Curricula on patient safety and the second victim phenomenon









CURRICULA ON PATIENT SAFETY AND THE SECOND VICTIM PHENOMENON

ERNST – The European Researchers' Network Working on Second Victims

Cost Action CA 19113

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EXECUTIVE SUMMARY

Patient safety and the second victim phenomenon are critical concerns in healthcare systems across Europe. This white paper, developed by the European Researchers' Network Working on Second Victims (ERNST) under COST Action CA 19113, seeks to address these issues by providing a comprehensive analysis of current educational curricula and the barriers and facilitators to integrating patient safety and the second victim phenomenon into healthcare training programs.

Through qualitative research involving 24 countries and input from healthcare education leaders, this white paper reveals significant gaps in existing curricula, particularly regarding the second victim phenomenon, which is often underrepresented or misunderstood. The findings highlight the need for a paradigm shift from a blame-centric culture to one that promotes systems thinking and resilience, focusing on the systemic nature of errors rather than individual culpability.

This white paper emphasizes the importance of interdisciplinary collaboration, continuous professional development, and innovative teaching methods to better equip healthcare professionals with the skills needed to manage patient safety and support second victims effectively. The recommendations provided aim to guide healthcare institutions, educators, and policymakers in implementing these changes to improve the overall quality of care and safety in European healthcare systems.







KEY RECOMMENDATIONS:

1. Curriculum Integration:

 Ensure patient safety and the second victim phenomenon are integrated into the core curricula of all healthcare-related education programs, from undergraduate to continuous professional development (CPD).

2. Development of Stand-Alone Courses:

 Advocate for the creation of dedicated courses or modules on patient safety and the second victim phenomenon, which should be mandatory for healthcare students and professionals.

3. Innovative Educational Approaches:

 Implement interactive and practical teaching methods, such as simulations and case studies, to engage students and professionals in understanding and applying patient safety principles.

4. Faculty Development:

 Invest in training programs for educators to equip them with the knowledge and skills necessary to teach patient safety and the second victim phenomenon effectively.

5. Interdisciplinary Collaboration:

 Promote interdisciplinary learning opportunities where students from different healthcare disciplines collaborate to foster a more comprehensive understanding of patient safety.

6. Addressing Curriculum Overload:

 Develop strategies to integrate patient safety topics into existing curricula without contributing to overload, ensuring that these crucial subjects are given appropriate attention.

7. Student and Stakeholder Engagement:

o Involve students and key stakeholders in the design and implementation of patient safety curricula to ensure relevance and efficacy.

8. Promotion of Psychological Safety:

 Foster an educational and organizational culture that prioritizes psychological safety, encouraging open discussions about errors without fear of punitive consequences.

9. Continuous Professional Development:

 Encourage lifelong learning through ongoing professional development programs focused on patient safety and second victim support, keeping pace with advancements in healthcare.

10. Collaborative Efforts for Implementation:

 Engage with regulatory bodies, professional organizations, and policymakers to ensure the successful implementation of these curriculum reforms across European healthcare education systems.





INTRODUCTION: CURRICULA ON PATIENT SAFETY AND SECOND VICTIM PHENOMENON

- > The COST Action CA 19113 ERNST European Researchers Network for Second Victims aims at: creating an open dialogue among key people involved in various processes that lead to the delivery of health and social care about the theoretical conceptualization and practical consequences of the second victims' phenomenon. The dialogue is intended to consolidate cross-national collaboration while integrating perspectives from different professions, disciplines and approaches.
- There are four working groups:
 - **WG1-** Network promotion: Networking, management, dissemination issues, assessment of work plan and sustainability.
 - **WG2-** Review and description of the state-of-the-art: Review and disseminate conceptualization, evidence-based interventions, metrics and instruments, including the experiences from other industries.
 - **WG3-** Making it happen: Make feasible interventions, train professionals, and implement cultural, legal or educational changes.
 - **WG4-** Facilitators and barriers: Explore and facilitate alternatives to overcome taboos, or obstacles facilitating collaboration among stakeholders.
- This white paper is a deliverable of WG4, specifically on the curricula and legislation on second victim phenomenon and patient safety. The objectives of this Work Group are the following:

