



# Why Invest in Communication for Immunization?

Evidence and Lessons Learned

Silvio Waisbord  
Heidi Larson

# TABLE OF CONTENTS

---

ACKNOWLEDGEMENTS ..... ii

INTRODUCTION ..... 1

FOUR KEY CHALLENGES AND THE ROLE OF COMMUNICATION ..... 5

WHAT CAN COMMUNICATION DO? ..... 7

CONCLUSION ..... 11

RECOMMENDATIONS ..... 13

TEN LESSONS ..... 15

FURTHER READING ..... 16

# ACKNOWLEDGEMENTS

---

*Acknowledge comments from Mike Favin, Rebecca Fields, Lora Shimp, Yaya Drabo, Peter Gottert, Mark Rasmusson, Scott Wittet, Jose Rimón.*

*Editing: Kim Martin*

*Design: Francine Mueller*

*Photo Credits:*

# INTRODUCTION



Since the launch of the Expanded Program on Immunization in 1974, vaccination programs have been one of the world's most cost-effective public health strategies. These programs reduce the burden of infectious diseases globally and serve as a key building block for health systems in the developing world.

Initially, immunization programs included vaccines against six diseases: polio, measles, neonatal tetanus, diphtheria, pertussis, and tuberculosis. Recently, many countries have introduced other vaccines (hepatitis B, yellow fever, Haemophilus influenza type B) based on several considerations such as the prevalence of specific diseases, the availability of new vaccines, and additional financial resources.

Immunization is a story of both successes and failures. With the push to universal immunization in the 1980s, the world accelerated immunization coverage in an unprecedented fashion, reaching reportedly over 70 percent of children globally with the basic six vaccines by the end of 1990. Yet coverage has stagnated since then, leading to 2 million unnecessary deaths annually from vaccine preventable diseases. Global and regional averages also mask lower local coverage, particularly in sub-Saharan Africa, where some 17 countries have immunization coverage levels under 50 percent. In fact, 30 million infants worldwide are still not immunized with even basic vaccines. In many countries, immunization services disproportionately miss the poorest and most excluded populations. Even when services are available, a substantial number of caregivers still fail to complete the immunization schedule.

The stagnation in vaccination coverage is not without cause. Problems range from infrastructural problems of health delivery systems to funding pressures that divert resources away from routine immunization.

Immunization programs are also affected by the interplay of local and national politics. Challenges have ranged from isolated episodes of non-acceptance (due to religious, ethical, and medical considerations) to active political mobilization against immunization programs driven by political and conspiratorial arguments. This is of particular concern considering recent growing evidence of declining confidence in governments in developed and developing countries.

In this context, it cannot be assumed that entire populations will trust and accept scientific endorsements of

specific vaccines and immunization in general. Even when a majority of caregivers accepts vaccines and are motivated to comply with vaccination schedules, immunization programs are likely to encounter pockets of refusal and resistance. Persuading these populations to accept vaccination is not simply a matter of disseminating knowledge about vaccines. Knowing about vaccination, although important, does not necessarily lead to immunization acceptance. The impact of information on immunization behavior is mediated by socio-cultural and political influences, a situation that calls for locally appropriate communication responses.

Immunization programs confront a number of challenges: low and stagnant coverage levels, under-utilization of vaccines, the introduction of new — often more expensive — vaccines, inadequate long-term sustainable financing, competition for funding with other health interventions, and a global communication environment filled with contradictory information about vaccine safety. These are urgent challenges that, if not effectively and quickly addressed, could further undermine past achievements.

## **Rationale**

This report makes a case for revitalizing investments in communication for immunization. It considers communication in a broad sense, including advocacy, social and community mobilization, and information, education, and communication (IEC) activities. It identifies communication challenges that affect the success of immunization services; offers evidence of the contributions of communication activities; identifies lessons learned, and suggests ways in which communication can continue to strengthen immunization programs.

Without well-planned, adequately funded strategic communication, immunization programs fall short of meeting and sustaining coverage goals. Communication is particularly needed to achieve vaccination coverage in hard-to-reach populations and to build trust in vaccines among those who question them. Stakeholders also need to advocate for immunization programs to persuade governments, donors, and other actors to support vaccine programs vis-à-vis other health programs and priorities.

