

Annex 1 TECHNICAL ISSUES IN PAYING HOSPITALS AND GENERAL PRACTITIONERS *

A1.1 This annex addresses technical issues involved in the design of payment systems for hospitals and for general practitioners.

1A. CONSTRUCTING AND USING DRGs WITHIN HOSPITAL PAYMENT REFORM

A1.2 The focal point of Belarus's health system is the hospital. Payment methodologies for hospitals and other providers can have incentive effects that significantly affect the amount and type of services provided, as well as the total cost of the health care system. They can also provide incentives for new styles of medical practice and new market structures. However, the existing payment system in Belarus has few incentives for efficient management of hospital resources.

A1.3 Retrospective or Prospective Payment. Payment systems are intended to allocate scarce resources to their best use within the health system. Some systems pay separately for each individual service on a retrospective basis--in other words, after the service is rendered. Retrospective payment systems typically try to estimate the costs actually incurred in providing care to the patient concerned and they then relate payment to these. Such systems often create an incentive for providers to do more than is necessary so as to increase the payments they receive. The alternative is to make a single prospectively-determined payment for an efficient set of services necessary to treat a particular diagnosis. Prospective payment relies on the fact that necessary services are reasonably predictable. (For example, a patient needing surgery to remove a nonmalignant tumor might receive an overnight stay in the hospital, sutures, dressings, and antibiotics as integral parts of the treatment.) "Bundling" services into a single comprehensive payment discourages the provision of additional unnecessary services, since they would not increase the payment.

A1.4 "Case-Mix Adjustments. The use of a system that adjusts payments to hospitals for "case-mix" (the average severity of illness of the patients treated) could improve incentives for efficient resource allocation and provide information to improve the management of hospitals. Case-mix systems have been developed to classify patients according to the resource costs of their treatment. Diagnosis-related groups (DRGs) are perhaps the most widely-known case-mix system. They are the basis for prospective payment of hospital care in the U.S. Medicare program, are also used in Portugal and Brazil, and are used to adjust global budgets in the UK, Germany and Denmark. Other systems have been developed for application to the outpatient setting as well.

* This Annex adapts unpublished material prepared by Joseph Antos in another context

A1.5 Diagnosis-Related Groups. DRGs could potentially provide Belarus with a rational basis for setting hospital budgets. Because a full DRG system could be difficult and time-consuming to develop, however, initial efforts could focus on a small number of DRGs that account for the greatest number of hospital admissions, or a simplified system of 20-30 categories by department.

A1.6 Case-mix systems like DRGs depend on the complete and consistent coding of patient-level information from the medical record, but it is relatively simple to do this, usually requiring 10-20 data items per discharge. For that reason, such systems can be used for both the equitable budgeting of funds across institutions and to improve hospital management. DRGs can be used to assess and improve the efficiency of hospital operations and they can be an important tool in assuring the quality of hospital services.

A1.7 Thus, the combination of clinical and financial data within a DRG framework could be very valuable to the Ministry of Health for planning and overall resource management of the hospital system. That information could also be used by the hospital director to manage resources more effectively and identify specific areas of operation that need improvement.

A1.8 DRGs and Global Payment Limits. DRGs may be used either in the context of an unconstrained per admission payment system or a system subject to global payment limits for each level of care within a region. Both approaches could allocate resources to hospitals in a more coherent way than the approach currently used in Belarus. Use of DRGs in a setting where the rate per admission is unconstrained, however, could lead to substantial increases in payments to hospitals that might not be affordable. Indeed, annual payment adjustments to reflect higher operating costs for hospitals paid by the U.S. Medicare program are, in many years, lowered through legislation to keep federal costs under control.

A1.9 Global budgets do not automatically eliminate the incentives for inefficiency but they do control costs. Hospitals would have an incentive to provide services more efficiently and perhaps to patients with complex conditions, if they knew that the allocation of the country or region's total budget for hospitals depends on the relative level of hospital performance. Similarly, physicians could have an incentive to treat patients rather than to pass them upward in the health system if their salaries depend on their performance. Properly administered global budgets that use data from the DRG system to judge hospital and physician performance can provide a strong incentive for efficient delivery of high-quality care.

A1.10 Data Needs and System Development. DRGs, as well as other case-mix systems, require certain detailed information for each patient. Specific data elements for DRGs include the principal diagnosis at the time the patient is admitted and then discharged; up to 8 secondary diagnoses; up to 6 procedures performed during the hospital stay; and the age, gender, and discharge status of the patient. In the DRG system, diagnosis and procedure information is reported by the hospital using the *International Classification of Diseases, 10th Edition (ICD-10)*. Cases are classified to only one DRG, regardless of the number of conditions treated or services provided. Payments based on DRGs represent the average cost of treating cases having similar clinical patterns and costs. So cost information is needed along with clinical information. Additional investigation might be necessary to determine whether Belarus already has available the cost data needed for different kinds of cases.

