

Perceptions about Injections and Private Sector Injection Practices in Central Nepal

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Executive Summary

People receiving unsafe injections are at risk of infection with the hepatitis B virus, HIV, and other serious diseases. As the global burden of unsafe injections has become more clear², concern about the potential negative effects of these practices in Nepal has grown. This exploratory, qualitative study was organized by General Welfare Pratisthan and the Gates Children's Vaccine Program at PATH to better understand who is giving injections in the study area, why they are giving them, and how they are giving them. Consumer attitudes towards injections also were explored.

"At least five patients come to me each day. On average I provide injections to three of them, according to need."
(Provider, Sarlahi)

During March-July, 2000, focus group discussions, in-depth interviews, direct observation, and "secret shopper" interactions were conducted with 204 private sector injection providers and consumers in seven districts of Nepal's Central region.³ The respondents are diverse in terms of ethnicity, hill or Terai location, urban/rural lifestyle, educational level, gender, age, and experience.

The data suggest that the availability of disposable syringes, coupled with AIDS awareness and personal experience of adverse effects of injection, may have led to behavior change in the study area. Our respondents reported that sterilizable syringes and needles, common five to ten years ago, have been replaced by disposable equipment. And many providers and consumers spontaneously mentioned that one syringe should be used with one person only.

"Everybody is allowed to provide injections in this area. Even the servant at the clinic is providing injections!"
(Consumer, Dhading district)

"At the sub-health post where I also work, we have some glass syringes, but I don't use them because they are not properly cleaned. I tell people to buy disposable syringes and bring them in."
(Provider, Dhading)

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² See special supplement on Safe Injection in the *Bulletin of the World Health Organization*, November, 1999 and an article in the January, 2000 issue. Documents are available online at www.ChildrensVaccine.org (go to Resources/Safe Injection).

³ The quotations in this Summary are edited translations of statements made by study respondents in the named districts.

That said, we found that unnecessary and unsafe injections seem to be common in the study area:

“A provider coming from India gave injections to a consumer. A few minutes after getting the injection, the patient died and the provider had to run away.” (Consumer, Parsa)

- Providers and consumers commonly report adverse consequences following injection (including abscesses, amputation, and death).
- They also report needle prick incidents resulting from poorly disposed waste.

- Unsafe handling of injection equipment and other sharps is common.
- Storage of contaminated waste in easily accessible, open containers is common.
- Reuse of non-sterile injection equipment with the same patient is common.
- Use of non-sterile injection equipment among more than one patient was observed.
- Providers generally fail to wash hands or take other hygienic precautions while injecting.

“The dentist’s table was very soiled and the dust could be seen from a distance. In one corner, four or five disposable syringes had no covers. There also was a clinical tray with old and dirty forceps, dental instruments, and scissors. Beside the table on the wall there were three open intravenous sets for glucose drips.” (Researcher, Danusha)

- Injections are valued by consumers and providers as fast acting and necessary therapy for a variety of complaints.
- Injections of vitamins, antibiotics, and painkillers are common in spite of widespread acknowledgement that oral medications should be used for less serious complaints.

“The local clinics and health post collect the used injection materials in a dustbin, then throw them in the field. People working in the field can be pricked and children playing with them prick each other. Once my neighbor’s goat swallowed four syringes thrown on the ground and didn’t recover for days!” (Consumer, Danusha)

- Disposal of contaminated needles, syringes, and other medical waste in accessible public areas is common.
- Recycling of injection equipment may be a problem.

Fortunately, some consumers and providers are concerned about these issues.

This suggests that professionals and the public may be supportive of Nepali governmental and NGO efforts to reduce unnecessary and unsafe injections, improve and regulate medical services, and improve handling and disposal of contaminated medical waste.

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Background

General Welfare Pratisthan (GWP), a Nepali NGO active in AIDS outreach and education for the past eight years, has long been aware of unsafe medical practices in its project area. Over the years GWP’s field outreach teams have reported observing unsafe injections and minor surgical and dental procedures performed in an unsafe manner.

Working closely with the Gates Children’s Vaccine Program at PATH (Program for Appropriate Technology in Health), and in consultation with the World Health Organization and UNICEF offices in Nepal and the Secretariat of the Safe Injection Global Network (SIGN) at WHO in Geneva, GWP decided to systematically document injection practices and attitudes towards injections in and around their project area in Central Nepal. GWP further decided to focus on a relatively undocumented, but active and important, sector: private health care centers, including small “medical shops,” pharmacies, and other private sector venues where injections are commonly available.

Understanding that this study is exploratory in nature, the team adopted a qualitative research approach. They determined that a rapid appraisal, using open-ended interview and observation guides, would be the best way to obtain valid, in-depth information about injection practices and the reasons for those practices. It was hoped that these data could then be used to design program interventions or guide future research.

Study Objectives

1. Investigate attitudes and knowledge regarding injections among the injection consumers and private injection providers in Central Nepal.
2. Observe and document injection practices of private injection providers.

Methods Summary

The study was designed by Mr. Mahesh Dev Bhattarai, Co-Principle Investigator and Director of General Welfare Pratisthan and Mr. Scott Wittet, Co-Principle Investigator and Director of Advocacy, Communications, and Training for the Gates Children’s Vaccine Program at PATH (Program for Technology in Health). Mr. Prakash Adikari, Project Manager, worked closely with the design team to develop the interview and observation guides and to organize the training of the interview teams.

Thirteen researchers successfully passed a three-day training course, followed by two days of supervised research using the guides in the field.

The interviews and observations were conducted March-July, 2000 in urban and rural sections of seven Central region districts: Bara, Chitwan, Dhading, Dhanusha, Makwanpur, Parsa, and Sarlahi. All interviews and focus groups were conducted in Nepali, Maithili, or another local language.

The research team had 124 interactions with a total of 204 injection consumers and private injection providers living in the hills and plains of Nepal’s Central region, including:

- 18 individual interviews with injection providers
- 46 individual interviews with injection consumers
- 10 focus group discussions with a total of 90 injection consumers
- 25 observations of injection provision and injection venue and
- 25 secret shopper interactions with providers and observation of injection venue

For further information see: Appendix A — Respondent Characteristics
Appendix B — Interview and Observation Guides
Appendix C — Methods Details

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Findings

The study findings are reported in three sections:

- I. Findings from Observation and Secret Shopper Interactions
- II. Findings from In-Depth Interviews and Focus Group Discussions with Injection Consumers
- III. Findings from In-Depth Interviews with Injection Providers

I. Findings from Observations and Secret Shopper Interactions

Following is a list of trends in the data gathered through observation of 25 consumer-provider interactions and 25 secret shopper interactions. Illustrative descriptions and notes on diversions from those trends are included, when appropriate. See Appendix A for more information on the providers in these 50 injection venues.

Observation of Injection Venues

There are a wide variety of injection venues in the project area. The majority are pharmacies or medical shops but sometimes injections are given in other kinds of shops or in homes.

...This clinic was a small kiosk under a 'peepal' tree by the side of the highway running through G___ Bazaar. Mostly vitamin bottles were neatly displayed in the racks and some disposable syringes, medicine vials and ampoules also were displayed in the rack to its east. A small checkup and injection room was found in a bamboo and mud cottage in back of the shop. (Danusha district)

...The injection service place is located at M___ Bazaar. It is a private clinic in a small room on the ground floor of the building. I observed a carton under a table for collecting the used injection materials. There was also a weighing machine, and cabinets at each side of the room. (Sarlahi)

...The provider gives injections in his bedroom. There were no medicines or syringes at all there; consumers bring syringes and medicine when they come. There was no medical equipment or tools except some spirit and cotton. (Makwanpur)

...The shop is a big medical store with lots of medicines displayed in racks. They also have a laboratory room, x-ray room, dressing cum mini-operation room (they do surgery for hernias there), and a ward with four beds. (Chitwan)

Most venues were dirty and did not have running water for hand washing or facilities for boiling instruments (though a few did).

... The medical shop was a small room with very few medicines. For cleanliness, there was no water bucket or any other tools. (Parsa)

...The provider did not wash his hands as there was no tap water in the place. (Chitwan)

...There was no stove, steam sterilizer or other equipment at the service location. (Dhading)

...There was some steam sterilizing equipment there, from which he took out a tray, forceps, and scissors. (Dhading)

Injection materials contaminated with blood or body fluids were observed lying on the floor, on the ground, or in drainage near 12 of 50 venues.

