

Monitoring Health Conditions in the Russian Federation

*The Russia
Longitudinal Monitoring Survey
1992-2005*

April 2006



Russian Longitudinal
Monitoring Survey

University of North Carolina
at Chapel Hill

The Russia Longitudinal Monitoring Survey (RLMS) is a series of nationally representative surveys of the Russian Federation implemented between 1992 and 2005. This report is based on surveys conducted in September 1992 (Round 1), February 1993 (Round 2), August 1993 (Round 3), November 1993 (Round 4), December 1994 (Round 5), October 1995 (Round 6), October 1996 (Round 7), November 1998 (Round 8), October 2000 (Round 9), October 2001 (Round 10), October 2002 (Round 11), October 2003 (Round 12), October 2004 (Round 13), and October 2005 (Round 14). Data from all rounds have been weighted to ensure comparability of the information presented herein. The October 2005 data used in this report comes from a sample of 8384 respondents in 3175 households.

To date, the RLMS has been carried out in two phases, each of which has followed a different nationally representative sample of the Russian population. All aspects of field work in Phase II (the current phase, consisting of Rounds 5-14) were handled by the Institute of Sociology, Russian Academy of Sciences, headed by Drs. Polina Kozyreva and Mikhail Kosolapov, along with the late Dr. Michael Swafford, Paragon Research International. The Institute of Nutrition, Russian Academy of Medical Sciences, headed by Dr. Alexander Baturin coordinated and carried out the collection and processing of health and diet data.

Data collection for Phase I (Rounds 1-4) was implemented by the Russian State Statistical Bureau (Goskomstat), with Alexander Ivanov and Igor Dmitrichev co-directing this effort. Assistance was provided by the Russian Center for Preventive Medicine, led by Drs. Alexander Deev and Svetlana Shalnova. The Russian Institute of Sociology, especially Drs. Polina Kozyreva and Mikhail Kosolapov, and the late Dr. Michael Swafford of Paragon Research International also provided detailed assistance in Phase I.

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The University of North Carolina team that has coordinated all phases of the RLMS includes: Barry Popkin, Principal Investigator, and co-investigators Namvar Zohoori and Thomas Mroz.

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Access to RLMS data is being provided to the public as data sets become available at the RLMS home page, <http://www.cpc.unc.edu/projects/rlms>

Monitoring Health Conditions in the Russian Federation

The Russia Longitudinal Monitoring Survey 1992-2005

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*took the lead in the preparation of this report, with assistance from
Jim Terry and Barry Popkin*

Part 1. Overview of Key Findings

- Following a notable decline in the early 1990s, the prevalence of drinking among adult men has been fluctuating between about about 70% and 67% since 1998.
- Among women, however, there was a steady increase in drinking prevalence between 1998 and 2004, from 43.4% to 47.1%, with the 2005 figure being slightly lower again at 44.2%.
- The pattern among teenagers is similar to that in women, increasing from 16.9% in 1998 to 27.9% in 2004, and dropping slightly to 23.1% in 2005.
- For all groups, the mean daily amount of alcohol consumed by drinkers, which was at its highest level in 2002, has decreased since then.
- The mean quantity of alcohol consumed by the heaviest drinkers (top 20%) in each group is 3-4 times the respective group mean.
- Smoking prevalence among men, which, in 2002, was at the highest level since the start of the RLMS in 1992, has declined to 60.6% in 2005.
- The increase in the prevalence of smoking among women, however, continues, from 7.3% in 1992 to 14.9% in 2005—a 105% increase over a 13-year period.
- Among teenagers, the increasing trend of the previous 3 years appears to have halted, decreasing slightly to 15.8% in 2005.
- The number of cigarettes smoked per day by all age groups, and most pronounced among women and teenagers, has been increasing steadily since 1998; but for men has now leveled off, and for women and teenagers it has declined slightly in 2005.
- Just about 1% of respondents report having ever had a diagnosis of tuberculosis.
- Since 2000, there has been a small but steady increase in the proportion of the sample who reported having compulsory insurance, from 87.7% in 2000 to 94.4% in 2005.
- Of the respondents who sought medical help in the 30 days prior to each survey, a steadily increasing proportion have had to pay for it, from 8.5% in 2000 to 12.6% in 2005.
- About 46% of those seeking medical attention report paying “unofficial” money or gifts, down from 52% last year.
- Among those who sought medical help, 44.7% reported undergoing “additional tests or procedures”, a steady increase since 2000. Of these, about 27% in 2005 (steadily up from 17% in 2000), paid for these tests or procedures.
- An increasing proportion were able to get some or all of their medications—85.1% in 2005 compared to 78% in 2000.
- In 2005, 81.4% of those who received prescriptions were entitled to a full discount, reversing the declining trend since 2000.
- Between 1996 and 2005, commercial pharmacies, as a source of medications, have increased from 15% to about 34.5% in urban areas, and from 12% to about 26% in rural areas.
- Since 2002, there has been a gradual decline in the frequency of ‘No money’ as the major reason for inability to obtain medications in urban areas.

- In rural areas, however, lack of money as a reason is cited more frequently than the previous 3 years (63.3% in 2005 versus 49.1% in 2004 and 58.9% in 2002).
- At the same time, in rural areas, there has also been an increase, since 2002, in unavailability of drugs as a major reason cited for inability to fill prescriptions (31.9% in 2005 compared to 17% in 2002, and 28.2% in 2004).
- Among the elderly, lack of money as a reason for the inability to get medications has declined since 2000, while unavailability of medications has increased.
- Dietary fat consumption, which had steadily and consistently decreased between 1992 and 1998 in all age groups, has been increasing since then, and is now at 34.6% in adults and 31.6% in the elderly.
- Protein intake, which was also showing a slow decrease until 2000, has been increasing slowly but consistently since 2000.
- The prevalence of stunting among those less than 2 years old had steadily declined to 7.8% by 2002, its lowest level since the start of the RLMS in 1992. However, in the last 3 years, there is a steady increase again to 12.3% in 2005.
- The prevalence of stunting among two- to six-year-olds, however, has declined steadily since 2000, from 10.5% to about 6.2% in 2005.
- Among young adults (18-29 years), under-nutrition rose between 1992 and 2003 from 4.3% to 7.6%, and currently is at 7.1% in the 2005 survey, still 65% higher than in 1992.
- Among the elderly, the prevalence of obesity has steadily increased and is at 36.3% in 2005, an increase of 59% since 1992.
- Among the elderly, the combined proportion of individuals who are now either overweight or obese is 72.5%, the highest level since the start of the RLMS in 1992.
- Among the middle-aged (30 to 59 years), the prevalence of obesity in 2005 is at 23.6%, the highest level since the start of the RLMS in 1992, and a 29% increase.
- 98% to 100% of older children (25 months to 6 years old) were reported to have had some form of vaccination.
- In the younger group, also, immunization coverage is over 92% among all income groups, with an average rate of 98.1% in 2005.
- However, certain types of vaccinations such as measles and mumps, are under-administered.

Part 2. Discussion of Results

Drinking and Smoking

NOTE: Figures on drinking and alcohol consumption in last year's and this year's reports have been recalculated using the latest information from the State Statistical Bureau (Goskomstat) on alcohol content of various types of drinks. In addition, the 2004 and 2005 results on prevalence of drinking take into consideration responses to a question specifically asking about beer consumption (in addition to the general question on consumption of "alcoholic beverages". As a result, there are slight

differences between these figures and those that appeared in previous versions of this report.

Figures 1a and 1b present data on the prevalence and level of individual alcohol consumption among adult men and women, and also among teenagers. (Due to the relatively small number of teenagers, aged 14 to 18, it is not useful to subdivide them by gender.) For the purposes of this report, a person was considered a drinker if there was any evidence in the data that he/she drank alcoholic beverages.¹