A1.11 Developing a functioning payment system based on DRGs depends on having a baseline data set that includes all the necessary clinical and financial data. That baseline data set must provide enough information to accurately characterize the hospital system — at least 6 months of data, and preferably more.

A1.12 Developing a complete DRG system would be a time-consuming process. The top 20 DRGs, accounting for perhaps 80 to 90 percent of admissions, could be sufficient for payment and management purposes. Even without secondary diagnosis data, it should be possible to identify the DRGs that account for the greatest number of hospital admissions and use of hospital resources. Perhaps 2 or 3 of the most significant DRGs could be the focal point for initial development of a DRG system. That would reduce the risk of undertaking a very large project before there is a good understanding of the technical issues that may arise.

A1.13 Decisions would also be needed regarding payments for hospital services that would not be paid according to DRGs. Those services might only account for 10 to 20 percent of hospital costs, but it would be necessary to have a method for paying for them.

A1.14 Any new DRG-based system should first be tested by simulating DRG-based payments so that errors in the payment system can be identified and corrected. Actual implementation of the new payment system might be phased to give hospitals a chance to adjust to the change.

A1.15 Other major policy changes would be needed if a DRG-based payment system is to effectively promote efficient use of resources and a higher standard of care. In particular, hospital managers need the flexibility and tools to actively manage all of their resources, including their labor force. Unless individual physicians are given financial incentives for good performance, the payment reform is likely to have disappointing results. Those incentives do not automatically lead to an uncontrolled surge of spending if global budgets are used.

1B. OPTIONS FOR ORGANIZATION, PAYMENT AND INCENTIVES FOR PRIMARY HEALTH CARE BY GENERAL PRACTITIONERS

A1.16 One central objective of health system reform is to increase the effectiveness of health services by moving from an over-reliance on curative and secondary clinical care to primary and preventive care. MOH has expressed strong interest in information about alternative models for organizing and paying for primary health care services provided by general practitioners (GPs). Although MoH envisages that, initially, GPs will engage in family medicine mainly in rural areas with lower population densities, it is also interested in how family medicine could evolve over time to play a more central, fundamental role within the primary health care system. Accordingly, it has requested information about alternative options for the organization and funding of general practice and about their advantages and disadvantages. The adoption of a model of general practice funded through capitation payments for at least some primary health care (PHC), with its implicit shift to self-employment for primary care physicians who work as GPs, is intended to create incentives for more efficient and effective care.

A1.17 Primary care physicians working as GPs are usually paid on a capitated basis, which means a fixed payment each month for each patient who selects the GP as the provider of all primary health care for the coming year. A patient is free to enroll with a different physician if (s)he is dissatisfied, although usually such changes are limited to a re-enrollment period, which typically is offered annually. GPs can increase their incomes by attracting additional patients to enroll with them. Typically, a case load of around 2000-2200 patients is viewed as providing the appropriate balance between an adequate work load and sufficient time to provide quality care to those requiring it. Because many patients within a practice will use little or no care during any given year, capitation arrangements typically function like an insurance premium. They generate enough income for the GP to cover the costs of providing care to the particular subset of individuals in the practice who are sick during any single year. GPs who are more (or less) efficient than average at providing care, or who have larger (or smaller) practices than average can expect to have higher (or lower) net incomes than average as a result. Furthermore, the average level of illness among a GP's enrolled patients will also affect the total costs of providing care to them and will thus affect the GP's net income as well.

A1.18 International experience with GP arrangements displays many variations. The basic model is for an individual GP to work as a private doctor running a solo practice. This was the traditional model in the United Kingdom, for example. Alternatively, where legally permitted, some GPs form groups and the capitation payments are made to the group rather than the individual GP. Also, in Croatia, during a transition process to the solo practice model, some primary care physicians were employees of health centers, which received the capitation payment and paid the physician a salary. Other primary care models that might be considered according to geographic areas could include:

- Rural Practice: One or two GPs practicing in a finite (isolated) geographic area, who may be sharing working space, support staff, on-call responsibilities, and patient records;
- Group Medical Practice: At least three GPs in a rural setting, and at least four GPs in an urban setting, who may be sharing working space, support staff, on-call responsibilities, patient records, and responsibility for the health of the population served; and
- Multidisciplinary Team Practice: GPs and other health care professionals working in a coordinated team environment. At least one non-primary care specialist would be included; and at least two non-physician professionals would be employed within the group. The list of these providers include nurses, midwives, physical therapists, occupational therapists, pharmacists, and other allied workers.

A1.19 The capitation payment level can be uniform across all patients, but more commonly varies with the age and/or gender of the patient to roughly account for differences in the typical use of services. Some countries have higher rates for GPs working in rural areas with lower population densities, where travel times can be higher for the GP and fewer patients can be seen in a day. Others differentiate certain kinds of preventive services, such as vaccination or active management that avoids acute flare-ups of potentially serious conditions like diabetes and hypertension, and pay an additional amount for provision of these forms of care.

