



## Project Final Report

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## Section 1 – Final publishable summary report

### OSPI-Europe



Logo:

**Project title: Optimizing suicide prevention programs and their implementation in Europe**

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## 1.1 Executive summary

A consortium of 14 partner institutions from 10 European countries started the project “Optimizing suicide prevention programs and their implementation in Europe” (OSPI-Europe) on October 1st, 2008. The project is funded by the European Commission within the 7th Research Framework and runs until March 31st, 2013. Main aim of the project is to provide health politicians, stakeholders and the European Commission with an evidence-based and efficient concept for suicide prevention with corresponding materials and instruments for multifaceted intervention, as well as guidelines for the implementation process.

Within the running time of OSPI-Europe a state-of-the-art intervention program on suicide prevention was implemented in four European regions (WP 6-9). The OSPI-Europe intervention is a five level approach including education of GPs using training sessions and videos (Level 1), public relations activities (Level 2), training sessions for community facilitators such as priests, social workers, geriatric care givers, teachers, and the media (level 3), offers for high risk groups (persons after suicide attempt) and support of self-help activities and relatives (Level 4), and restriction of lethal means (Level 5). It builds on concepts and materials developed within the European Alliance Against Depression (EAAD, [www.eaad.net](http://www.eaad.net)).

For evaluation, the prior developed standardised instruments to assess and evaluate primary, secondary, and intermediate outcomes have been adapted for and implemented in the intervention regions. While changes in rates of completed suicides and non-fatal suicidal acts are considered as primary outcomes, effects on general population, general practitioners, community facilitators, and patients and their relatives (e.g. attitudes towards depression) are classified as intermediate outcomes. Baseline and follow-up data of these have been successfully assessed. Two waves of a general population survey were conducted in every intervention and control region. Data on committed suicides and non-fatal suicidal acts have been collected as available up to now.

Meanwhile the intervention was implemented and finished in four model regions in Germany, Hungary, Ireland, and Portugal (WP 6-9). Multidisciplinary advisory panels have been established as well as an opening ceremony took place as the official launch of OSPI-Europe interventions in each intervention region. Materials for a public awareness campaign have been adapted to regional conditions and were spread within each intervention region. To assure trainings on depression and suicidality in a standardised manner train the trainer sessions have been conducted and training materials have been adapted to regional conditions.

Within the comprehensive evaluation of OSPI-Europe a questionnaire on health economic issues and process analysis was developed and filled in by every intervention region. Process and health economic analysis (WP 5, WP 11) was conducted during whole runtime of OSPI-Europe.

Several dissemination activities took place. While an official OSPI-Europe website was launched in October 2008, several press releases were published on international, national, and local level. Furthermore, OSPI-Europe was presented at several scientific meetings and conferences and six articles have already been published within scientific journals.

Next to the scientific and technical impact, OSPI-Europe had an impact on related fields of research (e.g. suicidology, prevention, health care), and impact on target groups (e.g. general population, general practitioners, community facilitators, patients and their relatives).

## 1.2 Summary description of project context and objectives

### Background and Aims

Suicide is a significant public health issue. This is especially the case in Europe where the highest rates for completed suicide in the world are found. Every year more than 58,000 persons commit suicide within the European Union. According to WHO data, suicide is among the 10 leading causes of death for all ages (World Health Organization, 2003). In 1998, suicide represented 1.8% of the global burden of disease and it is expected to increase to 2.4% in 2020 (Bertolote & Fleischmann, 2005). In most cases, a suicide is not only a premature end of a human life but additionally effects and traumatises family members and other persons involved in the suicide. Therefore, in 1984 the WHO's European Member States defined the reduction of suicide as one of their main health policy targets and reinforced that target in several position papers (World Health Organization, 2002).

Closely related to completed suicides are non-fatal suicidal acts which encompass parasuicides, suicide attempts, and deliberate self harm or self-inflicted injuries. They are the strongest predictor for completed suicide especially in males (Hawton et al., 1998). The rate of non-fatal suicidal acts is estimated to be about 10 times higher than that of suicides. In Europe, the highest rates for non-fatal suicidal acts are found in younger women, whereas the highest rates for suicide are found in older men. These data suggest that these acts represent different aspects of suicidality which call for differing prevention strategies. Nevertheless, every global strategy to prevent suicide should also include the prevention of non-fatal suicidal acts, not only because they are the strongest predictor for suicide but also because of their great medical and health economic impact.

The main aim of OSPI-Europe is to provide health politicians, stakeholders and the European Commission with an evidence-based and efficient concept for suicide prevention with corresponding materials and instruments for multifaceted intervention, as well as guidelines for the implementation process.

This aim was achieved by the following five objectives:

Development of a state of the art intervention concept for the prevention of suicidality

Analysis of differences in suicide rates among European countries and harmonization of procedures for definition, assessment and evaluation of suicidality

Implementation of comparable multilevel community-based prevention interventions in four European model regions

Evaluation of the interventions in a pre-post, controlled and cross-nationally comparable design concerning effectiveness, efficiency, involved processes and the interplay between the single intervention measures

Distribution of an optimized suicide preventive intervention concept, corresponding materials and instruments, and recommendations for implementation to policy makers and stakeholders

### Work strategy and general description

Development of a state of the art intervention concept for the prevention of suicidality that considers current evidence based best practices and international experiences with multilevel interventions, such as that of the EAAD (WP 02)

A state of the art intervention concept was based on a thorough review and evaluation of published reports of prevention programmes and consultation with key players. Strong evidence for the efficacy of this concept concerning prevention of suicidality has been shown by the quite strict evaluation of the Nuremberg Alliance against depression which was distinguished by a priori defined outcome criteria, a control region, and a one year baseline (Hegerl et al. 2006). Other elements, such as restricting access to lethal means were included in the intervention concept. The decisions about the elements and enhancements of the optimised intervention programme was based on available information from recent reviews and by systematically screening the literature concerning further, more recent publications about prevention of suicidality. Criteria for selecting single measures were, as far as possible, rooted in scientific evidence for cost-effectiveness. However, since this is lacking to a large degree, prima-vista plausibility was also a selection criterion. Care has to be taken that the different measures of the whole intervention package unfold not only additive, but also, synergistic effects. The target population in which suicide has to be prevented ranged from adolescence (high rate of non-fatal suicidal acts) to old age (high rate of suicide).

Analysis of differences in suicide rates among European countries and harmonisation of procedures for definition, assessment and evaluation of suicidality in Europe (WP 03-05)

Within Europe, there are considerable cross-national differences in published suicide rates. Suicide rates per country range from 3 per 100,000 in Greece up to 44 per 100,000 in Estonia (WHO/Europe, 2004). Several possible

explanations for these differences include societal factors (e.g. attitudes towards suicide), the prevalence of psychiatric morbidity (e.g. alcoholism, depression), the choice of more or less lethal suicide attempt methods and statistical artefacts. In Europe, a detailed and comparative analysis of such aspects was lacking by the start of OSPI-Europe. Within OSPI-Europe, these aspects were analysed in order to appropriately adapt intervention programmes to the specific situations in different European regions.

Differences in the definition and the procedure for assessing suicide rates exist between countries. Such differences represent a significant challenge of field work and reduce the validity of available official suicide statistics and influence the rates of hidden suicides. Categories such as “unknown reason of death” or “signs, symptoms and ill defined conditions” might be used more often in some regions than in others for a variety of reasons and changes of corresponding rates might show an inverse relationship to those of suicide rates. These differences and relationships were systematically analysed in the European countries. It was aimed to give feedback to the health ministers and other governmental organizations responsible for collecting and maintaining health statistics in EU member states regarding where and why validity is questionable and how it could be improved.

#### Implementation of comparable multilevel community based prevention intervention in four European model regions (WP 06-09)

The intervention concept worked out within WPO2 was implemented in model regions in four countries. The four countries were chosen to represent different EU-health systems and to represent different socio-cultural characteristics. Intervention and control regions in each of the model countries were identified beforehand; they were as follows: Hungary (Miskolc population 180,000 intervention region, Szeged population 200,000 control region), Ireland (Limerick population 83,863 intervention region, Galway population 183,863 control region), Portugal (Amadora population 200,000 intervention region, Almada population 350,000 control region) and Germany (Leipzig population 507,000 intervention region, Magdeburg population 230,000 control region).

The OSPI-Europe model intervention was based on the Nuremberg intervention approach (Nuremberg Alliance Against Depression; Hegerl et al., 2006) which included education of GPs using training sessions and videos (level 1), public relations activities (level 2), training sessions for multipliers such as priests, social workers, and the media (level 3), offers for high risk groups (persons after suicide attempt) and support of self-help activities (level 4).

This approach provided the first controlled cross-nationally comparable design of suicide prevention programs in Europe and allowed for an economic evaluation of the model, an evaluation of the program's effectiveness, and the provision of action-based recommendations and materials that are based on real-world experiences.

#### Evaluation of the community-based intervention in the four model regions (WPs 05, 10, 11, 12, 13)

Evaluations was performed concerning suicide prevention efficacy and intermediate outcomes, as well as regarding the implementation process and health economic aspects (see figure 1).

Primary outcome for evaluating the suicide preventive efficacy of the intervention concept were rates of suicidal acts (suicides + non-fatal suicidal acts). The main hypothesis is that rates of suicidal acts (completed suicides + non-fatal suicidal acts) per 100,000 people aggregated from all four intervention regions show a statistically significant reduction after one year follow-up in comparison to one year baseline and in comparison to the control regions. The secondary outcome were the aggregated non-fatal suicidal acts from all four intervention regions. The hypothesis is that rates of non-fatal suicidal acts per 100,000 people show a statistically significant reduction after two years follow-up in comparison to one year baseline and in comparison to the control regions. Since official statistics provide suicide rates for different regions and also for preceding years, changes in an intervention region can be compared to previous changes in the same region and to that of non-intervention regions. Data from official statistics are not available for non-fatal suicidal acts, except for Ireland. These data were collected prior to the start of interventions (baseline data) both in the intervention and the control regions. The same holds true for several other intermediate outcomes (e.g. changes in attitude or knowledge of the general population, changes in prescription rates of antidepressants).

