Should Pharmacists have a Role in Harm Reduction Services for IDUs? A Qualitative Study in Tallinn, Estonia

Sigrid Vorobjov, Anneli Uusküla, Katri Abel-Ollo, Ave Talu,
and Don Des Jarlais

ABSTRACT *Despite the high number of injecting drug users (IDUs) in Estonia, little is known about involving pharmacies into human immunodeficiency virus (HIV) prevention activities and potential barriers. Similarly, in other Eastern European countries, there is a need for additional sources for clean syringes besides syringe exchange programmes (SEPs), but data on current practices relating to pharmacists' role in harm reduction strategies is scant. Involving pharmacies is especially important for several reasons: they have extended hours of operation and convenient locations compared to SEPs, may provide access for IDUs who have avoided SEPs, and are a trusted health resource in the community. We conducted a series of focus groups with pharmacists and IDUs in Tallinn, Estonia, to explore their attitudes toward the role of pharmacists in HIV prevention activities for IDUs. Many, but not all, pharmacists reported a readiness to sell syringes to IDUs to help prevent HIV transmission. However, negative attitudes toward IDUs in general and syringe sales to them specifically were identified as important factors restricting such sales. The idea of free distribution of clean syringes or other injecting equipment and disposal of used syringes in pharmacies elicited strong resistance. IDUs stated that pharmacies were convenient for acquiring syringes due to their extended opening hours and local distribution. IDUs were positive toward pharmacies, although they were aware of stigma from pharmacists and other customers. They also emphasized the need for distilled water and other injection paraphernalia. In conclusion, there are no formal or legislative obstacles for providing HIV prevention services for IDUs at pharmacies. Addressing negative attitudes through educational courses and involving pharmacists willing to be public health educators in high drug use areas would improve access for HIV prevention services for IDUs.*

KEYWORDS *Injecting drug users, Pharmacists, Harm reduction services*

INTRODUCTION

Injecting drug users (IDUs) are at high risk of acquiring human immunodeficiency virus (HIV) and other blood-borne infections. In Eastern Europe, IDUs account for the majority of new HIV cases and in some countries also most hepatitis C cases, mainly due to sharing contaminated syringes or other injection equipment.¹⁻³

Vorobjov, Abel-Ollo, and Talu are with the Estonian Drug Monitoring Centre, National Institute for Health Development, Tallinn, Estonia; Vorobjov and Uusküla are with the Estonian Centre of Excellence in Behavioural and Health Sciences, Tartu, Estonia; Uusküla is with the Department of Public Health, University of Tartu, Tartu, Estonia; Jarlais is with the Chemical Dependency Institute, Beth Israel Medical Center, New York, NY, USA.

Correspondence: Sigrid Vorobjov, Estonian Drug Monitoring Centre, National Institute for Health Development, Tallinn, Estonia. (E-mail: sigrid.vorobjov@tai.ee)

IDUs have several sources of syringes—friends, other drug users, sexual partners, street vendors, syringe exchange programmes (SEPs), and pharmacies, depending on convenience and availability. For example, in Russia, more than 90% of IDUs acquired their syringes from pharmacies, and only a minority had ever had contact with a SEP.⁴ While in Tallinn, Estonia, about 60% of IDUs reported SEP/SEP outreach as the main source for clean syringes, and 38% mentioned pharmacies.⁵

Syringe exchange has been taking place in Estonia since 1997, and currently, there are three stationary SEPs operating in the capital (Tallinn). In 2008, these SEPs distributed 735,000 syringes. According to recent estimations, about 10,000 IDUs (70% of the IDUs in the country) reside in the Tallinn area, and about 50% of these IDUs are infected with HIV.^{3,6} Despite the high number of IDUs in Estonia, little is known about involving pharmacies into HIV prevention activities and potential barriers. Similarly, in other East European countries, data on pharmacists' and IDUs' attitudes and current practices relating to pharmacists' role in harm reduction strategies are scant. A number of studies conducted in Eastern Europe and other countries have stressed the need for complementary approaches to increase the availability of syringes for IDUs besides the SEPs.^{7–10} A recent Eurasian Harm Reduction Network report also reveals that existing drug policy in Eastern Europe has proved to be inadequate in terms of the increase in problem drug use and resultant epidemics of HIV and hepatitis, suggesting the need for a reformed policy and practical solutions grounded in science and human rights.¹¹