A1.20 GPs in private practice typically rent office space, or may work from their home. They require access to adequate diagnostic and laboratory facilities. Primary care physicians generate significant costs for the health system by prescribing drugs and referring patients for specialist or hospital care. Consequently, in some countries, the health financing body may impose limits on the average number of prescriptions and referrals per patient for the physician's practice or may introduce financial penalties for exceeding threshold levels. Typically, patients enroll with a primary care physician once a year.

A1.21 In some circumstances, allowing additional options for organizing the delivery and financing of care can strengthen the primary health care (PHC) system. General practice fund-holding and some types of group practice can shift part of the responsibility for managing health resources from the hospital and specialist to the primary care physician. Properly designed, such innovations could reverse the bias of the current system, based on salaried PHC doctors, toward the most expensive forms of health care.

Creating Incentives for Efficiency

A1.22 It is clear that primary care physicians are likely to err on the side of over-prescribing and over-referring. Patients demand such services even when the appropriate treatment could be handled by the primary care physician. A physician who refers patients to higher levels of care reduces his work load with no financial penalty. Structural changes are needed to correct this situation. Primary care physicians should have a financial incentive to provide treatment in the most cost-effective way possible, not just for the care they provide directly to the patient but also for care provided as a result of referrals to specialists and hospitals.

A1.23 Two approaches that could be instituted in the medium term to give physicians new opportunities to manage health resources better are group practices and GP fund-holding. A much more ambitious option is the prepaid comprehensive health care organization, which integrates, into one business structure, patient care at all levels from the general practitioner to the hospital. Such organizations can be viewed as large group practices that act as fund-holders for all health-care services.

Group Practice

A1.24 Group practice brings together the clinical and financial interests of a number of physicians who provide primary care and perhaps more specialized services to their patients. Existing health centers could develop into true group practices with changes in payment methods and wider authority to manage their resources.

A1.25 Group practice has a number of clear advantages over solo practice.

- ◆ Group practices can develop more effective ways of managing patient care by taking advantage of the differing clinical interests and expertise of physicians in the group. More effective care management can mean better quality care and lower costs, and could attract more people to enroll with the group.

- ◆ Group practice reduces the financial risks faced by solo practitioners, who could experience income losses under the solo-practice capitation arrangement if some of their patients need much more care than usual in some year. Moreover, physicians could pool their resources to finance expansions in the services that they can offer.
- ◆ Group practices can reduce their administrative costs by sharing support services (such as managing appointments and billing). Depending on other changes in the health system, large groups may also be able to negotiate lower prices for services for which they contract through other providers.

A1.26 Important issues must be faced in creating effective group practices.

- ◆ Payment. Capitation payments should be made to the group rather than to individual physicians. Physicians should be paid by the group on the basis of their performance, rewarding conservative practice styles and good patient outcomes. Information on patient case mix (average severity of illness) is necessary to assure that physicians with more difficult patients are not inappropriately penalized when they use more medical services than physicians with more routine caseloads.
- ◆ Staff and services. The group practice needs autonomy in deciding how to organize its staff and the services offered by the group. Physicians should participate in the group on a voluntary basis for fixed periods of time, perhaps on the basis of an annual contract with the group. The group should also have the right to reject a physician's application for membership in the group, or to terminate its contract with a physician based on objective staffing requirements and performance records. To be efficient, group practices should also have the right to hire the nursing and support staff they need without regard to political pressures to maintain high levels of employment.
- ◆ Management tools. Increased management capability is needed to exploit fully the potential of group practice for efficient use of resources. In addition to information on the case mix of patients, information is also needed that tracks the medical services provided to each patient, the cost of those services, and the outcome of the patient. Training in management information and management techniques should also be made available to clinic directors.
- ◆ Competition. If there is only one group practice that includes all of the primary care physicians in an area, that practice is unlikely to feel much pressure to find treatment efficiencies or to innovate in other ways. All of the patients in that area would have no choice but to enroll with the group practice. With patients unable to move to another primary care provider, the group could simply act as it had before the advent of group practice. Group practice would be most effective in cities large enough to support at least 2 groups who would compete for patients.

A1.27 Group practice alone is not sufficient to improve the efficiency of the health system as a whole. Group practices, as described here, would have incentives to provide primary care services as cheaply as possible. Groups might accomplish that through more efficient use of

resources. But without additional changes in the financial system, groups would continue to have the incentive to refer patients for specialist and hospital care – in essence, moving some of the necessary patient care outside the group, but retaining the entire capitation payment.

Fund-holding

A1.28 GP fund-holding could reverse the incentive primary care physicians now have to shift the responsibility for care to others. GP fund-holders are primary care physicians whose capitation rates would be raised so as to cover the budget for their referrals to specialist physicians and possibly other services. By controlling the payment for specialists, fund-holders have an incentive to limit their referrals and to directly provide as much of a patient's care as they can. Any savings caused by lower use of services than provided for in the augmented capitation rate could be retained by the fund-holder.

