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Demography, Social Statistics and Financial Trends Background to the Future Demand and Need for Social Services

PROPOSED EVIDENCE-BASED FRAMEWORK to INCORPORATE DEMOGRAPHIC AND FINANCIAL PROJECTIONS INTO SOCIAL SERVICE STRATEGIC POLICY DEVELOPMENT AND PLANNING

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This analytical study was designed to support the development of the Concept of the Reform of Social Services and to support the implementation of the Law on Social Services as a reference work to support the Ukrainian social services planners, and policy makers, and to begin policy discussions. The study was designed and prepared by a team led by Laurie Joshua, as an integral part of the DFID Project *Facilitating Reform of Social Services in Ukraine* (FRSSU). Technical contributions, advice, support and inputs for the analysis were provided by a multi-disciplinary team comprised of E. M. Libanova, N.S. Vlasenko, M.V. Golubchikov, L.M. Stelmakh, I.V. Kalachova, I.I. Samchenko, V.O. Pavlyuchenko, O.V. Makarova, G.V. Gersymenko, L.M. Cherenko, O.V. Poznyak, P.E. Shevchuk, S.V. Nychyporenko, S.A. Ponyakina, L.O. Grygorieva, and E.V. Kozhemyakina.

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Responsibility for the contents of the report rests with Stace Birks, the Project Director of the FRSSU project.

LIST OF ABBREVIATIONS

CPI	Consumer Price Index
DFID	Department for International Development
EU	European Union
FRSSU	Facilitating Reform of Social Services in Ukraine
GDP	Gross Domestic Product
IER	Institute of Economic Research
Mln	Million
MoES	Ministry of Education and Science
MoF	Ministry of Finance
MoLSP	Ministry of Labour and Social Policy
MoH	Ministry of Health
TAP	Transition Action Plan
UAH	Ukrainian Hryvna

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OVERVIEW

Demographic trends, in Ukraine, as well as in Europe, call for new approaches to support social policy making.

- Most European nations are experiencing long-term downtrends in fertility and, consequently, ageing of their populations[1]. Fertility rates are below replacement level (i.e., 2.1 children per couple) in nearly all countries. As a result, natural populations are entering periods of declining growth or outright decrease. At the same time, the proportion of elderly dependents continues to grow. Working-age population declines as a share of the overall population. These characteristics are familiar to observers of current demographic trends in Ukraine, and in Ukraine's case are exacerbated by outmigration especially of those of working age. Thus, the demographic trends observed in Ukraine share, with perhaps a greater acuteness, features in common with other EU member states.
- These demographic trends, combined with unprecedented social change related to transition, have significant consequences for the Ukrainian economy. And in particular, these trends can have major implications for the reform of social services and for ways in which services are designed and delivered in the future – the focus of this paper.
- To develop appropriate policy responses to these trends and their financial implications, decision-makers increasingly require new tools to understand the changing demographic picture. As the population of Ukraine becomes more mobile, more aged, and household structures and lifestyles change, policy development demands more refined data, and more detailed analyses[2]. These developments should increase the outputs, quality and coherence of what is being used to make policy judgements, and should generate insights that enable policy-makers and civil servants in Ukraine to develop good social policy that is more efficient, focussed and refined, in order to meet the demographic challenge.

These new approaches to analysis for planners include: (1) switching to more analytical demographic accounts, (2) a stronger emphasis on analysis of trends, and (3) a shift from "firm" data to multiple-scenario analysis.

- <u>More analytical demographic accounts.</u>

In the decades ahead Ukraine will see significant changes in its population with major shifts in:

- total size; and
- relative age structure of the population; compounded by changes in

[1] Rand Corporation Europe (2004*) Low Fertility and Population Ageing: Causes, Consequences and Policy Options*. A Report Prepared for the European Commission.

[2] Aside from plans for the demosocial survey in 2007 a number of plans being developed by the State Statistics Committee of Ukraine which are designed to address the need for more detailed analysis. Among the plans include: *The introduction of a New System of Organisation for Household Surveys* (Osypova, I.I., 2006); *Improvement in Labour Market Statistics* (Grygorovych, N.V. (2006) and (Rublova, N.V 2006); *Implementation of GIS at Statistical Offices* (Karpinsky, Y., and Lyaschenko, A., 2006). These plans were designed and developed by the State Statistics Committee of Ukraine under the auspices of the DFID Project entitled "*Support to the State Statistics Committee of Ukraine, Stage 111*"

- regional populations;
- ethnic composition of populations; and
- changes in household composition.

These changes in the population will have significant implications for the labour force – including the labour force requirements for the provision of social services, quite apart from the demand for social services. Even where Ukraine sees very large changes in population ratios and other demographic related relationships on a Ukraine-wide basis (such as the dependency ratio) then the change will be a muted, averaged version of the more acute changes that will be experienced at regional, age group, and occupational levels in the same comparison.

Policy-makers in Ukraine will therefore need to focus on the generation of ready and accurate comparisons across time, region, population group and cohort or other social community. And in the case of social service, these variations will mean that the principles of localised provision will become progressively more important.

