

# Analysis of how the health systems context shapes responses to the control of human immunodeficiency virus: case-studies from the Russian Federation

Rifat A. Atun,<sup>1</sup> Martin McKee,<sup>2</sup> Francis Drobniewski,<sup>3</sup> & Richard Coker<sup>2</sup>

**Objective** To develop a methodology and an instrument that allow the simultaneous rapid and systematic examination of the broad public health context, the health care systems, and the features of disease-specific programmes.

**Methods** Drawing on methodologies used for rapid situational assessments of vertical programmes for tackling communicable disease, we analysed programmes for the control human of immunodeficiency virus (HIV) and their health systems context in three regions in the Russian Federation. The analysis was conducted in three phases: first, analysis of published literature, documents and routine data from the regions; second, interviews with key informants, and third, further data collection and analysis. Synthesis of findings through exploration of emergent themes, with iteration, resulted in the identification of the key systems issues that influenced programme delivery.

**Findings** We observed a complex political economy within which efforts to control HIV sit, an intricate legal environment, and a high degree of decentralization of financing and operational responsibility. Although each region displays some commonalities arising from the Soviet traditions of public health control, there are considerable variations in the epidemiological trajectories, cultural responses, the political environment, financing, organization and service delivery, and the extent of multisectoral work in response to HIV epidemics.

**Conclusion** Within a centralized, post-Soviet health system, centrally directed measures to enhance HIV control may have varying degrees of impact at the regional level. Although the central tenets of effective vertical HIV programmes may be present, local imperatives substantially influence their interpretation, operationalization and effectiveness. Systematic analysis of the context within which vertical programmes are embedded is necessary to enhance understanding of how the relevant policies are prioritized and translated to action.

**Keywords** HIV infections/prevention and control/legislation; Acquired immunodeficiency syndrome/prevention and control/legislation; Delivery of health care/organization and administration; National health programs/organization and administration; Process assessment (Health care)/methods; Health expenditures; Politics; Socioeconomic factors; Case reports; Evaluation studies; Russian Federation (source: MeSH, NLM).

**Mots clés** Infection à VIH/prévention et contrôle/législation; SIDA/prévention et contrôle/législation; Délivrance soins/organisation et administration; Programme national santé/organisation et administration; Evaluation méthodes santé/méthodes; Dépenses de santé; Politique; Facteur socioéconomique; Étude de cas; Etude évaluation; Fédération de Russie (source : MeSH, INSERM).

**Palabras clave** Infecciones por VIH/prevenición y control/legislación; Síndrome de inmunodeficiencia adquirida/prevenición y control/legislación; Prestación de atención de salud/organización y administración; Programas nacionales de salud/organización y administración; Evaluación de proceso (Atención de salud)/métodos; Gastos en salud; Política; Factores socioeconómicos; Casos clínicos; Estudios de evaluación; Federación de Rusia (fuente: DeCS, BIREME).

Arabic

Bulletin of the World Health Organization 2005;83:730-738.

Voir page 736 le résumé en français. En la página 736 figura un resumen en español.

<sup>1</sup> Centre for Health Management, Tanaka Business School, Imperial College London, South Kensington Campus, London SW7 2AZ, England. Correspondence should be sent to this author (email: r.atun@imperial.ac.uk).

<sup>2</sup> Department of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, England.

<sup>3</sup> Department of Infectious Diseases, Guy's King's and St Thomas' Medical School, London, England.

Ref. No. 04-015537

(Submitted: 13 June 2004 – Final revised version received: 10 March 2005 – Accepted: 18 March 2005)

## Introduction

Organizational interventions in health care are complex: their design and implementation are shaped by pragmatic responses to local context. Their success or failure is often influenced, or even determined, by contextual factors, thus demanding analyses that consider both the intrinsic performance of the intervention and its context (1, 2).

One of the ways of overcoming this complexity of organizational interventions has been to adopt vertical programmes, focusing on a single disease or intervention. Such programmes are often established in parallel with existing health systems, with lines of accountability quite separate from them. Although the design and structuring of vertical programmes may vary, the set of interventions within them (such as treatment regimes) is largely standardized (although delivery methods may also vary), and they have specific and measurable objectives. This has the benefit of decontextualizing the interventions so that constraints, such as lack of trained staff or weak procurement systems, can be overcome without having to address the wider health system problems. This makes analysis of the vertical programme easier, especially if such an analysis is limited to narrow technical questions of effectiveness or efficiency (3).

Vertical programmes often lead to the fragmentation and duplication of services and a reduced likelihood of effective integration into the broader health system. This, in turn, increases the risk of governments diverting resources away from areas covered by externally-supported vertical programmes, reducing the “added-value”, and chances of long-term sustainability of these programmes (4, 5). Yet vertical programmes can be effective, allowing innovative methods to be developed within defined parameters before being “rolled-out” using existing infrastructure, as long as they are embedded effectively within the broader health system (6).

Many constraints faced by vertical programmes have their roots not in the technical content of the programme, but in the structures, policies and organizational frameworks within which they are working (7). Addressing health systems issues and strengthening the health system within which programmes

operate, rather than the vertical programme alone, improves the chances of sustainability.

In addition to methods that assess vertical programmes, there are tools for assessing a health system (8) or its elements (9–12). However, these are too general to offer useful insights into specific disease challenges. One challenge, therefore, is to develop tools to simultaneously assess both programmes and health systems.

A further issue to consider when conducting the analysis relates to generalizability. Whereas one question to be asked is “does this intervention work?”, a second question is “would this intervention work in this situation?”. Both are relevant to policy-makers. However, while the former may be appropriately studied by means of research projects, it is not cost-effective to undertake such a study to assess every individual implementation of the intervention in question. Instead, there is a need for a method that will be reasonably inexpensive, operate over a short timescale and provide practical guidance. At the second stage, the findings from such analyses can be combined to adduce the role that contextual factors play in the success or otherwise of an intervention.

