



# **Study on the uptake and impact of the EU Action Plan on Organ Donation and Transplantation (2009-2015) in the EU Member States**

FACTOR Study

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## EXECUTIVE SUMMARY

### **Background**

Organ donation and transplantation has become an established practice, bringing considerable benefits to thousands of patients in Europe and worldwide every year.

The availability of donor organs is often a question of life and death for patients requiring a transplant, and shortage of organs is one of the main factors limiting the number of transplants. This shortage is observed in the EU, albeit to varying degrees, in each individual Member State, and has been the main challenge to address in organ transplantation.

In 2008, the European Commission therefore brought forward the EU Action Plan on Organ Donation and Transplantation 2009-2015: Strengthened Cooperation between Member States (hereinafter referred to as the "Action Plan")<sup>1</sup>.

This Action Plan is a non-binding instrument that is complementary to the organ-specific legislation that was presented in parallel and adopted since (Directive 2010/53/EU, and implementing legislation 2012/25/EU). The Action Plan aims to help the Member States to address three challenges, i.e.

- (1) to increase organ availability,
- (2) to enhance efficiency and accessibility of transplant systems and
- (3) to improve quality and safety.

To this end, ten Priority Actions (PA) were defined, aiming to focus strengthening of cooperation among the Member States along these three challenges (see Figure 1).

To increase organ availability, the Action Plan advocates: appointing of transplant donor coordinators (PA1) and promoting quality improvement programmes in hospitals (PA2) hence optimizing deceased organ donation; exchanging best practice on donation from living donors (PA3); strengthening communication skills of professionals and patient support groups (PA4) and facilitating identification of donor across Europe and cross-border donation (PA5) in order to increase public awareness.

To enhance *efficiency and accessibility of transplant systems*, the Plan emphasizes: a need to enhance organisational models (PA6) in the Member States; establish EU-wide agreements (PA7) and facilitate organ exchange between countries (PA8).

Finally, to improve *quality and safety*, which is also the main objective of the legislation, the Plan proposes: the evaluation of post-transplant results (PA9) and an accreditation system for organ donation, procurement and transplant programmes (PA10).

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<sup>1</sup> Action Plan on Organ Donation and Transplantation (2009-2015): "Strengthened Cooperation between Member States".  
<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:sp0007>

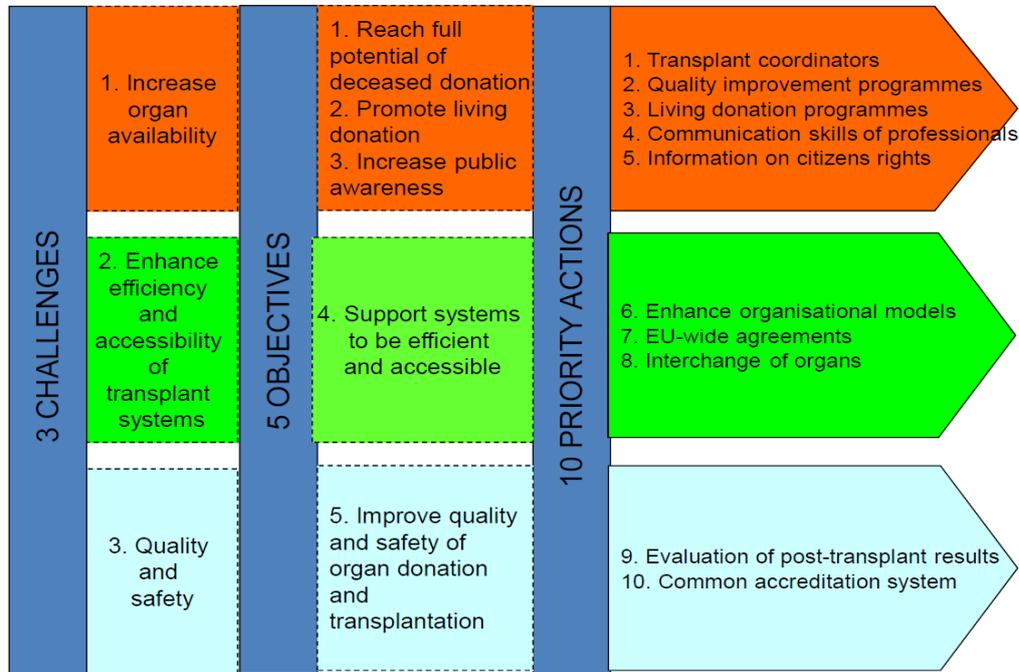


Figure 1: Overview of the Action Plan

During the period of the Action Plan, i.e. from 2009 to 2015, efforts have been made to develop and implement those Priority Actions, both at the national and the European level.

This study therefore aims to assess the uptake and impact of the Action Plan in the Member States, and presents a final review of the Action Plan (hereafter “the FACTOR study”). It provides an overview of the efforts made during the period of the Action Plan and its state of implementation at national level<sup>2</sup> as well as at EU level.

This study presents some key figures on organ donation and transplantation (Chapter 2), an assessment of the implementation of the Action Plan at national level (Chapter 3), a description of EU support to implement these Priority Actions (Chapter 4), success factors and key lessons learned (Chapter 5) and suggestions for potential future actions (Chapter 6).