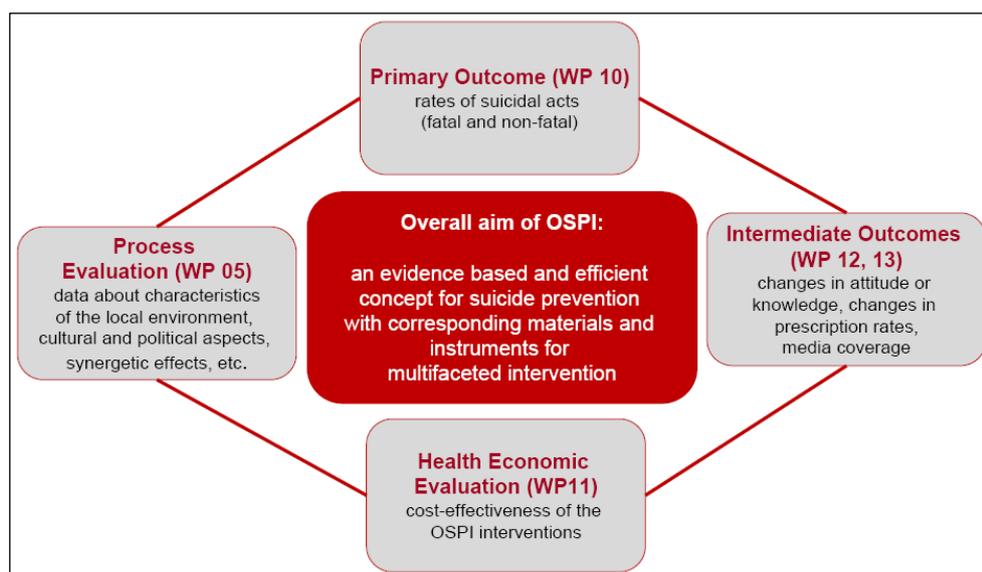


Figure 1 OSPI-Europe evaluation concept

Showing that a multilevel intervention package has effects on suicidality raises the question which of the different intervention elements are most effective, and similarly which elements are the most cost-effective. These questions are difficult to answer because a global effect might result from synergistic interactions between the single measures and because of the smaller statistical power of the respective single measures. It is unrealistic to prove effectiveness for every possible measure or even to compare different measures concerning the effectiveness or efficiency. However, evaluation of intermediate aspects and process evaluation helps to get a deeper understanding of the mechanisms involved in the global effects and which measures might be redundant or could be optimised.

A catalogue of evaluation instruments concerning for example attitudes of the general population or certain key groups (e.g. primary care providers, teacher, priests), concerning media coverage of suicidality was assembled. Several new evaluation aspects were added. Of special interest was the evaluation of the process of the implementation of the community-based interventions. In order to address the implementation of the guidelines in daily practise, capturing data about the actual process of implementation provided valuable information about the obstacles encountered and the fidelity of the implementation in the various model regions. Specifically at play are the characteristics of the local environment, which have the potential to influence both suicidality and the effective implementation of a prevention program. Key issues to be considered are prevailing local attitudes toward mental health treatment and suicidality, local health care structures and resources, other ongoing local actions targeting suicidality or related health aspects and historical, cultural and political aspects. This information was gathered at the local level with guidance and input from experts in this area. This contextual information was used to aid comparisons between intervention and control regions and between the four interventions sites. The expected findings informed the praxis transfer aspect of the project and are useful to the wide European community.

Health economic evaluation of suicidality and cost-effectiveness of the intervention is of special relevance for policy makers who have to make choices whether and how to invest scarce prevention resources. Often money is invested from one budget; however savings are made in another. This was considered in the health economic analysis that calculated the impact of the intervention with respect to cost-effectiveness, cost-offset and cost-benefit.

Dissemination of definitions, guidelines, and materials for a best practice suicide prevention programme in Europe (WP 14)

The aim of the project was to provide EU countries with clear guidelines, concrete materials and instruments necessary to implement effective and efficient suicide prevention. Based on the evaluation outcomes, a newly optimised and improved intervention concept was developed. Beyond developing the necessary evidence and recommendations for suicide prevention strategies, effective dissemination strategies of the results are essential to this aim. Thus strong publication and public relations activities accompanied the project from the beginning and had continued for the project's duration. These activities concerned the broad public, since encouraging discussion about

depression was part of the intervention strategy. Further target groups were the scientific community and policy makers and stakeholders both in EU countries and the EU itself.

A manual on suicide prevention that addresses policymakers and stakeholders in the member states and the EU is one of the outcomes of the project. The manual compiled action-oriented policy recommendations as to how to best fight suicide in the EU; recommendations aimed to be sensitive to the different contexts of EU-countries. The manual provides the basis for a concerted action to reduce suicide in EU-member states and thereby contributes to the strengthening of the European Community.

### Management structure and procedures

The Project Coordinator ensured the smooth operation of the project and guaranteed that all efforts were focused towards the objectives. He submitted all required progress reports, deliverables, financial statements to the European Commission, and, with the assistance of GABO:mi he was responsible for the proper use of funds and their transfers to participants. The OSPI-Europe office was established by and based at the coordinator in Leipzig and at GABO:mi in Munich. The Project Office at the Coordinator was concerned with the scientific management and the co-ordination of all research activities. The Project Office at GABO:mi was responsible for administrative, financial and contractual management and the organisational co-ordination of the project activities.

The Project Governing Board was in charge of the political and strategic orientation of the project and acted as the arbitration body. It met once a year unless the interest of the project required intermediate meetings. The Project Coordination Committee consisted of all work package leaders and the Coordinator and was in charge of monitoring all activities towards the objective of the project in order to deliver as promised, in due time and in the budget. The Project Coordination Committee met every six months during the funding period. Furthermore, a scientific advisory board was implemented to ensure a high standard of research and monitor the progress of the project by taking part in the annual Governing Board Meetings.

Panel members were

Prof. James Coyne, Pennsylvania, USA

Dr. Jordi Alonso, Barcelona, Spain

Mr. Jürgen Schefflein; Brussels, Belgium

Prof. Jochen Gensichen, Jena/Frankfurt, Germany

### Objectives of OSPI-Europe:

- Development of a state of the art intervention concept for the prevention of suicidality
- Analysis of differences in suicide rates among European countries and harmonization of procedures for definition, assessment and evaluation of suicidality
- Implementation of comparable multilevel community-based prevention interventions in four European model regions
- Evaluation of the interventions in a pre-post, controlled and cross-nationally comparable design concerning effectiveness, efficiency, involved processes and the interplay between the single intervention measures
- Distribution of an optimized suicide preventive intervention concept, corresponding materials and instruments, and recommendations for implementation to policy makers and stakeholders

### 1.3 Description of the main S&T results/foregrounds of OSPI-Europe

#### WP02: Review of evidence base for suicide prevention and development of a state of the art intervention concept for the prevention of suicidality

The best practice interventions have been identified by summarising core elements of successful national strategies for suicide prevention programmes and review articles. Best practice interventions of suicide prevention have been defined with the help of literature and strategies review. The identified core elements are: cooperation with general practitioners (GPs) to improve their knowledge and abilities in detecting and managing suicide risks; public awareness campaigns and cooperation with local media to improve public attitudes on depression and facilitate help seeking; training sessions for gatekeepers, multipliers and community facilitators on the detection of depression and suicide risks; services and self-help activities for high-risk groups to facilitate access to professional help; restriction of access to potential lethal means for suicide; improvement of access to care (cf. van der Feltz-Cornelis et al., 2011 and D02.01). A questionnaire on the topic of restrictions of means has been developed and was distributed among the experts in Europe.

Furthermore WP02 prepared guidelines on the implementation of best practice interventions. Within the guidelines the OSPI-Europe model was described. The OSPI-Europe model intervention is based on the Nuremberg intervention approach (Nuremberg Alliance Against Depression; Hegerl et al., 2006) and includes education of GPs using training sessions and videos (level 1), public relations activities (level 2), training sessions for multipliers such as priests, social workers, and the media (level 3), offers for high risk groups (persons after suicide attempt) and support of self-help activities (level 4), and restriction of access to lethal means (level 5) (see figure 2). Further, core and optional guidelines were set in order to be implemented in all OSPI-Europe intervention regions (table 1).

The identification of the best practice interventions and the development of guidelines for suicide prevention are the two most important results. Both served as a basis for the implementation of the interventions in the four intervention regions. The guidelines were published in a peer-reviewed journal (van der Feltz-Cornelis et al., 2011).

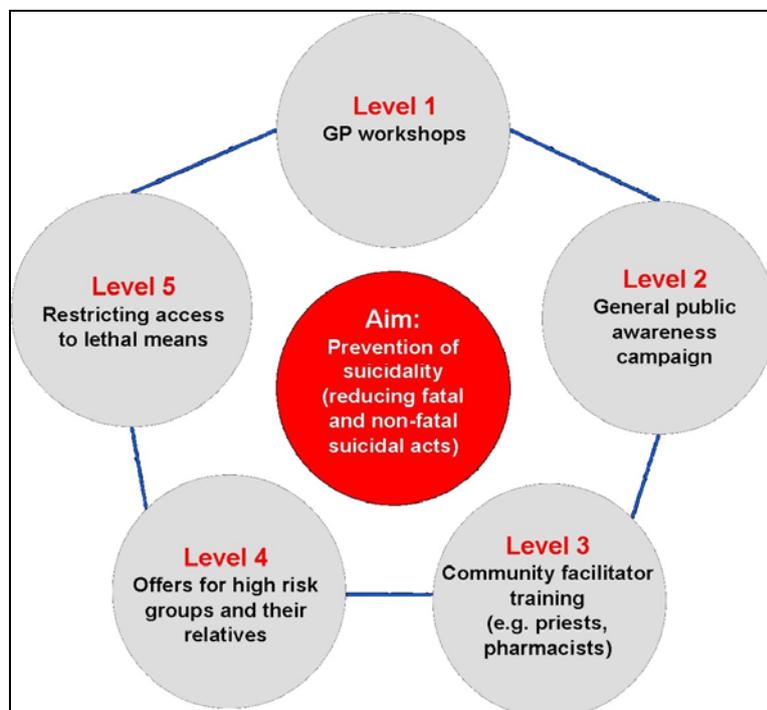


Figure 2 5-level approach in OSPI-Europe

Table 1 Core and optional intervention measure in OSPI-Europe

		Core	Optional
Level 1	Target group	GP	Paediatricians
			Primary care nurses/public health nurses
			Primary care psychologists, social workers, etc
	Intervention measure	CME activities (training courses etc)	Telephonic helpline for GPs
		Informational videos/DVDs for patients	Brief CBT training for psychiatric professionals
		Educational videos/DVDs for GPs	
Level 2	Target group	General public	
	Intervention measure	Flyer	Placards (4*5m)
		Poster (large, A0)	Poster (medium, A1)
		Poster (small, A3)	Poster (very small A4)
		Opening ceremony	Brochures
		Press conference	Press kits
		Well-known patron	Informational CDs
Public informational events (e.g. depression day, jogging against depression)	Cinema spot		
Level 3	Target group	Pharmacists	Hotline professionals
		Priests (main religion)	Psychotherapists
		Police	Prison professionals
			Alternative practitioner
			Teachers youth 15-19
			Enterprises health care professionals
			Medical secretary
			Undertaker
			Taxi driver
			Midwives & paediatric/obstetric nurses
			Journalists
			Other social workers (not in primary care)
			Counselling centre workers
			Carers for the young
			Carers for the elderly
	Intervention measure	TTT seminars	Workshops for journalists
Information seminars			
Media guidelines for journalists			

		Core	Optional
Level 4	Target group	Patients and their relatives	High risk groups
	Intervention measure	Support for self-help groups for depression	Discharge procedure review
		Emergency cards for high risk patients defined by psychiatric assessment after suicide attempt	Self-help groups for relatives (bereaved)
		Information material	Informational videos for high-risk groups
		Postcards from the EDge project	
Level 5	Intervention measure	Identification of suicide hot spots	information at hotspots (e.g. emergency telephone number)
		If possible, construction of barriers at jumping sites	
		During CME courses: warnings concerning TCA (especially larger packages) and other drugs with toxicity on overdose	

### **WP03: Analysis of methodological difficulties and development of evaluation methodology regarding the registration of suicidal acts (primary outcome) and recommendations for method-specific suicide prevention**

To define suicidal acts, a literature review was conducted of all articles published in peer-reviewed journals through electronic databases MEDLINE, PsychINFO and PsychARTICLES. Finally, 66 references were sorted out and included in the review.