Rapid assessment approaches, which often incorporate qualitative and quantitative methods of enquiry, can be a less costly way of analysing complex health interventions (13–16); they include manuals jointly developed by WHO and the Joint United Nations Programme on HIV/AIDS (UNAIDS) for rapid assessment of HIV/AIDS programmes (17, 18). Although some of these manuals, through approaches that use a combination of methods (a “multimethods approach”), try to address the challenge of complexity, they take a limited view of the health system and of the wider context within which the programme operates.

In this paper we focus on vertical programmes designed to control infection with human immunodeficiency virus (HIV). The success of such programmes is often determined by the constraints posed by health systems (19, 20). Indeed, the Director-General of WHO, identified comprehensive engagement with, and strengthening of, health systems as necessary starting points for scaling up HIV/acquired immunodeficiency syndrome (AIDS) interventions (21, 22). However, despite the

### Box 1. Systemic rapid assessment toolkit

The toolkit is based loosely on a “T” model and has two elements which are explored both individually and in terms of their linkages to each other. The “horizontal element” has modules to assess the macro context and the health system within which the infectious disease programme is embedded from a variety of perspectives: political, legal, social, demographic, economic, technological, financing, organizational arrangements, resource allocation, provider payment systems and provision. The “vertical element” has modules which allow assessment of key elements relating to the infectious disease programme such as epidemiology, service delivery, diagnostics laboratory networks and treatment.

The modular structure allows flexibility in use according to the area in question, context and resource availability. Each module addresses a specific area (e.g. legal, political, financing or epidemiology) and uses a predefined set of key questions to obtain the necessary information rapidly. A multimethods approach by a multidisciplinary team enables cross-referencing and triangulation of data. Where possible, the toolkit utilizes routinely obtained data.

The toolkit has three stages of analysis. The first (“screening”) stage, involves reviews of documents and analysis of data to address predefined questions for each module that are used to provide qualitative and quantitative information on the context, past patterns and other historical information, trends, responses to emerging challenges, processes and mechanism for the programme in question.

The second stage involves a field visit and interviews with key informants, purposively identified to capture a representative group, to rapidly elicit more detail on the health system and vertical programme to fill gaps identified by the screening questions and to elucidate information obtained at stage one. Qualitative data predominate, but routine quantitative data, especially in the areas of financing and epidemiology, are also collated for analysis to identify areas for further in-depth longitudinal analysis at stage three. Through an iterative process of information gathering and discussions, the team triangulates the findings for scenario building. The second stage typically takes 3–5 working days for a team to complete.

The aim of stage three is to provide detailed qualitative and quantitative information on areas identified as being critical to the success of the programme and not easily collated during the rapid assessment stages, i.e. stages one and two. This new information is collected over a longer period of time and used to inform programme implementation.

**Box 2. Features of Pskov, Samara, and Tatarstan**

Pskov Oblast has a population of 778 000. It is situated in the north-west of the Russian Federation and covers 55 300 km<sup>2</sup>. It has 24 regions and two cities, the larger of which, City of Pskov, has a population of 198 000. Around 70% of the population lives in urban areas.

Samara Oblast is situated in the in the Middle Volga Region of the Russian Federation. It covers a territory of 53 600 km<sup>2</sup> with a population of 3 305 800 people, the majority (2 662 200) of whom live in urban areas. The administrative–territorial division of the *Oblast* includes 11 towns (Samara and Togliatti are the largest), 24 urban settlements and 27 rural districts. Samara ranked fourth in the United Nations Development Programme Human Development Index ranking of the regions of the Russian Federation based on statistics from 1997.

The Republic of Tatarstan is an autonomous republic within the Russian Federation. It is situated in the Volga Region. It has a population of 3.8 million of whom 74.1% live in urban areas. The four largest cities are home to 2 million of the population. It has an area of 68 000 km<sup>2</sup> and it consists of 48 municipal entities. Thanks to a large oil industry, it is one of the most prosperous regions of the Russian Federation.

acknowledged need, tools to assess such interventions while placing them within their health system and broader context are lacking (23).

This paper describes the use of a novel toolkit which allows rapid, simultaneous and systematic examination of the broad public health context, the health care systems, and the features of the disease-specific programmes applied to three case-studies of HIV control in the Russian Federation (24, 25).

## Methods

The toolkit is modular in structure and has two linked elements applied simultaneously: a “horizontal” element to analyse the health system within which the HIV programme is embedded and a “vertical” element to analyse the HIV programme itself (Box 1). The toolkit employs a multimethods approach to analysis, undertaken by a multidisciplinary team — enabling cross-referencing and triangulation of data — and, to the extent possible, uses routinely obtained data.

The analysis was undertaken by multidisciplinary teams of two to four people in three regions of the Russian Federation: Pskov, Samara and Tatarstan — chosen because, although many of the over-arching post-Soviet political traditions and structures in these regions are similar, the epidemiological trajectories of the HIV epidemics and the regional policy responses to the epidemic differ (Box 2).

Analysis took place in three stages. First, published data, documents and routinely collected quantitative data, obtained from local counterparts, were analysed. Second, key informants from numerous administrative and professional levels and HIV-positive patients, purposively selected and further recruited by the snowballing technique (26), were interviewed during a field visit over 3–5 days. Third, further data were collected and analysed for triangulation and to fill gaps. Interviews were recorded in notes taken during the course of the interview. The research team reviewed findings in daily meetings to identify emerging themes and to triangulate findings. No further interviews were conducted when no new information was emerging (indicating saturation point). Data were grouped by emerging themes. Iterative analyses allowed further categorization of data to identify emerging sub-themes derived from the main themes (26). Further interviews were conducted to probe the meaning and significance of patterns of discourse, in particular the key themes and issues, as they emerged. Data obtained from interviews were validated internally through triangulation with data from documentary, routine and other sources gathered prior to and during the fieldwork. The interpretations of triangulated thematic data were discussed with key stakeholders and modifications and amendments were made during both the second and third stages of analysis (27).

## Results

### Federal legal context

An explicit legal framework, developed by the federal government, sets out in detail core actions and interventions to be taken to achieve control of HIV/AIDS in the Russian Federation (Box 3) (28). The law does not specify how programmes should be organized.

