

COST Action CA18211 Perinatal Mental Health and Birth-Related Trauma: Maximising best practice and optimal outcomes (DEVOTION)

Grant Period 1 (1st December 2019 – 30th April 2020) Progress Report submitted by the MC Chair on behalf of the Management Committee

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Executive Summary

COST Action CA18211 was successfully launched at a kick-off meeting in Brussels on 15th October 2019. MC members from most participating countries attended the premises of the COST Association on Avenue Louise in Brussels for this. Since then, the Action has developed a sustainable, multidisciplinary network of 160 individuals across 33 countries:

1. Albania	2. Austria	3. Belgium
4. Bosnia and Herzegovina	5. Croatia	6. Cyprus
7. Czech Republic	8. Denmark	9. Estonia
10. France	11. Germany	12. Greece
13. Iceland	14. Ireland	15. Israel
16. Italy	17. Lithuania	18. Luxembourg
19. Malta	20. Netherlands	21. North Macedonia
22. Norway	23. Poland	24. Portugal
25. Romania	26. Serbia	27. Slovakia
28. Slovenia	29. Spain	30. Sweden
31. Switzerland	32. Turkey	33. United Kingdom

The network was launched through a kick-off meeting in Brussels on 15th October 2019. Our first meeting proper (with CG, MC and WGs) was held in Vrije Universiteit, Amsterdam from 29th to 31st January 2020. At this point in the Action, one STSM and one ITC grant have been awarded and were completed. Due to travel restrictions secondary to Covid-19, a second STSM has had to be postponed.

The network includes a high proportion of female participants (91.25%) with just 8.75% of the Action being represented by male participants (14 identified out of the 160 people on the Action networks mailing list). The percentage of Early Stage Researchers/Early Careers Investigators (ECIs) is 13.125% (21 participants reported having completed their PhD studies within the last 8 years out of the 160 people on the mailing list). The network also includes 16 countries targeted by the COST Inclusiveness Policy (Albania, Bosnia and Herzegovina, Croatia, Cyprus, Czech Republic, Estonia, Lithuania, Luxembourg, Malta, North Macedonia, Poland, Portugal, Romania, Serbia, Slovakia, Turkey). The ratio of ITC to COST countries is equally represented at 50:50 (16 ITC to 32 total).

The Action got off to an enthusiastic start and is on-track to achieve its primary objective to consolidate and disseminate evidence by seeking ways to prevent, minimise and resolve birth-related trauma, to optimise emotional and psychological outcomes for parents and families, and to accelerate the translation of knowledge into best practices that can be shared across Europe. This is to reduce the societal and economic burden arising from birth-related negative/traumatic experiences.

Working Groups

The aims of the Working Groups are summarised as follows:

WG1 – *Optimising the birth environment to reduce/prevent negative/traumatic birth experiences*

- Use a multi-method approach to gain understanding and develop definitions of negative and traumatic birth-related experiences
- Explore women's and partners' subjective experiences of childbirth and develop a standardised and validated tool
- Survey women to develop a deeper understanding of the role of interpersonal interactions on the birth experience so effective systems for prevention and intervention can be developed

WG2 – *Understanding how culture, organisational structure and regional differences in service provision influence childbirth experiences*

- Use a multi-method approach to understand the role of the care-provider interactions
- Self-report survey of clinicians' experiences of interpersonal interactions in the birth environment
- Analysis of findings to identify key factors that can be ameliorated when shortcomings in communication are present
- Documentary analysis of national approaches
- Focus group interviews to identify training needs

WG3 – *Short and long-term impacts on women, infants, and family relationships*

- Prevalence estimate of PTSD (secondary data analysis) as an outcome after birth
- Secondary data analysis from Birth Cohort studies and maternity information systems to understand how a mismatch with expected and actual birth-related experiences influence reproductive health decisions
- To explore with parents the emotional costs of having less children than desired

WG4 – *Deepening our understanding of the intergenerational transmission of trauma through biomedical and epigenetic research*

- Develop a statistical model to predict outcomes across the lifespan by using longitudinal data on community-based samples and those with poor pregnancy outcomes
- Secondary data analysis to identify effects from stressors in pregnancy to develop future projects to explore the potential to develop biologically based outcome indicators

WG5 – *Health and Economic Analysis*

- Analysis of country-specific data on the economic burden and distributional health effects of traumatic birth
- Systematic Review of the impact of trauma on future reproductive decisions, preferences for obstetric care in subsequent births and intergenerational effects on children and families
- Development of a robust analytical framework for conducting economic evaluation in this area
- Protocol for an economic evaluation to run alongside a future clinical study

WG6 – Communications and Dissemination

- Synthesizing information from Working Groups 1-5, translating knowledge into practice and engaging profoundly with our publics.

Service-user Group – Activist Group

- Aims to improve the situation for families and engages with them through a Facebook page that is referenced in Part 2 of this report.

Outputs and Achievements

To date, the Action has achieved the following outputs:

1. In November 2019, Dr Antje Horsch, Susan Garthus-Niegel and Yael Benyamini hosted as Topic Editors for the following research topic in *Frontiers in Psychiatry/Psychology*:
“Perinatal Mental Health: Expanding the Focus to the Family Context”
<https://www.frontiersin.org/research-topics/12032/perinatal-mental-health-expanding-the-focus-to-the-family-context>
The above link was circulated to the network mailing list and participants were encouraged to contribute to and spread the word about this Special Issue.
2. The first publication associated with the Action was published in *Fetal and Pediatric Pathology* in March 2020. It was submitted by Professor Slobodan Sekulic (MC member for Serbia) and the reference is as follows:
Slobodan Sekulic, Slobodanka Komazec, Ivana Sokolovac, Anastasia Topalidou, Olga Gouni, Branka Petkovic, Ljiljana Martac, Goran Kekovic, Tatjana Redzek-Mudrinic & Ivan Capo (2020): Inner Ear Malformations in Congenital Deafness Are Not Associated with Increased Risk of Breech Presentation, *Fetal and Pediatric Pathology*, DOI: 10.1080/15513815.2020.1737993 <https://doi.org/10.1080/15513815.2020.1737993>
3. Another article from this Action was published on 29th April 2020 in the Special Issue of the *International Journal of Molecular Sciences* by Working Group 4 leader Dr Jonathan Turner: Turner, J.D., D’Ambrosio, C., Voge, C. and Diwald, M. (2020) ‘Twin Research in the Post-Genomic Era: Dissecting the Pathophysiological Effects of Adversity and the Social Environment’, *International Journal of Molecular Sciences*, 21(9), 3142
<https://doi.org/10.3390/ijms21093142>
4. Carolina Toscano from the University of Minho, Portugal was the recipient of the ITC conference grant. She attended the Trinity Health & Education International Research Conference (THEconf2020) in Trinity College Dublin on 4th to 5th March 2020 at which she presented the poster on ‘Prematurity and the quality of child interactive behaviour’.
5. Sheima Hossain López, PhD student of Alcalá University (Spain) and WG2 member presented some of the preliminary findings of ‘Motherhood in the Armed Forces’ at the Trinity Health & Education International Research Conference (THEconf2020) in Trinity College Dublin on 4th to 5th March 2020 also.

6. Dr Antje Horsch (Science Communication Manager and WG6 leader) participated at a press conference of the Health Minister of the Canton Vaud on 5th March, presenting the Action's research on traumatic childbirth to mark the launch of new measures to prevent and reduce PTSD in parents following childbirth.
7. Dr Sylvia Murphy-Tighe (MC member for Ireland) presented on the urgent need for trauma informed care at the Trinity Health & Education International Research Conference (THEconf2020) in Trinity College Dublin on 4th to 5th March 2020.
8. A Rapid Review protocol by Dr Antje Horsch and her team was published in March 2020: 'The psychological impact of an epidemic/pandemic on the mental health of healthcare professionals and interventions to reduce this impact: a rapid review':
https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42020175985
9. A resource website for information on response to Covid-19 and pregnancy and childbirth has been developed:

<https://sites.google.com/view/covid19maternitycostactionca18/home?authuser=3>



**FAO MIDWIVES
NOW LIVE
COVID-19 Shared Resources**
Protocols, Tools & Guidelines in Maternity Care
#CovidMaternity Resources
<https://sites.google.com/view/covid19maternitycostactionca18/home?authuser=3>

DEVOTION
COST ACTION CA18211
Perinatal Mental Health & Birth Related Trauma:
Maximising Best Practice & Optimal Outcomes

ACTION CHAIR:
Prof Joan Lalor
Professor of Midwifery
Trinity College Dublin
Ireland

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@THEConf_TCD

10. The budget re-allocation spend has been agreed by the Core Group and Management Committee so the Action's overall website will be created and maintained in Grant Period 1.
11. Video clips of interviews by participants at the Amsterdam meeting have been uploaded to the YouTube channel which has not been made live yet. The link to which is referenced in part 2 of this report.
12. 41 biography templates have been collected from participants to be published on the website when it goes live. A shared spreadsheet is also being worked added to by researchers to create an interactive map on the new website.
13. A ResearchGate project profile exists for the Action and anyone who publishes a paper related to it should add it to their own profile. Lola Ruiz Berdún is the coordinator of this:

<https://www.researchgate.net/project/CA18211-Perinatal-Mental-Health-and-Birth-Related-Trauma-Maximising-best-practice-and-optimal-outcomes>

14. Anastasia Topalidou, Gill Thomson and Soo Downe published a commentary (as a pre-print) in April 2020 entitled “Covid-19 and maternal mental health: Are we getting the balance right?” <https://www.medrxiv.org/content/10.1101/2020.03.30.20047969v1>
This commentary/pre-print presents the initial findings of their rapid scoping review. The updated rapid scoping review (with a new date of search), the full search strategy, tables and results, is currently under publication in the *BMC Pregnancy and Childbirth*. Once it is available online, it will be shared with the Action network.
15. Another commentary paper is currently under revision by Dr Antje Horsch, Professor Joan Lalor and Professor Soo Downe: ‘Moral and mental health challenges faces by maternity staff during the Covid-19 pandemic’, *Psychological Trauma* (under revision).
16. Olga Gouni, STSM Coordinator, has featured on radio programmes since 1st April 2020 every Wednesday 9 pm on www.syzefxi.gr web radio entitled Welcome (Greek Kalosorises) to support pregnant couples and young mothers: <https://www.mixcloud.com/kalosorises/>
17. Sandra Morano (Italy) had an article published in Corriere Della Sera on connecting birth and death: https://27esimaora.corriere.it/20_marzo_31/nascere-morire-ospedale-tempi-codiv-19-8a8b6e5c-7298-11ea-bc49-338bb9c7b205.shtml



The level of expertise within the network is high. There is a great amount of energy and enthusiasm which is expected to grow as we enter Grant Period 2.

Benefits of the COST Association to the Action

Administrative support

We would like to acknowledge that Ms Sarah Ninane was a great help during the first four months of the Action and Ms Andrea Tortajada has been very helpful in responding to our queries since February 2020.

Training completed

1. Dr Antje Horsch, Science Communication Manager, attended the Storytelling Workshop in the COST Association, Brussels in February 2020. It was given by the Professor of Public Communications from the University of Southampton and covered how to write a good story about scientific findings. The key learning take-aways will be helpful for communicating work to the media through press releases.
2. Ms Jennifer Finn (Grant Holder Manager) and Ms Annabel Walsh (School Research Finance Manager), both from the School of Nursing & Midwifery, Trinity College Dublin, attended the Grant Manager training in the COST Association in Brussels in November 2019.
3. Ms Jennifer Finn joined the COST webinar in April 2020 to learn of the new reimbursement rules that will come into effect on 1st May 2020.

Training anticipated

1. WordPress training for Ms Jennifer Finn to maintain the Action's website.

1. Progress Report

1.a. COST Action Profile

Objective/Aim

The main aim and objective of this Action is to consolidate and disseminate evidence by seeking ways to prevent, minimise and resolve birth-related trauma, to optimise emotional and psychological outcomes for parents and families & to accelerate the translation of knowledge into best practices that can be shared across Europe.