More generally, policy analysis is ultimately underpinned by the ability to model change, firstly in population projection models, but also through the use of cohort studies, longitudinal analysis, and special population studies (e.g., family structures and child care, family structures and care for the elderly, short and long run projections on disability trends and the implications for social services) , as well as specific analysis of morbidity, mortality, nuptiality and fertility, and migration. (p 18, Resource Paper 1)

- A stronger emphasis on analysis of trends.

New structures for the recording, collation and analysis of social services statistics will need to place strong emphasis on demographic trends.

This is an important policy feature because the coming decades in Ukraine will – as is well accepted - see significant changes in the population. But, as noted above, changes will be not just in the number of older people but also rapid contrasting local vacillations in:

- regional and rayon populations;
- household structure and formation processes;,
- labour force (which may exacerbate problems of recruitment of personnel into social services and may impede the elaboration of community-based social services as an alternative to residential provision (p.15, Resource Paper 1); and, of course
- in the scale and nature of needs for social services.

- A shift to multiple-scenario analysis.

Uncertainty, as well divergence between projections and actual trends, is inevitable when it comes to assessment of the future need for social services:

- this is particularly true for children's and disability related services, and
- only marginally less so, on a local scale, for social services aimed at the elderly.

The realities of actual delivery are further complicated by unforeseen vagaries in policy directions and future political decision.

This long-term uncertainty in social policy creates a big practical difference between a ***single policy*** and a ***policy strategy***. Considerations about sustainable ***policies*** in social services – whether for the elderly, children or disabled people – need to be based on a set of assumptions about:

- future demographics,
- budgetary implications,
- the consumer price index (CPI); etc.
- social evolution,
- development of expectations; as well as
- externalities such as international treaties and commitments, whether Ukraine inclines eastwards or to the EU.

In contrast, considerations about sustainable social services ***strategies*** must be based on a large number of possibilities that cover a realistic range of economic, governance and demographic developments.

Therefore, in order to develop a sustainable long-term strategy of social service provision, the government will have to rely increasingly on analysing multiple scenarios and making forecasts with a probability nature.

Current approaches to public financial management in Ukraine utilise population projections only to a very limited extent. In particular, such projections are used at the central government level for planning pension policy, state budget revenues and expenditures, and certain elements of the formula for intergovernmental transfer allocation. Some of these exercises utilise the official demographic forecasts provided by the State Statistics Committee which take into account optimistic, pessimistic and baseline scenarios for the future. However, there are essentially no probability-based calculations as for the ***future need and demand*** for public services – such as social services.

Some new approaches to demographic analysis emphasise general issues with organisation of social policy development in Ukraine.

The new approaches to demographic analysis needed create new demands on quality and coherence of the systems for managing statistical information. These systems need to cope with: rapid changes in political, social and economic environments, constantly arising needs for new information sources, changing resource limitations, dynamics of relations between different levels of government, the needs to meet international obligations (such as EU-Ukraine Action Plan), and other numerous challenges.

In order to achieve this, it is critical for such systems of data management to seek the following characteristics:

- Accuracy;
- Acceptance of accuracy by different stakeholders;
- Measures of accuracy;
- Consistency over time;
- Availability of small area information;
- Timeliness;
- Consistency across Ukraine;
- Consistency across Government Ministries with responsibility for social services;
- Capability of identifying new trends; and
- Availability of different population definitions.

At the moment, the development of such systems is limited by the high degree of fragmentation in the distribution of administrative responsibilities for social services. This fragmentation is reflected in the pattern of the current supply of essential data on social services, as well as in the lack of coherence and consistency of data collection, processing and exchange between the stakeholders.

This material offers an evidence-based framework which could be used to implement some of the new approaches for demographic analysis in social policy planning in Ukraine.

This summary paper describes a set of projections prepared by the FRSSU project to promote the new applications of demographic forecasting to increase long-term efficiency of social policy making in Ukraine. ***The complete set of materials (available separately available as Demography Resource Paper 3)*** includes:

- a detailed overview of contemporary theoretical and international thinking about ways to use demographic forecasting for social policy purposes, and
- as its key element – a detailed example of using statistical analysis (based on stochastic approaches) to analyse actual trends in Ukraine's demographic indicators for long-term scenario-based forecasting of implications for social policy making and public finance.

Although the work conducted by the project includes a large number of different outputs they should not be seen as discrete, but as a series of evidence-based calculations and analysis. Nor should this paper be seen as a discrete set of policy instruments and recommendations. Rather, this FRSSU work is a step to design a strategy for augmenting current approaches in long-term policy development in Ukraine with some of these new analytical tools. The basic skeleton of this integrated, practical and step by step approach can be seen in the Transition Action Plan (TAP) that FRSSU has produced and circulated for comment.

These materials are a platform on which various stakeholders in Ukrainian social services planning can cooperate to establish new ways to use demographic analysis for developing long-term, financially sustainable social policies. At the same time, some of the preliminary conclusions made in these materials may be of use as concrete examples of future financial implications of demographic changes in Ukraine.

All calculations presented in these materials are based on the best available evidence that FRSSU has been able to assemble[3]. Most of the calculations are based upon demographic trends observed throughout Ukraine. Separate analysis of specific features for Kharkivska and Khmelnytska oblasts, are included to illustrate how the proposed methodology is supported by local data and can be useful in understanding long-term trends of social service provision at sub-national levels.