This literature review resulted in a study protocol "Study protocol for evaluation of OSPI-Europe WP 06-09. The definition of primary outcome criteria (suicides and non-fatal suicidal acts)" and "Recommendations for tools to assess non-fatal suicidal acts" (D03.02) as well as a "Report on methodology to assess the reliability of official suicide statistics".

The study protocol comprises (1) operational definitions of primary outcome criteria for OSPI-Europe project evaluation purposes, and (2) a description how primary outcome of the OSPI-Europe project was evaluated.

A thorough overview of expressions applicable for suicidal acts with non-fatal outcome was presented in deliverable D03.02 titled "Recommendations for tools to assess non-fatal suicidal acts". The issue of possible 'hidden' suicides in Europe and respective estimation quotas was addressed in the "Report on methodology to assess the reliability of official suicide statistics". This report also addresses guidelines of suicide registration. Furthermore suggestions have been made how to improve the quality of suicide registration in the EU. Databases on suicide methods in the intervention/control sites and in 16 European countries were compiled.

Outcomes of the work were published in peer-reviewed journals (Värnik, P et al., 2010a, 2010b; Värnik, A et al., 2011; Värnik, P et al., 2011).

### **WP04: Analysis of methodological difficulties and development of a standard evaluation methodology for intermediate outcome criteria**

Following an extensive literature review on intermediate outcome criteria measures, intermediate outcome measures were recommended and agreed by the partners involved in WP04 and other members of the OSPI-Europe Consortium. Results of the literature review were also presented at an International conference and prepared for publication.

It was agreed on a standardised methodology for the assessment of intermediate outcome measures at OSPI-Europe levels 1 (Training programmes for GPs), 2 (General public awareness campaign) and 3 (Community facilitator training). Measurement instruments have been developed and baseline and follow-up questionnaires for the OSPI-levels 1, 2 and 3 have been compiled and made available to the partners of WP06-09 for data assessment (see table 2).

Furthermore, a train-the-trainer programme for trainers involved in the market research company conducting the telephone survey among the general public in the 4 OSPI-Europe intervention regions and the 4 control regions was developed and conducted prior to the first and second wave of the general population survey.

Further, guidelines for the standardised evaluation of synergistic effects in the intervention region have been finalised.

Table 2 Measurement instruments for levels 1, 2, and 3

Target Group		Questionnaires
General Public	Attitudes towards depression	Depression Stigma Scale, DSS (Griffiths et al 2004)
	Attitudes towards help-seeking	Attitudes Toward Seeking Professional Psychological Help Scale-Short Form, ATSPPH-SF (Fischer et al 1995)
	Mental Health	Mental Health Inventory 5 (Berwick et al 1991)
	Mental Health	Questionnaire on alcohol consumption
	Affected by Depression	EAAD questionnaire
	Sociodemographic characteristics	WHO Disability Assessment Schedule II (World Health Organisation 2000)
General Practitioners	Demographic characteristics	Age, gender, education, current position
	Previous training	Previous relevant training in depression, suicidality
	Prevalence of deliberate self harm, suicide and mood disorder in GP practice	EAAD Questionnaire for GPs
	Attitudes towards depression	Depression Attitude Questionnaire (Botega 1992)
	Attitude toward suicide prevention	Attitude toward suicide prevention scale (Herron et al 2001)
	Confidence in assessing and managing suicidal patients	Confidence scales (Morriss et al 1999)
Community Facilitators with clinical background	Demographic characteristics	Age, gender, education, current position
	Previous training	Previous relevant training in depression, suicidality
	Attitudes towards depression	Depression Stigma Scale (Griffiths et al 2004)
	Ability to recognize appropriate responses to suicidal clients	Suicide Intervention Response Inventory, SIRI-2 (Neimeyer et al 1997)
	Confidence in assessing and managing suicidal patients	Confidence Scales (Morriss et al 1999)
Community Facilitators without clinical background	Demographic characteristics	Age, gender, education, current position
	Professional experience with suicidality	Contact with suicidal persons
	Previous training	Previous relevant training in depression, suicidality
	Attitudes towards depression	Depression Stigma Scale (Griffiths et al 2004)

Target Group		Questionnaires
	Knowledge about suicidality	An adaptation of the Intervention Knowledge Test (Tierney et al 1994)
	Confidence in identification of people who are suicidal	Confidence Scale (Capp et al 2001)

### WP05: Process analysis

Data collection for process analysis is very extensive and had to be prepared thoroughly. A first step was to compile analytical background reports on the four intervention countries. Data collection instruments gathering data on the conduct and progress of the implementation of interventions in each of the four countries were developed, adapted and extended constantly.

Training sessions with researchers were developed and conducted in order to prepare them for conducting qualitative interviews. Researchers have been advised of the option of conducting a focus group with stakeholders in order to reduce the number of interviews whilst achieving the required number of participants. Partners were also supervised in completing the process evaluation questionnaires.

At the end of the project, 4 phases of data collection (qualitative interviews and focus groups) have been completed. 20 questionnaires were completed by the four intervention partners (CR01, CR07, CR08, CR11). Further, data for the process evaluation has been supplemented by participant observation at OSPI-Europe meetings conducted by the WP05 researcher (see table 3).

Table 3

	Interviews	Focus Groups	CCI Workshops	Questionnaires	Total data collection
Germany	14	4	1	5	47 Interviews 15 focus groups 6 meetings observations/fieldnotes 5 workshops
Hungary	10	4	1	5	
Ireland	13	3	1	5	
Portugal	10	1	1	5	
Observations at implementation team meetings		6 meetings' fieldnotes			
Synergistic effects workshop		1 (workpackage leads and intervention site researchers)			
Optimisation of 5-level approach workshop		3 focus groups (all OSPI-Europe leads and researchers)			

The data was analysed in regard to implementation issues and lessons learned from process evaluation data. Examples can be found in a full report on "Optimisation and Key Lessons Learned from OSPI Implementation and for each Intervention Region and in relation to each Intervention Level" that has been prepared and submitted.

The Community Capacity Index (CCI) was used to assess the added value for regions in engaging in a multi-level intervention and the sustainability of local activities. All four partner regions completed a CCI as well as a network mapping exercise in order to explore the networks developed to implement OSPI-Europe interventions. Focus groups were used to conduct a network mapping exercise, followed by a workshop to complete and evidence the CCI tool. These were conducted with significant stakeholders in 3 intervention regions (Germany, Hungary and Ireland) to allow the local network to give an overall description of network capacity. In Portugal, the CCI was completed by the local researcher using multiple data sources: individual interviews conducted throughout implementation; reviewing implementation questionnaires; attendance at 2 local meetings; and telephone contacts with local partners.

The process evaluation data also revealed important data on the synergies and catalytic interactions between intervention components and indeed the OSPI-Europe programme as a whole. It was realised that it was important to distinguish between the *synergies* between interventions and the action of *catalysts* that added value to OSPI-Europe interventions through, for instance, encouraging further suicide prevention activities that were external to OSPI-Europe or otherwise adding value to planned activities. We reached a definitions of synergies and catalysts thus:

1. Synergistic interactions in complex interventions (either single or multi-level) achieve an impact that is greater than the sum of effects of interventions provided in isolation.
2. Catalytic interactions in complex interventions (either single or multi-level) are those that stimulate additional activity that add value to, but are nevertheless external to, planned activities.

Key examples were identified that illustrate the potential of synergistic and catalytic interactions to add significant value to suicide prevention interventions.

Last, the interim and final results were presented at three international conferences and have been prepared for publication in a high impact journal (Harris et al., 2013).

### **WP06: Implementation and evaluation of OSPI -Europe intervention in Hungary:**

In Hungary, the OSPI-Europe intervention was implemented in the city of Miskolc during the period of January 2010 to June 2011. Szeged was control region.

Intervention:

In the preparation phase, a multidisciplinary team in the intervention region was formed and a network of community facilitator (CF) groups has been established. A review of practices and procedures was approved by the local ethics committee. The intervention materials for the trainings as well as the public campaign (e.g. flyer, poster, and emergency card) have been adapted.

Level 1: Primary Care Physicians

CME trainings for 50 GPs out of 93 GPs in the intervention regions were held. GPs received a manual on depression treatment as well as the Beck Depression Inventory for screening of patients. A hot-line service for GPs was established in cooperation with psychiatrists. For better networking of GPs and psychiatrists, regular meetings were organized.

A training for 23 clinicals (psychiatrists, doctors, and nurses) was held in the local hospital in the Toxicology department. In addition, 74 district nurses were trained. Further, 100 educational DVDs (for GPs and patients) were disseminated. The DVD can be downloaded from the web-site too.

Level 2: Public Awareness Campaign

The opening event for OSPI-Europe took place on 23rd January 2010 in the building of Miskolc Academic Committee with more than 120 participants. We gained some well-known patrons (major of the city, two ex-first ladies, head of the Hungarian Academes of Sciences).

In total, 60,000 flyers and 3,000 A3 posters were spread in GPs' offices, pharmacies, health centers, social institutions, hospitals, schools, libraries, supermarkets, community centres. Inside of public transport vehicles, 250 A5 posters were shown. 3 tailboards were shown on public transport buses (figure 3). In addition, 50 B5 posters were shown on advertising pillars.

The OSPI-Europe program presented on 9 public information events. The movie spot was screened for 8 months (100 times per month). A radio spot was broadcasted 3 times per day for 2 months. A web-page ([www.depresszistop.hu](http://www.depresszistop.hu)) was set up and updated regularly; the new materials were placed and distributed through the web page.



Figure 3

#### Level 3: Community facilitators

8-hour trainings were held for core CF groups with 50 pharmacists, 53 priests and 13 for police officers and teachers of Police Technical College attending. The University of Miskolc, Faculty of Healthcare as well as the Police Technical College uses the OSPI-Europe program as a part of the curriculum.

In addition, 3-hour trainings were held for youth care (30 persons), teachers (174 persons), parents (15 persons), the Roma Local Government (9 persons), carers for the elderly (35 persons). Media training was completed right after the opening event, 15 journalists participated.

