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PREVENTION OF LOSING PARENTAL CARE: INTERNATIONAL EVIDENCE OF EFFICIENCY ANALYSIS AND A BELARUSIAN CASE

Analytical report

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INTRODUCTION

This report presents the research by an international team of experts, which they concluded within a framework of ENCON project – Enhancing CSOs Contribution to Evidence-Based Policy Making for Vulnerable Groups in Belarus. The project has been implemented by CASE Belarus in cooperation with CASE (Poland), Institute of Economic Research of Slovak Academy of Sciences (Slovakia), The Faculty of Economics and Administration of Masaryk University (Czech Republic), as well as ACT (Belarus).

Main goal of the first (technical) part of this paper is to provide

simple overview of available information related to application of social cost-benefit analysis to determine the methodological approach selected for the assessment of applied social policies (in terms of pilot programs) in Belarus covered by the ENCON project. Application of in-depth social cost-benefit analysis is a difficult task. In this part of paper, we describe general methodological overview based on available sources. We also present potential adjustments or alternatives to CBA methodology with aim to simplify calculations or to use more tailored methods of

assessment of social policies (focused on improvement of the status of various vulnerable social groups). In the second part of the paper, we describe the challenges of application of CBA on interventions for children and families at risk and present selected cases of assessment of public programmes aimed to influence policies related to children and families at risk. Third part of the report presents cost-and-benefit analyses of a losing parental care prevention program that is currently being implemented in Belarusian provinces by SOS-Children Villages.

SOCIAL COST-BENEFIT ANALYSIS (SCBA)

The cost-benefit analysis (CBA) is traditional approach typically used to assess or compare weaknesses and benefits of available alternatives, previously related mainly to the public investments or infrastructure projects. In general, the methodology combines two main purposes. First, to verify whether the investment have positive cost/benefit ratio, thus if benefits and gains of the project application overweight its costs. Advantage of this approach (for example in comparison to simply evaluate the cost effectiveness) is monetization of the costs and benefits of all relevant factors including direct outcomes, externalities (socio-economic effects), opportunity costs and other qualitative effects. The monetization is time adjusted, thus all quantitative effects are

discounted to the net present value of investment. Second, the CBA is used to compare alternatives of various projects to determine best applicable option, including retaining current state (status quo). It is also applicable to determine gained value for money to select the project suitable for financing under various budget constraints and policy targets. That is why CBA is one of the most common tools used to assess relative efficiency and effectiveness of public investment/intervention. It allows comparing of different «return-on-investment» of various programmes or policies, so it may be used to identify which programme/measure yields higher possible benefits for a given size of investment/resources.

CBA should take into consideration value of all applicable costs and benefits, but there is often critique, that this analysis is trying to give monetary value to all factors, including social costs and benefits, which are often difficult to measure and could be perceived differently by all stakeholders, and therefore can be desirably adjusted by evaluators (including applied monetary values). Additionally, it is sometimes hard to avoid double counting in terms of direct and indirect effects. Therefore, the comparison of effects between various projects should be done by the same approach with clearly defined factors and values.

Social cost-benefit analysis

Specific type of CBA, social cost-benefit analysis, is a cohesive method to explore

full range of impacts caused by a development project or a (social) policy measure. It can be

used both, as an evaluation and a planning tool. It could provide answers to two basic questions

- has the programme/measure delivered the intended results for the invested resources?
- is there other alternative which would generate more effects (benefits) for the same resources invested?

with the aim to decide whether to improve existing/planned programme or measure, or to shift to a different alternative.

The social CBA is a useful tool for socio-economic appraisal of a programme or a policy measure, which can help decision makers to test, improve, optimize, or justify their decisions in various social and policy areas (infrastructure and energy projects, regional development and tourism, provision of social services to communities/individuals, etc.). This method composes financial effects (investments, profits, taxes, etc.) with societal effects (travel comfort, environment, health and safety and other indirect impacts). The idea is to estimate price («price» in a sense of a value given by a society to certain effect) of as many aspects as possible, with aim to scale various heterogeneous effects in uniform way. The main advantage is that in this way, different projects or alternatives can be compared, what enables public parties (investors) to

decide on the best option, given the circumstances. Besides this, the project can be compared also with a baseline scenario (the situation of the most likely scenario if the tested project/measure will not be implemented; null alternative).

The social CBA weighs all kinds of costs and benefits: the ones with direct effect on project participants/measure's target group or agents involved; the ones which have indirect effect on the persons/agents related to the original target group; and external effects (may be related to safety, transport, environment, public goods, etc.). These types of identified effects are either monetized, or they are given a value so that they can be compared (e.g. on a scale 0–10 as appraised by the stakeholders). The process of monetizing effects is the biggest advantage of the method, but also a weakness – it influences the outcomes of the CBA, introduces subjective element into calculations, and the prediction remains uncertain, so the results of the social CBA are never absolute. However, when comparing two alternatives, or comparing intended project to a null alternative, even the simplified or rough CBA is better than none. The social CBA should also reveal who bears the

costs and which group is getting the benefits («distribution of costs and benefits»). Besides monetization of as much effects as possible, ability to compare alternatives/or to compare intended intervention to a null alternative, uncovering the distribution of costs and benefits; another advantage of the social CBA approach is ability to calculate a risk and show uncertainties, so that policy decisions are based on calculated risks.

Since CBA approach is usually used to assess efficiency and effectiveness of public investments, its main purpose is to answer the question which intervention should be abandoned in favour of more effective one. The limitation is a lack of capacity to execute CBA by (smaller) public investors, especially at the local level. CBA is an appropriate tool for local governments, but also for NGOs, in order to select or improve projects or policy measures at the local or community level. To enhance utilization of the CBA approach, the widely consensual standardization of the methodology, as well as building capacities of local governments and NGOs to undertake CBA-kind analyses when evaluating social projects/programmes, are needed.

Understanding CBA (Simplified description of its stages)

There are several approaches to undertake social (policy) CBA, but we can identify these basic steps:

1) Identification and quantification of costs and benefits (gross outcomes)

2) Outcomes are adjusted by counterfactual and by attribution of other actors (getting the net outcomes)

3) Monetization of costs and net outcomes (impacts)

4) Discounting costs and impacts

1. Identification and quantification of costs and benefits

As identification of intervention's costs is much less difficult (including quantification/monetization), we will start with the benefit side of CBA and will focus on outcomes and impacts of the intended project/programme, hereinafter called intervention. Outcomes may be positive and negative and can be defined as a change (positive or negative) which occurred since the intervention has been implemented (or expected change). The identification of such changes related to the intervention can be based on stakeholders assessment, or based on verification of a hypothesis (e.g. expected income changes may be tested no matter if stakeholders identified this change or not). But engaging stakeholders to the identification of outcomes leads to more robust results.

NOTE: When building the set of outcomes = changes observed in relation to the intervention, there are two options: either the investor/evaluator pre-defines the outcomes and the measurement is to verify the pre-defined hypothesis (e.g. investor expects that the new policy will improve health of stakeholders so he sets «reduced morbidity» as an indicator of health outcome and examines it to verify his hypothesis), or stakeholders themselves identify changes they have experienced in

relation to the intervention. The second option may omit some changes (stakeholders may not realise their health improvement), on the other hand, first option allows investor to understand desired impact of his intervention but doesn't give him an opportunity to understand changes from the point of view of the stakeholders (and the investor may miss out the changes that are not visible at the first sight). Engagement of stakeholders helps to understand local dynamics better. Direct effects (quantitative changes captured in common statistical data) can be determined by the first option, but broader comprehension of less tangible outcomes is better to achieve by involving stakeholders into identification of outcomes. (While traditional CBAs did focus predominantly on tangible benefits – e.g. changes in economic capital such as production, revenue, infrastructure improvements; and in human capital, such as health, education results; or in environmental capital, recent CBAs involve also less tangible benefits of interventions, such as improvements in social capital; institutional capital; or broader well-being aspects: self-esteem, mental health, participation, empowerment...).

The social aspects are increasingly incorporated into CBAs, the framework for implementing «well-being» impacts into such analyses was created by the theory of «social return on investment» (SROI). Taking into consideration less tangible benefits is more difficult compared to the direct effects, as they usually don't

have attributed straightforward indicators which would allow translating of these (mostly) qualitative changes into quantitative terms.

The second step in this phase of CBA is to quantify identified gross outcomes, what means to measure the change that has occurred, and to do it separately for each gross outcome. Also the qualitative change has to be expressed in quantitative way – the evaluator may attribute an indicator for this outcome and set the value on a scale (e.g. asking the stakeholders to rank the indicator on a scale 0–10 when comparing it to the situation before the intervention).

Quantitative indicators should be determined for each outcome, as outcomes have to be benchmarked. It is always recommended to explore whether there is a recognized indicator in the literature, linked to the certain outcome, even if it does not reflect the outcome perfectly (e.g. the number of additional years at school is internationally accepted proxy indicator of improved education, even though it does not respond to the quality of education perfectly). For inherently qualitative processes, a scale assessment can be applied. To collect data, the survey questionnaire may be designed in a way, so that the evolution of a change is captured in time, since beginning of the intervention. It means that indicator should be able not only to include information on the coverage (the size of sample for data collection), but also information on dynamics of the change (magnitude of

the change experienced by the respondents).

In this phase of CBA, all «gross outcomes» are identified and measured; «gross» because here we do not assess to what extent the outcome has been influenced by other factors.

2. Adjustment by counterfactual and by attribution of other actors

The evolution in outcome indicators is now able to exhibit the magnitude of changes observed since the beginning of the intervention. However, these changes may not necessarily have occurred only due to the intervention. That is why gross outcomes must be deducted by the contribution of other factors and actors, to get the net value which can be attributed solely to the tested intervention. Counterfactual is the change which would occur anyway, regardless of the tested intervention. Attribution must be identified if there are other actors who contributed to the intervention. The changes based on «business-as-usual» (counterfactual) basis and contribution of other actors should be measured, in order to quantify the size of «net effect» (net change, called also «impact» of the intervention). The impact can be also calculated as a gross outcome (gross change) minus the percentage that was attributed to counterfactual and other actors contribution. The impact of intervention is thus adjusted by other factors and other actors influence.