... there was scattered bloody cotton, sharp materials, and some used syringes floating in the drainage before the medical shop. There was a used syringe with needle thrown on the ground. Syringes and some needles could be seen at open dumping sites. (Parsa)

...We often find used needles and syringes in the city garbage dump. (street children, Chitwan)

Unsafe handling of syringes, needles, and related material was observed in 19 of 50 sites.

...He took the filled syringe and put it on the dirty table for a while, uncapped. (Parsa)

...The second provider took out one ampoule of 'Gentamycin' and broke it open. His finger was cut by the broken glass and was bleeding. Without covering his wound with bandage or gauze, he opened the syringe packet and filled the syringe with medicine. (Sarlahi)

...[When the provider prepared to inject] the secret shopper said that she was very frightened and didn't want to get the injection then. She asked the provider for the syringe with the medicine so that her friend, a staff nurse, could give her the injection later. The provider replied that he could not do that as the syringe might contain germs then. Instead, he immediately refilled the empty vial with the medicine from the syringe, threw the empty syringe into the disposal carton, and put the medicine bottle back in its usual place. He would not take her money for the used syringe. (Makwanpur)

Supplies for intravenous infusion were observed in three sites and minor surgical and dental equipment was observed in nine sites.

...Another room was used as a dressing cum injection and check up room. There was a bed on which a sick woman of that village was lying. She was getting an intravenous drip. (Dhading)

...there was a kidney-shaped tray, forceps, scissors and a stitching needle kept uncovered on the table. (Danusha)

...[in a dental clinic] The table cover was very soiled and the dust could be seen from a distance. In one corner of the table, four or five disposable syringes could be seen which had no covers. There also was a clinical tray with old and dirty forceps, dental instruments, and scissors. Beside the table on the wall we could see three open intravenous sets for glucose drips. (Danusha)

Observation of Provider Interactions with Consumers and Secret Shoppers

Many providers were quick to offer injections for common or poorly diagnosed complaints, especially to poor, less educated consumers. Sometimes they did not examine the patient, but only listened briefly to the complaint, then prescribed injections or other treatments. Some providers examined patients prior to diagnosis.

...The patient was a small boy of 5 years wearing a dirty half-pants and shirt, torn in many places. He was dirty too. His father, a poor farmer, brought him for treatment. The father greeted the provider but the provider didn't return his greeting. When the provider asked about the problem, the patient's father pointed to wounds on his

son's legs. The provider stretched his neck over the counter and carelessly said that it was a kind of skin disease. He wrote a prescription for three vials of procaine penicillin and ordered the father to buy them at a nearby shop. The father came back with only two vials, explaining that he could not buy all three due to lack of money. The provider began preparing the injection without any response... (Danusha)

...A lady aged about 35 years came to the shop. She was a cloth seller from the Terai. She could not speak Nepali well but she mentioned that she had been taking injections for nine days from this provider to cure her dry and painful cough and sneezing. The provider had diagnosed that she had "allergy" and the woman was here for her final injection. (Chitwan)

...The guardian said that the young girl had stomach pain on the right side of the abdomen. The provider told the guardian to take the child into the injection room. The guardian requested the provider to give the girl a check up, but the provider replied that he was so experienced that he could diagnose the problem by looking at the patients. He said that the girl had appendicitis and ordered his assistant to give her an injection of 'Gentamycin.' (Sarlahi)

...The patient was a 2-year-old male child. He was wearing an old, discolored shirt and his body was covered with dirt and dust. His mother, a poor woman about 25 years old, told the provider that her child had had a fever and vomiting for the last 2 days. After listening to her problems, the provider gave the child two injections. Then he brought one bottle of 'Citamol' syrup [paracetamol], one bottle of 'Vitamin,' and two of 'Gentamycin.' He instructed the mother to pay Nrs. 165 altogether and to bring the child back after two days for another injection. (Dhanusha)

We did not observe any case of a consumer requesting an injection and being refused by the provider (usually consumers did not ask for specific services; they accepted whatever was offered by providers). However, **10 providers refused to give requested injections during 25 secret shopper interactions.** The providers gave various reasons for refusing the secret shopper's request: some wanted prescriptions from a doctor before they would inject; others insisted that consumers try oral medications first, then return for an injection if the oral medications didn't work; others mentioned legal concerns in case of an adverse reaction or death.

...The secret shopper told the provider that she had a bad pain in her throat and a terrible headache. The provider diagnosed that it was a cold due to the change of season. He advised her to gargle every morning and evening with salt and hot water. He also prescribed 'Strepsils' and 'Clotrimazol-DS'. But the secret shopper acted unhappy with that and asked for faster treatment. The provider said that there is an option of injection but it is better to use oral medication. The provider then told her that he had seen three persons die after injections. Since then, he had given up providing injection services. (Danusha)

Most providers and consumers are well aware of tetanus. They often believe that an injection is necessary after being cut by a dirty object.

...A woman came, aged about 30 yrs old and belonging to the Tamang caste. She looked uneducated and poor. She had a small cut on her right palm; she had been cut by a glass the day before. The provider advised her to get a TT injection. The consumer kept asking "does this small cut need an injection?" The provider explained that carelessness may lead to tetanus, so she got the injection. (Chitwan)

Observation of Injection Practices

Disposable syringes and needles are commonly used by the private sector in the project area.

We observed reuse of non-sterile injection equipment with different patients, or clear evidence that non-sterile equipment was routinely reused, in four out of 25 observation venues.

...The provider took a small plastic box from the showcase. From the box he took out a disposable syringe in a torn plastic packet; there were several more in the box. He uncapped the needle, then rinsed the needle and syringe with water...[After injecting] he put the used syringe back into the same plastic packet, then back in the box. (Danusha)

...A poor man aged about 50 came in limping and with a walking stick. He said "My lord, be kind to me. Look at my foot and please give me an injection." The provider asked whether he had brought a syringe with him or not. The consumer answered "no" and requested that the provider give an injection with the provider's syringe...The service provider ordered the compounder to give a vitamin B injection, using a disposable syringe lying exposed on the table. (Sarlahi)

Three times (out of 25) we observed providers arranging with patients to reuse syringes and needles on the same person. After getting an injection and paying for the syringe, consumers often wrapped the used, disposable syringes and needles in filthy rags and stored them in dirty boxes or bags, planning to return within a day or two to use them again. Many providers agreed to give filled syringes to secret shoppers upon request, so that they could use them later (though some providers did not agree or cautioned against such improper use).

...[The provider] gave the used syringe to the mother, asking her to store it safely, and told her to bring it back two days later for another injection. (Bara)

...The consumer had a boil on his left buttock and it was painful. After checking the boil, the provider advised the customer that it could not be opened now, so he had better get an injection. The consumer asked the price and was told "Rs 30\ - each and you need two injections." As the customer was a bit hesitant, the provider said that for the second injection, the charge would only be Rs 20\ - because the same syringe could be used again. After hearing this, the consumer said that it was OK. (Parsa)

Vitamin B injections for "weakness" are common (we were able to identify them in 7 of 50 injection observations). **Injectable antibiotics and painkillers are also commonly given.**

...The consumer was a 25 year old woman. She seemed uneducated and did not talk at all. Her husband told the provider that she was very weak and could barely stand up. She was also feeling giddiness. The provider said that it was due to "weakness." He would give her an injection and some other vitamins and medicines, then she would feel better. He advised that she should also eat fruit and drink milk. The provider then injected Neurobian (B. Complex). He also sold them Lomoplex tablets (another vitamin). (Parsa)

...The patient said that the left half of his body was numb. The provider announced that it was a case of "nerve dislocation" and suggested that the patient receive vitamin B injections for 6-7 days. (Dhanusa)

...The consumer's problem was intolerable back pain. The provider recommended that she should get three painkiller (Eldervit) injections with a gap of one day between each injection. (Chitwan)

The vast majority of injections were given without hand washing (only one out of 50 providers washed her hands before injecting—she is a nurse).

