

Magnet4Europe - Improving mental health and wellbeing in the health care workplace

Submission date 31/03/2020	Recruitment status No longer recruiting	☒ Prospectively registered ☒ Protocol
Registration date 10/04/2020	Overall study status Completed	☐ Statistical analysis plan ☒ Results
Last Edited 30/06/2026	Condition category Other	☐ Individual participant data

Plain English summary of protocol

Background and study aims

Mental health and wellbeing are among the highest priorities of the public health agenda in the European Union (EU). A large-scale European study of hospital work conditions and associated nurse and patient outcomes revealed high rates of job dissatisfaction and burnout, with burnout rates varying between 10% and 78%. Physician burnout rates ranging from 25% to 60% have been reported, varying across organizations and medical specialties. Magnet4Europe aims to redesign clinical environments in sixty hospitals in five European countries (Belgium, United Kingdom, Germany, Ireland, and Sweden) to promote the mental health and wellbeing of health professionals. Magnet4Europe will implement an evidence-based intervention based on the successful Magnet Recognition Program®, a voluntary hospital designation for nursing care excellence by the American Nurses Credentialing Center. Countless studies have shown that Magnet-recognized hospitals have lower health professional burnout and safer patient care suggesting that the Magnet journey is an intervention that results in positive changes Magnet4Europe seeks to achieve.

Who can participate?

Hospitals with more than 150 beds focused on acute care for adults.

Health professionals working at these hospitals who have direct patient contact and work on inpatient units.

What does the study involve?

In the Magnet4Europe study we will be studying and measuring various items in relation work environment (work relations, job satisfaction, perception of the quality of care and workload) and mental health of health professionals working in acute care hospitals. These items and topics will be measured using standardised and validated questionnaires. The Magnet4Europe study will run for four years and during this period you will be annually invited to take part in a survey. When you decide to take part in the Magnet4Europe study and engage in the survey, you will be asked to register yourself on the Meplis Care Monitor. The Care Monitor will provide access to the survey. You will receive an activation URL, allowing you to register yourself on the Care Monitor. You will receive instructions through the application on how to get started with the questionnaire. You will then be asked a number of questions about your perception of your working environment: the relationship with the doctors, the workload and staffing of the ward,

any intention (if any) to leave the profession, patient safety, etc. The questionnaire takes approx. 20 minutes to complete; it should be completed within two weeks of receiving the invitation. You will receive three more invitations after this (i.e. one invitation every following year).

What are the possible benefits and risks of participating?

Benefits: You have no benefit from participating in the Magnet4Europe study and will not be compensated for your participation. However, we hope that your participation in the study will help us to gain more insight on how you perceive hospital care and the demands that are placed on clinical staff. By doing so, you can help to improve the working environment and safety of patient care.

Risks: There are no disadvantages associated with participation. Neither the research team nor the hospital will know whether you have participated in the study or not. A possible refusal to participate in the study will have no adverse effect on your employment at this hospital; nor will your answers have any effect on your participation.

Where is the study run from?

University Hospitals Leuven (Belgium) and recruiting in Belgium, United Kingdom, Sweden, Ireland, Norway, and Germany.

When is the study starting and how long is it expected to run for?

September 2020 to June 2024

Who is funding the study?

European Commission Horizon 2020

Who is the main contact?

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Additional identifiers

Integrated Research Application System (IRAS)

274132

Protocol serial number

848031

Study information

Scientific Title

A workplace organizational intervention to improve hospital nurses' and physicians' mental health: protocol for the Magnet4Europe wait-list cluster randomized controlled trial

Acronym

Magnet4Europe

Study objectives

The objective is the implementation of the Magnet® Model of organizational redesign in acute care hospitals in Europe using a multi-component implementation strategy, reduces burnout rate and mental health morbidity among physicians and nurses.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Belgium: Approved 02/10/2020, Ethics Committee Research UZ/KU Leuven (Herestraat 49, 3000 Leuven, Belgium; +32 (0)16 34 86 00; ec@uzleuven.be), ref: S64213

Sweden: Approved 23/09/2020, Swedish Ethical Review Authority (Postal address Box 2110, SE-750 02 Uppsala, Sweden; registrator@etikprovning.se), ref: 2020-03842

