

# Strategies to investigate the cost-effectiveness of employment measures in a non-experimental setting

## BACKGROUND: INVESTIGATING COST-EFFECTIVENESS

### Key issues

- Cost-effectiveness evaluation is a way to inform decision makers to get best value for money, but evidence on cost-effective re-employment policies related to health is limited.
- Evaluation needs data on outcomes (e.g. employment, health, wellbeing, social inclusion) and the costs of achieving them.
- Observational studies with appropriate analytical techniques can produce cost-effectiveness information rapidly and with reasonable resources.
- To use the new research strategies, more data should be collected systematically. Especially on outcomes related to health and wellbeing, and robust effectiveness studies need to be conducted.

This policy brief describes evaluation methods which may help decision makers to develop cost-effective policies to reintegrate people with health problems and long term unemployed into labour market. The focus is on non-experimental study settings and pre-conditions to conduct cost-effectiveness studies.

Cost-effectiveness evaluation, also called an economic evaluation, offers information to policy makers to use the scarce resources so that they can achieve the best possible performance and to get best value for money. The key questions are 1) is the policy effective in generating aspired outcomes, and if 'yes' 2) are the outcomes worth paying the costs of resources used compared to other ways to use the resources<sup>1,2</sup>. That means that investigating cost-effectiveness requires comparing the resources (the costs) used by each policy to generate outcomes with the outcomes achieved (the effectiveness).

Quite many of the evaluations of active labour market policies (ALMP) ignore the 'cost' side<sup>3</sup>. Only few evaluation studies have recognised the role of health in labour market and in ALMPs, either.

When a policy has both lower costs and better effectiveness compared to other policies, it is a cost-effective policy. However, when a policy is more effective (better outcomes), but costs more, policy makers have to decide whether the better outcomes are worth paying. Cost-effective or 'worth paying' does not mean that the policy needs to bring savings. If the aim of the policy is to improve health, wellbeing and quality of life, it is 'worth paying' when the outcome gains are greater than achieved by spending the same resources to other policies aiming the same outcomes.

Judging the 'worth' of outcomes would be easier if the outcomes were measured in monetary values. This is the case in one type of cost-effectiveness evaluation, cost-benefit analysis. Although it is possible to value employment outcomes into money, it is challenging to put monetary values to health and wellbeing outcomes.

A randomised controlled trial (RCT) is the best design to provide robust evidence on the cost-effectiveness of policy measures<sup>4</sup>. It is resource and time consuming, sometimes felt unethical, and it is quite often not feasible e.g. in evaluating small or local employment programmes. Quasi-experimental designs are more often feasible instead of RCT, but do not give fast answers (example<sup>5</sup>). New instruments need to be developed to make comparisons possible. Observational designs have also been used: costs and outcomes are observed in 'non-experimental' settings, and statistical methods are used to adjust for differences between the affected individuals and the comparison group (example<sup>6</sup>). Modelling is an alternative to use previous evidence to study local settings and when politicians need results rapidly (example<sup>7</sup>). Because models require data from previous evaluations, observational studies or routine management information systems, reliability of models is dependent on the quality of the data available.

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### Project: Cost-effectiveness of policies aimed at prolonging working careers - the role of health (EU-HEMP)

EU-HEMP is an EU-funded project studying the impact of health in increasing employment rate and labour market participation. This series of policy briefs is produced as part of the project.

The principal objectives of the project are the following:

1) Producing and gathering evidence on the cost-effectiveness of strategies aimed at reintegration of disabled people, people on sickness leave and long-term unemployed people into the labour market and policies aimed at prolonging careers of near-retirement people. In short, we study the role of health in increasing employment.

2) Policy recommendations for the design of more cost-effective social policies will be made based on data analyses, comparative policy analysis and review of best practices.

3) Creation of an international expert network in the field of rehabilitation, reintegration, disability and health policies in connection with labour markets and focusing on the cost-effectiveness of these policies.

#### Website

The project is funded by the European Commission (agreement no. VS/2014/0174) together with the National Institute for Health and Welfare.

## COST-EFFECTIVENESS OF EMPLOYMENT PROGRAMMES FOR PERSONS WITH MENTAL HEALTH PROBLEMS: STANDARDIZED RE-EMPLOYMENT RATIO INSTEAD OF EXPERIMENTAL DESIGN

Commissioned by the Dutch Ministry of Social Affairs, a new instrument was developed to evaluate the effectiveness of employment programmes for unemployed persons with health problems in a non-experimental setting<sup>8,9</sup>.

The standardized re-employment ratio (SRR) gives insight in the added value of a specific measure compared to 'care as usual'. The observed number of persons entering paid employment is divided by the expected number of persons entering paid employment. SRR higher than 1 indicates that the employment strategy results in *more* persons in employment than expected.

Two longitudinal cohort studies were used to develop a prognostic model to estimate the expected number of persons entering paid employment: 1) a random sample of Dutch unemployed persons from Statistics Netherlands with information on health, personal and household characteristics and employment transitions during 10 years of follow-up.<sup>8</sup> 2) A cohort of long-term unemployed persons with psychological health problems living in the four largest cities with information of perceived health, personal and household characteristics and employment status two years follow-up<sup>10</sup>. Factors that were most important in predicting entering paid employment were combined to estimate the probability of entering paid employment for each individual.