Objectives

- RC4. Achieving changes in rules and regulations facilitating discussion of the legal, ethical, and organizational gaps while promoting a common understanding of factors underlying the interventions designed to support second victims.
- > RC7. Encouraging inclusion of the consequences of mistakes on care providers and the implications for health sciences in the field studies curricula.
- > CB1. To lead a debate to promote a culture of transparency and legal certainty as a contribution to furthering the wellbeing of frontline medical staff as part of its commitment to quality assurance.
- This COST Action has brought together for the first-time various professions and disciplines involved in health and social care so as to develop new knowledge from a wide range of viewpoints. Therefore, those participating are not just clinicians but also key players in the field with different backgrounds and from different organizations for example scholars, lawyers, journalists, as well as representatives of insurance companies, professional associations, trade unions, patients' associations and governmental institutions. It builds on established research and policy while presenting prospects to critique and possibly update local, national, and international legislation, rules, and policies.





- The white paper presents a strong case for the integration of patient safety and the second victim phenomenon into healthcare education. It uses evidence from a broad cross-section of European countries, providing both a detailed analysis of current gaps and practical recommendations for improvement. This document will be valuable for healthcare educators, policymakers, and professionals involved in curriculum development and patient safety initiatives.
- > This white paper specifically intends to provide an overview of the current state-of-the-art of curricula of healthcare and related professions across levels of education, but also including continuous professional development. This white paper intends to emphasize the much-needed paradigm shift from the traditional blame-culture towards more sustainable and resilient systems thinking and continuous improvement. It is hoped that this white paper will provide a basis for a revised curricula that will widen the impact of interventions related to patient safety in healthcare.
- This white paper encourages the development of stand-alone undergraduate and postgraduate programs on patient safety that should also include education and training on the second victim phenomenon. This will give a stronger focus on the subject matter over and above education and training in these fields as part of the general curriculum of healthcare and related professions' courses.
- > This white paper is based on a study that includes perspectives from ERNST participants from different countries in Europe, and therefore provides a holistic picture of curricula across different healthcare systems, legal structures, cultures and practices of patient safety.
- It is intended that this white paper will facilitate discussion and will enable the sharing of scientific knowledge and best practices concerning patient safety curriculum that includes awareness of the consequences of adverse events on the healthcare workforce. The discussion is intended to lead to joint and concerted efforts across Europe on patient safety curricula and the second victims' phenomenon.





CURRICULUM: RESEARCH DESCRIPTION, METHODOLOGY AND RESULTS

The research for this white paper is based on:

- A. Two Qualitative Studies: Analysis of gaps in training in health workforce across Europe
- Semi-Structured Questionnaire consisting of seven questions (Appendix 1) about curricula and policy regarding patient safety and the second victim phenomenon. Data were analyzed using qualitative techniques. The study was conducted to gather information and perspectives of

participants in ERNST COST Action on the main gaps in the health professions' curricula on patient safety and second victim phenomenon in their respective countries, and their intention to incorporate patient safety into training requirements across Europe.

24 countries and 27 ERNST MC members participated in the project. Mean age 51 (+12). Majority have direct experience with patient safety.



2. In-Depth Interviews across Europe on Patient Safety and Second Victim Phenomenon in Nursing and Medical Curricula. A multi-national qualitative study was conducted by the ERNST Work Group 4 members – authors of this manuscript, involving in-depth interviews with healthcare education leaders from medical and nursing programs in 10 European countries. Participants were from Finland, Iceland, Ireland, Israel, Lithuania, Norway, Malta, Serbia, Slovakia, and Spain. A total of 19 healthcare education leaders were recruited by using purposeful sampling, aiming to capture the geographical regions of Europe thereby ensuring a wide range of perspectives. Each country, had two participants, except for Ireland, which had only one participant due to logistical constraints. The participants included heads of departments or senior leaders with extensive knowledge and experience in medical and nursing education at both undergraduate and postgraduate level. This diverse sample provided a comprehensive trans-European overview of patient safety and the second victim phenomenon in healthcare education. The study protocol provided a comprehensive guide for the interviews, ensuring consistency across different countries. Interviews were conducted from April 2023 to June 2023. Thematic analysis, guided by COREQ, was employed to identify facilitators and barriers in curriculum development, content delivery, and professional development.