UK: Approved 01/09/2020, University of Southampton Ethics and Research Governance (ERGO, Head of Research Integrity and Governance, Research and Innovation Services, Southampton, SO17 1BJ, UK; +44 (0)2380595058; rgoinfo@soton.ac.uk), ref: 52986

UK: Approved 30/10/2020, NHS Health Research Authority (2 Redman Place, Stratford, London, E20 1JQ, UK; tel: not provided; approvals@hra.nhs.uk), ref: 274132

Ireland: Approved 12/08/2020, Clinical Research Ethics Committee of the Cork Teaching Hospitals (CREC; University College Cork, Lancaster Hall, 6 Little Hanover Street Cork, Ireland; +353 (0)21 4901901; crec@ucc.ie), ref: ECM 4 (s) 11/08/2020

Germany: Approved 30/10/2020, Ethikkommission Charité – Universitätsmedizin Berlin (Ethikausschuss am Campus Charité Mitte, Vorsitzender Prof. Dr. R. Morgenstern, Charité Universitätsmedizin Berlin, Ethikkommission der Charité, z.Hd. Dr. K. Orzechowski, Charitéplatz 1, 10117 Berlin, Germany; +49 (0)30 450 517222; Ethikkommission@charite.de), ref: EA1/243/20

Norway: Approved 05/11/2020, Regional Committee for Medical and Health Research Ethics (REC), South East (REK Sør-øst D, PO Box 1130, Blindern, N-0318 Oslo, Norway; +47 (0)2284 5511; re-sorost@medisin.uio.no), ref: 166980

Primary study design

Interventional

Study design

Multicenter hospital-based matched pairs usual-practice wait-list cluster randomized controlled trial with a nested mixed-methods process evaluation

Study type(s)

Prevention

Health condition(s) or problem(s) studied

The impact of organizational redesign of acute care hospitals according to the Magnet® principles of organizational redesign on mental health and wellbeing of health professionals

Interventions

A multicenter hospital-based matched pairs usual-practice wait-list cluster randomized controlled trial with a nested mixed-methods process evaluation is used. The order in which hospitals receive the intervention is randomized. Using computer-generated randomization with a 1:1 allocation ratio within each country hospitals will be randomized into an immediate intervention group or a usual-practice wait-list control group. Hospitals allocated to the immediate intervention group, start immediately with the intervention; hospitals in the wait-list group start 12 months later with the intervention. The design of the study inherently makes it impossible to blind hospitals to the intervention.

A multicomponent intervention aimed at organizational redesign of hospitals is applied. Hospitals in the wait-list control group do not access any intervention components until the start of the intervention period in their hospital.

The Magnet4Europe intervention will be launched in the immediate intervention group in month 9 of the project with the first learning collaborative taking place, and will have a total duration of 32 months. The intervention will be initiated in the usual-practice wait-list control group in month 19 and will last for 22 months.

At month 9, hospitals allocated to the immediate intervention group will engage in full exposure to the multi-component intervention. Full exposure entails following active components being operationalised:

1. The hospital start the implementation of the Magnet© components as outlined in the Magnet Manual© of organisational redesign. Using the Magnet4Europe Magnet© Gap Analysis Tool they will perform a gap analysis in close collaboration with their assigned twinning partner. Based on the results of the gap analysis, each intervention hospital is responsible for tailoring and individualizing the interventions to their hospital-specific context and develop a concrete, written implementation plan (in collaboration with the twinning hospital) that will be executed during the course of the intervention period
2. In close relation to element one of the intervention: hospitals engage in an active one-to-one twinning relationship with a Magnet© designated hospital. Twinning entails bi-annual on-site visits of the Magnet© partner to the intervention hospital (or vice-versa) and monthly virtual meetings
3. All hospitals allocated to the immediate intervention group will attend an international Learning collaborative taking place at month 9 (i.e. current plan in protocol)
4. The group of intervention hospitals is actively involved in creating critical mass. They promote innovation, draw public interest and foster replication. Tangibility of critical mass is difficult; nonetheless will it serve catalyst for improvement and enables improvements to take hold and to be more sustainable
5. Provide near real-time feedback to hospitals on clinicians' reports on work conditions and wellbeing after each of the quantitative data collection periods using rapid document delivery via SAS Output Delivery System. The duration of exposure in the immediate intervention group is 32 months