#### Level 4: High Risk Groups

Aftercare of the suicide attempters in the local hospital was established. Further, cooperation between psychiatric care and primary care was improved. Self-help groups were organized and started in the local hospitals Toxicology department. Blue Line Youth Crisis Hot line service opened its first countryside-office in Miskolc. Peer group helpers were trained. A 24-hours telephone hotline service (free calls, but not available from mobile phones) was established. Flyers with 8,000 emergency cards were distributed.

#### Level 5: Restriction of access to means

The local hot-spot (20 levels high building) was recognized and the roof was closed; no suicide happened since then. 90% of the suicides are committed at home. The three main endangered areas of the city are the poorest parts; information materials were disseminated.

#### Sustainability

There is an ongoing interest in the program in the intervention region and also at national level. The Report on the Transformation of the Psychiatric Care in Hungary (State Audit Office of Hungary, 2012) quoted the OSPI-Europe program in Hungary as a successful program.

On level 1, better networking of GPs and psychiatrists was established. On level 3, the training contents became part of the official education at the police college as well as the local university.

#### Evaluation:

To prepare for data assessment all instruments provided by WP03, WP04 and WP05 were translated and co-operations to relevant partner were established (e.g. hiring a company for general population survey).

Concerning primary outcome, data on completed suicides was collected for the years 1980-2011 for the intervention and control regions as well as the whole country Hungary. Data on non-fatal suicidal acts were collected for the period of 01/2009 - 12/2011.

Two waves of the general population survey were conducted. Local media were monitored and relevant articles collected for WP13. Furthermore stakeholder interviews with 10 key stakeholders and 4 focus groups were conducted.

Preliminary data evaluation was made and presented at several conferences during the project. Two publications were submitted to high-level journals.

### WP07: Implementation and evaluation of OSPI-Europe intervention in Portugal:

In Portugal, the OSPI-Europe intervention was implemented in the region of Almada during the period of April 2010 to September 2011. Amadora was control region.

Intervention:

#### Level 1: Primary Care Physicians

All planned workshops with GPs in the intervention region have been completed. In total, 68 GPs were trained. Further, 34 nurses, 5 psychologists and 3 primary care social workers were trained. All 90 GPs in the intervention region were given a total of 5.000 flyers to hand-out to patients and 500 DVDs of the 16 minutes film “Saídas para a Depressão” (EAAD material). A hand-out with the contents of training information was sent by e-mail to all GPs as part of an information package which included several papers (scientific articles), assessment tools, and a very practical calendar table base with the main clinical information about depression and suicide behaviour and risk (A3, 42cmx30cm).

#### Level 2: Public Awareness Campaign

OSPI-Amadora was officially launched on March 18th 2010 by Vice-President city council Mrs Carla Tavares. Approximately 200 people attended the event and the launch was widely covered in local media.

Dissemination of public awareness campaign materials and public awareness events were completed exceeding in most items the established minimum intensity. In 2011, many more events were planned but the deficit crisis that affected Europe, and Portugal in particular, provoked cuts within the municipality affecting almost all event production.

Core materials for the general public awareness campaign in Amadora were developed including information flyers and A4 posters (figure 4). Materials have been developed to cover the target population groups and were based primarily on a positive mental health approach. In a first wave, on April 2010, 4.800 posters and 50.000 flyers were printed and distributed. A second wave, in June 2011, of an additional 65.000 flyers were distributed to all households in the Amadora city and council, through post mail and 15.000 flyers more were distributed in health centres (primary care), pharmacies, public buildings.



Figure 4

Street outdoor publicity was made with 49 Mupis (street placards measuring 1200x1750mm, printed in four colors, mupi paper of 140gr) were distributed in the Amadora main streets. Further, several public information event took place.

OSPI-Amadora appeared in the main newspapers in the intervention region as well as in national radio stations.



Figure 5 Mupi on Amadora main street

### Level 3: Community facilitators

For the core community facilitators, 4-hour workshops were held. In total, 11 catholic priests, 12 evangelical pastors, 46 pharmacists and 302 police men were trained. In addition, 8-hour trainings were held for 45 community psychologists, social workers, teachers, geriatric caregivers, and journalists. 2-hour workshops were held for general hospital professionals, including 9 managers (53%), 172 doctors (23%), 673 nurses (85%), 27 psychologists (84%), 167 technical diagnostics and therapeutics (74%), 45 others (2h training).

### Level 4: High Risk Groups

Around 250 SOS cards were distributed in all cases of self-harm behaviour (started in February 2011 after GPs have been trained, until September 2011). With the collaboration of a user association, two self-help groups with fortnightly sessions, were set-up and are ongoing.

### Level 5: Restriction of access to means

No hot spot could be identified in Amadora. However, benzodiazepines were identified as main method for non-fatal suicide attempts. Therefore, the topic was integrated in the trainings directed to GPs and pharmacists the competencies to monitor for BZD abuse and dependence as well as detox protocols for GPs.

### Sustainable implementation

In 2012, a national Suicide Prevention Plan started to be discussed and is to be established in the near-future in Portugal with high-level contribution of the WP leader Prof. R. Gusmão. OSPI-Europe activities during the intervention period were crucial to raise awareness of the need to prevent suicide in the country as well as awareness of the need for accuracy of death registers and that many suicides were masked. As a result, any implementation on the future will take the revised OSPI-Europe 4-level model in consideration.

### Evaluation:

Data on non-fatal suicidal acts and completed suicides at the intervention (Amadora) and the control site (Almada) was collected for the period of 04/2008 to 03/2012 by systematic collection of databases of hospital admission emergency services and inpatient and clinical notes. Completed suicides was collected for the period of 1980-2011 from official statistics. The population survey to assess the knowledge, attitudes and skills regarding suicidal behaviour and depression of the residents of the intervention region was done by a local survey agency. Throughout the entire intervention period there were ongoing evaluations of attitudes, knowledge and skills of general practitioners and gatekeepers before and immediately after the trainings, as well as 6 months afterwards. Media reports were reviewed in the control and intervention region for their reporting on suicide. Data needed for the health economics evaluation (i.e. service utilisation) was collected according to a scheme and questionnaires suggested by WP 11 (health economic evaluation).

**WP08: Implementation and evaluation of OSPI-Europe intervention in Germany:**

In Germany, the OSPI intervention was implemented in Leipzig during the period of June 2009 – March 2011. The local initiative was given the name Leipzig Alliance against Depression (LAaD). The city of Magdeburg was control region.

Intervention:

The intervention programme with multifaceted actions on all five intervention levels was completed. The local network, that is sustainably addressing the goals of the LAaD, is ongoing since the completion of the intervention phase in March 2011.

**Level 1: Primary Care Physicians**

In total, 86 GPs were trained within a 4-hour training. In addition, 34 medical staff dealing with depression other than from primary care was trained and 303 professionals with a medical background attended educational lectures about depression and suicide. Within a mailing of DVDs to all GPs that didn't participate in training, 237 DVDs were distributed.

**Level 2: Public Awareness Campaign**

The opening ceremony was held in June 2009 in the Gewandhaus Leipzig (concert hall) with approx. 250 participants. During the project, 175.200 flyers were distributed. Further, 625 large poster were displayed in public areas and 1950 small posters were displayed in public transportation, university environment, public health institutions. Additional medium size posters were displayed in the public area, e.g. on train platforms (figure 6) or local restaurants. A press conference and additional 45 public informational events were held. A cinema spot was broadcasted regularly between March 2010 and March 2011. A local website with information about the LAaD, current events, addresses of support and consulting and a selection of regional press releases in review was launched and is accessible on [www.buendnis-depression.de/leipzig](http://www.buendnis-depression.de/leipzig).



Figure 6 Examples from the public awareness campaign (poster presentation)

**Level 3: Community facilitators**

For the core community facilitators, 2-3-hour workshops were held. In total, 36 priests, 51 pharmacists and 134 police men were trained. In addition, another 694 community facilitators (hotline professionals, teachers for youth, enterprises health care professionals, medical secretaries, mid-wives, social workers, counselling centre workers, carers for the elderly, agency of employment, collegiate sport) were held.

**Level 4: High Risk Groups**

Support for self-help groups for depression was given sporadically, but more in sense of networking activities (more concrete support for self-help groups and people in need for a self-help group is given by a local self-help bureau). Medical staff conducting data assessment for primary outcome with patients after suicide attempt was instructed to hand out emergency card to all patients. Ca. 500 informational DVDs and 3000 informational brochures for patients were distributed via GPs that participated in the training.

**Level 5: Restriction of access to means**

Three suicide hot spots for Leipzig (intervention region) have been identified in a personal talk with a local police authority (and confirmed by other local stakeholders of the field). One local hotspot was without any security measures. Talks with responsible authorities about securing possibilities didn't result in the construction of barriers based on a cost-benefit-analysis and due to the lack of financial resources. Two hotspots are partly secured already; contact for monitoring the number of suicides and about further needs and options was regularly held. Additionally, a poster with the analysis of first data of non-fatal suicidal acts was distributed for sensitization about pharmaceuticals most often used in suicide attempts via post mailing (along with further information material) to all GPs and pharmacists in Leipzig. 611 letters were dispatched.

Several authorities in the control region have been questioned about the existence of hotspots with the results that there are no special hot spots known for Magdeburg.

#### Sustainable implementation

Aiming at a sustainable network after the project funding period, actions are continued with a lower intensity on all intervention levels. Volunteers have become engaged in the Leipzig Alliance against Depression, among others helping to distribute information material and to organise and hold public events. On level 4, information is continuously provided to people affected and their relatives upon request. The offers established (running and creative group) have been repeated in 2011 in the months already outside the intervention period and thereafter depending on the given circumstances and possibilities. In 2013, a non-profit organisation will be founded to provide a legal basis for activities on the intervention levels.

#### Evaluation:

All procedures were reviewed and approved by the local ethics committee. For completed suicides for both, intervention and control region, the data was requested from official statistical agencies. Data on completed suicides is available for both regions for the years 1980-2011. For non-fatal suicidal acts the standardised protocol provided by WP10 was followed and the registration form for non-fatal suicidal acts was used, assessing all predefined core and, depending on the possibilities of each regional assessment centre, additional variables. Four major hospitals in Leipzig and 2 major hospitals in Magdeburg participated in the assessment of data on non-fatal suicidal acts.

The evaluation of trainings, involving a pre and post-test of the date of each training completed directly before and after the seminar, as well as a 4-month-follow-up, has been conducted for all trainings throughout the entire project period.

To assess effects on the general population, the general population survey for WP08 was completed as in the other intervention regions. The 1<sup>st</sup> wave of data assessment took place in May 2009 in the IR and CR and the second one was conducted in November / December 2010.

For media evaluation, it was agreed to analyse the major local newspaper as well as the regional part of one tabloid paper for both, IR and CR. The study time span was 3 years (June 2008 until May 2011), representing a one year baseline and two-year follow-up, including the intervention period. The assessment of data for the IR and CR has been completed in May 2012.