RESULTS OF SEMI-STRUCTURED QUESTIONNAIRE

- In general, patient safety is still being taught mostly as part of other subject areas or systems at both undergraduate and postgraduate levels
- While standalone patient safety study units and courses are not widespread across countries surveyed, the intention to introduce them seems to be on the rise.

PATIENT SAFETY CURRICULA		
Education in general about patient safety	19 (79.2%)	4 (16.7%)
Patient safety for undergraduate	19 (79.2%)	4 (16.7%)
Patient safety unit standalone Undergraduate	12 (50%)	10 (41.7%)
Patient safety for postgraduate	18 (75%)	2 (8.3%)
Patient safety unit standalone postgraduate	7 (29.2%)	10 (41/7%)
Patient safety for CPD	19 (79.2%)	3 (12.5%)
Patient safety unit standalone CPD	14 (58.3%)	5 (20.8%)
Patient safety intentions to develop	11 (45.8%)	4 (16.7%)
	Vec	No

No

Yes

- Only few countries provided a definition (e.g. Spain, Belgium, Israel, Estonia and Germany), based on Wu (2000) and Scott (2009) definitions.
- Majority of participants had misconceptions or lack of clarity about second victims.
- Definitions of participants of second victims included the event characterized as a shock, healthcare worker affected by the event and suffering from physical and mental illness as consequences.
- Some referred to undesired organizational approaches to adverse events. None of the responders approached the third victim (or the caregivers)

SECOND VICTIMS	Yes	No
Second victim definition	7 (29.2%)	16 (66.7%)
Second victim established definition	5 (20.8%)	16 (66.7%)
Intention to develop a second victim programme	14 (58.3%)	8 (33.3%)

- The majority of participants claimed that there is no awareness or established definition of the second victim phenomenon.
- The majority of participants believe that their health systems intend to develop a second victim program.



Curricula Curricula for the Second Victim Phenomenon

At undergraduate level, most participants from different countries declared that patient safety is included in multiple curricula of the various healthcare professionals' courses.

"Patient safety education can be included in of all the courses of the curriculum of undergraduate" [Finland]

"Patient safety is intertwined into other courses in formal education." [Iceland]

"Quality and patient safety is included in bachelors for different healthcare professionals" [Belgium]

"Infiltrated in other subjects e.g. as part of human system approach" [Malta]

"Themes of Patient Safety occur (are incorporated) into the courses of study field for study programs of higher education providing qualification degree - Professional Bachelor of Health Sciences (Radiology, Biomedical Diagnostics, Dietetics, Occupational Therapy, Hygienic and Decorative Cosmetology, Physiotherapy, General Care Nursing)" [Lithuania]

"There is some attention to training on patient safety given to students in medical training, nursing training, physiotherapy and social work." [Israel]

The participant from Sweden remarked that the learning outcomes for undergraduate nursing studies do not explicitly refer to patient safety. Rather, they use words like quality etc.

"Outcomes for nursing studies (undergraduate) the word "patient safety" is not explicit instead words such as, "quality of care; quality assurance; quality improvement; prevention etc. is used." [Sweden]

- > There is no mention of shared learning involving different students from different disciplines.
- There also seems to be variation within countries.

"In case of stand-alone units, it usually lasts 2+2 hours (lecture + seminar), one respondent stated 28 hours in total. Some of them stated that it varies and did not specify; In case when it is a part of other unit (for example it is part of Social Medicine, Medical Psychology, Introduction to health management) the time spent on the topic of patient safety varies (10 minutes, 10 % of the time, 5 respondents couldn't give an estimate of time, it varies....). The form varies: mainly lectures, then seminars, trainings and courses" [Slovakia]

While others like Spain remarked that:

"WHO curriculum guide on patient safety is not completely deployed" [Spain]

There seems to be variation in the weighting given to patient safety across countries. Some countries have specific modules for example:

"An example of a module which encompasses patient safety can be seen here:





Curricula Curricula for the Second Victim Phenomenon

https://hub.ucd.ie/usis/!W HU MENU.P PUBLISH?p tag=MODULE&MODULE=MDSA30320" [Ireland]

➤ At postgraduate level, courses related to patient safety are increasing across Europe. They are more structured as standalone study units with some universities also offering Postgraduate Certificate, Postgraduate Diploma and Master Programs.