Counterfactual scenario (which part of the change would happen regardless the

intervention) should be set for all outcomes in the analysis. This can be done by several approaches: hypothetical approach uses accessible regional or national data on the macro trend in the policy area where the intervention is being implemented; before-and-after-approach tries to uncover the ongoing trend by asking the stakeholders not only about their position at the zero time (when the intervention is going to be implemented) but also a certain period of time before it (let's say a year ago); stakeholder-based approach passes the responsibility to decide whether the change is attributed to the intervention or to other factors directly on the stakeholders; and comparative approach is built on a comparison of the change perceived by the target group with a control group (e.g. nearby community or non-targeted group within the same community). In addition to measuring counterfactual, the best way to identify the contribution of other actors is a stakeholder-based approach – stakeholders are asked to list other organizations which contributed to the observed change and to give the points according to the size of their impact.

3. Monetization of costs and net outcomes (impacts)

The comparison of costs and benefits of the intervention requires expressing both sides in the common units. So monetization of impacts is aimed towards comparability of the quantitative results, thus not only costs, but also all impacts must be expressed in common unit – in money. All impacts shall

be translated into money, also these which are normally not expresses in monetary terms (e.g. improvements in services, in status of target group, in quality of life aspects, etc.) – obviously, this part of CBA may be the most tricky.

Data for CBA can be collected either from the beginning of the intervention on year-by-year basis (this is useful for monitoring ongoing change - progress, for matching baseline and evaluation data), or in a retrospective way (this applies when it was not possible to collect data from the starting point and it requires deeper involvement of the stakeholders).

4. Discounting costs and impacts.

In the last phase of CBA, the time aspect should be considered in relation to costs, as well as benefits (on year-by-year basis). It means to identify how impacts (changes in outcome net of counterfactual and attribution) are distributed across time on year-by-year basis and how all costs, which were involved in delivering the intervention, are distributed in time (with costs we mean both, financial, easily expressed in budgets, as well as non-financial, referring to the community e.g. when beneficiaries are contributing to the intervention/programme). Capturing how impacts and costs are distributed across time will give the image of cash-flow broken down by the type of benefit and type of cost. Then it is possible to calculate total benefits and total costs across time.

All costs and benefits arising into the future should be discounting

in order to get their present values. The discount rate is expressed as a percentage and can be used by Excel formula (to get NPV). Thanks to this it will be possible to identify the net present value NPV (present value of benefits minus present

value of costs) and benefit-cost ratio BCR (present value of benefits divided by present value of costs). Tested intervention is rational (effective) if the net present value is higher than zero (benefits outweigh costs) and if benefit-cost ratio is >1 .

Calculating NPV is important as it may say how much the future impacts of the intervention are worth to investors and stakeholders now. BCR tells how many euros/dollars etc. are generated due to intervention per 1 €/€ invested.

Additional notes to describe CBA methodology

NOTES to identification of cost and benefits

- All benefits and costs that have impact on people should be taken into account in CBA
- Benefits and costs should be defined in terms of observable consequences on people
- Only those costs and benefits directly attributable to the policy should be taken into account – if they would occur anyway, then they should be ignored
- Avoid double counting
- Consider opportunity costs
- Consider externalities
- Consider induced behaviour

Notes to enumerating in CBA

- Benefits should be measured in terms of «willingness to pay», and costs should reflect opportunity costs
- Values should be adjusted for risk
- Values should be expressed in terms of ranges
- The evaluation period should be «whole of life»

- Benefits and costs should be measured in real terms, i.e. net of inflation
- Multiplier effects should be ignored, unless there is high unemployment

Note: Wider framework for conducting a CBA

The main steps of full cost-benefit analysis process (including those described above) are as follows:

- **Step 1:** Define policy alternatives and counterfactual
- **Step 2:** Identify the people who gain and those who lose
- **Step 3:** Identify the benefits and costs; allocate to time periods
- **Step 4:** Quantify the benefits and costs within ranges
- **Step 5:** Discount to a common period, compare benefits with costs
- **Step 6:** Is the result clear enough? If not, consider whether it is worth investing in more research, and repeat above steps
- **Step 7:** Write report

Individual steps of CBA mentioned above are very well described in the guides developed by The Treasury (advising body to the New Zealand Government) initially prepared for the institutions and bodies, decision makers and their advisors using the Treasury's tool for CBA. They not only explain how to monetize impacts, but also how to define policy alternatives and counterfactual, how to allocate costs and benefits to time periods, how to identify segments of policy target cohorts, how to avoid double-counting, explain reasoning behind discounting, or what is sensitivity analysis. The guides also provide worked examples on how to proceed CBA [see: CBAX Tool User Guidance – Guide for departments and agencies using Treasury's CBAX tool for cost benefit analysis; The Treasury (2017), or Guide to Social Cost Benefit Analysis; The Treasury (2015)]. Another guide to own CBA tool at governmental level was prepared by HM Treasury (British government department) in cooperation with Public Service Transformation Network and Whitehall partners, to redesign public services to

deliver better outcomes and higher value for money (see: Supporting public service transformation: cost benefit analysis guidance for local partnership; HM Treasury, 2014). For examples of outcomes identification and data sources for monetization of impacts, in segments relative to the target groups of ENCON project («adult mental health»;

«crime»; «children in care»), as defined by the HM Treasury CBA model. Priority attention is given to CBA, and especially to incorporating social aspects to CBA, in evidence-based policy decision-taking processes in UK, New Zealand, and the USA, that's why we can find variety of updated guidelines particularly from the official authorities of these countries. Of course,

there are also other extensive guides (see: Handbook of Cost-Benefit Analysis 2006 by Australian Department of Finance, 2006; Guide to Cost Benefit Analysis of Investment Projects by the European Commission's DG for Regional Policy, 2008; or Cost-Benefit Analysis and the Environment: Recent developments by OECD, 2006).

Alternatives to CBA or using partial CBA

Any major investment in public services will affect many actors, not only directly (suppliers, clients in the respective sector, as well as individuals: members of the target group and also employees, citizens), but also indirectly (induced effects). Some effects are external, and it is hard to express them in prices. It is necessary to examine linkages between actors (affected directly and

indirectly) and the effects, to avoid double counting of the benefits, to define who is experiencing the impact of the intervention at the end. In some cases, especially when there are many (indirect or external) effects that are difficult to monetize, it is more appropriate to use other similar evaluation method, or to use some of the partial CBA methods.

Relevant criteria for decision on the proper or most suitable methodology involve completeness, feasibility, objectivity and usability for decision making process. Each methodology has its advantages and disadvantages; the next table summarizes features (advantages and weaknesses) for the most common methodologies in relation to the mentioned criteria of methodology selection.

Table 1. Comparison of evaluation methodologies.

	Methodology features			Usability in decision process		
	Completeness	Feasibility	Objectivity	Clarity of calculations	Clear advice	Acceptability
Monetary methodologies						
Financial Analysis	- Only financial effects. Often single actor but can be extended to multiple actors.	+ Standard accounting approach.	+ Causality tested. Effects can be easily compared due to use of standard rules.	+ Process is clear due to use of standard and transparent accounting rules.	+ Ranks policies and distinction between attractive and unattractive policies.	- Limited acceptability for large project due to incompleteness.
Input-Output Analysis	+/- All actors are taken into account but only direct and some indirect effects.	- Limited: IO tables are only available for main activities (sectors).	+/- Causality tested. Objective due to use of standard IO table. But only relevant for short-run and for small projects.	- Insight in parameters from IO tables but not in calculations behind it.	+ Ranks policies and separates attractive from unattractive policies. Clear and detailed advice.	- Strong assumptions needed about state of the economy. Also not all effects are taken into account.

Table 1 (continuation). Comparison of evaluation methodologies.

	Methodology features			Usability in decision process		
	Completeness	Feasibility	Objectivity	Clarity of calculations	Clear advice	Acceptability
Monetary methodologies						
Computable General Equilibrium Analysis	+	–	+	–	+	–
Cost Effectiveness Analysis / Cost Utility Analysis	+/-	+	+	+	+/-	–
Social Cost Benefit Analysis	+	–	+	+/-	+	–
Social Return on Investment	+/-	–	+/-	+/-	+	+
Non-monetary methodologies						
Impact Assessment	+	+	0	0	–	+/-
Multi Criteria Analysis	+	+/-	–	+	+/-	+/-

Source: Hof, B. – Koopmans, C. – Lieshout, R. – Wokke, F. (2012).

Most of the mentioned methodologies have explicitly monetary nature, and the last two are recommended to use in cases when there are too many effects that cannot be monetized with acceptable degree of uncertainty. Input-output (I–O) analysis and CGE (computable general equilibrium) model are recommended when the evaluator aims to focus at sectoral analysis/sector effects. Financial analysis limits itself to measuring only financial impacts on the organizations or individuals. Traditional Economic impact analysis (or Economic effect analysis) is not suitable for measuring the balance between costs and benefits (with aim to detect the benefits for society), as it considers some costs to be benefits. In economic rationale, if it tries to measure economic effect of the project, it will treat costs such as labour employed in the project execution (input to the project) as benefit, because it is a contribution to the local economy. This is obviously different understanding of the outcomes of the intervention, as CBA follows «net benefit» created by the project/ intervention as a desirable result. Other alternative for project evaluation not mentioned previously are Life-cycle assessment (can be useful to identify external costs which are often ignored by standard social CBA), or Cumulative effects analysis.