A1.29 Fund-holding offers other significant advantages. It provides a good base for disease prevention and health promotion, since those activities can financially benefit the fund-holder in the long term. Placing the control of financing in the hands of primary care physicians could begin to erode the current system's bias toward specialist care, and it places the management of the patient in the hands of those physicians most likely to pursue a conservative clinical course. Primary care physicians would also have greater incentives to perform minor operations, specialty procedures, and tests whenever practical, which would reduce health system costs given the high overhead of specialist and hospital care.

A1.30 This innovation would make the outpatient specialist system more responsive to the primary health-care system and would give the primary care physician greater capacity to manage the overall care of their patients. But it would also expose physicians to new financial risks. An important principle is to pass along enough risk to motivate fund-holders to manage their patients, but not so much risk that they can make or lose large sums. But the system must allow the most capable physicians to prosper, and the least capable physicians to fail.

A1.31 Financial risk can be controlled through the design of the fund-holding system. One important factor is minimum practice size. Other things being equal, a physician practice with a larger number of patients is more capable of accepting financial risk than one with fewer patients. Physicians with a modest number of patients would be poor candidates for fund-holding, since a single very ill patient could require much more specialist care than expected. Physician group practices would be less likely to encounter financial problems due to unexpectedly high use of services by some patients. The United Kingdom, for example, limits GP fund-holding to larger practices. When it introduced the innovation in 1990, it required a minimum of 11,000 registered patients. That limit has declined over time as more familiarity was gained with the system, but the minimum remains at about 5,000 patients per practice.

A1.32 Altering the incentive structure for individual physicians is as important as doing so for group practices, however. Fund-holding could be offered to individual physicians with the proper design elements. In particular, the risk-sharing methods discussed below would be necessary to assure the stability of the primary care system.

- ◆ Payment rates. The capitation rate would be increased to reflect the costs of specialist care that might be required by the average patient. The current method of adjusting payments by the age of the patient may be inadequate for fund-holding. Case-mix adjustment, reflecting more specifically the medical needs of a physician's patients and the costs of meeting those needs, should be developed. More accurate capitation payments would also reduce the incentive under fund-holding to avoid patients who are more likely to need expensive specialist care.
- ◆ Scope of services. There is a trade-off between the scope of services covered under a fund-holder arrangement and the degree of financial risk. Defining the services more broadly increases the risk to the fund-holder – but it also increases the effectiveness with which the overall costs of patient care can be controlled. If, for example, fund-holders were responsible only for specialist services but not prescription drugs or hospital care, there would be a financial incentive to over-prescribe or to refer patients to the hospital. Limits on the use of services not covered by fund-holding might be necessary to avoid abuses.
- ◆ Risk-sharing arrangements. Special risk-sharing arrangements are essential if individual physicians are to be offered fund-holder status. Even with a minimum practice size, precise calculation of average payment rates, and other measures to reduce financial risk, other methods of spreading the financial risk would be useful. But risk-sharing arrangements should not attempt to eliminate every financial risk faced by fund-holders, lest the elimination of risk also eliminates the incentive to manage care.
- ◆ Reinsurance. Fund-holders might be required to contribute to a reinsurance pool, for example, which could compensate those practices that experience exceptionally high losses. Alternatively, the health financing body might develop an outlier payment that would be made when losses on either an individual case or for the practice as a whole exceeded some threshold. Another possibility might be to exclude certain kinds of high-cost conditions from the fund-holder's capitation and pay for necessary services on a fee-for-service basis. That approach, called "carving out," can be effective if a case manager (either a physician or a specially-trained nurse) is brought in to manage the treatment plan for high-cost cases.

A1.33 In addition to financial risks, there are other important issues to consider. Those issues include the following.

- ◆ Information requirements. Although capitation payments for fund-holders would be fixed regardless of the actual use of services, information on both diagnoses and treatments collected at the patient level would be needed to manage the system and set payment rates in subsequent years.
- ◆ Quality assurance. Oversight of patient care is critical in a fund-holder system, in which the financial incentive is to reduce care. Quality assurance activities should be geared to identifying when patients receive inadequate care, or are not referred to specialist care

when necessary. The physician's conflict of interest might be reduced if a significant portion of any net gain realized from controlling practice costs had to be reinvested in the practice.

- ◆ Contracting for specialist services. New forms of business relationships would develop between fund-holders and specialists. Fund-holders would be in a position to direct their patients to particular specialists in exchange for discounts in payment rates that might be negotiated. Large fund-holding group practices might consider including some specialists as part of their group, which could give the group more direct control over specialist costs.
- ◆ Managerial expertise. Fund-holders must be able to manage both their clinical practices and their businesses. The development of management courses and other assistance for fund-holders would be useful.