The developed instrument was applied in the Netherlands to evaluate the effectiveness of three different employment programmes: programme A (IPS for young patients with a first episode of psychosis), programme B (IPS for chronic psychiatric patients), and programme C (integrated employment programme for unemployed persons with psychological problems). For a period of one year, each person that entered paid employment was registered to calculate the observed number of persons. The expected number of persons was estimated with the developed prognostic model. Programme A had an SRR value of 1.9. This means that this specific employment measure resulted in a 90% increase of the number of re-employed persons compared to 'care as usual'. Programme C had an SRR value below 1. This means that the programme did not have an added value compared to 'care as usual' in the first year. However, the one year period of registration of the persons may have been too short, because of the 'first train, then place' strategy of this specific employment programme. A longer follow-up period was recommended.

**Table 1.** Standardized re-employment ratio (SRR) and return on investment period (ROI) of three employment programmes for unemployed persons with mental health problems

	Probability of entering paid employment			ROI (years)
	Observed (%)	Expected (%)	SRR	
Programme A (n=120)	29.3%	15,5%	<b>1,89</b>	<b>6,2</b>
Programme B(n=118)	16,5%	13,7%	<b>1,20</b>	<b>&gt;8</b>
Programme C (n=340)	6,3%	9,5%	<b>0,66</b>	<b>&gt;8</b>

SRR=standardized re-employment ratio, ROI=return on investment period

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In addition, a cost-benefit analysis was done of the three employment programmes. An increase of persons entering paid employment resulted in saving costs for social benefits and medical consumption, and generating more income out of work. The return on investment period (ROI) was calculated, taking into account the costs of the employment programmes. The ROI was 6.2 years for VIP Amsterdam and more than eight years for the other employment programmes.

## SIMULATION MODELLING: FAST BUT ONLY AS GOOD AS THE DATA

One way to provide estimates of cost-effectiveness and pay-offs relatively rapidly is to combine results from previous studies and data from different sources to simulate impact pathways (decision tree pathways). Simple decision analytic modelling simulates, what would happen to individuals, and what would be the costs, outcomes and economic consequences of different interventions. It works also for small and local interventions, if there is (robust) evidence and data available. Simulation modelling has been used in UK e.g. on mental health promotion and mental illness<sup>7</sup>.

The Centres for Economic Development, Transport and Environment of North Karelia granted funding from European Social Fund to study economic consequences of two ALMP measures, the highest-level increased pay subsidy and rehabilitative work activity in Eastern Finland<sup>11</sup>. These measures are intended for the job-seekers, who need a great deal of support and guidance with employment, as well as with health, wellbeing, social participation and coping with life. A person's wellbeing should be improved before re-employment is possible, but these outcomes of ALMP measures are not systematically collected and registered. This study wanted to recognise also the wellbeing outcomes and related consequences.

It was not possible to organise even quasi-experimental design, and therefore simple decision modelling was carried out. Four impact pathways were identified: a) employment, when unemployment benefits are replaced by wages, b) the clarification of the plans e.g. education followed by employment, c) increase in wellbeing followed by reduction in the need for social and health services, and d) improved coping with life, civil participation and active citizenship followed by benefits to the community.

Data on costs and outcomes were obtained from previous research, secondary data, statistics, and expert opinions. In particular, the Finnish data of social wellbeing and inclusion outcomes were limited. The employment pathway was the only one possible to fully populate with acceptable data and complete the calculations. The impacts on the distribution of income transfer costs were calculated separately.

Our data enabled the estimation of some savings in mental health care utilization, which were small compared to, for example, the productivity gains. Even without proper information of the savings due to increased wellbeing, and when the productivity gain was taken into account, the pay-offs of the highest-level increased pay subsidy exceeded the costs. Costs of rehabilitative work activity exceeded the pay-offs.

Previous research indicates that ALMP measures may impact also individuals' wellbeing in a positive manner, but existing studies on wellbeing outcomes are primarily qualitative or insufficient. In order to use modelling, we need (robust) evidence and quantitative data about changes in the wellbeing of the participants. This means that instruments to systematically measure and gather information about the wellbeing outcomes need to be developed.

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## RECOMMENDATIONS

European Union Member States need cost-effective strategies to re-integrate long-term unemployed and people with health problems into labour market. Evidence on cost-effective policies is limited. Especially the role of health and wellbeing and data on costs is often missing to make conclusions of cost-effectiveness.

Robust cost-effectiveness evaluations using experimental settings and large sample of people take time and need resources and are not always feasible. Ways to provide more rapidly and less costly conclusions on cost-effectiveness of re-employment strategies related to health should be developed. It is possible, for example, to develop instruments to conduct cost-effectiveness evaluation even when the comparison group is not available. Models are available to simulate impact pathways (costs, outcomes and economic consequences) and make conclusions about cost-effectiveness. Conclusions of cost-effectiveness and cost consequences are possible by adding economic dimension to outcome studies. Adaption of results from one country to another country might be possible as well.

For all above mentioned strategies, better data on effectiveness of policy measures, especially on health and wellbeing outcomes, as well as data on costs to generate outcomes, is essential. The costs used by stakeholders other than those directly operating the ALMP measure should be considered as well: for example health and social care costs, costs for individuals and families as well as productivity costs. Data on savings and gains, e.g. productivity gains are as important as costs. Subsidies and other transfer payments are relevant in employment and health policies. For developing instruments to help evaluating small and local programmes information on determinants of individuals entering payed employment is important. Also modelling requires this information as well as evidence on associations between health and wellbeing and service use.

Collecting better routine data on employment, re-employment, health and wellbeing as well as service use is crucial for developing ways to provide evidence on cost-effectiveness, and should be developed.

Better use of cost-effectiveness evidence in policy making requires greater understanding between policymakers, other stakeholders and researches on cost-effectiveness and economic evidence. Discussions between policy makers from social, health and labour market sectors and researches is important to develop understanding as well as improve using evidence and designing more cost-effective policies to re-integrate people with health problems into labour market.