Supporting immunization goals is one of the many contributions of the field of communication to health and international development programs. Recent evaluation and meta-analysis studies documented the impact of well-designed, research-based communication interventions on achieving health outcomes. (Snyder & Hamilton 2001). Studies conclude that communication activities are even more likely to affect care-seeking behaviors when health systems offer a supportive environment and structural barriers are minimal. Among other findings, studies show a positive association between exposure to communication campaigns and behavior, and a statistically significant impact of communication interventions that promote the initiation of new behaviors and retention of existing desired behaviors (Piotrow et al. 1997; Piotrow et al. 2003; Westoff 1999).

Despite the proven successes of communication programs, communication activities often do not receive adequate funding. They are often considered optional and, therefore, vulnerable to being cut in budget shortages. According to the *2002 State of the World's Vaccines and Immunization Report*, immunization programs only assign between one and four percent of the budgets to communication activities. Considering what communication is expected to contribute, this level of funding is insufficient. Funding should be commensurate with the scope of communication tasks.

This report identifies four key challenges that immunization programs are currently confronting, documents the success of communication in support of immunization, and proposes ways in which funders can support investments in communication for immunization. It encourages stakeholders responsible for allocating budgets in immunization programs at the global, national and state levels to recognize that communication is crucial to strengthening vaccine demand and supply, and that the success of communication interventions depends on the resources allocated.

Even the best-designed and carefully implemented communication interventions in support of immunization will deliver few results if not properly funded. Because funding requirements vary according to the goals and challenges of immunization programs at regional and national levels, specific needs assessments should be conducted to determine adequate communication budgets.

---



# FOUR KEY CHALLENGES AND THE ROLE OF COMMUNICATION



1. Children do not get vaccinated if caregivers do not know the value of vaccines, when children need to be immunized and where vaccines are administered

Studies show that knowledge gaps underlie low compliance with vaccination schedules (Bond et al. 1998; Bukenya & Freeman 1991; Eng et al. 1991; Harmanci et al. 2003; Khanom & Salahuddin 1983). Caregivers are less likely to complete immunization schedules if they are poorly informed about the need for immunization, logistics (time, date, and place of vaccination), and the appropriate series of vaccines to be followed. Although knowledge per se is insufficient to create demand, poor knowledge about the need for vaccination and when the next vaccination is due is a good predictor of poor compliance.

2. Children do not get vaccinated when communities are excluded or beyond the reach of immunization services

A substantial number of children worldwide do not complete immunization schedules because neither health services nor conventional communication mechanisms regularly reach their communities. In some communities, low immunization rates are associated with families living a long distance from health services, having little access or exposure to large-scale or local media, and low doctor- and nurse-patient ratios (e.g., slum-dwellers in the Philippines and South Africa, nomadic populations in Sub-Saharan Africa, and internal migrants in Brazil, Cameroon, and Mozambique). Underserved communities consistently show low immunization coverage. Innovative outreach strategies are needed that are particularly targeted to reach children who are excluded or beyond the reach of immunization services.

3. Children do not get vaccinated if caregivers do not trust the safety of vaccines

Neither anti-vaccination information nor refusal to get children immunized is new. Historically, populations have rejected immunization due to concerns about vaccine safety, as well as political, cultural, and religious reasons (Greenough 1995). Today, trust and acceptance of immunization faces two new, formidable challenges.

First, a global, fast-paced communication environment makes it possible for negative publicity and anti-immunization positions to be disseminated quickly worldwide. Localized opposition (e.g., polio campaigns in India and Nigeria), negative publicity surrounding vaccine safety (e.g., MMR vaccination in the UK) and suspected or real adverse events following immunization are more likely to attract wide media coverage, and spread through the Internet (Clements & Ratzan 2003; Offit & Coffin 2003).

Second, increased democratization promotes debates about individual and community rights and choice. Today, democratization offers an environment more conducive to the emergence of challenges to government-mandated programs such as immunization. In a growing “rights” environment in both the developed and developing world, national programs like immunization are more vulnerable to being questioned.