The framework tries to take into account not only domestic policy needs but also some of the opportunities Ukraine has for learning from international experience, such as experience from the Council of Europe member states, where population and social statistics have long been considered as one of the strengths of national statistics authorities.

Conclusions on sustainability

<u>The conclusions of the models show that all in Ukraine who are concerned for the future welfare of the older and disadvantaged people, ought to be:</u>

> **<u>Acutely concerned about the continuance of care provision in a residential setting which proves costly and, by most reasonable interpretations, unsustainable.</u>**

[3] The information base includes data from: the State Statistics Committee of Ukraine; the Ministry of Labour and Social Policy (MoLSP) especially on the disabled population, and the system of residential institutions subordinated to the Ministry; the Ministry of Health (MoH); the Ministry of Education and Science (MoES) on the system of residential institutions subordinated to the Ministry; Statistical reports on residential institutions in Kharkiv and Khmelnytsky; the State Treasury and the Ministry of Finance on funding residential institutions.

DETAILS ON THE EVIDENCE-BASED FRAMEWORK

Assumptions in the model

The model includes the following assumptions

1. The scope of the initial calculations in this model is limited to social services aimed at families and children; people with physical and mental health disabilities; and elderly people.
2. The projections assume that there will be no fundamental change in the dominant role of residential social services in the overall balance of service provision in the short to medium-term. In particular, the analysis does not incorporate the existing utilisation of community-based services – such as those types of services provided by territorial centres and domiciliary centres, and centres for families and children. There are three reasons behind this decision:
   (i) This analysis is ***preliminary in nature***; and it is easier to provide a clear illustration of this methodology by looking only at a selected range of issues first;
   (ii) The organisational and regulatory basis for community-based social services ***is still evolving***. Effective analysis of these services is difficult until the key stakeholders agree on clearer definitions and policy directions for these services;
   (iii) Residential social services have traditionally dominated social service delivery and therefore represent an ***illustrative material for the first application*** of the new methodology.

General algorithm for policy analysis of demographic trends

The key task of the policy analysis is to obtain an evidence-based picture of: how long-term demographic change may influence the country's budget and what opportunities the government will have in the future to respond to these changes and to pursue its reform objectives.

Constructing this picture requires a number of steps, to:

1. Define the types of social services which will be covered by the assessment:
   - On the one hand, this requires making assumptions about what will and will not be included; and
   - On the other hand, it requires a separate analysis of organizational and management structures for the selected types of services, in order to understand the characteristics of the population they cover.
2. Estimate trends and structural changes in the socio-demographic groups from which the users of the services in question originate (e.g. what will be long-term changes in numbers of children or elderly of certain age?);
3. Estimate the sizes of potential population groups that will use each type of services in the future (e.g. how many children or elderly will actually use each service?). These calculations take into account that:
   - On the one hand, calculations should incorporate ***general changes in corresponding socio-demographic groups***, established earlier.

- On the other hand, calculations should try to incorporate assumptions about expected changes in the ***rates of coverage*** of those socio-demographic groups by each type of services.

  Forecasting of the long-term changes in rates of coverage is an innovative practice proposed by this paper. It requires statistical analysis of:

  - how services were used in the past;
  - the various factors which affect the rates of coverage; and
  - techniques to combine all of this information to build trajectories of how intensively services might be used in future.

4. Define a macroeconomic projection on which long-term estimates will be based.
5. Estimate public expenditures per one user of the different types of services, indexed over predictive inflation rates.
6. Calculate the total predictive expenditures on each type of service (by multiplying the predictive number of users and the amount of expenditures per person);
7. Compare the predicted total expenditures with the predicted amount of the GDP in order to establish the deficit or surplus of predictive GDP, and the corresponding reserve of increase in expenditures on such services.

Step 1: Defining organisational profiles of the services covered by the assessment

This paper is limited to the residential services provided to children, elderly and disabled. In order to break down these services further into types of services and types of population served, the framework contains an analysis of respective organisational and managerial structures (p.14 of Resource Paper 3).

This analysis identifies that the system of residential social service institutions in Ukraine consists of ***nine basic types*** (including five types of children's institutions and four types of institutions for adults). These 9 types of services fall under subordinated responsibilities of ***three line ministries*** (see Figure 1 below).

- ***All residential institutions for adults*** are subordinated to the Ministry of Labour and Social Policy (MoLSP).
- ***Residential institutions for disabled children*** are also subordinated to the MoLSP.
- The Ministry of Education and Science (MoES) governs ***three types of residential institutions for children***: children's homes; general residential schools for orphans and children classed as "being without parental care"; and special residential schools (designated for children who need care and support with regard to physical and/or mental development).
- ***Baby homes*** (for children aged 0-3) are subordinated to the Ministry of Health (MoH).