Details

Memorandum of Understanding: 4th June 2019

CSO approval date: 4th June 2019

Start of Action: 15th October 2019

End of Action: 14th October 2023

List of countries and dates from Action Fact Sheet – COST Full Members:

Parties							
Country	Date		Country	Date		Country	Date
Albania	27/09/2019		Austria	10/02/2020		Belgium	12/09/2019
Croatia	03/07/2019		Cyprus	28/06/2019		Czech Republic	11/11/2019
Estonia	02/07/2019		France	25/06/2019		Germany	08/07/2019
Iceland	26/06/2019		Ireland	28/06/2019		Israel	10/07/2019
Lithuania	08/11/2019		Luxembourg	26/06/2019		Malta	27/06/2019
North Macedonia	17/09/2019		Norway	05/07/2019		Poland	25/06/2019
Romania	02/08/2019		Serbia	22/07/2019		Slovakia	03/10/2019
Spain	22/07/2019		Sweden	25/09/2019		Switzerland	25/06/2019
United Kingdom	25/06/2019					Bosnia and Herzegovina	05/09/2019
						Denmark	31/03/2020
						Greece	25/06/2019
						Italy	09/10/2019
						Netherlands	29/07/2019
						Portugal	28/06/2019
						Slovenia	17/07/2019
						Turkey	02/07/2019

Total: 33

COST Cooperating Member: Israel

COST International Partner Countries (IPC):

Institution name	Country	Participant
Griffith University	Australia	Professor Jenny Gamble Professor Debra Creedy

Non-COST country:

Institution name	Country	Participant
Harvard University	United States of America	Dr Sharon Dekel

Contacts

Chair/Vice Chair

Position	Name	Contact details	Country	Gender
Chair:	Prof Joan Lalor	Professor in Midwifery, Director of Research, School of Nursing & Midwifery, 24 D'Olier Street, Trinity College Dublin Joanlalor2907@gmail.com	Ireland	F
Vice Chair:	Prof Susan Ayers	Centre for Maternal & Child Health Research, School of Health Sciences, City, University of London, Northampton Square, London EC1V OHB Susan.ayers@city.ac.uk	UK	F

Working Group Leaders

W G #	WG Title	WG Leader	Country	Gender	No. of participants
1	Optimising the birth environment to reduce/prevent negative/traumatic birth experiences	Dr Sigfríður Inga Karlsdóttir University of Akureyri, Nordurslod, Iceland inga@unak.is Co-chair: Professor Julia Leinweber Protestant University of Applied Science, Berlin, Germany Julia.leinweber77@gmail.com	Iceland	F	43 members from 20 countries in 6 professions and one charity organisation
2	Understanding how culture, organisational structures & regional differences influence childbirth experiences	Prof Marianne Nieuwenhuijze Zuyd University Universiteitssingel 60, Maastricht, Netherlands m.nieuwenhuijze@av-m.nl	Amsterdam	F	49 members from 20 countries with 9 professional backgrounds
3	Short and long-term impacts on women, infants, and family relationships	Dr Mirjam Oosterman Vrije Universiteit, Van der boechorststraat 1, Netherlands m.oosterman@vu.nl Co-chair: Prof Annick Bogaerts KU Leuven, Herestraat, 41, Leuven Annick.bogaerts@kuleuven.be	Amsterdam Belgium	F F	22 members from several countries and professions

4	Deepening your understanding of inter-generational trauma transmission through biomedical & epigenetic research	Dr Jonathan Turner Luxembourg Institute of Health (LIH), 20A Rue Auguste Lumiere, Luxembourg Jonathan.turner@LIH.LU	Luxembourg	M	13 members from 12 countries
5	Health Economic Analysis	Dr Patrick Moran No. 2 Clare Street, Trinity College Dublin	Ireland	M	7 members from 5 countries and 4 professions
6	Science Communication and Dissemination	Prof Antje Horsch University of Lausanne, Route de la Corniche 10, Lausanne Antje.horsch@chuv.ch	Switzerland	F	13 members from 8 countries and 4 professions
7	Training Committee	Dr Sylvia Murphy-Tighe MC Member Ireland Sylvia.murphy@ul.ie	Ireland	F	10 members
8	Service User/Activist Group	Dr Ibone Olza Fernandez MC Member Spain olzafernandez@gmail.com	Spain	F	5 members from Spain / Germany

Other positions

STSM Coordinator: Ms Olga Gouni, Cosmoanelixis PC, el Alamein 20, nea ionia, Athens, Greece, info@cosmoanelixis.gr

STSM Committee:

1. Dr Dolores Ruíz Berdun, University of Alcalá, Facultad de Medicina y Ciencias de la Salud, Departamento de Cirugía y Ciencias Médicas y Sociales, Carretera de Madrid-Barcelona, Spain
lola.ruizberdun@uah.es
2. Prof Maria Kazmierczak, University of Gdansk, ul. Bazynskiego 4, Poland pysmk@ug.edu.pl
3. Prof Edi Vaisbuch, Kaplan Medical Center, Paternack 1, Israel evaisbuch@gmail.com

Service User/Activist Group – led by Dr Ibone Olza Fernandez and comprised of Katharina Hartmann, Hannah Elsch, Anna Lagodka and Antria Spyridou with the aim of improving the situation for families. There are two groups involved in this group – Motherhood from Germany and El Parto es Nuestro from Spain. Activists from a previous COST Action BIRTH have been contacted with a very positive response from Italy, Portugal, Croatia and others as well as ENCA (European Network of Childbirth associations).

Training Committee – established to make an Early Career Researcher Plan and organise the training schools:

- The International Training Committee has met to discuss future training school needs for early career researchers to span across the Action timeframe. Dr Sylvia Murphy Tighe was appointed as Chair and Alison Morison was appointed as Vice Chair with Professor Susan Ayres providing support. Currently the International Training Committee are generating topics for discussion that will be circulated to the wider membership shortly which is

comprised of: Sandra Morano, Rosita Gabbianelli, Jonathan Turner, Carlo Schungel, Alison Morison, Mirjam Oosterman, Eleni Hadjigeorgiou, Susan Ayers and Susan Garthus-Niegel.