#### 4. Children do not get immunized when vaccines are not available

The gap in access to vaccines between developed and developing countries has widened in the past decades. More vaccines have become available, but most developing countries cannot afford the newer vaccines, lack well-functioning systems to deliver them, and have inadequate surveillance systems or study data to determine the burden of disease to motivate decision-makers to adequately fund them.

A number of vaccines — such as hepatitis B, yellow fever, and Hib — are under-utilized due to inadequate funding from Ministries of Health, overstretched health systems, and weak demand from health providers and caregivers (who lack sufficient knowledge about the efficacy of specific vaccines and are unaware of the burden of vaccine-preventable diseases or the availability of vaccines).

The failure to secure long-term financing has been an obstacle to “vaccine security,” a concept defined by UNICEF as the uninterrupted, reliable supply of affordable, quality vaccines. For vaccine manufacturers, relatively high costs of production, intense market pressures, the erosion of economy of scale (in part, due to the availability of different vaccines for the developed and developing world), and slow uptake of new vaccines are disincentives to develop vaccines for poor countries. Uncertainty of demand, low profit margins, and inadequate long-term financial commitments are the main barriers to vaccine manufacturing.

## WHAT CAN COMMUNICATION DO? WHAT HAS COMMUNICATION SUCCESSFULLY DONE?



Research shows that the *quality* of the interaction between health workers and caregivers is decisive to ensure completion of the vaccination schedule. High dropout rates and caregivers' negative attitudes about immunization services are often due to poor or inadequate information-sharing by health providers.

The failure of health providers to communicate correct information about vaccine effects and schedules, to check whether caregivers know and understand information, and to give them opportunities to ask questions partially

- A study in Burkina Faso in the early 1990s showed that mothers who had been exposed to a variety of interpersonal and media messages were more likely to know the requirements to complete vaccination schedule and know the dates for specific vaccines than mothers in the control group (Bhattacharyya et al. 1994).
- An intervention in Ethiopia found that "reminder/prompt" materials reduced dropout rates compared to the control group (Berhane & Pickering 1993). Community health providers followed 6-week-old to 23-month-old children who visited vaccination centers to determine whether reminder stickers applied to the inside of their home front door would reduce immunization dropout rates. The health workers gave a circular sticker with a picture of a child receiving a vaccination and an appointment date to one group of mothers. The immunization dropout rate of children whose mothers received a reminder sticker was 55 percent lower than that of the control group (7.3 percent vs. 13.3 percent; p .01).
- Another study observed that door-to-door canvassing and strategic "miking" (the use of itinerant megaphones) accounted for increased vaccination coverage in peri-urban and rural areas in Mozambique (BASICS, WHO, and UNICEF 1999).

account for incomplete vaccination of young children. Specific behaviors by vaccinators such as rudeness and insensitivity deter caregivers, who feel disparaged and therefore become less motivated to return to health posts to complete the vaccine schedule.

Because health workers tend to be among the most influential source of information in vaccination behavior, effective interpersonal communication between health providers and caregivers is critical. This is even more important as caregivers need to know and be reminded of new vaccines added to the childhood immunization schedule.

- A media project was credited for a significant change in knowledge about the immunization schedule in Ecuador in the late 1980s. The proportion of respondents with correct knowledge went from 65 percent in November 1985 to 91 percent in April 1987. During that period, measles immunization coverage among 12 month-olds increased from 15 percent to 35 percent (HEALTHCOM 1992).
- Communication provided significant support to diphtheria immunization programs in Russia in the mid-1990s, following outbreaks after a significant drop in DTP coverage. After two months, various media were cited by one-third of Novgorod's vaccinated population as one of the means through which they learned about the need for additional doses of diphtheria vaccine. In Voronezh, higher exposure to media messages correlated with higher coverage rates for the same communication intervention period (Porter et al. 2000).
- In India, exposure to television and radio spots featuring a popular film celebrity influenced caregivers' decision to go to vaccination booths during the polio immunization campaigns in 2003 (Waisbord 2003).
- In the Philippines, a media campaign was credited for increasing knowledge about measles and other vaccines in 1990. Good access to a well-developed media system also contributed to positive changes in knowledge and increased participation in services. During the period of the communication interventions, the percentage of fully vaccinated children increased from 54 percent to 65 percent. Similar increases were observed in the percentage of children ages 2-8 months with at least four vaccines and the percentage of children ages 9-11 months who had all vaccinations (Zimicki et al. 1994).