Involving pharmacies in providing primary prevention services to IDUs is especially important for several reasons. Pharmacies are more accessible due to extended hours of operation and usually more convenient locations, compared to SEPs.^{12–15} Pharmacists already have a connection with IDUs and especially with those who have avoided SEPs. Also, attending a pharmacy may reduce possible stigma and could increase anonymity.¹⁶ Pharmacists are also a trusted health resource in the community for IDUs and non-IDUs; therefore, they could help transform the way the general public views IDUs.

Fuller et al. showed that involving pharmacies into harm reduction strategies can reduce high-risk behaviour among IDUs.¹⁷ They conducted a multi-level intervention to increase pharmacy use among IDUs in Harlem, New York City. The intervention involved training of pharmacists and outreach workers on the importance of providing non-prescription syringes to IDUs to reduce acquisition and transmission of HIV and led to positive attitude changes among pharmacists and increased use of pharmacies by IDUs.

In order to explore pharmacists' and IDUs' attitudes toward the role of pharmacists in HIV prevention activities for IDUs and to determine current practices, we conducted a series of focus groups with pharmacists and IDUs in Tallinn, Estonia. Our aim was also to discover potential barriers that might prevent the sale of syringes from pharmacies.

Background

The transition from a Soviet to a free market economy has affected the healthcare and pharmacy systems in Estonia. Following independence, ownership of State pharmacies was transferred from the government to individual entrepreneurs and commercial organizations.¹⁸ Under state regulations, the cost-plus (profit margin) system is used for pharmacies, and the maximum mark-ups for both reimbursed and non-reimbursed pharmaceuticals, including over-the-counter drugs, is fixed.¹⁹

However, the regulations do not apply to medical devices (including syringes and needles) sold in pharmacies. Estonian law does not prohibit the selling of syringes or limit the quantities that may be sold, and no prescription is required to buy a syringe. Currently, Estonian pharmacies are not involved in HIV prevention programmes, although it would be especially important as the pharmacies are one of the main sources of syringes for IDUs. However, on their own initiative, pharmacies have contributed to other chronic disease prevention programmes by providing opportunities to measure blood pressure or blood glucose level. Current legislation does not restrict the organization of prevention programmes in pharmacies, but as pharmacies now fall under the private sector, their activities are directed by their managers.

METHODS

Qualitative research methodology was used for this study. Qualitative research is recommended during early phases of intervention development and is used to gain insight into people's attitudes, behaviours, value systems, or lifestyles. Focus groups can help to determine a broad range of views on a specific topic, and the opportunity for group interaction stimulates conversation and reactions.^{20,21}

A total of 140 pharmacies were identified in Tallinn, and a random sample of 70 pharmacies was selected. Pharmacists from the selected pharmacies were invited to participate in focus groups through telephone contact with one of the researchers. Respondents were offered gift cards worth 300 Estonian kroons (around \$27) for their time and contribution to the study. Discussions focused on: (1) background attitudes and beliefs about HIV/acquired immunodeficiency syndrome (AIDS), IDUs, and SEPs; (2) syringe sale practices and attitudes to selling syringes to IDUs; and (3) involvement of pharmacies in HIV prevention and their willingness to cooperate.

IDUs were recruited via a drop-in centre that provides services for IDUs from all over Tallinn and which has previous experience in accessing IDU networks. IDU respondents were offered gift cards worth 100 Estonian kroons (around \$9) for their time and contribution to the study. Discussions focused on: (1) possible sources for clean syringes and attitudes toward SEPs, (2) experiences of syringe sale practices in pharmacies, and (3) suggestions about involving pharmacies in HIV prevention.