Observation of Handling and Disposal of Contaminated Materials

Most providers throw used syringes, needles, bloody cotton and gauze, and other contaminated supplies into an open bucket, can, or box dedicated to that purpose (but not designed for it).

... [The provider] throws the used syringe and needle into the carton box. He said that the municipality collected such used materials from him. (Parsa)

...While we were there, the provider's child stuck his hand into the open disposal carton and pulled out a bundle of gauze with a used needle and syringe stuck in it. The provider instantly pulled her child aside and put the syringe back inside the carton. The secret shopper then asked the provider if the child ever got pricked by needles. The provider said that her son was very naughty and that he had picked up a syringe just a few days ago. (Dhading)

Only one provider in 50 had a special, safe disposal container for needles.

...In one corner there was a small tin-box with a small opening. This is where he put the needle. The rest of the things (empty ampoule, swab, and syringe) were thrown in an open bucket on the floor. (Chitwan)

II. Findings from In-depth Interviews and FGDs with Consumers

Following is a list of trends in the data gathered through 46 in-depth interviews and 10 focus group discussions with 90 injection consumers, for a total of 136 respondents. Illustrative quotations and notes on diversions from those trends are included, as appropriate. More information about respondent characteristics can be found in Appendix A. The consumer interview guide is in Appendix B.

Consumer Attitudes Towards Providers

Consumers reported consulting various kinds of health care providers including faith healers, private providers with little or no formal medical training, physicians in private practice, public clinic staff, pharmacy staff, and others. Injections are provided in many different venues.

...As to the treatment practices of the local people, the respondent said that in cases of dysentery people took domestic methods of treatment in the form of oral rehydration. If the patient wasn't cured, then people who could afford it went to private clinics or medical stores, and those who couldn't pay visited the public hospital or consulted a faith healer. (Bara)

...Our local Jhankri Ba [faith healer] provides 'Jeevan Jal' [rehydration solution] for diarrhea patients. He also plays the Dhayangro [drum] and slaughters a cock. Then the patients recover! (Makwanpur)

Most consumers feel that care at public facilities (health posts, hospitals) is less expensive than care in private clinics or pharmacies. However, they believe that the quality of care is higher in private facilities.

...I don't believe in doctors at the hospital because they are careless. But they are good at the private clinic because they can earn more money there. (Bara)

...The health post sells genuine medicines outside and provides bogus ones to the patients. As a result people don't believe in our local health post. (Danusha)

...The rich go to Birgunj for medical treatment whereas the poor go to Jeetpur to be saved or to die. (Bara)

In contrast, a few consumers reported satisfaction with the quality of care at public facilities.

...The respondent said that for medical care, first of all the people visit the health post. If the treatment there is not effective, they go to the hospitals or clinics at Kathmandu. If the patient still is not cured, they go to faith healers. She felt that the treatment in the health center is up to the standard, the paramedics working there are responsible and can be trusted, and they are familiar with the local diseases and with the people. (Dhading)

Consumers tend to take a passive role when interacting with providers. They submit to the provider's professional judgement and express faith in the provider they have chosen. This is especially true for less educated consumers.

...We don't know anything about unnecessary and unsafe injections. We are fully dependent on the doctor's decision. (Parsa)

...We are only dancing, the doctors beat the drum. (Dhading)

A few consumers expressed distrust of private providers with business motives. They accused the providers of over-prescribing oral and injectable medications for personal profit or to increase their reputation. Several mentioned that providers are better able to exploit the poor and uneducated than the educated.

...The providers give injections to the poor people without a detailed check up. But they give tests in detail to the rich, and only then provide injections. (Parsa)

...Experienced doctors don't use strong medicine whereas persons with little medical knowledge use stronger medicines to gain popularity. (Chitwan)

Many consumers, especially those with more education, complained that there are many unqualified health care providers in the area. They hope that the general quality of care will improve and they want authorities to crack down on unqualified providers.

...Local practitioners give injections only after checking the patient's wrist. (Parsa)

...Those providers have no certificate and no license but they are providing health services. (Bara district)

...Everybody is allowed to provide injections in this area. Even the piun [servant] at the health post is providing injections! (Dhading)

Several consumers reported that itinerant injection providers visit households and provide injections through clothing when modesty requires it.

...One Madise provider injected from outside the cloth. He was beaten by the people. (Dhading)

Consumer Attitudes Towards Injections

All respondents had had an injection sometime in their lives. Most have had many injections.

Most consumers said that it is better to use oral medications for common or less serious health problems, but that injections were necessary in certain cases. Cases in which injections are useful, as spontaneously mentioned by one or more respondents, included: “serious infections,” severe pain, rabies, tetanus, cuts and wounds, immunizations, TB, snakebite, high fever, diabetes, pneumonia, gout, back pain, bleeding, asthma, dysentery, STD, “nerve pain,” mental problems, when the patient is a child, or when the patient cannot swallow or is vomiting.

...If oral medicines are working well then why should we receive injections? (Bara)

...Children don't like to take medicines, so it is necessary to give an injection to them. (Chitwan)

Injections are generally seen to be more “serious medicine” than oral drugs. Injections can save lives in emergency and severe cases. They cure more quickly by placing drugs directly into the circulatory system. They are faster and more effective than oral medications, but riskier.

Oral drugs are widely seen as less convenient than injections. Patients may get “bored” taking oral medication for many days, they may forget to take the drugs, or others may see the drugs and learn that the patient is being treated for an embarrassing disease (such as an STD or TB).

...Injection is all right. It works a lot and it works faster. (Bara)

...I think injection is a higher category treatment than tablets. (Chitwan)

...An injection makes our immune systems stronger. (Chitwan)

Even less educated respondents had high awareness of risks associated with injections. Many had experienced or seen adverse events following injection. Injection risks, as spontaneously mentioned by one or more respondents, included: “nodes and knots;” boils, wounds, and infection; “reactions;” disease transmission (many consumers mentioned HIV, hepatitis, and tetanus); and pain and swelling at the injection site.

A few also mentioned these perceived risks: the needle may break if the provider is unskilled or the patient is in spasm; drug addiction; leprosy; fainting, dizziness; paralysis; diarrhea; STDs; cancer; itching; and burns.

...My uncle had a bad reaction after injection. My little brother died of wounds after injection. (Sarlahi)

...My neighbor's child died last month due to an improper diagnosis and reaction from the injected medicine. (Chitwan)

...Eleven years ago, when I was studying in grade three, one of my classmates found a used syringe nearby a medical hall. He filled the syringe with his urine and tried to inject me but I ran away. Instead, he injected another boy. As a result, that boy went to a hospital where his arm had to be cut off. (Dhading)

It should be noted that a few respondents, especially among the less educated, had little concern about injection risk.

...There is no more problem from injections. There comes only a simple knot at the injected site. (Parsa)

Consumers were divided about whether injections or oral therapies were more expensive. They noted that the cost depends on the condition and the type of treatment. For example, people calculate that to receive an injection one usually pays for a disposable syringe, for the medication, and for injection services, making an injection expensive. But one injection may replace several days of oral therapy, so the oral drugs may be more expensive in the long run (and less convenient).

Most consumers did not feel that many unnecessary injections are given in their area, but most could not define the term well. A few used one or more of these definitions: medicines provided without a prescription or by an unqualified provider, or an injection given only for profit. Two respondents mentioned that abortion injections are unnecessary. No consumer mentioned vitamin injections as unnecessary.

A number of consumers used one or more of these definitions for an unsafe injection: the same equipment is used with several people without sterilization; “date expired” medicines are used; an overdose or the wrong medicine is used; or the injection is given in the wrong spot.

A number of respondents mentioned that injections should not be given to women during pregnancy. It is unclear whether they were referring to “abortion injections” (specifically mentioned by two respondents) or to other types of injections (including tetanus immunization).

Consumer Reports of Injection Practice

Consumers reported that injections are very common, especially vitamin injections for “weakness,” antibiotics for infection, painkillers for back or muscle pain, and tetanus toxoid.

...Poor people get vitamin injections because there is no good diet at home. (Dhading)

...Vitamin injections should be received while feeling giddiness. (Parsa)

Most injections are given with disposable syringes and needles. Sterilizable syringes are uncommon these days (though they were common five or ten years ago).