Civil and criminal laws that have an impact on the control of HIV/AIDS do not provide an enabling legal framework. For example, article 45 of the Russian Administrative Code deters commercial sex workers (CSWs) from seeking medical treatment for sexually transmitted infection (STI) — as the law prohibits people with STIs from concealing their illness and the identities of their sexual contacts (29). Although a Ministry of Health edict in 1999 recommended harm reduction programmes to combat HIV (30), the Russian Criminal Code and the 1998 federal law on narcotics hinder effective promotion of harm reduction programmes for injecting drug users (IDUs) (31). For instance, Article 230 of the Russian Criminal Code can be used to punish those who show the inclination to use narcotics or psychotropic substances and those who do — but the code makes no exception for counselling or advice to users to reduce risk of HIV acquisition and transmission (32).

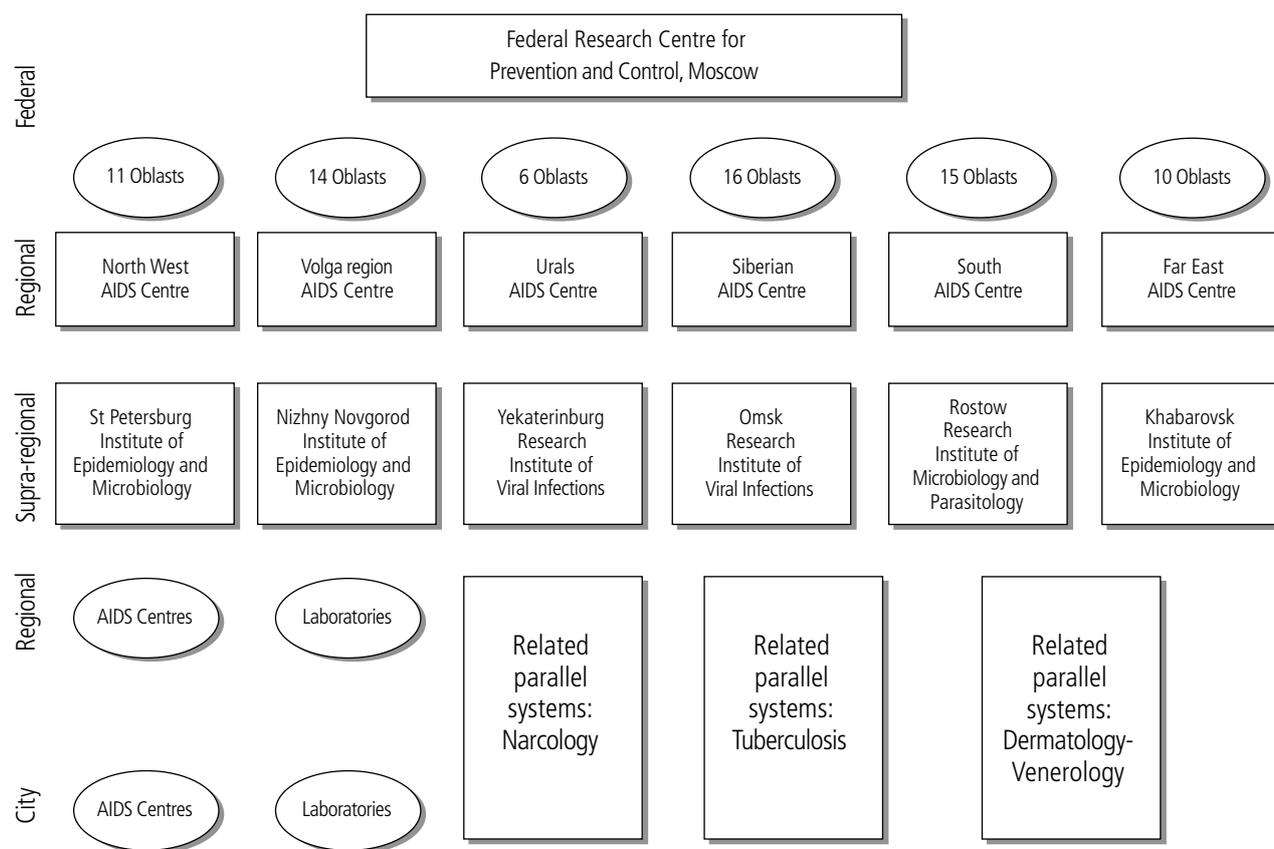
### Federal organizational context

The organization of HIV control in Russia is complex (Fig. 1) with three federal organizations, six supra-regional HIV centres and over a thousand regional-level units — comprising 78 territorial HIV centres, 700 diagnostic laboratories and 250 anonymous testing offices. Three other vertical subsystems,

#### Box 3. Core actions and interventions specified in Russian Law No. 38-F3 to achieve HIV/AIDS control in the Russian Federation

- Raise public awareness
- Conduct epidemiological surveillance
- Develop means of prevention, diagnosis, and treatment of HIV
- Control the safety of medical substances and supplies used in health services
- Ensure access to diagnostic tests for HIV and free medical care for HIV- infected citizens
- Undertake HIV research
- Provide sex education on HIV in schools
- Provide social support to those with HIV infection
- Train health-care staff
- Provide guidance on international collaboration and exchange of information

Fig. 1. Organizational structure of the network for the prevention and control of HIV/AIDS in the Russian Federation



WHO 05.67

(organizationally and financially separate from HIV control) for “narcology”, STI and tuberculosis, also provide services to people with HIV. The need for collaboration between subsystems is recognized and articulated in regulatory documents that recommend the establishment of regional commissions (33), but separate reporting lines for the HIV control, STI and narcology departments further hinder collaboration.

### Federal level financing

The federal programme on “Prevention and control of disease of social character” covers diabetes mellitus, tuberculosis, immunization, cancer care, STI, HIV and disaster-preparedness and has earmarked funding of Russian roubles (RR) 9.2 billion (~US\$ 300 million) for the period 2002–06. Of this, RR 2.8 billion (approximately US\$ 0.12 per person per year) is allocated to the federal HIV programme (Table 1), around two thirds of which is allocated for pharmaceuticals and diagnostics (Table 2). The inadequacy of funding is recognized and local initiatives draw on alternative resources (34).