Figure 1: Number of Residential Institutions*, Number of Clients* and Expenditure (in UAH million) 1998-2004**

			1998	1999	2000	2001	2002	2003	2004
MoES	Special residential schools	Institutions	348	n/a	345	344	345	337	336
		Residents	55,437	n/a	54,998	53,979	53,153	51,388	49,687
		Funding, UAH mln.	n/a	n/a	n/a	n/a	57.4	81.6	104.8

	Residential schools for orphans and children "without parents' care"	Institutions	40	n/a	44	45	52	53	54
		Residents	11,193	n/a	12,254	12,090	13,173	13,110	12,593
		Funding, UAH mln.	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Children's homes	Institutions	57	n/a	83	91	92	101	106
		Residents	4,526	n/a	5,552	5,910	6,116	6,417	6,690
		Funding, UAH mln.	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MoH	Baby homes	Institutions	44	n/a	46	47	48	48	50
		Residents	5,049	n/a	4,969	4,775	5,132	5,205	5,387
		Funding, UAH mln.	n/a	n/a	n/a	n/a	64.4	82.3	103.8
MoLSP	Children's homes	Institutions	57	58	58	57	56	56	56
		Residents	8,024	7,947	7,977	7,865	7,781	7,856	7,716
		Funding, UAH mln.	33.3	35.9	43.1	55.1	65.8	78.5	88.1
	Residential homes for elderly and disabled people	Institutions	221	218	217	231	258	258	260
		Residents	39,781	39,683	39,740	41,619	42,886	44,575	45,626
		Funding, UAH mln.	138.8	155.9	191.4	243.6	306.4	352.9	396.3

Notes: * Source: State Statistics Committee; ** Source: Ministry of Finance (MoF); n/a = no data provided

This breakdown, with the details about numbers, regional diversity and composition of these providers (provided in the corresponding Resource Paper), is a starting point for making an assessment of current and potential users of their services.

Step 2: Estimates of structural changes in socio-demographic groups of potential service users

Based on the profiles of services identified above, the socio-demographic groups which represent potential sources of clients for these residential institutions are:

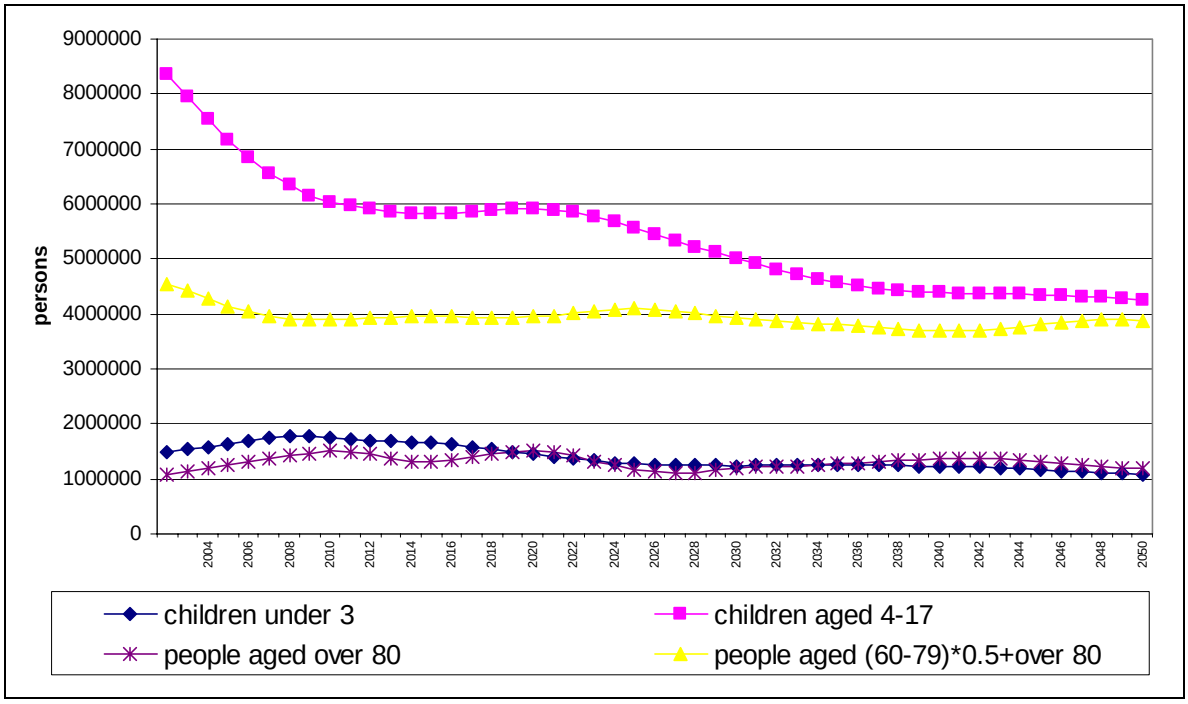
- ***Children aged 0-3 years*** as a potential group of residents of residential institutions under the remit of MoH[4];
- ***Children aged 4-17 years*** as potential groups of residents in different types of children's residential institutions under the remit of MoH and MoLSP;
- ***Elderly people*** as a potential group of residents of residential institutions for elderly and disabled people that fall under the remit of MoLSP. The potential age group in this case was calculated based on the expert judgement method and based on data outlined in Resource Paper 2, according to the formula: the size of the population aged 60-79 years*0.5 + the population over 80 years.

