Human - Centric Indoor Climate for Healthcare Facilities

Fact Sheet

Project Information

HumanIC
Grant agreement ID: 101119726

DOI
10.3030/101119726

Funded under
Marie Skłodowska-Curie Actions (MSCA)

Total cost
€ 0,00

EU contribution
€ 2 707 840,80

Coordinated by
POLITECHNIKA WARSZAWSKA
Poland

Objective

Over 4 million hospital patients acquire a healthcare-associated infection (HAI) in the EU each year. Moreover, the global crisis of antimicrobial resistance means that HAI is posing an increasing cost and risk of mortality. There is clear evidence that airflow controls the dispersion and exposure to airborne pathogens and determines the contamination of critical surfaces in the human-centric climate (HCC), which is defined as the microenvironment which surrounds and is close to a human body. This points to a significant need for innovation in healthcare indoor environments to tackle the challenge of infection control, while improving thermal comfort and energy efficiency in hospitals. To achieve this, we must both advance the fundamental understanding of how people are exposed to airborne pathogens and develop new tools and techniques to enable effective design and operation of healthcare environments. Specifically, there is a
need to understand better the local influence of airflows on particles in HCC; quantify the transient behaviour of airflows and contaminants due to healthcare activities like surgery; develop methods for optimising and adapting ventilation systems to control for risks in different environments like operation rooms and isolation rooms; and develop tools to enable real-time interaction with environments during design and operational phases. Bringing together 8 leading academic teams, 4 healthcare facilities and 8 HVAC industry partners, the HumanIC network aims to build a new approach to hospital environmental design through the concept of HCC and the training of 15 Early Career Stage Researchers to address these needs. HumanIC will create and disseminate fundamental and applied science to improve the knowledge base and innovate new technologies for designing and operating hospital ventilation and thermal systems and for reducing infection risk by at least 30%, meanwhile satisfying requirements of thermal comfort, safety and energy.

**Fields of science**

- social sciences ➔ sociology ➔ demography ➔ mortality
- medical and health sciences ➔ clinical medicine ➔ surgery
- engineering and technology ➔ mechanical engineering ➔ thermodynamic engineering
- medical and health sciences ➔ basic medicine ➔ pharmacology and pharmacy ➔ drug resistance ➔ antibiotic resistance

**Keywords**

- hospital
- patients
- operating room
- human-centric climate
- ventilation
- airborne pathogen exposure
- indoor air
- quality
- modeling
- smart tool
- monitoring
- thermal comfort
- energy efficiency

**Programme(s)**

HORIZON.1.2 - Marie Skłodowska-Curie Actions (MSCA)  
MAIN PROGRAMME

**Topic(s)**

HORIZON-MSCA-2022-DN-01-01 - MSCA Doctoral Networks 2022
Call for proposal

HORIZON-MSCA-2022-DN-01

See other projects for this call

Funding Scheme

HORIZON-TMA-MSCA-DN - HORIZON TMA MSCA Doctoral Networks

Coordinator

POLITECHNIKA WARSZAWSKA

Net EU contribution

€ 226 512,00

Address

Plac politechniki 1
00-661 Warszawa
Poland

Region

Makroregion województwo mazowieckie > Warszawski stoleczny > Miasto Warszawa

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding

€ 0,00

Participants (8)

NORGES TEKNISK-NATURVITENSKAPELIGE UNIVERSITET NTNU

Norway

Net EU contribution
€ 595 497,60

Address
Hogskoleringen 1
7491 Trondheim

Region
Norge > Trøndelag > Trøndelag

Links
Contact the organisation Website Participation in EU R&I programmes HORIZON collaboration network

Other funding
€ 0,00

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TECHNISCHE UNIVERSITAT BERLIN

Germany
Net EU contribution
€ 260 539,20

Address
Strasse des 17 juni 135
10623 Berlin

Region
Berlin > Berlin > Berlin

Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation Website Participation in EU R&I programmes HORIZON collaboration network

Other funding
€ 0,00

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KUNGLIGA TEKNISKA HOEGSKOLAN

Sweden
Net EU contribution
UNIVERSIDADE DE COIMBRA
Portugal
Net EU contribution
€ 243 403,20
Address
Paco das escolas
3004-531 Coimbra
Region
Continente > Centro (PT) > Região de Coimbra
Activity type
Higher or Secondary Education Establishments
Links
Contact the organisation | Website | Participation in EU R&I programmes | HORIZON collaboration network
Other funding
€ 0,00

UNIVERSIDAD CARLOS III DE MADRID
Spain

Net EU contribution

€ 251,971,20

Address

Calle madrid 126
28903 Getafe (madrid)

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website Participation in EU R&I programmes HORIZON collaboration network

Other funding

€ 0,00

FUNDACION PARA LA INVESTIGACION BIOMEDICA DEL HOSPITAL GREGORIO MARANON

Spain

Net EU contribution

€ 251,971,20

Address

Calle doctor esquerdo 46
28007 Madrid

Region

Comunidad de Madrid > Comunidad de Madrid > Madrid

Activity type

Other

Links

Contact the organisation Website Participation in EU R&I programmes HORIZON collaboration network

Other funding

€ 0,00
FEDERATIE VAN VERENIGINGEN VOOR VERWARMING EN LUCHTBEHANDELING IN EUROPA REHVA

Belgium

Net EU contribution
€ 0,00

Address
Rue washington 40
1050 Bruxelles / brussel

Region
Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest > Région de Bruxelles-Capitale/Brussels Hoofdstedelijk Gewest > Arr. de Bruxelles-Capitale/Arr. Brussel-Hoofdstad

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 0,00

DREES & SOMMER ADVANCED BUILDING TECHNOLOGIES GMBH

Germany

Net EU contribution
€ 0,00

Address
Obere waldplaezte 11
70569 Stuttgart

SME
Yes

Region
Baden-Württemberg > Stuttgart > Stuttgart, Stadtkreis

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)
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Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 0,00

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GRANLUND OY

Finland

Net EU contribution

€ 0,00

Address

Malminkaari 21
00701 Helsinki

Region

Manner-Suomi > Helsinki-Uusimaa > Helsinki-Uusimaa

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Website
Participation in EU R&I programmes
HORIZON collaboration network

Other funding

€ 0,00

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ACTIVTEK MEDICA SP. Z O. O.

Poland

Net EU contribution

€ 0,00

Address

Ul. karola olszewskiego 21
25-663 Kielce
SME  Yes

Region
Makroregion centralny > Świętokrzyskie > Kielecki

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 0,00

HALTON OY
Finland
Net EU contribution
€ 0,00

Address
Haltonintie 1-3
47400 Kausala

Region
Manner-Suomi > Etelä-Suomi > Kymenlaakso

Activity type
Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links
Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Other funding
€ 0,00

CHARITE - UNIVERSITAETSMEDIZIN BERLIN
Germany
Net EU contribution
Univ. of Chariteplatz 1

Chariteplatz 1
10117 Berlin

Address

Region
Berlin > Berlin > Berlin

Activity type
Higher or Secondary Education Establishments

Links
Contact the organisation  
Website  
Participation in EU R&I programmes  
HORIZON collaboration network

Other funding
€ 0,00

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Univ. of Leeds

Woodhouse lane
LS2 9JT Leeds

Address

Region
Yorkshire and the Humber > West Yorkshire > Leeds

Links
Contact the organisation  
Website  
Participation in EU R&I programmes  
HORIZON collaboration network

Other funding
€ 0,00

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Last update: 24 July 2023

Permalink: https://cordis.europa.eu/project/id/101119726