Besides CBA, Cost effectiveness analysis, or Cost utility analysis, may be also used to evaluate the effectiveness of the public interventions. They are appropriate particularly in

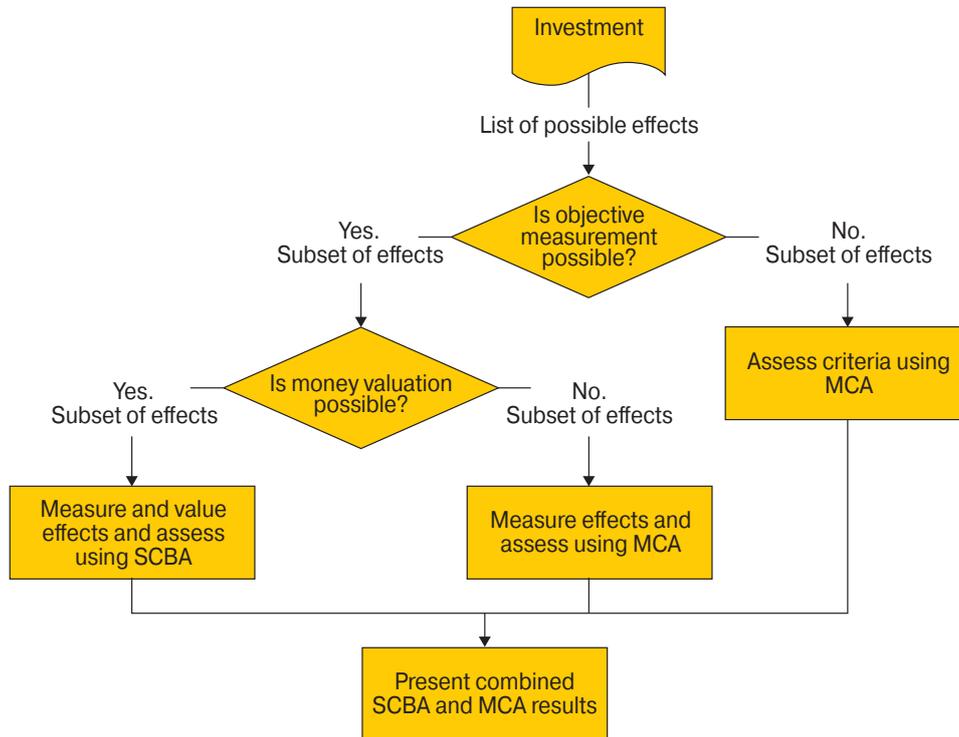
cases when benefits can be quantified but not monetized (expressed in money value), or when interventions shall be ranked within a fixed budget (they allow to rank alternatives by the benefits expressed in the same unit, other than money). The advantage for our project is that they understand costs and benefits in the same way as CBA does, and also here the assumption that benefits should outweigh costs is present. These two methods can be considered as kind of «partial CBA» (The Treasury, 2015). The disadvantage is that they are not suitable for evaluation of the interventions which are over the given budget.

Another option frequently mentioned in relation to CBA-based evaluations is Multi-criteria analysis (MCA). It is being used as an alternative to CBA particularly when either some costs or some outcomes are impossible or difficult to quantify; or when qualitative assessment is required. In this case, MCA is considered to be kind of a crude CBA and it is usually chosen due to data or time limitation. The second case when MCA becomes preferred methodology is when the emphasis is given to evaluation of to what extent the intended intervention meets the pre-set objectives of decision makers. It is usually based on a method of list of success criteria, reflecting public policy goals, with the weights assigned to each criterion. The alternatives are scored by stakeholders against these criteria. The shortcomings of the methodology include more intuitive evaluation,

inclination to double counting, criteria may reflect investors' objectives rather than welfare of community or target group, business-as-usual scenario is not considered, as well as time aspect. However, it is possible to combine advantages of both, Social CBA and MCA, and to perform the analysis in two dimensions. The mechanism of combination of both methods is displayed below.

The very basic idea, or foundations of CBA, is rooted in the private financial methods of project evaluation. They also use ranking criteria such as net present value, internal rate of return, benefit-cost ratio, but in a solely financial way. Another common criterion is a payback period. Since in the most projects, the costs incurred before any benefits are delivered, it is useful to be able to estimate the point in time, when total benefits will exceed the total costs. Both, costs and benefits should be discounted. The shortcoming of this evaluation criterion is that it neglects cash flows (costs and benefits) which will occur beyond the payback period. Social CBA also uses similar-to-financial ranking criteria, but it treats costs and benefits differently, than private evaluations do. Social CBA uses social rather than private rate of discount; social CBA considers opportunity costs (shadow prices) rather than market prices. So social CBA includes social perspective, however, limitation is that it assumes that everything what decision maker/investor should consider is possible to measure

Figure 1. Combination of SCBA and MCA.



Source: Hof, B. – Koopmans, C. – Lieshout, R. – Wokke, F. (2012).

in monetary terms. However, there are some aspects important to society, directly or indirectly influenced by the project/intervention, which cannot be included in money metric. Also these «intangibles» must be assessed against money metric. For purposes of evaluations, where intangibles plays important role and it was not possible to express them in money values, the concept of «multiple accounts» was introduced. Tangibles are measured at the cost-benefit account (here it is considered to be economic efficiency

account) and intangibles constitute other account (may be measured in monetary, or non-monetary units). This concept originated in the USA, in the process of designing the guidelines for publicly-funded development projects evaluation by the legislators (for details see e.g. van Kooten, 2017). Particularly MCA methodology (described above) may serve in the framework of multiply accounts – this approach is recommended when some spillovers are truly intangible and cannot be measured in monetary terms. (For deeper

insight in theoretical concept and foundations of CBA, see works such as: Cost-benefit Analysis: Concepts and Practice (2006) by Anthony E. Boardman; or later edition from 2011 by Anthony E. Boardman, David H. Greenberg, and Aidan R. Vining; Cost-benefit analysis and economic theory (1975) by Jacques Lesourne; Benefit-cost analysis in theory and practice (1994) by Richard O. Zerbe and Dwight Dively; Cost-Benefit Analysis and Public Policy (2009) by David Weimer.)

Conclusion

All significant decisions which may largely affect communities or citizens, or which require

substantial investments, should be based on evidence-based analyses. Most of them include

some kind of costs and benefits comparison. Primarily, CBA is about organizing available

information in a logical way and allowing an investor, local authority, or NGO to consider as many aspects as possible (it measures the impact on public at large). The decision makers or advisors should be encouraged to employ at least rough CBA, or some alternative methodology, otherwise they would be left to rely on intuition or anticipations. CBA should not be rejected already at the beginning due to the argument that some outcomes are difficult to measure (what is often true). There are techniques to use estimates, or to use proxy indicators, the evaluators can take advantage of existence of variety of guidelines. After all, some information is always available. However, once the rules of a method have been chosen, the evaluator should stick to it, especially when comparing alternatives. CBA is used to reduce uncertainty in decision making.

The main purpose of CBA is that it provides **benefit-cost ratio (BCR)**, rate of **return on investment (ROI)** and **net present value (NPV)** for each intervention/programme/project. This information about value for money allows comparing various options. The outputs of the analysis which may be of the most significant importance are: lifetime net present value of the intervention; lifetime net present value of individual impacts; and return on investment to society and to government (State/local).

However, maybe the biggest problem connected with social CBA is lack of standardization in some areas, where social CBA is currently being employed. For example, while there are some standards in using CBA in space, agriculture sector, waste management, or other environment-related areas, there is insufficient

standardization in using CBA to evaluate projects related to public services in childcare or support to families at risk. But still, there are many papers applying CBA to assess private or public programmes focused on child education, particularly on preventive interventions to improve schooling or health of children (mental health or cognitive and non-cognitive skills of children) published in psychology. However, general consensus is needed to develop the process of standardization, to achieve transparency and consistency in using social CBA to evaluate such programmes. Even while there is no general agreement on standards, meanwhile an agreement on basic principles may be achieved. This will also enhance the ability to educate stakeholders to conduct CBA to evaluate their own initiatives and to understand the results properly.

APPLYING CBA APPROACH TO INTERVENTIONS FOR FAMILIES AND CHILDREN AT RISK

The problem of standardization

Employing CBA in evaluation of policies related to children and families at risk is a promising step for decision makers. Comparison of costs of the programmes with the long-term benefits may help to decide which investment will have greater potential impact on economic, physical, psychological, health, behavioral or societal problems of vulnerable children and youth. But the challenge for such analyses is lack of uniformity in methods or assumptions, in levels of disaggregation of costs and benefits, in techniques to calculate them, etc.

However, in recent years there has been significant progress in the field of applying CBA to evaluate programmes in the areas such as pre-school education, foster care and health care, crime prevention, or prevention of substance use. Previous application of CBA on early childhood intervention programmes proved benefits

in various economic and social aspects (e.g. Belfield's evaluation of Perry Preschool Project from 2006 proved lower crime, less retention and special education use and increased lifetime earnings; Reynold's study from 2011 of Chicago Child Parent Centers found increased earning = increased tax revenues, reduced costs associated with crime and decline in need for special education services; Barnett and Masse's analysis from 2007 of Abecedarian program revealed higher lifetime earnings, increased maternal earnings, lower school costs, and decreased smoking-related costs; see Olson and Bogard, 2014).

As the literature proposes, standardization would improve many areas of the assessment process, e.g. identification of costs and assigning the values to outcomes, the way of incorporating discount rates and uncertainty, use of controlled

trials etc. Probably the most serious problem is how to monetize outcomes, particularly when outcomes such as social and emotional development, improvement of non-cognitive skills, or time invested by volunteers are considered. The interpretation of results and replication of evaluated intervention is complicated also due to fact that costs and benefits of a certain intervention vary across target groups, locations, and times.

When monetizing benefits, one should consider the extent to which true economic outcomes are affected as well as decide how to value key outcomes that have only indirect connection to money values. Of course it depends on the nature of the intervention and also other important aspects, like the age of the target group members or priority outcomes that are targeted. In some previous attempts to apply CBA, many outcomes were neglected due

to absence of precedence for how to monetize them (categories of outcomes like child behaviour and social skills, child mental health, parenting skills etc.). Different issue is how to apply time aspect, especially with respect to the future benefits (effects). The approach which prefers short-term benefits (easier to predict) may result in underestimating the economic impact. On the other hand, focusing on long-term or life-cycle benefits may lead to inaccuracy due to extended dependency on estimations. What is usually not taken into account, or underestimated, is the weight of outcomes related to later and long-lasting personal success or development of interpersonal skills – even though their importance is admitted, it is hard to capture them in the outcomes. This leads to the fact that some types of outcomes are left out from CBA. However, CBA can still pass the message on which policy do not work and which alternative is cost

beneficial, so it do contain the information for decision makers useful especially regarding the tight budgets.