Figure 1a. Drinking Adults (18+) and Teenagers

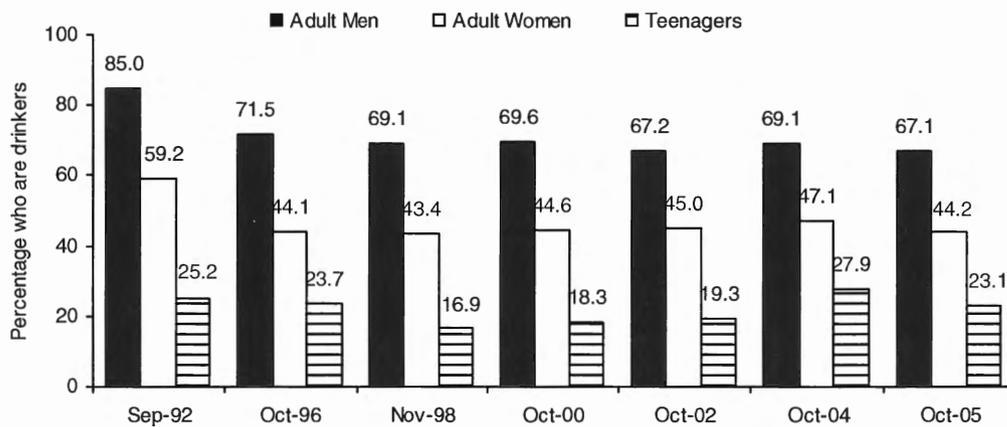
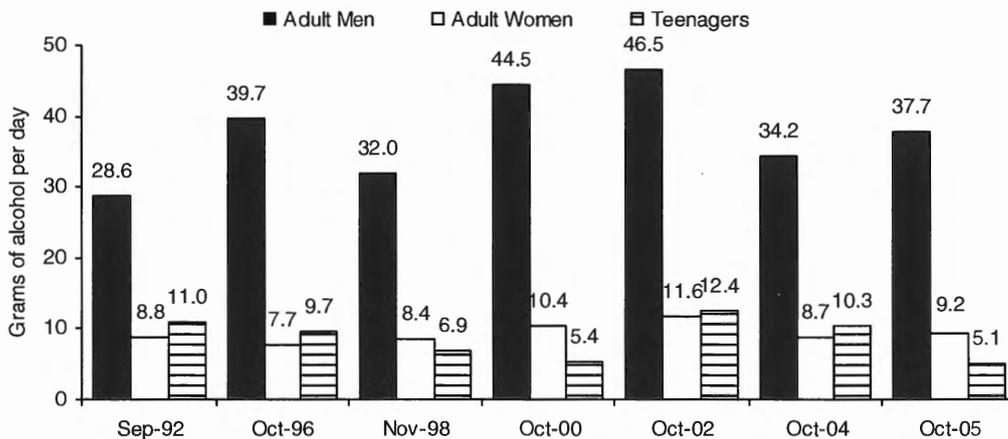


Figure 1b. Mean Daily Amount of Alcohol Consumption (for drinkers)



Following a notable decline in the early 1990s, the prevalence of drinking among adult men has been fluctuating between about 70% and 67% since 1998. Among women, however, there was a steady increase in drinking prevalence between 1998 and 2004, from 43.4% to 47.1%, with the 2005 figure being slightly lower again at 44.2%. The pattern among teenagers is similar to that in women, increasing from 16.9% in 1998 to 27.9% in 2004, and dropping slightly to 23.1% in 2005.

For men and women, the mean daily amount of alcohol consumed by drinkers, which was at its highest level in 2002, has decreased since then (Figure 1b). Among teenagers, also, there has been a decline from 12.4% in 2002, to 5.1% in 2005. These trends in consumption are corroborated by spending patterns, which show

general decline in expenditures on alcohol over the past few years (see the companion report, "Monitoring Economic Conditions in the Russian Federation: The Russia Longitudinal Monitoring Survey 1992-2005").

Figure 1c presents annual per capita alcohol consumption for all adult men, all adult women, and all teenagers.² The patterns are similar to those in Figure 1b: maximum per capita consumption for all groups was seen in 2002, at 14.5, 2.4, and 1.1 liters per year among adult men, adult women and teenagers, respectively. For October 2005, these numbers are 11.7, 1.9, and 0.5 liters among men, women, and teenagers, respectively.

Figure 1c. Annual Per Capita Alcohol Consumption (all persons)

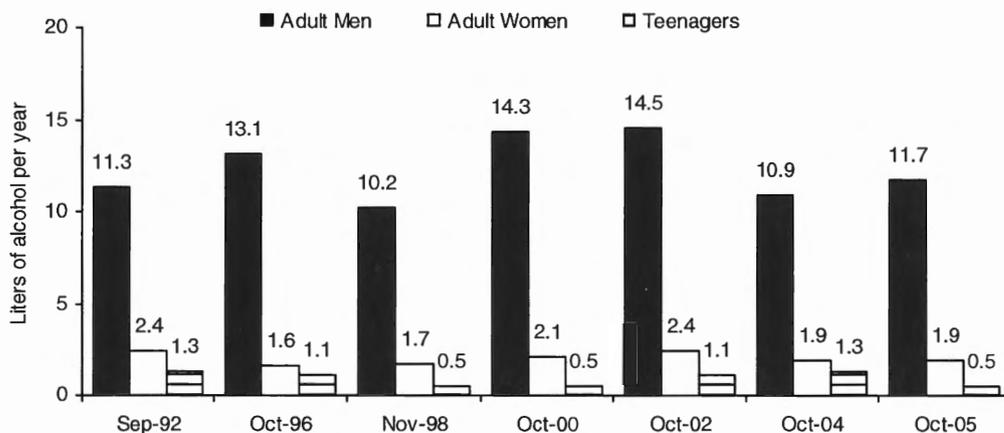
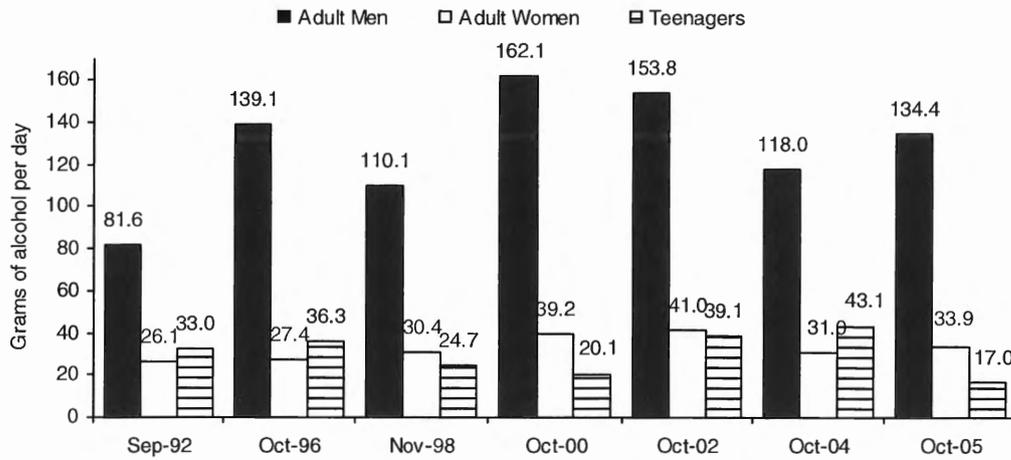


Figure 1d shows the mean daily amount of alcohol consumption for the 20% of drinkers who drink the most among adult men, adult women, and teenagers. The patterns over time are very similar to those in Figure 1b, and there is a general declining trend since October 2000. However, it is important to note the several-fold higher levels of consumption among these heavy drinkers. While the overall mean daily alcohol consumption

among men in 2005 was about 37.7 grams, the mean consumption for the top quintile was 134.4 grams. Corresponding figures for women are 9.2 grams (overall mean) versus 33.9 grams (top quintile), and for teenagers 5.1 grams (overall mean) versus 17.0 (top quintile). These figures point to subsets of the drinking population that are at considerable risk.

Figure 1d. Mean Daily Amount of Alcohol Consumption for the Heaviest 20% of Drinkers



Figures 2a and 2b show the prevalence and extent of smoking. Smoking prevalence among men, which, in 2002, was at the highest level (64.9%) since the start of the RLMS in 1992, has declined since then to 61.3% in 2004, and 60.6% in 2005. The increase in the prevalence of smoking among women, however, continues, from 7.3% in 1992 to 14.9% in 2005—a 105% increase over a 13-year period. Among teenagers, the increasing trend of

the previous 3 years appears to have halted, decreasing slightly to 15.8% in 2005. Figure 2b indicates that the number of cigarettes smoked per day by all age groups, and most pronounced among women and teenagers, has been increasing steadily since 1998; but for men has now leveled off, and for women and teenagers it has declined slightly in 2005.