### Case studies of Pskov, Samara and Tatarstan

In addition to the shared but contradictory legal framework, and limited federal budget, there are some similarities, framed by the federal nature of Russia and the centralized nature of policy-making, for instance: vertical organization of the narcology, STI and AIDS centres involved in HIV control with consequent operational gaps in the care process; a well-developed and hospital-led programme for the prevention of mother-to-child transmission, highlighting the dominant role of hospitals in

the health system of the Russian Federation; a regional committee responsible for HIV, as prescribed by the federal law, which has the potential to evolve as a multisectoral coordinating agency.

Despite these similarities, there are, however, some significant differences between the regions in the stages of the epidemic, the sociocultural context and the health systems elements.

### Stage of the epidemics in the regions

Pskov, Samara and Tatarstan are at different stages in the trajectories of their HIV epidemics (Fig. 2). In Pskov the epidemic is in its infancy, with approximately 100 infected individuals, most of whom are IDUs. By contrast, in Samara, more than 20 000 individuals have become infected: although the epidemic began in IDUs it is now evolving into an epidemic that is sexually and vertically transmitted, and has spread from urban centres to rural regions. In Tatarstan, the magnitude of the epidemic, which began in IDUs, is less pronounced than Samara, but greater than in Pskov (Table 3 web version only, available at: <http://www.who.int/bulletin>). However, official statistics are unreliable and there can be a fivefold difference between reported and real figures.

### Sociocultural context in regions

The social, religious and cultural context of the three regions differs: Pskov is overwhelmingly ethnically Russian and Russian Orthodox; Tatarstan is predominantly Tatar and Muslim; and Samara is a mixture comprising mainly ethnic Russians with Tatars (who are Muslim) and Chuvashians.

Table 1. Funds allocated to federal programmes in the Russian Federation for control of diseases "of social importance" for the years 2002–06

	Tuberculosis	Diabetes	Cancer services	Sexually transmitted illness	HIV/AIDS	Disaster medicine	Vaccine-preventable illness
Financing in million Russian roubles	33 825 (~1128 million US\$)	25 984 (~870 million US\$)	22 021 (~734 million US\$)	5244 (~174 million US\$)	2774 (~93 million US\$)	1385 (~46 million US\$)	974 (~33 million US\$)

In Pskov, the emerging epidemic of HIV is framed principally as an issue of drug control and "sociopathic behaviour", and policy responses are frail. In contrast, in Tatarstan, HIV is perceived as societal problem, and there is integrated policy-making involving many stakeholders, with interventions focusing on marginalized groups. In Samara, political, religious and social beliefs create a complex societal context, and despite strong support from the senior officials responsible for HIV prevention, multisectoral policies and harm reduction programmes are constrained (Table 3 web version only, available at: <http://www.who.int/bulletin>).

### Financing in the regions

The three regions allocate varying proportions of their total health expenditure to HIV and have differing priorities. As compared with Pskov and Samara, Tatarstan allocates a larger proportion of its health expenditure to HIV and provides significant funding to harm reduction activities (Table 4). Samara has invested substantial resources in a blood safety programme, but allocates no funding to harm reduction. Pskov allocates limited funding to harm reduction activities in its AIDS centre.

### Organization and delivery in the regions

The Russian Criminal Code and the federal decrees on HIV are interpreted differently in the three regions. In Tatarstan, there is good collaboration between the Ministries of Interior and

Health, when dealing with CSWs or IDUs, and comprehensive HIV-prevention interventions in the penitentiary sector, but this is not the case in Samara or Pskov. The nongovernmental organization sector is strongly involved in HIV control in Tatarstan, but not in the two other regions (Table 3, web version only, available at: <http://www.who.int/bulletin>). A true multisectoral approach was observed only in Tatarstan, which has a network of harm reduction units staffed by a mix of health-care staff, volunteers, ex-IDUs and CSWs. In Pskov and Samara, prevention activities are unisectoral and limited in scope.

Varying interpretation of the law, combined with decentralization of financing of HIV and care delivery, have allowed different models of public health responses and service delivery systems (which differ between regions in scope, scale and emphasis) to emerge. In Tatarstan, voluntary counselling and testing (VCT) for HIV and hepatitis is available and free for anyone requesting it; in Pskov, VCT is available only in the Regional AIDS Centre; and, in Samara in five urban VCT centres — but a lack of clarity in the interpretation of the law on confidentiality deters many IDUs and CSWs from attending (Table 3, web version only, available at: <http://www.who.int/bulletin>).

Although all three regions provide a programme for the prevention of vertical mother-to-child-transmission, monitoring of HIV-seropositive patients and the availability of antiretroviral therapy differs. In Pskov, where few individuals

Table 2. Breakdown of planned financial allocations for Federal HIV control programmes, 2002–06 in million Russian roubles

Area/expenditure by year (in million Russian roubles)	2002	2003	2004	2005	2006	Total for 2002–06
Population awareness	41	44	44	44	44	217
Epidemiological surveillance, prevention and control, legal support	40.5	29.8	29.8	29.8	29.8	160
Blood safety and safety of medical substances	68.7	78.3	78.3	78.3	78.3	382
Diagnostics and treatment	348	368	368	368	368	1821
Social protection of HIV-infected and health workers	0.5	0.8	0.8	0.8	0.7	3.6
Biomolecular and clinical monitoring	1.5	1.5	1.5	1.5	1.6	7.6
Development of methods for clinical evaluation of HIV progression	1.5	1.5	1.5	1.5	1.6	7.6
Analysis of clinical patterns of HIV	1.2	2.1	2.1	2.1	2.1	9.6
Fundamental research into HIV	0	1.7	1.7	1.7	1.7	6.8
Pharmaceutical research and clinical trials	0	1.8	1.8	1.8	1.8	7.2
Treatment of mental health and central nervous system conditions due to HIV	0	0.3	0.3	0.3	0.3	1.2
Development of evaluation methods for HIV prevention	0	0.4	0.4	0.5	1.1	2.4
Strengthening material base of HIV centres	37	26.5	26.5	26.5	26.5	143
Training of health workers	0.8	0.8	0.8	0.8	0.9	4.1
<b>Total (in million Russian roubles)</b>	<b>541</b>	<b>558</b>	<b>558</b>	<b>558</b>	<b>559</b>	<b>2773</b>
<b>Total (in million US\$)</b>	<b>16.9</b>	<b>17.4</b>	<b>17.4</b>	<b>17.4</b>	<b>17.5</b>	<b>86.7</b>