A1.34 In the medium term, a fund-holder system has the potential to alter significantly the adverse incentives currently plaguing the Belarus health system. The current allocation of funds to primary care physicians, specialists, and hospitals and the lack of financial accountability combine to encourage overuse of services, especially hospital services. Fund-holding is based on the principle that money should follow the patient. Rather than pushing the patient up to the next higher level of care, fund-holders would be rewarded for providing care at the lowest feasible level in the system.

A1.35 The broadest application of fund-holding is a prepaid comprehensive care-providing organization, which receives a fixed payment to provide all of the health services needed by a patient. With artificial payment barriers between different levels of care removed, such an organization has the potential to provide high quality care more efficiently than a fund-holder system that does not include hospital care in the capitated payment. Successful development of group practice and fund-holding are necessary steps in the development of the more comprehensive model.

A1.36 Conclusion. Additional options for reforms are available in the medium term to meet the objective of strengthening the primary health-care system. Those reforms could proceed in two phases, starting with the development of group practice and building toward business structures that incorporate the principles of fund-holding.

Annex 2 DATA ON THE BELARUSIAN HEALTH SYSTEM

A2.1 This annex reports, in tabular form:

- (i) Information on the structure of the “final results” model used by the Ministry of Health for evaluating the performance of medical institutions within Belarus; and
- (ii) Analyses of tabulations from the Household Income and Expenditure Survey, as discussed in paragraphs 4.31 – 4.36 of Chapter 4.

Annex 2A
"Final Results" Model for Performance of Medical Institutions
in the Administrative Territories of the Republic of Belarus in 2000

<i>Indicators</i>	<i>Measuring unit</i>	<i>Standard</i>	<i>Evaluation in points</i>		
			<i>Weight of the standard</i>	<i>Deviation</i>	
				<i>+</i> <i>or -</i>	<i>Measuring unit</i>
1	2	3	4	5	6
HEALTH INDICATORS					
1. Total mortality standardized (by age) index (with European population standard taken as the standard)	Cases per 1,000 persons	12.5	3	-	0.5
2. Infant mortality (excluding babies of 500-999 grams)	Cases per 1,000 born alive	11.3	8	-	0.5
3. Perinatal mortality (excluding babies of 500-999 grams)	Cases per 1,000 born alive and dead	8.0	8	-	0.4
4. Temporary invalidity (Social protection fund data)	Working days per 100 workers	845.0	2	-	0.01
5. Temporary invalidity (16-TI format data)	Cases per 100 workers	88.3	2	-	0.01
6. Temporary invalidity average duration per case (16-TI format data)	Days	10.2	2	-	0.01
7. Temporary invalidity in public health bodies and institutions	Calendar days per 100 workers	790.0	3	-	0.01
8. Acute gastric/intestinal prevalence	First- diagnosed cases per 100,000 persons	200.0	2	-	0.02
9. Active TB prevalence	First- diagnosed cases per 100,000 persons	50.0	3	-	0.05
10. Chronic alcoholism and alcoholic psychosis prevalence	First- diagnosed cases per 100,000 persons	190.0	2	-	0.02
11. Syphilis prevalence	First- diagnosed cases per 100,000 persons	120.0	2	-	0.02
12. Gonorrhea prevalence	First- diagnosed cases per 100,000 persons	100.0	2	-	0.02
13. Primary invalidity while of working age	Cases per 10,000 labor active persons	44.5	8	-	0.02
14. Primary invalidity at up to 18 years of age	Cases per 10,000 persons aged 0-17	16.8	4	-	0.2
15. Readiness for military service	Cases per 100 conscripts	75.0	8	+	0.2

PERFORMANCE INDICATORS					
1. Return to labor of working-age persons after myocard heart attack	% to total heart attacks in labor active age	77.0	5	+	0.05
2. Prevention examination of women (with cytological research)	Cases per 100 women subject for examination	95.0	3	+	0.05
3. Abortions (including vacuum regulations)	Cases per 100 women of fertile age	50.0	3	-	0.02
4. Morphological confirmation of new malicious generations	Cases per 100 first-detected diseases	85.0	6	+	0.1
5. Periodical examination of patients registered with the state register	Cases per 100 subject for examination	98.0	3	+	0.05
6. Teenagers' prevention examination coverage	Cases per 100 subject for examination	99.8	3	+	0.2
7. Disabled and World War two combatants' professional examination coverage	Cases per 100 subject for examination	99.9	3	+	0.2
8. Overall rehabilitation of the disabled	Cases per 100 of those with disability	4.7	5	+	0.1
9. Partial rehabilitation of the disabled	Cases per 100 of those with disability	12.0	5	+	0.1
10. Adults' immunization status indices	% of total adults subject to regular immunization	98.0	5	+	0.2
11. Children's immunization status indices	% of total children subject to regular immunization	98.8	5	+	0.2
12. TB examination (X-ray examination)	% of total population subject to regular examination	93.0	8	+	0.1
13. Daytime hospitals in medical institutions (% of beds in daytime hospitals)	% of total beds	15.0	4	+	0.25
14. % of out-patient clinics /polyclinic institutions with daytime hospitals	% of total institutions	35.0	3	+	0.05
15. Average length of inpatient stays	Days	12.0	6	+	0.1
16. % of doctors with qualification category	% of total with qualification category to total working doctors	48.0	5	+	0.1
17. % of medium-level medical workers with qualification category	% of total with qualification category to total employees	40.0	5	+	0.1
18. Total general practice out-patient clinics with necessary equipment and qualified doctors	Total general practice out-patient clinics per 100,000 persons	1	5	+	0.5