Problems may appear also on the costs side, for example when estimating volunteer and in-kind donations, or in regard to defining the participants' costs (e.g. when parents give support to the family-based programmes, their contribution represents cost, but they may become also the beneficiaries of this programme). Thus some standardization protocols (or deconstruction of invested resources into cost categories) would be useful also for cost collection. Various programmes for children and families are in the spotlight in recent years, so proper costs estimations containing all resources needed for intervention would enhance sustainability of the intervention and the quality of the service delivered.

The data for randomized controlled trials may also be a problem (they are not

necessarily perfect) as well as establishing the discount rate, accounting for uncertainty, the use of shadow prices, the length of follow-up, estimation of future outcomes not only for programme participants but also for family members and peers. The first step in standardization effort can be identification of the areas where common ground exists; standards and consistency in methodology is necessary for comparison across studies, because the main goal of CBA methodology is not only to evaluate whether the given programme/intervention has a positive economic return, but to enable comparison of various alternatives (policy makers have to make choices between e.g. early childhood programmes, school-based programmes, prevention vs remediation programmes, and so on, so they need to know what would be an optimal investment mix or investment strategy/decision).

CBA in practice – Examples from the field

1. Nurse-Family Partnership programme

As one of the «best practice» examples we can list the advisory work of the Washington State Institute for Public Policy, which from its foundation (in 1983) delivers effectiveness analyses of the policy activities considered by the State to policy makers. The institute

assesses investments in various areas, including early education, employment and training, housing, child abuse and neglect and substance abuse, crime, healthcare and development disabilities etc. The Institute determines «return on investment» of various policy interventions by calculating costs and benefits and

estimating risks, while it always uses a consistent calculation framework to allow comparison of several alternatives. The result of this evidence-based approach is a list of ranked policy options based on return-on-investment indicator.

«Nurse-Family Partnership» programme is an example of the social service provided to

families tested by the Institute. The calculation of costs side of the CBA was based on the costs of hiring nurses at the local labour market, and costs of instruction, service, and other activities within the programme.

Outcome side included reduced child welfare and victim costs, lower criminal justice costs, and savings in public assistance and health care. E.g. the outcome lower child welfare costs considered the proportion of

cases of children placed out of their homes and the marginal costs for foster care and for other services provided to these children (see Olson and Bogard, 2014).

Table 2. Results of CBA (including NPV, BCR, and ROI) for «Nurse-Family Partnership» programme.

Benefits per Family		Main Source of Benefits
Reduced child abuse and neglect	1 096 \$	Lower CW & victim costs
Increased ed. attainment (child & mother)	24 131 \$	Increased earnings
Reduced crime (child & mother)	5 333 \$	Lower CJ & victim costs
Increased K–12 costs	-1 738 \$	Higher K–12 costs
Other	2 854 \$	Pub asst, health care \$
Deadweight cost of program	-4 933 \$	
Total Benefits per Family	26 743 \$	
Cost per Family	9 788 \$	
Net Benefits (NPV)	16 956 \$	= 2,73 \$ B/C = 8% ROI

NOTE: B/C – benefit/cost; CJ – criminal justice; CW – child welfare; NPV – net present value; ROI – return on investment.

Source: Olson and Bogard (2014), page 12.

CBA conducted for the case of Nurse-Family Partnership revealed that educational attainment increased for both, children as well as mothers involved in the programme; what increased K-12 costs because they received more schooling and related services. The reduced criminal justice costs were calculated by detailed model tracking every step from arrest, through imprisonment, to community supervision upon release. According to CBA, this programme generates a net benefit (NPV) of app. 17 thousand dollars per one family; the return-on-investment (ROI) reached 8% and benefit-to-cost ratio (BCR)

is 2.73 (one dollar invested in the programme generates 2.73 dollars).

There is also need to account for uncertainty, because each estimated benefit and many costs have a standard error – the Institute uses Monte Carlo simulation to calculate the likelihood that the programme will be beneficial in any case. For example, for the Nurse-Family Partnership, net benefits are positive 76% of the time and negative 24% of the time – this result indicates that this programme is a solid investment. Also the double counting should be avoided (e.g. there are several outcomes that measure the same human

capital aspect, such as better test scores and increased high school graduation).

Not only ROI result, which is used by the Institute to develop a ranked list of appropriate policy options, but also CBR is a good indicator for decision on which programme should be chosen to be financially supported. However, when comparing several options to be invested in, one should compare the same, or comparable, things. If the policy options are evaluated at the same way, the decision of the investor/legislator will be based on consistent evidence, not only in cases when the

options are altered to achieve a particular policy goal. It is also appropriate to warn investors about the degree of uncertainty. The results

(calculated on annual cash-flow basis) can be interpreted from 3 perspectives – that of taxpayers, of participants of the programme, and of other

actors who may be affected by the programme (this allows investors to focus more on their intended outcome when taking the final decision).

Comparison of all types of alternative childcare in Bulgaria

Similarly to other EU Member States (especially Eastern European countries, where institutional care used to be a main pillar of alternative childcare), Bulgaria began the process of deinstitutionalization of a childcare provision (in 2008), i.e. the process of replacing of institutional type of childcare with more family-like types (kinship care, foster care, and community-based childcare). At this background, in 2011 DG for Regional Policy

prepared for the European Commission a CBA assessment of all types of childcare in Bulgaria.

Based on comparison of the state-of-the-art studies, the hypotheses of the CBA were formulated, basically assuming that alternative forms of childcare are more expensive than institutional ones, but since alternative forms meet individual needs of children better, the care leavers of these forms fare

better in their adult independent lives and thus they have higher contribution to society (due to their higher education, better physical and mental health, and more numerous social contacts). As another step the authors developed a conceptual framework for a model, which helped to design field survey and was aimed to uncover internal, and often less visible features of examined childcare systems.

Community-based childcare in Bulgaria.

In 2011, there were 72 centres of this type, with capacity of 831 children. They were considered as a «middle ground» between kinship/foster care and typical institutional childcare facilities. The children here live in more family-like environment, but compared to alternative personal care, they live in larger communities with higher staff-to-child ratio. Bulgaria has a tradition of SOS Children Villages as such care provider; however, there are newer projects which are also active. Confirmed by the studies from other European countries, alternative personal care (kinship and foster care) tend to be the cheapest option. Community-

based care is more expensive compared to both, alternative personal as well as institutional care. However, once the initial start-up costs have been amortized, the running costs of community facilities may be far lower when compared to large-scale institutions, and at the same time, they proved higher quality care and more suitable environment. The studies also demonstrated that community-based services show absolute superiority in the outcomes over institutional care (in many aspects such as physical and mental, educational and social abilities), even if the comparison is made with the best institutional services. However, the best option is to redirect resources to preventive programmes, to change flows towards families at risk themselves.

Table 3. Logic model – Conceptual framework for childcare provision.

1. NEEDS	2. SERVICES	3. INPUTS	4. OUTPUTS	5. IMPACT
1.1. Physical Needs	2.1. «Physical» Services	3.1. Financial resources	4.1. Outputs related to self-sustainability	5.1. «Direct» Benefits
Food Shelter Sleep and relaxation Health Sexual education Personal space	Provision of food Hygiene Provision of shelter Medical care Dental care Provision of privacy			Income sources Employment history Economic activity Criminal Acts State transfers Fiscal contribution Health status
1.2. Emotional needs	2.2. «Emotional» Services	3.2. Material resources	4.2. Outputs related to sociability	5.2. Supporting impacts (supporting the direct benefits)
Pleasure Security Emotional development Personal possessions Personal success To love and to be loved	Sports Play Entertainment Relationship with primary person Provision of personal possessions Personal communication			Educational attainment Hazardous behaviour Family status
1.3. Cognitive needs	2.3. «Cognitive» Services	3.3. Human resources	4.3. Outputs related to personality/maturity	5.3. Context Impacts
Cognitive development Confidence Diversity of stimulation Learning Privacy To be important for someone	Training Access to diversified forms of experience Language development Access to books, internet, films			Housing Social and leisure activities Quality of life
1.4. Social needs	2.4. «Social» Services	3.4. Additional resources (donations)	4.4. Horizontal output	
Identity Knowing the rules Sense of values Autonomy Self-esteem Self-sufficiency Spiritual development Relationships	Academic education Access to peers Freedom of choice and opinion Sexual education Access to authority figure Development of social skills Vocational training Religion/cultural services		Life skills	
	2.5. Administration	3.5. Hidden costs (inputs related to «social» services)		
		Other non-allocable costs		

Source: Sanopoulos, A. et al. (2011).

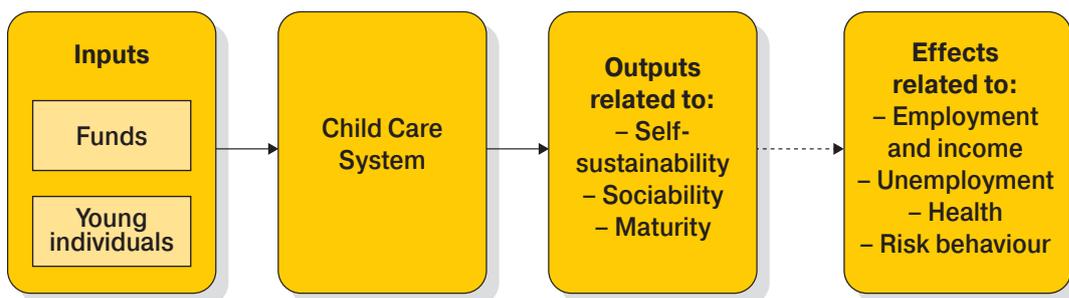
This logic model serves to combine information from official databases with the ones from the field survey, and outlines the questions which should be answered by CBA. It illustrates relation between the needs of individuals (children in care), services provided to meet these needs, investments required to manage such services (i.e. inputs), the abilities of care leavers after leaving the care (outputs), and impact for the society as a whole (effects).

The study combined publicly available statistical data with a field survey among individuals who had received one of the examined types of a childcare (in form of structured interviews with care leavers; the sample was comprised of 16 leavers of SOS Villages, representing community-based residential care; 5 leavers of kinship care; 7 leavers of foster care; and 37 leavers of institutional care). The condition was that respondents had been receiving care for at least 3 years and have left the

care at least 3 years ago. The authors tried to cope with the limitations (size of a sample and limited examples of CBA in Europe applied on residential and community-based childcare) by including into the CBA model adaptation of a reference model for budgeting and validation of outcomes by workshops with key experts.