The intervention in the usual-practice waitlist control group is employed 10 months later compared to the immediate intervention group and is - to a large extent - identical. At month 19 these hospitals engage in full exposure to the different intervention components. The only minor difference can be found in component three: i.e. the usual-practice waitlist hospitals now have access to implementation strategies of hospitals in the immediate intervention group allowing for expedited implementation of the Magnet© principles. This knowledge is not available for the immediate intervention group. The usual-practice waitlist control group will receive feedback on clinicians' reports on work conditions and wellbeing for the first time. The duration of exposure in usual-practice waitlist control group is 22 months

Intervention Type

Behavioural

Primary outcome(s)

Burnout measured among nurses and physicians using the validated Emotional Exhaustion subscale of the Maslach Burnout Inventory (9-items) and the Burnout Assessment Tool (12-items). Burnout is measured at every measurement occasion, i.e. at month 9, 17, 29 and 41 in the intervention group and the wait-list control group.

Key secondary outcome(s)

Current secondary outcome measures as of 26/05/2020:

Measured among nurses at each measurement occasion i.e. at month 9, 17, 29 and 41 in both the immediate intervention group and the wait-list control group:

1. Work engagement (UWES-3)
2. Job satisfaction measured using a single question
3. Depression (PHQ-2)
4. Anxiety (GAD-2)
5. General health (SF-8)
6. Sleep quality (PSQ)
7. Intent to leave the hospital measured using two items
8. Absenteeism (HPQ) and presenteeism (HPQ)
9. Workability measured using a single question
10. Work-life conflict measured using a single question
11. Team commitment measured using a single question
12. Organizational commitment measured using a single question
13. Whether clinicians would recommend the hospital measured using two items
14. Work environment (PES-NWI)
15. Various measures of staffing and workload (NPQS)
16. Safety and quality measured using 10 items
17. Necessary nursing care left undone measured using a single question
18. Operational failures measured using a single question
19. Emotional demands (SIMPH)
20. Red tape measured using a single question
21. Role conflicts (NPQS)
22. Job control measured using a single question
23. Skill use measured using a single question
24. Value congruence measured using a single question
25. Performance feedback measured using three items
26. Opportunities for learning and development measured using a single question
27. Task variety (QEEW)
28. Role clarity (NPQS)
29. Intrinsic motivation (WEIMS)

30. Additional survey items to quantify associations will be measured among nurses in measurement occasions 2 and 4 (i.e. month 17 and 41) in the wait-list control group:

- 30.1. Emotional dissonance measured using a single question
- 30.2. Qualitative job insecurity measured using a single question
- 30.3. Basic need satisfaction measured using a six items
- 30.4. Engaging leadership measured using a twelve items

31. To survey physicians at each measurement occasion in both the immediate intervention group and the wait-list control group (measures as above):

- 31.1. Work engagement
- 31.2. Job satisfaction
- 31.3. Depression
- 31.4. Anxiety
- 31.5. General health
- 31.6. Sleep quality
- 31.7. Intent to leave the hospital
- 31.8. Absenteeism and presenteeism
- 31.9. Work-life conflict
- 31.10. Whether clinicians would recommend the hospital

- 31.11. Work environment
 - 31.12. Measures of staffing and workload
 - 31.13. Safety and quality
 - 31.14. Red tape
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Previous secondary outcome measures:

Measured among nurses at each measurement occasion i.e. at month 9, 17, 29 and 41 in both the immediate intervention group and the wait-list control group:

1. Work engagement (UWES-3)
2. Job satisfaction measured using a single question
3. Depression (PHQ-2)
4. Anxiety (GAD-2)
5. General health (SF-8)
6. Sleep quality (PSQ)
7. Intent to leave the hospital measured using a single question
8. Absenteeism (HPQ) and presenteeism (HPQ)
9. Workability measured using a single question
10. Work-life conflict measured using a single question
11. Team commitment measured using a single question
12. Organizational commitment measured using a single question
13. Whether clinicians would recommend the hospital measured using a single question
14. Work environment (PES-NWI)
15. Various measures of staffing and workload (NPQS)
16. Safety and quality measured using a single question
17. Necessary nursing care left undone measured using a single question
18. Operational failures measured using a single question
19. Emotional demands (SIMPH)
20. Red tape measured using a single question
21. Role conflicts (NPQS)
22. Job control measured using a single question
23. Skill use measured using a single question
24. Value congruence measured using a single question
25. Performance feedback measured using a single question
26. Opportunities for learning and development measured using a single question
27. Task variety (QEEW)
28. Role clarity (NPQS)
29. Intrinsic motivation (WEIMS)