Figure 2a. Smoking Adults (18+) and Teenagers

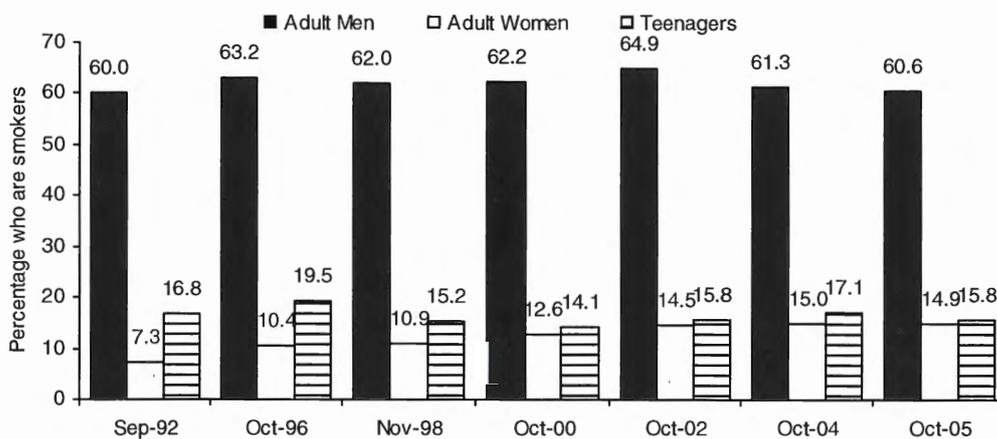
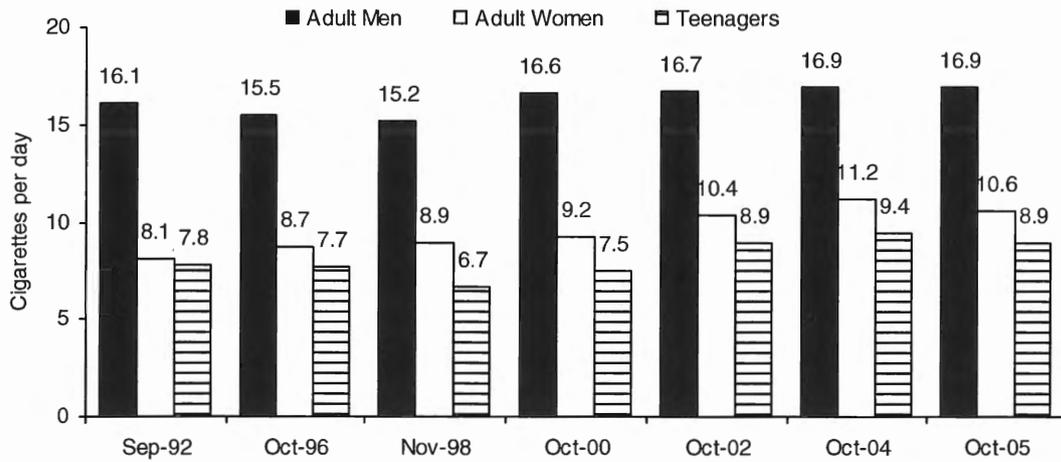


Figure 2b. Mean Daily Number of Cigarettes Smoked (for cigarette smokers)



Health Insurance, Medical Problems, Health-Services Use, and Hospitalization

Beginning in 1993, information on medical problems and the use of health services for these problems has been collected for the 30-day period preceding each survey.³

Generally, more women than men report a recent medical problem (Figure 3a), but a slightly higher proportion of men with illnesses tend to seek medical help (Figure 3b). The latter difference, however, has been slowly lessening over the past 3 years, with almost equal proportions of men and women seeking help in 2005.

Figure 3a. Prevalence of Self-Reported Medical Problems

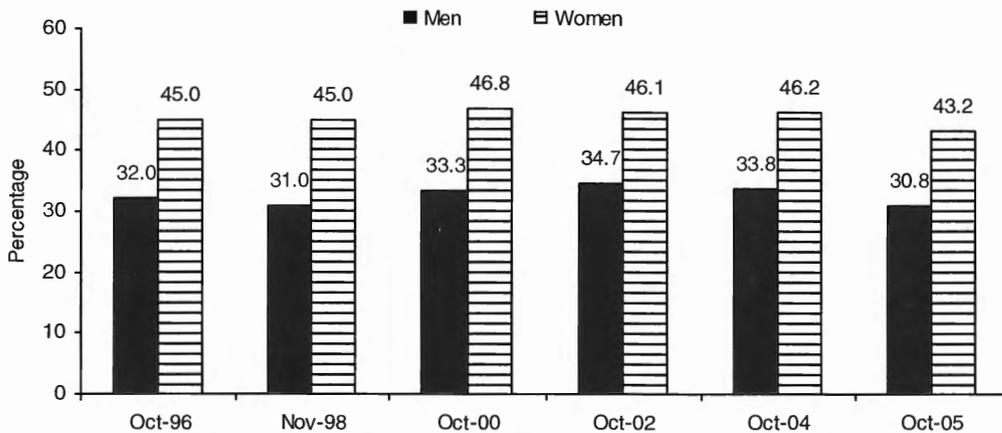
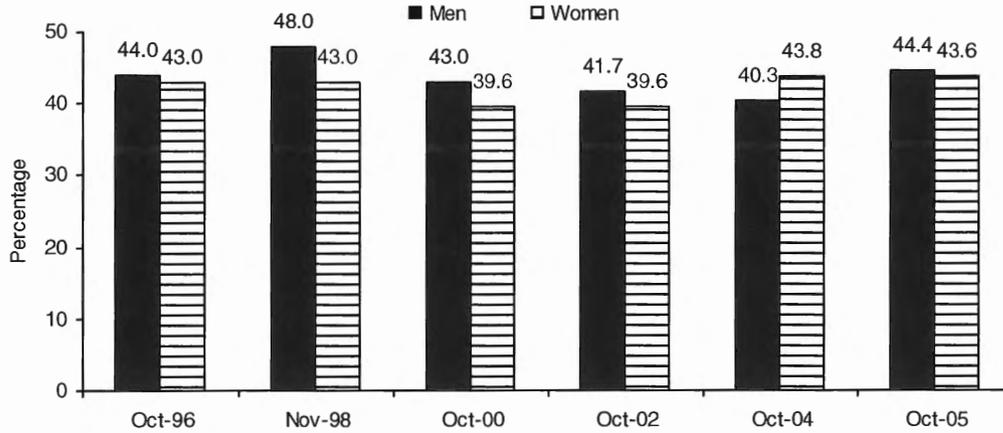


Figure 3b. Percentage of Those with Medical Problems Who Used Medical Services



Figures 4a and 4b present data on the prevalence of hospitalization among all respondents and the mean number of days of hospitalization among those who were hospitalized. Again, generally higher percentages of women than men are hospitalized. There are no noticeable trends in length of hospitalization.

subsequent surveys respondents were asked if they had ever been told by a doctor that they had TB. Of the 12,239 respondents in 2005, only about 1% (same as previous years) reported such a diagnosis. It must be borne in mind that this is from self-reported data, and may not be an accurate estimate of actual prevalence and incidence data.

Due to a perceived increasing prevalence of tuberculosis (TB) in Russia, in the 2000 and

Figure 4a. Percentage Hospitalized (within 30 days prior to the survey)

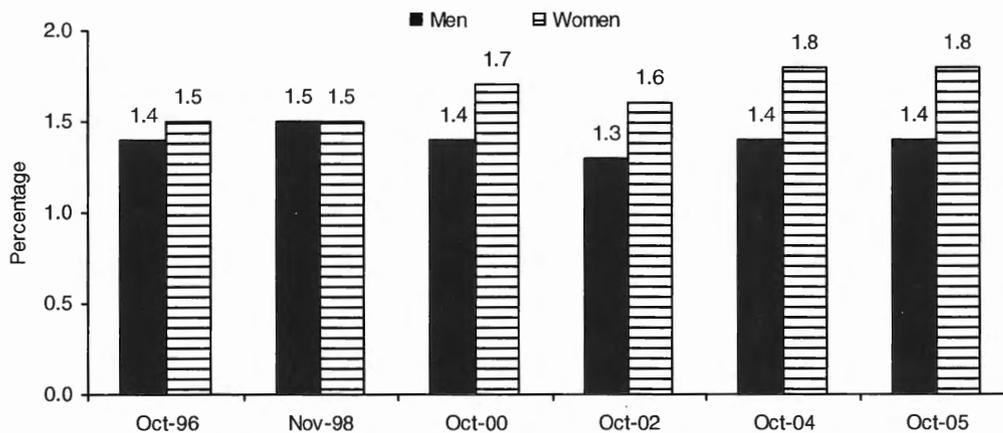
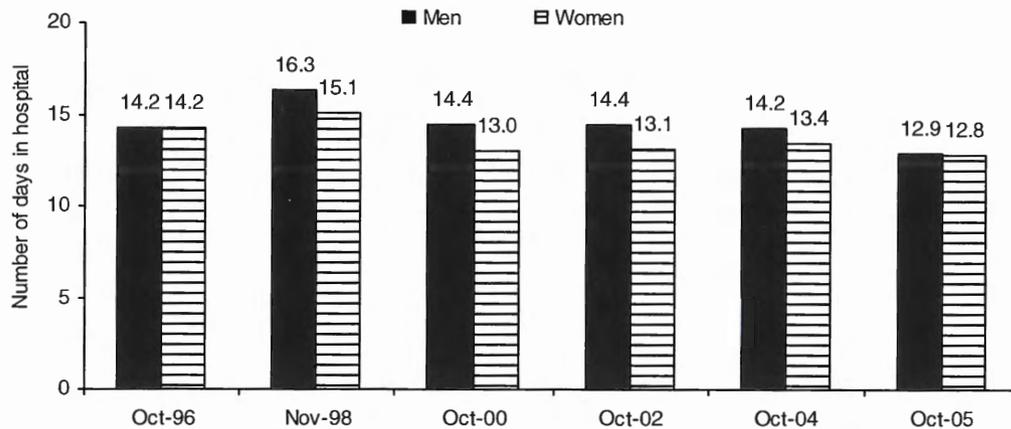


Figure 4b. Mean Length of Hospitalization (in days)



Out-of-pocket Health-related Expenditures

Beginning with the 2000 survey of the RLMS, questions were added about out-of-pocket health-related expenses and types of health insurance. These results are shown in Table 1.