Grant Holding Institution: The Provost, Fellows, Foundation Scholars, and the other members of Board, of the College of the Holy and Undivided Trinity of Queen Elizabeth near Dublin.

Grant Holder Scientific Representative: Professor Joan Lalor, Action Chair

Grant Holder Manager/Administrator: Ms Jennifer Finn, School of Nursing & Midwifery, 24 D'Olier Street, Trinity College Dublin, Ireland Jennifer.finn@tcd.ie

Core Group members: Action Chair, Vice Chair, all WG leaders (n=6 including the Science Communication Manager), Service User/Activist Group lead and STSM Coordinator.

Action website: in development and fast-tracked now due to Covid-19 pandemic.

Interim resource sharing website: this interim site was developed in a short-time period to respond to the Covid-19 pandemic due to changes in birth-related trauma changes in practice:

<https://sites.google.com/view/covid19maternitycostactionca18/home?authuser=3>

COST Scientific Officer: Dr Deniz Karaca, COST Association, deniz.karaca@cost.eu

COST Administrative Officer: Ms Andrea Tortajada, COST Association, andrea.tortajada@cost.eu

1.b. Progress with MoU objectives and deliverables and additional outputs

Working Group 1: To conceptualise negative and traumatic birth-related experiences in order to achieve positive experiences of birth

T1.1 Using a multi-method approach (combining qualitative and quantitative evidence) to gain an in-depth understanding and develop definitions of negative and traumatic birth-related experiences.

T1.2 Explore women's and partners' subjective experiences of childbirth through secondary data analysis to inform development of a standardised and validated tool to measure the perception of birth experiences and its influencing factors.

T1.3 Survey women who have experienced a positive or a negative/traumatic birth to develop a deeper understanding of the role of interpersonal interactions on the birth experience so effective systems for prevention and intervention can be developed. This survey is underway in several member countries and will extend to others in the Action over Year 1.

In working group 1, there are 43 members from 20 countries. Six professions and one member from charity organization.

Working Group one is working in nine different groups, some participants in more than one subgroup. Some of the subgroups has been working since September 2019, other subgroups have just been formed. However, during the Corona crisis conducting the interviews with health professionals is not possible and therefore will be delayed. Some participants have been called to work in clinic, been sick or have been taking care of their families at home.

Subgroup	Aim	Time frame – plan for submission	Task
Subgroup 1 - Definition group. Leaders: Julia Leinweber and Sigfríður Inga Karlsdóttir	To gain an in-depth understanding and develop definitions of negative and traumatic birth-related experiences.	Submission June 2020.	T1.1
Subgroup 2 - Students' attitude towards women's birth experience Leader: Ernesto Gonzalez Mesa	To improve students' knowledge regarding Negative Birth experience.	Submission June 2021.	T1.3
Subgroup 3 - Parents of premature infants' experiences and support needs following a traumatic/distressing birth (Quantitative approach) Leader: Wilson Correia de Abreu.	Several different aims and papers. To evaluate the PTS in mothers who experience preterm birth; To study the factors that might put a woman at risk for developing postpartum PTS after a preterm birth; To analyse the post-traumatic growth (PTG), that includes positive changes in the psychological functioning of parents that may occur after premature birth; To identify risk factors to PTSD and facilitators to PTG (personal interactions, family relations, past experiences.	Submission of different times 2021 and 2022. <ul style="list-style-type: none"> • Post-traumatic stress among mothers of infants with premature birth: a comparative study • Post-traumatic growth among mothers who suffer from PTS after a premature birth: a cohort study • Researchers from this study will contribute with our findings to make a standardized and validated tool to measure perception of birth experiences (with other studies that will be developed in WG1). 	T1.3
Subgroup 4 – Parents of premature infants' experiences and support needs following a traumatic/distressing birth (Qualitative approach). Leader: Gill Thomson.	To explore/capture insights into parents of premature infants' experiences and support needs.	Spring 2021.	T1.3
Subgroup 5 - Parents of premature infants' experiences and support needs following a traumatic/distressing birth. Leader: Gill Thomson.	The aim is to map the policies, training, and formal service provision for women following a traumatic birth within different EU countries.	Spring 2021.	T1.3
Subgroup 6 – The developing questionnaire group. Leaders: Claudia Limmer and Susan Ayers.	At first, we are going to do a literature review and then start to develop a standardised and validated tool. The aims of this literature review are to: review published reviews and meta-syntheses of women and men's experiences during labour and the birth of their baby. Furthermore, to identify common themes to inform the development of a questionnaire measure of birth experience.	Literature review: - Autumn 2020. Questionnaire: Autumn 2022.	T1.2

Subgroup 7 – The treatment group. Leaders: Andria Spyridou and Azijada Srkalovic Imsiragic.	The aim of the group is to explore, identify and describe the available interventions and guideline recommendations which may prevent the development of postpartum PTSD after experiencing a traumatic childbirth and the available or developing interventions (incl. programs, protocols, therapies) for the women who develop postpartum PTSD.	Autumn 2020	T1.3
Subgroup 8 - Traumatic childbirth from a multi-disciplinary perspective. Leader: Yvonne Kuipers.	This group is developing now, the aim and deliverables are not clear yet.		T1.3
Subgroup 9 – Environment and traumatic birth. Leader: Myrto Chronaki.	This group is developing now, the aim and deliverables are not clear yet.		T1.3

Working Group 2: To identify key factors to maximise effective translation of research to practice by looking at how the structural and organisational aspects of the environment may influence women and partner's experiences of birth, enabling an understanding of the context and improve prevention.

Work Group 2 is currently working on;

T2.1 Scoping review to gain understanding of the role of care provider interactions in positive and negative birth-related experiences.