30. Additional survey items to quantify associations will be measured among nurses in measurement occasions 2 and 4 (i.e. month 17 and 41) in the wait-list control group:

- 30.1. Emotional dissonance measured using a single question
- 30.2. Qualitative job insecurity measured using a single question
- 30.3. Basic need satisfaction measured using a single question
- 30.4. Engaging leadership measured using a single question

31. To survey physicians at each measurement occasion in both the immediate intervention group and the wait-list control group (measures as above):

- 31.1. Work engagement
- 31.2. Job satisfaction

- 31.3. Depression
- 31.4. Anxiety
- 31.5. General health
- 31.6. Sleep quality
- 31.7. Intent to leave the hospital
- 31.8. Absenteeism and presenteeism
- 31.9. Work-life conflict
- 31.10. Whether clinicians would recommend the hospital
- 31.11. Work environment
- 31.12. Measures of staffing and workload
- 31.13. Safety and quality
- 31.14. Red tape

Completion date

30/06/2024

Eligibility

Key inclusion criteria

Hospitals:

1. No Magnet® designation by the American Nursing Credentialing Center (ANCC) has been acquired in the past or at the time of the start of the intervention
2. Bed size greater or equal to 150
3. The hospital is focused on acute care for adults, including at least wards on internal medicine and/or surgery

Health professionals:

1. They have direct patient contact
2. Meet the minimum qualifications as stipulated by Directive 2013/55/EU amending Directive 2005/35/EC on the recognition of professional qualifications
3. Work on adult inpatient units including intensive care units (ICU) and the emergency room (ER)

Participant type(s)

Health professional

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Total final enrolment

0

Key exclusion criteria

Hospitals:

1. Highly specialized hospitals, e.g. psychiatric hospitals, tropical medicines or pediatrics

Health professionals:

1. Working in neonatology, pediatrics, obstetrics, psychiatry, operating room, pathology, microbiology, radiology and medical imaging