have developed AIDS, antiretroviral treatment is offered to all. In Samara, where there are increasingly large numbers of individuals with AIDS, free antiretroviral drugs are restricted to pregnant women and those who were exposed occupationally. In Tatarstan, intensive antiretroviral therapy is offered to all AIDS patients and the disease progression of 75% of the HIV-seropositive patients is monitored (Table 3).

## Conclusion

The analysis shows that although many similarities exist between the three regions studied, there are considerable differences as regards: stages of the epidemic; organizational arrangements; the political environment; social attitudes to HIV; finances allocated to HIV; monitoring and clinical management of HIV/AIDS patients; civil society involvement; interorganizational links and; multisectorality of responses to the HIV epidemic.

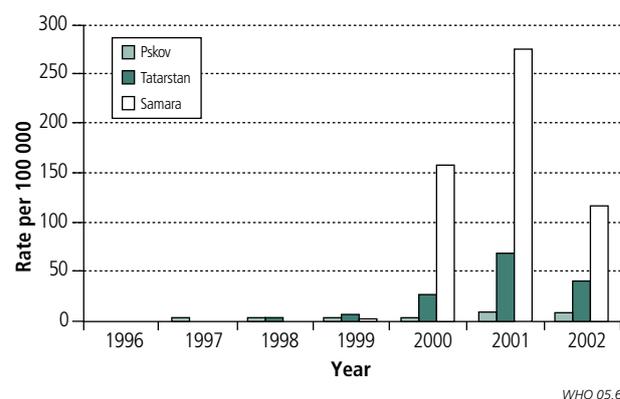
Each region displays some commonalities arising from the Soviet traditions of public health control. Yet, despite an apparently clear federal policy, accompanied by funding, there is considerable diversity in the priorities identified, policies pursued and translation of the policies into action.

Although each region draws on a common legislative framework, the interpretation of the law differs. These examples show how, within an apparently rigid post-Soviet public health system, some policy-makers have seized the opportunity to galvanize their community to mount a multisectoral response to HIV prevention and control. On the other hand, and of concern, our analysis shows how the gaps in the legal base for combating HIV can be used by policy-makers and practitioners to prevent an appropriate public health response to the emerging epidemics.

The reasons for this diversity can be explained in part by: the degree of autonomy enjoyed by the regions (especially an autonomous republic such as Tatarstan which has a greater degree of freedom when interpreting federal laws); predominantly local financing of the HIV programmes, which further reinforces this autonomy; varying interpretations of criminal codes and federal orders relating to HIV/AIDS; the nature of the local sociocultural and politico-economic context; peculiarities of local health systems within which the programmes operate; and the behaviour and values of health professionals and administrators, some of whom see HIV as a problem of IDUs and unlikely to affect the "normal" population (Table 3, web version only, available at: <http://www.who.int/bulletin>).

We have described a complex political economy within which efforts to control HIV sit, an intricate legal environment, and a high degree of decentralization of financing and operational responsibility. This complex environment and the interaction between the system elements affect the way the

Fig. 2. Official notifications of newly diagnosed immunodeficiency virus (HIV) per 100 000 population in Pskov, Tatarstan and Samara Regions



WHO 05.68

rules, norms and enforcement mechanisms are interpreted to generate system responses that may not be easy to predict and may indeed be counterintuitive (35, 36). For instance, we observed: in Pskov, despite a limited multisectoral response and little political commitment, an excellent harm reduction programme; in Samara, a leading reformist region with an internationally supported STI–HIV control programme, a fragmented response with no harm reduction programmes; and in Tatarstan, not a leading reformist region as regards health, a sophisticated multisectoral response.

Our analysis shows how contextual and health system factors influence the translation of policies to action. Therefore, a broader and more detailed analysis of the context and health system elements, than that usually done by specific programmes, will enable better prediction of the effects of a specific policy and promotion of sustainability. A simplistic situational analysis may result in the most important causes of the problem being overlooked and a risk that decisions taken to eliminate a problem could have unforeseen consequences and result in "policy resistance" (37, 38). One way to reduce this policy resistance is to adopt "systems thinking", which requires a detailed analysis of the context and drawing on lessons learnt to devise effective responses (39, 40).

A key lesson emerging from the results from the Russian Federation and countries attempting to address the HIV epidemic is that technical solutions alone are not adequate to mount effective scaled up responses. This is because the responses are influenced by complex health systems and the sociopolitical environment within which the HIV programmes are embedded. An effective scaled up response to HIV prevention and control must take these into account.

Table 4. Comparison of public health expenditures for Tatarstan, Samara and Pskov, 2002

	Pskov	Samara	Tatarstan
Health financing per capita in US\$ (compulsory health insurance included)	53.1	71.4	74.4
Health expenditure as % of total regional government budget	18.1	18	17.2
Financing of the HIV system as % of total health expenditure	0.6	0.5	0.7
Per capita HIV budget in US\$ (2002)	0.31	1.57 <sup>a</sup>	0.50

<sup>a</sup> Figures include capital expenditure on blood safety: if this amount is subtracted, the per capita expenditure on prevention, administration and treatment would be US\$ 0.33.

Our approach has certain limitations: in adopting a multidisciplinary and multimethods approach, this model (rather than a single qualitative or quantitative method) could be considered to fall in epistemological gaps; the assessments are rapid, requiring limited resources; and, although our analysis offers a generalizable conclusion on the importance of simultaneous and joint analysis of the health systems context and the vertical programmes, the findings themselves are clearly context-specific and hence may be of limited generalizability (limitations also attributed to other rapid assessment techniques). However, these features may also be seen as strengths, making possible the rapid identification of key context-specific issues that must be addressed locally.