T2.2 Scientific paper of the results of self-report survey of clinicians' experiences of interactions in the birth and recognise traumatic stress in maternity care staff and the impact on practice.

Additionally, WG2 is exploring if a study on Arts interventions for care providers or women experiencing traumas around birth is feasible. This is initiated by Maria Athaneseckou who has an art science background. However, the Corona crisis is challenging the progress of this Working Group as people are busy with managing their job and families.

Subgroup	Aim	Task
Subgroup 1 Leaders: Lola Ruiz Berdún and Sheima Hossain (supported by Marianne Nieuwenhuijze)	A protocol for the scoping review has been written, and the search has been done. The aim is to explore and synthesize what is known in the literature about the impact of traumatic events during the perinatal period on care providers and how these experiences affect their professional practice (and their interaction with women). The group is assessing abstracts, titles and full articles.	T2.1
Subgroup 2 Leader: Eleni Hadjigeorgiou and Patricia Leahy-Warren (supported by Marianne Nieuwenhuijze)	A protocol has been written for a survey study aiming to explore maternity care providers' experiences of work-related traumatic events during the perinatal period and whether these experiences influence their professional practice. To design the survey questionnaire a rapid literature review and qualitative interviews will be performed. The semi-structured interview guide has been made and ethical approval is granted from Trinity College Dublin for the interviews. However, conducting the interviews with health professionals is not possible and therefore will be delayed.	T2.2

Working Group 3: To develop the body of knowledge about predictors, sensitivity, persistence and the burden of illness associated with short and long-term consequences of emotional and

psychological outcomes (in particular PTSD) on women, on reproductive health decision-making and on the quality of parent-infant relationships (from the parent's perspective).

Subgroup	Aim	Task
Subgroup 1 Leaders: Susan Garthus-Niegel Participants: Danny Horesh, Antje Horsch, Maria Kazmierczak, Pelin Dikmen, Mijke Lambregtse-van den Berg, Mirjam Oosterman	Deliverable 1: Prevalence estimate PTSD after childbirth (Paper 1, Year 3 Quarter 2) Task: Comparative meta-analysis of prevalence rates of birth-related PTSD (symptoms) in mothers and their partners/fathers Evaluation: the subgroup developed a PROSPERO protocol which has been submitted on April 22th. A master student (Clara Heyne, under supervision of Susan Garthus-Niegel) has been involved to conduct the literature search and the statistical analyses. Anticipated completion date is March 2021.	T3.1
Subgroup 2 Leader: Susan Ayers Participants: Annick Bogaerts, Paulina Pawlicka, Isabel Soares, Lilijen Dragana, Mirjana Dragana-Solvilj, Rita Borg Xuereb, Stephanie Savona-Ventura	Deliverable 2: Scientific paper on expectations and experiences of birth (Paper 2, Year 3 Quarter 4) <ol style="list-style-type: none"> Task: Systematic review of the literature of the impact of a mismatch between expectations of birth and experiences of birth on various outcomes of the mother, the father and infant. Evaluation: There is a draft proposal which will be submitted for inclusion in PROSPERO. Master students have been involved to help with the literature search. The original aim was to complete the review by January 2021. Task: Development of a database template for existing longitudinal cohort studies on traumatic childbirth which can be used as an Action-wide resource for conducting secondary data analysis. Evaluation: The database template has been created. The goal is to fill out the details for all cohorts with the help of students. Task: Secondary data-analysis will be conducted on expectations and experiences of birth, informed by the systematic review (Task 1) and decided by the group after that has been done. Evaluation: The secondary data analysis will start in 2021 and completed by the end of 2022. 	T3.2
Subgroup 3 Leader: Soo Downe Participants: Maaïke Fobelets, Erilda Ajaz, Luisa Barros, Hannah Elsche, Olga Gouni, Shefaly Shorey	Deliverable 3: Scientific paper on emotional costs of having less children than desired (Paper 3, Year 4, Quarter 1) Task: Systematic review of reasons for involuntary childlessness following a primary pregnancy/birth Evaluation: Search strategy had been defined. Systematic review of the relationship between reasons for involuntary childlessness following a primary pregnancy/birth and emotional, social and economic consequences and costs for women, partners, siblings & grandparents? (Paper 3) Evaluation: Follows review 1 (see Task 1) Survey and in-depth qualitative study based on the findings of review 1 and 2 Evaluation: PhD student, Sofia O'Brian, will start in September 2020. She will work on the design of a prospective survey study in Ireland.	T3.3

Working Group 4: To explore the role of epigenetic alterations and underlying biological and biochemical mechanisms in perinatal mental health and infant development, to underpin screening and develop interventions for those affected.

Working Group	Aim	Task
Leader: Dr Jonathan Turner Participants: Prof Joan Lalor, Patricia Leahy-Warren, Susan Garthus-Niegel, Mechthild Gross, Aristotelis CHatzioannou, Rosita Gabbianelli, Sandra Morano, Kirsten Uvnäs Moberg, Jean Calleja Agius, Alicja Kotłowska, Carlo Schuengel, Slobodan Sekulic	Although during this reporting period there were no deliverables in the project plan for WP4, the Workgroup has established itself with 13 members from 12 countries including the chairman from a COST ITC (Luxembourg). The members of WP4 have met twice, in Brussels and Amsterdam and established online working during the recent Covid outbreak. From these meetings WP4 members have been involved in initiating and co-ordinating a European grant that was submitted recently to the ERA PerMed call; setting up a special edition of an academic journal; are involved in writing 4 review manuscripts; and have started a comprehensive review of the cohorts currently available that are of relevance to the action.	T4.1

WG4 Grant applications

Funding Scheme: ERA PerMed JTC2020

Date: Pre-proposal submitted 05/03/2020

Partner Countries: Luxembourg; Ireland; Germany; Greece

Title: Intergenerational epigenetic consequences of maternal PTSD

Keywords: Traumatic birth; early life adversity; PTSD; epigenetics; mother-infant bonding; Obstetric violence;