[4] According to regulations of the MoH on baby homes children aged 0-3 years are admitted to baby homes; children with physical and mental health development related disabilities can stay in rehabilitation groups till the age of 4.

The Resource Papers provide a detailed methodology for constructing long-term projections for these groups of population. According to predictive estimations to 2050 resulting from these calculations (see Figure 2 below) the general decrease in the size of the population will also result in a corresponding reduction of potential groups of social service users in Ukraine. In particular:

- The total number of ***children aged 0-3 years will decrease*** from 1.54 million at the beginning of 2004 to 1.08 million at the beginning of 2051 (in spite of slight fluctuations in numbers during the projection period);
- Total number of ***children aged 4-17 years will decrease*** from 7.96 million to 4.24 million;
- The group of ***disabled adults and elderly people will decrease*** from 5.55 million to 5.06 million. As for the latter (i.e., elderly people), it should be noted that there will be a slight growth among the population aged over 80 years (the oldest of this group) from 1.13 million to 1.18 million, the rest of this group will decrease (from 4.4 million to 3.88 million people).

Figure 2: Predictive Estimation of Some Age groups of the Population of Ukraine who are Most Probable Potential Users of Social Services in Ukraine



Step 3. Estimates of potential numbers of users of residential services by types of services

- **Analysis of past and current usage of various residential services in order to understand trends in rates of coverage and factors which determine these trends.**

This analysis was conducted separately for the adult population and for children, looking at the various types of residential institutions which they can use. (Detailed data and calculations are available on pages 16 – 19 of Resource Paper 3).

Figure 3 below summarises some of the key trends which this analysis identifies for each of the groups:

Figure 3. Key historic trends for each of the user groups

Groups of users	**Key trends to date (1998-2004)**
Adults of various age groups (MoLSP)	✓ **Rate of coverage growing (see table below)** ✓ Number of institutions grew by almost 20% (to 1994) ✓ Current average occupancy rate 95.8% ✓ Concentration in Eastern and Central Ukraine ✓ Number of residents grew by 14.7% ✓ Departures are usually because of death or transfer to alternative institutions (finding a job or home accounts for only 9% of total departures) ✓ Sizes of institutions vary considerably among regions ✓ For people over 80 the probability of going into a residential institution is 3 times higher compared to those aged between 60-79. ✓ The female share of residents is steadily decreasing.

Children under 3 (for some categories, under 4) in baby homes (MoH) – orphaned, "without parental care", or with disorders requiring care.	✓ **Rate of coverage growing (see table below)** ✓ Number of baby homes increased by 6.7% ✓ Intensity of transference of residents much higher compared with other children's institutions ✓ Share of orphans in total number of residents decreasing
Children 3 – to completion of secondary schools (orphans and children without parental care) (MoES)	✓ **Rate of coverage growing (see table below)** ✓ Number of institutions almost doubled since 1998. ✓ Most schools are in urban areas. ✓ The number of residents in children's homes grew by almost 1.5 times (45.8%), in residential schools for orphans: by 12.5% ✓ Residents of children's homes much younger than in residential schools and have a smaller boys to girls ratio ✓ Adoption much more frequent in children's homes compared to residential schools
Children from 3 to adulthood in Special Residential Schools (for those with need for special care) (MoES)	✓ **Rate of coverage growing (see table below)** ✓ 60% of residents – in schools for mentally retarded, 6-7% - for children with weak eyesight or hearing, 4 – 5.5% - for children with impaired speech and motor functions, and 1.7% - for blind children. ✓ Overall number of residents decreased by 10% ✓ Number of residents in schools for deaf decreased most significantly ✓ Number of residents in schools for children with weak eyesight grew by 7% ✓ Share of orphans growing steadily
Children between 4-17 with physical or mental disorders & in need of care (MoLSP)	✓ **Rate of coverage growing (see table below)** ✓ Network of institutions rather stable ✓ No significant variation in sizes of institutions between oblasts ✓ 95.5% of residents classified as "mentally retarded" (80.1% of them physically healthy). ✓ 2/3 of residents aged 7-17; ¼ - 18-24, only 6.8% - under 7. ✓ Notably more boys than girls; ✓ Overall number of resident decreases (3.8%); ✓ Average occupancy rate 87.2%.

Figure 4: Percentage of the Population of Ukraine Housed in Residential Institutions in 1998-2004 (at the end of each year) in percentage.

	1998	2000	2001	2002	2003	2004
Children						
- residential schools for orphans and children without parents' care	0.12	0.13	0.14	0.16	0.16	0.17
- children's homes	0.05	0.06	0.07	0.07	0.08	0.09
- baby homes	0.28	0.31	0.31	0.34	0.34	0.34
- care homes for disabled children	0.08	0.09	0.09	0.09	0.10	0.10
- special residential schools	0.57	0.60	0.62	0.64	0.65	0.66
- Group coverage rate for children	0.25	0.29	0.30	0.33	0.34	0.35

- total coverage rate for children	0.73	0.80	0.82	0.87	0.88	0.90
Adults	0.71	0.70	0.73	0.76	0.80	0.83

- **Calculations to make projections for the rates of coverage of each of the socio-demographic groups by each type of residential service.**