Respondents were asked if they have any compulsory health insurance, and also if they have any supplemental voluntary health insurance. Since 2000, there has been a steady increase in the proportion of the sample who reported having compulsory insurance, from 87.7% in 2000 to 94.4% in 2005. Also, in 2005 about 2.3% reported having supplemental insurance. Of those with supplemental insurance in 2005, 15.2% reported paying for it themselves, at annual amounts of up to 6,000 rubles.

Of the respondents who sought medical help in the 30 days prior to each survey, a steadily increasing proportion have had to pay for it, from 8.5% in 2000 to 12.6% in 2005. Of these, about 61.5% paid “officially in the cashier’s office,” in amounts up to 14,300 rubles in 2005 (a steady increase during the past 3 years), and about 46% paid “money or gifts to the medical personnel”, with reported amounts of up to 10,000 rubles. Also, among those who sought medical help, 44.7% reported undergoing “additional tests or

procedures”, a steady increase since 2000. Of these, about 27% in 2005 (steadily up from 17% in 2000), paid for these tests or procedures, of whom an increasing proportion, 75.4% (up from 66.4% in 2002) paid “officially,” in amounts up to 13,000 rubles, and 31% (down from 38.6% in 2000) paid “unofficially,” in amounts up to 2,500 rubles.

Among those who were hospitalized, 18.2% reported paying for the hospital stay. Of these, 41.5% paid “officially in the cashier’s office,” in amounts up to 30,000 rubles, and 61.6% paid “money or gifts to the medical personnel,” in amounts up to 6,000 rubles. Also, among those who were hospitalized, an increasing proportion, 60.3% (up from 12.4% in 2000) reported paying for “medicines, syringes, and dressing materials.” Of these, about 31% paid “officially,” in amounts up to 10,000 rubles (up from 1,500 in 2000), and 8.6% paid “unofficially.” It should be noted, however, that the numbers who responded to the questions reported in this paragraph were fairly small.

In 2005, 81.4% of those who received prescriptions were entitled to a full discount, reversing the declining trend since 2000. An increasing proportion were able to get some or all of their medications—85.1% in 2005 compared to 78% in 2000.

Table 1: Out of Pocket Health-related Expenditures

	2000	2002	2004	2005
% with compulsory health insurance	87.7	92.5	93.7	94.4
% with supplemental health insurance	1.9	3.0	2.2	2.3
% with supplemental health insurance who paid for it themselves	19.5	22.3	19.0	15.2
Max paid	5000	12000	1500	6000
% of those seeking medical help who had to pay for it	8.5	11.2	12.5	12.6
% who paid "officially at the cashier's office"	53.2	59.7	56.7	61.5
Max paid	5000	3500	5600	14300
% who paid "money or gifts to medical personnel"	51	43.7	51.9	46.1
Max paid	2000	3000	15000	10000
% of those seeking medical help who had "additional tests or procedures"	41.1	41.5	42.4	44.7
% of these who paid for them	16.7	20.3	22.4	26.8
% who paid "officially at the cashier's office"	68.1	66.4	75.2	75.4
Max paid	3400	2000	8000	13000
% who paid "money or gifts to medical personnel"	38.6	37.9	31.0	31.2
Max paid	4500	2000	10000	2500
<i>% of those hospitalized who had to pay for it</i>	<i>13.9</i>	<i>14.3</i>	<i>11.8</i>	<i>18.2</i>
<i>% who paid "officially at the cashier's office"</i>	<i>43.2</i>	<i>48.1</i>	<i>41.0</i>	<i>41.5</i>
<i>Max paid</i>	<i>50000</i>	<i>4000</i>	<i>12600</i>	<i>30000</i>
<i>% who paid "money or gifts to medical personnel"</i>	<i>46.4</i>	<i>73.4</i>	<i>65.2</i>	<i>61.6</i>
<i>Max paid</i>	<i>5000</i>	<i>2000</i>	<i>1000</i>	<i>6000</i>
<i>% of those hospitalized who had to pay for "medicines, syringes and dressing materials"</i>	<i>12.4</i>	<i>49.4</i>	<i>57.2</i>	<i>60.3</i>
<i>% who paid "officially at the cashier's office"</i>	<i>50</i>	<i>35.9</i>	<i>39.7</i>	<i>30.7</i>
<i>Max paid</i>	<i>1500</i>	<i>4000</i>	<i>10000</i>	<i>10000</i>
<i>% who paid "money or gifts to medical personnel"</i>	<i>7.4</i>	<i>8.1</i>	<i>9.5</i>	<i>8.6</i>
% of respondents who received a prescription during 30 days prior to survey	18	18.3	18.4	17.5
% of those receiving prescriptions who were entitled to a full discount	75	71.6	65.2	81.4
% of those receiving prescriptions who were able to get all or some of the medications	78	79.3	84.3	85.1
NOTE: Rows indicated in <i>italics</i> are based on very small numbers of respondents.				

Drug Availability

Since 1994, a series of questions in the RLMS surveys investigated respondents' ability to obtain medications prescribed by health workers. Respondents reported where these medications were obtained and, if they could not be obtained, the reasons why.

In 2005, overall, 85.1% of respondents who received prescriptions were able to get all or some of the medications (Table 1); this compares with 78% in 2000, 79.3% in 2002, and 84.3% in 2004. In both rural and urban areas, state pharmacies remain the predominant source of medications

(Figure 5a), but commercial pharmacies have gained a substantial proportion of the market. Between 1996 and 2005, commercial pharmacies, as a source of medications, have increased from 15% to about 34.5% in urban areas, and from 12% to about 26% in rural areas (the latter is a slight decline over the previous 3 years). The proportion of respondents who received medications directly from physicians is consistently higher in rural areas (7.7%) compared to urban areas (2.7%). The latter proportion in urban areas has been steadily decreasing since 1996.

Figure 5a. Where Medications Were Obtained, by Place of Residence

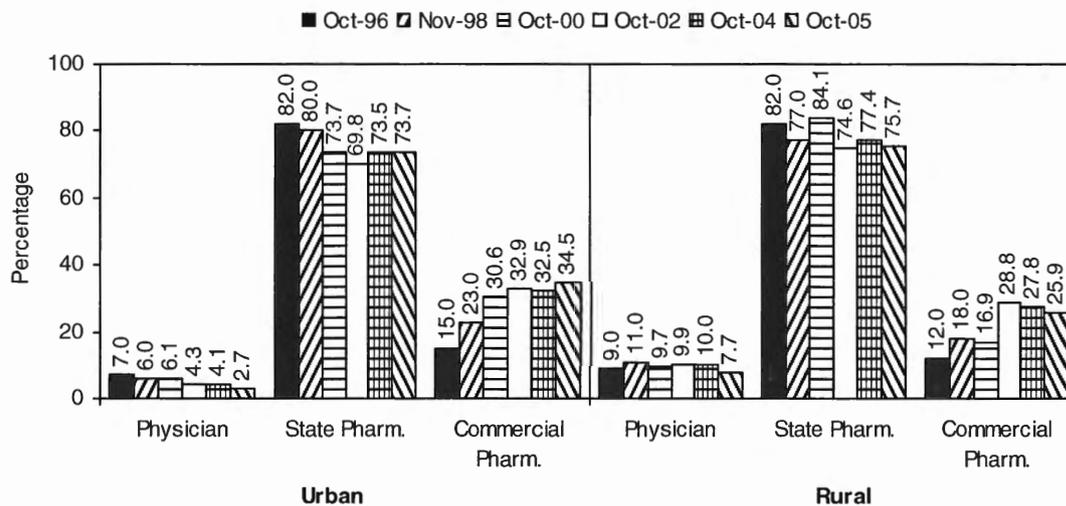


Figure 5b presents drug availability information reported for elderly (60 years and older) and non-elderly respondents. The purchasing pattern of the elderly does not differ much from that of the general population; the majority received their medications from state pharmacies, but increasing proportions are using commercial pharmacies, especially in urban areas.

Among respondents unable to fill prescriptions, the two reasons most often cited are unavailability of the drug and lack of money. Up until October 2000, lack of money had emerged as the major

reason in both urban and rural areas (Figure 5c), in parallel with a decrease in drug unavailability as the primary reason. This trend has continued in urban areas. In rural areas, however, lack of money as a reason is cited more frequently than the previous 3 years (63.3% in 2005 versus 49.1% in 2004 and 58.9% in 2002). At the same time, in rural areas, there has also been an increase, since 2002, in unavailability of drugs as a major reason cited for inability to fill prescriptions (31.9% in 2005 compared to 17% in 2002, and 28.2% in 2004).