For health economic evaluation, it was decided to use the retrospective data collection at the university clinic Leipzig along with additional information about treatment costs for the identified cases. Furthermore, general financial regulations and cost calculating documents were provided.

In close cooperation with the partners from the University of Stirling (WP05) various activities for the process analysis have been undertaken. In total, 3 project tracking questionnaires as well as a final questionnaire regarding intervention timelines and implementation were completed. Furthermore, the 5 waves of qualitative data assessment, were conducted.

#### **WP09: Implementation and evaluation of OSPI-Europe intervention in Ireland:**

In Ireland, the OSPI-Europe intervention was implemented in the county of Limerick during the period of April 2010 to September 2011. The county of Galway was control region.

#### Intervention:

During the preparation of the intervention ethical approval for conducting the OSPI-Europe intervention was granted in month 10. High-quality networks with key stakeholders, local representatives of health care, and community based agencies were established.

#### Level 1: Primary Care Physicians

The topic of depression and suicidal behaviour is already included as a small group session in the annual continuing medical education (CME) training schedule in the intervention region. Thus, efforts at Level 1 primarily focused on how OSPI-Limerick may best optimise the on-going work in the area. Elements of the OSPI-Europe programme for General Practitioners (GPs) were incorporated in the small group sessions in the annual CME training schedule. An introductory workshop with GPs took place in October 2010. This workshop presented an overview of OSPI-Limerick and suicide and deliberate self-harm in Ireland, and addressed issues of self-care for those working in primary care. Twelve general practitioners attended this session. An advanced 4-hour workshop was held in May 2011 for GPs. Seven general practitioners from the Limerick area attended the workshop. Information DVDs on depression for young people were distributed to 120 GPs throughout Limerick as part of an information package which included leaflets, posters, keyrings and information on OSPI-Limerick.

#### Level 2: Public Awareness Campaign

OSPI-Limerick was officially launched on March 29th 2010 by Minister of State for Equality, Disability and Mental Health Mr. John Moloney TD. A 3-hour Opening Ceremony including a forum discussion with representatives of relevant mental health care and community agencies was arranged in a city centre hotel and was advertised widely. A highlight of the launch was a display of artwork by people who had experienced mental health difficulties. Approximately 150 people attended the event and the launch was widely covered in local media.

Core materials for the general public awareness campaign in Limerick were developed including information flyers and A4 posters. Separate materials were developed for both adult and young people (figure 7) and were based primarily on a positive mental health approach. 40,000 flyers were printed with an additional 10,000 posters. 8,000 leaflets were distributed through newspaper inserts in a free weekly newspaper, the Limerick Post on 2nd June 2011. A Geo-Analysis of findings from the 2009 National Registry of Deliberate Self Harm was used to target these newspaper inserts to areas with >473 cases of DSH per 100,000.

As a public information events, a 1-hour lunchtime seminar was hosted in Limerick City on World Suicide Prevention Day, 10th September 2010. The seminar was open to the general public, health care professionals and community agencies. The title of the event was "Raising awareness of depression and suicidal behaviour – an everyday challenge for us all."

Extra funding enabled an outdoor advertising campaign with 25 bus shelter posters at strategic points throughout Limerick city and 20 placards in shopping centres as well as procurement of promotional gifts (2,400 keyrings) to supplement the core messages of the public awareness campaign.



Figure 7 Adolescent and adult materials in Limerick

Level 3: Community facilitators

Gatekeeper awareness programmes were conducted with core and optional community facilitators. From the core community facilitator groups, 570 policemen, 37 members of the clergy, and 15 pharmacists were trained. In addition, 58 members of the optional community facilitator groups were trained including Limerick Youth Service, Probation Service Support service for families of prisoners (Bedford Row), Traveller Health, Irish Water Safety, Support service for people bereaved by suicide (Console).

Level 4: High Risk Groups

Different interventions for high risk groups have been implemented in the intervention region. Emergency support cards were routinely handed out to patients who present to Emergency Departments following a suicidal act. It was therefore not necessary for OSPI-Limerick to implement such a system. A training programme in an evidence-based CBT protocol for people who self-harm was delivered to 4 psychiatric nurses in Limerick in a two-day training programme. Nurses from the Limerick day hospitals, child and adolescent mental health service and the acute psychiatric ward as well as social workers with experience in CBT attended the training, with a total of 21 participants. A DVD which can be given to young patients with depression or their parents was procured and was made available to the child and adolescent mental health service and youth workers throughout Limerick, in line with the information distributed to GPs.

#### Level 5: Restriction of access to means

Consultation process has been initiated with local stakeholders in relation to the identification of suicide hotspots. Five main points along one stretch of the Shannon River in Limerick City were identified. Although not located within the intervention region, the Cliffs of Moher have been identified as a hotspot for residents of Co. Limerick.

In addition, Information regarding drugs commonly used in overdose self-harm acts was highlighted in training sessions for GPs and pharmacists. In particular, the increased use of minor tranquilisers in Limerick in comparison to the control region (National Registry of Deliberate Self Harm, 2010) was emphasised.

#### Sustainable implementation

On level 1, elements of the OSPI-Europe programme for GPs were incorporated in the small group sessions in the annual CME training schedule. At the end of 2011, a further set of training sessions were conducted with GPs in the intervention region. OSPI workshops were conducted with a further 77 GPs. As for training activities, the Nation Suicide Research Foundation (NSRF) will continue to link in with the relevant agencies in this regard. On level 2, the templates of the materials are available for organisations wishing to print materials. Efforts to increase public awareness around depression and suicidality have been sustained beyond the running time OSPI-Limerick with continued engagement with national media. The NSRF has been promoting the multilevel approach to suicide prevention to policymakers and the public through national press, radio, and television. On level 5, a National Working Group on restricting access to benzodiazepines was established as well as a Regional Task Force to address increase in suicide by drowning.

#### Evaluation:

Data on completed suicides in Limerick (intervention region) and Galway (control region) for the years 1980 – 2011 were obtained from the Central Statistics Office Ireland. Data on non-fatal suicidal acts from the intervention and control region were obtained from the National Registry of Deliberate Self Harm. This registry contains data on presentations of attempted suicide to all emergency departments in Ireland and is maintained by the National Suicide Research Foundation.

Pre- and post-training and four-month follow-up data were collected and entered into SPSS for data analysis. Two waves of the general population survey were conducted by telephone in the intervention and control region by a European market research company.

All four rounds of process evaluation data collection have been conducted. All transcripts have been made available to University of Stirling for follow-up data assessment. Additionally, a Community Capacity Index workshop was held as part of the process evaluation including a range of different sectors within this meeting including representatives from statutory and non-statutory health and community based groups.

Data on health economic evaluation indicators has been provided to London School of Economics on an ongoing basis through data collection templates.

Media reports on suicide have been collected in intervention and control region from January 2009 to June 2012. Two newspapers were selected in each region (Intervention region: Limerick Leader - 69 articles, Limerick Post - 120 articles; Control region: Connacht Tribune - 165 articles, The Galway Independent - 52 articles). Media reports were provided to the project partners in Wuerzburg (see also WP13).

**WP10: Evaluation of primary and secondary outcome criteria of the OSPI-Europe intervention:**

Data for completed suicides were requested from the partners, who obtained it from national statistics office. It is available for all four implementation partners for the years 1980-2011 for the intervention and control region, and the whole country, respectively. An exception is Portugal where data for the whole country so far is available only up to 2009. A common database was compiled.

During the process of data collection of non-fatal suicidal acts, the intervention regions were supervised. In preparation of the compilation of the different data sources, a data mask and codebook for data entry was prepared.

In order to facilitate data collection in the different regions, a protocol for data collection was compiled giving detailed information on the sampling method and procedure, the sample selection method (how to deal with unclear cases of non-fatal suicidal acts). For reasons of feasibility, core and additional variables for the registration of non-fatal suicidal acts were defined in order to allow for resource restriction of WP06-09.

Table 4 gives an overview on the information for data collection of non-fatal suicidal acts in the intervention regions.

Data of non-fatal suicidal acts from the four partners were quality controlled and transferred to a uniform manner in order to compile them to a complete database.

**Table 4**

Hungary	Intervention period: 01/2010 - 06/2011 Evaluation period: 01/2009 - 12/2011 Assessment tool: OSPI questionnaire (core variables) Data Sources: patient records from county hospitals (IR: 1 county hospital, CR: 1 county hospital)
Portugal	Intervention period: 04/2010 - 09/2011 Evaluation period: 04/2009 - 03/2012 Assessment tool: OSPI questionnaire (core variables) Data Sources: patient records from county hospitals (IR: 3 City Hospitals, CR: 1 City Hospital)
Germany	Intervention period: 06/2009 - 03/2011 Evaluation period: 06/2008 - 05/2011 Assessment tool: OSPI questionnaire Data Sources: patient records and interviews from hospitals (IR: 4 City Hospitals, CR: 2 City Hospitals)
Ireland	Intervention period: 04/2010 - 09/2011 Evaluation period: 04/2009 - 03/2012 Data Source: National Registry (suicide attempts presented to hospital)

By project end only preliminary data is available having a one-year follow-up period for completed suicides and suicidal acts (completed and attempted suicides combined). Because of this, the overall outcome analyses of the OSPI-Europe project for the final report are preliminary and will be repeated at a later point for publication purposes once all data are available. Preliminary results are available upon request from the project coordinator (D10.01). A paper on the baseline results analysing gender differences in suicide methods was prepared. Final results will be available in 2014. Results will be published in peer-reviewed journals.

**WP11: Health economic evaluation:**

Three interconnected activities were conducted, addressing each of the WP objectives.

1. Costs of completed suicide and suicidal acts

Detailed estimates of the costs of completed suicide and suicidal acts in all four intervention and the control regions were made. These costs were broken down by age and gender, as well as by suicide methods in three of the four countries. Differences in potential years of life lost between the intervention and the control region, weighted to take account of difference in region populations were calculated. For this, published information on the costs of non-fatal suicides plus data collected in a German context to estimate the economic impact on non-fatal suicidal events in the intervention and control areas in the four countries were used. A report on these costs and potential years of life lost differences has been prepared.

In addition, the costs of completed suicide at national level in all four countries were estimated to highlight trends in the economic impact of the suicide at national level. Further, the potential years of life lost at national level for the four countries were estimated. Literature on costing methods as well as previous studies on the costs of completed and non-fatal suicidal acts were reviewed.

## 2. Intervention costs

The costs of implementing the OSPI-Europe intervention in all four countries were estimated. A bespoke questionnaire was developed to quantify resource use, including additional sources of funds raised and in-kind expenditure. Data were collected in five waves over the implementation time period.

## 3. Economic evaluations of the intervention

Two different types of economic evaluation were conducted – one is a cost benefit analysis where both costs and outcomes of OSPI-Europe are measured in monetary terms and the second looks at the cost per potential year of life saved and suicidal acts prevented in each of the four OSPI-Europe countries.