As the next step, the model uses information about observed rates of coverage and information about other trends in the usage of each type of institution (summarized above) in order to forecast how coverage rates will change between 2006 and 2050. In summary, the forecasts predict the following:

Figure 5. Initial projections for the rates of coverage by types of institutions

Groups of users	**Forecasted change in rates of coverage**
Adults of various age groups (MoLSP)	Further rapid growth; the rates will double
Children under 3 (for some categories, under 4) in baby homes (MoH) – orphaned, "without parental care", or with disorders requiring care.	Slow decrease
Children 3 – to completion of secondary schools (orphans and children without parental care) (MoES)	Slow growth
Children from 3 to adulthood in Special Residential Schools (for those in need of special care) (MoES)	Slight growth in the near term but stabilization after 2011
Children between 4-17 with physical or mental disorders & in need of care (MoLSP)	Slow growth

- **Calculations, which combine general demographic trends with assumptions about rates of coverage in order to obtain estimates of actual number of users for each service.**

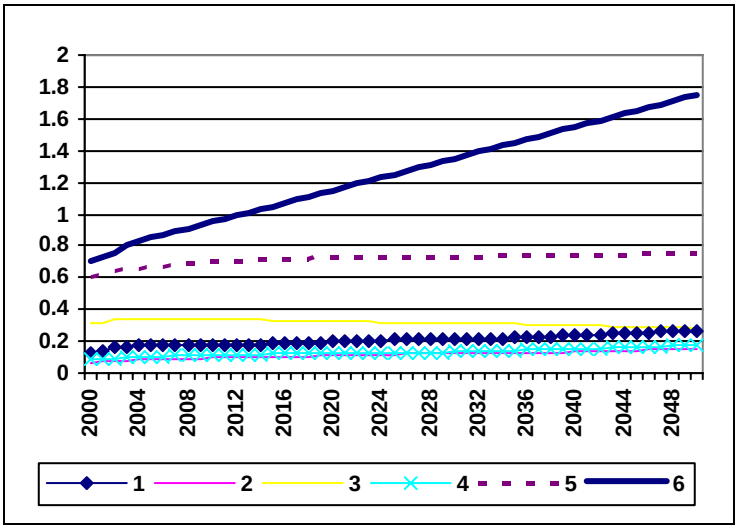
Figure 5.1 presented below illustrates the first results of applying expectations regarding changes in rates of coverage with the general expectations about demographic changes in each of the age groups. These results are also summarized in the extension of the previous table.

Figure 5.1. Resulting forecasts of changes in numbers of residents

Groups of users	**Forecasted change in rates of coverage**	**Forecasted change in number of residents**
Adults of various age groups (MoLSP)	Further rapid growth; the rates will double	Considerable increase in elderly (80+) but decrease in the rest of the group
Children under 3 (for some categories, under 4) in baby homes (MoH) –	Slow decrease	Steady decrease

orphaned, "without parental care", or with disorders requiring care.		
Children 3 – to completion of secondary schools (orphans and children without parental care) (MoES)	Slow growth	Fluctuation with general trend to decrease
Children from 3 to adulthood in Special Residential Schools (for those with need for special care) (MoES)	Slight growth in the near term but stabilization after 2011	Steady decrease
Children between 4-17 with physical or mental disorders & in need of care (MoLSP)	Slow growth	Fluctuation with general trend to decrease

Figure 6: Projections of the Population in Residential Institutions by Categories (see: key below) 2000-2050



Key: **1** - residential schools for orphans and children without parental care; **2** – children's homes; **3** – baby homes; **4** – care homes for disabled children; **5** – special residential schools; **6** – residential institutions for adults

- **Look deeper into some of the additional factors behind current rates of coverage, to fine-tune initial forecasts (analysis of trends in physical and mental disabilities).**

Coverage rates - how many people of each socio-demographic group require residential services - are affected by many factors. This model evaluates only one essential factor behind the behavior of coverage rates: the trends in physical and mental disabilities in the population.

This analysis of mental and physical disabilities as a factor behind coverage rates for residential social services was performed in three steps:

1. examination of current statistics regarding physical and mental disabilities, establishing recent trends, and defining factors which may be causing these trends;
2. use of statistical methodologies combined with quality analysis to make projections about how tendencies in disabilities will develop in the future; and

3. application of these conclusions about future trends in disabilities to initial projections of changes in coverage rates, revising them accordingly.

Details of these calculations are presented on pages 24 to 55 of the Resource Paper 3. The analysis differentiates between physical disabilities and mental disabilities, and assumes no catastrophic events or other fundamental external shocks.