Focus groups generally lasted 1 h and were conducted in Estonian or Russian, depending on the language preferred by the participants. Informed consent was obtained from the participants. A semi-structured guide was used for conducting the focus groups. All interviews were audio-taped and transcribed. Focus groups held in Russian were translated into Estonian for analysis.

The Ethics Review Board at the University of Tartu approved the study.

Data from the transcripts was first coded according to the main study questions. After a second reading, the researcher formulated subcategories for each main theme. After a third reading, the researcher selected subcategories depending on how frequently they appeared in the transcripts. Initial coding was done by one researcher, and after that, the second researcher read through the initial coding where coding disagreements were identified; the topic was recorded based on discussion between the researchers. Both researchers were present in all focus groups. The specific quotes reported in this paper were chosen to reflect common attitudes. Analyses were carried out using NVivo 8 software.²²

RESULTS

Six focus groups were held from January to May 2008 in Tallinn. We carried out three focus groups with pharmacists and three with IDUs. These six groups produced sufficient information such that conducted additional groups would have produced primarily little new information.

Focus Groups with Pharmacists

Each of the pharmacists' focus groups included five to nine participants. A total of 19 pharmacists took part (17 female and two male), with ages ranging from 25 to 59 years (mean age, 44 years), whose working careers spanned from 2 to 40 years (mean career length, 17 years). The participants comprised 13 retail pharmacists, five managers, and one pharmacy owner.

Pharmacists were concerned that HIV/AIDS is a serious problem for Estonia, since HIV has moved beyond the circle of IDUs and could start to affect the general population. All participants in the focus groups had come into contact with IDUs at their workplace. The degree of contact depended on the pharmacy location as the proportion of drug users among customers varied. In addition, pharmacies that opened for longer and at weekends were visited more often by the drug users.

In general, the pharmacists' attitude toward IDUs was negative, mainly due to frequent stealing from pharmacies and other customers.

...They steal everything that can be stolen; even garbage bins...doormats, anything...

The pharmacists also mentioned that IDUs are impatient, unpredictable, and can be aggressive toward employees and other customers.

...We had an incident with an extremely aggressive addict who started to lash out with his syringe. Fortunately he did not hit me but the security worker and later we found out that he was HIV positive. I was all wound up because he intended to attack me...

A positive attitude prevailed toward SEPs, although several pharmacists were not aware of their existence. The pharmacists believed that SEPs keep IDUs away from pharmacies and should educate drug users. The fact that IDUs still visit pharmacies to obtain syringes was seen as evidence of insufficient exchange points in Tallinn.

...Very nice, because I would not like to see them in pharmacies in their condition and frightening other customers. In this respect the SEPs are very welcome. There should be more of them. Must not be enough of them if they are still coming to pharmacies to buy syringes...

One respondent felt that SEPs are not able to replace pharmacies because buying syringes depends on where dealers sell drugs.

...The problem is that it does not work the way that ok, this morning I need a shot and I go to an exchange point and get a syringe. Everything depends on where dealers sell their stuff...

The idea of pharmacies selling syringes to IDUs was controversial. It was generally held that pharmacies should sell syringes in order to reduce the spread of

infectious diseases by all means. However, the role of pharmacists in this area was seen as secondary because IDUs are drug users who, when obtaining their drugs, do not keep in mind their health and safety.

...He demands the next shot and I doubt that he cares whether the syringe is sterile or not. I think all he cares about is the next dose...

At the same time, some participants were of the opinion that pharmacies should not sell syringes to IDUs, because providing a service to them is not ethical, it endangers the safety of employees or customers and blemishes the reputation of the pharmacy.

Most importantly, there were several strategies in place to 'regulate' IDU customers attending pharmacies. In some cases, selling syringes was regulated by the management of a pharmacy or by the pharmacists themselves. The strategies fell into three categories: (1) policy not to sell syringes, (2) restricting sales by charging high prices, and (3) only selling syringes depending on the 'appearance and behaviour' of customers (Box 1, quotation 1–3). The average price for a syringe with a needle was from two to five Estonian kroons (around \$0.2–0.5) and up to 10 kroons (around \$0.9); the wholesale price of the syringe is around 0.6 kroons (around \$0.05). Some pharmacies sold syringes only to customers who bought medicines requiring injection or who seemed not to be IDUs. Such sales regulation strategies were implemented by most of the pharmacies represented at the focus groups.