## **WP12: Evaluation of intermediate outcome criteria of interventions for primary care physicians (GPs), community facilitators (CFs) and affected patients and their relatives:**

Level 1 & 3: assessment of effects of OSPI-Europe trainings

The effectiveness of intervention levels 1 and 3 was measured using different scales assessing competences of the GPs and the CFs such as knowledge, awareness, confidence, skills, and self-efficacy regarding depression and suicidal behaviour. The scales were administered at three points in time: (1) prior to the intervention, (2) immediately after the intervention, and (3) at three to six months follow-up.

Three common datasets, one for each of the target groups (GPs, clinical CFs and non-clinical CFs), have been developed to facilitate uniform data collection and data entry across the four intervention countries. The intervention countries have been continuously supported in the data collection process and any questions or problems have been dealt with.

Data of the intervention and the control regions were merged in a comprehensive data file containing all data collected at the three time points. The clean data sets and the codebook describing all its variables were sent to the project coordination office in order to make them available for the other project partners who need the data for publication purposes.

The data was analysed regarding the following questions:

- Whether the competences of the CFs and GPs were increased after following the training program
- Whether gains in competences were maintained after three months follow-up
- Whether the increase in competences was associated with certain socio-demographic variables
- Whether there were specific training needs in different regions and in different groups of professionals

Two papers on the results of the training program for CFs and GPs are in preparation.

Level 2: assessment of the effects of the OSPI-Europe public awareness campaigns

With regard to the assessment of the effects of the OSPI-Europe media campaigns, a general population survey before and after the intervention period has been conducted by an international survey firm. The survey assessed attitudes towards depression and seeking professional help of inhabitants in the intervention and control regions. After receiving the data from the first wave, recommendations were given to the international survey firm with regard to conducting the second wave survey.

The data was analysed regarding the following questions:

- Whether knowledge, attitudes and skills regarding depression and suicide of the general population of the intervention regions was increased after the intervention period as compared to the competences of the general population of the control regions
- Whether the change in competences in the intervention regions maintained after three months follow-up
- Whether there were relevant differences between regions

The results of the OSPI-Europe baseline general population survey were first described in an internal report and presented to the project partners at an OSPI-Europe meeting. Baseline results have been presented at several scientific conferences. Also, a first, general publication about the results has been prepared and a draft sent around for discussion to project partners.

A manuscript about the results of the baseline survey was accepted for publication in the Journal of Affective Disorders (Coppens et al., 2013).

Level 4: effects of interventions for affected persons and their relatives

Data were collected and analysed regarding the use of self-help, access to care, participation in treatment decisions, treatment satisfaction, and quality of life of affected patients and their relatives within the general population survey.

### **WP13: Evaluation of intermediate outcome criteria of media campaign and of restrictions of lethal means:**

Media campaign

The centre in Wuerzburg assessed the interventions with media professionals that were conducted in the four intervention regions.

The newspaper reports that were collected by the four intervention centres were analysed according to the quantity and quality of reports on suicide cases and suicidality in general. The reporting style was expected to become more responsible as a consequence of the media intervention, whereas no change was expected in the control region. The intervention centres were asked to choose one tabloid and one "serious" local newspaper for a) the intervention region and b) the control region for the assessment of media reports. The baseline was defined as one year before the start of the intervention, while the follow-up period should at least cover one and a half years in order to find effects. In Hungary, only one major local newspaper exists in the intervention and control region. In Portugal, the problem occurred that most of the newspapers are national, but include local parts. Thus, they were also assessed, but only reports from local parts of the newspapers were included in the analysis. Since very few articles on suicide were found, all relevant newspapers were screened, instead of only four.

All articles were included that dealt with suicidality in general or reported specific suicide cases (including suicide attempt and suicidal ideation). Real and fictitious suicide (attempt) cases were assessed. Family tragedies including suicide (attempt) and unclear cases for which the possibility of suicide cannot be ruled out were also assessed. Articles on suicide bombing and shooting sprees (resulting in the suicide of the murderer, also suicide by police) were screened, but – due to the differences in motivation - are analysed separately. Announcements of films or events on suicide that do not include more detailed information on suicide were excluded. Also articles with a metaphoric use of the word suicide ("economic suicide", "financial suicide" etc.) were excluded.

To determine technical data such as the size of the focus articles in relation to the whole page, prints / pdf documents of the whole newspaper page were collected. The availability and accessibility of local newspapers differed between the centres, resulting in largely varying numbers of included articles for each centre. All centres conducted a full-text research.

Table 5

Centre	Name of the newspaper	Research method	Number of articles	Inclusion
Germany	Leipziger Volkszeitung	Manual research	1044	791 (76%)
	Bild Leipzig	Manual research	144	115 (80%)
	Magdeburger Volksstimme	External research by National Library in Leipzig	467	416 (89%)
	Bild Magdeburg	Manual research	129	116 (90%)
Hungary	Észak	Manual research	33	32 (97%)
	Délmagyarország		70	61 (87%)
Ireland	Limerick Leader	Electronic research	49	33 (67%)
	Limerick Post		92	46 (50%)
	Galway Independent		58	17 (29%)
	Connacht Tribune		146	45 (31%)
Portugal	Jornal Região	Electronic research	1	1 (100%)
	Publico		2	2 (100%)
	Correio da Manhã		4	4 (100%)
	Jornal Setubalense		1	1 (100%)
	Diário de Notícias		1	1 (100%)

#### Lethal means

The main suicide and suicide attempt methods in the intervention and control regions were collected from the centres. Interventions to restrict access to lethal means and hotspots were assessed and compared.

As a result of the work recommendations on (1) "safe" media reporting about suicide and (2) lethal means control were drafted. A paper on media recommendations on reporting suicidal behaviour was accepted for publication (Maloney et al, 2013).

#### WP14: Praxis transfer:

The broad public was informed about OSPI-Europe activities by the official OSPI-Europe website which was launched in October 2008 ([www.ospi-europe.com](http://www.ospi-europe.com)). Furthermore international media reports and many national as well as local press releases have been published so far. OSPI-Europe was presented at several national and international scientific meetings and conferences. Therefore several poster and oral presentations have been prepared and presented. In total, 12 publications have been published within scientific journals; several have been submitted meanwhile.

Based on the interim results of the evaluation of the intervention (WP06-09), the project further refined the intervention concept. This process was carried as an oral and written discussion in the consortium and resulted in the document "4-level-model\_current status with OSPI-integration" for internal use. The goal was to integrate the knowledge previously available from the European Alliance against Depression as well as currently collected through the OSPI-Europe intervention into a sustainable and flexible model. We aim to further disseminate the 4-level-approach through the EAAD foundation. For this purpose it was not only discussed the feasibility of the single intervention measures, but also the current needs and challenges in mental health care and in which ways our intervention model corresponds to them. Major results were to include mental health care professions into the level 1-interventions and the inclusion of internet-based measures and new media into public relation and patient-oriented activities. In terms of revising the OSPI-Europe 5-level model we had to realise that the restriction of access to lethal means is not always feasible and easy to carry out within a community-based intervention approach, since this often requires national legislation. All measures that formed the 5th intervention level in OSPI-Europe (restricting access to lethal means) have therefore been tailored to a local setting and integrated into the existing 4 levels.

Further, as a deliverable a manual on suicide prevention that included all revisions of the OSPI-Europe intervention was prepared (D14.01) and is available for researchers in the field as well as national ministries of health, NGOs active in mental health prevention and promotion in the EU member states, the EU-Directorate General for Health and Consumer Protection as well as other concerned directorates, and the Mental health Unit at WHO Copenhagen.

In June 2012, a symposium "Suicide prevention and depression care with focus on internet-based interventions targeting depression" was held in Leipzig (June 14th-15th 2012). Preliminary OSPI-Europe results were presented and discussed. Additionally, internet-based self-management was discussed with high level speakers. Representatives from the EU directorates as well as high-level researchers were invited.

All results from OSPI-Europe will be made available on the project website as well as in peer-reviewed journals.

## 1.4 The potential impact

### Socio-economic impact and the wider societal implications of the project

#### Contribution to Community and social objectives

Suicide is one major cause of premature death in Europe. It causes as many deaths as traffic accidents (WHO/Europe, 2004). Especially in regions suffering from high suicide rates such as the eastern EU member states, suicide has considerable impact on economics and the burden of disease in these countries. Preventing suicide has thus been identified as one major target within the upcoming EU-Mental Health Strategy. However, comprehensive and evidence based recommendations for sustainable suicide preventive measures are lacking. This project aims to provide them.

By saving lives and preventing self harm, as well as improving service provision for persons under suicide risk, the OSPI-Europe project added value to the EU-strategic policy objectives. This was done in respect to economics by averting burden of disease through effective suicide prevention. With respect to social issues, reducing suicidality will result in fewer people harmed either as survivors or relatives. The programme contributes to public health and coherence of society. In this sense, OSPI-Europe contributes to sustaining Europe's commitment to solidarity and social justice and will bring tangible practical benefits to the quality of life for European citizens (European Commission, 2005).

The project enhanced the field of suicidology by providing harmonised definitions with respect to suicidal behaviour, a methodology to make suicide reporting in Europe comparable, as well as a methodology to evaluate suicide prevention measures (WP 03). Beyond this, important knowledge on the use of lethal means in Europe was gathered (WP 03 and 13). Data was sought about the costs of suicide attempts with respect to the different methods used (WP 11). The impact of suicide prevention with respect to averted burden of disease was measured. Further, important information on the suicide climate (represented by media reporting about suicide and public attitudes) in different countries was gathered and compared (WP 12 and 13). Suicide and non-fatal suicidal acts are strongly related to gender. Whereas women commit more non-fatal suicidal acts, men commit suicide more frequently. Thus suicide prevention is a gender sensitive subject. Gender was considered in evaluating data but more so also in the design of the intervention.

The project adds to the sensitisation of primary care providers about mental disease and deliberate self harm by specifically addressing primary care physicians through trainings and information campaigns. Further, it provides knowledge and sensitivity for mental health issues in the fields where community facilitators work and are educated through specific trainings and information. It also adds information about effectiveness of physician and community facilitators' education, not only by looking for outcome but also by analysing processes (WP 05).

By evaluating the OSPI-Intervention the project provided detailed analyses of how preventive actions that operate on a regional public health bases should be designed to be effective. Through its cross-national experimental design, the project adds knowledge on the influence of health systems and service preconditions on the implementation and the effectiveness of preventive interventions in particular in mental health.

The implementation of the prevention programme had positive effects on the interventions' target groups: Via the public relations campaign, the general population was sensitised to conditions such as depression that come along with a high suicide risk. CFs were sensitised to the subject of suicide, deliberate self harm and detection of depression through training. The programme provided them with more competence to deal with mental disease and suffering and with better support structures. Primary care providers' capability in diagnosing and treating depression was improved through trainings. Care and clinical management for depressed people was improved through training GPs on management and making information about treatment available to the public.