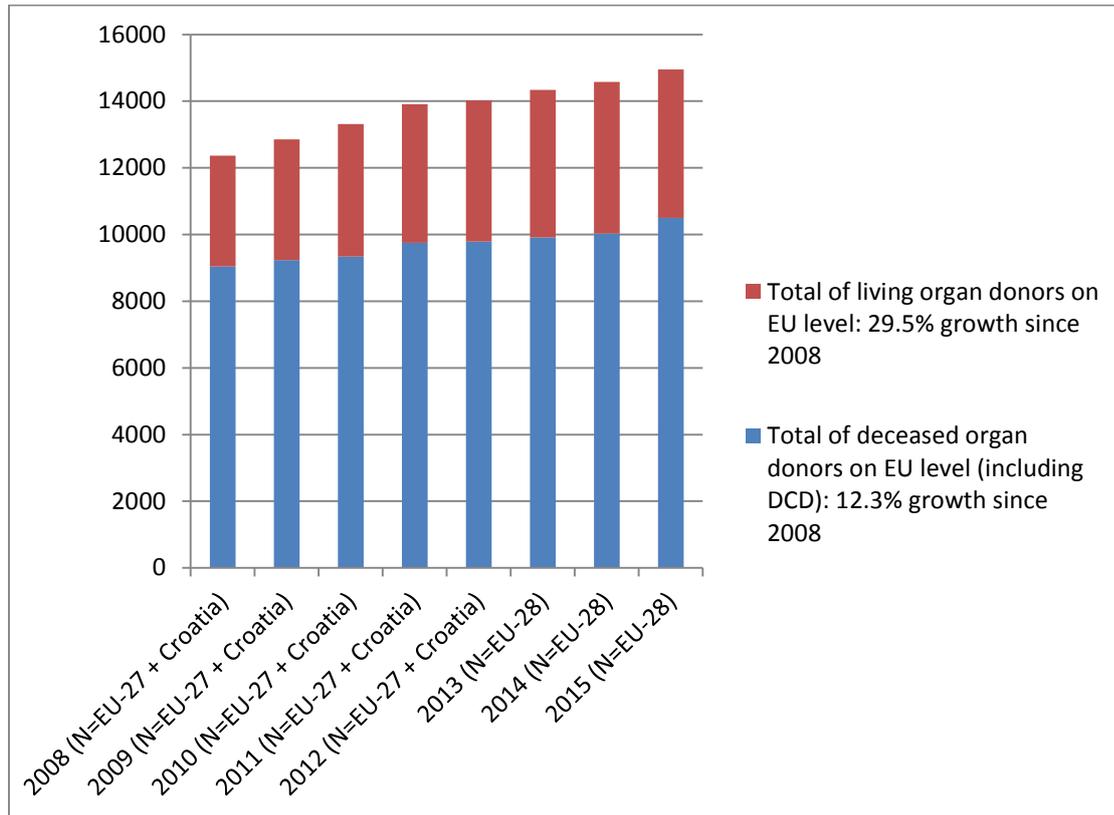
To conduct this study, an external contractor<sup>3</sup> was funded by the European Commission in 2015.

**Key figures on organ donation and transplantation**

<sup>2</sup> The study focuses on the EU Member States. However, a total of 36 countries participated in the study i.e. 28 EU Member States, the European Economic Area (EEA) countries (Iceland, Liechtenstein, Norway and Switzerland) and candidate/associated countries (the Former Yugoslav Republic of Macedonia, Montenegro, Serbia, and Turkey).

<sup>3</sup> NIVEL, Netherlands Institute for Health Services Research.

Since the adoption of the Action Plan, the total number of **organ donors** at the EU level has considerably **increased, i.e.** from 12.3 thousand in 2008 to 14.9 thousand in 2015. This accounts to a 21% **increase** over the period. This overall increase includes an increase in living organ donors of 29.5% and increase in deceased organ donors of 12%.



Figure

2: Number of organ donors in the EU in 2008-2015

Significant differences in (growth of) donation rates can be observed between countries. For instance, the average deceased donation rates varied from 1.3 PMP (Bulgaria) to 34.3 PMP (Spain) at beginning of the Action Plan (2008-2009). To compare, at the end of the Action Plan, in 2014-2015, deceased donation rates varied from 4 PMP (Greece) to 38 PMP (Spain).

Whereas most countries have demonstrated a steady increase in donation rates since the adoption of the Action Plan, some countries also have reported a fluctuation or fall-back. Poorer transplant rates can be noted in several countries that were hit by the economic crisis like Cyprus, Greece, Ireland, Portugal and Estonia. As organ transplantation builds on the entire health system, these poor transplant results might be a reflection of the overall impact of the economic crisis on the national healthcare systems.

