Annotated Bibliography

LOCAL FAITH COMMUNITIES AND IMMUNIZATION FOR COMMUNITY AND HEALTH SYSTEMS STRENGTHENING

Version – August 2014

Compiled by Jill Olivier

On behalf of the Joint Learning Initiative on Faith and Local Communities

http://jliflc.com/

Companion pieces:

- Local faith communities and immunization for community and health systems strengthening, a scoping review
- Companion scoping reviews commissioned by the JLIF&LC on 'Maternal Health and HIV/AIDS' and on 'Resilience in Humanitarian Contexts'

Acknowledgements: Many thanks for review comments from the following individuals: Andrew Tomkins, Angela Shen, Elizabeth Fox, Jean Duff, Katherine Marshall and Mwayabo Kazadi – and special mention for the review assistance from John D. Grabenstein

Report prepared by Jill Olivier (author correspondence: jill.olivier@uct.ac.za)

Suggested citation: Olivier, J. 2014. Local faith communities and immunization for community and health systems strengthening, Scoping review report for the Joint Learning Initiative on Faith and Local Communities, London.

August 2014

http://jliflc.com/

Contact: Jean Duff, JLIF&LC Coordinator jeanduff@fullcirclepartners.org

Some keys for usage:

- *[author abstract]*: Abstract has been provided as published by the author or publisher
- *[abstract abr]*: The author/publisher abstract has been abbreviated
- *[Commentary / Newsletter]*: indicates an item that has value but is not peer-reviewed
- *[Main relevance]*: this item has direct reference to this review topic (e.g. the entire article is relevant or it provides key new information)
- *[Minor relevance]*: this item has some related relevance (e.g. some brief mention or data on the issue)
- *Please note that the relevance indicator is a subjective value assessment by the reviewers (of the contribution of each publication to this scoping review) – this should not be taken as a judgement on the strength of the paper or such systematic review criteria.*

Agbeyegbe, L. 2007. "Risk communication: The over-looked factor in the Nigeria polio immunization boycott crisis." *The Nigerian Medical Practitioner* 51(3): 40-44.

The 2003 - 2004 polio vaccination boycotts in Nigeria threatened the global polio eradication initiative of having a polio-free world by 2005. Encouraged by the global eradication of smallpox from the world in 1980, World Health Organization (WHO) launched the Global Polio Eradication Initiative in 1988 seeking to eradicate polio from the world by the year 2000. In 2003, some Nigerian states boycotted national polio vaccination campaigns threatening the impending success of the global eradication initiative. By the end of 2003, Nigeria accounted for 45% of all global cases of polio and 70% of all cases in 2004. Within ten months, twelve polio free countries confirmed polio cases resulting from a poliovirus genetically linked to that endemic in Northern Nigeria. The situation appeared to have been fully resolved when Kano the last state holding out resumed polio vaccination in July 2004. However, some concerns remained. This paper considers the question on the safety of the vaccine and the role of religion in the boycott. It seeks to show that although the boycott is no longer in effect; low participation during vaccination may persist reflecting a failure to implement risk communication.

[author abstract | main relevance]

Anis, Emilia, Itamar Grotto, Larisa Moerman, Ehud Kaliner, Bruce Warshavsky, Paul E. Slater and Boaz Lev. 2013. "Rubella in Israel after the MMR vaccine: Elimination or containment?" *Journal of Public Health Policy* 34: 288–301.

Since 1996, after the full institution of the two-dose measles, mumps, and rubella vaccine (MMR) regimen in Israel, rubella incidence has declined dramatically and has remained extremely low. Cyclical outbreaks ended; the two brief outbreaks that did occur were quickly contained; and epidemiological data indicate that the disease is practically absent from the country. But similar steep declines in the incidence of measles and mumps, the two other MMR-preventable diseases, were followed by major outbreaks in 2007 and 2010. Epidemiological analyses show that undervaccination of subgroups within the Jewish ultra-orthodox population, both in Israel and abroad, and virus importation into Israel, continue to be risk factors for all three MMR-preventable diseases. Israel's public health system, therefore, should focus on a policy of containment: improve MMR coverage among undervaccinated subgroups and assure that virus importation is no longer a risk. Then the goal of rubella elimination will become feasible. We discuss how the Israeli experience may contribute to the World Health Organization Initiative to eliminate simultaneously measles and rubella.

[author abstract | minor relevance]

Ansari, M. Athar and Zulfia Khan. 2010. "Routine immunization coverage in underserved children of Aligarh (India): an effort with UNICEF." *Journal of Child Health Care* 14(2): 142-150.

The aims of the study were to find out the routine immunization coverage in under-five children; and to impart correct health education regarding the importance of complete immunization. This hospital- and outreach-session-based cross-sectional study was carried out by the interview method in two underserved areas of Aligarh city. Two thousand five hundred and thirty-one under-five children and their mothers or family members were included in the population sample. Statistical analysis was done by proportions and chi-square test. In Shahjamal area, a maximum 86.5 percent of children were immunized with DPT, OPV (86.5%) first doses followed by BCG (84.9%). DPT and OPV second and third doses were given in 64.5 percent and 54.8 percent respectively. Measles and DPT booster coverage was low at 39.0 percent and 11.4 percent respectively. Similarly, in Bhojpura, 99 percent of children received DPT and OPV first doses followed by BCG (94.1%). DPT and OPV second and third doses were given in 67.7 percent and 47.4 percent of children respectively. Measles and DPT booster coverage was low as 31.9 percent and 6.7 percent respectively. The results reveal high coverage of DPT1, OPV1, BCG, DPT2 and OPV2 in both areas. Immunization services need to be strengthened beyond infancy.

[author abstract | minor relevance]

Antai, Diddy. 2009. "Faith and child survival: The role of religion in childhood immunization in Nigeria." *Journal of Biosocial Science* 41(1): 57-76.

This study assessed the role of mother's religious affiliation in child immunization status of surviving children 12 months of age and older in Nigeria, using data from the 2003 Nigeria Demographic and Health Survey (NDHS). Guided by two competing hypotheses-the 'characteristics hypothesis' and the 'particularized theology hypothesis'-

variations in the risks of child immunization in Nigeria were examined using logistic regression analysis. The results indicate that religion plays a role in the risk of non-immunization; religion was not associated with the risk of partial immunization; however, religion was significantly associated with the reduced risk of full immunization. *[author abstract | main relevance]*

Antai, Diddy, Gebrenegus Ghilagaber, Sara Wedrén, Gloria Macassa and Tahereh Moradi. 2009. "Inequities in under-five mortality in Nigeria: Differentials by religious affiliation of the mother." *Journal of Religion and Health* 48(3): 290-304.

Observations in Nigeria have indicated polio vaccination refusal related to religion that ultimately affected child morbidity and mortality. This study assessed the role of religion in under-five (0-59 months) mortality using a cross-sectional, nationally representative sample of 7,620 women aged 15-49 years from the 2003 Nigeria Demographic and Health Survey and included 6,029 children. Results show that mother's affiliation to Traditional indigenous religion is significantly associated with increased under-five mortality. Multivariable modelling demonstrated that this association is explained by differential use of maternal and child health services, specifically attendance to prenatal care. To reduce child health inequity, these results need to be incorporated in the formulation of child health policies geared towards achieving a high degree of attendance to prenatal care, irrespective of religious affiliation.

[author abstract | main relevance]

Arora, N. K. 2000. Progress towards polio eradication: Service delivery, socio-cultural and communication barriers in pulse polio immunization in high burden zone in India. New Delhi, Clinical Epidemiology Unit. All India Institute of Medical Sciences.

The nature of problems observed during different phases of the Pulse Polio Immunization Program in India make an interesting study on its own. Three years ago, almost ten percent of the target population was left out during the National Immunization Days. Today the major challenges are to administer polio drops to a small fraction of less than 5 year old children whose parents are reluctant to accept it due to their concerns and beliefs regarding safety and efficacy of the vaccine and to determine the reasons for active virus transmission in selected clusters. The present study was undertaken on a very short notice to answer the above questions. It had been a challenging task. We earnestly hope that observations made by the study team and the recommendations emanating from these will be useful to overcome the last barriers in achieving polio eradication in India.

[author abstract | minor relevance]

Aylward, Bruce and Rudolf Tangermann. 2011. "The global polio eradication initiative: Lessons learned and prospects for success." *Vaccine* 29: D80-D85.

Following the rapid progress towards interrupting indigenous wild poliovirus transmission in the Americas in the early 1980s, the Global Polio Eradication Initiative (GPEI) was launched with a resolution of the World Health Assembly (WHA) in 1988. The GPEI built on many lessons learned from smallpox eradication, including the large-scale deployment of technical assistance, implementing agendas of innovation and research and the use of professionally planned and guided advocacy. By the year 2000, the incidence of polio globally had decreased by 99% compared with the estimated >350,000 cases reported from 125 endemic countries in 1988. By 2002, three WHO Regions (the Americas, Western Pacific and European Regions) had been certified polio-free. By 2005, transmission of indigenous wild poliovirus (WPV) had been interrupted in all but 4 'endemic' countries: India, Nigeria, Pakistan and Afghanistan, where eradication efforts effectively stalled. WPV exported from northern Nigeria and northern India subsequently caused >50 outbreaks and paralysed >1500 children in previously polio-free countries across Asia and Africa. In each of the four remaining polio-endemic countries different challenges, or a combination of factors, prevented to build up sufficient levels of population immunity to stop transmission. Consequently, specific strategies were increasingly tailored to each setting. A new 2010–2012 GPEI Strategic Plan was developed which brought together several approaches to overcome the remaining hurdles to eradication, including the large-scale use of bivalent oral poliovaccine (bOPV) in supplementary immunization activities (SIAs). By the end of 2010, the impact of the new GPEI Strategic Plan 2010–2012 was apparent. Compared to 2009, the number of new polio cases in 2010 fell by 95% in both northern Nigeria and northern India, the world's largest remaining reservoirs of indigenous WPVs. By mid-2011, India had not reported a polio case for more than 5 months, and in Nigeria, endemic transmission appeared to be restricted to the north-east and north-west corners of the country. While polio cases due to WPV type 3 were still being detected in west and central Africa, the overall level of WPV3 transmission globally was at an

all-time low. Uncontrolled WPV transmission appeared to be restricted to Chad and Pakistan, which increasingly represented the greatest risks to the GPEI. Although insufficient financing continued to be a major concern, political support for completing polio eradication in polio-infected countries was stronger than ever by mid-2011. While continued transmission in some areas, particularly in Pakistan and Chad, still had to be controlled as a matter of urgency, there were real opportunities to achieve new landmarks in polio eradication, especially in the key WPV reservoirs of India and Nigeria, setting the stage for polio to soon follow smallpox into the history books.

[author abstract abr | minor relevance]

Aylward, Lyn. 2012. Faith and immunization: past, present and potential roles of faith-inspired organizations. Washington, DC, World Faiths Development Dialogue (WFDD) for the Global Alliance for Vaccines and Immunization (GAVI).

The Global Alliance for Vaccines and Immunisation (GAVI) has recently begun a major effort to introduce the new pneumococcal and rotavirus vaccines in approved low-income countries. Pneumonia and diarrhea are the leading disease killers of children worldwide. The effort, resources, and persistence required to fight these two killers, which claim the lives of some 3 million children each year, mean that GAVI wishes to engage as many partners as possible, and thus hopes to explore the potential roles of faith-inspired organizations (FIOs). This paper examines the links between faith and immunization, and it aims to stimulate brainstorming on how FIOs, many of which are already highly-involved with immunization in poor countries, could help to introduce the new vaccines. It represents a joint effort of GAVI and the World Faiths Development Dialogue (WFDD), a nonprofit research institution based at Georgetown University. The paper focuses on how FIOs are involved in immunization initiatives in low-income countries, but also addresses support through advocacy and financing. The study was conducted via desk research and interviews with experts.

[author abstract | main relevance]

Babalola, Stella. 2011. "Maternal reasons for non-immunisation and partial immunisation in northern Nigeria." *Journal of Paediatrics and Child Health* 47(5): 276-281.

Aim: To compare maternal reasons for non-immunisation and for partial immunisation in northern Nigeria, and determine the link between specific reasons and future intentions to immunise. Methods: Responses to open-ended questions collected through a 2007 questionnaire survey were individually coded for keywords using the regexm command in Stata (StataCorp, College Station, TX, USA). Simple percentages are used to analyse the differences in reasons for non-immunisation and partial immunisation. Logistic regression serves to assess the relationship between specific reasons for non-immunisation and future intentions to immunise. Results: The reasons for non-immunisation generally differ from those advanced for partial immunisation. In general, reasons for nonimmunisation have to do with ideational and normative factors. In contrast, supply-side factors are the reasons most often advanced for partial immunisation, although lack of knowledge also plays a strong role. Some reasons for non-immunisation are more compatible with future intention to immunise than others. Conclusions: Efforts to promote the uptake of immunisation need to address both demand- and supply-side factors. Increasing knowledge about immunisation, changing negative attitudes about immunisation, debunking myths and rumours about immunisation, and addressing religious, ethnic and political bases for resistance to immunisation are necessary to encourage parents to initiate child immunisation. To promote timely completion of immunisation schedule, programmes will need to improve vaccine supply, strengthen provider's capacity for quality service and increase community knowledge about immunisation.

[author abstract | minor relevance]

Banda, M, E Ombaka, Sophie Logez and Marthe Everard. 2006. Multi-country study of medicine supply and distribution activities of faith-based organizations in sub-Saharan African countries. WHO and Ecumenical Pharmaceutical Network.

Faith-based organizations are part of the not-for-profit sector and play an important role in the advocacy, financing and delivery of health care, including pharmaceutical supply services in many countries. Although nongovernmental organizations' share in health service delivery and essential medicines provision varies considerably between countries, in low-income African countries it can be as much as 50% of curative services. Studies have shown that faith-based organizations contribute up to 40% of overall health care services in some places but their specific role in drug supply and procurement activities is not well documented. The research project reported here started from the hypothesis that these organizations' contribution to national medicines supply systems would be as significant as

their input to health care provision generally in sub-Saharan African countries. During 2003, the Ecumenical Pharmaceutical Network (EPN) collaborated with the World Health Organization (WHO), in a descriptive, comparative multi-country study on the work of 16 EPN member faith-based drug supply organizations (DSOs) and their contribution to medicines supply in 11 sub-Saharan African countries. The study's approach and execution was in line with the Swedish International Development Cooperation Agency's objective for operational research to assist decision-makers in identifying problems and evaluating performance in health services, including the pharmaceutical sector.

[author abstract | minor relevance]

Banggay, Jake Darpine B. 2012. "Perception of the Maguindanaon Muslim mothers on immunization." ***Journal of Vaccines & Vaccination*** **03(4).**

This study was aimed to determine the perception of the Maguindanaon Muslim mothers on immunization in Dalengaoen, Pikit, North Cotabato, Philippines. Specifically, it tried to enumerate the benefits and risks of immunization as perceived by the mothers and describe the beliefs and practices of the mothers towards immunization. Descriptive design specifically survey type was utilized. Convenience non-random sampling technique was used to identify the 100 respondents. The research instrument used was a self-constructed questionnaire that was subjected for validity and reliability test. Overall data were analyzed using the descriptive statistics (percentage, frequency counts, and mean). Findings show that majority of the mothers are 31–40 years old, married, with 3–5 children, have no education at all, and unemployed. Results further reveal that 54% of them reported that their children have not received any vaccines at all. Those who were rejecting them gave reasons such as vaccines are not safe; vaccines are like poison; and vaccines are unnecessary. The respondents agreed that they were not knowledgeable about immunization. And most of them were not aware of the contraindications and side effects of vaccines. In conclusion, the respondents believe that vaccines bring ill effects to their children. And their perception to immunization is being influenced by culture and religion, socio-economic status, and educational attainment. It is recommended that extensive health education programs should be provided to increase their awareness on immunization.

[author abstract | main relevance]

Bass, A. 2006. A review to identify the role of civil society organizations in immunization, GAVI Secretariat and GAVI CS Task Team.

At the request of the GAVI Civil Society Task Team a Global level assessment was undertaken to document the contribution of international Civil Society Organizations (CSOs) towards the achievement of the GAVI and Millennium Development Goals, a regional level assessment to review their impact in regional structures, and country level assessments in Bangladesh, Cambodia, Ghana, Kenya, and Uzbekistan. The aim of the review was to determine the current and possible future roles of CSOs in immunization at global, regional and national levels, to demonstrate the added value and mutual benefit of these roles in terms of GAVI objectives, and demonstrate that additional children were immunized. A time limited rapid assessment was conducted using an email survey, a literature and document review, and semi-structured telephone interviews. More than 110 key individuals in immunization at country, regional and global levels were contacted and more than 44 participated over a two week period.

[author abstract | minor relevance]

Bernsen, Roos M. D., Johan C. De Jongste, Bart W. Koes, Harry A. Aardoom and Johannes C. van der Wouden. 2006. "Diphtheria tetanus pertussis poliomyelitis vaccination and reported atopic disorders in 8-12 year-old children." ***Vaccine*** **24(12): 2035-2042.**

Evidence for the relationship between the diphtheria tetanus pertussis (DTP) vaccination and atopic disorders is inconclusive, because the available studies that constitute the evidence are liable to confounding by indication. Study objective: To assess the relationship between diphtheria–tetanus–pertussis-(inactivated) poliomyelitis vaccination (DTP-IPV) in the first year of life and reported atopic disorders at primary school age. 1875 children attending Orthodox Reformed (Protestant) primary schools in the Netherlands returned questionnaires with data on vaccination status, atopic symptoms and lifetime atopic disorders (asthma, hay fever, eczema and food allergy), and possible confounders. The adjusted odds ratio of any atopic disorder (vaccinated/unvaccinated) was 1.00 (CI95%: 0.80–1.24). For asthma, hay fever, eczema and food allergy the results were respectively: 1.04 (CI95%: 0.76–1.42), 0.79 (CI95%: 0.55–1.12), 0.87 (CI95%: 0.66–1.14) and 1.13 (CI95%: 0.71–1.81). The DTP-IPV vaccination was not

related to reported atopic disorders at primary school age.

[author abstract | minor relevance]

Bhalotra, Sonia, Christine Valente and Arthur van Soest. 2009. "Religion and childhood death in India." in *Handbook of Muslims in India*, edited by A. Sharif and R. Basant. Oxford, Oxford University Press.

Muslim children in India face substantially lower mortality risks than Hindu children. This is surprising because one would have expected just the opposite: Muslims have, on average, lower socio-economic status, higher fertility, shorter birth-spacing, and are a minority group in India that may be expected to live in areas that have relatively poor public provision. Although higher fertility amongst Muslims as compared with Hindus has excited considerable political and academic attention in India, higher mortality amongst Hindus has gone largely unnoticed. This paper considers this seeming puzzle in depth.

[author abstract | minor relevance]

Bhalotra, Sonia, Christine Valente and Arthur van Soest. 2010. "The puzzle of Muslim advantage in child survival in India." *Journal of Health Economics* 29: 191-204.

The socioeconomic status of Indian Muslims is, on average, considerably lower than that of upper-caste Hindus. Muslims nevertheless exhibit substantially higher child survival rates, and have done for decades. This paper analyses this seeming puzzle. A decomposition of the survival differential confirms that some compositional effects favour Muslims but that, overall, differences in characteristics and especially the Muslim deficit in parental education predict a Muslim disadvantage. The results of this study contribute to a recent literature that debates the importance of socioeconomic status (SES) in determining health and survival. They augment a growing literature on the role of religion or culture as encapsulating important unobservable behaviours or endowments that influence health, indeed, enough to reverse the SES gradient that is commonly observed.

[author abstract | minor relevance]

Bhopal, R.S. and A.K. Samim. 1988. "Immunization uptake of Glasgow Asian children: paradoxical benefit of communication barriers?" *J Public Health* 10(3): 215-220.

Asian children are a priority group for immunization. In view of such barriers to care as language and cultural differences, their immunization rate would be predicted to be low. We studied the immunization uptake among Asian children and matched controls using a retrospective cohort study. Asian children were identified by a names analysis and categorized as Muslim, Hindu or Sikh. They were matched for sex and post-code with children having European names. Immunization uptake and health visitor contact were measured. Sikhs had the highest immunization rates (90 per cent or more) for DPT, measles and polio. Muslims and Hindus had higher uptake of pertussis vaccination but were on a par with their controls for other immunization. Immunization of Asian children was minimally delayed compared with controls. Health visitor contact was no greater for Asians.

[author abstract | minor relevance]

Bingham, A., J. K. Drake and D. S. LaMontagne. 2009. "Sociocultural issues in the introduction of human papillomavirus vaccine in low-resource settings." *Arch Pediatr Adolesc Med* 163(5): 455-461.

Objectives: (1) To synthesize sociocultural results from diverse populations related to vaccine decision-making, understanding of cervical cancer and its etiology, experience with previous vaccinations, human papillomavirus (HPV) vaccine concerns, and information needed to foster acceptance; (2) to contextualize findings in light of recent studies; and (3) to discuss implications for communication strategies to facilitate vaccine acceptance. Design: Descriptive qualitative synthesis of sociocultural studies in 4 countries using iterative theme-based analyses. Setting: Four developing countries: India, Peru, Uganda, and Vietnam. Participants: Criterion-based sample of 252 focus-group discussions and 470 in-depth interviews with children, parents, teachers/administrators, health workers/managers, and community/religious leaders. A knowledge, attitudes, and practices survey was administered to 879 children and 875 parents in Vietnam. Results: We found that vaccine decision-making was primarily done by parents, with children having some role. Understanding of cervical cancer and HPV was limited; however, the gravity of cancer and some symptoms of cervical cancer were recognized. Vaccination and government-sponsored immunization programs were generally supported by respondents. Sentiments toward

cervical cancer vaccines were positive, but concerns about quality of delivery, safety, adverse effects, and the effect on fertility were raised. Communities requested comprehensive awareness-raising and health education to address these concerns. Conclusion: Sociocultural studies help elucidate the complexities of introducing a new vaccine from the perspective of children, parents, and communities. Strategies for introducing the HPV vaccine should address community concerns through effective communication, appropriate delivery, and targeted advocacy to make the program locally relevant.

[author abstract | minor relevance]

Blume, Stuart. 2006. "Anti-vaccination movements and their interpretations." *Social Science & Medicine* 62(3): 628-642.

Over the last two or three decades, growing numbers of parents in the industrialized world are choosing not to have their children vaccinated. In trying to explain why this is occurring, public health commentators refer to the activities of an anti-vaccination 'movement'. In the light of three decades of research on (new) social movements, what sense does it make to attribute decline in vaccination rates to the actions of an influential anti-vaccination movement? Two sorts of empirical data, drawn largely from UK and the Netherlands, are reviewed. These relate to the claims, actions and discourse of anti-vaccination groups on the one hand, and to the way parents of young children think about vaccines and vaccination on the other. How much theoretical sense it makes to view anti-vaccination groups as (new) social movement organizations (as distinct from pressure groups or self-help organizations) is as yet unclear. In any event there is no simple and unambiguous demarcation criterion. From a public health perspective, however, to focus attention on organized opponents of vaccination is appealing because it unites health professionals behind a banner of reason. At the same time it diverts attention from a potentially disruptive critique of vaccination practices; the critique in fact articulated by many parents. In the light of current theoretical discussion of 'scientific citizenship' this paper argues that identifying anti-vaccination groups with other social movements may ultimately have the opposite effect to that intended.

[author abstract | minor relevance]

Bond, K. T., K. Jones, D. C. Ompad and D. Vlahov. 2013. "Resources and interest among faith based organizations for influenza vaccination programs." *J Immigr Minor Health* 15: 758-763.

In the United States, annual influenza vaccination rates are suboptimal and are well below the national health objectives. Project VIVA mobilized community members and organizations to implement an influenza vaccination program in Harlem by administering vaccines in "non-traditional" venues, such as community-based organizations, pharmacies, and faith-based organizations (FBOs). FBOs have been recognized as important venues for health promotion initiatives within medically underserved communities. However, data regarding the extent of resources and interest in health promotion programs among FBOs are sparse. We conducted a telephone survey among 115 FBOs in three New York City neighborhoods with histories of low influenza immunization rates to identify the congregation's health concerns, interest in serving as a community-based venue for influenza vaccinations, and existing resources for health programming. Twenty-six percent of the FBOs had an established health ministry, while 45 % expressed interest in developing one. Seven percent included nurses among their health activities and 16.5 % had contact with the local health department. Most FBOs expressed interest in common health promotions programs; 60 % expressed interest in providing on-site influenza vaccination programs within their organization. Health programs within FBOs can be a point of access that may improve the health of their congregants as well as the larger community.