By identifying a best practice approach to suicide prevention in the EU (WP02) and providing a manual on how to implement these best practise interventions (WP14), OSPI-Europe addresses shortcomings of prior suicide prevention projects and provided stronger evidence informing about the efficacy of suicide prevention programmes. OSPI-Europe clearly addresses one of the five priority areas laid out in the European Pact for Mental Health and Well-Being, namely "1 – prevention of depression and suicide". The measures suggested for action in this priority area are almost completely covered by the OSPI-Europe and now optimised and integrated 4-level-intervention concept. Precisely it contains actions targeting the following key points from the Pact: Improve the training of health professionals, Restrict access to potential means for suicide, Take measures to raise mental health awareness in the

general public, among health professionals and other relevant sectors, and Take measures to reduce risk factors for suicide such as [...] depression. Furthermore the OSPI-Europe intervention can be considered best practice because it follows many of the key aspects that are identified in the WHO's 2012 published framework on suicide prevention ("Public health action for the prevention of suicide: a framework"). The fact that it was already designed and implemented before the document was published, underlines that its basis (the EAAD-4-level-model) is a solid and practicable intervention approach, which was as such named as "Successful action" for suicide prevention in the Green Paper on Mental Health (EC, 2005). Furthermore, as the European and German Alliance against Depression, it is at present already listed in the EU compass for action on mental health and well-being in the "policies and good practice" section ([https://webgate.ec.europa.eu/sanco\\_mental\\_health/index.jsp](https://webgate.ec.europa.eu/sanco_mental_health/index.jsp)).

The multilevel community based intervention concept has been positively evaluated not only in the Nuremberg Alliance against Depression, the Regensburg Alliance against Depression (Spießl et al., 2009) but also recently in a project performed within EAAD in Hungary (Székely et al., in press). Also the data on intermediate outcomes provided by OSPI support the efficiency of this approach. Preliminary results of the primary outcome are not significant over all four intervention regions; however on the country-level analyses show some encouraging evidence (e.g. Portugal; D10.01).

### Main dissemination activities and exploitation of results

This knowledge was disseminated on four different levels.

Level 1: dissemination in the scientific community

#### Presentation of OSPI-Europe at national and international meetings and conferences

On two international conferences, special OSPI-Europe symposia were held (European Symposium on Suicide and Suicidal Behaviour (ESSSB13), Rome (Italy), Sept 2010; Safety 2010 World Conference, London (UK), Sept 2010). Preliminary results were presented on an international conference (European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012). OSPI-Europe was presented in two symposia (cf. MA14.02; "Optimizing suicide prevention programs and their implementation in Europe" (OSPI-EUROPE): Results of a best-practice, multi-level programme for suicidality prevention - part 1 and 2). These presentations increased the publicity of the project among key persons in national and international health politics and in the scientific community.

Project partners presented the OSPI-Europe project at various national and international meetings and conferences (please see list below).

poster

- Gottlebe K, Gastmann U, Bramesfeld A, Hegerl, U. Optimised suicide prevention programs and their implementation in Europe (OSPI-Europe). 7th Leipzig Research Festival for Life Sciences, Leipzig, 12.12.2008
- Gottlebe K, Mähner A, Hegerl U. Wie profitieren Multiplikatoren von einer Schulung zu Depression und Suizidalität? Wissen und Einstellungen im Prä-Post-Vergleich. 10th Leipzig Research Festival for Life Sciences, Leipzig, Dec 2011
- Hegerl U, Gottlebe K, Schmidt S. Optimierung von Suizidpräventionsprogrammen und deren Implementierung in Europa (OSPI-Europe). Mitteldeutsche Psychiatrietage, Dresden, 25.-26.09.2009.
- Hegerl U, Gottlebe K, Schmidt S. Optimierung von Suizidpräventionsprogrammen und deren Implementierung in Europa (OSPI-Europe). 8. Deutscher Kongress für Versorgungsforschung des Deutschen Netzwerks Versorgungsforschung e.V., Heidelberg, 01.-03.10.2009.
- Scheerder G. & Van Audenhove C. Onderzoek naar de effectiviteit van suicidepreventie (OSPI-project). (Poster) 5e Vlaams Congres Geestelijke Gezondheidszorg (VVG), Ghent (Belgium), Sept 2010
- Sonnabend N, Boenisch S, Schmidt S, Hegerl U. Die Verwendung von Psychopharmaka beim Suizidversuch. 8th Leipzig Research Festival for Life Sciences, Leipzig, 17.-18.12.2009

Presentations on international conferences

- Arensman E, Coffey C. Intermediate outcome criteria and evaluation of suicide prevention programmes: A review. 2nd European Public Health Conference (EUPHA), Lodz, 25.-28.11.2009

- Arensman, Ella. Characteristics of a suicide cluster in Ireland, identified by a suicide support and information system. IASP, Beijing (China). September 2011.
- Arensman, E., Coffey, C., Van Audenhove C., Scheerder, G., and the OSPI-Europe. Effectiveness of depression-suicidal behaviour awareness training among police officers in three European regions: outcomes of the OSPI-Europe study. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- Gusmão R. The epidemiology of suicide in Portugal: 1980-2009. 20th European Congress of Psychiatry, Prague, March 2012
- Gusmão R. The use of antidepressants in Portugal: 1995-2009." 20th European Congress of Psychiatry, Prague, March 2012
- Gusmão R. "Suicide prevention in Portugal: the OSPI-Europe study." Jornada Previsió del suïcidi, experiències i estratègies nacionals i europees. Federació catalana d'associacions de familiars i persones amb problemes de salut mental (FECAFAMM), Barcelona, Nov 2012
- Harris F, Maxwell M, O'Connor R, Coyne J, Arensman E, Gusmão R, Székely A, Hegerl U. Exploring synergistic effects and 'added value' in an Optimised Suicide Prevention Programme implemented in four European countries (OSPI-Europe), Royal College of Nursing Annual Conference, Belfast, March 2013.
- Hegerl U. An evidence based 4-level community based intervention to improve the care of depressed patients and prevent suicidality cost effectively. WPA Regional Congress, St. Petersburg (Russia), June 2010
- Hegerl U. OSPI Europe – Optimizing suicide prevention programs and their implementation in Europe. EAAD Meeting "Networking Activities in Baltic countries", Berlin (Germany), February 2011
- Hegerl, Ulrich. Early interventions for preventing depression and suicide. Conference: Discovery research in neuropsychiatry: depression, anxiety and schizophrenia in focus, Budapest. March 2011.
- Hegerl, Ulrich. Mitteldeutsche Psychiatrietage, Magdeburg. September 2011
- Hegerl U. Prevention of suicidality by community based 5-level intervention programmes. Symposium "Suicide prevention and depression care with focus on internet-based interventions targeting depression", Leipzig (Germany), June 2012.
- Horváth O. N.. Analysis of suicide attempts with a focus on preceding diseases, causes and methods - International Scientific Student Conference, Tirgu Mures, Romania, March 2012
- Horváth O. N.. Analysis of suicide attempts with focus on preceding diseases, causes and methods. IV. International Scientific Conference for young researcher, Moscow, Apr 2012
- Koburger N, Hegerl U. Prevention of suicidality and improved care of depression by community based interventions. 12th International Congress of Behavioral Medicine, Budapest, August 29 – September 1, 2012
- Koburger N, Hegerl U. and the OSPI Consortium. Community-based interventions as a successful approach to the improvement of depression care and prevention of suicidality: an overview. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- Kopp, MS et al: Gender differences in mediating role of depression between socioeconomic factors and premature mortality: Follow-up of the Hungarian Epidemiological Panel, Congress of Psychiatric Epidemiology, Bergen, June 16-19, 2010.
- Kopp Mária, Székely András, Ulrich Hegerl. How to decrease suicide rates among men? European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- Maxwell M, Harris F, O'Connor R, Coyne J, Arensman E, Gusmão R, Székely A, Hegerl U. Addressing the implementation gap in research knowledge: the OSPI process evaluation. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- Maxwell M, Harris F. Process evaluation in OSPI. Symposium "Suicide prevention and depression care with focus on internet-based interventions targeting depression", Leipzig (Germany), June 2012.
- Maxwell M, Harris F, O'Connor R, Coyne J, Arensman E, Gusmão R, Székely A, Hegerl U. Addressing the implementation gap in research knowledge: the Optimised Suicide Prevention and its Implementation (OSPI) in Europe process evaluation, Royal College of Nursing Annual Conference, Belfast, March 2013.
- McDaid D. Making the case for investing in suicide prevention interventions: an economic perspective. 2nd European Public Health Conference (EUPHA), Lodz, 25.-28.11.2009
- McDaid D. WHO/EC Swedish Presidency Conference on Suicide, October 2009.
- McDaid D. The health economics of suicide prevention. Congress of the European Forum for Evidence-based Prevention, Baden near Vienna (Austria), June 2010
- McDaid D. The economic downturn and mental health. Shine and Mindwise Biennial Conference, Dublin (Ireland), Nov 2010

- McDaid D, Park A, Arensman E, Coffey C, Gusmão R, Koburger N, Székely A, Maxwell M, Harris F, Hegerl U. Making the case for investing in suicide prevention programmes: the OSPI economic evaluation. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- McDaid D. Costs of suicidal acts – Data from OSPI. Symposium "Suicide prevention and depression care with focus on internet-based interventions targeting depression", Leipzig (Germany), June 2012.
- Quintão S. Suicide after 65 years old: Current data in Portugal" International PALADIN Conference, Promoting Conscious and Active Learning and Ageing. Associação Portuguesa de Psicogerontologia, Coimbra (Portugal), Oct 2011
- Scheerder, G., Van Audenhove, C., Arensman, E., and the OSPI-Europe Consortium. Impact of the OSPI media campaign on public attitudes towards depression: a controlled intervention in European countries. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- Scheerder, G., Van Audenhove, C., Arensman, E., and the OSPI-Europe Consortium. Training general practitioners and community professionals about depression and suicide: results of the OSPI intervention in European countries. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- Schmidt S, Gottlebe K, Hegerl U. Optimizing suicide prevention programs and their implementation in Europe (OSPI-Europe) – Introducing the OSPI model intervention and evaluation methods. 2nd European Public Health Conference (EUPHA), Lodz, 25.-28.11.2009
- Sisask M. Suicide registration and its influence on the number of injury death of undetermined intent. Annual conference of the Estonian Centre of Behavioral and Health Services. Vihula, May 2009.
- Székely A, Kopp MS: OSPI-Europe Program, Optimized Suicide Prevention Programs and their Implementation in Europe, International Bálint Conference, Csikszereda, Jun 24-26, 2010
- Székely A, Kopp M. Social Change, Civic Society, and Suicide. INTERNATIONAL CONFERENCE: Developing an Evidence Base on Social and Public Health Determinants of Suicide in Eastern Europe, the Commonwealth of Independent States, and the Baltic Countries: A Foundation for Designing Interventions, Tallinn (Estonia), Sept 2010
- Székely, A. Community Based Intervention to Prevent Depression and Suicide in Hungary. ICBM, Budapest, Aug 2012
- Székely, A.. Community Based Intervention to Prevent Depression and Suicide in Hungary. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- Tóth, M.. Psychosocial and ethnical differences in the prevalence of potential risk factors of suicidal behavior in Hungary. European Symposium on Suicide and Suicidal Behaviour (ESSSB14), Tel-Aviv (Israel), Sept 2012
- van Audenhove C. Community facilitators' attitude toward depression: a pilot study in 9 EAAD countries. WPA Regional Congress, St. Petersburg (Russia), June 2010
- van Audenhove C. Secondary outcomes in OSPI-Europe – results from the population survey. Symposium "Suicide prevention and depression care with focus on internet-based interventions targeting depression", Leipzig (Germany), June 2012.
- Värnik A. Suicidology research group 2008/2009: projects and publications. Annual conference of the Estonian Centre of Behavioral and Health Services. Vihula, May 2009.
- Värnik A. Evaluation of interventions targeting suicidality. WPA Regional Congress, St. Petersburg (Russia), June 2010
- Värnik A. Gender, age and suicide. INTERNATIONAL CONFERENCE: Developing an Evidence Base on Social and Public Health Determinants of Suicide in Eastern Europe, the Commonwealth of Independent States, and the Baltic Countries: A Foundation for Designing Interventions, Tallinn (Estonia), Sept 2010
- Wu J. Gender- and Method-specific Suicide Prevention among Elderly in 16 European Countries. Joint World Conference on Social Work and Social Development: The Agenda, Hong Kong (China), June 2010