NEGATIVE INDICATORS					
1. Detection of patients with acute stages of oncological diseases	% of total detected patients	0	0	-	0.05
2. Detection of patients with TB acute stages	% of total detected patients	0	0	-	0.25
3. Detection of patients with acute stages of breast cancer	Cases per 100 first-detected	0	0	-	0.05
4. Maternal mortality	Cases	0	0	-	2.0
5. Post-surgical mortality from acute diseases of abdominal organs'	Cases per 100 undergone surgery	0	0	-	1.0
6. In-hospital mortality from acute myocard heart attack	Cases per 100 left patients with established diagnosis	0	0	-	0.1
7. Mortality from acute pneumonia (adults and teenagers)	Cases per 100 left patients with established diagnosis	0	0	-	0.5
8. Up-to-daily mortality of children under 1 in hospitals	% to total children under 1 who died in hospitals	0	0	-	0.1
9. Diphtheria prevalence	Cases per 100,000 persons	0	0	-	1.0
10. Inter-hospital infections	Cases	0	0	-	0.1
11. % of discrepancies (for main diseases) between pathological/ anatomic and clinical diagnoses	% of discrepancy cases per 100 post-mortem examinations	0	0	-	0.1
12. Occupational trauma among public health officers and employees	Cases per 100 workers	0	0	-	10.0
13. Lethal accidents among public health officers and employees	Cases	0	0	-	5.0
14. Justified complaints	Cases per 10,000 persons	0	0	-	10.0
15. Justified complaints and other defects considered by Treatment/Control Council of the Ministry of Health	Cases	0	0	-	5.0
16. Defects revealed during inspections of public health performance at administrative territories by superior bodies	Cases	0	0	-	5.0

Notes:

1. Total mortality standardized (by age) index is calculated for 1999.
2. Captured data have been used in summarizing annual results of the National review of provinces, City of Minsk and country districts as to higher quality and culture of medical services to the population.
3. Data for Points 12 and 13 of defects indices are provided by trade union bodies.
4. Administrative territories' public health performance reflected in Points 2-14 as to health indicators, Points 2,3 and 5 as to performance and points 1, 2, 8 and 14 as to defects has been analyzed quarterly while other indicators have been analyzed annually.

Source: Ministry of Health of the Republic of Belarus, Order No. 110, 5 May, 2000

Final Results of Medical Institutions Performance at Administrative Territories of the Republic of Belarus in 2000.

Implementation Information
(in evaluation indicators)

Indicators	Standard evaluation	Evaluation by Provinces (Oblast)								
		3	4	5	6	7	8	9		
1	2	3	4	5	6	7	8	9		
HEALTH INDICATORS										
1. Infant mortality (excluding babies of 500-999 grams)	8	8.95	7.43	9.15	8.15	8.30	10.30	9.75		
2. Perinatal mortality (excluding babies of 500-999 grams)	8	7.92	8.56	8.80	7.88	9.08	7.68	8.72		
4. Temporary invalidity (16-TI format data)	2	2.44	2.27	2.48	2.22	2.24	1.96	2.34		
5. Temporary invalidity average duration per case (16-TI format data)	2	1.98	2.01	1.99	2.00	2.00	2.00	2.00		
6. Temporary invalidity in public health bodies and institutions	3	5.12	5.75	6.28	5.28	5.29	3.88	6.19		
7. . Acute gastric/intestinal prevalence	2	3.32	2.86	3.72	1.90	1.80	2.90	3.83		
8. Active TB prevalence	3	3.78	3.68	4.03	3.18	3.35	3.91	3.92		
9. Chronic alcoholism and alcoholic psychosis prevalence	2	3.31	2.73	2.18	3.24	2.91	2.48	3.50		
10. Syphilis prevalence	2	3.10	2.80	3.33	2.49	2.50	3.01	2.58		
11. Gonorrhea prevalence	2	2.16	2.08	2.73	2.46	2.47	2.51	3.04		
12. Primary invalidity & aged 18-64	8	10.36	10.25	10.52	8.94	10.08	10.72	11.25		
PERFORMANCE INDICATORS										
1. Prevention examination of women (with cytological research)	3	2.20	1.86	1.90	1.90	1.74	1.92	1.90		
2. Abortions (including vacuum	3	3.25	3.41	3.49	3.28	3.37	3.44	3.49		