This summary contains the conclusions from these projections summarized below:

Figure 7. Summary of current and predictive trends in disabilities

Category of disability	**Selected trends observed so far**	**Forecasted long-term trend** (also taking account of shifts in population structures)
Total physical disabilities	✓ Grew considerably in 90s, but followed by a decrease ✓ Significant links with socio-economic factors ✓ Considerable regional diversity ✓ Primary disability tends to decrease ✓ Significant share of primary disability are systemic disabilities, and it is growing ✓ Number and share of disabled from childhood is growing ✓ Socially determined factors dominate as reasons for disability ✓ Disability among children, despite decreasing birth rate, is steadily growing. Largest number of disabled children aged 7-15. ✓ Main cause of disabilities among children: diseases of nervous system ✓ Occupational disabilities clearly growing	✓ A gradual decrease in share of disabled in the population ✓ Decrease in overall number of the disabled resulting from natural deaths, and a reduction of primarily disabled due to general improvements in population's health (Detailed numbers and graphs on page 39 of Resource Paper 3).
Disabilities related to mental health: Absolute total figures	✓ General deterioration; mass neurotisation in different variations, appearance of mass disorders and prevalence of debutant forms of endogenous psychoses ✓ Nonpsychotic disorders form the main group of mental disorders, and their share is growing	Overall numbers may fall although morbidity rates will be high
Primary registered mental health problems		Long-term growth
Overall prevalence of mental health problems in total population (p 49)		Will grow smoothly
Prevalence of mental health problems among children	✓ Prevalence increased notably among children and teenagers	Prevalence will continue to grow.

The table below is the final extension of Figure 5, which indicates the direction in which initial forecasts were changed for each group as a result of applying additional analysis of trends in disability. As it shows, the biggest revision was made for children under 3.

Figure 5.2. Direction of revision of forecast by groups of users

Groups of users	Forecasted change in rates of coverage	Forecasted change in number of residents	**Forecasted change in number of residents after correction of coverage rate forecast based on trends in disabilities**
Adults of various age groups (MoLSP)	Further rapid growth; the rates will double	Considerable increase in elderly (80+) but decrease in the rest of the group	Considerable increase in elderly (80+) but decrease in the rest of the group
Children under 3 (for some categories, under 4) in baby homes (MoH) – orphaned, "without parental care", or with disorders requiring care.	Slow decrease	Steady decrease	Slight increase
Children 3 – to completion of secondary schools (orphans and children without parental care) (MoES)	Slow growth	Fluctuation with general trend to decrease	Slight decrease (although rates vary between types of institutions)
Children from 3 to adulthood in Special Residential Schools (for those with need for special care) (MoES)	Slight growth in the near term but stabilization after 2011	Steady decrease	Slight decrease (although rates vary between types of institutions)
Children between 4-17 with physical or mental disorders & in need of care (MoLSP)	Slow growth	Fluctuation with general trend to decrease	Slight decrease (although rates vary between types of institutions)

Step 4. Defining the macroeconomic projections

This analysis uses two alternative scenarios of predicted parameters for the economic development of Ukraine, as described in Figure 8 below: (a) optimistic and (b) pessimistic scenarios.

The methodology for projections is drawn from the standardised World Bank model (November 2005). It is a standardised model, applied to all countries. One modification is that this model does not use the discount rate for financial projections: although it is an ideal indicator, it is not used as an instrument of monetary policy in Ukraine. Instead (drawing on the work of the Institute for Economic Research (IER)), projections in Ukraine are based on factors such as investment, the foreign trade balance; and present projected rates of GDP and Consumer Price Index (CPI), the minimum wage level, and the living wage level.

This methodology means that long-term macroeconomic projections are highly unreliable and are best constrained to a time horizon of 2015.

The optimistic scenario – that forecasts further economic growth in Ukraine - was used as the basic projection in this analysis. It forecasts that the rates of growth of actual GDP will be around 4-5 % a year, and the rate of inflation will be decreasing and will be only 5 per cent in 2015.

The pessimistic scenario is based on lower growth rates: namely, a decrease in growth rates to 2.5 % a year in 2015, and a change in consumer price index at around 10-9 % a year.

Figure 8: Predicted Economic Development Parameters to 2015

Pessimistic Scenario

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
GDP growth rate	102.4	107.0	103.0	103.0	103.0	103.0	102.5	102.5	102.5	102.5	102.5
Consumer Price Index (CPI)	112.0	111.4	112.0	111.0	110.0	110.0	109.0	109.0	109.0	109.0	109.0
Amount of GDP in actual prices, UAH billion	419.9	512.5	591.2	675.9	765.8	867.6	969.4	1083.1	1210.0	1351.9	1510.5
The living wage for persons, who have lost their ability to work (i.e., pensioners, disabled people)	332.0	358.5	401.5	445.7	490.3	539.3	587.8	640.7	698.4	761.2	829.8

Base / Optimistic Scenario

GDP growth rate	102.4	107.0	104.0	105.5	105.0	105.0	105.0	104.5	104.5	104.5	104.5
Consumer Price Index (CPI)	112.0	111.4	110.0	109.0	108.0	107.0	106.0	106.0	105.0	105.0	105.0
Amount of GDP in actual prices, UAH billion	419.9	512.5	586.3	674.2	764.5	858.9	956.0	1059.0	1162.0	1275.0	1399.0
The living wage for persons, who have lost their ability to work (i.e., pensioners, disabled people)	332.0	358.5	394.4	429.8	464.2	496.7	526.5	558.1	586.0	615.3	646.1

Step 5. Estimation of public expenditures per one user of the different types of services, indexed over predictive inflation rates.