The basic scheme of implemented CBA model is displayed below.

Figure 2. The logical scheme of CBA.



Source: Sanopoulos, A. et al. (2011).

For CBA calculations, five sub-models were developed: model for tangible costs (to calculate average cost per placement and year); model for life-time income (depending on education attained); two models for costs of unemployment; model for health costs; and model for costs due to increased crime/divergent behaviour. The biggest impact on the benefit side was assigned to income and unemployment sub-models.

The results of field survey basically confirmed the hypotheses. The kinship/

foster care leaver and community-based care leavers outperformed their peers from institutional care in all objectively verifiable indicators; in education attained, income and stability of working conditions. They also expressed higher satisfaction with care services they had been receiving. The level of attained education was used as an indicator of self-sustainability (see the scheme of the CBA model); as regards working conditions the authors focused on type and stability of employment; in the field of

income, an average monthly income as well the source of income were examined (indicators of self-sustainability and maturity); as regards sociability, the number and quality of close relations were investigated (SOS Villages leavers as well as kinship/foster care leavers frequently mentioned their carers as close contacts, so it can be assumed that they comprehend them as reference adults); in the field of risky behaviour, use of cigarettes, alcohol, drugs, fights and problems

with law and sexual behaviour were examined (indicators of sociability); and also other questions were incorporated to explore personality/maturity and sociability (e.g. ability to make independent decisions). The results are available in tables, which confirmed more successful behaviour of personal or community care leavers (expressed in percentage).

The main sources to calculate costs for each individual form of a childcare were Bulgarian Ministry of Finance, Agency for Social Assistance,

municipalities, directors of particular institutions, care providers and foster families. The table below presents average cost per child and year for each type of childcare (type 1 for community-based care, type 2 for foster and kinship families, and type 3 for standard institutional care). The results are in line with other studies findings – the total costs related to the foster care and kinship care are similar to that of the institutional care, but if only the State budget contribution is considered, then individual family types of care are far cheaper (sharing the burden

between the State and families; however, while it was quite clear how to calculate contribution of the State – one-off payment and regular monthly social benefits, the investments of the families were more complicated to estimate, it based on information received from the sample families). On the other hand, community-based residential care was the most expensive one. This may be explained e.g. by higher costs for specialized personnel, or small scale of care units. And last, institutional care, if considered from the State budget perspective, is a middle way.

Table 4. Costs per child and years for all examined types of childcare in Bulgaria.

Type of Child Care	Average cost per child and year	Total costs per placement of 12 years
1a. SOS Children Villages (values from 2010, discounted projection average for 2007-2009)	5 851 €	70 212 €
1b. ARK, case 1 (values from 2010)	5 563 €	66 756 €
1c. ARK, case 2 (values from 2010)	4 001 €	48 012 €
2a. Foster Care Prof. (values from 2007-2008)	4 102 / 1 763 €	49 224 / 21 156 €
2b. Foster Care Volunteer (values from 2007-2008)	3 547 / 1 209 €	42 564 / 14 508 €
2c. Kinship Care (values from 2007-2008)	3 014 / 675 €	36 168 / 8 100 €
3. Institutional care (values from 2007-2009)	3 459 €	41 508 €

NOTE: Foster/Kinship care – first number is a sum of the costs borne by the State budget and foster family, the second number refers only to the State budget costs.

Source: Sanopoulos, A. et al. (2011).

Calculation of outcomes side of CBA is derived from mentioned five sub-models and is based on the hypothesis that the level of attained education (measured on ISCED scale) is a key success factor, thus it is main explanatory variable.

The results are categorized not only by the type of childcare, but also by a gender aspect. Income (benefit) was calculated in three way: Ia variant was based on national average income, ISCED income index, and gender; Ib variant was using

average income received from the information gained by the field survey (average was used to smooth individual values), broken down by gender and ISCED level; and Ic variant relied on specific incomes declared by the respondents of the field

survey (again broken by gender and ISCED level), so the last one was modelled most precisely in relation to the results of the questionnaires.

Overall net result was calculated as income reduced by loss of contributions, unemployment benefits and spending on active labour market policy measures,

per average care leaver by gender (average is a weighted one, considering ISCED level). The benefit-to-cost ratio results are shown below:

Table 5. Benefit-to-cost ratios of individual forms of childcare systems in Bulgaria.

	SOS Children Villages	ARK, case 1	ARK, case 2	Foster care prof. (total cost)	Foster care prof. (state budget alone)	Foster care volunt. (total cost)	Foster care volunt. (state budget alone)	Kinship care (total cost)	Kinship care (state budget alone)	Institutional care
Income Variant «P Ia»										
Female	0,76	0,80	1,11	1,26	2,92	1,45	4,26	1,71	7,63	1,03
Male	1,62	1,71	2,38	1,92	4,47	2,22	6,52	2,61	11,67	1,48
Income Variant «P Ib»										
Female	0,71	0,75	1,04	1,64	3,81	1,89	5,55	2,23	9,95	0,68
Male	1,45	1,53	2,12	1,73	4,03	2,00	5,87	2,36	10,52	0,95
Income Variant «P Ic»										
Female	0,71	0,75	1,04	1,69	3,93	1,95	5,73	2,30	10,27	0,75
Male	1,47	1,54	2,14	1,79	4,16	2,07	6,06	2,43	10,86	0,95

NOTE: Values below 1 mean that it is paid more that it is received, and vice versa for values above 1.

Source: Sanopoulos, A. et al. (2011).

The benefit-to-cost ratio results shows that foster care (in all forms, including kinship) performs the best when compared to any other form of childcare. Especially kinship care can reach tenfold of the ratio attained for the institutional care. This can be explained by the educational levels, which are generally the highest in case of the foster/kinship care leavers; by the level of related income; and by lower total costs of placement (especially when State budget is considered) (but shadow costs may be applying). In some cases, community-based childcare exhibits worse results than institutional care

(particularly for women in variant Ia and Ic), which can be attributed to higher placement costs (as the benefits were actually higher for community-based care than for institutional care in all cases) and to more practically oriented education provided by community centres resulting in lower level of education attained.

The results demonstrated that foster and kinship care is faring better than community-based childcare, but the latter fares better than standard institutional care. However, it should be stated that besides small size of sample, other grey areas might

have influenced the results (e.g. uncertainty regarding costs side for institutional care as well as unknown informal and in-kind contributions in case of foster care). Community-based care was calculated on the example of SOS Villages – they have the highest (clearest so far) operational costs. On the other hand, foster care is the least expensive (per child per year basis) when only State contribution is considered (otherwise, the costs are comparable to the institutional care). Kinship care is by far the most advantageous as regards the costs.

The outputs also showed that institutional care leavers tend to have the lowest level of education and work in less stable conditions, they earn less and rely more on social benefits, when compared to other types of childcare. Community leavers have higher

education (frequently oriented on specialized secondary programmes), they usually find a job after graduation and do not take further education. They are skilled in managing of daily tasks, refrain from alcohol and drugs and risky behaviour. They have the most stable working

conditions and operate in wide networks of social relations. Kinship and foster care leavers have very similar features to the community leavers, but they attain higher level of education and they continue in their training after studies and have careers typical for majority population.

Comparison of private and public programmes of childcare in States Oregon and Washington

The study of Professor Richard Zerbe and his team, published in Contemporary Economic Policy in 2009 (Zerbe et al., 2009), was the first attempt to use CBA approach aimed at foster care to compare public and private services in this sector. The objective was to find out whether the social rate of return on improvement of such services would be a good public investment – as foster care services represent a major social investment. At this time, more than three million cases of child abuse or neglect were recorded annually in the US, of which 900 thousand children were victims of maltreatment. One fifth of victims were placed in out-of-home care, another 110 thousand of children were placed in such care due to behaviour problems or failure of reunification with the family. Zerbe's study focused on children who were receiving foster care due to previous maltreatment. The size of the sample was 479 children. The sample was created by young adults who spent at least

12 consecutive months in care between the age 14 to 18 years and who left foster care at least a year ago (alumni).

Zerbe decided to employ CBA approach, based on his critical assessment of the previous studies using other research designs. He considered approaches comparing maltreated children placed to foster care with their peers in the general population (even though matched on certain family and child characteristics) to be more likely biased. Other studies using pre-post design (comparing not the examined children with the control group from the general population, but comparing the situation of a child prior and after placement to foster care) inappropriate, because this approach does not examine foster care's impact on adult outcomes of a child. Another shortcoming were short follow-up period (e.g. 6 months after leaving foster care), or small sample size. In his view, previous studies didn't assess net

societal return on the investment in foster care. Zerbe employed a method of comparing two groups of young adults, who were both previously receiving foster care (private in one case and public in the other), what makes his approach less likely to suffer from selection bias than comparing with a control group from the general population. The team used the data retrieved from Northwest Foster Care Alumni Study (NFCAS). Their analysis did not use comparison to «no-intervention» scenario, as it is generally agreed that in cases of child maltreatment the child should be taken from the family and placed to some form of alternative care, so this scenario would not be relevant for policy purposes.

Descriptive statistics on children's experience with foster care differed significantly between the state care alumni and private (Casey) care alumni (e.g. Casey alumni spent 2.7 years more in care and the number of placement was lower, what reflects higher stability of

placements in case of Casey foster care service; Casey alumni also received more extended variety of activities such as arts, music, sports...). The research question of CBA was whether the extra costs of Casey services are justified by the higher benefits expressed in dollar terms. Measured benefits included the value of gains such as higher earnings and the value of avoided costs such as lower

medical costs. The gains from higher level of education were assumed over the working life, which accounted for expected periods of unemployment. Future values such as earnings were discounted using real discount rate. Both indicators, net present value as well as benefit-to-cost ratio were used to assess performance (NPV as a positive social return on investment). On benefit side, the

study examined alumni's adult outcomes related to education, employment, finance, marriage and children, social relations and physical and mental disorders. Table 6 summarizes the adult outcomes for both, state programme and private Casey programme alumni. The differences which were significant at 5% level or more were converted to 2007 dollars (Table 7).