Annex 2B Summary of Belarus Out of Pocket Health Spending, 1999 and 2000, from Household Survey Data

Percentage Distribution of Families Within Decile, by Spending Level (in Belarusian Roubles per Month)

	1999										Subtotal		
	0	1-300	301-600	601-900	901-1200	1201-1500	1501-1800	1801-2100	2101-2400	2401-2700		> 2701	
Decile 1	20.8	58.2	11.8	4.6	2.7	0.6	0.6	0.2	0.2	0.2	0.2	0.2	100
Decile 2	10.2	59.2	15.5	9.1	2.8	1.0	0.8	0.4	0.6	0.4	0.4	0	100
Decile 3	9.1	52.2	18.4	9.3	4.4	1.9	1.1	1.5	0.6	0.7	0.7	0.9	100
Decile 4	6.9	48.4	26.1	7.3	2.5	2.8	1.1	2.4	1.4	0.6	0.6	0.4	100
Decile 5	6.7	45.6	21.3	13	4.5	2.9	2.2	0.7	1.0	0.7	0.7	1.3	100
Decile 6	8.1	44.3	23.8	9.8	5.0	2.4	1.5	1.4	1.0	1.0	1.0	1.7	100
Decile 7	8.7	40.7	20.0	11.1	7.3	3.6	2.5	1.4	1.1	0.5	0.5	3.3	100
Decile 8	8.0	37.2	22.2	12	7.6	4.9	1.9	1.4	0.7	1.4	1.4	2.6	100
Decile 9	7.5	31.8	22.1	12.5	8.1	5.4	3.3	2.3	1.9	2.2	2.2	2.8	100
Decile 10	7.4	25.6	20.9	13.3	10	4.3	5.0	2.0	2.6	1.5	1.5	7.4	100
All Families	9.3	44.3	20.2	10.2	5.5	3.0	2.0	1.4	1.1	0.9	0.9	2.1	100

	2000										Subtotal	
	0	1-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001-7000	7001-8000	8001-9000		9001+
Decile 1	14.6	63.6	15.3	3.7	1.6	0.4	0.2	0.2	0	0.5	0	100
Decile 2	14.4	56.4	16.3	7.5	3.2	0.4	0.8	0.4	0.4	0	0.2	100
Decile 3	9.9	58.0	14.3	8.1	4	2.1	1.3	1	0.6	0	0.6	100
Decile 4	10.4	49.5	20.4	11.9	4.4	1.6	0.5	0.2	0.7	0.2	0.2	100
Decile 5	6.3	52.1	16.8	11.9	4.9	3.2	2.2	0.6	0.7	0	1.2	100
Decile 6	7.6	48.4	21.7	9.8	5.2	3.6	1.1	0.7	0.2	0.5	1.3	100
Decile 7	6.7	42.6	23.8	10.1	7.3	3.6	2.0	1.6	0.6	0.8	0.7	100
Decile 8	8.9	40.5	22.1	9.4	6.9	4.1	3.2	2.1	0.2	0.6	2	100
Decile 9	8.9	36.2	21.1	10.0	8.8	4.0	3.1	1.1	1.0	0.7	4.9	100
Decile 10	7.1	29.2	17.9	15.4	5.6	5.3	2.9	2.1	1.6	1.7	11.1	100
All Families	9.5	47.7	19.0	9.8	5.2	2.8	1.7	1.0	0.6	0.5	2.2	100

Families' Average Spending (in Roubles), by Decile and Spending Level of Group

1999

	0	1-300	301-600	601-900	901-1200	1201-1500	1501-1800	1801-2100	2101-2400	2401-2700	> 2701	Subtotal
Decile 1	0	108.0	429.1	731.5	1012	1363	1635	1986	2230	2680	2863	15037
Decile 2	0	115.6	415.8	736.8	1010	1328	1622	1875	2242	2493	0	11837
Decile 3	0	132.3	428.8	752.4	1031	1343	1675	1955	2256	2589	2994	15157
Decile 4	0	132.9	435.7	717.8	995	1294	1615	1937	2300	2525	2770	14724
Decile 5	0	130.3	423.9	736.7	1023	1320	1623	1965	2316	2498	4255	16291
Decile 6	0	129.8	433.3	712.1	1008	1327	1622	1912	2207	2541	4153	16046
Decile 7	0	129.0	434.0	737.6	1043	1324	1632	1914	2306	2580	5024	17125
Decile 8	0	135.2	439.8	739.7	1059	1309	1652	1945	2189	2490	6066	18026
Decile 9	0	141.2	416.8	748.8	1055	1363	1607	1947	2223	2532	5767	17801
Decile 10	0	124.8	446.9	752.2	1044	1335	1643	2000	2248	2594	4898	17086
All Families	0	126.7	431.0	738.1	1036	1330	1632	1946	2255	2542	4934	16970
												159129