Health providers need to be trained and adequately supervised to ensure that they give relevant and comprehensible information in a respectful and culturally sensitive manner. Strengthened mechanisms to apply and monitor the use of learned skills are also needed.

A number of studies have documented the impact of mass media — particularly radio and television — on awareness and vaccination rates in several countries where mass media is accessible and widely consumed (Perez-Cuevas et al. 1999; Quaiyum et al. 1998). Findings generally report an increase in knowledge about the benefits of vaccines, ages for immunization, and places and time of vaccinations; improved perceptions of seriousness of some diseases and positive shifts in attitudes regarding childhood vaccination; and more discussion about immunization in the home.

Building and maintaining confidence in immunization programs is a permanent task. In countries where vaccines have reduced the burden of disease, a paradoxical situation may emerge as immunization programs become victims of their own success. Individuals and communities may feel less threatened by the less visible vaccine-preventable diseases than by the side effects of vaccines. Caregivers may have more information and awareness about adverse events than about the benefits of immunization and the need to sustain immunization. Also, for caregivers in many communities around the world, immunization decisions are part of culturally grounded estimations about dangers and benefits that need to be addressed (Fairhead et al. 2004).

When controversies arise, immunization programs need communication strategies that can be readily put into action.(UNICEF 2004b). A mix of media and locally appropriate, community-based strategies is needed to address concerns and refusal. In any situation where the safety of vaccines is questioned, it is critical to first understand the nature and scope of the concerns.

Interpersonal communication activities with influential local leaders (religious, medical, and political) can positively affect the community's trust in and willingness to vaccinate their children. Community leaders can not only be valuable partners in promoting immunization, they can be valuable key informants to understand the nature and reasons for any concerns.

- A study conducted in the early 1980s in Bangladesh demonstrates that personal communication in meetings with influential local leaders showed a statistically significant increase in knowledge of vaccines and immunization schedule among caregivers. Because political, cultural, and religious leaders are influential opinion-makers, their messages strongly affect immunization behavior.
- Communication with religious and political leaders is key to increase acceptance of immunization (UNICEF 2004a). For example, it has been credited with increasing the acceptance of immunization campaigns in India (Das & Das 2003; Verma et al. 2004).
- In another study, communication interventions that included advocacy with leaders, community involvement with service delivery and child tracking, and media partnerships at various levels were responsible for dropout reduction and immunization coverage above the national average in two provinces in Madagascar in 2003 (Shimp 2004).
- Through community discussions and meetings with leaders, immunization programs were able to address concerns and opposition among religious groups in D.R. Congo, Mali, and Zambia (BASICS, WHO and UNICEF 1999).

- A major reason for the success of several health programs in Indonesia in the early 1990s was the recognition of the key role of leaders in encouraging hamlet residents to participate in government programs, including immunization. Competitions and other incentives were provided for leaders to maintain interest and efforts in support of these programs (Streatfield & Singarimbun 1988).

*“Religious leaders have a legitimacy that political leaders don’t have. You know why? They are present in the intimacy of the family. They are with them in their everyday life – in times of joy, times of happiness. When the husband and wife are in conflict, it is religious leaders that come in to it. When children come from HIV parents who died, everybody’s abandoned them, including the political parties, including the government. Who is there? The priest, the sheikh...”*

Promoting immunization through community networks is a proven means to build trust and acceptance of vaccines. Caregivers are most likely to trust other community members when they make decisions about the health of their children.