[author abstract | main relevance]

Bonu, Sekhar, Manju Rani and Timothy D. Baker. 2003. "The impact of the national polio immunization campaign on levels and equity in immunization coverage: evidence from rural North India." *Social Science & Medicine* 57(10): 1807-1819.

Few studies have investigated the impact of immunization campaigns conducted under the global polio eradication program on sustainability of polio vaccination coverage, on coverage of non-polio vaccines (administered under Expanded Program on Immunization (EPI)), and on changes in social inequities in immunization coverage. This study proposes to fill the gaps in the evidence by investigating the impact of a polio immunization campaign launched in India in 1995. The study uses a before-and-after study design using representative samples from rural areas of four North Indian states. The National Family Health Survey I (NFHS I) and NFHS II, conducted in 1992–93 and 1998–99 respectively, were used as pre- and post-intervention data. Using pooled data from both the surveys, multivariate

logistic regression models with interaction terms were used to investigate the changes in social inequities. During the study period, a greater increase was observed in the coverage of first dose of polio compared to three doses of polio. Moderate improvements in at least one dose of non-polio EPI vaccinations, and no improvements in complete immunization against non-polio EPI diseases were observed. The polio campaign was successful, to some extent, in reducing gender-, caste- and wealth-based inequities, but had no impact on religion- or residence-based inequities. Social inequities in non-polio EPI vaccinations did not reduce during the study period. Significant dropouts between first and third dose of polio raise concerns of sustainability of immunization coverage under a campaign approach. Similarly, little evidence to support synergy between polio campaign and non-polio EPI vaccinations raises questions about the effects of polio campaign on routine health system's functions. However, moderate success of the polio campaign in reducing social inequities in polio coverage may offer valuable insights into the routine health systems for addressing persistent social inequities in access to health care.

[author abstract | main relevance]

Borooah, Vani K. 2004. "Gender bias among children in India in their diet and immunisation against disease." ***Social Science & Medicine*** **58(9): 1719-1731.**

This paper conducts an econometric analysis of data for a sample of over 4000 children in India, between the ages of 1 and 2 years, with a view to studying two aspects of the neglect of children: their likelihood of being immunised against disease and their likelihood of receiving a nutritious diet. The starting hypothesis, consistent with an universal interest in gender issues, was that girls were more likely to be neglected than boys. The analysis confirmed this hypothesis. In respect of vaccinations, the likelihood of girls being fully vaccinated, after controlling for other variables, was 5 percentage points lower than that for boys. In respect of receiving a nutritious diet, the treatment of girls depended very much on whether or not their mothers were literate: there was no gender discrimination between children of literate mothers; on the other hand, when the mother was illiterate, girls were 5 percentage points less likely to be well-fed relative to their brothers and the presence of a literate father did little to dent this gender gap. But the analysis also pointed to a broader conclusion which was that all children in India suffered from sharper, butless publicised forms of disadvantage than that engendered solely by gender. These were the consequences which stemmed from children being born to illiterate mothers and being brought up in the more impoverished parts of India.

[author abstract | minor relevance]

Brabin, Loretta, Stephen A. Roberts, Farah Farzaneh and Henry C. Kitchener. 2006. "Future acceptance of adolescent human papillomavirus vaccination: A survey of parental attitudes." ***Vaccine*** **24(16): 3087-3094.**

The main target group for vaccination against human papillomavirus (HPV), the sexually transmitted virus that causes cervical cancer, will be young adolescents. We undertook a population-based survey to assess parental consent and potential HPV vaccine uptake in eight secondary schools using stratified randomisation according to school type and ethnicity. Our results suggest that in socially and ethnically mixed populations such as Manchester, an HPV vaccine uptake rate of 80% may be achievable if the vaccine is perceived to be safe and effective. However, most parents lack knowledge about HPV and some are concerned about sexual health issues that would arise as part of a HPV vaccine programme. It will be important to raise general awareness of the role of HPV in cervical cancer without stigmatizing the vaccine.

[author abstract | minor relevance]

Bray, Matthew and Daniel Keating. 2012. "Immunisation and informed decision-making amongst Islamic primary school parents and staff." ***Australian Medical Student Journal*** **3(1): 15-17.**

Background: The Islamic community represents a recognisable and growing minority group in the broader Australian context. Some sectors of the international Muslim community have voiced concerns about the ritual cleanliness of vaccines, and seen subsequent lower levels of compliance. Anecdotal evidence suggests Australian Muslims may hold similar concerns. Aim: This study aims to evaluate the information and knowledge with which Islamic parents and staff are equipped to make decisions about immunisation. Methods: Parents and staff at an Islamic primary school were recruited through survey forms sent home for voluntary completion. These surveys were designed to assess the sources of information and level of confidence regarding immunisations as well as highlighting personal perspectives of the participants and misapprehensions. All participants identified as Muslim parents. Results: 40.7%

(n = 64) of respondents were not confident that they knew enough about vaccines to make good decisions, while 73.3% (n=115) respondents stated a personal desire for further education about vaccinations and vaccination schedules, suggesting a significant degree of uncertainty associated with the amount of information currently accessible to this cohort of the community. Qualitative responses reflected concerns associated with side effects and the halal nature of vaccines. As these responses included a perceived information gap about material risks, it raises the possibility of invalid consent. Parents obtain information from a variety of sources, the most popular being their general practitioner. However, our data suggested that the public health nurses of the shire council facilitated better knowledge outcomes than general practitioners. Conclusion: By taking the time to communicate material risks to Muslim parents, health professionals ensure confident, informed decision-making and consent.

[author abstract | minor relevance]

Brooke, D. and A. Omeri. 1999. "Beliefs about childhood immunisation among Lebanese Muslim immigrants in Australia." *Journal of Transcultural Nursing* 10(3): 229-236.

The aim of the study was to describe and analyse care values, beliefs, and practices relating to immunisation by Lebanese Muslim immigrants in New South Wales (NSW), Australia. This ethnonursing study explored the importance of care related to immunisation, knowledge of informants relating to vaccines, diseases, side effects, and contraindications. Family responsibilities relating to immunisation care services as well as expectations and evaluations of care services provided were also examined. Data were collected via observation-participation-reflection, including in-depth interviews. The findings revealed significant care themes for Lebanese Muslim informants based on their cultural values, beliefs, and practices related to health and immunisation. Culturally congruent nursing care practices related to immunisation for Lebanese Muslims in NSW, Australia, were identified.
[author abstract | minor relevance]

Brown, Phyllida. 1994. "AIDS vaccines: What chance of a fair trial?" Pp.134-140 in *AIDS, ethics & religion: Embracing a world of suffering*, edited by K. R. Overberg. Maryknoll, Orbis Books.

[no author abstract | minor relevance]

Budge-Reid, Heather, Donna Asiimwe Kusemererwa and Anke Meiburg. 2012. "Pharmaceutical service delivery in church health systems in Africa: a cross-country analysis." Pp.143-166 in *Strengthening faith-inspired health engagement, Vol 1: The role of faith-inspired health care providers in sub-Saharan Africa and public-private partnerships*, edited by J. Olivier and Q. Wodon. Washington DC, The World Bank, HNP Discussion Papers.

Faith groups play a significant role in providing health care around the world although their exact contribution has not been well defined and few systematic studies have been done about pharmaceutical service delivery at facility level in the church sector. The baseline studies on access undertaken by EPN between 2005 and 2008 as summarised in this article, were a foundational attempt to address the information gap in this area. The studies were done to investigate compliance by church health services (CHS) with guidelines on efficient and effective pharmaceutical services. Church health facilities (numbering 363), representing over 20,000 beds, over 4 million outpatients and with budgets totalling more than 40 million US dollars were surveyed. Results of the study show some areas that are working well and others requiring urgent attention to improve effective and efficient provision of pharmaceutical services.

[author abstract | minor relevance]

Burnett, M., I. Genao and W. F. Wong. 2005. "Race, culture, and trust: why should I take a shot if I'm not sick?" *Ethnicity and Disease* 15(2 Suppl 3): S3-13-S13-16.

This three-part panel discussion provides information on: 1) the role religious leaders can take in influencing health care, health access, and compliance; 2) barriers to equal health care and major gaps in immunizations among Hispanics; and 3) population management strategies for public health officials and private practice physicians. Citing barriers such as mistrust of government programs, socioeconomic conditions, lack of access to preventive healthcare services, cultural attitudes, and lack of education about immunizations, the speakers also offered solutions to overcome resistance to immunization. Panel members supported these strategies and provided techniques to implement the strategy: engaging faith-based organizations, improving patient-provider communication; and creating public health initiatives to be culturally competent.

[author abstract | minor relevance]

Chand, Sarla and Jacqui Patterson. 2007. Faith-based models for improving maternal and newborn health. Baltimore, USA, USAID-ACCESS.

[no author abstract |minor relevance]

Chaturvedi, Sanjay, Narendra K. Arora, Rajib Dasgupta and Ashok K. Patwari. 2011. "Are we reluctant to talk about cultural determinants?" *Indian Journal of Medical Research* 133(4): 361-363.

Epidemiologists and public health managers generally harbour a belief that cultural determinants of health would be suitably taken care of if the broader domain of social causations is addressed. Is this placing the cart before the horse? Several of the social determinants may be mere proxies of deeper, and probably causal, cultural determinants. The recently published report of the WHO Commission on Social Determinants of Health is also short of expectations on this score. It is customary to deal with income, education and occupation while remaining oblivious to the fact that some of the cleanest people of the world are from the most deprived tribal areas, and several communities could achieve what they did, not because of their per capita income but for their deeply rooted cultural strengths. In contrast, community based systematic resistance to supplementary immunization activities of polio eradication campaign witnessed in several pockets in India, Pakistan, Afghanistan and Nigeria cannot be totally explained as behaviour of economically disadvantaged communities. There has been little recognition of the component of cultural resistance behind this phenomenon, and sometimes the imperatives of political correctness smothers such enquiries. On another related front, while privatization of health care is being strongly advocated, nearly all of the sex-selective abortions in South Asia are being conducted and abated by the private sector – and some of the richest and educated people in this part of the world are involved, as clients or as providers. Can this phenomenon be deconstructed without understanding the cultural determinants that sustain male child preference, cynically goaded by dowry system in marriage? Can we possibly explain the continued marginalization of natives, aborigines and tribal people across the globe without analysing the cultural attributes of dominant occupants of the land? The time has come for a dedicated identification of such determinants of health instead of covering them up with proxy social factors.

[author abstract |minor relevance]

Chaturvedi, Sanjay, Rajib Dasgupta, Vivek Adhish, Kalyan K Ganguly, Sanjay Rai, Leena Sushant, Srabasti and Narendra K. Arora. 2009. "Deconstructing social resistance to pulse polio campaign in two north Indian districts." *Indian Pediatrics* 46(11): 963-974.

Objective: To gain an insight into the phenomenon of social resistance and rumors against pulse polio campaign. Design: Qualitative, community-based investigation, mapping perceptions of various stakeholders through in-depth interviews (IDIs), focus group discussions (FGDs), non-formal interactions and observations. Setting: Moradabad and JP Nagar districts of Uttar Pradesh. Subjects: IDIs (providers 33, mothers 33, community leaders 10); FGDs (providers 4, mothers 8) and non-formal interactions (156) with community leaders, parents, businessmen, journalists (Hindi and Urdu media), mobilizers, vaccinators and supervisors. Results: A distinct machination of social resistance and rumors against oral polio vaccine during supplementary immunization activities (SIA) was observed in some minority dominated areas. The pattern can be understood through a model that emerged through qualitative evidence. Inspite of all this, most parents in minority areas supported the SIAs. Only a few clusters from extremely marginalized sections continued to evade SIAs, with an endemic pattern. Through social osmosis, these rumors reached majority community as well and some parents were affected. However, in such cases, the resistance was sporadic and transient. Conclusion: While the program's focus was on microbiological issues, the obstacles to polio eradication lie in the endemicity of social (and/or cultural) resistance in some pockets, leading to clustering of perpetually unimmunized children - inspite of good coverage of SIAs at macro level. This may sustain low levels of wild poliovirus transmission, and there can be exceptions to the robustness of the pulse approach. A micro level involvement of volunteers from marginalized pockets of minorities might be able to minimize or eliminate this resistance.

[author abstract |main relevance]

Chen, Cecilia. 2004. "Rebellion against the polio vaccine in Nigeria: implications for humanitarian policy." *African Health Sciences* 4(3): 205-208.

Polio eradication has been top on the agenda of various international humanitarian organizations since 1988. Caused by a virus that enters through the mouth, poliomyelitis attacks the nervous system, and can lead to irreversible paralysis or death. Children under five years of age are most at risk, and the oral polio vaccine, OPV, is administered as a drop often on a lump of sugar placed in the child's mouth. Given multiple times, the vaccine may protect a child for life!. In this essay, the Nigerian scenario serves as a case study of community involvement and trust in international humanitarian policy. The underlying causes of the rebellion and its long term impact on immunization programs in the region as well around the world are of interest and relevance to students, teachers and practitioners of public health.

[author abstract |minor relevance]

Cheng, Margaret Harris. 2008. "Nigeria struggles to contain poliomyelitis." *The Lancet* 372(Special Report).

This Lancet report discusses how Nigeria has had several setbacks in its bid to control poliomyelitis, including false rumours about vaccine safety. Now public anger over the failure of the ailing health system to deliver for its people threatens to derail the country's eradication campaign.

[author abstract |main relevance]

CIFA-WFDD. 2013. Faith communities' promise renewed: ending preventable child deaths and supporting mothers - a mapping of faith efforts through the 10 Promises Approach. Washington, DC, Center for Interfaith Action on Global Poverty, World Faiths Development Dialogue.

[no author abstract |minor relevance]

Clements, Christopher J., Paul Greenough and Diana Shull. 2006. "How vaccine safety can become political – the example of polio in Nigeria." *Current Drug Safety* 1: 117-119.

Vaccine safety is increasingly a major aspect of immunization programmes. Parents are becoming more aware of safety issues relating to vaccines their babies might receive. As a consequence, public health initiatives have had to take note of pressures brought to bear by individual parents and groups. Now we document a new phase in vaccine safety where it has been used to achieve political objectives. In 1988, the World Health Assembly declared its intention to eradicate poliomyelitis from the globe by the year 2000. This goal had to be postponed to 2005 for a number of reasons. Although the progress has been spectacular in achieving eradication in almost all nations and areas, the goal has been tantalizingly elusive. But arguably the most difficult country from which to eradicate the virus has been Nigeria. Over the past two years, tension has arisen in the north against immunizing against polio using the oral polio vaccine (OPV). Although this vaccine has been used in every other country in the world including other Muslim states, some religious leaders in the north found reason in August 2003 to advise their followers not to have their children vaccinated with OPV. Subsequent to this boycott, which the Kano governor had endorsed for a year and then ended in July 2004, cases of polio occurred in African nations previously free of the virus, and the DNA finger-print of the virus indicated it had come from Nigeria. In other words, Nigeria became a net exporter of polio virus to its African neighbours and beyond. Now the disease has spread to a dozen formerly polio-free countries, including Sudan and Indonesia. We show that, while the outward manifestations of the northern Nigerian intransigence were that of distrust of vaccine, the underlying problem was actually part of a longstanding dispute about political and religious power vis a vis Abuja. It is unlikely that polio transmission will be interrupted by 2005 if this dispute is allowed to run its course.

[author abstract |main relevance]

Closser, Svea and Rashid Jooma. 2013. "Why we must provide better support for Pakistan's female frontline health workers." *PLoS Med* 10(10): e1001528.

The authors argue that achieving polio eradication and strengthening Pakistan's health system must focus not just on international engagement but also on local partnerships with Lady Health Workers and other ground-level staff.

[author abstract |minor relevance]

Closser, Svea. 2010. *Chasing polio in Pakistan: Why the world's largest public health initiative may fail.* Nashville, Tennessee, Vanderbilt Univ. Press.

The number of global polio cases has fallen dramatically and eradication is within sight, but despite extraordinary efforts, polio retains its grip in a few areas. Anthropologist Svea Closser follows the trajectory of the polio eradication effort in Pakistan, one of the last four countries in the world with endemic polio. Journeying from vaccination campaigns in rural Pakistan to the center of global health decision making at the World Health Organization in Geneva, the author explores the historical and cultural underpinnings of eradication as a public health strategy, and reveals the culture of optimism that characterizes--and sometimes cripples--global health institutions.

[publisher abstract |minor relevance]

Coates, Ellen A., Silvio Waisbord, Jitendra Awale, Roma Solomon and Rina Dey. 2013. "Successful polio eradication in Uttar Pradesh, India: the pivotal contribution of the Social Mobilization Network, an NGO/UNICEF collaboration." *Global Health: Science and Practice* 1(1): 68-83.

In Uttar Pradesh, India, in response to low routine immunization coverage and ongoing poliovirus circulation, a network of U.S.-based CORE Group member and local nongovernmental organizations partnered with UNICEF, creating the Social Mobilization Network (SMNet). The SMNet's goal was to improve access and reduce family and community resistance to vaccination. The partners trained thousands of mobilizers from high-risk communities to visit households, promote government-run child immunization services, track children's immunization history and encourage vaccination of children missing scheduled vaccinations, and mobilize local opinion leaders. Creative behavior change activities and materials promoted vaccination awareness and safety, household hygiene, sanitation, home diarrheal-disease control, and breastfeeding. Program decision-makers at all levels used householdlevel data that were aggregated at community and district levels, and senior staff provided rapid feedback and regular capacity-building supervision to field staff. Use of routine project data and targeted research findings offered insights into and informed innovative approaches to overcoming community concerns impacting immunization coverage. While the SMNet worked in the highest-risk, poorly served communities, data suggest that the immunization coverage in SMNet communities was often higher than overall coverage in the district. The partners' organizational and resource differences and complementary technical strengths posed both opportunities and challenges; overcoming them enhanced the partnership's success and contributions.

[author abstract |minor relevance]

Crawford, S. Y., A. M. Manuel and B. D. Wood. 2009. "Pharmacists' considerations when serving Amish patients." *J Am Pharm Assoc* 49(1): 86-94; quiz 95-87.

Objectives: To introduce historical and sociocultural influences on health and health care decisions that should be considered by pharmacists and other health professionals when serving Amish patients and to describe the roles of pharmacists in working with Amish populations, as an example of culturally and linguistically appropriate care. Setting: Community independent pharmacy in Arthur, IL, from 1991 to 2008. Practice description: Reflections of a pharmacist-owner whose community practice serves a sizeable Amish population. Case summary: The Old Order Amish are a religious group that values health and actively participates in its health care decisions. The Amish possess a strong sense of community responsibility and often seek advice of friends, family, and community in health care decisions. Their explanatory models of health and illness differ, in some respects, from the larger American society. The Amish are open to the use of folk medicine, complementary and alternative medicine, and conventional care when deemed necessary. They are receptive to health care information and explanations of options from trusted sources and use increased self-care modalities, including herbal remedies. Results: Knowledge of salient cultural differences is important, but care should be given to avoid stereotyping patients because Amish rules and customs differ across districts. Culturally competent pharmacist care should be individualized based on patient needs and in consideration of aspects of differences in Amish cultures and districts. When serving Amish patients, special consideration should be given to addressing potential barriers to health care use, such as unique dialects, affordability issues for largely cash-paying customers, lower prenatal care use, and lower vaccination rates. Conclusion: Enhanced awareness and sensitivity to Amish lifestyles and beliefs can lessen misconceptions and minimize barriers that interfere with optimal provision of patient-centered pharmacy care and services. By working

through established community norms, building trust, and effectively applying cultural competency techniques, pharmacists can best serve the Amish communities.

[author abstract |minor relevance]

Cuninghame, C. J., C. P. Charlton and S. M. Jenkins. 1994. "Immunization uptake and parental perceptions in a strictly orthodox Jewish community in north-east London." *J Public Health Med* 16: 314–317.

We wished to ascertain immunization uptake rates in the strictly orthodox Jewish community in Hackney and to survey reasons for non-uptake and attitudes to immunization and immunization services within this community. A total of 575 strictly orthodox Jewish children, aged under 2.5 years, were identified from three general practices in the community, and a random sampling of 100 of these children was carried out. The sample uptake recorded by family doctors was compared with District uptake rates. A questionnaire was administered to parents. The main outcome measures were immunization uptake rate, reasons for non-uptake, and attitudes to immunization. Percentage immunization uptake (95 per cent confidence intervals) was: third diphtheria 86 per cent (82-90 per cent); third pertussis 82 per cent (78-86 per cent); and MMR 79 per cent (75-85 per cent). District uptake rates for a cohort of the same age, and at the time of the study, were: third diphtheria 82 per cent; third pertussis 79 per cent; and MMR 83 per cent. Sixty-seven parents completed the questionnaire (72 per cent response) and their children's uptake was the same as for children of nonresponders. All parents thought immunization to be important. For all immunizations, uptake in the strictly orthodox Jewish community is not significantly different from that of the District. Responding parents had positive attitudes to the value and safety of immunizations but wished better access to services. Health professionals need to question their perceptions so that efforts to improve uptake amongst ethnic minority groups are based on facts and are responsive to identified needs.

[author abstract |main relevance]

Curran, W. J. 1971. "Public health and the law: Smallpox vaccination and organized religion." *Am J Public Health* 61(10): 2127-2128.

One of the foundation stones of the public health movement was smallpox vaccination. As a compulsory measure, it has also been the subject of some of the major court decisions in public health law. In the United States, the constitutionality of the Massachusetts compulsory smallpox vaccination law was the first test case in the United States Supreme Court concerning the power of the states in public health law. The Court, in the famous case of Commonwealth of Massachusetts v. Jacobson,' upheld the law and the power of the states to enact public health laws of a compulsory nature. The challenge in Jacobson was not of a religious nature. However, the courts have regularly rejected religious objection as a grounds for declaring such statutes invalid. In one of the most significant of these cases, decided as recently as 1943, the Supreme Court said, "The right to practice religion freely does not include liberty to expose the community or the child to communicable diseases or the latter to ill health or death." But times have changed. Public health authorities have been greatly successful in wiping out smallpox. Objection to compulsory vaccination is again growing. Much of the argument against it is the same as that expressed in the nineteenth century. [author abstract |minor relevance]

Daniels, N. A., T. Juarbe, G. Moreno-John and E. J. Perez-Stable. 2007. "Effectiveness of adult vaccination programs in faith-based organizations." *Ethn Dis* 17(1 Suppl 1): S15-22.

Elderly persons of African American and Latino descent have lower rates of immunizations after adjustment for insurance and education. Interventions that use faith-based organizations (FBOs) are promising but have not been well evaluated. We examined the effectiveness of an FBO adult vaccination program in minority communities. From December 2003 through January 2004 and November 2005 through February 2006, 15 churches were randomized to intervention with onsite adult vaccinations or to comparison with no vaccinations. Participants were eligible if they had not been previously vaccinated with pneumococcal vaccine, did not regularly receive influenza vaccine, were aged > or =65 years, and had a clinical indication for vaccination. Baseline and follow-up surveys were conducted. Primary outcome was rates of influenza and pneumococcal vaccinations. The study sample (N=186) was 44% African American, 43% Latino, 8% White, and 3% Asian. Of those eligible, 90 of 112 (80%) in the intervention group used the influenza vaccine compared to 32 of 70 (46%) in the comparison group (P < .001). Of those eligible, 58 of 88 (66%) in the experimental group used the pneumococcal vaccine compared to 20 of 57 (35%) in the comparison group (P < .001). Participants in the intervention group were significantly more likely to receive influenza vaccinations (odds ratio [OR] 4.8, 95% confidence interval [CI] 2.5-9.4) and pneumococcal vaccination (OR 3.6, 95% CI 1.8-7.2). More

than ninety percent of all participants reported willingness to participate in FBO education and promotion programs. This onsite, FBO adult vaccination program was effective in increasing vaccination rates and may be promising for decreasing raciallethnic disparities in vaccination rates. *[author abstract | main relevance]*

Das, Veena, R. K. Das and Lester Coutinho. 2000. "Disease control and immunisation: a sociological enquiry." *Economic and Political Weekly* 35(8/9): 625-632.

Understanding the processes through which immunisation comes to be institutionalised as a routine practice in public health management provides an interesting field of sociological enquiry. A wide range of issues may be examined in this field: processes of state formation in relation to public health, the practices of science in developing countries, the role of global institutions and policy formation, the construction of the inotions of consent as well as of citizenship, the relationship between the politics of the day and research institutions, and so on. These dimensions of public health need to be seriously addressed at the policy level.