Participants: Jonathan D. Turner (Leader WP4, MC member Luxembourg); Joan Lalor (Action Chair); Patricia Leahy-Warren (MC member Ireland); Susan GarthusNiegel (MC member Germany); M Mechthild M. Gross (MC member Germany); Aristotelis Chatziioannou

Status: Results of pre-proposal expected 13/05/2020

WG4 Publications

Special issue: International Journal of Molecular Sciences

Impact Factor: 4.2

Open Access: Yes

Editor: Jonathan D. Turner (Leader WP4, MC member Luxembourg)

Status: 2 manuscripts submitted from Action – 1 under revision and 1 published as follows:

Turner, J.D., D'Ambrosio, C., Voge, C. and Diwald, M. (2020) 'Twin Research in the Post-Genomic Era: Dissecting the Pathophysiological Effects of Adversity and the Social Environment', *International Journal of Molecular Sciences*, 21(9), 3142 <https://doi.org/10.3390/ijms21093142>

WG4 Manuscripts currently being written

Title: Nutri-epigenomics and gut microbiota: how birth care, bonding and breast feeding can influence and be influenced? Authors: Gabbianelli R., Morano S., Calleja Agius J., Lalor J.

Title: A Review of Different Methods and Approaches for the Determination of Various Endocrine and Epigenetic Response Factors That Could be Triggered by Childbirth. Authors: Kotłowska A., Uvnäs Moberg K., Turner J.D., Gabbianelli R.

Title: Oxytocin; childbirth and epigenetics. Authors: Uvnäs Moberg K., Turner J.D.

Working Group 5: To explore the impact of traumatic birth on healthcare costs and resource use, distributional health effects, and indicators of women's economic wellbeing such as labour force participation and earnings.

Working Group 5 has commenced a range of activities designed to build upon the work being carried out across all areas of the COST action to inform the development of a framework for examining healthcare costs and resource use. This includes one-to-one and group discussions about potential sources of relevant data, and identification of on-going maternity care research studies that involve the collection of data on resource use and costs. Developing links between WG5 and other work groups is a key priority, as an awareness of the scope and direction of work in each area will shape the development of an empirical framework that includes robust estimates of parameters that are as yet poorly understood, such as intergenerational spill-over effects.

Working Group 5 members are encouraged to create links across other groups, in realisation of the importance of capitalising on these novel findings to progress knowledge on the economic consequences of traumatic birth. An overview of the objectives of the group and a summary of the background context for this work was presented at the meeting in Amsterdam on 31st January 2020. Development of the optimal approach to synthesising the available information is also being planned, with consideration being given to the feasibility and comparative value of a formal systematic review versus a state of the art or thematic review of selected papers, and the potential for small scale surveys to be used to gather primary data on attitudes and perceptions of the potential contribution of health economics and cost-effectiveness analysis in this area, to help target our efforts as effectively as possible.

Ongoing challenges that are being addressed include the need to continue growing Working Group 5 and developing contacts with a broad range of researchers currently active in this area, enhance communication and engagement and mitigate the impact of the Covid-19 pandemic on Working Group activities.

Working Group 6: to synthesize and disseminate the evidence from WG 1-5, to scientific, clinical, managerial, opinion leader, policy maker and service user stakeholders.

The Communication and Dissemination Plan was drafted, circulated for review and then presented at the meeting in Amsterdam on 31st January 2020. Three Working Group 6 meetings have taken place to date with the last one taking place via Zoom on 8th April 2020. A service user Facebook group has been established. Research Gate is being managed to link articles to the Action. A newsletter is being drafted to send to the Action network's mailing list via Mailchimp which is GDPR-compliant. An Action website is being developed with €4,500 re-allocation of funds being approved for Grant Period 1. A Wikipedia page is being explored to develop country pages from as this was looked on positively by participants of the meeting in Amsterdam and has been done for other Actions. Another Action called 'RiseUp' has been identified to join forces with so as not to have two actions working separately doing the same work. A Position/Opinion Statement is being written by the Action Chair.

Short-term Scientific Missions (STSMs)

1. Ms Julie Horgan from Trinity College Dublin in Ireland spent 14 days from 16th February to 29th February 2020 in the Host institution of the University of Gothenburg, Sweden under the supervision of Prof Marie Berg. The aim of this STSM research was to obtain information regarding current practice in Sahlgrenska University Hospital in Gothenburg of protocols and guidelines for IOL. Subsequent sharing of this knowledge amongst maternity services in Europe may help to reduce the societal and economic burden evolving from global rising CS rates. A scientific report was submitted along with host approval of same.
2. Ms Ursula Nagle, a Clinical Midwife Specialist from the Rotunda Hospital, Dublin, Ireland, successfully applied for an STSM in the host institution of City, University of London under the supervision of Dr Susan Ayers to examine the use of the City Birth Trauma scale in a specialist traumatic birth assessment service. This STSM has been postponed due to Covid-19 travel restrictions.

ITC conference grant

1. Dr Carolina Toscano presented a poster at the Trinity Health and Education International Research Conference (THEconf2020) in Trinity College Dublin. The poster was based on Carolina's contribution to Professor Isabel Soares (MC member for Portugal) study on 'Prematurity and the Quality of child interactive behaviour'. A scientific report was submitted, and the grant was approved.

Additional outputs and achievements

Any other outputs and achievements that have resulted or are in progress, focussing in particular on those that contribute to the COST mission of "COST enables break-through scientific developments leading to new concepts and products and thereby contributes the strengthen Europe's research and innovation capacities".

1.c. Networking

Added value of the networking

The members of the Action network are inter-disciplinary, and this has generated useful discussions that reveal how a topic can be examined from a range of different perspectives. The Action network spans across the following professions: Midwife, Psychiatrist, Psychologist, Obstetrician/Gynaecologist, Nurse, Economist. The kick-off meeting in Brussels in October 2019 brought 48 members together to elect the Vice Chair and Working Group leaders. It also elected the Science Communication Manager and STSM Coordinator. The three-day meeting in Vrije Universiteit, Amsterdam in January 2020 brought 52 funded and 12 self-funded members of the network together for Working Group meetings. A Management Committee meeting was held on 31st

January in Amsterdam and 45 members were present from 25 of the 31 countries that were participating at the time. The Action has more female than male participants. Three of the ten members of the Training School Committee are Early Career Researchers. The next in-person meeting and first training school of the Action should take place in the end of September 2020 pending further information about Covid-19 travel restrictions. An STSM has taken place along with an ITC conference grant being awarded.