- Zimbabwe’s ability to maintain high routine immunization coverage is largely due to the extensive network of community motivators. Motivators distribute materials through the media, public and group meetings, and home visits (WHO et al. 2000).
- Studies have documented several successful experiences including the work of the Catholic Church in Angola and the Philippines; community mobilization in rural districts in Ethiopia, Ghana, and Madagascar; the programs of Urban Volunteers in Bangladesh and schoolchildren in Indonesia; and the network of motivators in Zimbabwe (Awoonor-Williams 2003; Kidane & Tekie 2003; Streatfield & Singarimbun 1988; Waisbord 2003).
- In the AIN (Integrated Child Health) program in Honduras and similar programs throughout Central America, a cadre of community volunteers holds a monthly child health session to check immunization as well as general health status and counsel, treat, or refer each child as appropriate. In some of these programs, the nurse supervisor actually vaccinates during sessions, but in others children are simply referred. In program communities, full coverage increased from 85 to 95 percent in Nicaragua and from 83 to 95 percent in El Salvador from 2002 to 2003. The mid-project evaluation in Honduras showed an increase from 73.2 percent to 80.7 percent of children fully immunized (Change 2003).
- In Bangladesh in the 1990s, self-help organizations were mobilized to update the list of children, announce the dates of EPI sessions, motivate mothers to attend EPI sessions, and liaise with government workers. Improvements in the EPI coverage were greater in the intervention area than in the comparison area. In the intervention area, the BCG vaccine coverage increased from 55.8 percent to 74.4 percent, the coverage of DPT1, DPT2, and DPT3 improved from 65 percent to 79.7 percent, 52.1 percent to 63.2 percent, and 44.8 percent to 47.9 percent, respectively. The measles vaccine coverage also increased from 43.4 percent to 59.2 percent. For the same period in the comparison area, the coverage of EPI decreased for all vaccines (Hanifi & Rasheed 2000).
- In India, UNICEF’s social mobilization network contributed to the increase from 30.48 million to 33.96 million children vaccinated in hard-to-reach districts between November 2002 and February 2003. A review of vaccination records in a slum in Mumbai shows that while coverage rates for DPT (diphtheria-pertussis-tetanus) vaccines were 78 percent in communities where primary school students made home visits to encourage mothers to bring their children to mobile vaccination units, rates were 67 percent in communities that lacked substantial participation (UNICEF 2003).

## CONCLUSION

---



**S**trengthening immunization services requires expanding the use of available vaccines, decreasing vaccine wastage, accelerating the development and introduction of new vaccines, promoting appropriate policies on immunization safety, and increasing the financial sustainability of immunization programs. A complexity of political, epidemiological, economic, and social factors underlie these challenges.

Information about burden of disease, cost-effectiveness of vaccines, and demand is central to the process in which stakeholders make decisions that affect vaccine supply and financing. Quantitative and qualitative data on those issues inform the thinking and the priorities of politicians, health officials, donors, and vaccine manufacturers. Because these decision-makers might not be fully aware and/or might hold misperceptions about specific issues, advocacy strategies are needed to make the case for investing in immunization.

Experience shows that strategic actions need to be based on information that identifies patterns and differences among users, non-users, and “inconsistent” users (“dropouts”) of immunization services, and that analyzes factors (media coverage, risk perception, and information from opinion leaders and social networks) that affect caretakers willingness to have their children — or themselves — vaccinated or not.

Advocacy activities should build support among in-country institutions and opinion leaders, secure support from multilateral organizations, and generate and maintain discussions among relevant domestic and foreign actors. These activities should not be one-time actions. To be successful, they need to be guided by research findings, carefully planned, and systematically implemented.

If communication programs are provided with necessary resources, they will be able to contribute significantly to immunization through increasing and maintaining demand as well as advocating for continuous support for vaccine programs among partners and decision-makers. Relevant stakeholders should consider the evidence presented as well as suggested actions to increase and maintain support for communication activities, recognizing that they are integral to the success of immunization programs



# TEN LESSONS LEARNED

---

The following are ten lessons learned from successful communication interventions in support of immunization programs.