[author abstract | minor relevance]

Diamenu, Stanley and Messeret Eshetu. 2005. Bringing immunization services closer to communities: The Reaching Every District experience in Ghana. Ghana, Accra, WHO-Ghana.

[no author abstract | minor relevance]

Doupe, Andrew and Manoj Kurian, Eds. 2006. *HIV prevention: Current issues and new technologies. No 182.* Contact. Geneva, World Council of Churches (WCC).

[no author abstract | minor relevance]

Edelheit, Joseph A. 2004. "The passion to heal: a theological pastoral approach to HIV/AIDS." *Zygon* 39(2): 497-506.

The global pandemic of HIV/AIDS is the most significant challenge of our time. The ongoing conversation between religion and science comes to a critical juncture in this pandemic. The global community has not yet found a vaccine or cure for this virulent virus, which will likely claim five million more lives in the coming year. The global statistics challenge even the most sophisticated imagination, with projections in the tens of millions of people dead, orphaned children, and many more living in various stages of incapacitation or diminished lives. There is a common prophetic religious imperative among Western faith communities that urgently requires both science and religion to respond. Both disciplines define their scope and purpose as universal, and the global pandemic provides a significant challenge to that universal claim. Regardless of the many differences among the nations and peoples challenged by this pandemic, there is a common moral foundation to which the Western religious and scientific traditions must respond. Religion and science cannot deny their respective social responsibilities by claiming the role of neutral bystander. There are several critical ethical choices to be made in response to the pandemic, and the disciplines of religion and science are critical in formulating those choices.

[author abstract | minor relevance]

Egnor, M. 1984. "The changed mother or what the smallpox goddess did when there was no more smallpox." *Contribut. Asian Stud.* 18(24).

[no author abstract | minor relevance]

Elliott, C. and K. Farmer. 2006. "Immunization status of children under 7 years in the Vikas Nagar area, North India." *Child: Care, Health and Development* 32(4): 415-421.

Background: Immunization has played a major part in reducing childhood morbidity and mortality worldwide. Knowledge of vaccine coverage and reasons for poor uptake are essential for the achievement of herd immunity. Method: An observational study was carried out in September 2003, in 10 villages in the Vikas Nagar area around Herbertpur Christian Hospital in Uttaranchal, North India. We aimed to assess vaccination rates and potential socio-cultural, economic and religious influences on vaccine uptake. A total of 470 families were visited and details of immunization status of the oldest child under 7 years in each household were taken. Age range of children included was 9 months to 6 years. Results: The overall primary immunization rate was 77.2%, children receiving the first

booster was 73.1% and children receiving the second booster was 58.4%. The most common vaccinations to be missed were the diphtheria, pertussis, tetanus at 18 months and diphtheria, tetanus at 5 years. Measles was the most frequently omitted vaccination in the primary course (19.4%). Poor education was the most frequent reason given by parents for failure to vaccinate. Immunization rates did not differ according to gender of the child. A lower immunization rate was found in Muslim families (65.4% primary) compared with Hindu (85.2%). Parental literacy had a beneficial effect such that up to 20% more children were immunized. Conclusion: These results highlight the potential importance of literacy, and religious or cultural influences on the success of the Expanded Programme of Immunization, and will have important implications for areas with similar cultural demographics. *[author abstract | main relevance]*

Fenner, F., D.A. Henderson, I. Arita, Z. Jezek and I. D. Ladnyi. 1988. Smallpox and its eradication. Geneva, World Health Organization.

[no author abstract | minor relevance]

Fisher, William A., Hila Laniado, Hila Shoval, Marwan Hakim and Jacob Bornstein. 2013. "Barriers to Human Papillomavirus Vaccine Acceptability in Israel." *Vaccine* 31, Supplement 8(0): I53-I57.

Barriers to human papillomavirus (HPV) vaccine acceptability in Israel include Israel's relatively low incidence of cervical cancer; the religiously-based 80% circumcision rate in Israel, which is regarded as contributing to the lower incidence of HPV infection in the country; the fact that HPV vaccine provides immunity against only few virus types; the vaccine's high cost; and the perception that HPV transmission is associated with unacceptable sexual relations. A recent survey has demonstrated that, following media two campaigns, Israeli's level of awareness of the vaccine increased but the actual vaccination rate remained low, at approximately 10%. Survey findings also indicated that an enduring barrier to HPV vaccination is the vaccine's high cost. Recent research on a convenience sample of Israeli undergraduate women 21 to 24 years of age showed that intentions to receive HPV vaccination in the coming year were a function of women's attitudes towards getting vaccinated and their perceptions of social support for doing so. Undergraduate women who intended to be vaccinated perceived the prevention of cervical cancer, avoidance of personal health threat, and avoidance of HPV infection per se to be the advantages of undergoing HPV vaccination. Disadvantages of getting vaccinated included fear of vaccine side effects, cost of the vaccine, and newness of the vaccine, doubts about vaccines, time required to undergo multiple vaccinations, and dislike of injections. Friends', mothers' and physicians' recommendations influenced women's intentions to be vaccinated in the coming year as well.

[author abstract | minor relevance]

Flores, A., J. A. Villeda, R. Rodriguez-Fernandez, A. E. Chevez, L. Barrera, R. Tezaguic, C. Cajas, L. V. Oliva, J. Molina and C. Castillo-Solorzano. 2011. "Advocacy and resource mobilization for rubella elimination in Guatemala." *Journal of Infectious Diseases* 204(suppl 2): S598-S602.

This review describes the advocacy efforts to mobilize resources for the campaign to vaccinate men and women aged 9–39 years, with a goal of eliminating rubella and congenital rubella syndrome in Guatemala.

[author abstract abr | minor relevance]

Gatrad, A. R. 1994. "Muslim customs surrounding death, bereavement, postmortem examinations, and organ transplants." *BMJ* 309(20-27): 521.

Muslims are always buried, never cremated. It is a religious requirement that the body be ritually washed and draped before burial, which should be as soon as possible after death. Those carrying out this duty should be immunised against hepatitis B and be aware of the hazards ofAIDS. Muslim women never attend burials and it is rare for funeral directors to be involved. Muslim jurists from the Arab world can justify organ transplantation, but those from the Indian subcontinent are against it. They are united in the belief of the sacredness of the human body and thus deplore postmortem examinations.

[author abstract | minor relevance]

Gaudino, James A. and Steve Robison. 2012. "Risk factors associated with parents claiming personal-belief exemptions to school immunization requirements: Community and other influences on more skeptical parents in Oregon, 2006." *Vaccine* 30(6): 1132-1142.

Background and objectives: With vaccine-preventable diseases at record lows, few studies investigate rising parent-claimed exemptions to school immunization requirements. After finding exemption clusters in Oregon, we hypothesized that exemption risk factors may vary among communities. We surveyed parents to identify risk factors for exemptions and evaluated risk factor differences among communities with differing exemption rates. Design: Retrospective cohort study, multi-staged, population-proportionate sampling. Setting and participants: Parents of 2004–05 Oregon elementary school children (N = 2900). Main outcome measure: Parent-reported exemption status. Results: The response rate was 55%. Compared to vaccinators, exemptors were significantly more likely to have: strong vaccine concerns (weighted adjusted odds ratio (aOR) = 15.3, 95% CI 6.4–36.7); "vaccine hesitant" concerns (aOR = 2.3; 95% CI 1.0–5.0); >1 childbirth(s) at a non-hospital, alternative setting (aOR = 3.6; 95% CI 1.6–8.0); distrust of local doctors (aOR = 2.7; 95% CI 1.0–7.5); reported chiropractic healthcare for their youngest school-age child (aOR = 3.9; 95% CI 1.8–8.5); and reported knowledge of someone with a vaccine-hurt child (aOR = 1.8; 95% CI 0.9–3.4). Exemptors were less likely to have "provaccine" beliefs (aOR = 0.2; 95% CI 0.0–0.6) and less likely to report relying on print materials (aOR = 0.4; 95% CI 0.2–0.8). The strengths of association differed significantly for those with strong vaccine concerns and those reporting knowledge of someone with a vaccine-hurt child, depending on residence in exemption-rate areas, e.g., exemptors in medium-rate areas were more likely to have strong vaccine concerns (aOR = 13.5; 95% CI 5.4–34.0) than those in high-rate areas (aOR = 9.7; 95% CI 3.7–25.4). Conclusions: Vaccine beliefs were important risk factors. That differing community-level exemption use modified the effects of several individual-level factors suggests that communities also influence parent decisions. Therefore, understanding community contexts and norms may be important when designing interventions.

[author abstract | minor relevance]

Gemignani, Regina and Quentin Wodon. 2012. "How do households choose between health providers? Results from qualitative fieldwork in Burkina Faso." Pp.49-72 in *Strengthening the evidence for faith-inspired health engagement in Africa (Volume 2): The comparative nature of faith-inspired health care providers in sub-saharan Africa*, edited by J. Olivier and Q. Wodon. Washington DC, World Bank.

This paper provides results from qualitative fieldwork conducted in 2010 in Burkina Faso to understand the factors that lead households to rely on traditional as opposed to modern health providers, and within modern providers, on faith-inspired as opposed to public facilities. While there is an overall preference for modern care, households still rely on traditional healers for specific health issues that they encounter. As to the choice between modern providers, faith-inspired clinics and hospitals are perceived as being characterized by lower costs and higher quality of service than public facilities. Faith-inspired facilities are well regarded in their surrounding communities and patients are willing to travel significant distances to receive care from the facilities. Although these providers vary in size and religious affiliation, they share a similar goal of offering affordable services to the poor and doing so in a way that fosters closer relationships between individuals, communities and the healthcare system. Their approach and services thus helps in expanding options for care, especially for those who for feel marginalized in the public health system.

[author abstract | main relevance]

Ghatak, Anchita. 2006. "Faith, work, and women in a changing world: the influence of religion in the lives of beedi rollers in West Bengal." *Gender and Development* 14(3): 375-383.

In India, religious norms and values play a significant role in regulating the lives of women and girls in many communities. This article looks at how the lives of women and girl beedi (hand rolled cigarette) rollers in a Muslim community in West Bengal are influenced by their religious background, highlighting the complex relationship between gender, faith, and work. Secondly, the article discusses how secular NGOs - which in India are often seen to be hesitant in addressing questions of religious faith and practice - can engage in development work with women and girls in faith-based communities. The article focuses on the experiences of two secular NGOs working with women beedi workers in villages in Murshidabad, as they come to understand that to bring about significant changes in women's lives they must open up discussions around sensitive religious belief, within the community and their own organisations.

[author abstract | main relevance]

Ghinai, I., C. Willott, I. Dadari and H.J. Larson. 2013. "Listening to the rumours: what the northern Nigeria polio vaccine boycott can tell us ten years on." Glob Public Health 8(10): 1138-1150.

In 2003 five northern Nigerian states boycotted the oral polio vaccine due to fears that it was unsafe. Though the international responses have been scrutinised in the literature, this paper argues that lessons still need to be learnt from the boycott: that the origins and continuation of the boycott were due to specific local factors. We focus mainly on Kano state, which initiated the boycotts and continued to reject immunisations for the longest period, to provide a focused analysis of the internal dynamics and complex multifaceted causes of the boycott. We argue that the delay in resolving the year-long boycott was largely due to the spread of rumours at local levels, which were intensified by the outspoken involvement of high-profile individuals whose views were misunderstood or underestimated. We use sociological concepts to analyse why these men gained influence amongst northern Nigerian communities. This study has implications on contemporary policy: refusals still challenge the Global Polio Eradication Initiative; and polio remains endemic to Nigeria (Nigeria accounted for over half of global cases in 2012). This paper sheds light on how this problem may be tackled with the ultimate aim of vaccinating more children and eradicating polio.

[author abstract | minor relevance]

Gilson, Lucy, M. Magomi and E. Mkangaa. 1995. "The structural quality of Tanzanian primary health facilities." *Bulletin of the World Health Organisation* 73(1): 105-114.

Structural quality is a key element in the quality of care provided at the primary level, which aims to offer health care interventions of proven efficacy. This assessment of the structural quality of Tanzanian primary health services indicated serious weaknesses in the available physical infrastructure, as well as supervision and other support, both for government and nongovernmental services and for dispensary and first referral-level services. Addressing these weaknesses is likely to require some additional funding and review of the functions of different groups of health care facilities within the primary care system. Although district health management teams have an important role to play in tackling the weaknesses, the existing division of management responsibilities indicates that they can only do so with the support of the regional and national levels of the health management structure. Study methods might be adapted to facilitate improved supervision and management. A total of 58 primary health facilities were assessed in this study: 40 government dispensaries, 14 Catholic church dispensaries, and 4 health centers. The government health facilities were randomly selected from a sample frame of all facilities within the Morogoro region, stratified by district. Ten dispensaries, representing 20-90% of all dispensaries in the district, and one health center were selected from each of the four districts. Structural quality was assessed against expected standards. Overall performance (as judged from the totper variables) was not high. Median scores calculated across all criteria fell around 50% for all facility groups and all variables. Only three facilities out of the total of 59 were judged to perform at good levels against the 60% standard: two government dispensaries and one church facility. The church facility performed at good levels across all totper variables: the basic summary total (totper1), basic plus laboratory total (totper2), and basic plus laboratory and inpatient services total (totper3). Health centers only scored at similar levels to dispensaries. Health centers had several significantly lower scores for overall and curative care than church facilities. Curative care in government dispensaries was weaker than that in church facilities. Outreach service scores were uniformly low, but were least for church facilities whose performance was well below the standards for immunization sessions (monthly), home-visiting (weekly), and school visits (at least one in the previous two months). Although most facilities offered the range of services set by national standards, church dispensaries did not provide family planning services. However, in contrast to government dispensaries, laboratory services were usually available. In addition to the services provided in dispensaries, health centers did generally provide inpatient care. Overall, church facilities performed MCH services relatively poorly. Church facilities with inpatient services performed significantly better across seven of the eight MCH variables (the generally weaker activity of the group overall) than other facilities (p or= 0.05).

[author abstract | main relevance]

Giwa, F. J., A. T. Olayinka and F. T. Ogunshola. 2012. "Seroprevalence of poliovirus antibodies amongst children in Zaria, Northern Nigeria." *Vaccine* 30(48): 6759-6765.

Background: Poliomyelitis is endemic in Northern Nigeria where there is continuous transmission of wild poliovirus 1 and 3 (WPV1 and 3) and circulating vaccine derived poliovirus 2 (cVDPV2) resulting in a high number of cases of children with acute flaccid paralysis. The seroprevalence of antibodies to polio serotypes which can be used to

assess the immune status of children and the effectiveness of the vaccine against poliomyelitis is unknown, despite its endemicity in this part of the world. Objective: This study aimed to determine the seroprevalence of poliovirus antibodies in children aged 1–10 years in Zaria, Northern Nigeria. Methods: A descriptive, cross sectional, community based study was undertaken in Zaria, North Western Nigeria between 2008 and 2009. Two hundred and sixty-four (264) children aged 1–10 years were enrolled from two local government in Zaria by multistage random sampling method. Demographic data and polio immunisation history were retrieved from parents and caregivers by an interviewer administered questionnaire. Neutralising antibody titres to polioserotypes 1, 2 and 3 were assayed according to the WHO Manual for the virological investigation of polio. Antibody titres ≥1:8 were considered positive. Results: The mean age of the 264 children studied was 6.25 years. Fifty-five percent of the children were protected against the three polioserotypes, while 86.4%, 76.1% and 77.3% of children had neutralising antibodies to P1, P2 and P3 polioserotypes respectively. 5 (1.9%) of the children had no antibodies to all the three polioserotypes. Polio antibody seropositivity was significantly associated with higher socioeconomic status and immunisation was the single most important determinant of seropositivity to poliovirus serotypes. Conclusion: Seroprevalence to poliovirus serotypes, though higher than values found in previous studies done in Nigeria, was lower compared to findings in the developed world. The use of more immunogenic vaccines and the balanced use of OPV formulations in SIAs, with further improvements in programme quality could provide the necessary immune booster to make polio eradication in Nigeria a reality.

[author abstract | minor relevance]

Glatman-Freedman, Aharona and Katherine Nichols. 2012. "The effect of social determinants on immunization programs." ***Human Vaccines & Immunotherapeutics*** **8(3): 293-301.**

Vaccine preventable diseases have been responsible for a significant portion of childhood mortality in low-income countries, and have been re-emerging in medium- and high income countries. The effectiveness of routine childhood immunization programs relies on multiple factors. Social determinants have the potential to affect immunization programs around the world, with globalization and ease of communication facilitating their effect. Exploring the types of social determinants affecting immunization efforts in various countries is of great importance to the ability of nations to address them, prevent the spread of disease and lower mortality rates. The social determinants affecting vaccination programs can vary among countries of different income levels, with some social determinants overlapping among these country groups. In this article we explore the various social determinants affecting routine immunization programs in low-, middle and high-income countries and possible interventions to address them.

[author abstract | minor relevance]

Gordon, Daniel, Jo Waller and Laura A. V. Marlow. 2011. "Attitudes to HPV vaccination among mothers in the British Jewish community: Reasons for accepting or declining the vaccine." ***Vaccine*** **29(43): 7350-7356.**

Objective: This study aimed to explore attitudes to human papillomavirus (HPV) vaccination and reasons for accepting or declining the vaccine in the British Jewish community. Methods: A qualitative approach was used to explore maternal attitudes towards HPV vaccination. Participants were mothers of girls who had been offered HPV vaccination and were purposively sampled through Jewish secondary schools. Face-to-face interviews were conducted with vaccine-accepting (n = 10) and vaccine-declining (n = 10) mothers. Interviews were transcribed verbatim and analysed using a framework approach. Results: HPV and cervical cancer knowledge varied, with poor knowledge attributed to lack of contact with the disease. Although mothers thought HPV vaccination was a good idea in general, many did not perceive it as necessary for their daughter, citing Jewish religious laws governing family purity and abstinence until marriage as reasons for daughter's low susceptibility. These beliefs combined with concerns about the novelty of the vaccination were the main reasons given for declining the vaccine. Mothers who accepted the vaccine generally did so to protect their daughters health and because they felt unable to predict their daughters future behaviour and HPV susceptibility. Many mothers expressed a wish to wait until their daughter was older and the vaccine was more established before consenting. Among some mothers there was disappointment in the information they had received and a feeling that the concerns and questions of the Jewish community had not been addressed. Conclusion: Attitudes to HPV vaccine in religious communities may lead to reduced vaccine coverage. The development of community-specific information about the importance of the vaccine may help address concerns.

[author abstract | main relevance]

Grabenstein, John D. 2013. "What the world's religions teach, applied to vaccines and immune globulins." *Vaccine* 31(16): 2011-2023.

For millennia, humans have sought and found purpose, solace, values, understanding, and fellowship in religious practices. Buddhist nuns performed variolation against smallpox over 1000 years ago. Since Jenner developed vaccination against smallpox in 1796, some people have objected to and declined vaccination, citing various religious reasons. This paper reviews the scriptural, canonical basis for such interpretations, as well as passages that support immunization. Populous faith traditions are considered, including Hinduism, Buddhism, Jainism, Judaism, Christianity, and Islam. Subjects of concern such as blood components, pharmaceutical excipients of porcine or bovine origin, rubella strain RA 27/3, and cell-culture media with remote fetal origins are evaluated against the religious concerns identified. The review identified more than 60 reports or evaluations of vaccine-preventable infectious-disease outbreaks that occurred within religious communities or that spread from them to broader communities. In multiple cases, ostensibly religious reasons to decline immunization actually reflected concerns about vaccine safety or personal beliefs among a social network of people organized around a faith community, rather than theologically based objections per se. Themes favoring vaccine acceptance included transformation of vaccine excipients from their starting material, extensive dilution of components of concern, the medicinal purpose of immunization (in contrast to diet), and lack of alternatives. Other important features included imperatives to preserve health and duty to community (e.g., parent to child, among neighbors). Concern that 'the body is a temple not to be defiled' is contrasted with other teaching and quality-control requirements in manufacturing vaccines and immune globulins. Health professionals who counsel hesitant patients or parents can ask about the basis for concern and how the individual applies religious understanding to decision-making about medical products, explain facts about content and processes, and suggest further dialog with informed religious leaders. Key considerations for observant believers for each populous religion are described.

[author abstract | main relevance]

Gyimah, Stephen Obeng. 2007. "What has faith got to do with it? religion and child survival in Ghana." *Journal of Biosocial Science* 39: 923-937.

Using pooled children data from the 1998 and 2003 Ghana Demographic and Health Surveys, this study examines religious differences in child survival in Ghana. Guided by the particularized theology and selectivity theses, a piecewise constant hazard model with gamma-shared frailty is used to explore if there are denominational differences in child mortality, and whether these could be explained through other characteristics. At the bivariate level, children whose mothers identified as Muslim and Traditional were found to have a significantly higher risk of death compared with their counterparts whose mothers identified as Christians. In the multivariate models, however, the religious differences disappeared after the mediating and confounding influence of socioeconomic factors were controlled. The findings provide support for the selectivity hypothesis, which is based on the notion that religious variations mainly reflect differential access to social and human capital rather than religious theology per se.

[author abstract | minor relevance]

Gyimah, Stephen Obeng, Baffour K. Takyi and Isaac Addai. 2006. "Challenges to the reproductive-health needs of African women: On religion and maternal health utilization in Ghana." *Social Science & Medicine* 62: 2930-2944.

How relevant is religion to our understanding of maternal health (MH) service utilization in sub-Saharan Africa? We ask this question mainly because while the effect of religion on some aspects of reproductive behavior (e.g., fertility, contraception) has not gone unnoticed in the region, very few studies have examined the possible link with MH service utilization. Understanding this link in the context of sub-Saharan Africa is particularly relevant given the overriding influence of religion on the social fabric of Africans and the unacceptably high levels of maternal mortality in the region. As African countries struggle to achieve their stipulated reductions in maternal and child mortality levels by two-thirds by 2015 as part of the Millennium Development Goals, the need to examine the complex set of macro- and micro-factors that affect maternal and child health in the region cannot be underestimated. Using data from the 2003 Ghana Demographic Survey, we found religion (measured by denominational affiliation) to be a significant factor in MH use. This is true even after we had controlled for socio-economic variables. In general, Moslem and traditional women were less likely to use such services compared with Christians. The findings are discussed with reference to our theoretical framework and some policy issues are highlighted.

[author abstract | main relevance]

Hahné, Susan, Jeannette Macey, Rob van Binnendijk, Robert Kohl, Sharon Dolman, Ytje van der Veen, Graham Tipples, Helma Ruijs, Tony Mazzulli, Aura Timen, Anton van Loon and Hester de Melker. 2009. "Rubella outbreak in the Netherlands, 2004–2005." *The Pediatric Infectious Disease Journal* 28(9): 795-800.

Background: In The Netherlands and Canada the measles, mumps, rubella vaccine coverage is high. In 2004 a rubella outbreak started in the Netherlands in a population subgroup with low coverage, with subsequent spread to Canada. Methods: We examined data on rubella cases in the Netherlands and Canada reported between September 2004 and July 2005. In The Netherlands we established enhanced surveillance for congenital rubella while in Canada we carried out a cohort study to estimate vaccine effectiveness. Results: In The Netherlands and Canada, 387 and 309 rubella cases were reported, respectively. Of these, 97% were in unvaccinated individuals of orthodox protestant denomination. Reported consequences of rubella in pregnancy were 2 fetal deaths and 14 infants with congenital infection. Of the latter, 11 had clinical defects including deafness in all but eye defects in none. The estimated vaccine effectiveness was 99.3% (95% CI: 95.3%-99.9%). Closely related strains of rubella virus genotype 1G were found in Dutch and Canadian cases. Conclusions: A large rubella outbreak occurred in The Netherlands with spread to Canada in a population subgroup with religious objections to vaccination. Its major public health importance was due to the high burden of congenital disease, international spread and implications for measles and rubella surveillance and elimination. Congenital deafness occurred more frequently and eye defects less frequently than expected. The estimated rubella vaccine effectiveness was very high. Our results demonstrate the risks associated with heterogeneity in rubella vaccine coverage. High rubella vaccine coverage in all population subgroups and sensitive surveillance are crucial for elimination of rubella and CRS.

[no author abstract | minor relevance]

Hanmer, Stephen. 2010. "Child rights organizations and religious communities: powerful partnerships for children." *CrossCurrents* 60(3): 451-461.