We would caution against drawing over-simplistic conclusions from our findings. We analysed programmes in three settings, all of which were the sites of increasing epidemics of HIV although somewhat different in nature. Although lessons drawn from this research might inform policy-making and planning in similar settings, further analysis, perhaps drawing upon the approaches we have outlined, should be conducted elsewhere to enable further development and improvement

of the methodology and the toolkit. Similarly, the analysis of HIV control programmes in very different settings, such as low-income countries where HIV epidemics are mature, should, through an iterative honing of these analytical methods, facilitate further development of models or “theories” that help to explain the successes, failures, challenges, and limitations of these programmes, taking account of their place in health systems, and inform pragmatic decision-making.

In conclusion, we have described the application of a novel toolkit enabling systematic, simultaneous, yet rapid analysis of HIV control programmes within their broader health systems context and illustrated this through three case-studies in the Russian Federation. We suggest that if HIV programmes are to be effective and sustainable they need to be informed by an analysis of the impact on HIV programmes of broader health systems. Understanding the health systems contexts and embedding vertical programmes within them is a necessary prerequisite to achieving sustained success. ■

**Competing interests:** none declared.

## Résumé

### Analyse du conditionnement des réponses en matière de lutte contre le VIH par le contexte de fonctionnement des systèmes de santé à partir d'études de cas réalisées dans la Fédération de Russie

**Objectif** Mettre au point une méthodologie et un instrument permettant l'examen simultané, rapide et systématique du contexte général de fonctionnement de la santé publique, des systèmes de soins de santé et des caractéristiques des programmes consacrés à des maladies spécifiques.

**Méthodes** A l'aide des méthodes applicables à l'évaluation situationnelle rapide des programmes verticaux de lutte contre les maladies transmissibles, il a été procédé à une analyse des programmes de lutte contre le virus de l'immunodéficience humaine (VIH) et du contexte de fonctionnement des systèmes de santé de trois régions de la Fédération de Russie. Cette analyse a été menée en trois phases : premièrement, dépouillement des publications, des documents et des données faisant l'objet d'un relevé systématique en provenance de ces régions, deuxièmement, entretiens avec des informateurs clés et troisièmement, collecte et analyse de données supplémentaires. La synthèse des résultats à travers une recherche des thèmes émergents, suivie d'une recherche des sous-thèmes, a débouché sur l'identification des principaux problèmes affectant les systèmes de santé et influant sur l'exécution des programmes.

**Résultats** L'étude constate l'existence d'une économie politique complexe comme cadre des efforts dirigés contre le VIH, d'un

environnement juridique compliqué et d'un fort degré de décentralisation des responsabilités en matière de financement et de mise en œuvre. Bien que les différentes régions partagent certains points communs découlant des traditions soviétiques en matière d'action sanitaire publique, il existe des variations considérables dans les évolutions épidémiologiques, les réactions culturelles, l'environnement politique, le financement, l'organisation et la délivrance des services, ainsi que dans l'ampleur du travail multisectoriel en réponse aux épidémies de VIH.

**Conclusion** Dans le cadre du système de santé post-soviétique centralisé, les mesures édictées par l'organisation centrale pour améliorer la lutte contre le VIH peuvent avoir des degrés d'efficacité divers au niveau régional. Bien que les principes essentiels des programmes verticaux de lutte contre le VIH efficaces soient inscrits dans les programmes mis en place, des impératifs locaux influent considérablement sur leur interprétation, leur mise en œuvre et leur efficacité. Une analyse systématique du contexte dans lequel s'inscrivent les programmes verticaux s'impose pour mieux comprendre comment les politiques concernées sont classées par priorité et transposées en actions.

## Resumen

### Análisis de la influencia del contexto del sistema sanitario en las respuestas de control del VIH: estudios de casos de la Federación de Rusia

**Objetivo** Desarrollar una metodología y un instrumento que permitan analizar rápida y sistemáticamente de forma simultánea el contexto global de salud pública, los sistemas de atención sanitaria y las características de los programas contra enfermedades específicas.

**Métodos** Utilizando metodologías empleadas para evaluar rápidamente la situación de los programas verticales contra enfermedades transmisibles, procedimos a analizar los programas de control del virus de la inmunodeficiencia humana (VIH) y el

contexto de los sistemas de salud correspondientes en tres regiones de la Federación de Rusia. El análisis se llevó a cabo en tres etapas: primero, análisis de las publicaciones, los documentos y los datos recopilados sistemáticamente por las regiones; segundo, realización de entrevistas con informantes clave; y tercero, recopilación y análisis de nuevos datos. La síntesis de los datos realizada mediante un análisis iterativo de los temas que se plantearon permitió identificar los aspectos de los sistemas que más influían en la ejecución de los programas.

**Resultados** Hemos observado que las actividades de control del VIH se inscriben en un complejo marco de economía política, con un intrincado entorno legal y un alto grado de descentralización de la financiación y la responsabilidad operacional. Aunque las regiones muestran algunos puntos en común que se remontan a los mecanismos tradicionales de control de la salud pública que empleaba el régimen soviético, se observan diferencias considerables en lo que atañe a las tendencias epidemiológicas, las respuestas culturales, el entorno político, la financiación, la organización y la prestación de servicios, y la magnitud de la

actividad multisectorial en respuesta a las epidemias de VIH.

**Conclusión** Dentro del sistema de salud centralizado postsoviético, las medidas centralizadas de mejora del control del VIH pueden tener distinta repercusión a nivel regional. Aunque se apliquen los principios centrales de los programas verticales eficaces contra el VIH, los imperativos locales influyen sustancialmente en su interpretación, operacionalización y efectividad. Es necesario realizar un análisis sistemático del contexto en que se enmarcan los programas verticales a fin de comprender mejor la manera de priorizar las políticas pertinentes y de traducirlas en medidas.

