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt03-hepa.pdf	Fact sheet
	Hepatitis A	----	WHO	2008	http://www.who.int/mediacentre/factsheets/fs328/en/index.html	Fact sheet
	Weekly epidemiological record (No. 6)	----	WHO	2002	http://www.who.int/docstore/wer/pdf/2002/wer7706.pdf	Report/ Map
	VPD Surveillance Manual 4th Edition Chapter 3: Hepatitis A	Finelli L., Bell B.P.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt03-hepa.pdf	Fact sheet
	WHO-recommended surveillance standard of acute viral hepatitis	----	WHO	2009	http://www.who.int/immunization_monitoring/resources/Maternal_and_neonatal_tetanus_Seminar.pdf The Lancet: 12 September 2007	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Neonatal tetanus	Maternal and neonatal tetanus	Roper M.H., Weybridge V.T.	----	2007	http://www.who.int/immunization_monitoring/resources/Maternal_and_neonatal_tetanus_Seminar.pdf The Lancet: 12 September 2007	Paper

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Neonatal tetanus	Tetanus (neonatal) reported cases	----	WHO	2009	http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencente.htm	Report
	WHO-recommended standards for surveillance of selected vaccine-preventable diseases	----	WHO/ Vaccine and Biologicals	2003	http://www.who.int/vaccines-documents/DocsPDF06/843.pdf	Guideline
	Neonatal tetanus elimination, field guide	----	WHO/ Pan American Health Organization	2005	http://www.paho.org/English/AD/FCH/IM/FieldGuide_NNT.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Mumps Virus	VPD Surveillance Manual 4th Edition Chapter 9: Mumps	Dayan G., Bellini W., Barskey A., Reef S.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt09-mumps.pdf	Fact sheet
	Mumps reported cases	----	WHO	2009	http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencemum.htm	Report
	VPD Surveillance Manual 4th Edition Chapter 9: Mumps	Dayan G., Bellini W., Barskey A., Reef S.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt09-mumps.pdf	Fact sheet
	WHO-recommended standards for surveillance of selected vaccine-preventable diseases	----	WHO/ Vaccine and Biologicals	2003	http://www.who.int/vaccines-documents/DocsPDF06/843.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Rubella Virus	VPD Surveillance Manual 4th Edition Chapter 14: Rubella	Reef S., Redd S., Abernathy E., Icenogle J.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt14-rubella.pdf	Fact sheet
	Rubella reported cases	----	WHO	2009	http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencerub.htm	Report
	VPD Surveillance Manual 4th Edition Chapter 14: Rubella	Reef S., Redd S., Abernathy E., Icenogle J.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt14-rubella.pdf	Fact sheet
	WHO-recommended standards for surveillance of selected vaccine-preventable diseases	----	WHO/ Vaccine and Biologicals	2003	http://www.who.int/vaccines-documents/DocsPDF06/843.pdf	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Measles Virus	Measles	----	WHO	2008	http://www.who.int/mediacentre/factsheets/fs286/en/index.html	Fact sheet
	VPD Surveillance Manual 4th Edition Chapter 7: Measles	Dayan G.H., Rota J., Bellini W., Redd S.B.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.pdf	Fact sheet
	Key Statistics	----	Measles Initiative	----	http://www.measlesinitiative.org/docs/mi-fact-sheet.pdf	Fact sheet
	Measles reported cases	----	WHO	2009	http://www.who.int/immunization_monitoring/en/globalsummary/timeseries/tsincidencemea.htm	Guideline
	VPD Surveillance Manual 4th Edition Chapter 7: Measles	Dayan G.H., Rota J., Bellini W., Redd S.B.	CDC	2008	http://www.cdc.gov/vaccines/pubs/surv-manual/chpt07-measles.pdf	Fact sheet

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Measles Virus	WHO-recommended standards for surveillance of selected vaccine-preventable diseases	----	WHO/ Vaccine and Biologicals	2003	http://www.who.int/vaccines-documents/DocsPDF06/843.pdf	Guideline
	Module on best practices for measles surveillance	Guirs, D.	WHO/ Department of Vaccines and Biologicals	2001	http://www.who.int/vaccines-documents/DocsPDF01/www617.pdf	Guideline

8.3 Catalogue of decision-making guidelines for vaccine introduction, WHO position papers and generic information on disease specific vaccines

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Decision-making guidelines for vaccine introduction	Vaccine Introduction Guidelines: Adding a vaccine to a national immunization programme: decision and implementation	----	WHO/ Department of Immunization, Vaccines, and Biologicals	2005	http://www.who.int/vaccines-documents/DocsPDF05/777_screen.pdf	Guideline
	Assessing new vaccines for national immunization programmes : A framework to assist decision makers	----	WHO/ Immunization Focus/ Regional Office for the Western Pacific, Manila	2000	http://www.wpro.who.int/NR/rdonlyres/280FF00E-D121-4C40-A41F-F55D0B08F61A/0/assessing_new_vaccines.pdf	Guideline
	Mathematical modeling: a tool for decision making in situations of uncertainty	----	French Institute for Public Health Surveillance	2000	http://www.invs.sante.fr/publications/2008/modelisation_mathematique/plaquette_modelisation_mathematique_eng.pdf	Guideline
	Cervical cancer, human papillomavirus (HPV), and HPV vaccines: Key points for policy-makers and health professionals (1) Human Papillomavirus and HPV vaccines: Technical information for policy-makers and health professionals (2) Preparing for introduction of HPV vaccines: Policy and programme guidance for countries (3)	----	WHO/ PATH/ UNFPA/ Flemish Government (1) WHO/ Department of Immunization, Vaccines and Biologicals (2) WHO/ UNFPA (3)	2007 (1), 2007 (2), 2006 (3)	http://whqlibdoc.who.int/hq/2008/WHO_RHR_08.14_eng.pdf (1) http://whqlibdoc.who.int/hq/2007/WHO_IVB_07.05_eng.pdf (2) http://whqlibdoc.who.int/hq/2006/WHO_RHR_06.11_eng.pdf (3)	Guideline