Figure 5b. Where Medications Were Obtained, by Age

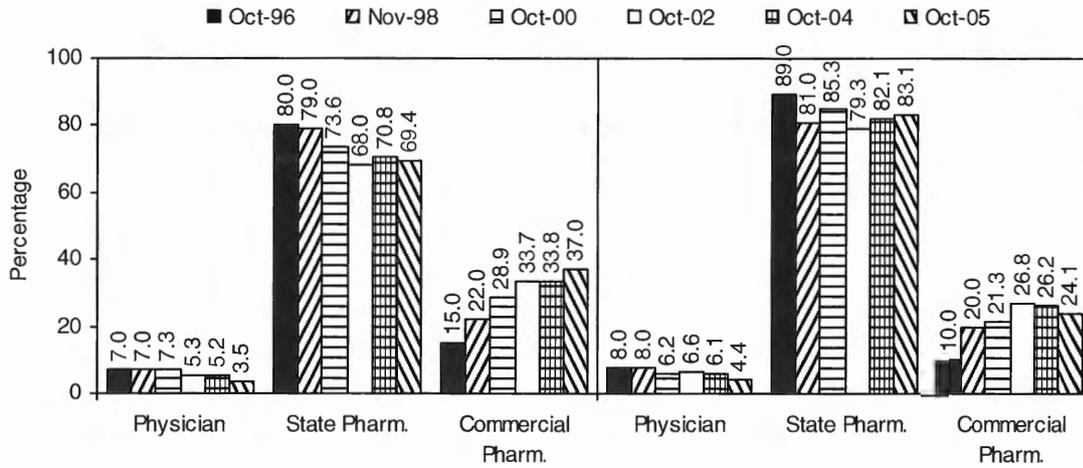
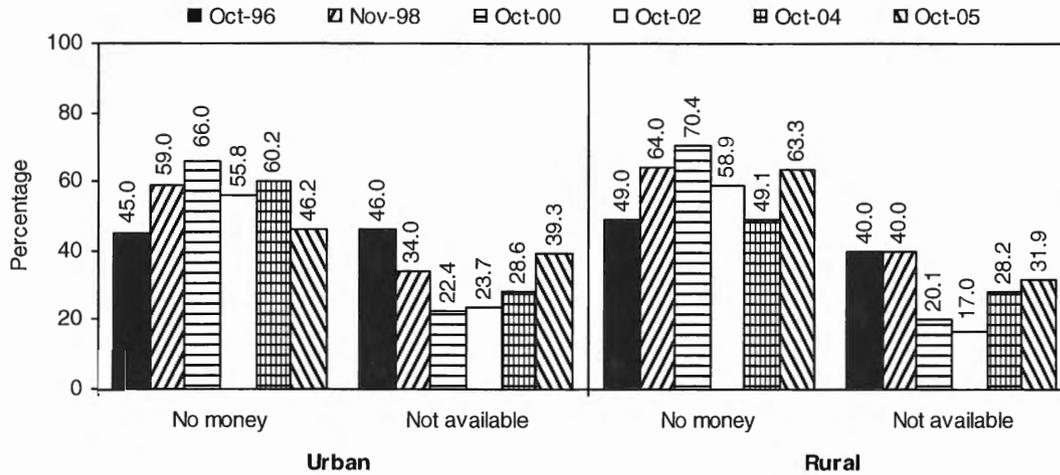


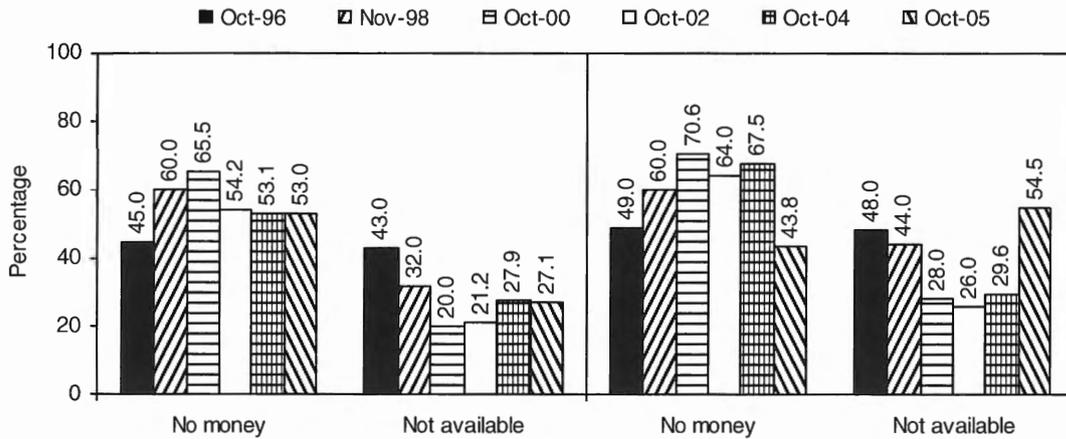
Figure 5c. Reasons for Inability to Obtain Medications, by Place of Residence



Among the elderly, (Figure 5d) lack of money as a reason for the inability to get medications has declined since 2000, while unavailability of medications has increased. In 2005, 54.5% of elderly respondents said medications were unavailable, compared to 26% in 2002. It may be that some types of medications prescribed for the elderly are less available than are those prescribed for younger people.

Although one might propose disability as another cause of reduced access among the elderly, generally less than 1% of the elderly in each survey year cited this as a reason. Therefore, it is not disability that is preventing the elderly from going to the pharmacy and obtaining medications.

Figure 5d. Reasons for Inability to Obtain Medications, by Age

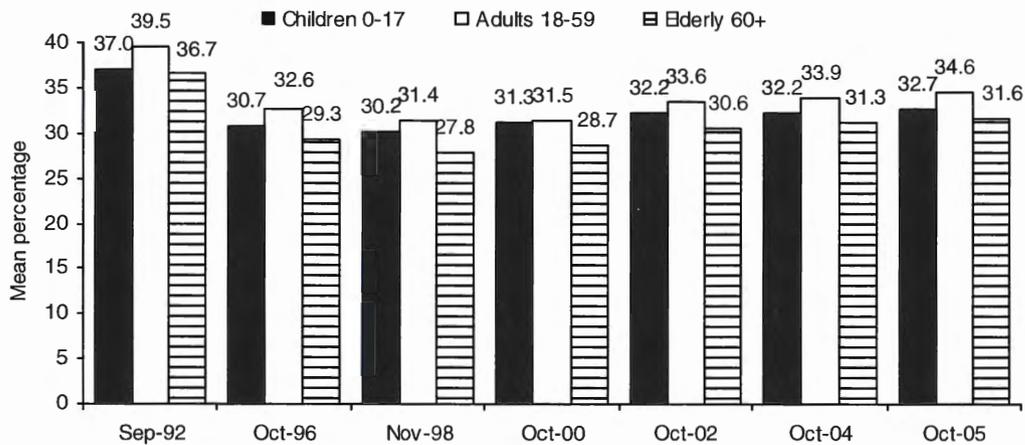


Composition of Diet

The RLMS contains detailed information on dietary intake collected with a 24-hour dietary recall. Here, we present data on fat and protein. Fat intake in Russia has historically been much higher than the recommended level of 30% of total energy intake. This has been of great concern since it has serious implications for a

number of chronic diseases. For all age groups, we saw a steady decline in the percentage of energy from fat between September 1992 and November 1998 (Figure 6). However, beginning in October 2000 and continuing since then, a reversal of this trend has appeared, with the percentage of energy from fat increasing for all age groups.

Figure 6. Mean Percentage of Energy Intake from Fat

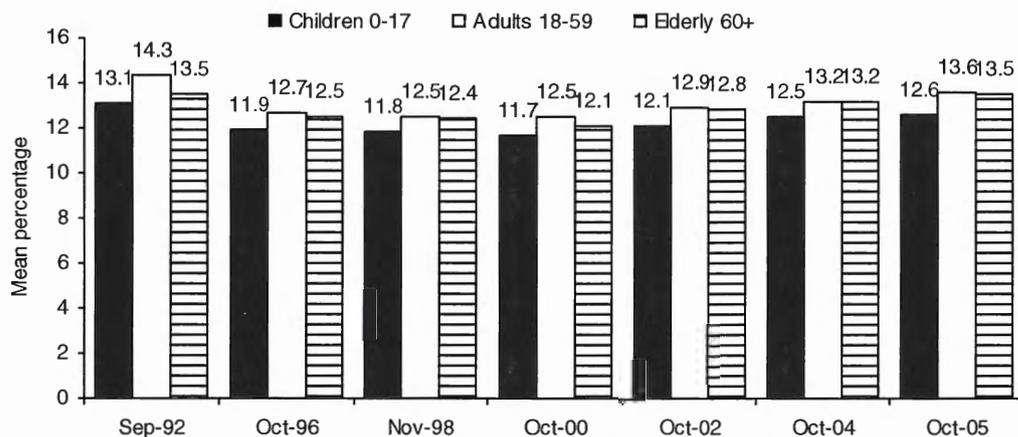


Among the elderly, the percentage of energy from fat declined from 36.7% in 1992 to 27.8% in 1998, but has steadily increased again to 31.6% in 2005. There are similar trends in fat consumption among adults and children. Also, as shown in Figure 7, there was a persistent but much slower decline in the percentage of energy from protein between 1992 and 2000. For adults, energy from protein declined from 14.3% in September 1992 to 12.5% in October 2000. The corresponding decline for the elderly was from 13.5% to 12.1%, and for children from 13.1% to 11.7%. However, for all age groups, percentages have increased consistently since 2000, to their 2005 levels of 12.6%, 13.6% and 13.5% among children, adults and the elderly, respectively.

and the elderly, respectively.