---

## Arabic

---



---

### References

- Bradley F, Wiles R, Kinmonth AL, Mant D, Gantley M. Development and evaluation of complex interventions in health services research: case study of the Southampton heart integrated care project (SHIP). The SHIP Collaborative Group. *BMJ* 1999;318:711-5.
- Fulop N, Allen P, Clarke A, Black N. From health technology assessment to research on the organisation and delivery of health services: addressing the balance. *Health Policy* 2003;63:155-65.
- Scotland GS, van Teijlingen ER, van der Pol M, Smith WC. A review of studies assessing the costs and consequences of interventions to reduce mother-to-child HIV transmission in sub-Saharan Africa. *AIDS* 2003;17:1045-52.
- Richey LA. HIV/AIDS in the shadows of reproductive health interventions. *Reprod Health Matters* 2003;11:30-5.
- Kroeger A, Ordonez-Gonzalez J, Avina AL. Malaria control reinvented: health sector reform and strategy development in Colombia. *Trop Med Int Health* 2002;7:450-8.
- World Health Organization. Integration of health care delivery. Report of a WHO Study Group. *World Health Organ Tech Rep Ser* 1996;861:1-68.
- Raviglione MC, Pio A. Evolution of WHO policies for tuberculosis control, 1948-2001. *Lancet* 2002;359:775-80.
- World Health Organization. World health report 2000. Health systems: improving performance. Geneva: WHO; 2000.
- Brugha R, Varvasovszky Z. Stakeholder analysis: a review. *Health Policy Plan* 2000;15:239-46.
- Kutzin J. A descriptive framework for country-level analysis of health care financing arrangements. *Health Policy* 2001;56:171-204.
- Berman P. National health accounts in developing countries: appropriate methods and recent applications. *Health Econ* 1997;11-30.
- Reich MR. Applied political analysis for health policy reform. *Curr Issues Pub Health* 1996;2:186-91.
- Scrimshaw N, Gleason G. Rapid assessment procedures: qualitative methodologies for planning and evaluation of health related programmes. Boston: International Nutrition Foundation for developing countries; 1992.
- World Health Organization. The rapid assessment and response guide on injecting drug use (IDU-RAR). Geneva: WHO; 1998.
- World Health Organization. The rapid assessment and response guide on substance use and sexual risk behaviour (SEX-RAR). Draft for field-testing. Geneva: WHO; 1998.
- United Nations Office for Drug Control and Crime Prevention. Drug abuse rapid situation assessments and responses. Vienna: United Nations Office for Drug Control and Crime Prevention; 1999.
- Joint United Nations Programme on HIV/AIDS. National AIDS programmes: a guide to monitoring and evaluation. New York: Joint United Nations Programme on HIV/AIDS; 2001.
- World Health Organization. Rapid assessment and response technical guide. (TG-RAR). Geneva: WHO; 2003.
- World Health Organization. World health report 2003: shaping the future. Geneva: WHO; 2003.
- Walt G. WHO's World Health Report 2003. *BMJ* 2004;328:6.
- Lee JW. Global health improvement and WHO: shaping the future. *Lancet* 2003; 362:2083-88.
- World Health Organization. The 3 by 5 initiative. Geneva: WHO. Available from: URL: <http://www.who.int/3by5/en>
- Goodburn E, Campbell O. Reducing maternal mortality in the developing world: sector-wide approaches may be the key. *BMJ* 2001;322:917-20.
- Atun RA, Lennox-Chhugani N, Drobniewski F, Samyshkin Y, Coker RJ. A framework and toolkit for capturing the communicable disease programmes within health systems: tuberculosis control as an illustrative example. *Eur J Pub Health* 2004;14:267-73.

25. Atun RA, Samyshkin YA, Drobniewski F, Gusarova G, Skuratova NM, Kuznetsov SI, et al. Health system barriers to sustainable tuberculosis control in the Russian Federation. *Bull World Health Organ* 2005;83:217-23.
26. Pope C, Mays N. Qualitative research in health care. Analysing qualitative data. *BMJ* 2000;320:114-6.
27. Pawson R, Tilley N. Realistic evaluation. London: Sage; 1997.
28. On prevention of spread in the Russian Federation of the disease caused by HIV. Law No 38-F3. Moscow: The Ministry of Health of the Russian Federation; 1993.
29. Code on administrative violations of the Russian Federation. Moscow: The Duma of the Russian Federation; 2001.
30. On urgent measures for prevention of spread of HIV infection. Edict No 19. Edict of the head state sanitary physician of the Russian Federation. Moscow: The Ministry of Health of the Russian Federation; 1999.
31. Federal law on narcotics means and psychotropic substances. Moscow: The Duma of the Russian Federation; 1998.
32. The criminal code of the Russian Federation. Moscow: The Duma of the Russian Federation; 2001.
33. On improvement of organisational structure and activities of organisations for prevention and control of AIDS. Prikaz No. 312. Moscow: The Ministry of Health of the Russian Federation; 2000.
34. On active measures to control HIV infection in the Russian Federation. Law No 28, Moscow: The Ministry of Health of the Russian Federation; 2002.
35. North D. Institutions, institutional change and economic performance. Cambridge: Cambridge University Press; 1990.
36. Sterman JD. Learning in and about complex systems. *Syst Dyn Rev* 1994;10:291-330.
37. Sterman JD. Business dynamics. Systems thinking and modeling for a complex world. New York: Mc-Graw Hill/Irwin; 2000.
38. Sterman JD. System dynamics modelling: tools for learning in a complex world. *Calif Manage Rev* 2001;43:8-25.
39. Senge PM. The fifth discipline. The art and practice of the learning organization. New York: Doubleday; 1990.
40. Forrester JW. Industrial dynamics. Cambridge, MA: The MIT Press; 1961.