Consumers frequently buy disposable equipment at the time of injection, or buy it ahead of time and take it to the injection venue (whether in public or private sectors).

Many consumers reported that it is common for providers to use non-sterile injection equipment with the same patient. This especially is true with poor patients who can’t afford to buy a syringe every time they receive an injection. A few consumers mentioned using the same syringe within a family.

...I was injected three times with the same disposable syringe myself. (Bara)

...We sometimes use the same syringe and needle repeatedly for the same person. The provider cleans it in water. After all it is only for injecting! (Parsa)

A few consumers said that it is common for providers to use non-sterile equipment with several patients. This especially is true for itinerant injection providers and providers who serve the very poor.

...In our local health post, the staff rinse used needles and syringes in cold water for consumers who don't bring their own. (Sarlahi)

...Providers in the village yards use the same syringes and needles for many people. (Parsa)

A few consumers mentioned that intravenous “drips” are common in their communities. This may be more common in the Terai.

Consumer Perceptions of Unsafe Disposal and Risk of Cross-Infection

Consumers reported that medical waste contaminated with blood or other body fluids is often thrown in uncovered garbage pits or in streams and gullies.

...They collect the used injection materials in a bucket and throw them at the dumping site. Then after some are burnt down and some are taken by garbage pickers. (Sarlahi)

...It would be better if the providers disposed of them in a pit but they don't. There is carelessness, nobody cares. (Bara)

Many respondents had experienced or seen needle stick injuries in the community. Many also were concerned that children could be pricked and infected.

...The local clinics and health post collect the used injection materials in a dustbin, then throw them in the field. People working in the field can be pricked and children playing with them prick each other. Once my neighbor's goat swallowed four syringes thrown on the ground and didn't recover for days! (Danusha)

...Some providers throw the used syringes in the river that flows into the canal. Then the working farmers get stuck by them. (Dhading)

Even less educated respondents tended to have high awareness of the risks associated with improper disposal of used injection equipment. Many consumers are concerned about tetanus infection (it was mentioned frequently). Many were also aware of the possibility of HIV and hepatitis B transmission from improperly disposed equipment.

...Children use syringes with needles as water guns and we have found them pricking their hands. We used to play with syringes too, but we stopped after hearing about AIDS. (Makwanpur)

There were, however, a few respondents who had less information or concerns about contaminated equipment and disposal issues.

...Many of the focus group participants said that used injection materials were thrown everywhere in the area but they did not see any problems from such disposal. (Bara)

Most consumers felt that injection equipment should be buried or burned, but many reported that was not routinely done. Many consumers, especially those better educated, felt that injection providers and municipal garbage services should be held accountable for proper disposal of medical waste.

...We can reduce such disposal and the risks, but we don't because we are lazy and careless ourselves. (Dhading)

...Used injection materials should be buried in the earth. Everyone should be aware about this. If providers do not properly dispose of the materials, they should be punished. (Dhading)

Several respondents reported that garbage collectors buy used syringes and needles from providers. A few respondents hypothesized that these materials are recycled and resold.

...Syringes are sold to the garbage collectors and needles are thrown in the drainage pipes. (Parsa)

...Used syringes are purchased by the manufacturers from the scrap sellers and after getting washed and repackaged, these are again sold in the market. (Bara)

However, most consumers seem to trust the packaged equipment sold in the pharmacies and medical shops.

...She was sure that if she bought a syringe for herself safety was certain. (Dhanusha)

III. Findings from In-depth Interviews with Injection Providers

Following is a list of trends in the data gathered through 18 in-depth interviews with injection providers. Illustrative quotations and notes on diversions from those trends are included, as appropriate.

Depth and quality of training varied considerably among providers, but most had not had any formal injection training. Four of the respondents are nurses or nurse-midwives. The remaining 14 had some work experience in health care settings but all of them routinely prescribe injections without consulting a qualified doctor or nurse. More information about provider training and experience can be found in Appendix A.

...The provider said that she did her ANM [auxiliary nurse-midwife] course and practice training at Bharatpur hospital and that she had been providing injection services to her community for the last five months. (Chitwan district)

...The provider told me that when he was studying in Class Eight [middle school] a medical practitioner came and settled in his village. When the respondent saw the man providing injections, he asked to be taught to prescribe and inject medicines. The practitioner taught him for six months, then the respondent went to Sitamani, India to work in a clinic as a compounder. He worked under Dr. G___ M___ for 10 years and, for the last two years, he operated his own clinic. (Sarlahi)

...The injection provider, a 23 year old man, had been operating the medical store for the last two years. He had received a three-week "orientation training for drug sellers," but was not trained to provide injections then. A doctor had trained him to do it 10 years before. (Bara)

Provider Attitudes Towards Consumers

Many providers mentioned that consumers often demand injections, especially less educated consumers. Educated consumers were easier to reason with regarding use of oral medicines instead of injections.

...If the well acquainted customers strongly demand for injections, I provide them. But I try to reduce the risks. (Bara)

...The poor and illiterate ask for injections for each and every disease. But rich and educated people never ask for injections. (Sarlahi)

...The rich, the educated, and the people at the roadside usually prefer oral drugs. But poor people or villagers or uneducated ones believe that injection is best. (Dhading)

Providers know that giving consumers what they want is good for business. They expressed concern that if a consumer was not satisfied, she or he might become angry and go to another shop. For this reason they sometimes comply with requests for injections, even when they know it is not necessary. They also acknowledged that some providers promote unnecessary treatments.

...Injections are given when consumers insist on them, so that we do not slow down the business. (Chitwan)

...Providers sometimes give injections to boost the consumer's faith and for his mental health, such as when they give vitamin injections for aged people and simple injections in delivery cases. (Parsa)

Provider Attitudes Towards Injections

In general, provider perceptions of injections were similar to consumer perceptions. However, as might be expected, many providers tended to have a more sophisticated understanding of medical issues than most consumers. They also tended to be better educated.

Like consumers, most providers said that it is better to use oral medications for common or less serious health problems, but injections are necessary in certain cases. Cases in which injections are useful, as spontaneously mentioned by one or more respondents, included: rabies, tetanus, cuts and wounds, TB, high fever, paralysis, chest infection, scabies, pneumonia, severe pain, back pain, severe "gastric," typhoid, head injuries, bronchitis, bleeding, fungal infection, shock, snakebite, menstrual problems, during labor, or when the patient cannot swallow or is vomiting.

...It is better not to take injections as far as possible, but better to use a disposable syringe if necessary. (Chitwan)

...At least five patients come to me each day. On average I provide injections to three of them, according to need. (Sarlahi)

Providers say that injections are faster and more effective than oral drugs, but riskier. They cure more quickly by placing drugs directly into the circulatory system. Oral medicines are widely seen as less convenient than injections.

...Customers feel that injections are good because they cure quickly and effectively. They have a choice: take one injection per day or take oral pills 2 or 3 times a day. That can make oral drugs expensive and people need to remember to take them on time. (Chitwan)

Nearly all providers had high awareness of the risks associated with injections. Injection risks, as spontaneously mentioned by one or more respondents, included: "nodes and knots;" boils, wounds, and infection; allergic reactions to medications; disease transmission (many providers mentioned HIV, hepatitis B, and tetanus); and pain and swelling at the injection site.

A few also mentioned these risks: fainting, unhappy customers if an injection created problems, legal action against the provider, dizziness, constipation, chest and stomach pain, and paralysis.

...Some customers complain that they got a node on the injection site. It comes because of customers who don't sit properly while getting injected. (Bara)

...A provider coming from India gave injections to a consumer as there was a wound. A few minutes after getting the injection, the patient died and the provider had to run away. (Parsa)

Like consumers, providers were divided about whether injections or oral medications were more expensive, feeling that the cost depends on the condition and the type of treatment.

Providers defined an unnecessary injection using these terms (some providers gave one or more of these definitions, some gave no definition): medicines provided without a prescription or by an unqualified provider, injections to increase sexual power, vitamins, penicillin to treat a simple wound, or painkillers.

Providers defined an unsafe injection using these terms (some providers gave one or more of these definitions, some gave no definition): an injection is provided by an unqualified person, the same equipment is used with several people without sterilization, “date expired” medicines are used, medicines improperly stored are used, an improper dose or the wrong medicine is used, antibiotics are given without first testing for allergies, or the injection is given in the wrong spot.