These dietary intake shifts are indicative of important changes in Russian food-purchasing patterns and diets (see “Nutritional Status,” below, and also the companion report, “Monitoring Economic Conditions in the Russian Federation: The Russia Longitudinal Monitoring Survey 1992-2005”). The shifts result from a combination of socioeconomic, market availability, and personal factors. It should be noted that the initial desirable declines in fat consumption are now reversing to levels above recommendations in all age groups.

Figure 7. Mean Percentage of Energy Intake from Protein



Nutritional Status

Figures 8a and 8b present data on the nutritional status of children (height and weight are measured for all respondents). They show a mixed picture. Of particular concern in previous rounds was an increase in the prevalence of stunting (an indicator of chronic malnutrition) among children two years old and younger.⁴ Between September 1992 and December 1994 there was a 26% increase in stunting in this age group (from 11.8% to 14.9%,

data not shown for 1994). Between 1994 and 1996 there was a decline to 8%. After a level of 12.4% in 1998, the prevalence of stunting in this age group had steadily declined to 7.8% by 2002, its lowest level since the start of the RLMS in 1992. However, in the last 3 years, there is a steady increase again to 12.3% in 2005. The prevalence of stunting among two- to six-year-olds, however, has declined steadily since 2000, from 10.5% to about 6.2% in 2005 (Figure 8b).

Wasting (a measure of acute malnutrition) also presents a mixed picture. Among 0- to 24-month-olds, prevalence of wasting is at 4.2% in 2005, after a low of 0.7% in 2004, and a high of 9.1% in 1992 (Figure 8a). Among older children (Figure 8b), the prevalence of wasting declined between 1992 and 2000, but has been increasing since then to the 2005 level of 5.7%.

It should be noted that children’s nutritional status, particularly wasting, is quite sensitive to socioeconomic factors. Generally, average real household income in Russia is now at the highest level ever recorded in the RLMS. However, disparities persist, with households in the wealthiest income quintile earning on average 5.2

times more income than households in the poorest quintile. Also, even with the continuous growth in real expenditures in RLMS surveys since 1998, it is important to recognize that there were higher real average expenditures measured ten to twelve years ago. Total real average expenditure is currently 12% below its peak level observed from August 1993 through November 1993 and December 1994 (See the 1998 RLMS Report). In addition, for the fourth year in a row, total food expenditures have barely changed. They are now one to two percent lower than they were in 2001 through 2004 (see the companion report, “Monitoring Economic Conditions in the Russian Federation: The Russia Longitudinal Monitoring Survey 1992-2005”).

Figure 8a. Children's Nutritional Status (0-24 months)

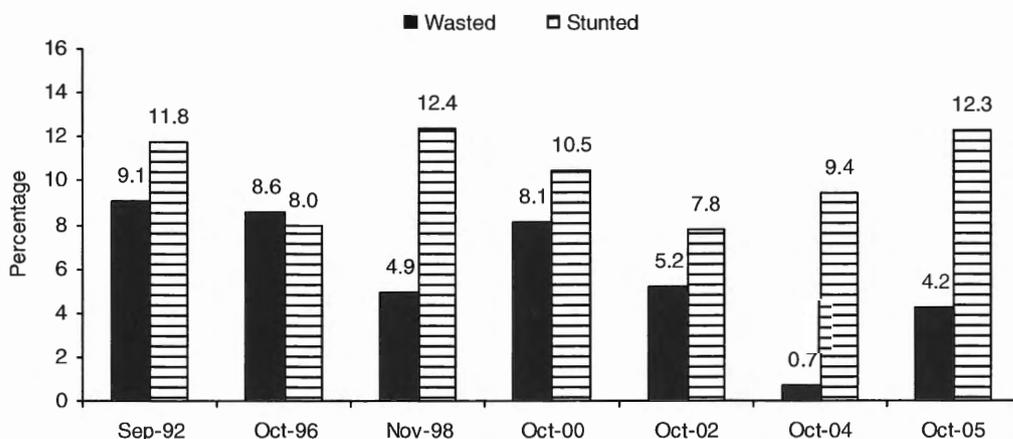
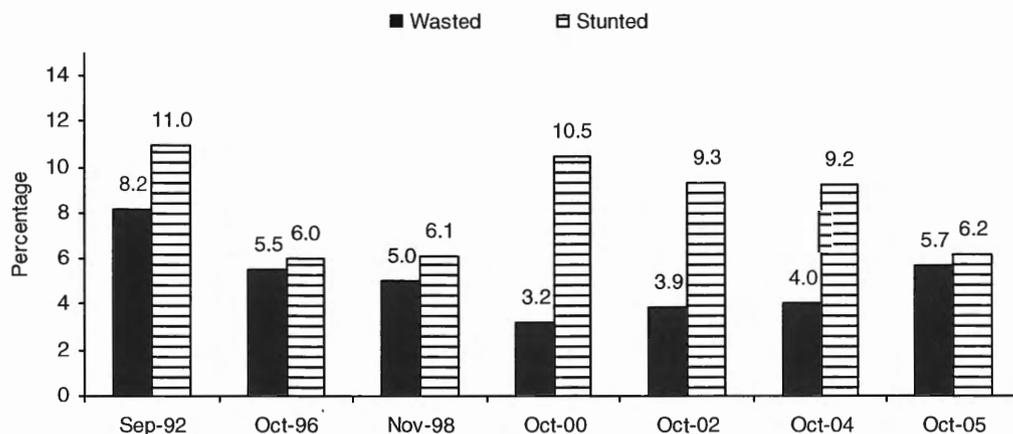


Figure 8b. Children's Nutritional Status (25 months-6 years)



The nutritional status of adults varies by age group (Figure 9). Among young adults (18-29 years), the trend of concern has been increasing under-nutrition, which rose between 1992 and 2003 from 4.3% to 7.6%, and currently is at 7.1% in the 2005 survey, still 65% higher than in 1992. Conversely, among the elderly there has been a steady increase in the proportion who are obese (according to WHO classifications),⁵ from 22.8% in 1992 to 36.3% in 2005, a 59% increase. Among this age group (60 years and older), the combined proportion of individuals who are now either overweight or obese is 72.5%, the highest level since the start of the RLMS in 1992. These patterns are better understood against what the

RLMS reveals about the economic situation of the Russian people and changes in their food expenditures, as outlined in the paragraph above, in addition to the fact that the elderly have traditionally fared better economically than the rest of the population.

Among the middle-aged (30 to 59 years) also there has been a steady shift into the overweight and obese categories, where the prevalence of obesity in 2005 is at 23.6%, the highest level recorded, and a 29% increase, since the start of the RLMS in 1992. The prevalence of underweight among both the middle-aged and the elderly remains steadily low (less than 2%).