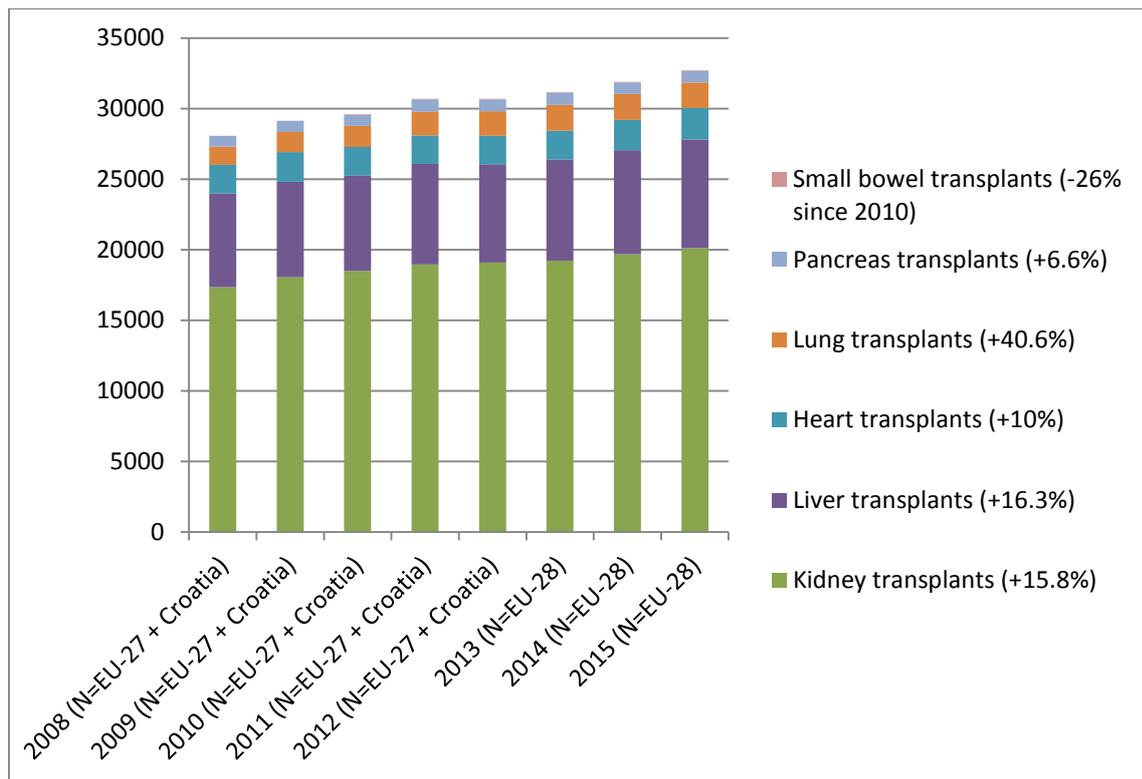
Important to note is the backdrop of more than 20% in transplant numbers in Germany during the same period. Without Germany, the other EU-27 Member States have grown almost 25%. One reason lies probably in the 2011 scandal on manipulation of waiting lists, which had an impact on willingness to donate, but also other organisational issues are to be looked at.

Study on the uptake and impact of the EU Action Plan on Organ Donation and Transplantation (2009-2015) in the EU Member States

For living donation (mainly for kidney transplants, but also possible for liver and lung transplants), average rates varied from 1.1 PMP (Poland) to 33.8 PMP (Cyprus) in 2008-2009. To compare, in 2014-2015 living donation rates varied from 0 PMP (Slovenia) to 31.3 PMP (the Netherlands).

An encouraging trend was observed in the number of **transplants** over the period of the Action Plan. Overall, there was an increase with 4.641 transplants, from 28.066 transplants in 2008 to 32.707 in 2015. This accounts to a **17% increase** over the period. The number of transplants was increasing for all types organs over the period of the Action Plan, except for small bowel transplants. There was a 16% increase in kidney transplants (the most transplanted organ), and liver transplants increased by 16%, heart transplants by 10%, pancreas transplants by 7% and lung transplants even by 41%.

Again, a significant variation is observed between Member States, in the numbers of organs transplanted in the countries.



3: Organ transplants in the EU in 2008-2015

Figure

The Action Plan also reveals that **cross-border exchange of organs plays an important role** to optimise use of the limited number of available organs. The majority of cross-border exchange takes place within European Organ Exchange Organisations (EOEO). Three European such organisations exist, i.e. *Eurotransplant*, *ScandiTransplant*

and SAT (Southern Alliance on Transplantation), and many Member States participate in it<sup>4</sup>.