1. There are no one-size-fits-all communication strategies. Strategies with tailored messages that use appropriate channels are required to reach specific segments of the population, whether decision-makers or remote, “hard to reach” populations.
2. Proactive communication actions are needed to curtail and prevent negative publicity and resistance to immunization, and to build continuous trust in vaccination programs by working with opinion leaders who influence caregivers’ perceptions and behaviors.
3. Positive attitudes and good interpersonal communication skills of frontline health workers are decisive to promote long-term compliance – well-designed, easy-to-use tools can often bridge the gap if interpersonal communication skill-building programs can not be assured.
4. Strengthening and supervising communication skills of health providers should be integral to immunization planning and training.
5. In-country advocacy coalitions are key to building and maintaining awareness about the value of immunization programs as well as securing sustainable funding from governments and donors. One important way to do this is to make regular public announcements recognizing those districts that have achieved high coverage. Raising public awareness about the impact of vaccination programs on reducing disease incidence and saving lives is also key.
6. Although personal anecdotes and experiences have persuaded government officials to support specific vaccine programs, advocacy programs need to use evidence (ie. data) to show the benefits and cost effectiveness of vaccination over other health interventions. Without well-planned advocacy, new vaccines are not likely to be not funded by governments nor meet demand from health providers and caregivers.
7. The impact of print materials, or other single information mediums, depends in part on whether they are used with other communication channels.
8. Communication interventions should be tailored based on information distinguishing knowledge and attitudes among users and non-users of immunization services.
9. Grassroots communication strategies are more likely to succeed if they are integrated with the provision of other community health and social needs.
10. Effective communication interventions can increase demand, but if the quality or availability of services is poor, many caregivers are not likely to return to complete schedules.



# RECOMMENDATIONS

---

- Earmark adequate funding for communication activities, particularly for routine vaccination services
  - Make strategic communication plans a requirement within immunization proposals
  - Offer incentives and rewards to national plans that assign above-average resources for communication positions and activities
  - Identify key gaps in communication capacity and fund training and capacity-building programs as well as communication positions at regional and national levels
  - Provide technical guidance to immunization managers to design and budget communication plans
  - Support baseline and evaluation studies to guide communication interventions
  - Fund and offer technical assistance for advocacy activities support the introduction of under-used and new vaccines
  - Fund programs to monitor and document effective use of interpersonal communication, and training of frontline health workers
  - With MOH, implement selective reward programs for health staff in districts where caregivers are highly knowledgeable about vaccines and immunization schedules and hold positive attitudes about vaccination and friendly attitudes toward caregivers
  - Collaborate with other stakeholders to develop communication strategies that identify potential refusal and resistance to immunization and to implement strategies that build trust and respond to adverse events and rumors
  - Contribute to setting up and sustaining immunization coalitions with relevant health organizations, communities, and opinion leaders by meeting regularly, sharing information, and ensuring coherent, collective responses to any adverse events or negative rumors that could undermine the success of immunization programs
-

## FURTHER READING

---

Awonoor-Williams, J. K. 2003. Setting the stage for scaling-up a successful experiment: The Nkwanta initiative in rural Ghana. Paper presented at the American Public Health Association conference, San Francisco.

Bankole, A., Westoff, C., & Rodriguez, G. 1996. Mass media and reproductive behavior in Africa, *Journal of Biosocial Science*. 227-239.

BASICS, UNICEF and WHO. 1999. *Communication for Immunization and Polio Eradication: Joint Case Studies*.

Bastien, J. W. 1995. Cross cultural communication of tetanus vaccinations in Bolivia, *Social Science and Medicine* 41, 1:77-86.

Berhane, Y. & Pickering, J. 1993. Are reminder stickers effective in reducing immunization dropout rates in Addis Ababa, Ethiopia? *Journal of Tropical Medicine & Hygiene* 96 (3): 139-145.

Bhattacharyya, K., Shafritz, L. & Graeff, J. 1994. Sustaining health workers' performance in Burkina Faso. Washington: BASICS.

Bond L., Nolan T., Pattison P., & Carlin J. 1998. Vaccine preventable diseases and immunizations: A qualitative study of mothers' perceptions of severity, susceptibility, benefits and barriers, *Australian/New Zealand Journal of Public Health* 22 (4): 441-6.

Bukenya, G .B. & Freeman, P. A. 1991. Possible reasons for non-completion of immunization in an urban settlement of Papua New Guinea, *Papua New Guinea Medical Journal* 34(1): 22-5.

CHANGE Project. 2003 Dominican Republic: Community Based Child Health Program - Adapting the AIN Model.

Children's Vaccine [www.childreenvaccine.org](http://www.childreenvaccine.org)

Clements C.J. & Ratzan S. 2003. Misled and confused? Telling the public about MMR vaccine safety. Measles, mumps, and rubella, *Journal of Medical Ethics* 29(1):22-6.

Danovaro-Holliday M.C., Wood A.L., & LeBaron C.W. 2002. Rotavirus vaccine and the news media, 1987-2001, *Journal of the American Medical Association* 287(11): 1455-62.

