Topic: PHC-11-2015:
Development of new diagnostic tools and technologies: in vivo medical imaging technologies

HYPMED

Digital Hybrid Breast PET/MRI for Enhanced Diagnosis of Breast Cancer

Grant Agreement Number: 667211

D 5.5 Report on maintenance of website, updating with project news, results, success information

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Nature:	Report		
Dissemination level:	Public		

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1 Introduction

The HYPMED website (www.hypmed.eu) was designed to provide a primary source of project information, news and results to both peers in the medical community and the public. Along with the consortium's Twitter account (@hypmed_eu), its document and presentation templates, and event material, the website has portrayed the overall corporate identity of the project through its colour scheme and inclusion of the project logo and slogan. It has been consistently updated according to changes in the project workplan, the occurrence of sponsored and associated events, and the achievement of publicly available results, keeping it relevant for the focused audience and increasing engagement across the globe. The report describes the maintenance of the website, updates as the project progressed, and evidence of interaction with a diverse audience.

The website will remain operable in the foreseeable future as a repository of project information and with prospects of results to be exploited by future research initiatives.

2 HYPMED website

2.1 Introduction

With regular news updates, a modern design and supporting activities (newsletter mailings, social media posts), the HYPMED website has seen a commendable amount of traffic since its launch. Its design was intended to demonstrate the project's strong associations with breast cancer, medical imaging and the European Union's Horizon 2020 programme. The website also featured simplified readability and engagement through the use of a single page with scroll function and a menu in the website banner to quickly reach its seven sections, each of which are linked to pages for more details of project aspects.

2.2 Website sections

The introductory section of the website (Figure 2.1) conveys the project's focus on breast cancer in its imagery, colours, logo and heading. The banner menu allows users to quickly access information most relevant to their inquiries.