"The training is within a stand-alone course on human-factors engineering and risks involved from poor planning of actions or systems." [Israel]

"Some educational institutes organize specific patient safety courses." [Finland]

"We have standalone study units on patient safety, human factors, and evidence-based approaches to patient safety, which are being offered also as continuous professional development courses, apart from serving as credits that lead to PG certificate, diploma and Master degree" [Malta]

> Some countries referred to the existence of associations related to quality assurance in healthcare as advising curricula.

"The Association for Quality Promotion advises medical schools to include patient safety courses in all curricula and organizes courses, mainly in the framework of healthcare facilities accreditation."
[Poland]

Interestingly, the participants from Italy and Malta reported that patient safety is dealt with within or together with clinical risk management - seemingly providing a more proactive approach to patient safety.

"Patient safety dealt with in clinical risk management courses of all degree courses of health professionals." [Italy]

"We have included clinical risk management as a study unit following the one on patient safety, emphasizing throughout the importance of both - therefore being proactive to avoid patient harm not just reactive when an error or patient harm occurs" [Malta]

Limitations of study

In this study, efforts to capture information and perspectives holistically and accurately from every ERNST participant representing different countries across Europe, we are aware that this information is not complete and cannot represent a country-wide perspective. We have also encountered participants who were not aware of the extent of development of the curriculum in the fields of patient safety and second victim phenomenon, when the information was validated using other sources.

For this reason, a multi-national qualitative study was conducted by the ERNST consortium, involving indepth interviews with healthcare education leaders from medical and nursing programs in 10 European countries.





RESULTS

IN-DEPTH INTERVIEWS

Five main themes

emerged, indicating substantial gaps in the inclusion of the second victim phenomenon despite its importance.

Themes

Theme 1: Recognition and Understanding of Patient Safety and the Second Victim

- Concept of second victim seldom included in formal curricula.
- Second victim phenomenon crucial for well-being of healthcare workers and for maintaining high standards of patient safety.
- Medical errors are often systemic rather than individual failures, indicating need for comprehensive systems thinking educational approaches that address the broader context of patient safety.

Theme 2: Curriculum Development and Implementations

- Integrating patient safety topics, e.g. second victim phenomenon, into existing curricula presents several challenges.
- Participants frequently cited already overloaded curricula and stringent regulatory requirements.
- Second victim phenomenon is crucial for well-being of healthcare workers and for maintaining high standards of patient safety.
- Need for innovative/creative approaches to teaching patient safety to incorporate more interactive and practical training.

Theme 3: Content and Delivery of Training

- Content and delivery of patient safety training highlighted as critical areas needing improvement.
- Need for practical coping skills, interdisciplinary training, and a more hands-on approach in patient safety education.
- Need for teaching philosophy grounded in research to ensure that educational interventions are effective.
- Changing attitudes towards mistakes is essential, advocating for open and constructive response to errors.

Theme 4: Student Engagement and Impact

- Engaging students in the design and implementation of the curriculum essential for its success.
- Students would respond positively to new courses focused on patient safety and the second victim phenomenon.
- Actively involving students in curriculum development would ensure educational content is relevant and impactful.

Theme 5: Continuous Professional Development and Future Directions

- Continuous education and the ongoing updating of healthcare professionals' competencies emerged as crucial themes.
- Need for faculty development programs to equip educators with the necessary skills and knowledge to teach patient safety effectively.
- Ongoing professional development essential to keep pace with rapid advancements in evidence-based healthcare and education.
- Commitment to lifelong learning and professional development is vital for maintaining high standards of patient safety and care quality.





RESULTS OF IN-DEPTH

INTERVIEWS

Key barriers

Barrier 1: Overloaded curricula.

Barrier 2: Resistance to change from traditional teaching methods.

Barrier 3: Bureaucracy in changing academic study programs and stringent regulatory requirements.

Barrier 4: Teachers are not familiar with teaching patient safety and the second victim phenomenon.

Barrier 5: Current lack of structured educational content on the second victim phenomenon.

Barrier 6: Part of broader challenges in medical education reform.

Barrier 7: Lack of structure for continuous professional development and lack of inclusion of topics on patient safety.

RESULTS OF

IN-DEPTH INTERVIEWS

Facilitators

Facilitator 1: Interdisciplinary collaboration.