Das, J & Das, S. 2003 Trust, leaning and vaccination: A case study of a North Indian village, *Social Science & Medicine* 57: 97-112.

Ekunwe E.O., Taylor P., Macauley R., & Ayodele O. 1994. How disease prevention fails without good communication, *World Health Forum* 15(4): 340-4.

Eng E., Naimoli J., Naimoli G., Parker K.A., & Lowenthal N. 1991. The acceptability of childhood immunization to Togolese mothers: A sociobehavioral perspective. *Health Education Quarterly* 18(1): 97-110.

Fairhead, J, Leach M., & Small M. 2004. Childhood vaccination and society in the Gambia. Brighton: Institute of Development Studies.

GAVI. 2001. *Advocacy for Immunization: How to generate and maintain support of vaccine programs*. <http://www.childreenvaccine.org/files/GAVI-AdvocacyHandbook.pdf>

Greenough, P. 1995. Global immunization and culture: Compliance and resistance in large-scale public health campaigns. *Social Science & Medicine* 41 (5) 605-7.

- Hanifi, M.A. & Rasheed, S. 2000. Community mobilization and EPI coverage: Lessons learned from Chakaria. Dakha: ICDDR.
- Harmanci H; Gurbuz Y; Torun SD; Tumerdem N; Erturk T. 2003. Reasons for non-vaccination during national immunization days: a case study in Istanbul, Turkey, *Public Health*, 117(1): 54-61.
- HealthCom. 1992. *Results & realities: A decade of experience in communication for child survival*. Washington: AED.
- Children's Vaccine Program. Increasing Immunization Coverage in Uganda--The Community Problem. [http://childrensvaccine.org/files/BASICS\\_Uganda\\_Community\\_Problem\\_Solving.pdf](http://childrensvaccine.org/files/BASICS_Uganda_Community_Problem_Solving.pdf)
- Children's Vaccine Program. Helping Young People Become Youth Advocates for Immunization. [http://childrensvaccine.org/files/CVP\\_Occ\\_Paper3.pdf](http://childrensvaccine.org/files/CVP_Occ_Paper3.pdf)
- Children's Vaccine Program. Realizing the Full Potential of Childhood Immunization - How Health Professionals can Make a Difference. [http://childrensvaccine.org/files/CVP\\_Occ\\_Paper1.pdf](http://childrensvaccine.org/files/CVP_Occ_Paper1.pdf)
- Khanom, K. & Salahuddin, A. K. 1983. A study of an educational programme on immunization behavior of parents, *Bangladesh Medical Research Council Bulletin* 9:18-24.
- Kidane, T, & Keti, M. 2003. Factors influencing child immunization coverage in a rural district of Ethiopia 2000, *Ethiopian Journal of Health Development* 17 (2): 105-110.
- Kowli, S.S., Bhalerao, V.R., Jagtap, A.S., & Shrivastav, R. 1990. Community participation improves vaccination coverage, *Forum Monde Santé* 11(2): 181-4.
- Ndiaye, S.M., Quick, L. Sanda, O., & Niandou, S. 2000. "The value of community participation in disease surveillance: a case study from Niger," *Health Promotion International*, Vol. 18, No. 2.
- Offit P.A. & Coffin S.E. 2003. Communicating science to the public: MMR vaccine and autism, *Vaccine* 21(1):1-6.
- Penrice G.M., McMenamin J., & Cameron S.O. 2000. Hepatitis B immunisation of infants at risk. *Communicable Disease Public Health* 3 (3): 215-6.
- Perez-Cuevas, R., Reyes, H., Pego, U., Tome, P., Ceja, K., Flores, S., & Gutierrez, G. 1999. Immunization promotion activities: are they effective in encouraging mothers to immunize their children? *Social Science & Medicine* 49 (7): 921-32.
- Piotrow, P., Kincaid, L., Rimon II, J., & Rinehart, W. 1997. *Health Communication: Lessons from family Planning and Reproductive Health*. Praeger.
- Piotrow, P., Rimon II, J., Merritt, A., & Saffitz, G. 2003. *Advancing Health Communication: The PCS Experience in the Field*, Johns Hopkins University Bloomberg School of Public Health Center for Communication Programs.
- Porter, R. W., Steinglass, R., Kaiser, J., Olkhovsky, P., Rasmuson, M., Dzhatdieva, F., Fishman, B., & Bragina, V. 2000. Role of health communications in Russia's diphtheria immunization program, *The Journal of Infectious Diseases* 181:220-7.
- Quaiyum, A., Tunon, C, Baqui, A. H., Quayyum, Z., & Khatun, J. 1998. Impact of national immunization days on polio-related knowledge and practice of urban women in Bangladesh, *Health Policy and Planning* 12: 363-371.
- Rasmuson, M. 1990. Sustaining EPI: What can communication do? Washington: Healthcom. [http://www.childrensvaccine.org/files/Communication\\_for\\_EPI.PDF](http://www.childrensvaccine.org/files/Communication_for_EPI.PDF)