1.d. Impacts

The impacts that have resulted, or might result from the Action are described as follows:

- Arising from the STSM that was completed by Ms Julie Horgan from Trinity College Dublin, a critical discussion/commentary piece will be written and hopefully published with Professor Marie Berg and Professor Cecily Begley (Trinity College Dublin, Ireland) in relation to possible predictors that may influence the pathways of IOL to lead to an increased likelihood of a vaginal birth.

1.e. Dissemination and exploitation of Action results

Selected Activities – some of the highlights

The Dissemination Strategy (including social media) was approved at the meeting in Amsterdam on 31st January 2020 when it was presented by the Science Communications Manager. Some key points from it are as follows:

1. Facebook page which has a target audience of EU and other citizens, service users and healthcare staff: www.facebook.com/COST-Action-Ca18211-104798544420827
Its reach is 57 followers and 45 like the page.
2. Instagram has 21 followers and 2 posts: <https://www.instagram.com/ca18211/>
3. The Action Twitter has 197 followers and is following 351 researchers and policymakers: <https://twitter.com/ca18211>
4. YouTube channel that has not been published yet with videos of interviews recorded during the meeting in Amsterdam: COST ACTION DEVOTION <https://studio.youtube.com/channel/UC2zglv9KNN50955kbrNvYgQ/videos/upload?filter=%5B%5D&sort=%7B%22columnType%22%3A%22date%22%2C%22sortOrder%22%3A%22DESCENDING%22%7D>
5. A ResearchGate profile exists for the Action: <https://www.researchgate.net/project/CA18211-Perinatal-Mental-Health-and-Birth-Related-Trauma-Maximising-best-practice-and-optimal-outcomes>
Dolores Ruiz Berdún acts as coordinator for adding participants as collaborators to link their publications to the Action project.
6. Acknowledgements text: A publication policy was agreed at the Management Committee meeting in Amsterdam. The text was agreed as follows:
 - a. For direct output:

Author by-line: Author 1, Author 2 etc 'for the EU COST Action 18211: DEVoTION: Perinatal Mental Health and Birth-Related Trauma: Maximising best practice and optimal outcomes supported by COST (European Cooperation in Science and Technology).

There are guidelines stated in the publication policy based on the number of authors (1 – 3 or more).

- b. For Indirect output (not mentioned specifically in the Memorandum of Understanding):

Author by-line: Author 1, Author 2 etc 'This paper **relates** to the EU COST Action CA18211: DEVoTION: Perinatal Mental Health and Birth-Related Trauma: Maximising best practice and optimal outcomes.

- c. If the output originated from works done prior to/in parallel with the Action and further developed because of the author's involvement in the Action, the above text changes from 'relates' to '**contributes**'. This is to widely acknowledge participation.

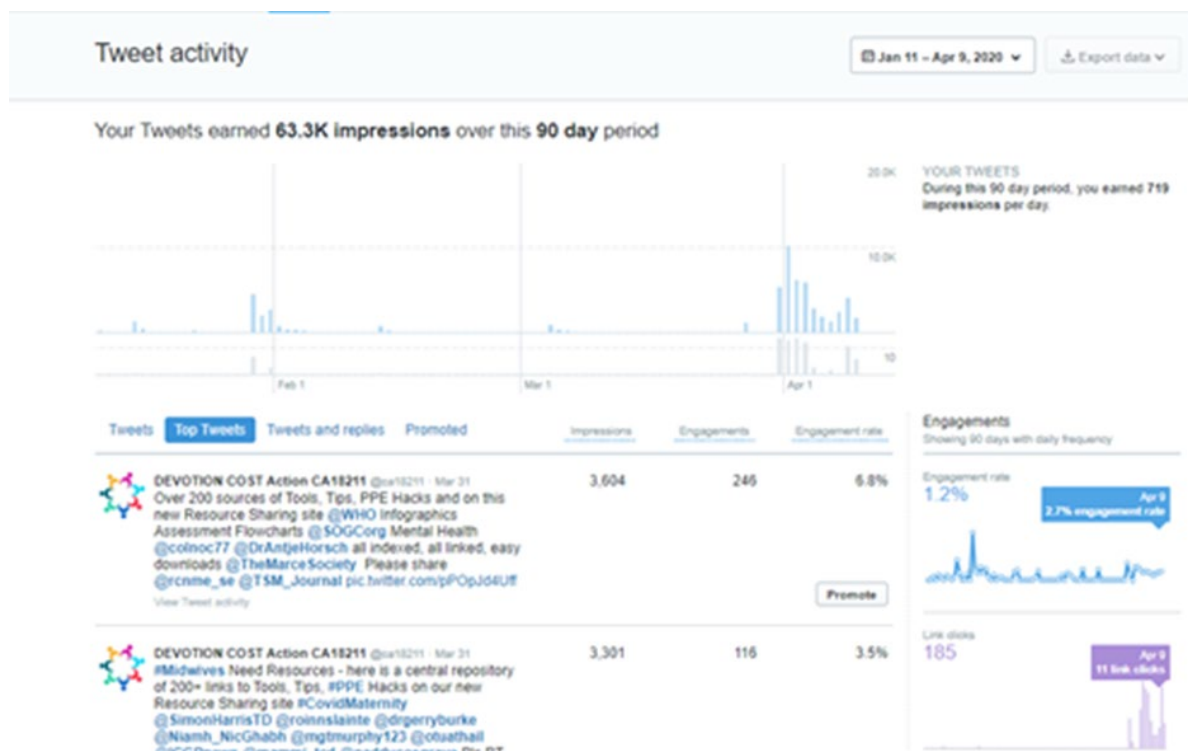
Engagement Analytics: Social Media and Interim Website