[no author abstract | main relevance]

Hirano, Douglas. 1998. "Partnering to improve infant immunizations: The Arizona partnership for infant immunization (TAPII)." *American Journal of Preventive Medicine* 14(3S): 22–25.

The Arizona Partnership for Infant Immunization (TAPII) is a public-private partnership intended to achieve the year 2000 goal of 90% infant immunizations. Created in 1992 as a means to develop a statewide approach to improving infant immunization rates, TAPII is a broad-based partnership that includes public health departments, managed care plans, professional organizations, medical organizations, pharmaceutical companies, businesses, the faith community, the media, and many others. TAPII's organizational structure includes a steering committee and five subcommittees: advocacy and policy, community awareness, provider awareness, survey and assessment, and strategic planning. A key accomplishment of TAPII has been the development of a statewide infant immunization registry known as the Arizona Statewide Immunization Information System (ASIIS). This registry will facilitate up-to-date immunizations of children and improve statewide immunization assessment capability. Since the advent of TAPII, infant immunization rates within private managed care plans have increased. However, significant improvement in statewide rates will require long-term strategic efforts in provider and community awareness and a fully operational statewide registry, ASIIS, which is set to begin in January 1998. TAPII has been a successful partnership for a number of reasons: private sector participation, a single and measurable goal, vision and leadership, a strong emphasis on assessment, a broadbased membership, community ownership, Governor's Office participation, health plan involvement, and full-time project staffing. As resources to improve the health of communities diminish, public-private partnerships such as TAPII can effectively consolidate resources and expertise to improve the health of populations.

[author abstract | minor relevance]

Hussain, Rashid S., Stephen T. McGarvey, Tabassam Shahab and Lina M. Fruzzetti. 2012. "Fatigue and fear with shifting polio eradication strategies in India: A study of social resistance to vaccination." *PLoS One* 7(9): e46274.

Shifting polio eradication strategies may have generated fear and ''resistance'' to the eradication program in Aligarh, India during the summer of 2009. Participant observation and formal interviews with 107 people from May to August 2009 indicated that the intensified frequency of vaccination was correlated with patients' doubt in the

efficacy of the vaccine. This doubt was exacerbated in a few cases as families were uninformed of the use of monovalent mOPV1, while P3 cases continued to occur. Many families had also come to believe that their children had been adversely affected by OPV after being told the vaccine carried no risk. Though polio is now largely eradicated in India, with only a single case in 2011, greater transparency about changes with vaccination policy may need to be considered to build trust with the public in future eradication programs.

[author abstract | minor relevance]

Ide, B. A. and T. Sanli. 1992. "Health beliefs and behaviors of Saudi women." ***Women Health*** **19(1): 97-113.**

This paper describes perceptions of familiarity with symptoms and beliefs about illnesses based on interviews with 50 Saudi women. The sample was young, with 82% under the age of 40, and not well educated by Western standards, with one-third being illiterate and 80% having no more than a primary school education. More than half lived in households of six or more. Although there was greater awareness of germs as causative factors in illness than previous studies in Saudi Arabia had demonstrated, beliefs in multiple causes, including religious beliefs about disease causation, persisted. There was an apparent lack of understanding of specific causes of various illnesses or of the rationale for preventive measures. This lack of understanding may be related to the low education levels and/or deeply ingrained cultural beliefs.

[author abstract | minor relevance]

IFC-WorldBank. 2011. ***Healthy partnerships: how governments can engage the private sector to improve health in Africa.*** **Washington, DC, The International Bank for Reconstruction and Development, The World Bank.**

[no author abstract | main relevance]

IIPC. 2014. ***Vaccinations and religion: Issues, challenges and prospects*****. Vaccinations and religion: Issues, challenges and prospects, Dakar, Senegal, International Interfaith Peace Corps (IIPC) and the Government of the Republic of Senegal.**

[no author abstract | main relevance]

Iyun, F. 1989. "An assessment of a rural health programme on child and maternal care: the Ogbomoso Community Health Care Programme (CHCP), Oyo State, Nigeria." ***Social Science & Medicine*** **29(8): 933-938.**

Village health workers (VHW) in Ogbomoso have been trained by the nearby Baptist Medical Centre to accept responsibility for the health and health education of the rural populace. They assume particular care in respect of child and maternal services. This analysis is based on over 800 interviews with women to compare villages with and without VHWs, and it attempts to quantify such measures as the percentage partaking in specific services (e.g. immunization and family planning). The survey emphasizes difficulties currently faced by VHWs including competition from commercial 'quacks' as well as unenthusiasm from persons of other religions and from women who prefer not to be advised by male VHWs. Knowledge of criticism should, however, be of value in upgrading the approaches offered by the VHW programme.

[author abstract | main relevance]

Jeffery, Patricia and Roger Jeffery. 2011. "Underserved and overdosed? Muslims and the Pulse Polio Initiative in rural north India." ***Contemporary South Asia*** **19(2): 117-135.**

During the 2000s, confirmed polio cases in India have been increasingly localised in Uttar Pradesh (UP) and Bihar, especially amongst Muslim children. Muslims have also been at the sharp end of the Pulse Polio Initiative (PPI) and the associated 'Underserved Strategy' designed to counter civilian resistance to the programme. Our critique of the PPI draws on long-term research in rural UP and focuses on the programme's socio-political implications. We discuss popular rumours about polio vaccine and official responses to resistance. Taking a longer term view of top-down single-issue public health programmes, we argue that Muslims in western UP, as a marginalised minority, have good reason to be suspicious of the PPI. Moreover, the PPI arguably reflects the agendas of global funders, not the priorities of local communities. Villagers - Hindu and Muslim alike - have repeatedly criticised government health services for failing to deal with the health issues that worry them most. Their concerns echo other critiques of the PPI, particularly the diversion of resources from other health-related activities that could address the social

determinants of health and health inequalities.

[author abstract | minor relevance]

Jegede, Ayodele Samuel. 2007. "What led to the Nigerian boycott of the polio vaccination campaign?" *PLoS Medicine* 4(3): e73.

Vaccination is a crucial tool for preventing and controlling disease, but its use has been plagued by controversies worldwide. In this article, I look at the controversy surrounding the immunization program against polio in Nigeria, in which three states in northern Nigeria in 2003 boycotted the polio immunization campaign. I discuss the problems caused by the boycott, its implications, and how it was resolved. Finally, I make recommendations for the future to prevent a similar situation from arising.

[author abstract | main relevance]

Jolles, Frank and Stephen Jolles. 2000. "Zulu ritual immunisation in perspective." *Africa: Journal of the International African Institute* 70(2): 229-248.

This article arose out of an attempt to quantify the risk of transmitting blood-borne diseases, in particular Hepatitis B and HIV, through the practice of making incisions (umgcabo) and punctures (ukutshobha) in the skin for the purpose of introducing medication (muthi) into the human body. The intention was to examine means of containing the risk. It soon became apparent that the practice of these therapies was inextricably bound up with legal and economic issues arising out of the impact of colonialism on Zulu medicine. Any endeavour to contain them would first have to address these fundamental issues. The article takes a step in that direction by (1) examining in detail some of the practices of diviners and herbalists in their historical context and (2) showing how colonial and post-colonial legislation has affected traditional healers and their clients in rural KwaZulu/Natal.

[author abstract | main relevance]

Kaler, Amy. 2009. "Health interventions and the persistence of rumour: The circulation of sterility stories in African public health campaigns." *Social Science & Medicine* 68(9): 1711-1719.

Public health programmes have done enormous good in Africa and elsewhere in the global south, but have also been met with skepticism. This skepticism often takes the form of rumours about the motives or the results of the public health intervention. One recurrent theme in such rumours is the centrality of reproductive bodies (both male and female), and the perception that these bodies are being rendered sterile by toxic compounds given under the guise of improving health. Public health operations research has identified these rumours as significant obstacles to programme delivery, but they have been treated primarily as failures in communication, to be rectified by the provision of more accurate information. Using reports of such rumours from public health interventions in Africa, with emphasis on vaccines, I argue that these rumours are more than simply stories which are not true. The widespread rumour of sterility is a way of articulating broadly shared understandings about reproductive bodies, collective survival, and global asymmetries of power. I use Foucault's notion of biopolitics to theorize international public health programmes, and introduce the concept of counter-epistemic convergence to account for the ubiquity and persistence of sterility rumours.

[author abstract | minor relevance]

Kapp, Clare. 2003. "Surge in polio spreads alarm in northern Nigeria." *The Lancet* 362(9396): 1631.

Rumours about vaccine safety in Muslim-run states threaten WHO’s eradication programme.

[author abstract | minor relevance]

Kata, Anna. 2010. "A postmodern Pandora's box: anti-vaccination misinformation on the internet." *Vaccine* 28(7): 1709-1716.

The Internet plays a large role in disseminating anti-vaccination information. This paper builds upon previous research by analyzing the arguments proffered on anti-vaccination websites, determining the extent of misinformation present, and examining discourses used to support vaccine objections. Arguments around the themes of safety and effectiveness, alternative medicine, civil liberties, conspiracy theories, and morality were found

on the majority of websites analyzed; misinformation was also prevalent. The most commonly proposed method of combating this misinformation is through better education, although this has proven ineffective. Education does not consider the discourses supporting vaccine rejection, such as those involving alternative explanatory models of health, interpretations of parental responsibility, and distrust of expertise. Anti-vaccination protestors make postmodern arguments that reject biomedical and scientific "facts" in favour of their own interpretations. Pro-vaccination advocates who focus on correcting misinformation reduce the controversy to merely an "educational" problem; rather, these postmodern discourses must be acknowledged in order to begin a dialogue.

[author abstract | minor relevance]

Katz, Mira L., Paul L. Reiter, Sarah Heaner, Mack T. Ruffin, Douglas M. Post and Electra D. Paskett. 2009. "Acceptance of the HPV vaccine among women, parents, community leaders, and healthcare providers in Ohio Appalachia." *Vaccine* 27(30): 3945-3952.

To assess HPV vaccine acceptability, focus groups of women (18-26 years), parents, community leaders, and healthcare providers were conducted throughout Ohio Appalachia. Themes that emerged among the 23 focus groups (n = 114) about the HPV vaccine were: barriers (general health and vaccine specific), lack of knowledge (cervical cancer and HPV), cultural attitudes, and suggestions for educational materials and programs. Important Appalachian attitudes included strong family ties, privacy, conservative views, and lack of trust of outsiders to the region. There are differences in HPV vaccine acceptability among different types of community members highlighting the need for a range of HPV vaccine educational materials/programs to be developed that are inclusive of the Appalachian culture.

[author abstract | minor relevance]

Kaufmann, J. R. and H. Feldbaum. 2009. "Diplomacy and the polio immunization boycott in northern Nigeria." *Health Affairs* 28(4): 1091-1101.

The boycott of polio vaccination in three Northern Nigerian states in 2003 created a global health crisis that was political in origin. This paper traces the diplomatic actions that were taken by the Global Polio Eradication Initiative, the United Nations, and the U.S. government, to restart polio vaccination and resolve the crisis. The polio vaccination boycott in Northern Nigeria provides a useful case study of the practice of global health diplomacy. *[author abstract | main relevance]*

Kawasaki, Eriko and John P. Patten. 2002. Drug supply systems of missionary organizations identifying factors affecting expansion and efficiency: Case studies from Uganda and Kenya. Boston MA, Boston University for the World Health Organization (EDM).

In many developing countries, difficulties that governments face in drug supply systems have been addressed by many researchers. However, there are few detailed studies regarding efficient management of drug supply systems by mission organizations, despite their large contribution in many cases to the health care systems of developing countries. Existing literature has pointed out that efficiency of mission organizations and their high service quality are due to a high dependence on foreign donors. In fact, there are some mission drug supply systems that have become self-sustainable and have expanded their drug supply capacity to the public and private sectors. In order to identify the key factors for success and obstacles facing mission run drug store systems, this work is a detailed qualitative and quantitative study on the drug management systems of the Mission for Essential Drugs and Supplies (MEDS) in Kenya and the Joint Medical Store (JMS) in Uganda. The methods of this study, using in-depth interviews and analysis of data given by the organizations, have produced a comprehensive overview of both organizations, and have drawn lessons regarding sustainability and expansion.

[author abstract abr | minor relevance]

Khairkar, Vijaya. 2013. "Issues of maternal and child health care services among Muslims in selected cities of India " *International Journal of Social Sciences, Language and Linguistics* 38(1): 1110-1121.

Objectives: To study the variation in the issues regarding maternal and child health care services among Muslims in selected cities of India. Study design: Using secondary data the issues explore regarding maternal and child health care services among Muslims in selected cities of India. The cities have been selected on the basis of proportion of

Muslim population to total population in the city. Methods: The data has been analyzed with the help of frequencies, percentages, rates and ratios of the same are presented in table, graphs and maps. Result: The analysis of Maternal and Child Health indicators in the cities shows that geographical location of the region has the impact on the utilization of maternal and child health care services among Muslims. Conclusion: The socio-economic and demographic characteristics make difference in the use of maternal and child health care services. There is an urgent need to make people aware and provide the facilities as per availability of people.

[author abstract | main relevance]

Khan, Mohammad, Rion Ochiai, Hasan Hamza, Shah Sahito, Muhammad Habib, Sajid Soofi, Naveed Bhutto, Shahid Rasool, Mahesh K. Puri, Mohammad Ali, Shafi Wasan, Remon Abu-Elyazeed, Bernard Ivanoff, Claudia M. Galindo, Tikki Pang, Allan Donner, Lorenz von Seidlein, Camilo J. Acosta, John D. Clemens, Shaikh Nizami and Zulfiqar A. Bhutta. 2006. "Lessons and implications from a mass immunization campaign in squatter settlements of Karachi, Pakistan: an experience from a cluster-randomized double-blinded vaccine trial [NCT00125047]." ***Trials*** **7(1): 17.**

Objective: To determine the safety and logistic feasibility of a mass immunization strategy outside the local immunization program in the pediatric population of urban squatter settlements in Karachi, Pakistan. Methods: A cluster-randomized double blind preventive trial was launched in August 2003 in 60 geographic clusters covering 21,059 children ages 2 to 16 years. After consent was obtained from parents or guardians, eligible children were immunized parenterally at vaccination posts in each cluster with Vi polysaccharide or hepatitis A vaccine. Safety, logistics, and standards were monitored and documented. Results: The vaccine coverage of the population was 74% and was higher in those under age 10 years. No life-threatening serious adverse events were reported. Adverse events occurred in less than 1% of all vaccine recipients and the main reactions reported were fever and local pain. The proportion of adverse events in Vi polysaccharide and hepatitis A recipients will not be known until the end of the trial when the code is broken. Throughout the vaccination campaign safe injection practices were maintained and the cold chain was not interrupted. Mass vaccination in slums had good acceptance. Because populations in such areas are highly mobile, settlement conditions could affect coverage. Systemic reactions were uncommon and local reactions were mild and transient. Close community involvement was pivotal for information dissemination and immunization coverage. Conclusion: This vaccine strategy described together with other information that will soon be available in the area (cost/effectiveness, vaccine delivery costs, etc) will make typhoid fever control become a reality in the near future.

[author abstract | minor relevance]

Khowaja, Asif, Sher Ali Khan, Naveeda Nizam, Saad Bin Omer and Anita Zaidi. 2012. "Parental perceptions surrounding polio and self-reported non-participation in polio supplementary immunization activities in Karachi, Pakistan: a mixed methods study." ***Bulletin of the World Health Organization*** **90(11): 822-830.**

Objective To assess parent's knowledge and perceptions surrounding polio and polio vaccination, self-reported participation in polio supplementary immunization activities (SIAs) targeting children aged < 5 years, and reasons for non-participation. Methods The mixed methods study began with a cross-sectional survey in Karachi, Pakistan. A structured questionnaire was administered to assess parental knowledge of polio and participation in polio SIAs conducted in September and October 2011. Additionally, 30 parents of Pashtun ethnicity (a high-risk group) who refused to vaccinate their children were interviewed in depth to determine why. Descriptive and bivariate analyses by ethnic and socioeconomic group were performed for quantitative data; thematic analysis was conducted for qualitative interviews with Pashtun parents. Findings Of 1017 parents surveyed, 412 (41%) had never heard of polio; 132 (13%) did not participate in one SIA and 157 (15.4%) did not participate in either SIA. Among non-participants, 34 (21.6%) reported not having been contacted by a vaccinator; 116 (73.9%) reported having refused to participate, and 7 (4.5%) reported that the child was absent from home when the vaccinator visited. Refusals clustered in low-income Pashtun (43/441; 9.8%) and high-income families of any ethnic background (71/153; 46.4%). Low-income Pashtuns were more likely to not have participated in polio SIAs than low-income non-Pashtuns (odds ratio, OR: 7.1; 95% confidence interval, CI: 3.47–14.5). Reasons commonly cited among Pashtuns for refusing vaccination included fear of sterility; lack of faith in the polio vaccine; scepticism about the vaccination programme, and fear that the vaccine might contain religiously forbidden ingredients. Conclusion In Karachi, interruption of polio transmission requires integrated and participatory community interventions targeting high-risk populations.

[author abstract | minor relevance]

Kiser, Miriam and H Michael. 1999. Engaging faith communities as partners in improving community health. Atlanta, GA, United States Centers for Disease Control and Prevention, and The Carter Center.

This report by the United States (US) Centers for Disease Control and Prevention (CDC) provides an overview of a 1997 forum on partnerships between United States health systems and faith communities. According to the authors, "the faith sector…represents the values of the community" and it is essential to consider these values when seeking to change behaviours and social norms within a community.

[author abstract | minor relevance]

Knight, Anne L. 2004. "Religious exemptions to North Carolina's childhood immunization requirements: what constitutes a bona fide religious belief?" *School Law Bulletin* Fall: 12-19.

The mother of a child about to enter kindergarten in a North Carolina public school asks her pediatrician to certify that her child should receive a medical exemption from North Carolina's childhood immunization requirement. He refuses because he determines that immunization is not medically contraindicated. She asks another doctor to certify her exemption request. He also refuses. Two days later, she walks into the school office and requests a religious exemption from the immunization requirement. The mother of another new kindergartner requests a religious exemption from the immunization requirement. The school nurse knows that the child's older sibling has been immunized.

[author abstract | minor relevance]

Knol, M. J., A. T. Urbanus, E. M. Swart, L. Mollema, W. L. Ruijs, R. S. Van Binnendijk, M. J. Te Wierik, H. E. De Melker, A. Timen and S. J. Hahné. 2013. "Large ongoing measles outbreak in a religious community in the Netherlands since May 2013." *Euro Surveillance* 18(36): pii=20580.

Despite vaccination coverage over 95%, a measles outbreak started in May 2013 in the Netherlands. As of 28 August, there were 1,226 reported cases, including 82 hospitalisations. It is anticipated that the outbreak will continue. Most cases were orthodox Protestants (n=1,087/1,186; 91.7%) and unvaccinated (n=1,174/1,217; 96.5%). A unique outbreak control intervention was implemented: a personal invitation for measles-mumps-rubella (MMR) vaccination was sent for all children aged 6–14 months living in municipalities with MMR vaccination coverage below 90%.

[author abstract | minor relevance]

Koenig, Harold G., Harvey Jay Cohen, Linda K. George, Judith C. Hays, David B. Larson and Dan G. Blazer. 1997. "Attendance at religious services, interleukin-6, and other biological parameters of immune function in older adults." *The International Journal of Psychiatry in Medicine* 27(3): 233-250.

First, to examine and explain the relationship between religious service attendance and plasma Interleukin-6 (IL-6) levels, and second, to examine the relationship between religious attendance and other immune-system regulators and inflammatory substances. During the third in-person interview (1992) of the Establishment of Populations for Epidemiologic Studies of the Elderly (EPESE) project, Duke site, 1718 subjects age sixty-five or over had blood drawn for analysis of immune regulators and inflammatory factors, including IL-6 measurements. IL-6 was examined both as a continuous variable and at a cutoff of 5 pg/ml. Information on attendance at religious services was available from the 1992 interview and two prior interviews (1986 and 1989). Religious attendance was inversely related to high IL-6 levels (>5 pg/ml), but not to IL-6 measured as a continuous variable. Bivariate analyses revealed that high religious attendance in 1989 predicted a lower proportion of subjects with high IL-6 in 1992 (beta -.10, p = .01). High religious attendance in 1992 also predicted a lower proportion of subjects with high IL-6 levels in 1992 (beta -.14, p = .0005). When age, sex, race, education, chronic illnesses, and physical functioning were controlled, 1989 religious attendance weakened as a predictor of high IL-6 (beta -.07, p = .10), but 1992 religious attendance retained its effect (beta = -.10, p = .02). When religious attenders were compared to non-attenders, they were only about one-half as likely to have IL-6 levels greater than 5 ng/ml (OR 0.58, 95% CI 0.40-0.84, p < .005). Religious attendance was also related to lower levels of the immune-inflammatory markers alpha-2 globulin, fibrin d-dimers, polymorphonuclear leukocytes, and lymphocytes. While controlling for covariates weakened most of these relationships, adjusting analyses for depression and negative life events had little effect. There is a weak relationship between religious attendance and high IL-6 levels that could not be explained by other covariates, depression, or negative life events.

This finding provides some support for the hypothesis that older adults who frequently attend religious services have healthier immune systems, although mechanism of effect remains unknown.

[author abstract | minor relevance]

Kumar, Devendra, Anju Aggarwal and Sunil Gomber. 2010. "Immunization status of children admitted to a tertiary-care hospital of north India: reasons for partial immunization or non-immunization." *Journal of Health, Population and Nutrition* 28(3): 300-304.

Reasons for the low coverage of immunization vary from logistic ones to those dependent on human behaviour. The study was planned to find out: (a) the immunization status of children admitted to a paediatric ward of tertiary-care hospital in Delhi, India and (b) reasons for partial immunization and nonimmunization. Parents of 325 consecutively-admitted children aged 12-60 months were interviewed using a semi-structured questionnaire. A child who had missed any of the vaccines given under the national immunization programme till one year of age was classified as partially-immunized while those who had not received any vaccine up to 12 months of age or received only pulse polio vaccine were classified as non-immunized. Reasons for partial/non-immunization were recorded using open-ended questions. Of the 325 children (148 males, 177 females), 58 (17.84%) were completely immunized, 156 (48%) were partially immunized, and 111 (34.15%) were non-immunized. Mothers were the primary respondents in 84% of the cases. The immunization card was available with 31.3% of the patients. All 214 partially- or completely-immunized children received BCG, 207 received OPV/DPT1, 182 received OPV/DPT2, 180 received OPV/DPT3, and 115 received measles vaccines. Most (96%) received pulse polio immunization, including 98 of the 111 non-immunized children. The immunization status varied significantly ($p < 0.05$) with sex, education of parents, urban/rural background, route and place of delivery. On logistic regression, place of delivery [odds ratio (OR): 2.3, 95% confidence interval (CI) 1.3-4.1], maternal education (OR=6.94, 95% CI 3.1-15.1), and religion (OR=1.75, 95% CI 1.2-3.1) were significant ($p<0.05$). The most common reasons for partial or non-immunization were: inadequate knowledge about immunization or subsequent dose (n=140, 52.4%); belief that vaccine has side-effects (n=77, 28.8%); lack of faith in immunization (n=58, 21.7%); or oral polio vaccine is the only vaccine required (n=56, 20.9%. Most (82.5%) children admitted to a tertiary-care hospital were partially immunized or non-immunized. The immunization status needs to be improved by education, increasing awareness, and counselling of parents and caregivers regarding immunizations and associated misconceptions as observed in the study.

[author abstract | minor relevance]

Larson, A., N. Kanagat, R. Biellik, A. K. LaFond and K. Amegah. 2012. A study of the drivers of routine immunization system performance in Ghana. Arlington, VA, JSI Research & Training Institute, Inc./ARISE, for the Bill & Melinda Gates Foundation.

Sub-Saharan African countries have achieved solid advances in immunization performance in the past decade. For example, in the 46 countries in the Africa region of the World Health Organization (WHO), the proportion of infants vaccinated with the recommended three doses of the vaccine for diphtheria-tetanus-pertussis (DTP) grew to 77 percent in 2010 from 55 percent in 2000. But even as overall progress has been steady and sustained, coverage rates continue to vary among and within countries. Some of Africa's most populous countries, including Nigeria, South Africa, Democratic Republic of the Congo, and Uganda, have coverage rates below 80 percent, as do many districts throughout Africa. The foundation of national immunization programs is routine immunization (RI) — the provision of consistent, timely protection from common diseases to all children through vaccination. Without an effective system to deliver RI, coverage rates cannot be increased, gains from special vaccination campaigns cannot be sustained, and new vaccines cannot be introduced. The Africa Routine Immunization System Essentials (ARISE) project was created in late 2009 to learn from countries that have improved their immunization programs and increased coverage. Specifically, in Ghana, the project studied why some RI systems achieve improvements in immunization performance while others do not by conducting an in-depth study of RI performance in four districts. This research is part of a larger study that extends to Cameroon and Ethiopia.