Table 6. Adult outcomes of Casey and State alumni.

	Casey (n=111) Estimated (SE)	Public (n=368) Estimated (SE)	$F_{1,474}$	p Value
Education				
Less than high school (%)	31,0 (1,1)	42,3 (1,2)	9,3	0,002
High school graduation with diploma (%)	28,8 (1,1)	27,1 (0,9)	0,3	0,614
Post-high school education without BA (%)	37,7 (1,0)	29,2 (0,9)	4,4	0,035
College with bachelor degree (%)	3,3 (0,5)	0,8 (0,2)	12,5	<0,001
Post-bachelor education (%)	1,8 (0,2)	0,1 (0,0)	14,3	<0,001
Employment				
Respondent employed (%)	78,1 (0,8)	69,0 (0,9)	6,7	0,010
Spouse/partner employed (%)	83,3 (1,9)	84,9 (2,4)	3,2	0,073
Household breadwinner employed (%)	86,9 (0,8)	77,1 (1,0)	9,7	0,002
Finances				
Household income per family member, in 1 000 \$ (mean)	10,4 (0,2)	10,3 (0,2)	0,0	0,871
Public assistance (%)	49,4 (1,1)	50,8 (1,2)	0,3	0,606
Above poverty line (%)	70,6 (0,8)	65,6 (0,9)	1,9	0,172
Three or more times above poverty line (%)	18,0 (0,8)	21,8 (0,9)	1,9	0,171
Marriage				
Married (%)	44,9 (1,1)	25,6 (0,9)	28,5	<0,001
Marital quality (range: 0–100) (mean)	90,4 (0,7)	86,9 (0,8)	1,4	0,241
Children				
Placed child in foster care (%)	5,0 (0,3)	5,0 (0,3)	0,0	0,866
Number of children (mean)	1,6 (0,0)	1,4 (0,0)	1,1	0,301
Parenting quality (mean, range: 0–100)	71,8 (0,6)	69,1 (0,6)	3,3	0,070
Social networks				
Frequency of contact with relatives (mean, range: 0–100)	60,3 (0,7)	58,6 (0,6)	0,4	0,544
Frequency of contact with friends (mean, range: 0–100)	71,3 (0,6)	73,3 (0,5)	0,6	0,448
Positive relations with relatives (mean, range: 0–100)	64,6 (0,7)	57,0 (0,6)	6,6	0,011
Positive relations with friends (mean, range: 0–100)	67,8 (0,9)	72,6 (0,8)	3,8	0,053

Table 6 (continuation). Adult outcomes of Casey and State alumni.

	Casey (n=111) Estimated (SE)	Public (n=368) Estimated (SE)	F _{1,474}	p Value
Physical disorders				
Chronic headaches (%)	44,5 (1,0)	50,5 (0,9)	2,6	0,109
Chronic back/neck pain (%)	30,0 (0,8)	38,1 (0,8)	3,4	0,066
Ulcer (%)	7,4 (0,4)	13,0 (0,6)	6,5	0,011
Other chronic pain conditions (%)	24,9 (1,1)	27,5 (1,1)	0,3	0,567
Cardiometabolic conditions (%)	14,9 (0,8)	22,6 (1,1)	6,5	0,011
Respiratory conditions (%)	28,8 (1,1)	17,9 (0,8)	9,4	0,002
Mental disorders				
Major depression (%)	11,3 (0,5)	24,3 (1,0)	18,2	<0,001
Anxiety disorder (%)	28,8 (0,9)	43,0 (1,0)	13,3	<0,001
Substance disorder (%)	5,1 (0,3)	11,1 (0,5)	6,5	0,011

Source: Zerbe et al. (2009).

The major benefits of Casey programme were higher earning associated with the higher level of education attained by the Casey alumni. Except for one health condition, all

other outcomes expressed in monetary terms favoured Casey programme. The net aggregate benefits for the Casey programme were more than 206 thousand dollars per

alumni (see Table 7). Besides higher education and better employment, also fewer chronic physical and mental disorders contributed to the net benefits.

Table 7. Outcomes differences between Casey and State expressed in dollars.

	Casey	State	Value in January 2007 Dollars (All Urban Consumer Price Index), per Unit	Difference between Casey and State in 2007 Dollars
Less than high school	0,310	0,423	618 968 \$	- 75 289 \$
Post-high school	0,375	0,292	1 278 834 \$	106 143 \$
College degree	0,033	0,008	2 151 583 \$	53 790 \$
Post-college education	0,018	0	2 897 817 \$	52 161 \$
Sum of educational benefits				136 805 \$
Employment	0,781	0,690	NA	64 718 \$
Ulcer	0,074	0,130	-53 557 \$	2 999 \$
Cardiometabolic conditions	0,149	0,226	-51 434 \$	3 960 \$
Respiratory conditions	0,288	0,179	-53 483 \$	-5 830 \$
Major depression	0,113	0,243	-12 508 \$	1 626 \$
Anxiety disorder	0,288	0,430	-12 664 \$	1 798 \$
Substance disorder	0,051	0,111	-12 811 \$	769 \$
Sum of all benefits				206 305 \$

Source: Zerbe et al. (2009).

The Casey programme costs more than the state programme and lasts longer. The higher costs for Casey are due to hiring and retaining more educated=more expensive staff, monthly foster parents retention payments, and more comprehensive support services. Casey programme

costs app. 82 dollars per day, and state programme 50 dollars per day. The state programme lasts 7.1 y on average, so the difference in costs for the first 7.1 y is 32 dollars per day (for the rest of the Casey programmes it is less than mentioned 82 dollars due to fixed costs, it's about 60 dollars per day). The present

value of the difference in costs was calculated over 10 y period, discounted by 3% and adjusted to 2007 dollars, and it amounted to more than 141 thousand dollars. However, although Casey programme is that much more expensive, additional benefits seemed to be even higher. The results are shown in Table 8.

Table 8. The difference in additional costs and benefits between Casey and State programme.

	Assumes Period of Sample Effects (10 Yr) for Medical Outcome Differences and Work Life Effects for Earnings Differences	Assumes 1-Yr Effects for Medical Outcome Differences and Work Life Effects for Earnings Differences
Additional benefits/case	206 305 \$	191 666 \$
Additional costs/case	141 304 \$	141 304 \$
NPV: benefits-costs	65 001 \$	550 362 \$
Benefit-cost ratio	1,46	1,36

NOTE: The second column displays results when if the medical differences would be calculated only for 1 y (the difference is little as overall benefits were dominated by educational differences).

Source: Zerbe et al. (2009).

Zerbe's study documented economic superiority of a private programme of foster care over the State one. Private programme provided longer,

more intensive, but also more expensive care, however, the study proved significant positive difference of private programme alumni in adult outcomes

related to educational, health, and social aspects of life. Estimated present value of enhanced foster care exceeded with extra costs.

Other research related to interventions aimed at children and families at risk

Another pioneer study performed by the same, but extended research team, was focused on effects of enhanced foster care treatment on the long-term physical and mental health of adult foster care alumni (Kessler et al., 2008). Child maltreatment is a risk factor of later mental disorders and physical illnesses, so in many

cases children are taken out of families and receive foster care instead, however, there were no studies proving positive impact based on field data surveys. This one was the first quasi-experimental study to examine effectiveness of this intervention in improving long-term health of previously maltreated children. The survey also revealed that

caseworkers of the private programme had higher education and salaries, less overloads, and better access to supporting services (tutoring, mental health counselling). The results showed that young adults previously receiving private foster care had significantly fewer mental disorders (major depression, anxiety problems,

and substance use), ulcers, and cardiometabolic disorders, but had more respiratory disorders compared to the state program alumni. However, the conclusion was that public investments in enhancing foster care services can also substantially improve mental and physical health of children placed to foster care.

More recent study (Winokur – Holtan – Batchelder, 2014) compared the effects of kinship care and foster care in regard to the safety, permanency, and well-being of children previously removed from their families for maltreatment. The authors entered data extracted from examined studies to RevMan 5 software for meta-analysis. The results suggested that children in kinship care experienced fewer behavioural problems, had fewer mental disorders (odds ratio 0,51), better well-being (odds ratio 0,50), and less placement disruptions (odds ratio 0,52), compared to children in non-kinship foster care. There was no significant difference in reunification rate, however, the children in non-kinship foster care were more likely to be adopted (odds ratio 2,52). They were also more likely to utilise mental health services (odds ratio 1,79). RevMan calculations were also used in the work of Turner and MacDonald (2011), to assess the impact of a special service «treatment foster care» (TFC), which is a foster family-based intervention providing tailored programme for under-age children who, due to severe medical, social, psychological or behavioural problems, are at risk of being placed (or were placed) to restrictive settings (such as secure residential

care, psychiatric hospital, youth justice settings). The authors examined the impact of TFC on psychosocial, behavioural outcomes, delinquency, placement stability, and discharge status of children who required out-of-home placement. The results suggest that TFC is a useful intervention measure for children with complex psychological and behavioural needs, however the authors concluded that the evidence based (from examined studies) is less robust than usually reported.

The impact of foster care and related services has been examined deeply already since 80s/90s of the last century; some of the first studies used more simple research designs (but which indeed are partial steps of the CBA approach), such as tracking a deviation in performance of the foster care leaver if compared to the control group. The work of Wendy Blome published in 1997 by Springer in *Child and Adolescent Social Work Journal* titled «What happens to foster kids: educational experiences of a random sample of foster care youth and a matched group of non-foster care youth» is exactly this case. She made a secondary analysis of existing longitudinal data of 1980 to 1986 to investigate high school and post high school behaviour of young adults who were receiving foster care, compared with a matched group of youth raised in intact families (sample of 167 youth in foster care was matched with youth living with at least one parent on age, gender, and race). The results revealed that foster care youth had much higher rate of high school

dropout and were significantly less likely to have completed GED; they were also less likely to be in a college preparation; they receive significantly less financial support from their foster parents or guardians; they reported higher number of discipline problems in school; and they experienced more educational disruption as a consequence of changing schools (see Blome, 1997).