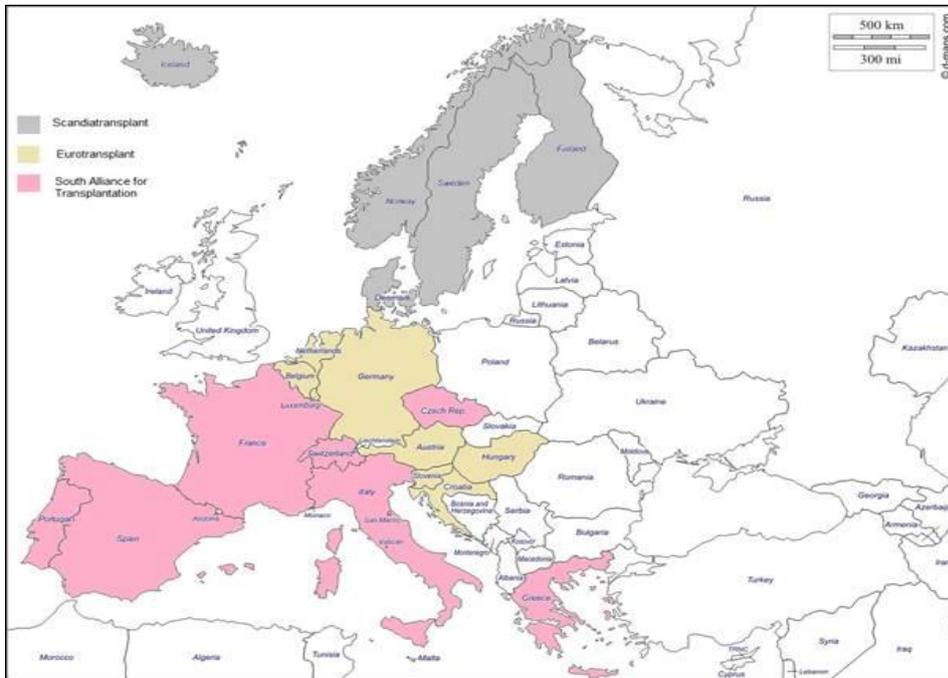


Figure 4: European Organ Exchange Organisations

However, many Member States have also set up direct collaborations and concluded **bilateral agreements** on the exchange of donor organs. Such cross-border agreements allow some countries to become very experienced in specific transplant procedures (for instance, lung transplant for Austria and Belgium, pancreas transplant for the UK, and Sweden), while other (neighbour) countries can benefit and access this expertise.

In addition, a number of countries (Czech Republic, Slovakia, Lithuania, Bulgaria, Switzerland, Italy, Spain, France, UK and Romania) have started to use a **common organ exchange platform** that was developed in the EU-funded FOEDUS joint action.<sup>5</sup> This organ exchange platform allows for allocation bodies (that match and decide donor organs with patients on the waiting list) to offer surplus organs, which are difficult to match to recipients in the own country. Often this concerns children. Inversely, these allocation bodies get access to offers from surplus organs donated in other countries. In the first 21 months, 380 organs have been offered on this platform leading to 53 transplanted organs, which otherwise would not have been used. More than one out of three of these transplants helped children under 10 years old. The platform is maintained at an annual cost around 10,000 Euro and more countries/allocation bodies are considering to participate.

<sup>4</sup> Eurotransplant (AT, BE, DE, HR, HU, LU, NL, SI).  
ScandiTransplant (DK, FI, IS, NO, SE).

<sup>5</sup> the South Alliance for Transplantation (SAT) (ES, FR, IT, PT, CH, CZ).

Organ exchange is therefore increasingly important for many countries to optimize use of the limited number of donor organs and increase overall transplant rates.

In spite of this overall progress, 56 thousand people were still **waiting for a transplant** in the EU Member States by end 2015. The demand for organs in the EU continues to strongly exceed the supply. This is observed in all countries, albeit to varying degrees for specific organs.

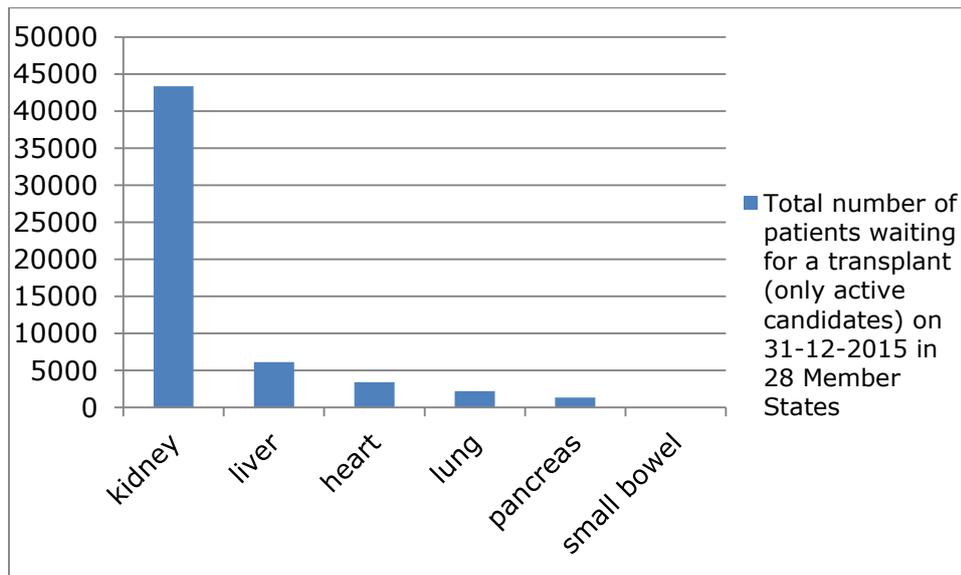


Figure 5: Total number of patients waiting for transplant in the EU (Source: Transplant Newsletter 2016, ONT/Council of Europe)

Some caution is however required when interpreting the number of patients on waiting lists. Waiting lists can rapidly change and the numbers on waiting lists cannot be compared across the EU for several reasons. For instance, a country usually does not have a waiting list for an organ if it does not have a transplant centre/program for this organ, which might lead to the wrong conclusion that no patients are waiting for such organ transplants in this country. Also the criteria for admission to the waiting list or removal from the waiting list differ between and within countries.

Overall, persistent organ shortages make **countries look for new options** to increase organ availability, in particular by:

- Promoting deceased organ donation inside and outside the intensive care units.
- Developing deceased donation also after circulatory death (besides donation after brain death).
- Optimizing living donation programmes, in particular for kidneys and livers.
- Increasing the donor pool through the use of organs from extended criteria donors (e.g. aged donors, non-standard risk donors, risk-positive donors for risk-positive recipients).
- Increasing the quality of the organs, for example by using machine preservation techniques.
- Exchanging surplus organs between countries, in particular for difficult to allocate organs.