[author abstract | minor relevance]

Larson, Heidi J., Louis Z. Cooper, Juhani Eskola, Samuel L. Katz and Scott Ratzan. 2011. "Addressing the vaccine confidence gap." *The Lancet* 378(9790): 526-535.

Vaccines-often lauded as one of the greatest public health interventions-are losing public confidence. Some vaccine experts have referred to this decline in confidence as a crisis. We discuss some of the characteristics of the changing global environment that are contributing to increased public questioning of vaccines, and outline some of the specific determinants of public trust. Public decision making related to vaccine acceptance is neither driven by scientific nor economic evidence alone, but is also driven by a mix of psychological, sociocultural, and political factors, all of which need to be understood and taken into account by policy and other decision makers. Public trust in vaccines is highly variable and building trust depends on understanding perceptions of vaccines and vaccine risks, historical experiences, religious or political affiliations, and socioeconomic status. Although provision of accurate, scientifically based evidence on the risk-benefit ratios of vaccines is crucial, it is not enough to redress the gap between current levels of public confidence in vaccines and levels of trust needed to ensure adequate and sustained vaccine coverage. We call for more research not just on individual determinants of public trust, but on what mix of factors are most likely to sustain public trust. The vaccine community demands rigorous evidence on vaccine efficacy and safety and technical and operational feasibility when introducing a new vaccine, but has been negligent in demanding equally rigorous research to understand the psychological, social, and political factors that affect public trust in vaccines.

[author abstract | main relevance]

Leask, Julie, Paul Kinnersley, Cath Jackson, Francine Cheater, Helen Bedford and Greg Rowles. 2012. "Communicating with parents about vaccination: a framework for health professionals." ***BMC Pediatrics*** **12(154).**

A critical factor shaping parental attitudes to vaccination is the parent's interactions with health professionals. An effective interaction can address the concerns of vaccine supportive parents and motivate a hesitant parent towards vaccine acceptance. Poor communication can contribute to rejection of vaccinations or dissatisfaction with care. We sought to provide a framework for health professionals when communicating with parents about vaccination. Literature review to identify a spectrum of parent attitudes or 'positions' on childhood vaccination with estimates of the proportion of each group based on population studies. Development of a framework related to each parental position with determination of key indicators, goals and strategies based on communication science, motivational interviewing and valid consent principles. Results: Five distinct parental groups were identified: the 'unquestioning acceptor' (30–40%), the 'cautious acceptor' (25–35%); the 'hesitant' (20–30%); the 'late or selective vaccinator' (2–27%); and the 'refuser' of all vaccines (<2%). The goals of the encounter with each group will vary, depending on the parents' readiness to vaccinate. In all encounters, health professionals should build rapport, accept questions and concerns, and facilitate valid consent. For the hesitant, late or selective vaccinators, or refusers, strategies should include use of a guiding style and eliciting the parent's own motivations to vaccinate while, avoiding excessive persuasion and adversarial debates. It may be necessary to book another appointment or offer attendance at a specialised adverse events clinic. Good information resources should also be used. Health professionals have a central role in maintaining public trust in vaccination, including addressing parents' concerns. These recommendations are tailored to specific parental positions on vaccination and provide a structured approach to assist professionals. They advocate respectful interactions that aim to guide parents towards quality decisions.

[author abstract | minor relevance]

Lernout, T., E. Kissling, V. Hutse, K. De Schrijver and G. Top. 2009. "An outbreak of measles in Orthodox Jewish communities in Antwerp, Belgium, 2007-2008: different reasons for accumulation of susceptibles." ***Euro Surveillance*** **14: 15-18.**

From August 2007 to May 2008, an outbreak of at least 137 cases of measles occurred in some orthodox Jewish communities in Antwerp, Belgium. The outbreak was linked to outbreaks in the same communities in the United Kingdom and in Israel. The reasons for this outbreak were diverse: cultural factors, misinformation on vaccination by some medical doctors and the lack of a catch-up vaccination programme in private Jewish schools. The identification of smaller susceptible groups for measles transmission and vaccination of these groups represent a major challenge for the measles elimination programme.

[author abstract | minor relevance]

Levin, A. and M. Kaddar. 2011. "Role of the private sector in the provision of immunization services in low- and middle-income countries." Health Policy Plan 26 Suppl 1: i4-12.

The authors conducted a literature review on the role of the private sector in low- and middle-income countries. The review indicated that relatively few studies have researched the role of the private sector in immunization service delivery in these countries. The studies suggest that the private sector is playing different roles and functions according to economic development levels, the governance structure and the general presence of the private sector in the health sector. In some countries, generally low-income countries, the private for-profit sector is contributing to immunization service delivery and helping to improve access to traditional EPI vaccines. In other countries, particularly middle-income countries, the private for-profit sector often acts to facilitate early adoption of new vaccines and technologies before introduction and generalization by the public sector. The not-for-profit sector plays an important role in extending access to traditional EPI vaccines, particularly in low-income countries. Not-for-profit facilities are situated in rural as well as urban areas and are more likely to be coordinated with public services than the private for-profit sector. Although numerous studies on non-governmental organizations (NGOs) suggest that the extent of NGO provision of immunization services in low- and middle-income countries is substantial, the contribution of this sector is poorly documented, leading to a lack of recognition of its role at national and global levels. Studies on quality of immunization service provision at private health facilities suggest that it is sometimes inadequate and needs to be monitored. Although some articles on public-private collaboration exist, little was found on the extent to which governments are effectively interacting with and regulating the private sector. The review revealed many geographical and thematic gaps in the literature on the role and regulation of the private sector in the delivery of immunization services in low- and middle-income countries.

[author abstract | main relevance]

Levin, Jeffrey S. 1996. "How religion influences morbidity and health: reflections on natural history, salutogenesis and host resistance." *Social Science & Medicine* 43(5): 849-864.

This paper surveys the field that has come to be known as the epidemiology of religion. Epidemiologic study of the impact of religious involvement, broadly defined, has become increasingly popular in recent years, although the existence, meaning and implications of an apparently salutary religious effect on health have not yet been interpreted in an epidemiologic context. This paper attempts to remedy this situation by putting the "epidemiology" into the epidemiology of religion through discussion of existing empirical findings in terms of several substantive epidemiologic concepts. After first providing an overview of key research findings and prior reviews of this field, the summary finding of a protective religious effect on morbidity is examined in terms of three important epidemiologic concepts: the natural history of disease, salutogenesis and host resistance. In addition to describing a theoretical basis for interpreting a religion-health association, this paper provides an enumeration of common misinterpretations of epidemiologic findings for religious involvement, as well as an outline of hypothesized pathways, mediating factors, and salutogenic mechanisms for respective religious dimensions. It is hoped that these reflections will serve both to elevate the status of religion as a construct worthy of social-epidemiologic research and to reinvigorate the field of social epidemiology.

[author abstract | minor relevance]

Marlow, L. A. V., J. Wardle, A. S. Forster and J. Waller. 2009. "Ethnic differences in human papillomavirus awareness and vaccine acceptability." *Journal of Epidemiology & Community Health* 63(12): 1010-1015.

Studies of human papillomavirus (HPV) awareness and HPV vaccine acceptability have included few non-white participants, making it difficult to explore ethnic differences. This study assessed HPV awareness and HPV vaccine acceptability in a sample of women representing the major UK ethnic minority groups. A cross-sectional study design was used to assess awareness of HPV and acceptability of HPV vaccination. Participants were recruited using quota sampling to ensure adequate representation of ethnic minority women: Indian, Pakistani, Bangladeshi, Caribbean, African and Chinese women (n=750). A comparison sample of white British women (n=200) was also recruited. Awareness of HPV was lower among ethnic minority women than among white women (6–18% vs 39% in white women), and this was not explained by generational status or language spoken at home. In a subsample who were mothers (n=601), ethnicity and religion were strongly associated with acceptability of HPV vaccination. Acceptability was highest among white mothers (63%) and lowest among South Asians (11–25%). Those from non-Christian religions were also less accepting of the vaccine (17–34%). The most common barriers to giving HPV vaccination were a need for more information, sex-related concerns and concern about side-effects. South Asian women were the most likely to cite sex-related concerns, and were also least likely to believe the vaccine would offer their daughters protection. These findings suggest some cultural barriers that could be addressed in tailored information

aimed at ethnic minority groups. They also highlight the importance of recording ethnicity as part of HPV vaccine uptake data.

[author abstract | minor relevance]

McCaffery, K., S. Forrest, J. Waller, M. Desai, A. Szarewski and J. Wardle. 2003. "Attitudes towards HPV testing: a qualitative study of beliefs among Indian, Pakistani, African-Caribbean and white British women in the UK." *British Journal of Cancer* 88(1): 42-46.

This study examined attitudes to human papillomavirus (HPV) testing among a purposively selected sample of women from four ethnic groups: white British, African Caribbean, Pakistani and Indian. The design was qualitative, using focus group discussion to elicit women's attitudes towards HPV testing in the context of cervical cancer prevention. The findings indicate that although some women welcomed the possible introduction of HPV testing, they were not fully aware of the sexually transmitted nature of cervical cancer and expressed anxiety, confusion and stigma about HPV as a sexually transmitted infection. The term 'wart virus', often used by medical professionals to describe high-risk HPV to women, appeared to exacerbate stigma and confusion. Testing positive for HPV raised concerns about women's sexual relationships in terms of trust, fidelity, blame and protection, particularly for women in longterm monogamous relationships. Participation in HPV testing also had the potential to communicate messages of distrust, infidelity and promiscuity to women's partners, family and community. Concern about the current lack of available information about HPV was clearly expressed and public education about HPV was seen as necessary for the whole community, not only women. The management of HPV within cervical screening raises important questions about informed participation. Our findings suggest that HPV testing has the potential to cause psychosocial harm to women and their partners and families.

[author abstract | minor relevance]

Muhsen, Khitam, Tamy Shohat, Yair Aboudy, Ella Mendelson, Nurit Algor, Emilia Anis and Dani Cohen. 2011. "Sero-prevalence of mumps antibodies in subpopulations subsequently affected by a large scale mumps epidemic in Israel." *Vaccine* 29(22): 3878-3882.

Despite the high national vaccination coverage, a large outbreak of mumps occurred in Israel, in 2009–2010, with onset and heavy transmission in ultraorthodox Jewish communities and further country-wide spread. We examined the sero-prevalence of mumps antibodies in the subpopulations subsequently affected by this large mumps outbreak, compared with the general population. The study was conducted in ultraorthodox Jewish communities, in Jerusalem district (N = 251), in Bnei Brak city in Tel Aviv district (N = 453), and in the general population (N = 1846), using residual sera of 1–20 year old subjects. Mumps IgG antibodies were measured using Enzygnost anti-parotitis virus IgG ELISA kit. Mumps sero-positivity was significantly lower in Jerusalem: 51.8% (95% CI 51.9–61.0), and Bnei Brak: 56.5% (95% CI 45.6–57.9), than in the general population: 68.1% (95% CI 66.0–70.2). Sero-positivity increased with age, however in Jerusalem it was substantially low (46%) in the age group 10–20 years. This age group comprised a significant portion of mumps patients in the 2009–2010 outbreak. Low immunity levels, combined with overcrowding and social mixing, were the main predisposing factors of the enhanced epidemic transmission of mumps in the ultraorthodox Jewish communities and further country-wide spread.

[author abstract | minor relevance]

Muhsen, Khitam, Reem Abed El-Hai, Anat Amit-Aharon, Haim Nehama, Mervat Gondia, Nadav Davidovitch, Sophy Goren and Dani Cohen. 2012. "Risk factors of underutilization of childhood immunizations in ultraorthodox Jewish communities in Israel despite high access to health care services." *Vaccine* 30(12): 2109-2115.

Background: The risk factors of underutilization of childhood vaccines in populations with high access to health services are not fully understood. Objectives: To determine vaccination coverage and factors associated with underutilization of childhood vaccines in a population with sub-optimal vaccination compliance, despite a high health care access. Methods: The study was conducted among 430 children from ultraorthodox Jewish communities in the Bnei Brak city and Jerusalem district. Data on immunization status, socio-demographic factors and on parents' attitudes regarding vaccines were obtained from medical records and through parents' interviews. Results: The proportion of fully vaccinated children was 65% in 2- to 5-year-old ultraorthodox children from Jerusalem district, and 86% in 2.5-year-old children from Bnei Brak city. The factors that were significantly associated with vaccines underutilization in Bnei Brak were having >6 siblings, maternal academic education, parental religious beliefs against

vaccination, perceived risk of vaccine preventable diseases as low, and mistrust in the Ministry of Health (MOH). Similarly, in Jerusalem, religious beliefs against vaccination, and the perceived low risk of vaccine preventable diseases significantly increased the likelihood of under-immunization, while having a complementary health insurance was inversely related with vaccines underutilization. Conclusions: The risk factors of under-immunization are in part modifiable, by means of health education on the risks of vaccine preventable diseases and by improving the trust in the MOH. The leaders of the ultraorthodox communities could play an important role in such interventions.

[author abstract | main relevance]

Murhekar, Manoj V., Sailaja Bitragunta, Yvan Hutin, Anita Ckakravarty, Hitt J. Sharma and Mohan D. Gupte. 2009. "Immunization coverage and immunity to diphtheria and tetanus among children in Hyderabad, India." *Journal of Infection* 58(3): 191-196.

The Indian state of Andhra Pradesh accounted for 50% diphtheria and 3% tetanus cases reported globally during 2005. During 2003–2006, there was a rising trend of diphtheria in Hyderabad, the state capital, whereas there was no major change in trend of tetanus cases. We estimated coverage of diphtheria and tetanus vaccine among children aged ≤ 6 years and immunity against these diseases among school children aged 7–17 years in Hyderabad. Using lot quality assurance sampling method, we surveyed children aged 12–23, 18–36 and 54–72 months to estimate coverage of three primary doses and first and second boosters of diphtheria and tetanus vaccine respectively. We conducted a sero-survey among children aged 7–17 years studying in randomly selected schools in Hyderabad. We tested sera for antibodies against diphtheria and tetanus. Primary vaccination coverage was <80% in four of the seven circles of Hyderabad while booster coverage was <80% in entire city. Of the 2419 children sero-surveyed, 56% and 64% were immune to diphtheria and tetanus respectively (titre ≥0.1 IU/ml). Booster coverage and immunity against these diseases was lower among Muslims. It is necessary to improve booster coverage especially among Muslims. Vaccinating school children at school entry and periodic boosters thereafter will increase immunity among children.

[author abstract | main relevance]

Murphy, Elaine. 2012. Social mobilization lessons from the CORE Group Polio Project in Angola, Ethiopia, and India. Washington, D.C., CORE Group.

The CORE Group Polio Project (CGPP) and its partners in India, Angola, and Ethiopia have led successful social mobilization efforts to reach difficult-to-access populations critical for polio eradication. These include extremely poor rural and urban communities, ethnic and religious minorities who resist immunizing their children, and others such as newborns, pastoralists, migrants, and those in transit across national borders. Working through grassroots nongovernmental organizations (NGOs), CGPP social mobilization activities have contributed to the current polio-free status in all three countries and have improved the coverage of children's routine immunizations as well. Marking a shift from the earlier dominance of epidemiological perspectives, today behavior-change communication — advocacy, interpersonal communication, and social mobilization — is recognized internationally as the way forward in this final phase of polio eradication.1 This shift is reflected in WHO's May 2012 Global Polio Emergency Plan: 1) Establish/scale up social mobilization networks at community level in infected areas; 2) Undertake systematic monitoring to identify and understand the social reasons for chronically missed children; 3) Build interpersonal skills to enhance vaccination performance, including addressing reticence and refusal; 4) Apply best practices for reaching high-risk and chronically missed children (e.g., migrant and underserved); 5) Re-energize public support, motivate vaccinators, enhance ownership of key stakeholders (media, physicians), and increase local leader accountability; and 6) Apply to routine immunization lessons on identifying and reaching missed children, especially among underserved, mobile, and minority populations. This report places CGPP within the context of the Global Polio Eradication Initiative (GPEI) that began in 1988, defines and describes three varieties of social mobilization, and presents as case examples CGPP's successful social mobilization work in India, Angola, and Ethiopia. It is intended for those interested in best practices to move polio eradication from its current 99.9 percent success rate to 100 percent, and all who want to "reach the hardly reached" with routine immunization, new vaccines and other life-saving maternal and child health services.

[author abstract | main relevance]

Muula, A. S., M. Y. Polycarpe, J. Job, S. Siziya and E. Rudatsikira. 2009. "Association between maternal use of traditional healer services and child vaccination coverage in Pont-Sonde, Haiti." *Int J Equity Health* 8: 1.

Child vaccination is one of the public health interventions that are responsible for the relatively low child morbidity and mortality in developed nations compared to the developing world. We carried out this study to examine the association between mothers' use of traditional healer services and vaccination among Haitian children. Our hypothesis was that children whose mothers used the services of traditional healers were less likely to be vaccinated compared to children whose mothers did not use the services of traditional healers. A two-stage stratified sampling method was used to select 720 mothers from the population of Pont-Sonde, Haiti. Of these mothers, 691 (96%) completed the survey by responding to a standardized questionnaire on vaccination giving unadjusted odds ratios (OR) and adjusted odds ratios (AOR) and 95% confidence intervals (CI) and use of traditional healers. Bivariate and multivariate logistic regression analyses were performed to estimate the effect of explanatory variables on vaccination (the main outcome). Mother's use of traditional healer services was negatively associated with vaccination after controlling for maternal age, education, religion, and distance from the nearest health care facility. For those children whose mothers often or always used the services of traditional healers, we found a 53% decrease in the odds of vaccination (AOR = 0.47; 95% CI [0.27, 0.83]) compared against children whose mothers never used the services of the traditional healers. There were negative associations between practice of Vodou and vaccination (AOR = 0.56; 95% CI [0.35, 0.92]), and distance from the nearest health care service facility and vaccination (AOR = 0.53; 95% CI [0.29, 0.97] and AOR = 0.34; 95% CI [0.20, 0.59] at 46-60 and more than 60 minutes walk time, respectively). We found that mother's use of traditional healer services was negatively associated with vaccination of Haitian children. Findings from this study underscore the potential to enlist the support of traditional healers in promoting child health by educating, mentoring them (the traditional healers) in supporting vaccination efforts.

[author abstract | main relevance]

Natan, Merav Ben, Osnat Aharon, Sharon Palickshvili and Vicky Gurman. 2011. "Attitude of Israeli Mothers With Vaccination of Their Daughters Against Human Papilloma Virus." *Journal of Pediatric Nursing* 26(1): 70-77.

The purpose of the study is to examine whether the model based on the Theory of Reasoned Action (TRA) succeeds in predicting mothers' intention to vaccinate their daughters against the human papilloma virus infection. Questionnaires were distributed among convenience sample of 103 mothers of daughters 18 years and younger. Approximately 65% of mothers intend to vaccinate their daughters. Behavioral beliefs, normative beliefs, and level of knowledge had a significant positive effect on mothers' intention to vaccinate their daughters. High levels of religiosity were found to negatively affect mothers' intention to vaccinate their daughters. The TRA combined with level of knowledge and level of religiosity succeeds in predicting mothers' behavioral intentions regarding vaccinating daughters. This indicates the significance of nurses' roles in imparting information and increasing awareness among mothers.

[author abstract | minor relevance]

Nath, Bhola, J. V. Singh, Shally Awasthi, Vidya Bhushan, Vishwajeet Kumar and S. K. Singh. 2007. "A study on determinants of immunization coverage among 12-23 months old children in urban slums of Lucknow district, India." *Indian Journal of Medical Sciences* 61(11): 598.

Context: To find out the suitable factors for raising the coverage of immunization. Aims : To determine the coverage and to identify the various factors of primary immunization. Settings and Design : Urban slums of Lucknow district. Methods and Material : WHO 30-cluster sampling technique was used for the selection of the subjects. Mother, father or relative of a total of 510 children with 17 children per cluster were interviewed in the study. Statistical Analysis : Chisquare test, binary logistic regression and multinomial logistic regression analysis were done to test the statistical significance of the association. Results: About 44% of the children studied were fully immunized. Multinomial logistic regression analysis revealed that an illiterate mother (OR=4.0), Muslim religion (OR=2.5), scheduled caste or tribes (OR=2.3) and higher birth order (OR≈2) were significant independent predictors of the partial immunized status of the child; while those associated with the unimmunized status of the child were low socioeconomic status (OR=10.8), Muslim religion (OR=4.3), higher birth order (OR=4.3), home delivery (OR=3.6) and belonging to a joint family (OR=2.1). Conclusions: The status of complete immunization is about half of what was proposed to be achieved under the Universal Immunization Program. This emphasizes the imperative need for urgent intervention to address the issues of both dropout and lack of access, which are mainly responsible for partial immunization and nonimmunization respectively.

[author abstract | minor relevance]

Ncayiyana, Daniel J. 2004. "What Islam needs is a pope." *SAMJ* 94(6).

[no author abstract | minor relevance]

Nichter, M. 1992. "Of ticks, kings, spirits and the promise of vaccines." Pp.224-556 in *Paths to Asian medical systems*, edited by C. Leslie and A. Young. Berkeley, CA, Univ. of California Press.

[no author abstract | minor relevance]

Nichter, Mark. 1995. "Vaccinations in the third world: A consideration of community demand." *Social Science & Medicine* 41(5): 617-632.

Impressive increases in immunization rates have been reported in several less developed countries (LDCs) as a result of intensive EPI programs. An issue arises as to whether existing rates of immunization coverage can be sustained/increased given projected cutbacks in funding. This issue calls into question the assumption that as immunizable disease rates fall, local populations will need less encouragement to secure immunization services. This article considers how immunizations are perceived by lay populations and how perceptions of utility and need effect demand which in turn effects the sustainability of EPI programs. Among issues addressed is the observation that when specific diseases are not linked to specific immunizations, misimpressions related to the number of immunizations needed for "good health" abound. Also considered are metamedical reasons immunizations (and immunization programs) are both resisted and demanded in particular political contexts.

[author abstract | minor relevance]

Nishtar, Sania. 2010. "Pakistan, politics and polio." *Bull World Health Organ* 88: 159-160.

The United Nations Secretary General's concern over the recent resurgence of polio cases in Pakistan should focus global attention on the country for reasons other than security, terrorism and conflict. As one of the four countries of the world now harbouring the disease, Pakistan faces many geopolitical and socioeconomic challenges. While these threaten the country in many ways, they also pose a challenge for global health and jeopardize worldwide efforts aimed at eradicating polio. As long as a single child remains infected, children in all countries are at risk of contracting polio and we will not achieve the global goal of eradicating a disease for the second time in history. *[author abstract | minor relevance]*

Obadare, Ebenezer. 2005. "A crisis of trust: history, politics, religion and the polio controversy in Northern Nigeria." *Patterns of Prejudice* 39(3): 265-284.

In the middle of 2003, disagreement over the safety of the oral polio vaccine pitted ordinary citizens and community leaders in the predominantly Muslim north of Nigeria against the World Health Organization, the United Nations Children's Fund and Nigeria's federal authorities. During the crisis that ensued, five northern states (Niger, Bauchi, Kano, Zamfara and Kaduna) banned the use of the controversial vaccine on children in their respective domains. Underpinning Obadare's paper is the assumption that the immunization crisis is best understood after considering developments in the broader politico-religious contexts, both local and global. Thus, he locates the controversy as a whole against the background of the deepening interface between health and politics. He suggests that the crisis is best seen as emanating from a dearth of trust in social intercourse between ordinary citizens and the Nigerian state on the one hand, and between the same citizens and international health agencies and pharmaceutical companies on the other. The analysis of trust is historically embedded in order to illuminate the dynamics of relations among the identified actors.

[author abstract | main relevance]

Obregón, Rafael, Ketan Chitnis, Chris Morry, Warren Feek, Jeffrey Bates, Michael Galway and Ellyn Ogden. 2009. "Achieving polio eradication: a review of health communication evidence and lessons learned in India and Pakistan." *Bulletin of the World Health Organization* 87(8): 624-630.