Box 1. Experiences of syringe sale practices in pharmacies

Pharmacists:

Quotation 1: *"...Many pharmacies do not sell syringes any more, it is better to lose two junkies than all your customers..."*

Quotation 2: *"...Our price policy is that a syringe costs [a high price]. We do not get so many addicts that it would disturb our normal work routine..."*

Quotation 3: *"...I sell syringes, but I am selective about whom I sell to, there is a very big difference who is buying..."*

IDUs:

Quotation 4: *"... We will buy syringes here, on the spot, when we need them... Who will go so far?..."*

Quotation 5: *"...Exchange points are open at certain times. But what to do in the evening? You go to a pharmacy that is open 24 h, but they do not sell syringes to you..."*

Quotation 6: *"...You go to a pharmacy, want to buy syringes and they tell that we do not sell syringes. All in all, they want to get rid of you, because you are an addict. But other people can buy syringes without any problems..."*

As IDUs could be troublesome customers, they were often served out of the queue to get rid of them quickly. A typical IDU customer was described as a young, decently dressed man of 20–30 years of age, mainly recognized by disturbed or impatient behaviour, and using special vocabulary for syringes. As a rule, drug users buy one or two syringes at a time, not a supply for future use. In general, it was not thought that selling syringes in a pharmacy would increase the number of used syringes around pharmacies, as IDUs prefer to inject their drugs in less public places. Pharmacists also did not believe that widespread availability of syringes would increase injecting.

Although pharmacists regarded themselves as part of the public health system, commercial interests also play an important role.

...Of course we have to manage financially, because when we will be in the red, the pharmacy will close. The owners will close it, a pharmacy has to earn a profit...

Counselling and health promotion was regarded as one aspect of a pharmacist's work, but there was a strong belief that pharmacies are not the right place for HIV/AIDS prevention. However, pharmacists would agree to make information leaflets available (Box 2, quotation 1), and inform IDUs about possible services, for example, to refer them to the nearest SEPs, HIV testing, or drug treatment centres (Box 2, quotation 2). Furthermore, some pharmacists told, from their own experience, that people whom they identify as drug users tend to ward off attempts to counsel them or deny their drug problem.

Box 2. Suggestions about the involvement of pharmacies in HIV prevention

Pharmacists:

Quotation 1: *"...We are not against informational materials, these could be placed on a separate table and anyone interested can take them...."*

Quotation 2: *"...I would firmly refer them, please your SEPs are there and there..."*

IDUs:

Quotation 3: *"...Distilled water is needed, it plays a big part. Just in small ampoules..."*

Quotation 4: *"...With reasonable price, around a kroon, there would be plenty of buyers for this kit (containing syringe, needle, water, filter, sterile sponge)..."*

...Once information leaflets were brought to our pharmacy, for an AIDS Day or something, so that everyone who buys a syringe could get one. But the addicts started to swear and curse, said that they needed to inject their cat or whatever...

Pharmacists admitted that, at the moment, IDUs seem to be more aware of available specialist services than they were.

...Addicts know all of them and better than we do. For example I do not know where the syringe exchange point in Tallinn is...

Questions on whether it would be possible to arrange the (free of charge) distribution of clean syringes or other injecting equipment and disposal of used syringes in pharmacies elicited strong resistance because it was felt that such services would bring even more drug users to pharmacies. Possible financial compensation also would not motivate pharmacists.

The participants did not feel the need for educational courses on drug addiction. Younger pharmacists/recent graduates have had courses on drug addiction and drug users at university, and this proved to be valuable in their work. The participants in the pharmacists' focus groups were interested in training on how to communicate with IDUs and how to avoid triggering an aggressive response. Pharmacists would also like information on the national addiction treatment programme, harm reduction system, and information about services available for IDUs for referrals.