Date of first enrolment

19/10/2020

Date of final enrolment

24/12/2023

Locations

Countries of recruitment

United Kingdom

England

Belgium

Germany

Ireland

Norway

Sweden

Study participating centre

East and North Hertfordshire Teaching NHS Trust

Lister Hospital

Coreys Mill Lane

Stevenage

England

SG1 4AB

Study participating centre

Gloucestershire Hospitals NHS Foundation Trust

Cheltenham General Hospital

Sandford Road

Cheltenham

England

GL53 7AN

Study participating centre

Torbay and South Devon Health Care NHS Foundation Trust

-

-

England
TQ2 7AA

Study participating centre

West Hertfordshire Hospitals NHS Trust Laboratory

Watford General Hospital

Vicarage Road

Watford

England

WD18 0HB

Study participating centre

Bradford Teaching Hospitals NHS Foundation Trust

Bradford Royal Infirmary

Duckworth Lane

Bradford

England

BD9 6RJ

Study participating centre

University Hospitals of Morecambe Bay NHS Foundation Trust

Westmorland General Hospital

Burton Road

Kendal

England

LA9 7RG

Study participating centre

Frimley Health NHS Foundation Trust

Portsmouth Road

Frimley

Camberley

England

GU16 7UJ

Study participating centre

Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

Doncaster Royal Infirmary

Armthorpe Road
Doncaster
England
DN2 5LT

Study participating centre

Chelsea and Westminster Hospital NHS Foundation Trust

Chelsea & Westminster Hospital

369 Fulham Road

London

England

SW10 9NH

Study participating centre

King's College Hospitals NHS Foundation Trust

-

-

England

SE5 9RS

Study participating centre

South Tees Hospitals NHS Foundation Trust

James Cook University Hospital

Marton Road

Middlesbrough

England

TS4 3BW

Study participating centre

Lancashire Teaching Hospitals NHS Foundation Trust

Royal Preston Hospital

Sharoe Green Lane

Fulwood

Preston

England

PR2 9HT

Study participating centre

University Hospitals Leuven

Belgium

3000

Study participating centre
OLV Aalst
Belgium
9300

Study participating centre
University Hospitals Brussels
Belgium
1090

Study participating centre
Ziekenhuis Oost Limburg
Belgium
3600

Study participating centre
Jessa Ziekenhuis
Belgium
3500

Study participating centre
RZ Heilig Hart Leuven
Belgium
3000

Study participating centre
AZ Delta
Belgium
8800

Study participating centre
AZ Vesalius
Belgium
3700

Study participating centre
OLV van Lourdes Ziekenhuis Waregem
Belgium
8790

Study participating centre
AZ Sint-Maarten
Belgium
2800

Study participating centre
AZ Maria Middelaes
Belgium
9000

Study participating centre
AZ Sint-Vincentius Deinze
Belgium
9800

Study participating centre
Universitätsklinikum Hamburg-Eppendorf
Germany
20251

Study participating centre
Universitätsklinikum Heidelberg
Germany
69120

Study participating centre
Universitätsklinikum Düsseldorf
Germany
40225

Study participating centre

Ulm Universitäts und Rehabilitationskliniken

Germany

89081

Study participating centre

Universitätsklinikum Münster

Germany

48149

Study participating centre

Universitätsklinikum Bonn

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53127

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72764

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Germany

80636

Study participating centre

Deutsches Herzzentrum Berlin

Germany

13353

Study participating centre

Robert-Bosch-Krankenhaus

Germany

70376

Study participating centre

Städtisches Klinikum Dessau
Germany
06847

Study participating centre
Universitätsklinikum Halle
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06120

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39244

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Sweden
20501

Study participating centre
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75185

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Norway
0456

Study participating centre
Beaumont Hospital
Ireland
D09 V2N0

Study participating centre

Connolly Hospital

Ireland

D15 X40D

Study participating centre

Cork University Hospital

Ireland

T12 DFK4

Study participating centre

Galway University Hospital

Ireland

H91 YR71

Study participating centre

Letterkenny University Hospital

Ireland

X75 8X8

Study participating centre

Limerick University Hospital

Ireland

V94 F858

Study participating centre

Our Lady of Lourdes Hospital

Ireland

A92 VW28

Study participating centre

South Infirmary-Victoria University Hospital

Ireland

T12 X23H

Study participating centre

St. James's Hospital

Ireland

D08 NHY1

Study participating centre

Tipperary South Hospital

Ireland

E91 VY40

Study participating centre

Waterford University Hospital

Ireland

X91 ER8E

Study participating centre

Tallaght University Hospital

Ireland

D24 NR0A

Study participating centre

Mater Misericordiae University Hospital

Ireland

D07 R2WY

Study participating centre

Bons Secours Hospital

Ireland

D09 YN97

Study participating centre

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Study participating centre

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Study participating centre
AZ Damiaan Oostende
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Study participating centre
Klinikum Osnabrück
Germany
49076

Study participating centre
Universitaetsklinikum Regensburg
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93053

Study participating centre
Kreiskliniken Reutlingen
Germany
72764

Study participating centre
Krankenhaus vom Roten Kreuz Bad Cannstatt
Germany
70372

Study participating centre

Sana Herzchirurgie Stuttgart
Germany
70174

Study participating centre
Universitätsklinikum Tübingen
Germany
72076

Study participating centre
Städtisches Klinikum Lüneburg
Germany
21339

Study participating centre
Klinikum Bremerhaven-Reinkenheide
Germany
27574

Study participating centre
Mercy University Hospital
Ireland
T12 WE28

Study participating centre
Södertälje Sykehus
Södertälje
Sweden
152 40

Sponsor information

Organisation
KU Leuven

ROR
<https://ror.org/05f950310>

Funder(s)

Funder type
Government

Funder Name
European Commission Horizon 2020

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		15/10/2025	04/11/2025	Yes	No
Results article		29/06/2026	30/06/2026	Yes	No
Protocol article		28/07/2022	29/07/2022	Yes	No
Interim results article		15/01/2024	16/01/2024	Yes	No
Study website	Study website	11/11/2025	11/11/2025	No	Yes