Facilitator 2: Recognition of needs on patient safety acts as a facilitator for advocating changes in the curriculum.

Facilitator 3: Recognizing and harnessing student motivation were considered critical factors.

Facilitator 4: Practical coping skills and interdisciplinary training were seen as facilitators for improving patient safety education.

Facilitator 5: Providing incentives for student engagement, such as integrating these topics into final thesis projects or offering specialized training modules.

Facilitator 6: Fostering an environment of psychological safety where healthcare professionals feel comfortable discussing and learning from errors.

Facilitator 7: Continuous professional development and systematic reforms on patient safety.





RECOMMENDATIONS TO STRENGTHEN CURRICULA ON PATIENT SAFETY AND SECOND VICTIM PHENOMENON

The recommendations to "Strengthen Curricula on Patient Safety and Second Victim Phenomenon" include the following:

1. Integration of Patient Safety and Second Victim Topics in Curricula:

- Advocate for the incorporation of dedicated modules on patient safety and the second victim phenomenon within undergraduate, postgraduate, and continuous professional development (CPD) curricula for all healthcare-related disciplines.
- Encourage the inclusion of these topics as mandatory elements rather than optional courses to ensure comprehensive coverage.

2. Development of Stand-Alone Programs:

- Promote the creation of stand-alone degree programs focused on patient safety and second victim support, possibly leading to specialized certifications or qualifications.
- Ensure these programs are accessible to students and a wide range of healthcare professionals, including those in leadership roles.

3. Innovative Teaching Methods:

- Introduce interactive and practical teaching methods such as simulations, roleplaying, and case studies to better engage students and healthcare professionals in understanding patient safety and the second victim phenomenon.
- Emphasize the importance of system thinking approaches that highlight the systemic nature of errors in healthcare.

4. Faculty Training and Development:

- Implement faculty development programs to equip educators with the necessary knowledge and skills to effectively teach these topics.
- Encourage ongoing professional development for educators to keep up with the latest evidence-based practices in patient safety and second victim support.

5. Interdisciplinary Collaboration:

- Facilitate interdisciplinary learning opportunities where students from different healthcare disciplines can collaborate and learn together on patient safety issues.
- Leverage interdisciplinary collaboration to foster a more holistic understanding of the second victim phenomenon and its impact on various healthcare roles.

6. Curriculum Flexibility and Adaptability:

- Encourage flexibility in curricula to allow for the continuous updating and adaptation of course content in response to emerging trends and research in patient safety and second victim support.
- Address bureaucratic barriers that hinder the timely revision of academic programs to include these crucial topics.

7. Student and Stakeholder Engagement:

• Involve students and key stakeholders in the design and implementation of curricula to ensure the relevance and impact of the educational content.





• Consider offering incentives for student engagement, such as integrating patient safety topics into final projects or offering specialized training modules.

8. Promotion of a Culture of Psychological Safety:

- Cultivate an educational environment where healthcare professionals feel psychologically safe to discuss and learn from errors without fear of punitive repercussions.
- Emphasize the importance of open communication and support mechanisms to address the emotional and professional impacts of medical errors.

These recommendations are designed to enhance the education and training of healthcare professionals in patient safety and the second victim phenomenon, ultimately contributing to safer healthcare systems across Europe.

CONCLUSIONS

The pressing need for a comprehensive and integrated patient safety curriculum is underscored by the ongoing challenges faced within healthcare education across Europe. The findings from this White Paper highlight the critical importance of embedding patient safety and the second victim phenomenon into the core curricula of healthcare professions. This approach is not merely an academic exercise but a proactive intervention aimed at cultivating a culture of safety and resilience among healthcare professionals.

This White Paper reveals significant gaps in the current curricula, where patient safety is often treated as a peripheral topic rather than a central component of healthcare education. Moreover, the concept of the second victim, although crucial for the well-being of healthcare workers and the maintenance of high standards in patient safety, remains inadequately addressed or even overlooked in many educational programs. These gaps are further exacerbated by overloaded curricula, resistance to change from traditional teaching methods, and bureaucratic challenges in revising academic programs.