Since 1988, the world has come very close to eradicating polio through the Global Polio Eradication Initiative, in which communication interventions have played a consistently central role. Mass media and information dissemination approaches used in immunization efforts worldwide have contributed to this success. However, reaching the hardest-to-reach, the poorest, the most marginalized and those without access to health services has been challenging. In the last push to eradicate polio, Polio Eradication Initiative communication strategies have become increasingly research-driven and innovative, particularly through the introduction of sustained interpersonal communication and social mobilization approaches to reach unreached populations. This review examines polio communication efforts in India and Pakistan between the years 2000 and 2007. It shows how epidemiological, social and behavioural data guide communication strategies that have contributed to increased levels of polio immunity, particularly among underserved and hard-to-reach populations. It illustrates how evidence-based and planned communication strategies – such as sustained media campaigns, intensive community and social mobilization, interpersonal communication and political and national advocacy combined – have contributed to reducing polio incidence in these countries. Findings show that communication strategies have contributed on several levels by: mobilizing social networks and leaders; creating political will; increasing knowledge; ensuring individual and community-level demand; overcoming gender barriers and resistance to vaccination; and reaching out to the poorest and marginalized populations. The review concludes with observations about the added value of communication strategies in polio eradication efforts and implications for global and local public health communication interventions.

[author abstract | main relevance]

Obregón, Rafael and Silvio Waisbord. 2010. "The complexity of social mobilization in health communications: top-down and bottom-up experiences in polio eradication." ***Journal of Health Communication*** **15(Supplement 1 (Health Communication: Polio Lessons)): 25-47.**

The Polio Eradication Initiative (PEI) has been one of the most ambitious global health efforts in recent times. Social mobilization (SM) has been a strategic component of the PEI. Yet, a close-up analysis of SM dynamics seems to be lacking in the health communication literature. We examine critical aspects of the PEI experience in an attempt to move from dominant informational perspectives to a focus on emerging challenges in polio eradication efforts and new levels of complexity to SM. We examine available literature on communication and public health, available data on SM experiences that support polio eradication in Africa and Asia, and field work conducted by the authors where polio eradication efforts are ongoing. Our analysis suggests that (1) SM should not be casually approached as a top-down informational strategy to advance pre-established health goals; (2) centralized strategies hardly amount to SM; and (3) hybrid options that combine both activist and pragmatic SM are concrete possibilities for global health initiatives. In the context of renewed global democratization and persistent conflicts rooted in ethnicity, religion, and economics, it cannot be assumed that communities will either diligently espouse global goals or necessarily oppose them. Communication and SM strategies should rely on a clear understanding of the motives and agendas of involved actors. Resistance or opposition are important analytical dimensions as they may uncover new opportunities for effective health interventions. Further studies using these perspectives should be a priority for global health programs, including studies of the trust level, or lack thereof, among social actors.

[author abstract | main relevance]

Ojikutu, Rasheed Kola. 2012. "Beliefs, knowledge and perception of parents to pediatric vaccination in Lagos State, Nigeria." ***Journal of Management and Sustainability*** **2(2).**

This study examined the belief, knowledge and perception on parents to immunization of children in Lagos State. Questionnaires were distributed to a sample of 1000 parents seeking for their opinion on various issues pertaining to their perception about child immunization. In addition, the study did a general literature review on immunization coverage in Nigeria taking into cognizance the beliefs of the Yoruba of South-West Nigeria to which the study area (Lagos State) is an integral part. The result shows that although, many parents have knowledge about the efficacy of vaccination for their children, yet culture overrides such knowledge in some cases. The result shows that gender of parents does not significantly affect their belief about immunization and their willingness to present children for routine immunization. However, marital status, education and religion significantly influence such belief. It is concluded that the culture and beliefs of the Yoruba in Lagos State is too complex to be ignored in any public health plan, if such plan is to be effectively and efficiently implemented.

[author abstract | minor relevance]

Olivier, Jill and Gillian Margaret Paterson. 2011. "Religion and medicine in the context of HIV and AIDS: a landscaping review." Pp.25-52 in *Religion and HIV and AIDS: charting the terrain*, edited by B. Haddad. Scottsville, South Africa, University of KwaZulu-Natal Press.

This essay focuses on the intersection of the medical narrative with that of religion. It offers a brief overview of the history of religion-inspired medical responses to the epidemic before suggesting a theological and ethical rationale that religions claim for their medical work. The essay continues by analysing the strengths and weaknesses of the religious sectors' involvement in prevention, care and support, and treatment, briefly explores the narratives on "miraculous cures", and concludes by identifying the gaps in the literature survey and possible future work. It argues that there is insufficient "nuanced work that acknowledges the differences in religion, or that compares religious and non-religious activities or organizations in the context of the HIV epidemic.

[author abstract | minor relevance]

Olusanya, Bolajoko O. 2004. "Polio-vaccination boycott in Nigeria." *The Lancet* 363: 1912.

[commentary, no author abstract | minor relevance]

Oluwadare, Christopher. 2009. "The social determinants of routine immunisation in Ekiti State of Nigeria." *Ethno-Med* 3(1): 49-56.

The greatest challenge to child health in sub Saharan Africa is poor immunization service for major child illnesses. The World Health Organisation's (WHO) review of the health systems of the World, looking at various health indicators including child mortality, in the year 2003 placed Nigeria in 187th position among 191 countries, and little has been achieved since then. This paper is an overview of routine immunization in Ekiti State of Nigeria. The State serves as a case for understanding the prospects and challenges of child health care in South Nigeria. The study used qualitative data derived from focus group discussions and key informants and secondary data of state and national surveys. The findings identify factors that account for the relative poor immunization coverage. The salient issues include ignorance and social cost of access to the service. Also the quality of the immunization service: availability to the remote areas, health personnel commitment, and consistent availability account for low coverage. It is concluded and recommended that there is a need for improvement in the supply side of immunization service especially taken the service to the physically and socially marginalized areas and also extend the campaigns for immunizations beyond the current emphasis on Polio vaccination to incorporate other antigens. *[author abstract | main relevance]*

Oostvogel, P. M., J. K. van Wijngaarden, H. G. van der Avoort, M. N. Mulders, M. A. Conyn-van Spaendonck, H. C. Rümke, G. van Steenis and A. M. van Loon. 1994. "Poliomyelitis outbreak in an unvaccinated community in The Netherlands, 1992-93." *Lancet* 344(8923): 665-670.

An outbreak of poliomyelitis occurred in the Netherlands between September, 1992, and February, 1993, after 14 years without endemic cases. The outbreak was due to poliovirus type 3 and involved 71 patients, of whom 2 died and 59 had paralysis. The patients were aged between 10 days and 61 years (median 18 years). None of the patients had been vaccinated, and all but 1 belonged to a socially and geographically clustered group of people who refuse vaccination for religious reasons. Control measures were taken within 5 days of notification of the first patient and included a wide offer of vaccination with the trivalent oral poliovirus vaccine to the population at risk. Sequence analysis of the viral genome showed closest similarity (96.7%) with a strain isolated in India in 1992, indicating that the virus probably originates from the Indian subcontinent. The difference, however, is still too large to assume direct import. Extensive outbreak investigation at schools, in the environment, at virus diagnostic laboratories, and in the general population showed no evidence of widespread circulation of the epidemic virus outside the groups at risk and area where these groups live. As in the previous outbreak in 1978, the general population, including the majority of unvaccinated people who live dispersed in the population, seemed to be well-protected against poliomyelitis.

[author abstract | minor relevance]

Ozohu-Suleiman, Yakubu. 2009. "Interpersonal communication and risk perception determinants in the polio eradication campaign in Zaria, Northern Nigeria." *Journal of Communication and Media Research* 1(1): 93-107.

Ethnic and religious leaders are believed to have been largely instrumental to the success or failure of polio eradication campaign in various parts of northern Nigeria. To establish the validity of this credence, this study examined the extent to which polio eradication campaign resistance in northern Nigeria is associated with leadership and personal persuasions. Zaria Local Government Area, one of the high-risk (WPV- endemic) areas in northern Nigeria, where resistance to the global campaign on polio eradication is very high. Premised on Risk Perception Model, the survey sampled eight out of thirteen wards, representing approximately 62 per cent of the population of Zaria local Government Area, with response rate of 78.9 per cent. Findings show that leadership (ethnic and religious) persuasions were of little significance in the campaign acceptance or resistance. Rather, the risk of vaccine contamination and related health consequences, based on personal persuasions of husband/wife and friends/relations accounted for the resistance decisions of the individuals in the local communities.

[author abstract | main relevance]

Paterson, P. and H. J. Larson. 2012. "The role of publics in the introduction of new vaccines." *Health Policy and Planning* 27(suppl 2): ii77-ii79.

[no author abstract – commentary | minor relevance]

Pavia, A. T., L. Nielsen, L. Armington, D. J. Thurman, E. Tierney and C. R. Nichols. 1990. "A community-wide outbreak of hepatitis A in a religious community: impact of mass administration of immune globulin." *Am J Epidemiol* 131(6): 1085-1093.

Community-wide outbreaks of hepatitis A are frequently prolonged and difficult to control. An extensive outbreak of hepatitis A in a religious community provided an opportunity to assess the effect of mass administration of immune globulin on the course of the outbreak. Between July 1, 1988 and May 30, 1989, 204 cases occurred among 3,500 residents (58/1,000), with persons aged 5-19 years having the highest attack rate. It was found that 89% of persons older than age 19, but no persons under age 20, had evidence of prior hepatitis A infection. During a 5-day campaign, immune globulin (0.02 ml/kg) was administered to 2,287 (65%) of the 3,500 residents. The cost of vaccine and syringes was less than $3,500. New cases among immune globulin recipients virtually stopped 2 weeks after the campaign, and the incidence of hepatitis in the community decreased from 9.6/week to 1.9/week. Among persons younger than age 20 years, the efficacy of immune globulin was 88.9% (95% confidence interval 77.9-94.5) for seven months. Although the authors cannot be sure that the outbreak will not recur, they believe that mass administration of immune globulin appears to have been partially effective at controlling this community-wide outbreak.

[author abstract | minor relevance]

Ramos-Jimenez, P., C. A. Rodriguez, O. L. Patino and M. B. Lim. 1999. *Immunisation in the Philippines: the social and cultural dimension.* Amsterdam, Het Spinhuis.

[no author abstract – commentary | minor relevance]

Raufu, Abiodun. 2004. "Nigeria apologises to neighbours for spread of polio." *BMJ* 329(14): 365.

[no author abstract – commentary | minor relevance]

Reinikka, Ritva and Jakob Svensson. 2003. Working for God? Evaluating service delivery of religious not-for-profit health care providers in Uganda. Washington, DC, World Bank.

This paper exploits a unique micro-level data set on primary health care facilities in Uganda to address the question: What motivates religious not-for-profit (RNP) health-care providers? We use two approaches to identify whether an altruistic (religious) effect exists in the data. First, exploiting cross-section variation, we show that RNP facilities hire qualified medical staff below the market wage; are more likely to provide propoor services and services with a public good element; and charge lower prices for services than for-profit facilities, although they provide a similar (observable) quality of care. RNP and for-profit facilities both provide better quality care than their government counterparts, although government facilities have better equipment. These findings are consistent with the view

that RNP are driven (partly) by altruistic concerns and that these preferences matter quantitatively. Second, we exploit a near natural experiment in which the government initiated a program of financial aid for the RNP sector, and show that financial aid leads to more laboratory testing of suspected malaria and intestinal worm cases, and hence higher quality of service, and to lower prices, but only in RNP facilities. These findings suggest that working for God matters.

[author abstract | minor relevance]

Remes, Pieter, Veronica Selestine, John Changalucha, David A. Ross, Daniel Wight, Silvia de Sanjosé, Saidi Kapiga, Richard J. Hayes and Deborah Watson-Jones. 2012. "A qualitative study of HPV vaccine acceptability among health workers, teachers, parents, female pupils, and religious leaders in northwest Tanzania." *Vaccine* 30(36): 5363-5367.

Background: As human papillomavirus (HPV) vaccines become available in developing countries, acceptability studies can help to better understand potential barriers and facilitators of HPV vaccination and guide immunisation programs. Methods: Prior to a cluster-randomised phase IV trial of HPV vaccination delivery strategies in Mwanza Region, Tanzania, qualitative research was conducted to assess attitudes and knowledge about cervical cancer and HPV, and acceptability of and potential barriers to HPV vaccination of Tanzanian primary schoolgirls. Semi-structured interviews (n = 31) and group discussions (n = 12) were conducted with a total of 169 respondents (parents, female pupils, teachers, health workers and religious leaders). Results: While participants had heard of cancer in general, most respondents had no knowledge of cervical cancer, HPV, or HPV vaccines. Only health workers had heard of cervical cancer but very few knew its cause or had any awareness about HPV vaccines. After participants were provided with information about cervical cancer and HPV vaccination, the majority stated that they would support HPV vaccination of their daughter to protect them against cervical cancer. Opt-out consent for vaccination was considered acceptable. Most preferred age-based vaccination, saying this would target more girls before sexual debut than class-based vaccination. Potential side effects and infertility concerns were raised by 5/14 of participating male teachers. Discussion: Reported acceptability of HPV vaccination amongst parents, teachers and other community members was high in this population. Respondents stressed the need to provide adequate information about the vaccine to parents that also addresses side effects and infertility concerns.

[author abstract | minor relevance]

Renne, Elisha. 2006. "Perspectives on polio and immunization in Northern Nigeria." *Social Science & Medicine* 63(7): 1857-1869.

Through the efforts of the global campaign to eradicate poliomyelitis, polio cases have declined worldwide, from 35,251 cases in 1988, to 1449 cases as of 28 October 2005. However, confirmed cases of wild polio virus continue to be reported from Northern Nigeria. This paper examines the reasons for the difficulties in eradicating polio in Northern igeria from the perspective of residents of one town, Zaria, in northern Kaduna State. Research methods included participant observation, open-ended interviews and the collection of polio-related documents. While some people believed that the vaccine was contaminated by anti-fertility substances, others questioned the focus on polio when measles and malaria were considered more harmful. Some also distrusted claims about the safety of Western biomedicine. These concerns relate to questions about the appropriateness of vertical health interventions, where levels of routine immunization are low. While the Polio Eradication Initiative was considered to be cost-effective by Western donors, from the perspective of some people in Zaria it was seen as undermining primary health care, suggesting that a collaborative, community-based framework for primary health care, which includes routine immunization, would be a more acceptable approach.

[author abstract | minor relevance]

Renne, Elisha P. 2009. "Anthropological and public health perspectives on the Polio Eradication Initiative in Northern Nigeria." Pp.512-538 in *Anthropology and public health: bridging differences in culture and Society*, edited by R. Hahn and M. Inhorn. New York, Oxford University Press.

In 1988, the World Health Assembly voted to eradicate poliomyelitis by 2000. While cases of wild poliovirus worldwide have declined considerably, cases continue to be reported, mainly in India, Nigeria, Pakistan, and Afghanistan. This chapter uses anthropological research methods to examine changes in the reception and implementation of the Global Polio Eradication Initiative in Zaria, Kaduna State, in Northern Nigeria in order to address the question of why polio cases persist in this area. It also considers how changes the GPEI program in

Nigeria, specifically broader community involvement and the introduction of health incentives teams, affected its reception and raises the larger question of how such global public health initiatives might be appropriately framed in the future.

[author abstract | minor relevance]

Renne, Elisha P. 2010. *The politics of polio in Nothern Nigeria.* Bloomington, Indiana University Press.

In 2008, Northern Nigeria had the greatest number of confirmed cases of polio in the world and was the source of outbreaks in several West African countries. Elisha P. Renne explores the politics and social dynamics of the Northern Nigerian response to the Global Polio Eradication Initiative, which has been met with extreme skepticism, subversion, and the refusal of some parents to immunize their children. Renne explains this resistance by situating the eradication effort within the social, political, cultural, and historical context of the experience of polio in Northern Nigeria. Questions of vaccine safety, the ability of the government to provide basic health care, and the role of the international community are factored into this sensitive and complex treatment of the ethics of global polio eradication efforts.

[author abstract | minor relevance]

Renne, Elisha P. 2012. "Polio in Nigeria." *History Compass* 10(7): 496-511.

Poliomyelitis, or polio as it is commonly known, is a disease caused by an enterovirus found throughout the world. Although it is often associated with paralysis of one or more limbs, it is more common for children to experience asymptomatic cases of the disease, which convey life-long immunity. While lameness associated with polio has long been known in Nigeria, during the colonial period immunization efforts focused mainly on expatriates. Later, with the implementation of the Expanded Programme on Immunisation during the 1980s, polio vaccination was included as part of primary health care. However, it was only after the 1988 World Health Assembly vote to eradicate polio worldwide that intensive efforts to vaccinate all children under five for polio began. Initial efforts, which focused only on polio vaccination, may be characterized as an “override approach.” In 2006, Nigeria had the greatest number of confirmed cases of polio worldwide. However, with the implementation of a more “collaborative approach,” incorporating other vaccines and health incentives such as bed nets, the number of polio cases declined. By the end of 2010, case numbers had declined dramatically and these numbers remain low, reflecting government, NGO, and community efforts to work together to end polio transmission in Nigeria.

[author abstract | minor relevance]

Ross, Lainie Friedman and Timothy J. Aspinwall. 1997. "Religious exemptions to the immunization statutes: balancing public health and religious freedom." *The Journal of Law, Medicine & Ethics* 25(2-3): 202-209.

[no author abstract | minor relevance]

Ruijs, Wilhelmina L.M., Jeannine L.A. Hautvast, Wilke J.C. van Ansem, Reinier P. Akkermans, Kees van’t Spijker, Marlies E.J.L. Hulscher and Koos van der Velden. 2012. "Measuring vaccination coverage in a hard to reach minority." *The European Journal of Public Health* 22(3): 359-364.

Although childhood vaccination programmes have been very successful, there are some hard to reach minority groups that object to vaccination. The Netherlands has experienced several epidemics of vaccine-preventable diseases, confined to the orthodox Protestant minority. However, vaccination coverage in this minority is still unknown and this hampers prevention and control of epidemics. We estimated vaccination coverage among the orthodox Protestant minority and its various subgroups (denominations), using two sub-studies with different design and study population. For both sub-studies separately, we determined overall vaccination coverage and vaccination coverage per denomination. The results were compared and discussed. An online survey was filled out by 1778 orthodox Protestant youngsters, invited via orthodox Protestant media using a snowball method. Next to that, results of a national sample study on vaccination were used, of which only orthodox Protestant respondents were included in our analyses. Overall vaccination coverage among orthodox Protestants in The Netherlands was estimated to be at minimum 60%. Moreover, in both sub-studies three clusters of denominations could be identified, with high (>85%), intermediate (50–75%) and low (<25%) vaccination coverage. The integration of both sub-studies, with their own specific strengths and weaknesses, added to our insight in the vaccination coverage in

this minority. Based on these results, we recommend to focus prevention and control of vaccine-preventable diseases on the orthodox Protestant subgroups with intermediate and low vaccination coverage

[author abstract | main relevance]

Ruijs, Wilhelmina, Jeannine Hautvast, Koos van der Velden, Sjoerd de Vos, Hans Knippenberg and Marlies Hulscher. 2011. "Religious subgroups influencing vaccination coverage in the Dutch Bible belt: an ecological study." *BMC Public Health* 11(1): 102.

The Netherlands has experienced epidemics of vaccine preventable diseases largely confined to the Bible belt, an area where -among others- orthodox protestant groups are living. Lacking information on the vaccination coverage in this minority, and its various subgroups, control of vaccine preventable diseases is focused on the geographical area of the Bible belt. However, the adequacy of this strategy is questionable. This study assesses the influence of presence of various orthodox protestant subgroups (orthodox protestant denominations, OPDs) on municipal vaccination coverage in the Bible belt. We performed an ecological study at municipality level. Data on number of inhabitants, urbanization level, socio-economical status, immigration and vaccination coverage were obtained from national databases. As religion is not registered in the Netherlands, membership numbers of the OPDs had to be obtained from church year books and via church offices. For all municipalities in the Netherlands, the effect of presence or absence of OPDs on vaccination coverage was assessed by comparing mean vaccination coverage. For municipalities where OPDs were present, the effect of each of them (measured as membership ratio, the number of members proportional to total number of inhabitants) on vaccination coverage was assessed by bivariate correlation and multiple regression analysis in a model containing the determinants immigration, socio-economical status and urbanization as well. Mean vaccination coverage (93.5% +/- 4.7) in municipalities with OPDs (n = 135) was significantly lower ($p < 0.001$) than in 297 municipalities without OPDs (96.9% +/- 2.1). Multiple regression analyses showed that in municipalities with OPDs 84% of the variance in vaccination coverage was explained by the presence of these OPDs. Immigration had a significant, but small explanatory effect as well. Membership ratios of all OPDs were negatively related to vaccination coverage; this relationship was strongest for two very conservative OPDs. As variance in municipal vaccination coverage in the Bible belt is largely explained by membership ratios of the various OPDs, control of vaccine preventable diseases should be focused on these specific risk groups. In current policy part of the orthodox protestant risk group is missed.

[author abstract | main relevance]

Ruijs, Wilhelmina L. M., Jeannine L. A. Hautvast, Giovanna van I. Jzendoorn, Wilke J. C. van Ansem, Glyn Elwyn, Koos van der Velden and Marlies E. J. L. Hulscher. 2012. "How healthcare professionals respond to parents with religious objections to vaccination: a qualitative study." *BMC Health Services Research* 12(231).

Background: In recent years healthcare professionals have faced increasing concerns about the value of childhood vaccination and many find it difficult to deal with parents who object to vaccination. In general, healthcare professionals are advised to listen respectfully to the objections of parents, provide honest information, and attempt to correct any misperceptions regarding vaccination. Religious objections are one of the possible reasons for refusing vaccination. Although religious objections have a long history, little is known about the way healthcare professionals deal with these specific objections. The aim of this study is to gain insight into the responding of healthcare professionals to parents with religious objections to the vaccination of their children. Methods: A qualitative interview study was conducted with health care professionals (HCPs) in the Netherlands who had ample experience with religious objections to vaccination. Purposeful sampling was applied in order to include HCPs with different professional and religious backgrounds. Data saturation was reached after 22 interviews, with 7 child health clinic doctors, 5 child health clinic nurses and 10 general practitioners. The interviews were thematically analyzed. Two analysts coded, reviewed, discussed, and refined the coding of the transcripts until consensus was reached. Emerging concepts were assessed using the constant comparative method from grounded theory. Results: Three manners of responding to religious objections to vaccination were identified: providing medical information, discussion of the decision-making process, and adoption of an authoritarian stance. All of the HCPs provided the parents with medical information. In addition, some HCPs discussed the decision-making process. They verified how the decision was made and if possible consequences were realized. Sometimes they also discussed religious considerations. Whether the decision-making process was discussed depended on the willingness of the parents to engage in such a discussion and on the religious background, attitudes, and communication skills of the HCPs. Only in cases of tetanus post-exposure-prophylaxis, general practitioners reported adoption of an authoritarian stance. Conclusion: Given that the provision of medical information is generally not decisive for parents with religious

objections to vaccination, we recommend HCPs to discuss the vaccination decision-making process, rather than to provide them with extra medical information.

[author abstract | main relevance]

Ruijs, Wilhelmina L, Jeannine L Hautvast, Giovanna van IJzendoorn, Wilke J van Ansem, Koos van der Velden and Marlies EJL Hulscher. 2012. "How orthodox protestant parents decide on the vaccination of their children: a qualitative study." *BMC Public Health* 12(1): 408.

Despite high vaccination coverage, there have recently been epidemics of vaccine preventable diseases in the Netherlands, largely confined to an orthodox protestant minority with religious objections to vaccination. The orthodox protestant minority consists of various denominations with either low, intermediate or high vaccination coverage. All orthodox protestant denominations leave the final decision to vaccinate or not up to their individual members. To gain insight into how orthodox protestant parents decide on vaccination, what arguments they use, and the consequences of their decisions, we conducted an in-depth interview study of both vaccinating and non-vaccinating orthodox protestant parents selected via purposeful sampling. The interviews were thematically coded by two analysts using the software program Atlas.ti. The initial coding results were reviewed, discussed, and refined by the analysts until consensus was reached. Emerging concepts were assessed for consistency using the constant comparative method from grounded theory. After 27 interviews, data saturation was reached. Based on characteristics of the decision-making process (tradition vs. deliberation) and outcome (vaccinate or not), 4 subgroups of parents could be distinguished: traditionally non-vaccinating parents, deliberately non-vaccinating parents, deliberately vaccinating parents, and traditionally vaccinating parents. Except for the traditionally vaccinating parents, all used predominantly religious arguments to justify their vaccination decisions. Also with the exception of the traditionally vaccinating parents, all reported facing fears that they had made the wrong decision. This fear was most tangible among the deliberately vaccinating parents who thought they might be punished immediately by God for vaccinating their children and interpreted any side effects as a sign to stop vaccinating. Policy makers and health care professionals should stimulate orthodox protestant parents to make a deliberate vaccination choice but also realize that a deliberate choice does not necessarily mean a choice to vaccinate. *[author abstract | main relevance]*

Sadaf, Alina, Jennifer L. Richards, Jason Glanz, Daniel A. Salmon and Saad B. Omer. 2013. "A systematic review of interventions for reducing parental vaccine refusal and vaccine hesitancy." *Vaccine* 31(40): 4293-4304.