Only one provider expressed concern about increasing drug resistance. Interestingly, he was not formally trained—he learned to practice medicine working in various clinics in India and Nepal.

Several providers mentioned that injections should not be given in the following situations (each respondent spontaneously mentioned one or more of these conditions): during pregnancy, to unconscious persons, to persons with anemia or low blood pressure, to those with high fevers, to patients with empty stomachs, or to those allergic to the medication.

Provider Reports on Injection Practices

Some providers give injections infrequently, others give many injections every day. Among the sixteen respondents for whom we have data, three provide less than one injection per week, four provide one to 10 injections per week, four provide 11 to 30 injections per week, and five provide more than 31 injections per week.

Most providers use disposable needles and syringes, one per patient per injection.

...Now a days, customers ask only for disposable syringes. I too practice the same ...Up to fifteen years ago, I used to clean glass syringes by boiling them for 30 minutes. (Chitwan)

...At the sub-health post where I have a permanent job we have some glass syringes. But I don't use them because they are not properly cleaned. I tell people to buy disposable syringes and bring them in. (Dhading)

Many providers reported that reuse of disposable syringes by the same person is a common practice. This was more often done by the poor, to save money. Providers suggested that a disposable needle and syringe can be used two to five times. They seem to see nothing wrong with this practice.

...A disposable syringe can be used several times for the same person. It is not necessary to clean it, recapping it is enough. (Chitwan)

...In treatment of poor people, the provider was compelled to provide the injections with the same syringe up to four times as the poor could not buy new syringes each time. (Bara)

...I sometimes use the same syringe for the same client by cleaning it with saline water. I give it back to the client to keep safe because I am not a medical shopkeeper, it may get lost somewhere. (Parsa)

A few providers claimed that other providers use one needle and syringe with different patients, but none admitted to doing so themselves.

Most providers do not feel that it is necessary to wash hands prior to giving an injection with a disposable syringe.

...The provider said that washing hands was not necessary because he was using disposable syringes exclusively. (Sarlahi)

...In the case of using a disposable syringe...I know well that a needle should not be touched. I don't touch it so it doesn't matter if I don't wash my hands, I am confident about this. (Parsa)

When discussing injection-related risk, only five of 18 providers mentioned being at risk of needle sticks and infection themselves.

...Rusty needles can transmit tetanus, AIDS, and hepatitis. One of my friend's sisters who was drawing blood recapped the needle and accidentally pricked herself. She got hepatitis. I strongly advise not to recap needles after use. (Chitwan)

In discussing how they would disinfect injection equipment, a few providers recommended boiling it for from 5 to 30 minutes.

Many providers expressed concern that injections were being provided in an unsafe manner by unqualified providers. Many of them suggested enacting and enforcing legislation, training providers properly, and educating the public.

...The government should ban unsafe injection practices or provide training for safe injections. (Sarlahi)

...Some people in this community are receiving injections from Indian practitioners who go house to house. Injections are provided without cleaning the site or washing hands. Injections are given through the clothes, too! These practitioners should be stopped from coming in. (Parsa)

A number of providers reported that they perform minor surgery, such as stitching wounds and lancing boils.

Provider Reports on Disposal of Used Injection Equipment

Like consumers, providers have high awareness of the risks associated with improper disposal of used injection equipment. Most providers were aware of the possibility of disease transmission from improperly disposed equipment and some specifically mentioned HIV, hepatitis, and tetanus.

Providers generally seemed to think it was acceptable to use (and reuse) open buckets to hold used medical waste until it is buried or dumped for the municipality to pick up. Most of them do not know what happens to the waste once the city picks it up.

Most providers recommended that medical waste be buried or burned. Most did not report doing that themselves, though a few did.

...The provider said that he collects needles & blood stained cotton gauze in an open bucket, then packs them in a carton box and dumps them near the river. He knows that dumping in the open could create problems so he added that the VDC /District Administration Office should find safe dumping or disposal sites. (Chitwan)

Three providers (out of 18) mentioned selling used needles and syringes to garbage collectors.

...The provider sells used syringes to a "Kabadi Wala" [scrap purchaser]. (Chitwan)

...I sell used syringes to the garbage collectors at a price of Nrs. 30.00/kg." (Sarlahi)

Discussion

Concerned by reports from GWP field staff about unsafe injections, the investigators were determined to learn more about the “culture of injections” in Central Nepal. Qualitative research methods were selected for this task because they are particularly effective in exposing why and how people behave in certain ways and what they believe about certain topics. Though qualitative data are not statistically representative in the way that data from a quantitative survey are, the rich, descriptive information gathered through observation, focus group discussions, and in-depth interviews can be extremely useful for program planning, for development of educational strategies, and for design of surveys to answer quantitative questions.

The GWP research team set out to systematically observe injection practices in the study area and to document the thoughts and attitudes of injection providers and consumers in their own words. The researchers interacted with 204 individuals in seven districts.

A complex story emerges when listening to these many voices. The research teams met dedicated, caring providers working hard under difficult conditions. They also observed providers exploiting their customers by prescribing unnecessary injections, delivering them in an unsafe manner, and selling unnecessary oral medications. But in spite of the fact that all the respondents have unique perspectives, and that some people’s comments contradict others, we see a number of common trends in the data.

It is clear, for example, that many injections are given by private health care providers in the study area every day. Most of these providers are not supervised by qualified doctors or nurses. They have had some exposure to health care provision (perhaps from working as an orderly in a hospital or pharmacy, for example), but many have no formal injection training at all. From their “medical halls,” pharmacies, and private clinics (many of which are dirty and open to the air), these local providers diagnose diseases, prescribe controlled substances, inject drugs, set up intravenous infusions, and perform minor surgical and dental procedures. Consumers respect these providers as “doctors,” pay them for consultation, and, as a rule, comply with their instructions.

We were surprised, and pleased, to note that many providers and consumers said that injections usually are not needed for common illness such as colds and flu. They think of injections as strong medicine—fast acting and effective, but risky. In spite of this finding, the data make it clear that injections which many trained doctors would call unnecessary are given in the study area every day.

Interestingly, some providers were cautious in prescribing injections to our secret shoppers (the researchers believe that in some of these cases respondents may have been suspicious of the secret shopper’s motives, and therefore were more cautious about offering injections). But by far the more common observation was that injections of vitamins, antibiotics, and/or painkillers are frequently prescribed during routine health consultations. Consumers sometimes demand injections and providers make money providing them. The uneducated (and usually, poor) consumer is especially vulnerable; the team observed several destitute patients leaving consultations with bags full of expensive tonics and pills. But most consumers do not complain that they are being sold unnecessary medication, stating instead that “the doctor knows best.”

Among our respondents, the concept of an unsafe injection is much more widely understood than that of an unnecessary injection. By and large consumers and providers understand the risk of infection posed by injection equipment. Much of their awareness comes from personal experience—friends or family members who had abscesses or allergic reactions. Most respondents fear tetanus, so are concerned about metal sharps in the environment (where people often walk barefoot or wearing thin rubber sandals). Many respondents spontaneously mentioned that HIV and hepatitis B could be transmitted by injection. Some of this heightened AIDS awareness may be explained by the fact that 60% of our respondents live within the GWP AIDS education project area.

Access to disposable syringes, perhaps reinforced with aggressive AIDS education and personal experience of injection-related problems, may have changed injection practices in the study area over the past five or ten years. Providers reported that they previously used sterilizable syringes, but respondents say that now only the very poor have to reuse syringes—sometimes with the same patient, sometimes with many different patients. Fortunately, most patients and providers understand that it is safer to use a disposable syringe, fresh from its sealed packet, for each injection. Those who can afford to do so buy “fresh” disposable syringes each time.

We were alarmed by the extent to which providers and consumers agree that reuse of a needle and syringe by the same person is a sensible way to save money and protect oneself against infection with HIV and hepatitis B. This situation may affect the acceptability of auto-disable (AD) syringes. If Nepal should win support from the Global Fund for Children’s Vaccines, AD syringes may soon be introduced. Training and promotion for these devices will be challenging since AD syringes may seem expensive and unnecessary to some consumers.