One of the former studies which tried to monitor effects of societal intervention – in this case it was foster care – on juvenile delinquency among victims of child maltreatment was developed by Desmond Runyan and Carolyn Gould, published in 1985 in *Pediatrics* (Runyan – Gould, 1985a). In this work, the same approach of control group was applied; a comparison cohort to foster care children was composed of victims of maltreatment who were left with their families (114 children aged 11 to 18 placed to foster care as a result of maltreatment and stayed in foster care for three or more years vs 106 victims of maltreatment who were left in their homes, with similar age, race, sex, and year of diagnosis). The results showed that foster care children committed (after age 11 years) 0,050 crimes per person and year compared to 0,059 crimes committed by home care children. Foster care children were more likely to have committed criminal assault; in this group the increased number of delinquency convictions correlated with increased number of foster home placements. The authors continued in their research on the same sample,

when they examined also the impact of foster care (as acute intervention for maltreated children) on their school performance (Runyan – Gould, 1985b). Children, later placed to foster care, missed on average 15,6% of the school year before their maltreatment was reported, but only 3,48% of the most recent school year. The children from the control group missed on average 8,5% of the school year prior reporting maltreatment and 7,2% of their most recent year in school (follow-up of almost 8 years was realized). 44% of foster care children later achieved average or above average grades compared to passing rate for the control group 32%. However, both groups achieved poor school performance 8 years (on average) after maltreatment was reported, so there is no significant evidence of robust rehabilitative impact of foster care as regards school performance. Findings of similar studies may have important implications for child welfare policy and practice.

Although evidence of some studies as regards estimation of the effects of foster care might have been mixed, some useful findings having resulted from the comparative studies (particularly the previously mentioned studies focused on specific adult behaviour outcomes) may later serve as one of the input data for CBA assessment of financial effectiveness of examined interventions. Good example is work of Arthur Reynolds and Judy Temple, who focused their research on early childhood intervention programmes. In 2001 they published a study evaluating effectiveness of a

federal center-based pre-school and school-based intervention program for urban low-income children (Chicago Child-Parent Center Program, CPC), with a special focus on the long-term effects of this early childhood intervention on educational attainment and juvenile arrest. The intervention programme provided comprehensive education, family and health services, and included half-day pre-school for children aged 3–4 y, half/full-day kindergarten, and school-age services for children aged 6–9 y. The comparison group consisted of 550 children who participated in alternative early childhood programmes (full-day kindergarten). The outcomes that were measured included: high school completion rate; school dropout by age 20; juvenile arrests; grade retention and special education placements. The results proved that children who participated in pre-school intervention programme for 1–2 years had higher rate of high school completion (49,7% vs 38,5%); more years of completed education (by 0,4 y); fewer juvenile arrest (16,9% vs 25,1%); fewer violent arrests (9,0% vs 15,3%); as well as school dropout (46,7% vs 55,0%). Participation in both, preschool and school-age preventive programmes, was significantly associated with lower rates of grade retention and lower need of special education services. Children with extended program participation from preschool through second or third grade experienced lower rates of grade retention (21,9% vs 32,3%) and special education (13,5% vs 20,7%;

see Reynolds – Temple – Robertson – Mann, 2001).

The authors later continued in their research by employing CBA and conducting a cost-effectiveness analyses of early childhood development programmes and services from ages 3 to 9 (see Reynolds – Temple, 2008). They compared three intervention programmes: Carolina Abecedarian Project; Perry Preschool program; and Child-Parent Center program. These three programs provided high quality educational services to children at risk in groups characterized by small classes, focus on language and cognitive skills, and well qualified teachers. Abecedarian program was the most intensive, provided year-round full-day care for 5 years. Perry Preschool program provided the best organized curriculum, on the basis of Piagetian cognitive principle of child-initiated learning. CPC provided the most comprehensive services, as it implemented parent involvement, outreach services and focused on health and nutrition. The difference among these programs was observed also regarding the child-to-staff ratio. The benefit side of CBA included increased earnings in adulthood projected from education attained; benefits to parents from provision of part-day care to their children; benefits to general public included averted expenditures of remedial education and social welfare spending; reduced expenditures to crime victims (resulting from lower rate of crime); and increased tax revenues (due to higher earnings). The results of CBA are presented in Table 9.

Table 9. CBA results per participant in 2002 dollars for examined 3 pre-school programmes.

Costs and Benefits	High/Scope Perry Preschool	Chicago Child-Parent Centers	Abecedarian Project
Program Costs (\$)			
Average program participant	15 844	7 384	35 864
For one year of participation	9 759	4 856	13 900
Program Benefits (\$)			
Total benefits	138 486	74 981	135 546
Net benefits (benefits-costs)	122 642	67 595	99 682
Total benefit per dollar invested	8,74	10,15	3,78
Public benefit per dollar invested (Benefit-cost ratio)	7,16	6,87	2,69

Source: Reynolds – Temple (2008)

Participation in preschool programs has relatively significant effects on school achievement and child well-being. Besides this, high-quality programs for children at risk produce strong economic return, in this case total societal benefits ranging from app. 4 \$ per one dollar invested to over 10 \$ per one dollar invested

(benefit-to-cost ratio). All three programmes showed large return on investment. The CPC programme showed the highest benefit-to-cost ratio, due to the lowest costs (achieved thanks to higher child to staff ratio in the classes). Regarding public benefits alone (i.e. government and victim crime savings), benefit-to-cost ratios ranged

from almost 3 \$ to more than 7 \$ per dollar invested. The positive effects of full-day kindergarten compared to half-day kindergarten have been found to be relatively small and usually did not last for more than a year. Class-size reductions show evidence of positive effects, with economic returns of app. 3 \$ per dollar invested.

Conclusions: Outline of basic CBA parts

Many studies from the field, originally focused on topics such as effects of preschool education as early intervention programme, substance use prevention, foster care, crime prevention, and health care, may serve as good examples how to assess effectiveness of various public services or public investments. We have identified CBA as a proper tool to support evidence-based policy making by providing information on return on investment, with respect to the budget constraints usually associated with the public programmes. CBA allows to compare costs of the

programme with the monetary value of the outcomes delivered. The advantage of this approach is more complex information for decision making process.

Basic principles behind (sample) CBA are as follows (a manual of CBA steps):

- Identify costs/and marginal costs related to the intervention, of these kinds:
 - capital
 - revenue (staff salaries and on-costs; overhead costs; staff travel and subsistence expenses etc.); identify referrals to other services

- in kind costs and voluntary sector input (volunteer staff time; free use of community facilities etc.)
- Identify outcome measure (e.g. in case of our target group, the metric will be **reduced number of children in care**) (and identify who benefits from outcome improvement)
 - Analyse input data
 - total population in the area under the project
 - population at risk (in our case, children identified as at risk of becoming looked after children)

- level of engagement with the target group (% of individuals involved in the project/ receiving the service, as identified by project team)
- level of retention of the cohort (% of individuals who continue in the service after the project completion)
- scale of **impact** in improving/changing the outcome (% success of achieving desired outcome, e.g. getting the individual into employment)
- Identify deadweight (what would happen anyway, business-as-usual scenario)
- for ex-ante CBA determine deadweight by forecasting trends in outcome indicators over the project duration
- for ex-post CBA assess the change in outcome measure of comparator area or cohort (e.g. control group)

(in our case, analysis of trend in the examined area of percentage of children who were identified as at risk of safeguarding, but who then didn't reach the point of safeguarding)

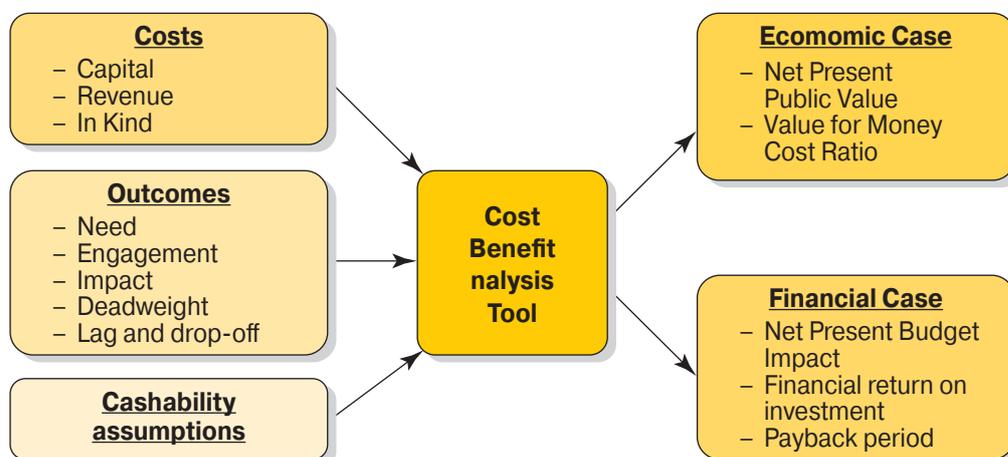
- Account for additionality (assess leakage outside the project area and displacement and substitution – especially in employment outcomes)
- Monetize outcomes in two categories:
 - fiscal benefits (e.g. savings to central and local governments; in our case avoided costs related to prevented placements calculated based on average costs per child in foster or residential care)
 - public value benefits (economic and social impact, overall benefit to the public, including economic growth or improved health and well-being; in our case prevented service costs, saving related to reduced harm to children, improved well-being and future opportunities of children, etc.)

(in our case, use data on costs of children services, looked-after children costs, number of children in care, the total costs of placements, costs related to safeguarding, etc.)

- Convert values to real prices
- Make optimism bias corrections (confidence grades for costs as well as benefits)
- Calculate potential monetary benefit for each outcome
- Estimate lag/drop off (more realistic forecast when a desired outcome will occur or for how long it will sustain)
- Estimate cashability (extent to which a change in outcome/output – such as fewer children in care – will result in reduction in fiscal expenditures, so that the expenditure released from that change may be reallocated elsewhere)
- Use CBA tool to calculate:
 - Economic case – net present public value, value for money Benefit-to-cost ratio
 - Financial case – net present budget impact, financial return on investment, payback period

All CBA steps, the logic of which was presented above, are summarized in the next scheme.

Figure 3. CBA calculation scheme (HM Treasury model).