Despite these challenges, there is a growing recognition across European countries of the need to prioritize patient safety education. This recognition serves as a catalyst for change, encouraging innovative approaches to curriculum development that can better equip healthcare professionals with the necessary skills to prevent and respond to medical errors. Interdisciplinary collaboration, student engagement, and continuous professional development are identified as key facilitators in this process.



To bridge the identified gaps, it is essential to adopt a systems-thinking approach that moves beyond blaming individuals for errors and instead focuses on understanding and mitigating systemic issues. This approach should be reflected in the curricula through interactive and practical learning experiences that prepare healthcare professionals to navigate the complexities of patient safety.

Moving forward, stakeholder collaboration will be paramount in ensuring that these curriculum reforms are effectively implemented. This includes not only healthcare educators and institutions but also regulatory bodies, policymakers, and professional organizations. By fostering a shared commitment to patient safety and the support of second victims, Europe can set a global standard for healthcare education that prioritizes the well-being of both patients and healthcare providers.

In conclusion, the integration of patient safety and the second victim phenomenon into healthcare education is not just an academic priority but a moral imperative. By addressing these issues through comprehensive curriculum reforms, we can create a more resilient healthcare workforce, capable of delivering safer care and better supporting those affected by medical errors.

GLOSSARY

- First Victim A patient who experiences an adverse event, and also their close relatives.
- Patient Safety Patient safety is a framework of organized activities that creates cultures, processes, procedures, behaviors, technologies and environments in health care that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make error less likely and reduce impact of harm when it does occur. (WHO, 2020)
- Patient safety incident is an event or circumstance which could have resulted, or did result, in unnecessary harm to a patient. Incidents can arise from either unintended or intended acts.
- > Psychological safety Feeling able to show and employ one's self without fear of negative consequences to self-image, status, or career. (Kahn, 1990) A shared belief that the team is safe for interpersonal risk-taking. (Edmondson, 1999) When employees feel safe voicing concerns and reporting problems and can trust their supervisor. (MacCurtain et al., 2018)
- > Safety Culture The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the characteristics of the organization's health and safety management.





Organizations with a positive safety culture are characterized by communications based on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures. (WHO, 2021)

- > Second Victim Any health care worker, directly or indirectly involved in an unanticipated adverse patient event, unintentional healthcare error, or patient injury and who becomes victimized in the sense that they are also negatively impacted. (Vanhaecht et al., 2022)
- Systems Approach Using prompt, intensive investigation followed by multidisciplinary systems analysis to [uncover] both proximal and systemic causes of errors... It is based on the concept that although individuals make errors, characteristics of the systems within which they work can make errors more likely and also more difficult to detect and correct. Further, it takes the position that while individuals must be responsible for the quality of their work, more errors will be eliminated by focusing on systems than on individuals. It substitutes inquiry for blame and focuses on circumstances rather than on character. (WHO, 2009)

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APPENDICES

Appendix 1

WG4 COST Action 19113 ERNST

WG Leaders Prof Sandra C. Buttigieg and Dr Einav Srulovici

ERNST

The curricula of undergraduate, postgraduate and continuous professional development courses for healthcare professionals on patient safety across different countries and at EU level by participants of the current COST Action, with particular focus on second victims programs.

Questions

- 1. Can you please provide some background details including age, education, expertise and experiences you have in healthcare?
- 2. Can you please provide the reason/reasons why you joined this COST Action related to second victims?
- 3. Could you please briefly describe your country's healthcare system (public/private, insurance system, fees, hospital/clinics, financial perspectives?
- 4. Is patient safety part of the curriculum of undergraduate, postgraduate and continuous professional development courses for healthcare professionals? If yes, describe at which level and whether it exists as a stand-alone study-unit/course or as part of other study units/courses?
- 5. If I say second victim, what are your thoughts about this subject and how is it defined in your country? Is there an established definition? If so, could you please describe it to me
- 6. Could you please describe:
 - a. Your country's idea and intentions/ambitions regarding patient safety courses for healthcare professionals?
 - b. Your country's idea and intentions/ambitions regarding the topic of second-victims programs in healthcare?
- 7. Is there anything else you would like to add regarding patient safety and second victims programs in your country's health care and educational systems?

Thank you for sharing your knowledge and experience regarding patient safety and second victims programs in your country.











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COST (European Cooperation in Science and Technology) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers.

This boosts their research career and innovation.

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