The high volume of disposable syringes used in the study area creates an environmental biohazard which Nepal is not prepared to handle. In spite of people’s awareness of the danger of cross-infection, most providers toss used needles and syringes (and other contaminated waste) into open buckets where they are easily accessible to children. The waste later is dumped in unfrequented areas such as uncovered sewers, gullies, or rivers, or in an unsecured collection area. Sometimes traders buy used syringes and needles from medical shops.

We were concerned that so many providers and consumers spontaneously recommended that “injections should not be given to pregnant women.” It is unclear what they meant by this comment and whether such a perception extends to tetanus vaccination during pregnancy. Unfortunately, we do not know their exact beliefs and behaviors regarding tetanus since those specific questions were not included in the observation or interview guides.

We also do not know much about intravenous infusions and dental and surgical procedures in the project area. Researchers were not asked to look for equipment used for these purposes, though some spontaneously noted their presence. When later asked about personal knowledge of intravenous infusion, most of the researchers, especially those from the Terai (southern Nepal along the Indian border), reported that “saline drips” are popular and common in their communities.

Of great concern is the wide gap between provider knowledge and their practices. Given that many respondents had personally experienced, seen, or heard about injection-related health problems, the risk of infection must seem very real to them. Yet only a few providers seemed concerned about needle stick

accidents and only one had a sharps disposal container designed specifically for that purpose. Many carelessly dispose of contaminated waste in spite of the fact that they themselves say it should be burned or buried. And in spite of some attention to using clean technique, only one out of 50 providers washed her hands before injecting.

While many consumers and providers exhibit a classic “ke garne?” [what to do?] attitude about injection-related problems, others, especially more educated respondents, called for policy reform and enforcement, increased training, and better public education related to injection safety.

...When asked about injection safety problems, the man said that there are many such problems in the village but they are not recorded. To solve these problems he suggested that only properly trained persons should provide injections, otherwise they must be punished by law. (Consumer, Sarlahi)

...To avoid unsafe or unnecessary injections it is necessary to raise the awareness of the people and the authorities. (Provider, Danusha)

...The providers should be convinced by the big doctors or other Government people [to improve injection safety]. Who will listen to us? We are like jackals before a tiger! (Consumer, Sarlahi)

Conclusions

Using classifications developed by Dr. Hutin of SIGN, our data point to the following problems in the study area:

Observed and reported consequences of poor injection practices

- Providers and consumers commonly report adverse consequences following injection (including abscesses, amputation, and death).
- They also report needle prick incidents resulting from poorly disposed waste.

Practices that put providers at risk

- Unsafe handling of injection equipment and other sharps is common.
- Storage of contaminated waste in easily accessible, open containers is common. Container reuse is also common.
- Adverse consequences of injections could result in decreased business and even violence against the provider.

Practices that put consumers at risk

- Health care services, including injections, are provided by unqualified personnel.
- Reuse of non-sterile injection equipment with the same patient is common among the very poor.
- Use of non-sterile injection equipment among more than one patient was observed.
- Providers generally fail to wash hands or take other hygienic precautions while injecting.

Practices that put the community at risk

- Disposal of contaminated medical waste in public areas, including needles and syringes, is common.
- Resale of non-sterile injection equipment may be a problem.

Unnecessary injections

- Injections are valued by consumers and providers as fast acting and necessary therapy for a variety of complaints.
- Injections of vitamins, antibiotics, and painkillers are common in spite of widespread acknowledgement that oral medications should be used for less serious complaints.

Determinants of poor practices

- Poverty may drive consumers to reuse injection equipment, to consult less-qualified providers, and to get treatment without sufficient diagnostic information.
- Less-educated consumers may be more likely to demand injections and less likely to be convinced otherwise. They may also be less likely to question the provider and more vulnerable to exploitation.
- A shortage of trained health care providers may open the market to those with questionable qualifications.
- Lack of policies restricting medical practice, or lack of enforcement of those policies, may result in lower standards of care.

Recommendations

1. There is a serious gap between provider knowledge about injection safety and provider behavior.

Policy initiatives, infrastructure development, and provider and consumer behavior change strategies should be considered, including:

- Create and enforce legislation and policies related to qualifications for providing health services and for safe handling of medical waste. Ban the sale of used injection equipment (if that is a problem).
- Improve handling of waste by increasing provider access to safe, simple waste management tools, such as dedicated incinerator boxes (perhaps using social marketing strategies).
- Create, or improve, facilities for handling and safe disposal of waste.
- Implement public education, through the mass media and other channels, emphasizing the toll of hepatitis B, HIV, hepatitis C, and abscesses related to contaminated sharps. Reinforce existing perceptions about injection risks while taking appropriate measures to promote behavior change. Pay special attention to the poor and uneducated and how their vulnerability can be lessened.

2. The findings of this study suggest that research into the following areas might be useful:

- Conduct a rapid assessment of injection practices in public sector facilities.
- Gain a better understanding of hospital and municipal handling and disposal of medical waste and design interventions to improve unsafe practices.
- Investigate attitudes towards and practices related to intravenous infusions and minor surgical and dental procedures (such as stitching wounds, lancing boils, and pulling teeth).
- Assess the safety of disposable syringes in the market. Investigate syringe (and needle) recycling practices and the economics of recycling. Should a problem be identified, consider designing action research into stopping the practice and helping consumers and providers recognize low quality products.
- Determine whether providers support TT vaccination of pregnant women (and others) or not. If not, educate them to the benefits of TT immunization.
- Because many of our respondents live in the GWP project area, they may be better informed about HIV transmission than people in other parts of the country. Further investigation in non-GWP project areas may be warranted to assess whether the general public is as knowledgeable as many of our respondents.

3. If autodisable (AD) syringes are introduced in Nepal, special attention should be paid to public education. This could be challenging as campaign designers must be careful not to inadvertently promote injections in general while introducing AD syringes.

Appendix A – Respondent Characteristics

A total of 124 interactions with 204 injection consumers and injection providers

64 individual interviews with Injection Consumers and Providers

Research Method	Total	Sex of Resp.	Educational Level of Respondent			
			# Illiterate/Low Literate Resp.	# Resp. passed Class 5-10	# Resp. with SLC or higher	Data not avail. on educational level
In-depth int. with Consumers	46 Cons.	19 male 27 female	29	7	10	0
In-depth int. with Providers	18 Prov.	13 male 5 female	0	3	14	1

10 Focus Group Discussions with a total of 90 Consumers

Research Method	Total	Sex of FGD participants	Educational Level of FGD Participants			
			# FGDs with Illiterate/Low Literate Resp.	# FGDs with resp. completed Class 5-10	# FGDs with resp. with SLC or higher	Mixed or data not available on educational level
Focus Group Discussion (FGD) with Consumers	10 FGDs with 90 cons.	4 FGDs with men 6 FGDs with women	4	2	1	3

25 Direct Observations of Injection Provision and Observation of Injection Venue +

25 “Secret Shopper” interactions with Providers and Observation of Injection Venue

Research Method	Total # venues observed	Sex of Provider	Educational Level of Provider			
			# Provider Illiterate/Low Literate	# Prov. passed Class 5-10	# Prov. with SLC or higher	Data not avail. on educational level
Consumer-Provider Observation	25 venues	24 male 1 female	1	1	11	12
Secret Shopper Observation	25 venues	22 male 3 female	0	2	7	16

Provider Qualifications

Training of Provider	No. of Providers (n=18)
Formal training including injection technique (nursing school, nurse-midwife training, etc.)	4
Some formal health care training (may not have included training in injection technique: Community Medical Assistant training, drug seller's orientation training, family planning outreach worker training, etc.)	6
Informal training only (doctor trained provider to inject on the job, provider was trained by uncle, etc.)	6
Data not available	2
Years of Injection Experience	
<1 year	1
1-10 years	3
11-30 years	8
Data not available	6

Appendix B – Interview and Observation Guides

Observation Guidelines (Injection Providers)