- **Difficulties in the approach and how to handle them**

  - ✓ ***Complex factors which effect public expenditures***. Making such estimates is a difficult task given that public spending on various social services is affected by several complex factors. In particular, it depends on the changes in the costs of service provision; the extent to which users themselves will participate in financing of the services; the potential arrangements for service commissioning; and other factors. This analysis is based on the assumption that none of the current arrangements for these factors will change.
  - ✓ ***Fragmented financing structures.*** Public expenditures on different types of residential institutions are fragmented across different budget managers and across different tiers of public administration. Therefore, analysis is conducted for each corresponding ministry that performs the role of budget manager. Such information was available to the project only for the period up to 2004. As for expenditures at the oblast level, FRSSU's, analysis is based on extrapolation of the data on total expenditures from sub-oblast level budgets in Ukraine.
  - ✓ ***Variety of financing sources***. The common practice for understanding the costs of service provision is to analyse such costs as percentage of GDP, which captures not only public expenditures but also contributions from private and non-for-profit sectors. However, in Ukraine, contributions from these other sectors are still very small, and data on them is not reliable. For this reason, analysis in this model was limited to spending on residential institutions only by key government Ministries, and an analysis of the approximate amount that can be attributed to costs from the Pension Fund that are deducted – as co-payments from the pensions of older people in residential social service institutions.

- **Key observations on historic trends in public spending on social services, which were used for long-term projections**

Ministry to which institutions are subordinated	**Key historic trends in financing**
MoLSP	✓ Considerable growth in allocation of funds; ✓ Level of execution of expenditures improved (98.1% in 2005 compared to 92.8% in 2000); ✓ Growth rates for residential homes for adults higher compared to children's residential homes; ✓ However, share of financing for residential institutions decreased both as % of GDP and as % of total budget expenditures; ✓ Allocation from the Pension Fund (75% of residents' pensions) form a substantial part of funding for these residential institutions (around 12% of all actual expenditures).
MoH (baby homes)	✓ Although the absolute level of funding grew by 26%, share of these expenditures in total healthcare expenditures is practically unchanged (around 0.85%); ✓ In the structure of Consolidated Budget, their share somewhat decreased, but slightly increased as % of GDP;

	✓ All payments related to these services (material security, money allowances, norms for maintenance of orphans and children etc) are regulated directly by resolution of the Cabinet of Ministers, and are therefore not fully protected against inflation; ✓ Considerable regional diversity in financing.
MoES	✓ Although the level of funding in absolute figures grew, the share of these expenditures in the Consolidated Budget remained unchanged at around 0.5%; ✓ A greater proportion of funding for institutions under MoES are assigned from local budgets (65-70%) but the share of the central budget is growing; ✓ Although financing is improving, material and technical conditions of these institutions have not changed much.

Step 6. Calculation of the total predictive expenditures on each type of service (by multiplying the predictive number of users and the amount of expenditures per person).

This is a technical, self-explanatory step, which requires no additional comments. However, all details on these calculations are available in the Resource Paper 3.

Step 7. Comparison of the predicted total expenditures with the predicted amount of the GDP in order to establish the deficit or surplus of predictive GDP, and the corresponding reserve of increase in expenditures on such services – for each of the potential scenarios.

With all the data obtained from earlier steps, the final task is to conduct detailed, year-by-year calculations of how predicted expenditures will compare with the amount of resources available in the economy.

These calculations can be conducted for a number of various scenarios. In this preliminary model, we consider four options:

- ✓ ***"Variant 1": present rates of coverage remain unchanged.*** This assumption is then applied separately for calculations under an ***optimistic/base and a pessimistic macroeconomic forecast***.
- ✓ ***"Variant 2": there are changes in the rates of coverage (as earlier defined).*** Again, this assumption is tested against the ***two alternative macroeconomic forecasts***.

The details of all these calculations are available as part of Resource Paper 3. For the purposes of a brief introduction, this summary contains a short descriptive table which brings together and compares their results:

Scenario	**Predictive funding requirements**	**Availability of "GDP reserve" to perform reform objectives**
Variant 1, Base macroeconomic scenario	✓ Expenditures per person will grow more than 2 times by 2015 ✓ Funds needed for residential institutions will grow from UAH 693 million in 2004 to UAH 1449.9 million in 2015	Even under pessimistic macroeconomic projections, the GDP would leave some "reserve for an increase" in public expenditures on residential institutions. This means that there will be a possibility of raising the level of financing in relation to the GDP and the State Budget, while the

Variant 1, Pessimistic macroeconomic scenario	✓ Higher inflation rates means that expenditures per person will increase almost 3 times; ✓ Hence, total funding requirement in 2015 is also higher (UAH 1862)	rates of coverage of the population by residential institutions remain unchanged. This will allow some flexibility for diversifying the range of social services, and raise the quality of services provided.
Variant 2, Base macroeconomic scenario	✓ Total expenditures on residential institutions will be UAH 1717.2 million (an increase of almost UAH 270 million compared to previous variant)	Given that in both macroeconomic scenarios, Variant 2 is associated with an increase in required funding for residential institutions, there will be a corresponding decrease of the "reserve of increase" for public expenditures on residential institutions in relation to predictive GDP.
Variant 2, Pessimistic macroeconomic scenario	✓ Total expenditures on residential institutions will be UAH 2205.3 million (an increase almost UAH 340 million compared to previous variant).	