The Action Plan has allowed exchanging know-how and developing common practices, to help Member States when implementing these options to increase availability.

### ***Implementation of the Action Plan at the national level***

A total of 36 countries (28 EU Member States and 8 other countries) participated in the FACTOR study, and reported back on national progress on each of the 10 Priority Actions.<sup>6</sup> While the inputs of all countries were assessed, the analyses focused in particular on the EU Member States.

The Action Plan has a voluntary nature and each Member State had a different starting position. In order to adapt the Action Plans to different national situations, taking account of local needs and resources, Priority Actions in the Action Plan were often translated into a set of corresponding National Priority Actions.

In short, the first challenge of the Action Plan, increasing organ availability seems to be taken up in most countries, as demonstrated by the continuous increase in both, deceased and living, donation rates in most countries. The second challenge, addressing efficiency and accessibility of transplantation systems, was mainly addressed through initiatives on organ exchange between countries. The third challenge, improving quality and safety of medical practices across the EU, has been addressed to a lesser extent within the Action Plan, but is of course the main focus of the EU legislation adopted in 2010.

The study confirmed that the Action Plan has been implemented by a majority of the countries, albeit to a varying degree (see Figure 6). Most importantly, the Action Plan helped countries to set their agenda in the field of organ donation and transplantation based on the priorities of the Action Plan.

Countries reported that most aspects of the Action Plan are being taken up at a national level, especially those Priority Actions which are most clearly defined. The following Priority Actions were perceived to have the clearest objectives and were implemented by the majority of countries:

- The appointment of transplant donor coordinators in hospitals to facilitate the identification of possible deceased donors and their transition to actual donation. This was by many considered a key success factor in increasing the number of deceased donors (PA1).
- The development of quality improvement programmes to optimise different organisational steps in the chain from deceased donation to transplantation (PA2).
- The set-up and/or development of living donation programmes to increase the donor pool (PA3).
- The building of public awareness, including communication training for professionals and working with the media to increase willingness to donate (PA4).
- The facilitation of organ exchange between countries to increase optimal use of available organs (PA8).

Some of the Priority Actions were considered by the countries as more complex to interpret and implement. Consequently, some Priority Actions were taken up to a lesser degree: identification of organs across Europe (PA5), involvement in twinings (PA6),

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<sup>6</sup> Nivel sent questionnaires to the competent authorities acting as representatives for the countries in the field of organ donation and transplantation. Data submitted was aggregated and evaluated. A stakeholder conference was held on 21.11.2016 to discuss the findings of the study.

Study on the uptake and impact of the EU Action Plan on Organ Donation and Transplantation (2009-2015) in the EU Member States

EU-wide agreements (PA7), the evaluation of post-transplant results on a national basis to improve transplant practice (PA9) and regular auditing/accreditation of procurement organisations and transplantation centres on a regular basis to assess, improve and align procedures (PA10).

The overview of the implementation of each of the PAs in the EU-28 Member States is summarised in Figure 6.

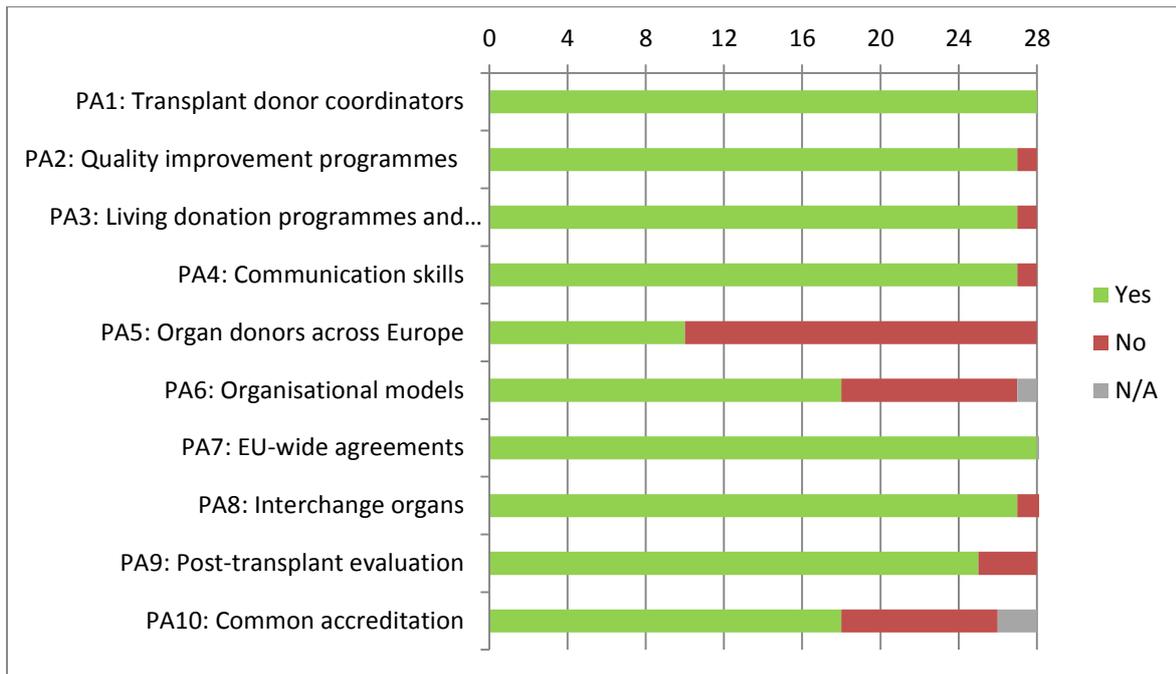


Figure 6: Implementation of the Action Plan per Priority Action in EU Member States

Overall, those Priority Actions and underlying sub-actions (see Annex 6) of the Action Plan that had clear objectives had been implemented to a larger extent than Priority Actions with the more complex nature. The later therefore might require further clarification, more EU-level support and/or more guidance for effective implementation.