Disease	Title of the document	Authors	Institution	Year of issue	Accessibility of the document	Type of the document
Decision-making guidelines for vaccine introduction	Decision support in vaccination policies	Piso B., Wild C.	----	2009	http://www.ncbi.nlm.nih.gov/pubmed/19698809?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum Vaccine 27 (2009) 5923-5928	Paper/ Review
	Developing a vaccination evaluation model to support evidence-based decision making on national immunization programs	Kimman T.G., Boot H.J., Berbers G.A.M., Vermeer-de Bondt P.E., de Wit G.A., de Melker H.E.	----	2006	http://www.ncbi.nlm.nih.gov/pubmed/16616803?ordinalpos=7&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum Vaccine 24 (2006) 4769-4778	Paper
	A schematic framework to aid decision analysis for the introduction of a new vaccine into a national immunization programme	----	----	----	----	Report
	Key issues that need to be considered in the decision analysis prior to a final resolution on whether to introduce a new vaccine in the national immunization program or not	----	Regional Workshop on Vaccine Prioritization, Bankok	2009	----	Report

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WHO position papers and generic information on disease specific vaccines	Table 1 + 2: Recommended Routine Immunization – Summary of WHO Position Papers	----	WHO	2009	http://www.who.int/immunization/policy/immunization_tables/en/ http://www.who.int/immunization/policy/Immunization_routine_table1.pdf (Table 1) http://www.who.int/immunization/policy/Immunization_routine_table2.pdf (Table 2)	Report
	WHO position paper on *Haemophilus influenzae* type b conjugate vaccines	----	WHO	2006	http://www.who.int/immunization/REH_47_8_pages.pdf Weekly epidemiological record (No. 47, 81, 445-452)	Report
	Meningococcal vaccines: polysaccharide and polysaccharide conjugate vaccines	----	WHO	2002	http://www.who.int/immunization/wer7740meningococcal_Oct02_position_paper.pdf Weekly epidemiological record (No. 40, 77, 329-340)	Report
	Pneumococcal conjugate vaccine for childhood immunization – WHO position paper	----	WHO	2007	http://www.who.int/immunization/wer8212pneumococcus_child_Mar07_position_paper.pdf (Additional: http://www.who.int/wer/2008/wer8342.pdf) Weekly epidemiological record (No. 12, 82, 93-104)	Report

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WHO position papers and generic information on disease specific vaccines	Rotavirus vaccines	----	WHO	2007	http://www.who.int/wer/2007/wer8232.pdf Weekly epidemiological record (No. 32, 82, 285-296)	Report
	Yellow fever vaccines	----	WHO	2003	http://www.who.int/wer/2003/en/wer7840.pdf Weekly epidemiological record (No. 40, 78, 349-360)	Report
	Typhoid vaccines	----	WHO	2000	http://www.who.int/wer/2008/wer8306.pdf Weekly epidemiological record (No. 32, 75, 257-264)	Report
	Cholera vaccines	----	WHO	2001	http://www.who.int/immunization/wer7616cholera_Apr01_position_paper.pdf Weekly epidemiological record (No. 16, 76, 117-124)	Report
	Japanese Encephalitis Vaccines	----	WHO	2006	http://www.who.int/immunization/wer8134japanese%20encephalitis_Aug06_position%20paper.pdf Weekly epidemiological record (No. 34/35, 81, 325-340)	Report

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WHO position papers and generic information on disease specific vaccines	Human Papillomavirus Vaccines	----	WHO	2009	http://www.who.int/wer/2009/wer8415.pdf Weekly epidemiological record (No. 15, 84, 117-132)	Report
	Influenza Vaccines	----	WHO	2005	http://www.who.int/immunization/wer8033influenza_August2005_position_paper.pdf Weekly epidemiological record (No. 33)	Report
	Hepatitis A Vaccines	----	WHO	2000	http://www.who.int/immunization/wer7505Hepatitis%20A_Feb00_position_paper.pdf Weekly epidemiological record (No. 5, 75, 37-44)	Report
	Mumps Virus Vaccines	----	WHO	2007	http://www.who.int/immunization/wer8207mumps_Feb07_position_paper.pdf Weekly epidemiological record (No. 7, 82, 49-60)	Report
	Rubella Virus Vaccines	----	WHO	2000	http://www.who.int/immunization/wer7520rubella%20_May00_position_paper.pdf Weekly epidemiological record (No. 20, 75, 161-172)	Report
	Measles Virus Vaccines	----	WHO	2009	http://www.who.int/wer/2009/wer8435.pdf Weekly epidemiological record (No. 35, 84, 349-360)	Report