Focus Groups with IDUs

A total of 15 male IDUs ranging in age from 26 to 49 years old (mean age, 30 years) participated in the study. The mean length of drug use was 12 years (ranging from 6 to 27 years). The IDU participants said that they mainly obtained clean syringes from pharmacies, SEPs, and outreach workers. The place and method of obtaining syringes depended on its proximity and accessibility (Box 1, quotation 4). IDUs reported obtaining information about acquiring clean syringes mainly via word of mouth. If necessary, information can spread within hours, as IDUs are frequently connected via cell phones. A positive attitude prevailed toward SEPs: all IDUs in our study were aware of their existence and had used their services. As for weaknesses, respondents mentioned the small numbers and limited coverage area of the syringe exchange services. The operating hours of the SEPs also emerged as a problem: the services could be opened earlier and mobile exchange points should remain open for longer.

...The earlier the better. I do not care about the evening times, but in the morning I cannot do without my dose. The best time would be from 8 a.m....

It was mentioned that pharmacies are more convenient to use due to the extended opening hours, and it would be good if some of the pharmacies, especially the ones open round-the-clock, provide services similar to that of SEPs (Box 1, quotation 5).

IDUs were aware that some pharmacies will sell syringes only to certain customers based on their appearance (Box 1, quotation 6). The IDUs also stated that they were perceived as unpleasant and unwelcome customers.

...All in all, they want to get rid of you, because you are an addict. We think that we are normal people, but they do not and see us like animals or something...

Drug users mentioned that pharmacies are easier to access because there are more pharmacies than SEPs, but they stated the discomfort and embarrassment when they sense the negative and scornful attitude of pharmacists and other customers.

...Yes, it would be more comfortable in pharmacies, there are more of them. But they do not want us, because customers get scared when they see us, I guess. When a young man buys syringes then everyone looks at him with disapproval...

Due to the generally negative attitude, IDUs were of the opinion that no one will change anything just for them.

...You want to know? There is no point... nothing will change...

...Who will organize something like that for us... Who are we that anyone would do that? This project requires millions and, after all, who would agree with that...

IDUs stressed the need for distilled water which could be sold for one-time administration (Box 2, quotation 3). They related incidents when water had not been readily available and drugs were injected with soft-drink (e.g., Sprite), in other cases, water from puddles or melted snow had been used. Frequently, IDUs buy one bottle of water and the whole group uses it. In addition to syringes, other injecting

equipment should be on sale (i.e., in the form of injecting equipment kit that includes a syringe, filter, a disinfecting tissue, and a boiling spoon). The overall attitude toward such sets was very positive and drug users said that, if they were reasonably priced, many would buy them from pharmacies (Box 2, quotation 4).

DISCUSSION

To our knowledge, this is the first study from Eastern Europe describing barriers and potential opportunities for pharmacy-based HIV prevention interventions for IDUs. In several countries, pharmacies are involved in syringe exchange, distributing or selling low price kits containing injecting equipment, providing treatment for addiction, dispensing methadone, supervising methadone consumption, and providing information on drug misuse and HIV prevention.^{12,13,23–26} Pharmacists in our study believed that HIV/AIDS was a serious social and public health issue; they valued the work of SEPs but held a strongly negative position toward IDUs and against the idea of involving pharmacies in actual harm reduction service delivery. Resistance was explained by concerns that IDUs would steal from the pharmacy, endanger staff, and scare away other customers; these reactions are similar to those seen in other studies.^{27–29} However, the pharmacists did not feel that syringe sales would increase drug use or increase injecting (and therefore more discarded syringes) near pharmacies as has been found previously.^{27,28}