2000

	0	1-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001-7000	7001-8000	8001-9000	> 9001	Subtotal
Decile 1	0	351	1442	2365	3439	4278	5257	6867	0	8699	0	32697
Decile 2	0	386	1396	2429	3487	4287	5404	6546	7257	0	14153	45344
Decile 3	0	401	1386	2475	3426	4386	5340	6523	7584	0	11095	42615
Decile 4	0	422	1450	2473	3401	4384	5281	6212	7631	8715	14347	54318
Decile 5	0	469	1462	2424	3537	4300	5513	6351	7245	0	12654	43954
Decile 6	0	428	1441	2436	3449	4481	5537	6513	7366	8153	22841	62645
Decile 7	0	451	1443	2383	3437	4468	5429	6391	7693	8712	20460	60868
Decile 8	0	436	1459	2486	3480	4554	5527	6425	7562	8432	20471	60833
Decile 9	0	485	1448	2454	3518	4433	5393	6260	7506	8661	19851	60008
Decile 10	0	478	1435	2491	3565	4538	5529	6345	7330	8490	19409	59611
All Families	0	423	1439	2449	3480	4455	5462	6404	7451	8539	19145	59247

Estimated Percentage Distribution of Families' Total Out-of-Pocket Spending, by Decile and Spending Level of Group

	1999										Subtotal	
	0	1-300	301-600	601-900	901-1200	1201-1500	1501-1800	1801-2100	2101-2400	2401-2700		> 2701
Decile 1	0.0	1.2	1.0	0.6	0.5	0.2	0.2	0.1	0.1	0.1	0.1	4.0
Decile 2	0.0	1.3	1.2	1.3	0.5	0.3	0.2	0.1	0.3	0.2	0.0	5.4
Decile 3	0.0	1.3	1.5	1.3	0.9	0.5	0.4	0.6	0.3	0.3	0.5	7.5
Decile 4	0.0	1.2	2.2	1.0	0.5	0.7	0.3	0.9	0.6	0.3	0.2	7.9
Decile 5	0.0	1.1	1.7	1.8	0.9	0.7	0.7	0.3	0.4	0.3	1.1	9.1
Decile 6	0.0	1.1	2.0	1.3	1.0	0.6	0.5	0.5	0.4	0.5	1.3	9.2
Decile 7	0.0	1.0	1.7	1.6	1.5	0.9	0.8	0.5	0.5	0.2	3.2	11.8
Decile 8	0.0	1.0	1.9	1.7	1.5	1.2	0.6	0.5	0.3	0.7	3.0	12.4
Decile 9	0.0	0.9	1.8	1.8	1.6	1.4	1.0	0.9	0.8	1.1	3.1	14.2
Decile 10	0.0	0.6	1.8	1.9	2.0	1.1	1.6	0.8	1.1	0.7	6.9	18.5
All Families	0.0	1.1	1.7	1.4	1.1	0.8	0.6	0.5	0.5	0.4	2.0	10.0

	2000.0										Subtotal	
	0	1-1000	1001-2000	2001-3000	3001-4000	4001-5000	5001-6000	6001-7000	7001-8000	8001-9000		> 9001
Decile 1	0.0	1.3	1.3	0.5	0.3	0.1	0.1	0.1	0.0	0.3	0.0	4.0
Decile 2	0.0	1.3	1.3	1.1	0.7	0.1	0.3	0.2	0.2	0.0	0.2	5.2
Decile 3	0.0	1.4	1.2	1.2	0.8	0.5	0.4	0.4	0.3	0.0	0.4	6.5
Decile 4	0.0	1.2	1.7	1.7	0.9	0.4	0.2	0.1	0.3	0.1	0.2	6.8
Decile 5	0.0	1.4	1.5	1.7	1.0	0.8	0.7	0.2	0.3	0.0	0.9	8.6
Decile 6	0.0	1.2	1.8	1.4	1.1	1.0	0.4	0.3	0.1	0.2	1.8	9.2
Decile 7	0.0	1.1	2.0	1.4	1.5	1.0	0.6	0.6	0.3	0.4	0.8	9.8
Decile 8	0.0	1.0	1.9	1.4	1.4	1.1	1.0	0.8	0.1	0.3	2.4	11.5
Decile 9	0.0	1.0	1.8	1.5	1.8	1.0	1.0	0.4	0.4	0.4	5.7	15.1
Decile 10	0.0	0.8	1.5	2.3	1.2	1.4	0.9	0.8	0.7	0.9	12.7	23.2
All Families	0.0	1.2	1.6	1.4	1.1	0.7	0.5	0.4	0.3	0.3	2.5	10.0

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