Table 3. Summary of key findings from case-studies

	Pskov	Samara	Tatarstan
Epidemiology	<ul style="list-style-type: none"> <li>• Early epidemic concentrated in IDUs<sup>a</sup> with a cumulative total of approximately 100 HIV-seropositive people.</li> <li>• In 2002, HIV prevalence was 18/100 000</li> <li>• Estimated 5000 IDUs</li> <li>• Estimated 3.3% of prisoners are IDUs, with a few reported HIV-positive prisoners</li> </ul>	<ul style="list-style-type: none"> <li>• Explosive epidemic commenced in 2000 with a cumulative total of over 20 000 persons</li> <li>• In 2002, HIV prevalence was 53/100 000</li> <li>• Prevalence of HIV in pregnant women 1.8% in 2003, with approximately 1000 children born to HIV-seropositive mothers</li> <li>• Most HIV infection is in IDUs but heterosexual spread increasing: 50% of the infected women acquire HIV through sexual spread</li> <li>• Substantial proportion of prisoners inject drugs</li> </ul>	<ul style="list-style-type: none"> <li>• Rapidly expanding epidemic with numbers increasing from 230 cases in 1999 to 3000 cases in 2003</li> <li>• Estimated true number of cases is 11 000–20 000</li> <li>• In 2002, HIV prevalence was 114/100 000</li> <li>• Estimated 50 000–60 000 IDUs</li> <li>• Epidemic initially concentrated in IDUs in cities, but has expanded with sexually acquired HIV</li> <li>• Approximately one-third of the prisoners inject drugs</li> </ul>
Sociocultural context	<ul style="list-style-type: none"> <li>• Homogeneously ethnically Russian and Russian Orthodox population</li> <li>• HIV framed culturally as a problem of drug use and unlikely to affect the "normal" population</li> <li>• Questions persist amongst clinicians and others about the causal link between HIV and AIDS</li> </ul>	<ul style="list-style-type: none"> <li>• Principally Russian Orthodox and Muslim populations</li> <li>• Stigma remains widespread</li> </ul>	<ul style="list-style-type: none"> <li>• Predominantly Muslim</li> <li>• Widespread acknowledgement of HIV as a public health threat for all social strata</li> <li>• HIV programmes widely supported and visible</li> </ul>
Regional political and legal environment	<ul style="list-style-type: none"> <li>• Some political commitment but lacking a sense of urgency</li> <li>• HIV is not a priority of Regional Youth Committees</li> <li>• Little translation of intersectoral imperatives working in practice</li> <li>• Successful harm reduction programme which relies heavily on a charismatic leader</li> <li>• Federal laws are interpreted strictly and constrain novel, context-specific interventions</li> <li>• There is no prison HIV control programme</li> </ul>	<ul style="list-style-type: none"> <li>• Funding from the Governor for five AIDS centres and a programme to ensure blood safety</li> <li>• Support for marginalized groups remains low</li> <li>• Concerns that cheap syringes from pharmacies and free syringes might promote drug use are widely cited</li> <li>• Mass media campaigns to promote HIV control resulted in many complaints and were stopped</li> <li>• No integrated harm reduction strategy in prisons</li> </ul>	<ul style="list-style-type: none"> <li>• Support for HIV control offered by different ministries and education establishments</li> <li>• Substantial high-level political commitment to HIV prevention</li> <li>• An Interdepartmental AIDS Control Commission reports to the Cabinet of Ministers</li> <li>• Multisectoral working across state agencies, NGOs<sup>b</sup>, private businesses and the media</li> <li>• Well-designed population education programme through the media</li> <li>• Integrated harm reduction strategy in prisons with education and training of staff and inmates, pre- and post-test counselling, provision of protective materials to prisoners and in visitor meeting rooms.</li> </ul>
Organization	<ul style="list-style-type: none"> <li>• Limited multisectoral intervention</li> <li>• Regional AIDS Centre</li> </ul>	<ul style="list-style-type: none"> <li>• HIV-related activities are performed by a variety of institutions, but with little integration and coordination</li> </ul>	<ul style="list-style-type: none"> <li>• Multisectoral response</li> <li>• AIDS Centre trains the police on needle-stick injury and safety when dealing with IDUs</li> <li>• The police encourage IDUs to attend needle-exchange sites</li> </ul>
Service delivery	<ul style="list-style-type: none"> <li>• No free VCT<sup>c</sup> except for the patients attending narcology, AIDS and dermato-venereology services</li> <li>• Successful harm reduction programme with 70% coverage of IDUs led by the AIDS Centre through a fixed needle-exchange unit – driven by the director of the AIDS Centre</li> <li>• Strong MTCT<sup>d</sup> prevention programme</li> <li>• Antiviral treatment offered to the few AIDS patients through the Federal AIDS Centre and paid for by Pskov Government</li> </ul>	<ul style="list-style-type: none"> <li>• VCT available in urban areas by doctors, but a lack of clarity in law regarding patient rights and confidentiality deters victims of sexual assaults and commercial sex workers from volunteering for testing</li> <li>• No harm reduction or needle-exchange programmes</li> <li>• No prevention programmes focusing on the youth</li> <li>• Strong MTCT prevention programme</li> <li>• Antiretroviral treatment available after occupational exposure to needle-stick injury, but not for rape victims or AIDS patients</li> </ul>	<ul style="list-style-type: none"> <li>• Free VCT service for HIV and hepatitis. Counselling by trained volunteers</li> <li>• Harm-reduction programmes widely available at 26 stationary and 2 mobile needle-exchange centres</li> <li>• Syndromic treatment of STIs<sup>e</sup> by dermato-venereologists in mobile units</li> <li>• Strong MTCT prevention programme</li> <li>• Intensive combined antiviral therapy offered to AIDS patients</li> </ul>
NGO and private business involvement	<ul style="list-style-type: none"> <li>• Limited NGO involvement</li> </ul>	<ul style="list-style-type: none"> <li>• Limited NGO involvement</li> </ul>	<ul style="list-style-type: none"> <li>• Harm reduction and health promotion efforts receive widespread support from NGOs and the business community</li> </ul>

<sup>a</sup> IDUs = Injecting drug users<sup>c</sup> VCT, = voluntary counselling and testing<sup>e</sup> STI = sexually transmitted infection.<sup>b</sup> NGOs = nongovernmental organizations<sup>d</sup> MTCT = mother-to-child-transmission