Although selling syringes over-the-counter is allowed in Estonia, several pharmacist participants refused to sell syringes to IDUs because of an individual or pharmacy policy not to sell to anyone who looked or acted suspiciously. Previously, it has been found that pharmacists who supported the idea of selling syringes to IDUs were also supportive of syringe exchange in their pharmacies.^{30,31} Disposal of syringes was a concern among all the pharmacist focus group members, although some pharmacies already have sharps boxes in their premises for drug misusers.¹⁶ Similar concern over exchange or disposal of syringes has been stated previously.^{16,31} Possible solutions could be distributing personal disposal boxes or distributing clean syringes using referral cards.^{25,31}

The evidence indicates that many pharmacists are willing to offer advice to IDUs.^{16,31,32} However, in our focus groups, the pharmacists' experiences were that IDUs are not interested in counselling, and it is difficult for pharmacists to find enough time, although they were willing to provide information leaflets. Leaflets could contain information on drug misuse, safer intravenous drug injection, safe disposal, prevention of various diseases, and referrals to drug treatment centres.

To some extent, pharmacists saw themselves as part of the public health system, but HIV and AIDS prevention was not a priority. Commercial interests also have a substantial impact on decisions about pharmacy policies. An important finding is the pharmacists' lack information about IDUs and available harm reduction services. There is a clear need for education of pharmacists to promote the understanding that harm reduction is a broader public health issue and not primarily about the IDUs.³³ Educational programmes should stress the current understanding that drug addiction is a chronic, relapsing, treatable medical condition.³⁴ Pharmacists themselves expressed the need for guidance about how to deal with drug misusers. For successful training, professional pharmacy associations should be involved, and involving pharmacists in planning the interventions should help to break down barriers.

In general, IDUs were positive toward pharmacies, although they have detected stigma from pharmacists and other customers. They were aware that some pharmacists sell syringes selectively. Such stigma may reduce the effectiveness of harm reduction services because it may prevent IDUs from accessing or utilizing the services.³³ Therefore, addressing negative attitudes should be a priority to encourage the process of service delivery.^{12,30}

IDUs reported that SEPs and pharmacies were their main sources for acquiring clean syringes and stated that syringes could be obtained with relative ease. IDUs emphasized the need for wider access to other injection paraphernalia. Kits containing a syringe, needle, spoon, filter, and sterile sponge were viewed positively by IDUs. Distribution of clean injecting equipment including water and sharps containers has been shown to have a positive effect on IDU behaviour.¹³ In Estonia, within limited resources, it would be possible to modify the restrictions prohibiting the sale of sterile water without a prescription.

The need for syringes to be available near where drugs are sold has previously been described.³⁵ When IDUs have a dose of drugs, they will typically want to use the drug immediately and will not want to spend much time searching for a clean syringe, hence, acquiring syringes needs to be very easy. It would be reasonable to start involving pharmacies in high drug use areas or those that are open 24 h and to find pharmacists willing to be public health educators. Developing relationships with SEPs and sharing their knowledge and experiences in cooperation with IDUs could improve the current situation.

One limitation of the study could be the self-selection bias in participation of pharmacists' focus groups. We could not determine if the pharmacists who decided not to participate in the focus groups were more or less favourable towards providing services to IDUs. However, the purpose of the pharmacist focus groups was not to quantify potential support for providing services to IDUs, but rather to identify the issues related to providing such services. We did feel that all of the important issues were identified in the first three focus groups, and that conducting additional focus groups, or recruiting pharmacists who had originally declined to participate (perhaps through larger incentives) would not have produced a different set of relevant issues.

The results from both the pharmacists and IDUs are very valuable for understanding barriers and the potential improvement of harm reduction within pharmacies in Estonia. Although data were gathered by means of focus groups and are not necessarily generalizable to other locations, we see the knowledge gathered as potentially useful input for pharmacy-based interventions in the Eastern European region.

In conclusion, a large proportion of IDUs rely on pharmacies as their source for clean needles. However, there is substantial resistance among pharmacists against syringe sale and the provision of other HIV prevention efforts among IDUs. Nevertheless, continuous education of pharmacists on drug use, HIV prevention issues, and practical guidance on how to work/counsel an IDU client can remove some barriers. Clearly, pharmacists need up-to-date information on harm reduction and health services available for IDUs in the region to link their clients with the services they need. In addition, pharmacists should be engaged in developing appropriate interventions, selecting pharmacists who are motivated to work with IDUs and/or pharmacists from high drug use areas who could give the most benefit and allow positive experiences to build.