1. General Information

1.1. District 1.2. VDC/Municipality/Ward/Village 1.3. Name of Observer 1.4. Date

2. Describe the provider (i.e. pharmacist or assistant, doctor or assistant, teashop owner, faithhealer, age, sex, training, education etc.,).
3. Describe the setting (i.e. private clinic, pharmacy, teashop, private house, shops, and storage of syringe and medicine, etc.,).
4. Describe the customer (i.e. age, caste/ethnicity, sex, education, middle/upper class or lower class, active/aggressive customer or passive customer, etc., as you can).
5. Listen to interaction between customer and provider.
What symptoms does the patient describe?
If the provider mentions the diagnosis, what is it?
Does patient request injection? What is the provider's reaction?
If provider suggests injection, how does the patient react?
Does the patient or provider express any concern about injection safety?
6. Observation of injecting process
What medicine is being injected (if possible)?
What type of syringe is used?
Where and how was the syringe stored?
Did the provider wash his/ her hands before beginning the procedure?
How did the provider handle the equipment? Does he put equipment on dirty surfaces?
How did the provider handle the medication?
Did the provider fill the syringe in a sterile manner?
How did the provider clean the injection site?
What did the provider do with the syringe after use?
7. Observation of sterilization and disposal process
Does the provider have a steam sterilizer in the workplace?
Is there any source of heat (electric hotplate, fireplace, stove, etc.,) that could be used for boiling water?
Is there any evidence of how the provider disposes of waste? Do you see syringes or needles on the ground nearby?
Do you see any other medical waste exposed nearby (gauze, bloody materials, empty vials, etc.,)?
Do you see any other evidence of unsafe disposal of injection equipment or other sharps (i.e. children playing with syringes)?

Secret Shopper Guidelines

(Being a secret shopper observe in detail the interaction of provider, his injecting, sterilization and disposal process as far as possible as specified in observation guidelines).

1. General information

1.1. District 1.2. VDC/Municipality 1.3. Name of secret shopper 1.4. Date

2. Describe the private provider

(Age, sex, education, training, ethnicity, whether he/she is a medical shopkeeper or his assistant or a doctor or his assistant or other health staff)

3. Describe the place of treatment

(Whether it is a tea-shop or under a tree or medical shop or general stores, private house, private clinic etc. and describe the storage system of syringes and medicines)

4. Describe your problem/ symptoms to the provider

5. Describe the diagnosis and the reaction of the provider and follow his instructions.

6. Wait till the time of injecting and observe how the provider handles the syringe and medicine, washes his hands and cleans the injecting spot.

7. Stop the provider at the time of injecting and thank him (make a natural excuse for stopping him to inject).

8. Pay the prices for syringe, opened and used medicines if necessary and bring them with you (be careful while bringing them with you).

In-depth Interview Guidelines (Private Injection Providers)

- A. General Information
1. District 2. VDC 3. Name of the Respondent: 4. Age 5. Sex 6. Caste/Ethnicity 7. Education
8. Experience 9. Training (if any) 10. Address 11. Name of Interviewer 12. Date of Interview
- B. Treatment Practices
1. What kinds of diseases or symptoms do you usually treat here?
2. How do you treat these diseases? (probe for injection)
3. Are there any specific diseases or symptoms for which injections are most effective? If, yes which ones and why?
4. Are there any other ways to treat these diseases? If yes, when is it better to use those therapies? Why?
5. How often do you provide injections? (Probe for frequency)
6. When and where did you learn to give injections?
7. Since how long have you been giving injection?
8. Why do you think that patients come to you for injections instead of going to the health post or hospital?
9. What is your average charge for injection? (ask detail cost of syringe and fee and medicine)
- C. Perceptions Regarding Injections
1. What do your patients think about injections and why?
2. Who initiates first for injection (you or consumers)?
3. What do you do when consumers request for injection? Whether you provide or not? Why?
4. In what situations injection is not appropriate even if consumers request it? Why?
5. If you refuse to give injection, how your patients react to that and why? What do you do then?
6. Have you noticed any differences between what educated or illiterate patients think about injections? Why?
7. Do you think is it necessary to treat these types of patients differently in any way? Why?
- D. Advantages and Disadvantages of Syringes
1. What are the advantages and disadvantages of injections for patients? For providers? Why? (Probe for knowledge of hepatitis B, Hepatitis C and HIV transmission, allergic reactions between patients or from patient to provider following needle stick injury and how providers have obtained knowledge of safety issues)
2. Accidentally, if a used needle pricked someone what will happen? How did you know about it?
3. What types of complaints do you hear from your patients regarding injections and why?
4. Are there any risks associated with injections? In other words, can injections ever harm someone? How?
5. How common are such risks in this area? How often unsafe injections are used?
- E. Use of Syringes
1. What kinds of syringes do you usually use? When and why do you use each kind?
2. Could you please demonstrate (or explain) how you give an injection? (Urge the respondent to role-play)
3. How did you learn to give an injection that way?
4. Could you please show me what you do after each injection to clean the equipment?
4. Why do you do things that way? What is the advantage?
5. Where do you keep these syringes and needles for later use? Why do you keep like this? Do you always keep do so?
6. In what situations do you ever have to reuse disposal syringes? How often do you have to reuse them? How they were cleaned for later use? (Probe for adequate procedures, equipment, materials and knowledge)
- F. Problems and Solutions
1. In your opinion, what procedure you could do while giving injection in a better way, but you can not do so because of your situation? (Probe for which procedures should be used to administer a safe injection: washing hands, clean surface, sterile needle and syringe, skin disinfection, sterilization of needles and syringes and storage of needles and syringes)
2. What process you could not do? Why? What are the problems?
3. What happens to syringes and needles after they have been used and discarded? (Probe for how they are disposed)
4. Are there any risks or problems that result from this? If yes, what could be done to reduce these problems?
5. Do people have their own injection equipment for use in health facilities or at home? If yes, why people have their own equipment? From where they obtain it? What types of injection equipment do they keep? Why do they keep them?
6. Who administers the injections in the home? How do they clean the equipment?
7. In your opinion what type of injection is unnecessary?
8. Do people in this community receive unnecessary injections? In what situations? Why? Who provides?
9. In your opinion what type of injection is unsafe?
10. Do people in this community receive unsafe injections? In what situations? Why? Who provides?
11. What could be done to reduce these problems (unnecessary/unsafe injections)? What should be done and by whom?

In-depth Interview Guidelines (Injection Consumers)

A. General Information

- | | | |
|------------------------|----------------------|---------------------------|
| 1. District | 2. VDC | 3. Name of the Respondent |
| 4. Age | 5. Sex | 6. Caste/Ethnicity |
| 7. Education | | |
| 8. Name of Interviewer | 9. Date of Interview | |

B. Common Health Problems and Treatment Practices

1. What kinds of health problems are most common in this community?
2. What treatments are given for these problems? (Probe for injections, oral and other therapies)
3. Where do people in this community go for treatment of these health problems? (Probe for all types of providers i.e. health posts, hospitals, private clinics, pharmacies, baidyas, faith healers etc.,)
4. How and why do you choose specific treatment providers?

C. Knowledge, Attitude and Practice Regarding Injection

1. How do you determine if a treatment is effective?
2. Are there any specific diseases or symptoms for which injections are most effective? If yes, which ones? Why? How do you know that?
3. Where can people in this area get injections? And you? (If, other than a government health post or hospital)
4. Why do you choose to go to that place?
5. When was the last time you or your family members got an injection? What was it for? Who gave it? Where? Why did you get the injection there instead of someplace else? Are there any other places nearby to get injections?
6. In your opinion, when people seek health care, how often do they receive injections (always, most of the time, or only sometimes)? Why?
7. What do you think of receiving injection? (probe for its reason: good, bad or problem) Why do you think so?
8. Are injections popular in the area? If yes, why? How did you form that opinion? (prob for health education providers, source of health education, experience) If no, why?
9. How do the direct costs (for instance provider fee) and the indirect costs (for instance cost of travel to provider) of injections compared to the cost of other types of therapy?
10. If injections are more expensive, do people still demand or prefer them? Why? (Probe for why people prefer injections, for instance perceptions of injections being a quicker cure and therefore worth more money/effort)
11. How do you think injection prescribers decide on whether or not to give an injection? (Probe for people's perception of the providers' therapeutic rationale)
12. In what situations patients request for injections? (probe for reasons)
13. In what situations patients should not get injections? Why? How did you know about it?