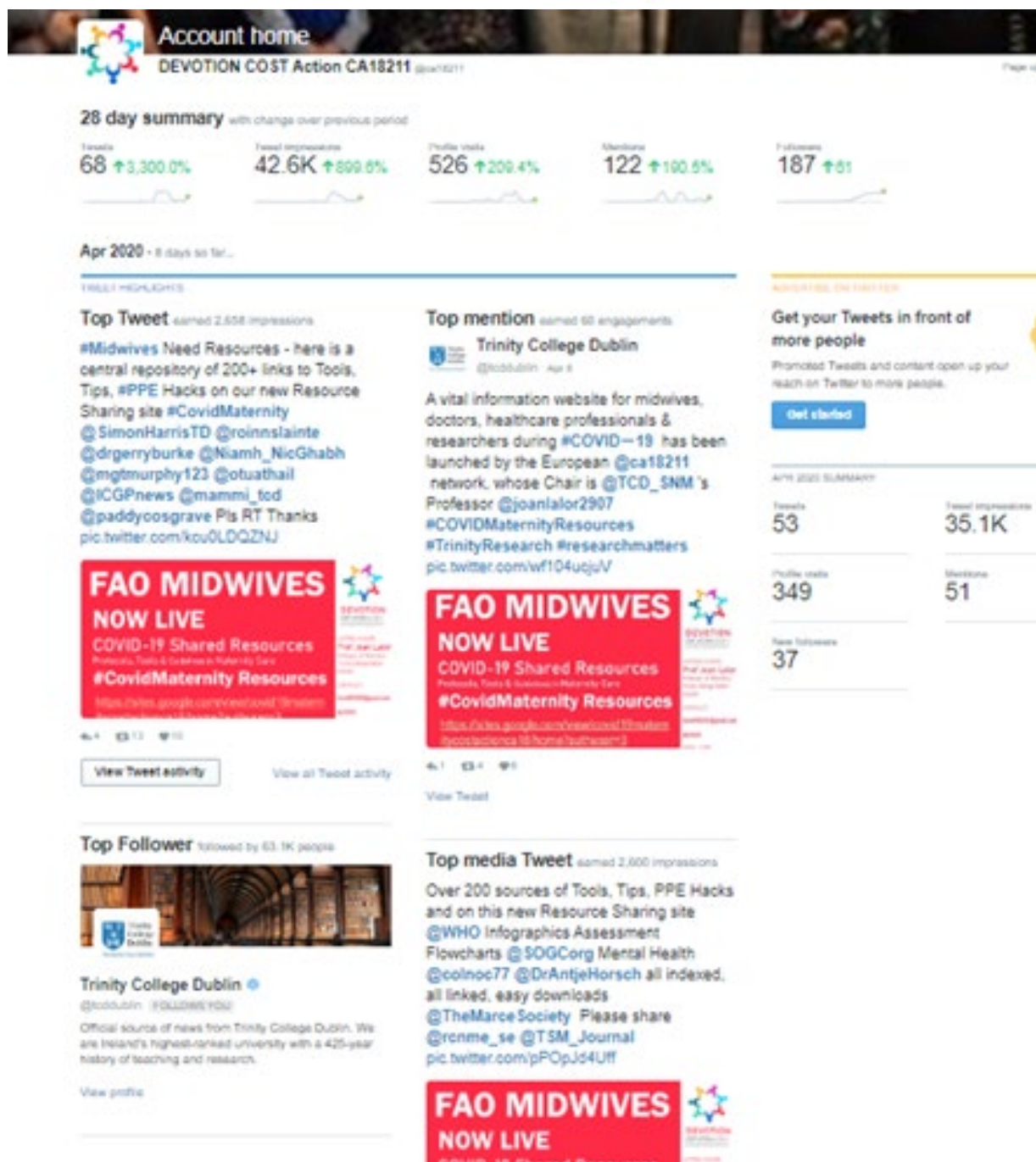
- With ten days focus we have added 61 new followers (197 total as of 22nd April 2020) and increased impressions by 42k
- There have been over 500 clicks on our posts, many going to the interim information sharing site since it went live on 1st April 2020:

<https://sites.google.com/view/covid19maternitycostactionca18/home?authuser=3>

- There have been 550 unique visits averaging close to 3 minutes per visit indicating engagement with content
- There have been 414-page views which means both pages are being visited
- Top 3 countries = Ireland, Spain and USA
- Next 3: UK, Israel and Canada
- Global reach to South Korea, Poland, Finland, Australia, etc. = vast range of countries
- Over 300+ hyperlinked sources in the handbook that are all categorized.







1.f. Action Successes

Description of success story

Maternity care has been improved by a new prenatal and postpartum midwife-led consultation which has been introduced for couples at the Lausanne University Hospital, Switzerland. The prenatal consultation will focus on developing a birth plan with the couple and addressing their expectations as well as worries in relation to childbirth. The postpartum consultation which will take place at around 6 weeks after childbirth and ask any questions they may have in relation to the care during labour and childbirth. They will also be screened for PTSD and depression symptoms and signposted to appropriate sources of professional support if needed. The new consultations are funded by the local government based on the research carried out both in Lausanne by Prof. Horsch and her team as well as internationally, showing the need for it. Prof. Horsch will evaluate the effect of this new model of care and also use the feedback from couples on their birth experiences to train maternity care staff.

2. Management Report

2.a. Overview of Expenditure

1st December 2019 – 30th April 2020 = Grant Period start and end dates

	Originally budgeted for GP1	Grant Period 1 - Actual
Meetings	49,999	41,054.20
LOS	Included above	3,706.18
Training schools	-	-
STSM	1,299	1,299
ITC conference grant	875	604
Dissemination	-	4,500
Total scientific expenditure	52,173	51,163.38
FSAC (15% of total scientific exp.)	7,825.95	7,674.51
Total	59,998.95	58,837*

*Actual figures leave €1,161.06 for the STSM that was approved for Ursula Nagle but had to be postponed due to the Covid-19 public health crisis and travel restrictions.

2.b. Participants

Management Committee

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