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REFERENCES

1. Joint United Nations Programme on HIV/AIDS. 2008 Report on the global AIDS epidemic. Available at: http://www.unaids.org/en/KnowledgeCentre/HIVData/GlobalReport/2008/2008_Global_report.asp. Accessed on April 27, 2009.
2. Dore GJ, Law M, MacDonald M, Kaldor JM. Epidemiology of hepatitis C virus infection in Australia. *J Clin Virol*. 2003; 26: 171-184.
3. Uusküla A, McNutt LA, Dehovitz J, Fischer K, Heimer R. High prevalence of blood-borne virus infections and high-risk behaviour among injecting drug users in Tallinn, Estonia. *Int J STD AIDS*. 2007; 18: 41-46.
4. Sarang A, Rhodes T, Platt L. Access to syringes in three Russian cities: implications for syringe distribution and coverage. *Int J Drug Policy*. 2008; 19(Suppl 1): 25-36.
5. Vorobjov S, Uusküla A, Abel-Ollo K, Talu A, Rüütel K, Des Jarlais DC. Comparison of injecting drug users who obtain syringes from pharmacies and syringe exchange programs in Tallinn, Estonia. *Harm Reduct J*. 2009; 6:3.
6. Platt L, Bobrova N, Rhodes T, et al. High HIV prevalence among injecting drug users in Estonia: implications for understanding the risk environment. *AIDS*. 2006; 20: 2120-2123.
7. Aceijas C, Hickman M, Donoghoe MC, Burrows D, Stuijke R. Access and coverage of needle and syringe programmes (NSP) in Central and Eastern Europe and Central Asia. *Addiction*. 2007; 102: 1244-1250.
8. Bryant J, Treloar C. Risk practices and other characteristics of injecting drug users who obtain injecting equipment from pharmacies and personal networks. *Int J Drug Policy*. 2006; 17: 418-424.
9. Obadia Y, Feroni I, Perrin V, Vlahov D, Moatti JP. Syringe vending machines for injection drug users: an experiment in Marseille, France. *Am J Public Health*. 1999; 89: 1852-1854.
10. Miller CL, Tyndall M, Spittal P, Li K, Palepu A, Schechter MT. Risk-taking behaviors among injecting drug users who obtain syringes from pharmacies, fixed sites, and mobile van needle exchanges. *J Urban Health*. 2002; 79: 257-265.
11. Eurasian Harm Reduction Network. The impact of drug policy on health and human rights in Eastern Europe: 10 years after the UN General Assembly Special Session on Drugs. Available at: http://www.harm-reduction.org/images/stories/documents/ungass_report_2009_03_04_en.pdf. Accessed on April 27, 2009.
12. Sheridan J, Strang J, Taylor C, Barber N. HIV prevention and drug treatment services for drug misusers: a national study of community pharmacists' attitudes and their involvement in service specific training. *Addiction*. 1997; 92: 1737-1748.
13. Lurie P, Jones TS, Foley J. A sterile syringe for every drug user injection: how many injections take place annually, and how might pharmacists contribute to syringe distribution? *J Acquir Immune Defic Syndr Human Retrovirol*. 1998; 18: 45-51.
14. Des Jarlais DC, McKnight C, Friedmann P. Legal syringe purchases by injection drug users, Brooklyn and Queens, New York City, 2000-2001. *J Am Pharm Assoc*. 2002; 42: 73-76.
15. Deren S, Fuller C, Pouget E, et al. Impact of expanding syringe access in New York on sources of syringes for injection drug users in Harlem and the Bronx, NYC, USA. *Int J Drug Policy*. 2003; 14: 373-379.