D. Problems and Solutions

1. What types of risks are associated with injections or circumstances where injections should not be given?
2. Have you ever heard of people having health problems resulting from injections in the area? If yes, what kinds of problems?
3. What could be done to prevent these problems?
4. How often people in this area receive too many or unnecessary injections? Why do you think they are unnecessary? In what situations such injections are received/provided?
5. In your opinion what types of injections are unsafe? Why?
6. How often people in this area receive unsafe injections? Why do you think they are unsafe? In what situations such injections are received/provided?
7. What could be done to prevent these problems (unsafe and unnecessary injections)? How?
8. Aside from immunizations, are there differences in men, women and children receiving injections? (Probe for differences in prescribing patterns and perceived gender/age based reactions to injections)
9. Do you, or other people, ever keep your own, personal injection equipment for use in health facilities or at home? If yes, why do you have your own equipment? Where did you obtain it? How do you clean it after use?
10. Who provides injections at home if required? (ask if the consumer provide injections at home) Can you demonstrate how you give the injection and how you clean the equipment?
11. What happens to syringes and needles after they have been used and discarded? (probe for disposal process)
12. What types of problems could occur due to the used and discarded syringes and needles? (probe for problems and examples)
13. What could be done to prevent these problems? (probe for what should be done and who should do it, and why it was not done)

Topic Guide for Focus Group Discussion with Injection Consumers

A. Introduction and Warm-up

Spend 5-10 minutes for warming-up the group. Putting them at ease.

I. Moderator's Opening:

Describe what a focus group is: an opportunity to get together and discuss your thoughts and feelings about a particular topic.

Explain the purpose of the group: we will be discussing some aspects of health and would like your reactions.

Explain they should feel free to give their frank opinions.

Assure the group that this session is only for research purpose and all comments will be kept confidential and be used for research purpose only.

Explain that it is an opportunity to share ideas, it is not a test, and therefore there is no right or wrong answer. All comments are valuable -- both positive and negative.

Create trust and security among the participants -- we are like brothers and sisters.

II. Warm-up Questions:

Introduce the team (moderator/ recorder) and provide warm-up information.

Ask the participants to introduce themselves (collect basic demographic and other information of the participants: name, age, sex, caste, education, occupation, etc.,).

B. Common Health Problems and Treatment Practices

1. What kinds of health problems are most common in this community?
2. What treatments are given for these problems? (Probe for injections, oral and other therapies)
3. Where do people in this community go for treatment of these health problems? (Probe for all types of providers i.e. health posts, hospitals, private clinics, pharmacies, baidyas, faithhealers etc.,)
4. How and why do you choose specific treatment providers?

C. Knowledge, Attitude and Practice Regarding Injection

1. How do you determine if a treatment is effective?
2. Are there any specific diseases or symptoms for which injections are most effective? If yes, which ones? Why? How do you know that?
3. Where can people in this area get injections? If, other than a government health post or hospital, why do they choose to go to that place?
4. When was the last time you or your family members got an injection? What was it for? Who gave it? Where? Why did you get the injection there instead of someplace else? Are there any other places nearby to get injections?
5. In your opinion, when people seek health care, how often do they receive injections (always, most of the time, or only sometimes)? Why?
6. What do you think of receiving injection? (probe for its reason: good, bad or problem)
Why do you think so?
7. Are injections popular in the area? If yes, why? How did you form that opinion? (prob for health education providers, source of health education, experience) If no, why?
8. How do the direct costs (for instance provider fee) and the indirect costs (for instance cost of travel to provider) of injections compared to the cost of other types of therapy?
9. If injections are more expensive, do people still demand or prefer them? Why? (Probe for why people prefer injections, for instance perceptions of injections being a quicker cure and therefore worth more money/effort)
10. How do you think injection prescribers decide on whether or not to give an injection?
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12. What could be done to prevent these problems? (probe for what should be done and who should do it, and why it was not done)

Appendix C – Methods Details

The Research Team

The study was designed by Mr. Mahesh Dev Bhattarai, Co-Principle Investigator and Director of General Welfare Pratisthan and Mr. Scott Wittet, Co-Principle Investigator and Communications Director of the Gates Children’s Vaccine Program at PATH. Both Mr. Wittet and Mr. Bhattarai have many years of experience conducting qualitative research into health issues in Nepal. Mr. Prakash Adikari, Project Manager, worked closely with the design team to develop the interview and observation guides and to organize the training of the interview teams.

Four different qualitative research methods were used in this study: in-depth interviews, focus group discussions, direct observation of interactions between providers and consumers (including observation of injection practices), and secret shopper interactions with providers.

Thirteen researchers successfully passed a three-day training course, followed by two days of supervised research using the guides in the field. In accordance with standard qualitative research practice, interviewers were trained to use the interview and observation guides as “checklists” to make sure that they had gathered all the required data, but they were careful to allow consumers and providers to respond in their own words. The researchers also were trained to probe for details in an appropriate manner.

The researchers were selected based on their interpersonal communication skills, their ability to speak one or more local languages, and demonstrated success using the guides in the field.

Research Methods

Four different qualitative research methods were used in this study: in-depth interviews, focus group discussions, direct observation of interactions between providers and consumers (including observation of injection practices), and secret shopper interactions with providers.

In-depth interviews: The individual, in-depth interviews with providers and consumers were conducted in private and typically lasted from 20 minutes to 1 hour.

Focus Group Discussions: The focus groups were segregated by gender, and, as much as possible, by educational level. However, three of ten focus groups included respondents of diverse educational backgrounds. The focus groups usually lasted 60 to 90 minutes.

Observations: For the direct observations, researchers simply waited near injection venues (i.e. private clinics or pharmacies) until a consumer approached. The researcher then drew near enough to hear what was said and often to see what medication was being injected. Because injections seem to be so common in the study area, it was not difficult for our researchers to have success with this method.

Secret Shopper Interactions: We did not know for certain that the observations would be successful when designing the study, so we also trained the researchers in the secret shopper research method. “Secret Shoppers” (sometimes called “Mystery Clients”) are researchers who pose as clients, presenting themselves to a provider with a variety of complaints. The researcher continues in this role until an injection is about to be given, then finds an excuse to decline it, pays the provider for materials as appropriate, and departs.

The full set of interview and observation guides can be found in Appendix B. To summarize them: the interview guides reminded interviewers to concentrate on topics such as respondent attitudes towards injections, respondent awareness of risk related to injections, and respondent awareness of waste disposal issues, among others.

The observation and secret shopper guides reminded researchers to document interactions between providers and consumers (or secret shoppers), to observe and describe the venue, to note what type of medicine was injected, and to look for contaminated waste, among other topics.

The interviews and observations were conducted March-July, 2000 in urban and rural sections of seven Central region districts: Bara, Chitwan, Dhading, Dhanusha, Makwanpur, Parsa, and Sarlahi. All interviews and focus groups were conducted in Nepali, Maithili, or another local language.

Approximately 60% of respondents were interviewed or observed within the area where GWP has been conducting AIDS education activities for the past six years. The remaining respondents may have been exposed to AIDS education activities from the government or another NGO, or when traveling through the GWP area, but to our knowledge they have had no direct contact with GWP staff prior to this study.

Data Recording, Translation, And Analysis

In-depth interviews were conducted by a single interviewer who took detailed notes during the conversation.

The focus groups were conducted by two person research teams: one interviewer/facilitator and one notetaker.

Direct observations and secret shopper interactions were usually conducted by a single researcher, though they sometimes traveled in pairs. These researchers recorded their observations and experiences immediately after leaving the injection venue.

The Nepali-language notes were translated into English by a member of the research team. The raw, English data were sent to Seattle for analysis. The Co-Principle Investigator read the full set of interview and observation reports several times, extracting key statements and verbatim quotations and entering them into a database. These summarized data could be sorted by data report number, location of research, type of research method (secret shopper, observation, focus group, etc.), type of respondent (i.e. consumer or provider), age of respondent, educational level of respondent, gender of respondent, or name of researcher. By examining the data in these ways the Co-Principle Investigator was able to spot the major trends and divergent data as reported in the Findings section of this paper.

Information on respondent characteristics can be found in Appendix A.