Unvaccinated individuals pose a public health threat to communities. Research has identified many factors associated with parental vaccine refusal and hesitancy toward childhood and adolescent immunizations. However, data on the effectiveness of interventions to address parental refusal are limited. We conducted a systematic review of four online databases to identify interventional studies. We used criteria recommended by the WHO's Strategic Advisory Group of Experts on immunization (SAGE) for the quality assessment of studies. Intervention categories and outcomes were evaluated for each body of evidence and confidence in overall estimates of effect was determined. There is limited evidence to guide implementation of effective strategies to deal with the emerging threat of parental vaccine refusal. There is a need for appropriately designed, executed and evaluated intervention studies to address this gap in knowledge.

[author abstract | minor relevance]

Sahoo, H. 2012. "Coverage of child immunisation and its determinants in India." *Social Change* 42(2): 187-202.

For reducing morbidity, mortality and disabilities from the six serious but preventable diseases—that is, tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis and measles—the government of India initiated Expanded Programme on Immunisation by making free vaccination services easily available to all eligible children. Despite considerable gains in immunisation coverage, a large chunk of children die from vaccine preventable diseases. The article sheds light on the coverage of child immunisation in India and estimates the effect of selected demographic and socio-economic characteristics on immunisation coverage. Data for the study have been utilised from DLHS-RCH, conducted during 2002–04. Both bi-variate and multivariate techniques have been carried out in due course of analysis. Multivariate analysis in the form of multinomial logistic regression is employed to see the net effect of each of the independent variables on the dependant variable, that is, immunisation (no immunisation, any immunisation and full immunisation). The different background characteristics considered for the study are age of mother, educational level of mother, birth order, sex of the child, place of residence, religion, caste and standard of living of

the household, antenatal care (ANC) and geographical region. The result reveals that about half the children are fully immunised but one-fifth of the children have not been immunised. There is a substantial variation in full immunisation across background variables. Those children are more likely to be fully immunised whose mothers are more educated. Besides this, the sex of the child, place of residence and standard of living of the household also show statistically significant effect on full immunisation.

[author abstract | minor relevance]

Salmon, D. A., L. H. Moulton, S. B. Omer, M. P. DeHart, S. Stokley and N. A. Halsey. 2005. "Factors associated with refusal of childhood vaccines among parents of school-aged children: a case-control study." ***Arch Pediatr Adolesc Med*** **159(5): 470-476.**

The rate of nonmedical exemptions to school immunization requirements has been increasing, and children with exemptions have contributed to outbreaks of vaccine-preventable diseases. To determine why parents claim nonmedical exemptions and to explore differences in perceptions of vaccines and vaccine information sources between parents of exempt and fully vaccinated children. Case-control study in Colorado, Massachusetts, Missouri, and Washington. Surveys were mailed to the parents of 815 exempt children (cases) and 1630 fully vaccinated children (controls randomly selected from the same grade and school) recruited from 112 private and public elementary schools. Surveys were completed by 2435 parents (56.1%). Most children (209 [75.5%] of 277) with nonmedical exemptions received at least some vaccines. The most common vaccine not received was varicella (147 [53.1%] of 277 exempt children). The most common reason stated for requesting exemptions (190 [69%] of 277) was concern that the vaccines might cause harm. Parents of exempt children were significantly more likely than parents of vaccinated children to report low perceived vaccine safety and efficacy, a low level of trust in the government, and low perceived susceptibility to and severity of vaccine-preventable diseases. Parents of exempt children were significantly less likely to report confidence in medical, public health, and government sources for vaccine information and were more likely to report confidence in alternative medicine professionals than parents of vaccinated children. Continued efforts must be made to educate parents about the utility and safety of vaccines, especially parents requesting nonmedical exemptions to school immunization requirements.

[author abstract | minor relevance

Salmon, D. A. and A. W. Siegel. 2001. "Religious and philosophical exemptions from vaccination requirements and lessons learned from conscientious objectors from conscription." ***Public Health Rep*** **116(4): 289-295.**

All jurisdictions in the US require proof of vaccination for school entrance. Most states permit non-medical exemptions. Public health officials must balance the rights of individuals to choose whether or not to vaccinate their children with the individual and societal risks associated with choosing not to vaccinate (i.e., claiming an exemption). To assist the public health community in optimally reaching this balance, this analysis examines the constitutional basis of non-medical exemptions and examines policies governing conscientious objection to conscription as a possible model. The jurisprudence that the US Supreme Court has developed in cases in which religious beliefs conflict with public or state interests suggests that mandatory immunization against dangerous diseases does not violate the First Amendment right to free exercise of religion. Accordingly, states do not have a constitutional obligation to enact religious exemptions. Applying the model of conscientious objectors to conscription suggests that if states choose to offer nonmedical exemptions, they may be able to optimally balance individual freedoms with public good by considering the sincerity of beliefs and requiring parents considering exemptions to attend individual educational counseling.

[author abstract | minor relevance]

Sanou, Aboubakary, Seraphin Simboro, Bocar Kouyaté, Marylène Dugas, Janice Graham and Gilles Bibeau. 2009. "Assessment of factors associated with complete immunization coverage in children aged 12-23 months: a cross-sectional study in Nouna district, Burkina Faso." ***BMC International Health and Human Rights*** **9(Suppl 1:S10).**

Background: The Expanded Program on Immunization (EPI) is still in need of improvement. In Burkina Faso in 2003, for example, the Nouna health district had an immunization coverage rate of 31.5%, compared to the national rate of 52%.This study identifies specific factors associated with immunization status in Nouna health district in order to advance improved intervention strategies in this district and in those with similar environmental and social contexts. Methods: A cross-sectional study was undertaken in 41 rural communities and one semi-urban area (urban in the

text). Data on 476 children aged 12 to 23 months were analyzed from a representative sample of 489, drawn from the Nouna Health Research Centre's Demographic Surveillance System (DSS) database. The vaccination history of these children was examined.The relationships between their immunization status and social, economic and various contextual variables associated with their parents and households were assessed using Chi square test, Pearson correlation and logistic regression. Results: The total immunization coverage was 50.2% (CI, 45.71; 54.69). Parental knowledge of the preventive value of immunization was positively related to complete immunization status (p = 0.03) in rural areas. Children of parents who reported a perception of communication problems surrounding immunization had a lower immunization coverage rate (p <0.001). No distance related difference exists in terms of complete immunization coverage within villages and between villages outside the site of the health centres. Children of non-educated fathers in rural areas have higher rates of complete immunization coverage than those in the urban area (p = 0.028). Good communication about immunization and the importance of availability of immunization booklets, as well as economic and religious factors appear to positively affect children's immunization status. Conclusions: Vaccination sites in remote areas are intended to provide a greater opportunity for children to access vaccination services. These efforts, however, are often hampered by the poor economic conditions of households and insufficient communication and knowledge regarding immunization issues. While comprehensive communication may improve understanding about immunization, it is necessary that local interventions also take into account religious specificities and critical economic periods. Particular approaches that take into consideration these distinctions need to be applied in both rural and urban settings.

[author abstract | main relevance]

Schmid, Barbara, Elizabeth Thomas, Jill Olivier and James. R. Cochrane. 2008. The contribution of religious entities to health in sub-Saharan Africa. Cape Town, Study commissioned by Bill and Melinda Gates Foundation. African Religious Health Assets Programme.

ARHAP was commissioned by the Bill and Melinda Gates Foundation to conduct a sub-Saharan study of health services provided by religious communities. The focus was on describing the services provided, their 'comparative advantage', the way they network and collaborate with each other and the public health system, and specific recommendations on funding of these services. A desk review of existing literature complimented in-depth case studies in Zambia, Uganda and Mali. This was a first opportunity for ARHAP to study RHAs in a predominantly Muslim setting.

[author abstract | minor relevance]

Sellars, Marie L., H. Reed Geertsen and Robert M. Gray. 1971. "Religion, alienation and immunization participation." *Rocky Mountain Social Science Journal* 8(1): 119-126.

[no author abstract | minor relevance]

Sensarma, Pinaki, Subhasis Bhandari and V. Raman Kutty. 2012. "Immunisation status and its predictors among children of HIV-infected people in Kolkata." *Health Soc Care Community* 20(6): 645-652.

World Health Organization and United Nations International Children's Emergency Fund have strongly recommended a sustained coverage of universal immunisation among all children against tuberculosis, polio, diphtheria, pertussis, tetanus and measles. In India, these vaccines under the universal immunisation programme are made available absolutely free of cost to all children through the public health system. Information regarding immunisation coverage among HIV exposed children in India is still very limited. The objective of this study was to estimate the proportion of children of people living with HIV who had been completely immunised by the age of 12 months and to find predictors of complete immunisation. A community-based cross-sectional survey was conducted in the Kolkata Metropolitan Area between 15 June and 14 September 2009 using a pre-structured interview schedule. Data were analysed from 256 care-givers of children (85.5% response rate) whose parents were randomly selected from the Bengal Network of HIV-positive people. Multiple logistic regression was used to estimate and test associations of predictors with complete immunisation. The percentage of children of people living with HIV completely immunised at the age of 12 months was 73.0% (67.3% to 78.1%), which was not significantly different from that for all children at 12 months. Mothers having received antenatal care [OR (odds ratio): 7.29; 95% confidence intervals (CI): 2.39-22.25], mothers having postprimary education (OR: 3.37; 95% CI: 1.45-7.81), children of Hindu and Christian religion (OR: 3.74; 95% CI: 1.63-8.62), children not belonging to scheduled castes, tribes and 'other backward classes' (OR: 2.08; 95% CI: 1.02-4.25) were significant independent predictors of complete

immunisation status of these children. This emphasises the imperative need for up-scaling of antenatal care among the pregnant mothers to ensure complete immunisation among their children. A special focus on girl child education should also be implemented to empower future mothers for a sustained improvement of child immunisation in the long-run. The current national immunisation programme should focus on the children from the Muslim community and those belonging to scheduled castes, tribes and other backward classes to improve coverage.

[author abstract | minor relevance]

Sharma, Suresh. 2007. Immunization coverage in India. Delhi, India, Institute of Economic Growth, University of Delhi Enclave.

Immunization against common childhood diseases has been an integral component of mother and child health services in India since adoption of the primary health care approach in 1978 being reinforced by the Declaration of Health Policy in 1983. The focus of this paper is to examine the status and performance during 1980-2004 of the child immunization programme in India, U.P. and Uttarakhand and to suggest policy and programmes for realization of the goals of universal immunization services. Data sources on immunization coverage used for this study include secondary data from the National Family Health Surveys and RCH Surveys in U.P. Uttarakhand and all over India. The analyses reveal that a large number of children who have contact with services providers are missed out of subsequent services. There is a wide gap between routine data and survey data. Almost every other child in Uttarakhand and U.P is incompletely protected and one out every of three children is a dropout from the immunization programme. Uttarakhand has not reached the goal of universal immunization coverage despite a focused and intense immunization programme since 1985.

[author abstract | minor relevance]

Shafi, Shuja, Robert Booy, Elizabeth Haworth, Harunor Rashid and Ziad A. Memish. 2008. "Hajj: Health lessons for mass gatherings." *Journal of Infection and Public Health* 1(1): 27-32.

The potential for spread of infectious diseases associated with mass gatherings is well recognised. Hajj, the unique annual mass gathering of over 2 million Muslims from all over the world, presents enormous challenges to the authorities in Saudi Arabia. They have a comprehensive programme updated annually, to ensure that all aspects of Hajj rituals are conducted safely and without major incident. The inevitable overcrowding in a confined area of such large numbers increases the risk of respiratory infections. Of these 'Hajj cough' is the most frequently reported complaint and is caused by a variety of viruses and bacteria. The outbreaks of meningococcal W135 strains in 2000 and 2001 with the associated high mortality showed the potential for international spread at mass gatherings. Collaboration between health policy makers and community leaders in the UK resulted in a rapid and impressive reduction of these infections. On-going disease surveillance and data analysis is necessary to better understand health risks and strengthen evidence base for health policy and prevention. The battle against spread of travel-related infections is a shared responsibility. Countries sending pilgrims should co-ordinate preventive measures by healthcare professionals and community groups. A multi-pronged approach involving awareness programme for pilgrims and their health advisers, supported by rapid diagnosis, timely treatment, prevention by vaccine, community measures, infection prevention and control practices are necessary. The benefits from such measures go beyond the Hajj to protect health and reduce inequalities. Establishing an international centre for public health relating to the Hajj will enable co-ordinating international health action and appropriate intervention.

[author abstract | minor relevance]

Singh, Bir, K. Suresh, Sanjiv Kumar and Padam Singh. 1996. "Pulse polio immunization in Delhi 1995-96 :a survey." *Indian J Pediatr* 64: 57-64.

A coverage evaluation survey of the campaign for mass Pulse Polio Immunization (PPI) on 9th December, 1995 and 20th January, 1996 in Delhi was carried out using the modified cluster sampling technique and a pre-structured proforma. Six-hundred-and-nine children of under-3 age group were covered in the survey. Overall coverage for both the doses was found to be 77%. While coverage for 9th December dose was found to be 80%, it rose to 90.2% on 20th January, 1996. Coverage levels for male and female children were similar. Parental literacy was seen as a definite factor, positively affecting the coverage levels. Proportion of not covered under PPI was significantly higher in the 0-6 months age group. Television and health workers were found to be the main sources of awareness about PPI.

[author abstract | minor relevance]

Spier, R. E. 2002. "Perception of risk of vaccine adverse events: a historical perspective." *Vaccine* 20: S78–S84.

The psychology of risk perception puts the emotive evaluation of the risks associated with vaccination incorrectly into a high risk category. This causes a wariness of taking vaccines that has its roots in the deep history of people. Humans do not seek to disturb the status quo by which they live. So the introduction of a vaccinal material into a healthy baby requires courage and an educated anticipation that some important benefit will accrue to this act at some future date. This situation encourages the emergence of a resistance to vaccines and the establishment of propagandists and movements to promote such ideas. The origin and development of such movements and the arguments which they prefer are the subject of this paper. These are based on religion in the first instance and then they widen to include the practical and technical problems which the early vaccinators experienced. The making of vaccination against smallpox compulsory at law in the UK in (effectively) 1867, inspired a most active and able opposition to vaccination. The concerns which such movements raise and ways in which they may be addressed are dealt with in the final sections.

[author abstract | minor relevance]

Ssengooba, Freddie Peter. 2010. "Performance-based contracting: casestudy for non-profit hospitals in Uganda." Public Health, London: London School of Hygiene Tropical Medicine.

Background: Performance-based contracting (PBC) and similar approaches to tie funding to measured performance have become major characteristics of innovative financing mechanisms. The World Bank and Uganda's Ministry of Health pilot tested PBC in five districts for a period 2003 to 2006. This PhD examines the response to this pilot among private-not-for-profit (PNFP) hospitals. Methods: A multi-level analysis was undertaken to explore essential up-stream and downstream institutional relationships and functions for PBC success. Agency-based and processbased organisational theories were used as alternative frameworks to build explanations of the response actions. In -depth case studies were carried out using mixed methods among PNFP hospitals that were assigned to different mix of PBC pilot components (performance targets, service output metering, performance feedback and financial bonuses). Seven PNFP hospitals participated in the PBC pilot while an additional three non-participating public hospitals provided opportunity for comparative analysis. In-depth interviews (28) covered hospital management teams (HMTs) and members of their Board of Governors (BOG) in all the ten hospitals. Five district health officials, two implementers of PBC pilots and two officials from Uganda Catholic Medical Bureau (UCMB) were also interviewed. A survey of 560 hospital staff at baseline and 741 after 12 months was undertaken among the 10 hospitals to measure changes in perceptions relevant to hospital performance. Participant observations were undertaken during meetings for PBC pilot activities as well as meetings for reviewing the performance of health activities at national and district levels. Major findings: Upstream support functions like financial disbursement, staff movements and costs of service provision formed contextual constraints for the hospitals to respond to PBC. Likewise, governance relationships between HMT and BOG provided additional constraints for PBC success. Hospital managers were expected to respond to several performance-focused interventions - many of which were contradictory to the PBC targets. Among the difficulties observed during the PBC pilot implementation, poor metering of performance and inadequate financing for the essential pilot elements were particularly problematic. The implementation arrangements generated unanticipated negative performance influences especially among the control group -a situation that may overestimate the pilot effectiveness. Findings show that financial bonuses at the organization level can create either motivation or demotivation among staff depending on the hygiene of the bonus allocation processes within an organization. Results from the staff surveys indicate that the drivers for performance improvements in the hospitals were related to job satisfaction, performance governance of work teams, availability of medicines and supplies, as well as staff satisfaction with their financial benefits. Conclusions: PBC may not achieve optimal effectiveness in settings without a package of supplementary interventions for improving resource inputs, performance governance and motivating the workforce. Financial incentives as predicted from agency theory were not sufficient for PBC success. Micro-care approaches aimed at improving the organisational processes (process-based theory) for better performance will be required for greater effectiveness of PBC initiatives and policies. Policy prescriptions and implementation arrangements for PBC interventions need to provide for on-going monitoring of mechanisms and consequences as a basis for mitigating harmful effects on health systems and optimizing the good.

[author abstract | main relevance]

Stein-Zamir, C., G. Zentner, N. Abramson, H. Shoob, Y. Aboudy, L. Shulman and E. Mendelson. 2007. "Measles outbreaks affecting children in Jewish ultra-orthodox communities in Jerusalem." *Epidemiology and Infection* 136(02).

In 2003 and 2004 two measles outbreaks occurred in Jewish ultra-orthodox communities in Jerusalem. The index case of the first outbreak (March 2003) was a 2-year-old unvaccinated child from Switzerland. Within 5 months, 107 cases (mean age 8.3¡7.5 years) emerged in three crowded neighbourhoods. The first cases of the second outbreak (June 2004) were in three girls aged 4–5 years in one kindergarten in another community. By November 2004, 117 cases (mean age 7.3¡6.5 years) occurred. The virus genotypes were D8 and D4 respectively. Altogether, 96 households accounted for the two outbreaks, with two or more patients per family in 79% of cases. Most cases (91.5%) were unvaccinated. Immunization coverage was lower in outbreak than in non-outbreak neighbourhoods (88.3% vs. 90. 3%, P=0.001). Controlling the outbreaks necessitated a culture-sensitive approach, and targeted efforts increased MMR vaccine coverage (first dose) to 95.2%. Despite high national immunization coverage (94–95%), special attention to specific sub-populations is essential.

[author abstract | minor relevance]

Stewart-Freedman, B. and N. Kovalsky. 2007. "An ongoing outbreak of measles linked to the United Kingdom in an ultra-orthodox Jewish community in Israel." *Euro Surveillance* 12(38): pii=3270.

[author abstract | minor relevance]

Streefland, Pieter, A. M. R. Chowdhury and Pilar Ramos-Jimenez. 1999. "Patterns of vaccination acceptance." *Social Science & Medicine* 49(12): 1705-1716.

Immunization is one of the major public health interventions to prevent childhood morbidity and death. The Expanded Programme on Immunization has gathered momentum worldwide since 1974. The range of vaccines in the programme is being expanded in the years to come. All across the globe, a high level of vaccination coverage has been reached and now needs to be sustained. In part, the coverage has been made possible by the broad acceptance of vaccinations, although there are variations resulting in different configurations of fully, partially and non-immunized children. Using the results of studies carried out by the Social Science and Immunization Project in Bangladesh, Ethiopia, India, Malawi, the Netherlands and the Philippines, this article describes and discusses patterns of vaccination acceptance and non-acceptance. It shows how context affects acceptance of vaccinations, and analyses the underlying reasons behind refusal and resistance. The article also develops conceptual tools for the analysis of acceptance and non-acceptance and discusses explanatory theoretical perspectives.

[author abstract | main relevance]

Streefland, Pieter H. 2001. "Public doubts about vaccination safety and resistance against vaccination." *Health Policy* 55: 159-172.

Immunisation is a cornerstone of preventive medicine. The prospects for continuation of this position are outstanding, since the medical intervention has been deemed as cost-effective in major publications on global disease prevention priorities. Recently, the financial foundations of global immunisation efforts have been strengthened considerably through the establishment of a large fund with a viable organisational underpinning. Routine vaccination programmes, usually known as Expanded Programme on Immunisation (EPI), now have an almost world-wide coverage. Despite high coverage levels, there have always been parents with doubts about the efficacy, safety and necessity of childhood vaccinations on offer. Although usually acceptance of vaccination was and is the general pattern, individual refusal and public resistance have been documented. This article focuses on the forms and implications of public doubts about vaccines and vaccinations in industrialised and in developing countries. Using, among other sources, material from the Social Science and Immunisation Project it explains how such reactions must be understood in context. It highlights different forms and trajectories of non-acceptance of vaccinations and discusses how policy makers and programme managers could address these issues.

[author abstract | minor relevance]

Subedi, Govind. 2008. "Demand side barriers to immunization services in Terai districts of Nepal." *Nepal Population Journal* 17(16): 91-104.

This article explores awareness, knowledge and practices related to the recommended immunization schedule and demand side barriers associated with low immunization coverage drawing on data from a household survey conducted in three central Terai districts of Nepal. The survey collected data from 450 married women with at least one child aged 12-23 months from 30 clusters (10 clusters in each districts). Key findings include the following. Heard about children immunization among mothers is universal but immunization coverage ranges from 94 percent for vaccines of DPT 3 and measles to 99 percent for OPV. Muslims and girls tend to have lower immunization coverage compared to their corresponding counterparts. The common places for immunization of child were health institution (64%), immunization campaign place (39%) and at home (6%). Key demand side barriers to full immunization coverage are lack of knowledge and misconception about immunization, lack of access to services such as service centers, heavy household work and carelessness including culture/family barriers. The article concludes that full immunization coverage is still beyond in case of DPT1 and measles. This holds especially for Muslims and girl children. Some of these demand side barriers can be addressed through effective mobilization of FCHV including media while others such as heavy household work appears to be associated with poverty. Some of the cultural barriers such as no permission from family to visit the health facility to the young mothers, caste and gender discrimination warrant more complex interventions – the women empowerment, inclusiveness and male involvement in immunization coverage programs.

[author abstract | minor relevance]

Tan, Michael Lim. 1995. "All in the name of life." *Reproductive Health Matters* 3(6): 29-30.

In the Philippines the 'pro-lifers' got a court order restraining the provision of anti-tetanus vaccinations in health centres and used fear tactics that caused women to worry they would miscarry if they were vaccinated against tetanus. Consequently, the numbers of women getting an anti-tetanus vaccination dropped. This is the third time the 'pro-lifers' have struck in the Philippines. First, they claimed that all contraceptives were abortifacient. In 1994, they spread rumours that condoms did not protect against HIV. Now a tetanus vaccine scare.

[author abstract | minor relevance]

Tomori, Oyewale. 2011. "From smallpox eradication to the future of global health: Innovations, application and lessons for future eradication and control initiatives." *Vaccine* 29: D145-D148.

Technological advancements, including landmark innovations in vaccinology through molecular virology, and significant transformation and changes in the society have taken place since the eradication of smallpox thirty years ago. The success with eradicating smallpox gave confidence for initiating the eradication of other diseases, such as malaria and polio. However, these efforts have not been as effective, as recorded for small pox, for a variety of reasons. There is now a debate within the global health community as to whether eradication campaigns should be abandoned in favor of less costly and perhaps more effective primary health and containment or control programmes. Significant changes that have taken place in the last thirty years, since the eradication of smallpox include, among others, (i) post-colonial political changes, with varying commitment to disease eradication initiatives, especially in the parts of the world most burdened by infectious and vaccine preventable diseases, (ii) innovations leading to the development of new and highly effective vaccines, targeted to specific diseases, (iii) the transformation brought about by improvement in education and the new global access to information (cell phones, internet, etc.), leading to an unlimited access to different types of information, subject to either positive or negative use. At the onset of eradication of smallpox, global health was confined in its operation. Today, global health is at the intersection of medical and social science disciplines—including demography, economics, epidemiology, political economy and sociology. Therefore, in considering the issue of disease eradication, medical and social perspectives must be brought into play, if future eradication programmes must succeed. The paper discusses the roles of these disciplines in disease control and eradication, especially as it affects sub Saharan Africa, the melting pot and verdant pasture of infectious diseases.