Figure 9. Adult Nutritional Status

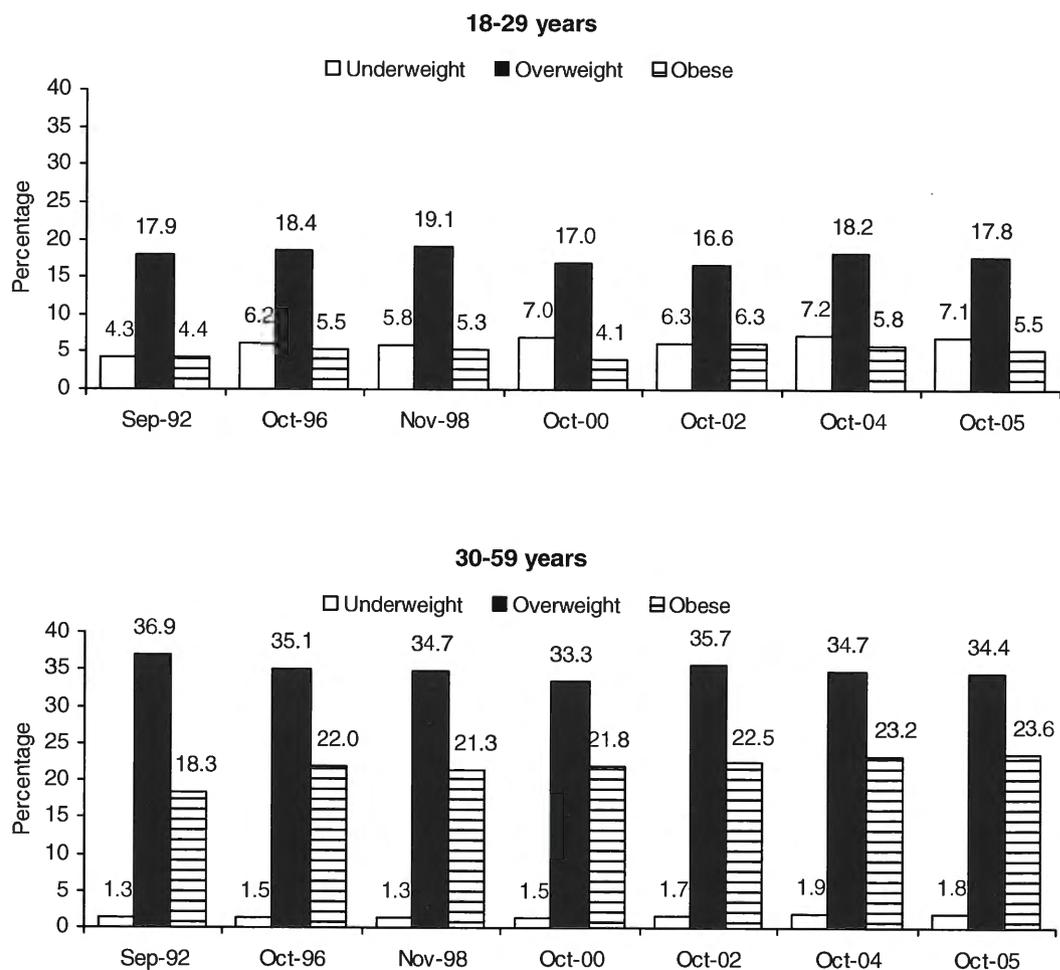
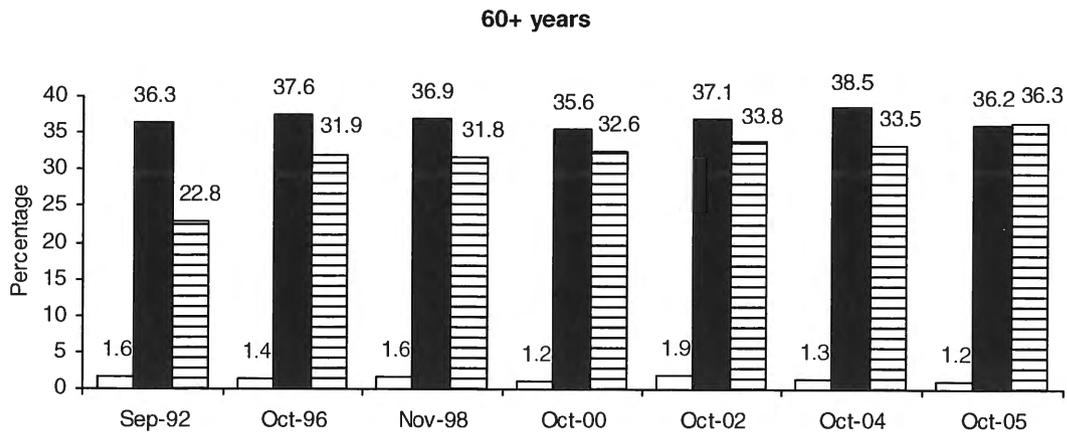


Figure 9. Adult Nutritional Status (cont'd)



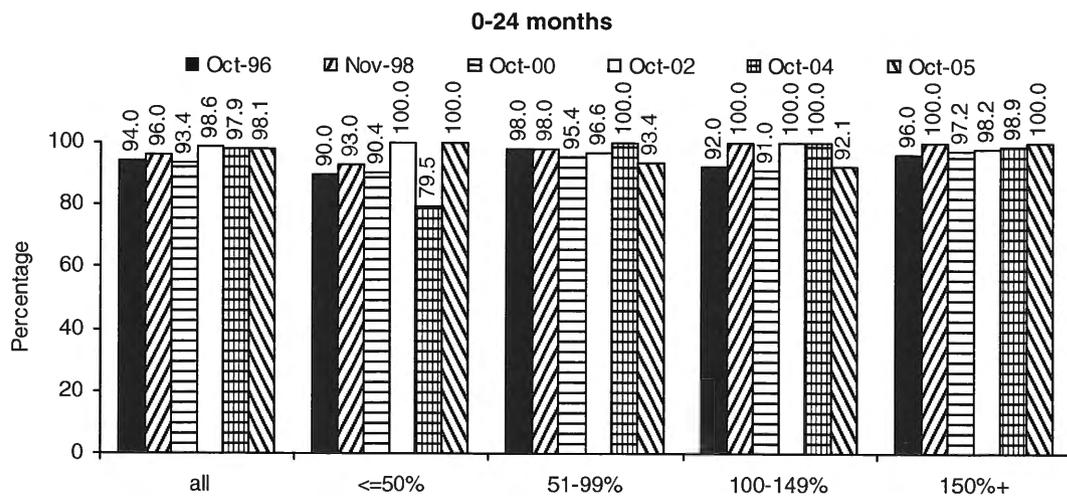
Childhood Immunizations

Figures 10a, 10b, and 10c present information about childhood immunizations between 1996 and 2004, for children up to six years of age.

The percentages of children who had received any vaccination by the time of these surveys are shown in Figure 10a. The data are displayed both

by age group (0 to 24 months and 25 months to 6 years) and by poverty level. In the older group, 98% to 100% of all children, regardless of their household income level (measured as a proportion of the poverty level), have been vaccinated. In the younger group, also, immunization coverage is over 92% among all income groups, with an average rate of 98.1% in 2005.

Figure 10a. Percentage of Children Ever Vaccinated (by percentage of the poverty line)



**Figure 10a. Percentage of Children Ever Vaccinated (cont'd)
(by percentage of the poverty line)**

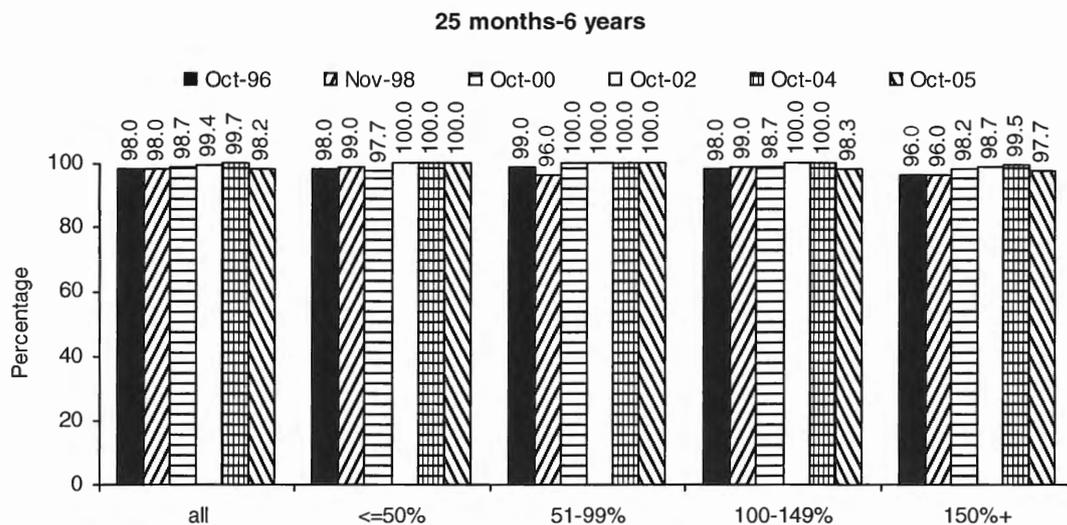
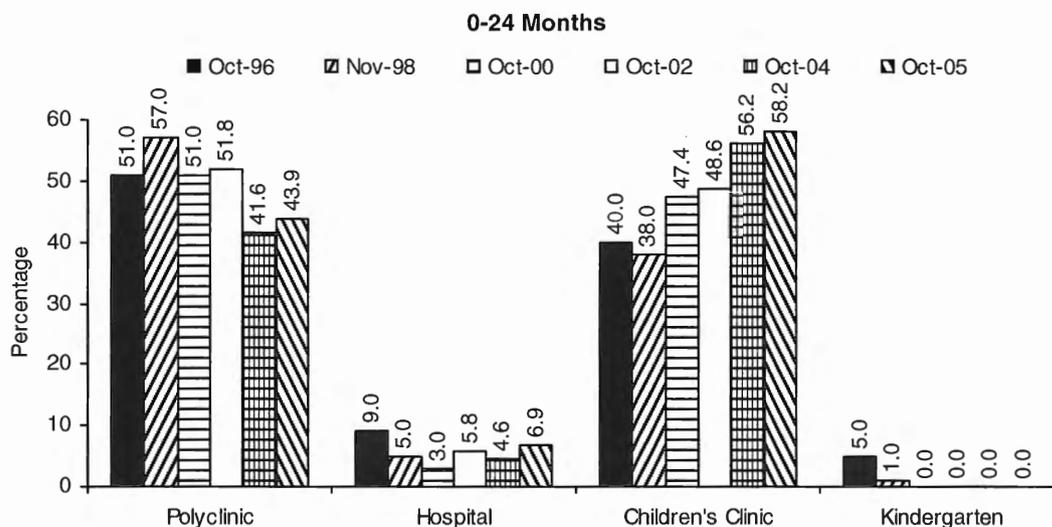