### **EU support to implement Priority Actions**

EU-funded projects have significantly contributed to the goals of the Action Plan. These EU-funded projects contributed in several ways to help Member States achieve the objectives of the Action Plan. In particular they allowed acquiring knowledge to implement Priority Actions; developing tools such as guidelines, trainings and manuals to facilitate this implementation; to exchange knowledge and best practices among countries; and to directly implement initiatives and achieve concrete changes.

EU-funded projects particularly contributed to the PA1 (donor coordinators), PA2 (quality programmes), PA3 (living donation), PA4 (communication), PA8 (organ exchange) and PA9 (post-transplant evaluation). In particular, the following EU projects can be highlighted:

- With regard to actions focused on improving outcomes from deceased organ donation, both by focusing on transplant donor coordinators in hospitals (PA1) and by increasing quality of donation activities (PA2), EU-funded actions allowed to train donor coordinators (Train the trainers<sup>7</sup>), to improve collaboration with intensive care units (ACCORD<sup>8</sup>), to compare and improve deceased organ donation programmes (MODE<sup>9</sup>), to assess protocols and critical steps (COORENOR<sup>10</sup>) and to develop quality system indicators (ODEQUS<sup>11</sup>).
- The ACCORD Joint Action<sup>12</sup> facilitated the organisation of living donor programmes (PA3) by improving Member States' information systems to register and follow-up on health of living organ donors. Follow-up is an essential element to organise living organ donation in a trustworthy way. Living donor follow-up was already prepared in the ELIPSY project and the approach is currently rolled-out under the EDITH<sup>13</sup> pilot project. Other EU-funded work in the field of living donation focused on ethical and legal aspects (EULID Project<sup>14</sup>), and explored existing organisational models (COORENOR<sup>15</sup> and EULOD<sup>16</sup>). Dissemination of these activities was ensured at EU-supported conferences like LIDOBS<sup>17</sup> and ELPAT<sup>18</sup>.
- With regard to communication (PA4), the FOEDUS<sup>19</sup> joint action looked into communication strategies towards the general public, professionals and media. Both positive (campaigns) and negative (crises) communications were covered. The EU also funded the development of guidelines to organise a public European Organ Donation Day. The organisation of this event in 2010 in Slovenia allowed to document know-how that continues to serve the annual organisation of this awareness building event all over the EU. The recently launched pilot project EUDONORGAN<sup>20</sup> focuses on increasing social awareness and cooperation with patients' support groups and will further contribute to implementing

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7 European Transplant Coordinators (2012). Draft final report. European Transplant Coordinators: train the trainers course.

8 <http://www.accord-ja.eu/>

9 <http://www.mode-ja.org/>

10 <https://coorenor.ders.cz/display/CRN/Home>

11 <http://www.odequs.eu/>

12 <http://www.accord-ja.eu/>

13 <http://edith-project.eu/>

14 <http://www.eulivingdonor.eu/eulid/what-is-eulid.html>

15 <https://coorenor.ders.cz/display/CRN/Home>

16 <http://www.esot.org/EULOD/home>

17 <http://wp2.eulivingdonor.eu/lidobs-project/>

18 <http://www.esot.org/ELPAT/home>

19 <http://eudonorgan.eu/>

PA4. Finally it is worthwhile mentioning that, from 2010 to 2014, the Commission has run annual workshops introducing journalists into specificities of the organ transplant sector.

- On organ exchange (PA8), the FOEDUS joint action did not only develop organisational model agreements for organ exchange amongst countries, but has also set-up an IT platform for the exchange of surplus (unused) organs between countries. In the first 21 months, 53 transplants have already been carried out, often for children. Before that, also the COORENOR<sup>21</sup> project had already looked into organ exchange practices.
- An important contribution to allow for evaluation of transplant outcomes (PA9) came from the EFRETOS<sup>22</sup> project, which focused on the development of a register of registers for the follow-up of organ recipients. The EFRETOS project provided a data set and tools for the evaluation of post-transplant outcomes and set down the basis to build a European register of registries. Continuation of this project will be provided by the EDITH project focusing on the development and implementation of a recipient follow-up registry. Some additional follow-up aspects, mainly focused on vigilance, were addressed within the MODE Joint Action.

These Joint Actions bring many of the National Competent Authorities (NCA's) of the EU-28 Member States together on a regular basis. Almost all NCA's have been (and are) participating in one or more of these actions. Many Member States expressed explicitly that the EU-funded activities have supported them to implement the different Priority Actions in their country.