[author abstract | minor relevance]

Toni-Uebari, Thelma and Baba Inusa. 2009. "The role of religious leaders and faith organisations in haemoglobinopathies: a review." *BMC Blood Disorders* 9(1): 6.

Sickle cell disease (SCD) is now the most common genetic condition in the world including the UK with an estimate of over 12,500 affected people and over 300 new births per year. Blood transfusion therapy plays a very important role

as a disease-modifying strategy in severe SCD e.g. primary and secondary stroke prevention and other acute life-threatening complications such as acute chest infections and acute multi-organ failure. Blood transfusion, however, carries a number of risks including alloimmunisation. There is the need to increase the level of awareness and education about SCD and also to increase blood donation drive among affected communities. These communities are mostly ethnic minority populations who are recognised to have poor access to health care services. Due to the strong impact of religion on these populations, faith organisations may provide potential access for health promotion and interventions. A literature search was conducted to find studies published between 1990-2008 aimed at examining the influence of religious leaders and faith organisations in health, with particular reference to haemoglobinopathies. Eleven studies were reviewed covering a variety of health interventions. The findings suggest that involvement of religious leaders and faith organisations in health related interventions improved the level of acceptance, participation and positive health outcomes within the faith communities. Religious leaders and faith organisations have the potential to influence health education, health promotion and positive health outcomes amongst members of their faith community. They also provide potential access to at-risk populations for increasing awareness about SCD, encouraging health service utilization and ethnic blood donor drives.

[author abstract | minor relevance]

UCMB-UPMB-UMMB. 2007. Facts and figures of the PNFP's: Knowing and understanding the facility-based PNFP health sub-sector in Uganda. Uganda Catholic Medical Bureau, Uganda Protestant Medical Bureau and the Uganda Muslim Medical Bureau.

The PNFP health sector in Uganda is a group of large networks of service delivery points spread all across the country. When considered together, this sub-sector is reckoned to provide about one third of the total volume of health services provided to the people of Uganda. Despite its long tradition of service and the longstanding collaboration with Government, it has been noticed that some of the features and characteristics of the sector are either unknown or wrongly perceived by both the general public, decision makers and planners. The purpose of these notes is to provide a summary of facts and figures-largely quantitative data-that give background information about the PNFP sub-sector, to facilitate knowledge and understanding of the sub-sector, its achievements, its current critical constraints and problems.

[author abstract | minor relevance]

UNICEF. 2000. Communication handbook for Polio Eradication and Routine EPI. New York, United Nations Childrens Fund.

[author abstract | minor relevance]

UNICEF. 2001. Combatting antivaccination rumours: lessons learned from case studies in East Africa. Nairobi, Kenya, Eastern And Southern Africa Regional Office, United Nations Childrens Fund.

The Expanded Programme on Immunisation (EPI), set up in 1974, has been one of the largest and best documented public health programmes in history. The present report seeks to fill a gap on the EPI bookshelf by documenting an underreported phenomenon in developing countries, namely, the rise of antivaccination campaigns mounted against vaccination.

[author abstract | main relevance]

UNICEF. 2004. Building trust through immunization and belief. New York, NY, (UNICEF) United Nations Children's Fund.

Religious leaders, with their tremendous authority at the grass roots, are key to garnering community support for broad immunization coverage. This workbook, designed for communication and programme officers and their immunization partners, provides guidelines on forging alliances with religious leaders and groups on immunization. It also offers advice on options that can be taken when confronting resistance to immunization, illustrated by success stories from three countries.

[author abstract | main relevance]

UNICEF. 2004. When every child counts: engaging the underserved communities for polio eradication in Uttar Pradesh, India. United Nations Children's Fund (UNICEF), Regional Office for South Asia.

A momentous, historic drive is underway in India to put an end to rampant ravages of the wild poliovirus on young children's limbs, health and future. The stage where actions unfold – as documented in the following pages – is a populous state of 170 million people, Uttar Pradesh, also the world's epicenter in 2002 of the communicable disease. Though it has been largely contained around the globe, the wild poliovirus remains alive and sprightly, particularly in Uttar Pradesh. It threatens not only to reintroduce polio in other parts of India, but also to neighbouring countries and those afar, when the disease is nearing a closed chapter in history, resembling small pox in the seventies. The race against time to free the nation of polio by the end of 2005 has spawned two distinctive, strategic communication interventions designed and supported by UNICEF to change opinion, attitude and behaviour of families – from resistance to acceptance – of OPV vaccination. The Underserved Strategy, the focus of this working paper, entails massive engagement of religious leaders, intellectuals, thinkers, doctors, teachers in Madrassas and undergraduate students in the monumental public health movement to eradicate polio. Partnership building works hand in hand with advocacy to create an enabling environment where opinions in favour of polio vaccination are generated to mitigate resistance to the vaccine. More importantly, interpersonal outreach is organized and targeted at certain segments of communities, including Muslims, scheduled caste Hindus, scheduled tribes and the poor that are deprived of access to basic services, which has molded a resistant attitude against the free, polio vaccination service. The alliance with partners in the Muslim world of UP is closely linked to another strategy: the Social Mobilization Network made up of over 3,000 community mobilizers, forming an interpersonal communication channel to reach nearly the entire state. It works in sync with a host of partners that range from global – WHO, Rotary International and the Center of Diseases Control, USA – to national – Government of India, GOI-WHO National Polio Surveillance Project, state governments, the CORE Group of International NGOs and Rotary India – and local, from NGOs to individuals of stature or who are active in their neighbourhoods. The combined interventions have yielded positive results and produced rich lessons on strategic communication for social change. They have also brought invaluable experiences to UNICEF and partners on working with religious communities and institutions toward a social goal.

[Report intro | main relevance]

UNICEF. 2007. "Nigeria – UNICEF Country Office EPI Update." April-June.

[no author abstract – newsletter | minor relevance]

UNICEF. 2011. Polio communications quarterly update. New York, NY, United Nations Children's Fund (UNICEF).

[*no author abstract | minor relevance]*

UNICEF. 2011. Polio communications quarterly update: report to the independent monitoring board. New York, NY, United Nations Children's Fund (UNICEF).

[*no author abstract | minor relevance]*

UNICEF. 2012. Missed: polio communications quarterly update. New York, NY, United Nations Children's Fund (UNICEF).

[*no author abstract | minor relevance]*

UNICEF. 2012. On the frontline: Polio communications quarterly update. New York, NY, United Nations Children's Fund (UNICEF).

[*no author abstract | minor relevance]*

UNICEF. 2012. Partnering with religious communities for children. New York, United Nations Children Fund.

[*no author abstract | minor relevance]*

UNICEF. 2013. Tracking anti-vaccination sentiment in Eastern European social media networks. New York, NY, United Nations Children's Fund, Division of Communication, Social and Civic Media Section.

[*no author abstract | minor relevance]*

UNICEF. 2013. Trust: Polio communications quarterly update. New York, NY, United Nations Children's Fund (UNICEF).

[*no author abstract | main relevance]*

Van den Hof, Susan, Marina A. E. Conyn–van Spaendonck and Jim E. van Steenbergen. 2002. "Measles epidemic in The Netherlands, 1999–2000." *J Infect Dis* 186: 1483-1486.

In 1999–2000, a measles epidemic occurred in The Netherlands, with 3292 reported cases; 94% of the affected patients had not been vaccinated. Only 1 patient had received 2 doses of vaccine. Three patients died, and 16% had complications. For the unvaccinated population, the incidence per 1000 inhabitants 15 months to 14 years old increased from83 (95% confidence interval [CI], 53–113), in municipalities with vaccine coverage rates 90%, to 200 (95% CI, 153–247), in municipalities with coverage rates 195%; for the vaccinated population, the incidence increased from 0.2 (95% CI, 0.1–0.4) to 1.4 (95% CI, 0.9–1.9). Unvaccinated individuals were 224 times (95% CI, 148–460 times) more likely to acquire measles than were vaccinated individuals; the relative risk increased with decreasing vaccine coverage. Herd immunity outside unvaccinated clusters was high enough to prevent further transmission. More case patients came from the vaccine-accepting population living among unvaccinated clusters than from individuals who declined vaccination and who lived among the vaccine-accepting population.

[*author abstract | minor relevance]*

Veenman, J. and L.G. Jansma. 1992. "The 1978 Dutch polio epidemic: a sociological study of the motives for accepting or refusing vaccination." *Netherlands Journal of Sociology* 16(21-48).

[*no author abstract | minor relevance]*

Waisbord, Silvio. 2004. Assessment of communication programs in support of polio eradication: global trends and case studies. Washington DC, The CHANGE Project, Academy for Educational Development/The Manoff Group.

This document reports the findings of an assessment conducted between June 2003 and January 2004 of communication programs in support of the Polio Eradication Initiative (PEI). The United States Agency for International Development (USAID) Washington solicited the CHANGE Project to carry out an assessment of communication programs in support of polio eradication (PE).

[author abstract | minor relevance]

Weiss, William M., Manojkumar Choudhary and Roma Solomon. 2013. "Performance and determinants of routine immunization coverage within the context of intensive polio eradication activities in Uttar Pradesh, India: Social Mobilization Network (SM Net) and Core Group Polio Project (CGPP)." *BMC International Health and Human Rights* 13(25).

Background: Studies that have looked at the effect of polio eradication efforts in India on routine immunization programs have provided mixed findings. One polio eradication project, funded by US Agency for International Development (USAID) and carried out by the CORE Group Polio Project (CGPP) in the state of Uttar Pradesh of India, has included the strengthening of routine immunization systems as a core part of its polio eradication strategy. This paper explores the performance of routine immunization services in the CGPP intervention areas concurrent with intensive polio eradication activities. The paper also explores determinants of routine immunization performance such as caretaker characteristics and CGPP activities to strengthen routine immunization services. Methods: We conduct secondary data analysis of the latest project household immunization survey in 2011 and compare these findings to reports of past surveys in the CGPP program area and at the Uttar Pradesh state level (as measured by children's receipt of DPT vaccinations). This is done to judge if there is any evidence that routine immunization services are being disrupted. We also model characteristics of survey respondents and respondents' exposure to CGPP, communication activities against their children's receipt of key vaccinations in order to identify determinants of routine immunization coverage. Results: Routine immunization coverage has increased between the first survey (2005 for state level estimates, 2008 for the CGPP program) and the latest (2011 for both state level and CGPP areas), as measured by children's receipt of DPT vaccination. This increase occurred concurrent with polio eradication efforts intensive enough to result in interruption of transmission. In addition, a mothers' exposure to specific communication materials, her religion and education were associated with whether or not her children receive one or more doses of DPT. Conclusions: A limitation of the analysis is the absence of a controlled

comparison. It is possible routine immunization coverage would have increased even more in the absence of polio eradication efforts. At the same time, however, there is no evidence that routine immunization services were disrupted by polio eradication efforts. Targeted health communications are helpful in improving routine immunization performance. Strategies to address other determinants of routine immunization, such as religion and education, are also needed to maximize coverage. *[author abstract | main relevance]*

Widmer, Mariana, Ana P. Betran, Mario Merialdi, Jennifer Requejo and Ted Karpf. 2011. "The role of faith-based organizations in maternal and newborn health care in Africa." *International Journal of Gynecology & Obstetrics* 114(3): 218-222.

Background: Global disparities in maternal and newborn health represent one of the starkest health inequities of our times. Faith-based organizations (FBOs) have historically played an important role in providing maternal/newborn health services in African countries. However, the contribution of FBOs in service delivery is insufficiently recognized and mapped. Objectives: A systematic review of the literature to assess available evidence on the role of FBOs in the area of maternal/newborn health care in Africa. Search strategy: MEDLINE and EMBASE were searched for articles published between 1989 and 2009 on maternal/newborn health and FBOs in Africa. Results: Six articles met the criteria for inclusion. These articles provided information on 6 different African countries. Maternal/newborn health services provided by FBOs were similar to those offered by governments, but the quality of care received and the satisfaction were reported to be better. Conclusion: Efforts to document and analyze the contribution of FBOs in maternal/newborn health are necessary to increase the recognition of FBOs and to establish stronger partnerships with them in Africa as an untapped route to achieving Millennium Development Goals 4 and 5.

[author abstract | minor relevance]

Wielders, C. C., R. S. Van Binnendijk, B. E. Snijders, G. A. Tipples, J. Cremer, E. Fanoy, S. Dolman, W. L. Ruijs, H. J. Boot, H. E. De Melker and S. J. Hahné. 2011. "Mumps epidemic in orthodox religious low-vaccination communities in the Netherlands and Canada, 2007 to 2009." *Euro Surveillance* 16(41): pii=19989.

We assessed the epidemiological characteristics of a mumps virus epidemic (genotype D) that occurred in the Netherlands between August 2007 and May 2009 and its association with a subsequent mumps outbreak in Canada. In the Netherlands, five data sources were used: notifications (only mandatory since the end of 2008) (56 cases), laboratory confirmation data (177 cases), a sentinel general practitioner (GP) database (275 cases), hospitalisation data (29 cases) and weekly virological reports (96 cases). The median age of cases in the notification, laboratory and GP databases ranged from 13 to 15 years. The proportion of cases that were unvaccinated ranged from 65% to 85% in the notification, laboratory and GP databases. Having orthodox Protestant beliefs was the main reason for not being vaccinated. In Canada, a mumps virus strain indistinguishable from the Dutch epidemic strain was detected between February and October 2008 in an orthodox Protestant community with historical and family links to the affected community in the Netherlands, suggesting that spread to Canada had occurred. Prevention and control of vaccine-preventable diseases among population subgroups with low vaccination coverage remains a priority.

[author abstract | minor relevance]

Williams, G. 2010. *Angel of death: the story of smallpox.* Houndmills, UK, Palgrave Macmillan.

[no author abstract | minor relevance]

Wong, Li Ping. 2009. "Physicians' experiences with HPV vaccine delivery: Evidence from developing country with multiethnic populations." *Vaccine* 27(10): 1622-1627.

Physicians' experiences in providing human papillomavirus (HPV) immunization were assessed by mailed questionnaire. Response rate of 41.4% was achieved. Malay Muslim physicians were more likely to agree that cultural sensitivity is an issue when recommending HPV vaccines. Pediatricians and family physicians were more likely to agree that acceptance is better if vaccines were recommended to prevent cervical cancer than to prevent a sexually transmitted disease. Near 70% rated success of HPV vaccines recommendation in their practice as very poor with the majority patients preferred to postpone immunization. Physicians reported cultural disparities in vaccine uptake and perceived high vaccination cost limits its use.

[author abstract | minor relevance]

Wonodi, C. B., L. Privor-Dumm, M. Aina, A. M. Pate, R. Reis, P. Gadhoke and O. S. Levine. 2012. "Using social network analysis to examine the decision-making process on new vaccine introduction in Nigeria." *Health Policy and Planning* 27(suppl 2): ii27-ii38.

The decision-making process to introduce new vaccines into national immunization programmes is often complex, involving many stakeholders who provide technical information, mobilize finance, implement programmes and garner political support. Stakeholders may have different levels of interest, knowledge and motivations to introduce new vaccines. Lack of consensus on the priority, public health value or feasibility of adding a new vaccine can delay policy decisions. Efforts to support country-level decision-making have largely focused on establishing global policies and equipping policy makers with the information to support decision-making on new vaccine introduction (NVI). Less attention has been given to understanding the interactions of policy actors and how the distribution of influence affects the policy process and decision-making. Social network analysis (SNA) is a social science technique concerned with explaining social phenomena using the structural and relational features of the network of actors involved. This approach can be used to identify how information is exchanged and who is included or excluded from the process. For this SNA of vaccine decision-making in Nigeria, we interviewed federal and state-level government officials, officers of bilateral and multilateral partner organizations, and other stakeholders such as health providers and the media. Using data culled from those interviews, we performed an SNA in order to map formal and informal relationships and the distribution of influence among vaccine decision-makers, as well as to explore linkages and pathways to stakeholders who can influence critical decisions in the policy process. Our findings indicate a relatively robust engagement of key stakeholders in Nigeria. We hypothesized that economic stakeholders and implementers would be important to ensure sustainable financing and strengthen programme implementation, but some economic and implementation stakeholders did not appear centrally on the map; this may suggest a need to strengthen the decision-making processes by engaging these stakeholders more centrally and earlier.

[author abstract | minor relevance]

Woods, Teresa E., Michael H. Antoni, Gail H. Ironson and David W. Kling. 1999. "Religiosity is associated with affective and immune status in symptomatic HIV-infected gay men." *Journal of Psychosomatic Research* 46(2): 165-176.

This study examines the relationship between religiosity and the affective and immune status of 106 HIV-seropositive mildly symptomatic gay men (CDC stage B). All men completed an intake interview, a set of psychosocial questionnaires, and provided a venous blood sample. Factor analysis of 12 religiously oriented response items revealed two distinct aspects to religiosity: religious coping and religious behavior. Religious coping (e.g., placing trust in God, seeking comfort in religion) was significantly associated with lower scores on the Beck Depression Inventory, but not with specific immune markers. On the other hand, religious behavior (e.g., service attendance, prayer, spiritual discussion, reading religious literature) was significantly associated with higher T-helper-inducer cell (CD41) counts and higher CD41 percentages, but not with depression. Regression analyses indicated that religiosity's associations with affective and immune status was not mediated by the subjects' sense of self-efficacy or ability to actively cope with their health situation. The associations between religiosity and affective and immune status also appear to be independent of symptom status. Self-efficacy, however, did appear to contribute uniquely and significantly to lower depression scores. Our results show that an examination considering both subject religiosity as well as sense of self-efficacy may predict depressive symptoms in HIV-infected gay men better than an examination that considers either variable in isolation.

[author abstract | minor relevance]

Yadav, R.J. and Padam Singh. 2004. "Immunisation of children and mothers in Northeastern states." *Health and Population* 27(3): 185-193.

Immunisation status of children and mothers in the northeastern states (except Assam) was evaluated in comparison with data at the national level using a WHO 30-cluster survey methodology. About 1,400 children (1-2 years age) and mothers (with children up to one year of age) from one district each from these states were included in the study. The different vaccines that the children received and information on pregnant women receiving Tetanus Toxoid and ANC were collected. The study revealed that about 52 percent of children in north-eastern states received the full dose of (BCG, DPT, OPV, Measles) vaccination as against 63 percent at the country level. Further, about 33 percent of the pregnant women received the complete package of ANC consisting of minimum three ANC visits, two TT/Booster doses and IF A tablets compared to 53 per cent at the all India level The proportion

of fully immunized children and fully vaccinated mothers was lower among illiterate mothers and those living in small, inaccessible and tribal villages. The above findings indicate that literacy among women is the key for better compliance of immunization. Information Education and Communication (IEC) activities need to be targeted to educate mothers with a special focus on those residing in remote villages in these states.

[author abstract | minor relevance]

Yahya, Maryam. 2006. Polio vaccines: difficult to swallow. The story of a controversy in northern Nigeria. Brighton, Brighton: Institute for Development Studies.

Global health and poverty reduction discourses have recognised immunisation as one of the most affordable and effective means of reducing child mortality and in a broader sense, as an essential contribution to poverty reduction efforts. While immunisation comes with countless benefits, it is potentially a complex and difficult health strategy to enforce. Decisions on broader health as well as immunisation goals are often made at a global level to be incorporated and adapted in to national health plans and budgets. Evidently for immunisation campaigns, the journey from the global to the local is a vulnerable and unpredictable one. Indeed 'anti-vaccination rumours' have been defined as a major threat to achieving vaccine coverage goals. This is demonstrated in this paper through a case study of responses to the Global Polio Eradication Campaign (GPEI) in northern Nigeria where Muslim leaders ordered the boycott of the Oral Polio Vaccine (OPV). A 16-month controversy resulted from their allegations that the vaccines were contaminated with anti-fertility substances and the HIV virus was a plot by Western governments to reduce Muslim populations worldwide. Through desk and field research, this paper explores the political and cultural angles of this controversy revealing deeper dimensions and complex factors that have contributed to the rejection of the Oral Polio Vaccine (OPV) in northern Nigeria. Through the lens of the local northern Nigerian communities, this paper examines and brings to question the roles, responsibilities and actions of global and national actors in implementing effective immunisation campaigns with a view to curbing and managing 'anti-vaccination rumours' and informing better practices for international health partnerships. I will argue that while the polio vaccine boycott has proved costly in both economic and human terms, it has opened up important lines of communication at both global and national levels, deepening dialogue, participation and sensitivity.

[no author abstract | main relevance]

Yahya, Maryam. 2007. "Polio vaccines—"no thank you!" barriers to polio eradication in Northern Nigeria." *African Affairs* 106(423): 185-204.

This article is an analysis of the boycott of the polio vaccination campaign in northern Nigeria, which has indefinitely stalled global polio eradication targets. The polio immunization drive was brought to a standstill in July 2003 as religious and political leaders in northern Nigeria responded to fears that the vaccines were deliberately contaminated with anti-fertility agents and the HIV virus. The article explores the political and cultural angles of this controversy, revealing deeper dimensions that have contributed to the rejection of polio vaccines in northern Nigeria. In doing so, it argues that there is an underlying logic to public anxieties often dismissed as 'anti-vaccination rumours'. Although the polio vaccine boycott has proved costly in both economic and human terms, it has opened important lines of communication at global and national levels, potentially deepening dialogue, participation and sensitivity necessary for global health campaigns. Although immunization comes with countless benefits, it is a complex and difficult health strategy to enforce. Decisions on broader health as well as immunization goals are often made at a global level to be incorporated and adapted into national health plans and budgets. Evidently for immunization campaigns, the journey from the global to the local is a vulnerable and unpredictable one.

[author abstract | main relevance]

Zarocostas, John. 2004. "UNICEF taps religious leaders in vaccination push." *The Lancet* 363(9422): 1709-1709.

[no author abstract – commentary | minor relevance]

Zimmerman, R. 2006. "Ethical analysis of HPV vaccine policy options." *Vaccine* 24(22): 4812-4820.

Vaccines against human papillomavirus (HPV) may soon be licensed. In contrast to most vaccine-preventable diseases, which are transmitted by air or casual contact, HPV is primarily transmitted by sexual contact. An analysis that applies ethical theories, such as utilitarianism, rule of double effect, and principlism, is needed for policy

considerations. These analyses reveal that HPV vaccination can be recommended universally, including at ages 11–12 years. However, given concerns for autonomy, justice, as not all persons are at risk, and non-maleficence, HPV vaccine should not be mandated for school entry. Economic justice indicates a need to provide vaccination for the disadvantaged.

[author abstract | minor relevance]

Zimmerman, Richard K. 2013. "Ethical analyses of institutional measures to increase health care worker influenza vaccination rates." *Vaccine* (forthcoming).

Health care worker (HCW) influenza vaccination rates are modest. This paper provides a detailed ethical analysis of the major options to increase HCW vaccination rates, comparing how major ethical theories would address the options. The main categories of interventions to raise rates include education, incentives, easy access, competition with rewards, assessment and feedback, declination, mandates with alternative infection control measures, and mandates with administrative action as consequences. The aforementioned interventions, except mandates, arouse little ethical controversy. However, these efforts are time and work intensive and rarely achieve vaccination rates higher than about 70%. The primary concerns voiced about mandates are loss of autonomy, injustice, lack of due process, and subsuming the individual for institutional ends. Proponents of mandates argue that they are ethical based on beneficence, non-maleficence, and duty. A number of professional associations support mandates. Arguments by analogy can be made by mandates for HCW vaccination against other diseases. The ethical systems used in the analyses include evolutionary ethics, utilitarianism, principalism (autonomy, beneficence, non-maleficence, and justice), Kantism, and altruism. Across these systems, the most commonly preferred options are easy access, assessment and feedback, declinations, and mandates with infection control measures as consequences for non-compliance. Given the ethical imperatives of non-maleficence and beneficence, the limited success of lower intensive interventions, and the need for putting patient safety ahead of HCW convenience, mandates with additional infection control measures as consequences for non-compliance are preferred. For those who opt out of vaccination due to conscience concerns, such mandates provide a means to remain employed but not put patient safety at risk.

[author abstract | minor relevance]