16. Glanz A, Byrne C, Jackson P. Role of community pharmacies in prevention of AIDS among injecting drug misusers: findings of a survey in England and Wales. *BMJ*. 1989; 299: 1076-1079.
17. Fuller CM, Galea S, Caceres W, Blaney S, Sisco S, Vlahov D. Multilevel community-based intervention to increase access to sterile syringes among injection drug users through pharmacy sales in New York City. *Am J Public Health*. 2007; 97: 117-124.
18. Volmer D, Vendla K, Vetka A, Bell JS, Hamilton D. Pharmaceutical care in community pharmacies: practice and research in Estonia. *Ann Pharmacother*. 2008; 42: 1104-1111.
19. World Health Organization Regional Office for Europe. Pharmaceuticals: Estonia. Available at: http://www.euro.who.int/pharmaceuticals/Topics/Overview/20020425_5. Accessed on April 27, 2009.
20. Morgan DL. *Focus Groups as Qualitative Research*. California: Sage Newbury Park; 1988.
21. Mack N, Woodsong C, MacQueen KM, Quest G, Namey E. *Qualitative Research Methods: A Data Collector's Field Guide*. North Carolina: Family Health International; 2005.
22. Nvivo qualitative data analysis software; QSR International Pty Ltd. Version 8, 2008.
23. Sheridan J, Strang J, Barber N, Glanz A. Role of community pharmacies in relation to HIV prevention and drug misuse: findings from the 1995 national survey in England and Wales. *BMJ*. 1996; 313: 272-274.
24. Strang J, Sheridan J, Barber N. Prescribing injectable and oral methadone to opiate addicts: results from the 1995 national postal survey of community pharmacies in England and Wales. *BMJ*. 1996; 313: 270-272.
25. Matheson C, Bond CM, Pitcairn J. Community pharmacy services for drug misusers in Scotland: what difference does 5 years make? *Addiction*. 2002; 97: 1405-1411.
26. Thein HH, Denoe M, van Beek I, Dore G, MacDonald M. Injecting behaviour of injecting drug users at needle and syringe programmes and pharmacies in Australia. *Int J Drug Policy*. 2003; 14: 425-430.
27. Farley TA, Niccolai LM, Billeter M, Kissinger PJ, Grace M. Attitudes and practices of pharmacy managers regarding needle sales to injection drug users. *J Am Pharm Assoc (Wash)*. 1999; 39: 23-26.
28. Lewis BA, Koester SK, Bush TW. Pharmacists' attitudes and concerns regarding syringe sales to injection drug users in Denver, Colorado. *J Am Pharm Assoc (Wash)*. 2002; 42: S46-S51.
29. Reich W, Compton WM, Horton JC, et al. Injection drug users report good access to pharmacy sale of syringes. *J Am Pharm Assoc (Wash)*. 2002; 42: S68-S72.
30. Matheson C, Bond CM, Mollison J. Attitudinal factors associated with community pharmacists' involvement in services for drug misusers. *Addiction*. 1999; 94: 1349-1359.
31. Coffin PO, Linas BP, Factor SH, Vlahov D. New York City pharmacists' attitudes toward sale of needles/syringes to injection drug users before implementation of law expanding syringe access. *J Urban Health*. 2000; 77: 781-793.
32. Rich JD, Martin EG, Macalino GE, Paul RV, McNamara S, Taylor LE. Pharmacist support for selling syringes without a prescription to injection drug users in Rhode Island. *J Am Pharm Assoc (Wash)*. 2002; 42: S58-S61.
33. Simmonds L, Coomber R. Injecting drug users: a stigmatised and stigmatising population. *Int J Drug Policy*. 2009; 20: 121-130.
34. Taussig J, Junge B, Burris S, Jones TS, Sterk CE. Individual and structural influences shaping pharmacists' decisions to sell syringes to injection drug users in Atlanta, Georgia. *J Am Pharm Assoc*. 2002; 42: 40-45.
35. Finkelstein R, Tiger R, Greenwald R, Mukherjee R. Pharmacy syringe sale practices during the first year of expanded syringe availability in New York City (2001-2002). *J Am Pharm Assoc (Wash)*. 2002; 42(6 Suppl 2): S83-S87.