In addition, the European Commission organises regular meetings of National Competent Authorities for Organs<sup>23</sup>, allowing NCA's to review and compare progress on a regular basis. These meetings are also good occasions to exchange know-how. This has led a.o. to the development of manuals for authorities on how to set-up living donation programs and how to improve deceased donation activities. Many national authorities have also used the occasions of these meetings to present and discuss their national activities to and with their peers. These regular meeting can therefore be considered to be a cornerstone supporting organ transplant activities in the EU.

The regular meetings of National Competent Authorities for Organs and the Commission services also followed progress in transplant activities, through a so-called annual indicator exercise including key data on donation and transplant activities in the EU-28. This was developed in close collaboration with the Spanish Transplant Agency (ONT) and the Council of Europe (CoE), who publishes annual transplant data in a Newsletter<sup>24</sup>.

These EU activities should not be considered stand-alone but need to be seen within an **international context**, in alignment with the work of other international bodies or associations making important contributions to develop organ transplant activities in the EU and abroad. In particular worthwhile mentioning is the work by the Council of Europe's Directorate for the Quality of Medicines and Healthcare (CoE/EDQM, guidance on safety, quality and ethics), by the World Health Organisation (WHO, guiding

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<sup>21</sup> <https://coorenor.ders.cz/display/CRN/Home>

<sup>22</sup> <http://www.notifylibrary.org/content/european-framework-evaluation-organ-transplants-efretos>

<sup>23</sup> [https://ec.europa.eu/health/blood\\_tissues\\_organs/organs\\_en](https://ec.europa.eu/health/blood_tissues_organs/organs_en)

<sup>24</sup> [https://www.edqm.eu/sites/default/files/newsletter\\_transplant\\_2015\\_2.pdf](https://www.edqm.eu/sites/default/files/newsletter_transplant_2015_2.pdf)

principles), by professional associations like ESOT (European Society for Organ Transplantation)<sup>25</sup> and EDTCO (The European Donation and Transplantation Coordination Organization)<sup>26</sup>.

The Commission services and EU-28 National Competent Authorities have regular and good interactions with these key stakeholders.

Finally, other EU-funded programmes, managed outside the remit of European Commission DG SANTE, have also contributed to this sector. Noteworthy are initiatives supported by DG RTD (EULOD, DOPKI, ALLIANCE-O on organisational aspects and COPE on organ preservation) and by DG HOME (HOTT project on trafficking<sup>27</sup>).

### ***Success factors and challenges***

The Action Plan has helped countries in different ways, but most importantly by **setting a shared** agenda and by **facilitating EU-wide cooperation**.

The driving factor of the Action Plan is a strong **cooperation** between Member States, as mentioned in the sub-title of the Action Plan. The differences in practices and activity levels are a rich source to tap from when improving transplant programmes in the entire EU. Joint Actions and twinning projects were considered as a good way of achieving successful cooperation.

The fact that the common agenda in the Action Plan is aligned with and enforced by other **international activities**, in the Council of Europe (CoE) and in the World Health Organisation (WHO), is also considered an essential element of success. The fact that objectives of several EU-funded projects are aligned to these international initiatives increases the chances of sustainability.

This study found that the Action Plan and EU cooperation have been very helpful in developing national donation and transplant systems. The Action Plan was most effective for those Priority Actions that have been clearly defined. This highlights the need to clearly **define the roles of different parties** involved in implementing a Priority Action, the national or EU-level authorities, but also the professionals in transplant and donation programmes.

The role of the **Commission as central facilitator** also needs to be emphasized. The most important Commission activity is the organisation of regular meetings with the National Competent Authorities, responsible for organ donation and transplant activities in each of the EU-28 Member States. These meetings allow building a strong community open to exchange and develop know-how. The financial support through different EU-funded Actions is also considered a key facilitating factor in the field.

Some challenges for a successful implementation of the Action Plan have also been identified.

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<sup>25</sup> <http://www.esot.org/>

<sup>26</sup> <http://www.esot.org/EDTCO/home>

<sup>27</sup> <http://hottproject.com/>

**Countries with less developed donation and transplantation systems** are often dealing with different institutional and organisational constraints which hamper implementation of some of the Priority Actions. Subsequently, it is difficult to accommodate the interests of countries with less developed donation and transplant systems, at the same time as the interests of the countries with more developed systems.

Another challenge is the **sustainability** of some EU-funded projects, in particular where they involve an IT component such as a common database. And many areas of activity increasingly require such IT-platforms (follow-up registries for recipients and for living donors, organ exchange platforms, knowledge exchange). Ensuring continuation of the projects and maintenance of the systems requires particular consideration.

Furthermore, the results of the projects could be better presented at the **political level** as the support of governments is essential to ensure sustainability of the projects. The political level might find it also interesting to learn more about the positive cost/benefit balance that organ transplant activities bring (savings compared to alternative organ-replacement therapies like dialyses). **Professional societies** such as ESOT<sup>28</sup> (European Society for Organ Transplantation) and EASL<sup>29</sup> (European Association for the Study of the Liver) could also be involved more to bolster sustainability.