STUDY OF SOS CHILDREN VILLAGES BELARUS PREVENTION PROGRAM

Introduction

In this part of the report we provide a short overview of the research made by ENCON expert team in order to calculate net effect of the particular social intervention in Belarus using cost-and-benefit analysis. The intervention is a special program of «prevention of losing parental care» implemented in Puchavicy district by SOS Children Villages Belarus. SOS, being an international fund, is present

in Belarus quite extensively with the three major «children villages» providing alternative care for children in Minsk district, Puchavicy district, and the city of Mahileu. Additionally to this they implement a range of activities aimed at families at risk, including those that potentially would decrease the total number of children in need for alternative care. Exactly such a program implemented in the

Puchavicy district was chosen as an object of research.

Puchavicy district is a typical central-Belarus administrative entity with a considerable fraction of rural population which lives in small settlements at some distance from the medium-size industrial centre Mar'ina Horka. The SOS program covers both urban and rural population of the district.

Prevention of losing parental care

Every two children out of 100 in Belarus are deprived of parental care due to a number of reasons. As of 2015 24 395 children were officially considered as being in «socially dangerous situation» living in 13 735 families at risk. Statistically, 6% of them will lose parental care in future. Over 80% of children in alternative care are not orphaned – their biological parents are alive.

In official terminology of the Belarusian state they are called «social orphans».

Belarus has developed rather extensive system of childhood protection, including institutions and measures that prevent children from losing parental care. Despite this, in some places across the country additional efforts are undertaken to strengthen families by

non-state actors. The biggest programs of this kind has been implement by the local brunch of SOS-Children Villages Fund in three Belarusian districts. Further we will consider only activities of SOS-Children Villages undertaken in the Puchavichy district.

The prevention activities are realized by the SOS-Center which was created as a

structural part of SOS-Children Village Mar'ina Horka in 2004 to decrease the need for alternative care and strengthen families of the region. During the years of operation it provided services to over 2 500 children.

Over a half of programs clients are single-parent families with at least 3 children. Children under 14 years old count for 98% of clients. On average, about 15–17 % of enrolled children are officially recognized as being at risk, either by school or by local internal affairs office (usually those are adolescents in conflict with the law) or by local childhood protection body (in this case a child receives an official status of being in socially

dangerous situation). Many of programs clients reside outside of Mar'ina Horka so the services are provided to them by mobile groups, and sometimes they also use facilities of partner organizations.

The range of services provided to the families at risk by the employees of the SOS-Center derives from the needs of the target group: most families here struggle with poverty (which in turn is caused by poor education and stagnating labor market), poor parental and social skills, anti-social behavior in local community (alcohol abuse, violence).

The services provided by the SOS-Center are aimed, first of

all, at ensuring child's physical and emotional safety, increasing feeling of protection, and also correction of learning and emotional abilities. Services for parents are to strengthen their parental skills, self-appraisal and self-esteem, reconstruct their sense of dignity, provide psychological and emotional correction, solve legal and social issues, and strengthen abilities to live descent lives independently.

The timeframe of the analysis includes 10-year period from 2008 to 2017. Average early number of children in the program has been 245 during that time.

Cost-and-benefit analysis

To define the net effect of the efforts of SOS-Center a standard cost and benefit analysis was used (for the description of methodology consult previous parts of the report).

As a first step of the CBA we identified the impact of the intervention. To do so it was needed to construct the «basic scenario», or the hypothetical situation in which the intervention was missing. As a controlled variable we took the official number of children, which lost parental care. We collected the data on 8 districts of the central region for 10-year period. The districts chosen have the same socio-economic, demographic and cultural profile

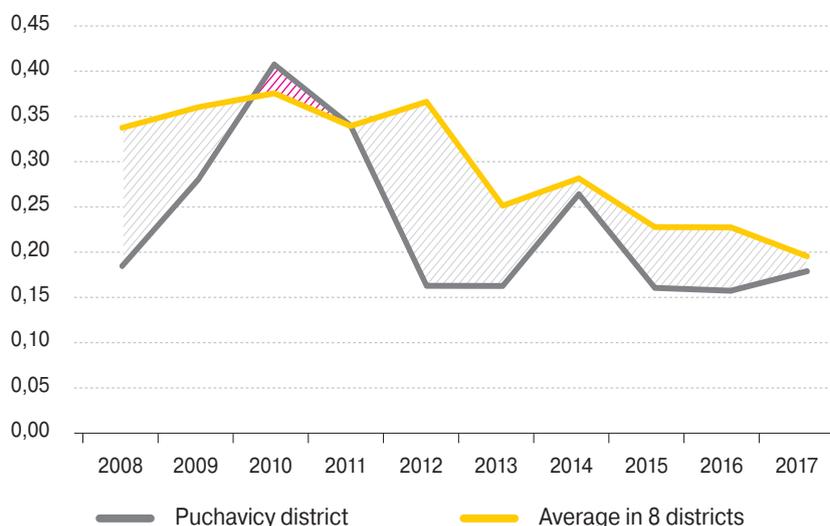
as Puchavicy district: they are placed in eastern part of the central region, don't include large industrial centers, and far enough from the capital city. Those are Biarezinski, Kopylski, Krupski, Lahojski, Lubanski, Staradarozski, Uzdzenski and Cerviensi districts. The average meaning of the controlled variable will serve us as a benchmark, or the «basic scenario».

Filled areas on the Figure 4 correspond to the quantity of children that remained in biological families as compared to the basic scenario. During 10-year period of observation the number of children sent to alternative care in Puchavicy district amounted to 2,27 per

1000 of population of minors. Whereas the basic scenario would give the 2,92 per 1000 share, which is 29% more. It means that the result of social intervention in absolute numbers equals to 88 children not going to alternative care during the observed period (almost 9 children per year).

Second step was to estimate costs of the program, both financial and economic (paid by the society as a whole). Direct costs of the program was calculated using the financial documentation generously provided by SOS-Center, and social costs (which amount to only less than 10% of total) were estimated using normal market benchmarks (Table 10).

Figure 4. Share of children removed from biological families in a given year in total underage population of Puchavicy district and the group of 8 districts, 2008-2017.



Source: own calculations based on the data of the Ministry of education of Belarus.

Table 10. Average early economic cost of prevention program in Puchavicy district, 2005-2017.

Cost item	Summ, USD
1. Operational costs	81 902
2. Capital costs including:	
Depreciation of vehicle	3 000
Alternative costs of capital	1 200
3. Tax and other benefits	300
4. Voluntary labor costs	2 000
Total	88 402

Source: SOS-Center, own calculations If we consider the 10-year period (2008-2017) the costs would be somewhat higher and amount to USD 93 686, early.

The third step in the CBA was to define economic benefits of reducing the number of children in alternative care. Those include two major effects: 1) decrease of public spending on alternative care and 2) increase of the country's total productivity.

Knowing the structure of placement into different types of alternative care in Belarus and

the average costs of each type one can calculate average costs (direct) for 1 child in alternative care. Besides, the fact that a child receives «orphan» status causes several one-time payments that the government is obliged to pay, and average size of those payments is difficult to estimate (for example, families that adopt children have a right for pregnancy benefits, all children leaving alternative care

receive one-time allowance and some of them receive subsidized loans to buy an apartment etc.). So to accurately estimate the financial effect and not to distort results of the research we kept to the minimal threshold in each type of placement (adoption, foster care, institutions and so on) and added USD 600 as an average amount of one-time allowances. Also, keeping in mind the specifics of childhood protection system in Belarus, we subtracted the amount of money that is received by the state from biological parents of the children in alternative care: by law they are obliged to contribute certain amount of money to the alternative care system (but quite often fail to do so which in turn causes even more costs to tackle these cases). Average time in alternative care was estimated to be 8 years, since the average age to enter it equals 11,5. In the end the direct financial benefits of one successful case of prevention amounted to as much as USD 12 423.

Increase of productivity per case was calculated as a potential increase of future contribution to the country's GDP due to growing up in family environment instead of alternative care.

As of 2016 GDP per employed person amounted to USD 10,8 thousand in Belarus. According to the national statistics compensation of employees contributed 47% to the GDP which equals USD 5 101. To construct the time series of future contributions we also implied a moderate

growth rate of 1,5% yearly. There is no hard empirical evidence on the difference in productivity between people who left alternative care and the rest of population so we used the results of psychological study to estimate the scale of productivity losses for the former. This study was performed in 2004 by A. Aladzin on three groups of Belarusian children: living in biological families, foster families and institutions. The study found that there is significant difference in intellectual development and psychological health between those groups. Based on the findings of this study an assumption was made that productivity loss in case of people who left alternative care institutions is 38%, and in case of people raised in foster families – 11%. We also assume that no losses will be generated by placement of orphaned children into care of the families

of origin and adoption (this types of placements make up more than half of all cases).

Since the average age of losing parental care is 11,5 it's likely that, normally, a person enters the productive age in 8 years. The loses will be distributed in time up to another 40 years (standard length of professional career in Belarus), and this is the reason for discounting future loses (we use 4% discount rate). Taking into consideration current composition of children in alternative care by type of placement we can calculate present value of average productivity losses per case: it amounts to USD 9 545.

One should clearly understand that not all of the negative effects of losing parental care were included into the analysis. We had too little data to estimate the productivity loss that comes from increase of number of

crimes and suicides (research implies that orphans are more aggressive, have less empathy and more likely to have anxiety disorder). It's also very tricky to assess losses from reproduction of antisocial lifestyle, violent behavior and reduction of social capital.

Summing up all the above one can state that the prevention program of SOS-Center was both effective in terms of achieved result and economically efficient: the economic benefits of USD 21 968 exceed by far economic costs of USD 10 667 (per case). Benefit-cost ratio equals 2,06 – every dollar invested in the program yielded 2 dollars, creating more than USD 1 million of net economic effect over 10 years of program implementation. It takes 7 years for the intervention to break even. All CBA findings are summed up in the Table 11.

Table 11. Result of cost-and-benefit analyses of SOS-Center prevention program.

Net effect of the intervention, cases per year	8,8
Costs per case, USD	10 667
Present value of benefits per case, USD	21 968
Benefit-cost ratio	2,06
Total net effect over 10 year period of observation, USD	1 060 000

Source: own calculations.

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