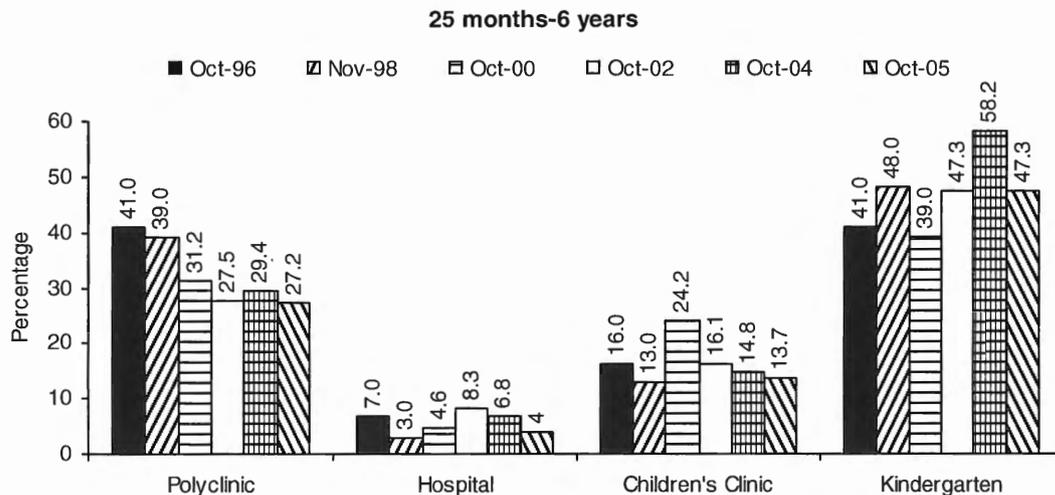
Figure 10b shows the distribution of places where vaccinations were obtained. Generally, for younger children, clinics (poly and children's) were the most common sites for immunization, with children's clinics becoming increasingly

more common with time (Figure 10b). For older children, kindergartens have assumed a greater share over time and are now the most common site for receiving vaccinations.

**Figure 10b. Places of Vaccinations
(in the three months prior to the survey)**



**Figure 10b. Places of Vaccinations (cont'd)
(in the three months prior to the survey)**



Due to a slight change in the manner in which the data on immunizations were collected beginning with the 2002 RLMS survey, the results of types of vaccinations (Figure 10c) are not comparable

with those of previous years. Since we believe these latest results to be more complete and accurate, in this report we do not present data from years previous to 2002.

**Figure 10c. Types of Vaccines Received, among Those Ever Vaccinated
(by age group)**

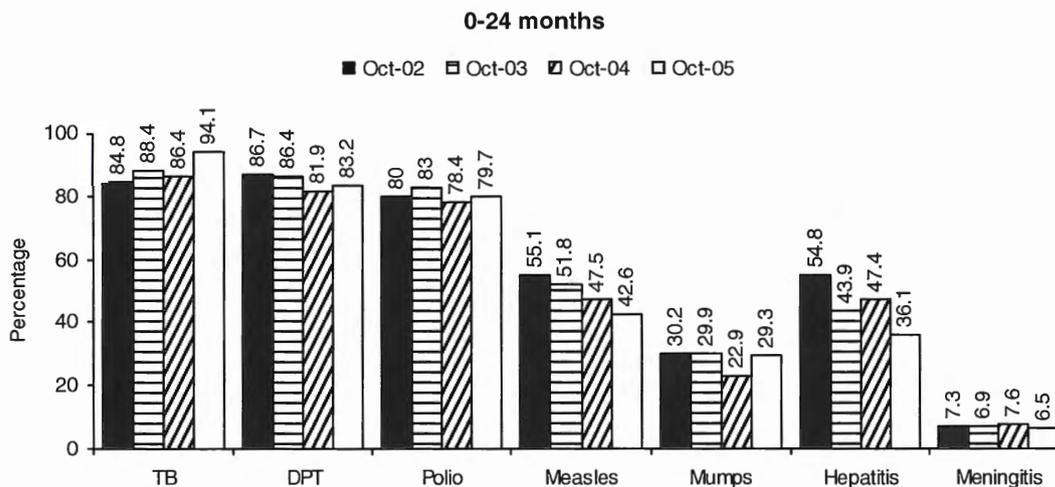
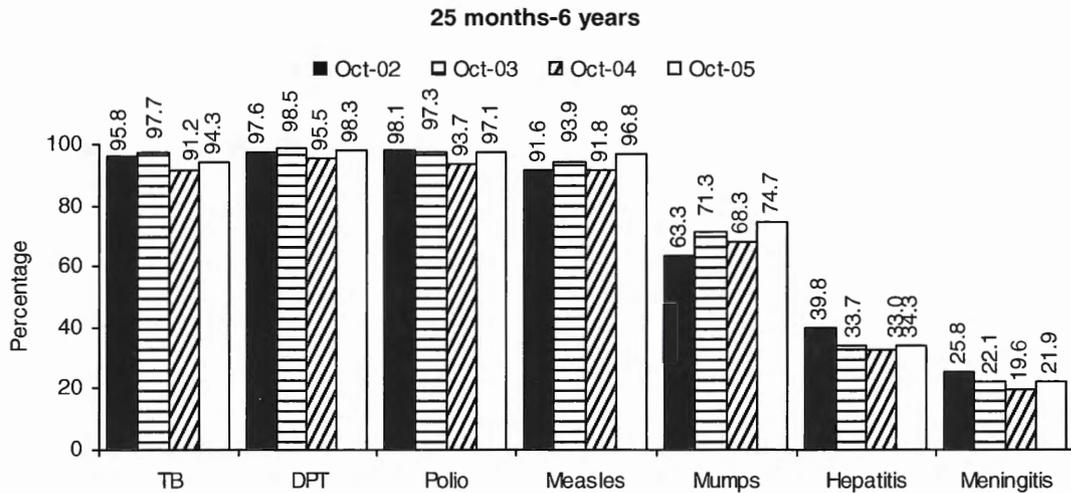


Figure 10c indicates that in 2002-5 there is under-coverage of varying degrees for specific vaccines. Among those 0-24 months of age, DPT (diphtheria/pertussis/tetanus), polio, and TB (BCG), all of which are recommended during the first 2 months of life, had coverages ranging from 79.7% (for Polio) to 94.1% (for TB) in 2005, rates that are higher than in the previous year. Measles and mumps, which are recommended between the ages of 12-15 months, are reported in 42.6% and 29.3%, respectively, of these younger children in 2005. While, these lower numbers are partly due

to their administration at a later age in this age-group, the different coverage rates of measles and mumps, as well as the 74.7% coverage rate of mumps in those older than 25 months, is an indication of incomplete coverage. Overall, however, there is over 90% coverage rate for most vaccines among older children, and the 2005 rates are higher than in 2004 for each vaccine—this is a continuation of the increasing trend that was seen in rounds of RLMS previous to 2002 (data not shown).

**Figure 10c. Types of Vaccines Received, among Those Ever Vaccinated (cont'd)
(by age group)**



Endnotes

1. Information for the graphs on drinking behavior comes from two sources in the RLMS surveys—the battery of questions on *usual* patterns of drinking in the health section of the adult individual questionnaire and the 24-hour dietary recall data. If the respondent considered him/herself a non-drinker in the drinking section of the questionnaire, but the 24-hour dietary recall included an alcoholic beverage, then that person was counted as a drinker.

The calculations of quantities of alcohol consumed are based on respondents' evaluations of their usual intake of various beverages, and not on the single 24-hour dietary recall.

It should be noted that, in the September 1992 survey, *samagon*, a homemade alcoholic brew, was not included as a separate response category, but was lumped together with “vodka and other strong drinks.” However, in February 1993 and subsequent rounds, *samagon* consumption was asked about specifically.

It is acknowledged that the data on alcohol consumption in the RLMS are based on self-reported information, and as such are subject to some of the possible biases of such reporting, such as under-reporting. Also, the RLMS sampling frame is based only on households, and does not include institutionalized individuals, those in the military and homeless persons, some of whom are likely to be heavier drinkers. Our results, therefore, may somewhat

underestimate drinking prevalence and amounts.

2. The per capita data on alcohol consumption are meant to be comparable in their construction to those commonly reported, which give annual per capita consumption for the entire sample population. However, due to the large disparity in alcohol consumption among adult men, adult women, and teenagers, we present per capita data drawn from the RLMS separately for each group.
3. Beginning in December 1994, questions on hospitalization and duration of hospitalization referred to the previous three months, as opposed to 30 days in the previous rounds. For the purposes of Figures 8a and 8b, the prevalence data from this and subsequent rounds were simply divided by 3, and only those with a duration of hospitalization of 30 days or less were used in the calculation of the mean.
4. The numbers for these figures prior to 2000 have changed compared to older versions of this report. The new numbers are based on new 2000 formulae and standards from the National Center for Health Statistics for the calculation of wasting and stunting.
5. The division of adults and elderly into various weight groups is based on Body Mass Index categories recommended by WHO: <18.5 (chronic energy deficiency), 18.5-24.9 (normal), 25-29.9, (overweight), and ≥ 30 (obese).