### **Recommendations for the future**

Many countries have emphasized that future EU cooperation in the area of organ donation and transplantation is essential and should benefit from the lessons learned during the implementation of the Action Plan in 2009-2015. The key lessons learned and ideas for the future approach are the following:

- Define **clear objectives**, using a bottom-up approach by involving all actors that participate in decision-making, such as (medical) professionals, administrations, political decision makers and the general public. This will allow having result-oriented and feasible actions that are broadly supported.
- Build upon the power of **mutual learning and knowledge** exchange.
- Seek opportunities to share with and learn from **experience in adjacent areas of expertise**, like tissues and cells, to increase the participatory and absorptive capacity of each country.
- Support countries with less developed donation systems to have a more explicit role. Individual **countries that face similar contexts can be brought together in groups** that are supported jointly by the EU. The Competent Authority meetings could also be organised in function of such different groups of Member States, and other relevant stakeholders could be invited to contribute to these meetings.
- Focus more on **implementation and sustainability**, including the maintenance of IT platform in an EU-funded project, to ensure a long-term impact.

Following areas were brought forward as most promising for future work at EU-level<sup>30</sup>:

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<sup>28</sup> <http://www.esot.org/>

<sup>29</sup> <http://www.easl.eu/discover/what-is-easl/easl-and-the-eu/organ-donation-and-transplantation>

<sup>30</sup> In a stakeholder meeting, held in the framework of this study with country representatives and professionals on 21.11.2016.

- **Donation after Circulatory Death (DCD):** DCD offers the potential of an important new source of organs and this practice should be further explored, so that it can be organised in more EU Member States. However, this requires for some countries changes in organisation and legal/ethical frameworks. Furthermore, possible joint work in this area should fully respect that national provisions on the donation or medical use of organs fall within the national competence and hence not in the remit of the European Union.
- **Living donation:** Supporting the further uptake of living donor follow-up and of living donor registries in a common and comparable way is crucial to ensure public trust in this sensitive (ethical) but important transplant practice, which is now performed in almost every country.
- Furthermore, approaches and tools to increase the donor pool with **expanded criteria donors** is a promising development in order to further increase the number of donors. For instance, the use of expanded donors could be supported by quality improvement measurements like machine preservation.
- Collection of **Clinical Outcome Data** in recipients. Given the limited availability of organs, it is of key importance to know that the available organs are of optimal quality. This requires recipient follow-up and better common registers. Important lessons can be learned on critical factors like survival after transplantation, patient selection for transplantation, donor/recipient matching. In this respect, the collection and provision of data by countries is essential.
- The further development of common guidelines and standardization of evaluating, auditing **and benchmarking hospital performance**, and bio-vigilance will help to address specific aspects of quality and safety.
- **End-of-life care:** Understanding and overcoming the obstacles that critical care professionals face to incorporate donation in end-of-life care plans are considered important. Such efforts of course need to fully respect the primary objective of delivering critical care, which is to restore health of patients.
- **Communication:** Examine and develop different aspects of communication to assess and improve their effectiveness (such as public awareness campaigns, social media, education in schools and communication with the family of patients).
- **Education of professionals:** Consider a sustainable way that all professionals in the entire donation and transplantation chain could benefit from continuous training on differing aspects of organ donation and transplantation.
- **Efficiency:** Further research is needed to understand the differences between countries in the efficiency of the organisation of organ donation: for example the Study found significant differences between countries in the number of donations per donation centre.
- **Finances:** Demonstrating more widely, the cost-efficiency of transplantation programs is likely to obtain greater support at all levels, in particular with politicians and financing decision makers.
- **Research:** Opportunities were identified related to the evaluation and improvement of post-transplant outcomes, donor optimisation, immunogenicity, organ rehabilitation and organ preservation/perfusion, and new products such as combined cell therapies.

## **Conclusion**

Organ donation and transplant practices have developed well in the EU in the course of the Action Plan. Overall, the total number of **organ donors** at the EU level has

considerably increased, i.e. from 12.3 thousand to 14.9 thousand in 2008-2015 (21%). At the same time, there was an increase by 4.641 **transplants**, from 28.066 to over 32.707 in the same period (17%).

In first place this is an achievement of the professionals and the National Competent Authorities coordinating and overseeing transplant activities within each of the EU-28 Member States.

Most of these Member States<sup>31</sup> do however indicate the value of having a common set of priorities in form of the **EU Action Plan**, in particular by having a shared agenda and by allowing the exchange of know-how. In particular, the Member States expressed the view that the Action Plan has helped them to improve their national policies and activities on organ donation.

They also expressed that the **EU-funded activities** have supported them to implement the different Priority Actions in their country. Many countries have been actively engaged in the development, sharing and implementation of know-how within a variety of EU-funded projects.

Member States also seem to appreciate the development of a **peer network of National Competent Authorities** for Organs and a possibility to regularly participate in the meetings organised by the European Commission services.

This has allowed strengthening deceased donor programmes, a.o. through the role of donor coordinators, as well as living donor programmes. Also good progress was made in exploring the potential of public awareness building and of organ exchange.

There are however some learnings to be made from this experience of common work, like the need for clearly defined actions, the need to involve actors at professional, administrative and political level, and the need to work more in tailor-made sub-groups of countries facing common issues.

Member States have expressed their interest in continuing this work, and a first list of ideas was brought forward for future focus like exploring more types of donation, building awareness and looking into the financial aspects of organising transplant programmes.

Based on this positive evaluation, many Member States consider there is a need for a new, improved Action Plan, benefitting from lessons learned from the Action Plan in 2009-2015.

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<sup>31</sup> Representatives of National Competent authorities for Organs.