Salisbury, D. 2004. Immunisation Communication, the Media and the Public. Presented at the "Why Invest in Communication for Immunization" Workshop Washington, DC, USA - January 2004

Shimp, L. 2004. *Strengthening Immunization Programs: The Communication Component*. BASICS. [http://www.childrensvaccine.org/files/Strengthening\\_Immunization\\_Communications\\_BASICS.pdf](http://www.childrensvaccine.org/files/Strengthening_Immunization_Communications_BASICS.pdf)

Snyder, LB & Hamilton, MA. 2001. Meta-analysis of US health campaign effects on behavior: Emphasize enforcement, exposure, and new information, and beware the secular trend. In R. Hornik Ed. *Public Health Communication: Evidence for Behavior Change*, 357-383. Hillsdale: Lawrence Erlbaum Associates.

Streatfield, K & Singarimbun, M 1988. Social factors affecting use of immunization in Indonesia, *Social Science and Medicine* 27, 11:1237-1245.

Streefland, P, Chowdury, A. M. R. & Ramos-Jimenez, P. 1999. Patterns of vaccination acceptance, *Social Science & Medicine* 49: 1705-1716.

UNICEF. 2003. A critical leap to polio eradication: Changing behavior to rid India of a childhood disease. Working paper.

UNICEF. 2004a. *Building Trust in Immunization: Partnering with Religious Leaders and Groups*. New York: UNICEF

UNICEF. 2004b. *Building Trust in Immunization. Partnering with the Media*. New York: UNICEF.

Verma AK, Bansal RK, Pawar AB. 2004. Facilitating behavioral change for acceptance of oral polio vaccine. *Indian Pediatrics* Sep 41 (9): 951-2.

Younger, E. et al. 2001. Immunization and Child Health Materials Development Guide. <http://childrensvaccine.org/files/CVP-Materials-Development-Guide.pdf>

Waisbord, S. 2004. Assessment of Communication Programs In Support of Polio Eradication: Global Trends and Case Studies. Washington: The CHANGE Project.

Westoff CF, & Bankole, A. 1999. Mass media and reproductive behavior in Pakistan, India, and Bangladesh. Demographic and Health Surveys Analytical Report 10. Macro International.

Westoff, C. & Bankole, A. 1997. Mass media and reproductive behavior in Africa, *Demographic Health Surveys Analytical Report* No. 2.

WHO, UNICEF, and USAID. 2000. *Communication Handbook for Polio Eradication and Routine EPI*.

Wittet, S. 2001. Hepatitis B Vaccine Introduction. [http://childrensvaccine.org/files/CVP\\_Occ\\_Paper4.pdf](http://childrensvaccine.org/files/CVP_Occ_Paper4.pdf)

Wittet, S. et al. 2004. Practical, Local Solutions for Safely Managing Contaminated Syringes and Other Medical Waste. [http://childrensvaccine.org/html/safe\\_injection.htm#practicallocalsyringe](http://childrensvaccine.org/html/safe_injection.htm#practicallocalsyringe)

Zimicki, S, Hornik, R, Verzoza, C., Hernandez, J., de Guzman, E., Dayrit, M, Fausto, A, Lee, M. B. & Abad, M. 1994. Improving vaccination coverage in urban areas through a health communication campaign: The 1990 Philippines experience, *Bulletin of the World Health Organization* 72: 409-422.