#### Preparation of publications in scientific journals

The project office supervised the OSPI-Europe publication plan of the partners which was created during and following the 1st OSPI-Europe General meeting (Kick-off meeting). Several papers have been submitted already to diverse scientific journals (see list below)

- Coppens, E., Van Audenhove, C., Scheerder, G., Arensman, E., Coffey, C., Costa, S., Koburger, N., Gottlebe, K., Gusmão, R., O'Connor, R., Postuvan, V., Sarchiapone, M., Sisask, M., Székely, A., van der

- Feltz-Cornelis, C., & Hegerl, U. (accepted for publication). Public attitudes towards depression and help-seeking in four European countries: Baseline survey prior to the OSPI-Europe intervention. *Journal of Affective Disorders*.
- Gusmão, R, Quintão, S, McDaid, D, Arensman, E, Van Audenhove, C, Coffey, C, Värnik, A, Värnik, P, Coyne, J, Hegerl, U. (2013) Antidepressant Utilization and Suicide in Europe: An Ecological Multi-National Study. Accepted for publication at PLoS One. DOI: 10.1371/journal.pone.0066455
  - Harris, Fiona M., Maxwell, Margaret, O'Connor, Rory C., Coyne, James, Arensman, Ella, Székely, András et al. (2013). Developing social capital in implementing a complex intervention: a process evaluation of the early implementation of a suicide prevention intervention in four European countries. *BMC Public Health* 13 (1), 158.
  - Hegerl, U., Rummel-Kluge, C., Värnik, A., Arensman, E., Koburger, N. Alliances against Depression—a community based approach to target depression and to prevent suicidal behaviour. *Neuroscience & Biobehavioral Reviews* (0). Online available <http://www.sciencedirect.com/science/article/pii/S0149763413000456>.
  - Maloney, J., Pfuhlmann, B., Arensman, E., Coffey, C., Gusmão, R., Poštuvan, V. et al. (2013): Media recommendations on reporting suicidal behaviour and suggestions for optimisation. *Acta Psychiatrica Scandinavia* (0). Online available: <http://onlinelibrary.wiley.com/doi/10.1111/acps.12131/full>
  - van der Feltz-Cornelis, C. M., Sarchiapone, M., Postuvan, V. et al. (2011). Best Practice Elements of Multilevel Suicide Prevention Strategies. *Crisis: The Journal of Crisis Intervention and Suicide Prevention* [Epub ahead of print], 1-15.
  - Värnik A, Sisask M, Värnik P. et al. (2011). Drug suicide: a sex-equal cause of death in 16 European countries. *BMC Public Health*, 11(1):61
  - Värnik, P., Sisask, M., Värnik, A. et al. (2010). Massive increase in injury deaths of undetermined intent in ex-USSR Baltic and Slavic countries: Hidden suicides? *Scandinavian Journal of Public Health*, 38 (4), 395-403.
  - Värnik, P., Sisask, M., Värnik, A., Laido, Z., Meise, U., Ibelshäuser, A., et al. (2010). Suicide registration in eight European countries: A qualitative analysis of procedures and practices. *Forensic Science International*, 202(1-3), 86–92.
  - Värnik, P., Sisask, M., Värnik, A. et al. (2012). Validity of suicide statistics in Europe in relation to undetermined deaths: developing the 2-20 benchmark. *Injury Prevention*, 18(5), 321-325.

#### Level 2: dissemination to key players

In June 2012, a symposium "Suicide prevention and depression care with focus on internet-based interventions targeting depression" was held in Leipzig (June 14th-15th 2012). Preliminary OSPI-Europe results were presented and discussed. Additionally, internet-based self-management was discussed with high level speakers.

The following representatives from the EU directorates as well as high-level researchers were invited:

- Dr. Purva Abhyankar (University of Stirling, NMAHP Research Unit, Department of Nursing and Midwifery, Stirling, UK)
- Prof. Dr. Gerhard Andersson (Linköping University, Department of Behavioural Sciences and Learning, Linköping, Sweden)
- Caroline Attard (Representative FP7/ DG RTD F2 /001 (scientific project officer OSPI-Europe), Brussels, Belgium)
- Prof. Dr. Pim Cuijpers (VU University Amsterdam, Department of Clinical Psychology, Amsterdam, The Netherlands)
- Prof. Dr. Kathleen Griffiths (Australian National University, College of Medicine, Biology and Environment, Canberra, Australia)
- Prof. Dr. Kenneth Kirkby (University of Tasmania, School of Medicine, Hobart, Australia.)
- Dr. Hans Kordy (University Hospital Heidelberg, Center for Psychotherapy Research, Heidelberg, Germany)
- Dr. Yan Leykin (University of California, San Francisco, Department of Psychiatry, San Francisco, USA)
- Prof. Dr. Ricardo Muñoz (University of California, Department of Psychiatry at San Francisco General Hospital, San Francisco, USA)
- Ionela Petrea (Trimbos Institute, International Department for Mental Health, Utrecht, The Netherlands)
- Cathy Richards (Lead Clinician/Head of CAMHS Psychology, Child and Adolescent Mental Health Service, The Royal Edinburgh Hospital, Edinburgh, UK)

- PD Dr. Christine Rummel-Kluge (University of Leipzig, Department of Psychiatry, Leipzig, Germany; German Foundation for depression help ("Stiftung Deutsche Depressionshilfe"), Leipzig, Germany)
- Prof. Dr. Chris Williams (University of Glasgow, Institute of Mental Health and Wellbeing, Glasgow, UK)

Further, as a deliverable a manual on suicide prevention was prepared (D14.01) and is available for researchers in the field as well as national ministries of health, NGOs active in mental health prevention and promotion in the EU member states, the EU-Directorate General for Health and Consumer Protection as well as other concerned directorates, and the Mental health Unit at WHO Copenhagen.

Level 3: nation-wide dissemination of the OSPI-Europe intervention in the EAAD countries.

All materials that were prepared during OSPI-Europe (flyers, posters, questionnaires, manual on suicide prevention etc.) are made available via the European Alliance Against Depression e.V. (NGO). The EAAD currently consists of eleven members in Europe and South America (Austria, Belgium, Chile, Estonia, Germany, Ireland, Italy, Lichtenstein, The Netherlands, Portugal, Spain).

Level 4: dissemination to the general public

During the 3rd reporting period the official OSPI-Europe website was updated regularly ([www.ospi-europe.com](http://www.ospi-europe.com))

Furthermore, the project was presented in many press releases mainly on international (e.g. Mental Health Europe Newsletter N°7-8, 07-08/2008; innovations-report, 30.10.2008) and national level (Germany: 72, Hungary: 15, Ireland: 9, Portugal: 10).

A flyer describing the project in more detail was created and is available in English.

In Germany, a press conference was held with the topic: taboo subject depression - especially in Germany. European suicide prevention project: first research results.

### Outlook and future research

OSPI-Europe gave evidence that community based five-level intervention programs targeting depression and suicidality are a cost-effective approach to suicide prevention. The bottom-up approach inherent to the intervention concept proved to be helpful for the successful implementation by strengthening the motivation of the participating regional partners and their identification with their regional alliance against depression. Further, synergistic effects are triggered by the fact that the intervention starts simultaneously at four different levels.

In order to sustain and transfer knowledge gained with in OSPI-Europe, intervention concepts and extensive catalogue of intervention and evaluation materials is made available in different languages for further implementation under the umbrella of the European Alliance against Depression e.V. ([www.eaad.net](http://www.eaad.net)). Experiences showed that they can easily be adapted to different cultures and health care systems. The EAAD provides support for other regions in and outside of Europe who intends to start own four-level intervention programs.

However, project activities revealed two major problems that will be addressed by other projects, e.g. PREDI-NU. The intervention activities intend to motivate depressed patients to seek help, but patients are often confronted with the difficulty of limited access to psychotherapy and pharmacotherapy. Further, many of the intervention materials used within OSPI-Europe and EAAD do not sufficiently relate to adolescents, and networks providing care for adolescents and young adults with depression and possibly suicidal behaviour are not well established. It should therefore be a key priority of future project to increase depression awareness and implement innovative interventions for treatment of depression that also match young peoples' needs.

A European e-mental health guided self-help approach could be a practical way of providing ready access to effective psychosocial interventions for mild depression and have potential to impact on suicidal thoughts and behaviours. Millions of people access the internet each year for health-related information and more users search for information on depression than any other condition. However, despite strong evidence endorsing self-help materials based on Cognitive Behavioural Therapy techniques, the adoption of self-help approaches and support by professionals is limited in many countries to date. The evidence-based multi-level depression awareness and suicide prevention concept provides a solid foundation through which to develop opportunities for innovative ICT interventions.

## **Section 2 – Use and dissemination of foreground**

### **2.1 Plan for use and dissemination of foreground (including socio-economic impact and target groups for the results of the research)**

#### **Section A**

##### **List of Scientific Publication**

For more information please see the ECAS system, as well as section “Main dissemination activities and exploitation of results”

##### **List of Dissemination Activities**

For more information please see the ECAS system, as well as section “Main dissemination activities and exploitation of results”

#### **Section B**

No patents, trademarks, registered designs, etc. were applied.

## **Section 3 – Report on societal implications**

For more information please see the ECAS system.