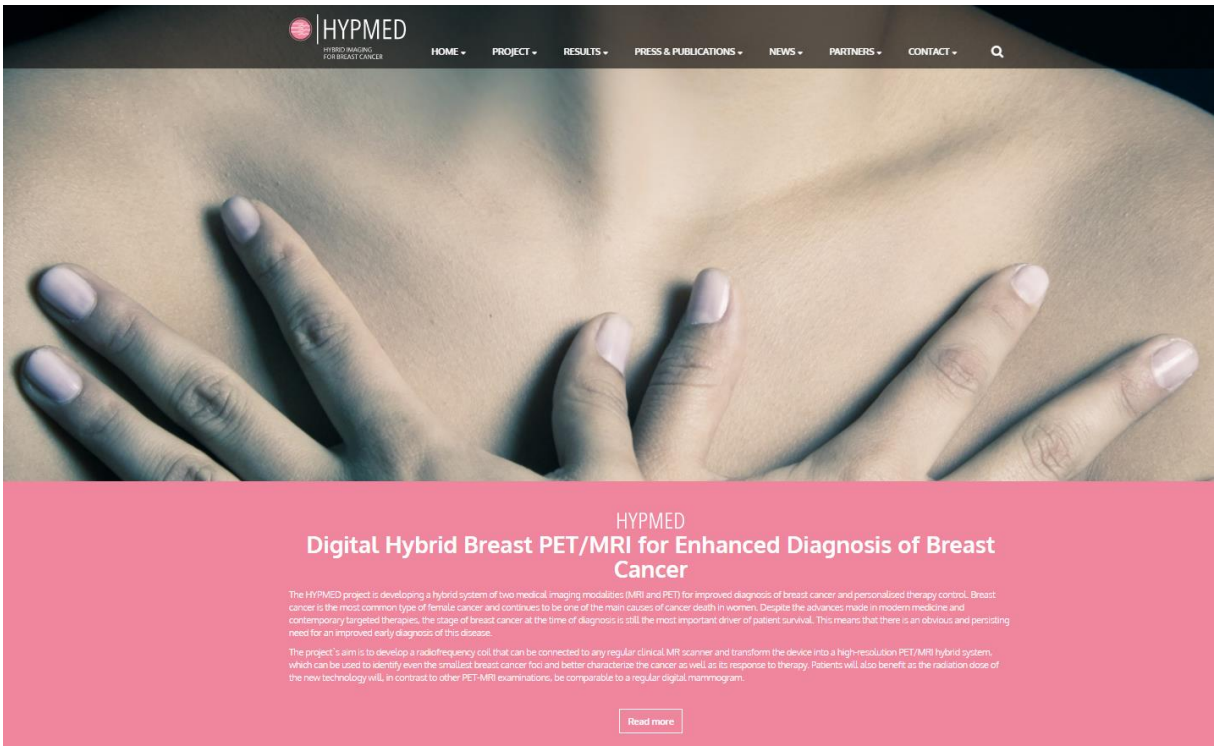


Figure 2.1: Introductory section of the website

The Latest News section (Figure 2.2) communicates the latest news. As much of the project's relevant news events were associated with the board meetings and conferences, it can be noted few news items were added in 2020 and 2021 due to the COVID-19 pandemic. Nevertheless, its position on the website provides a link to the consortium's latest achievements and representation at important events across Europe.

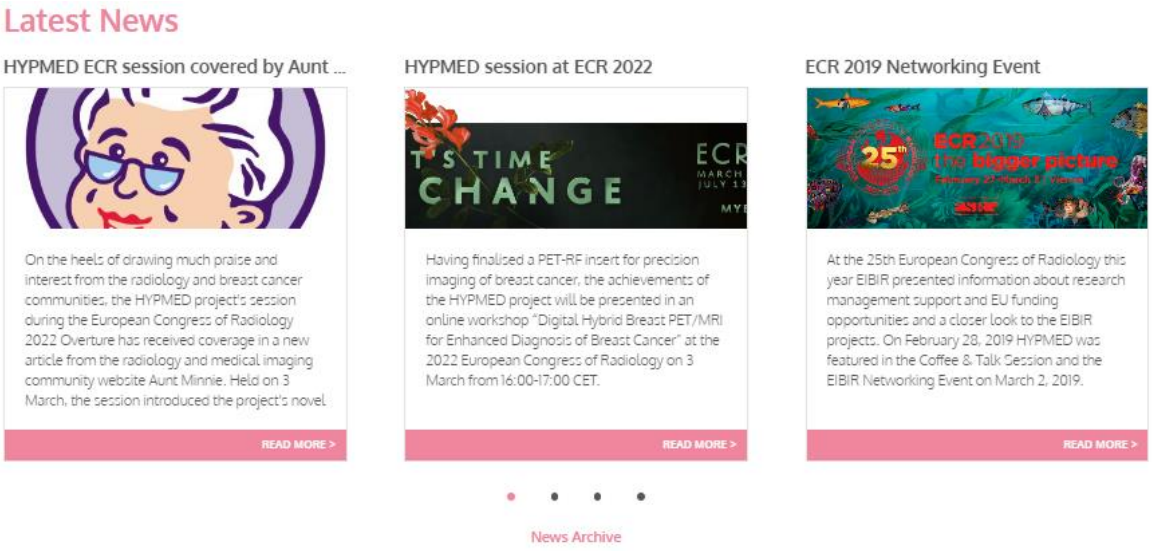


Figure 2.2: Latest News section of the website

The About HYPMED section serves to connect the reader to detailed information about the work packages and public deliverables, similarly contributing to a sense of progress toward the project's objectives, while the Partners section (Figure 2.3) projects the Member States of the partners, symbolized by a national flag banner, on a partial European map and gives links to dedicated pages for each with general information about the institution and role of each associated staff member.

Figure 2.3: Partners section of the website

The Press and Publications section (Figure 2.4) adds to the visual attractiveness of the website and carries links to repositories of the press and media materials as well as the relevant journal publications of the consortium members.

Figure 2.4: Press and Publications section of the website

Finally, the Contact section (Figure 2.5) provides open reader engagement with the consortium or direct contact to the Scientific Coordinator or Project Manager, while the footer states the EU funding source and provides links to the project newsletter and Twitter account for brief updates of the project status and upcoming events.

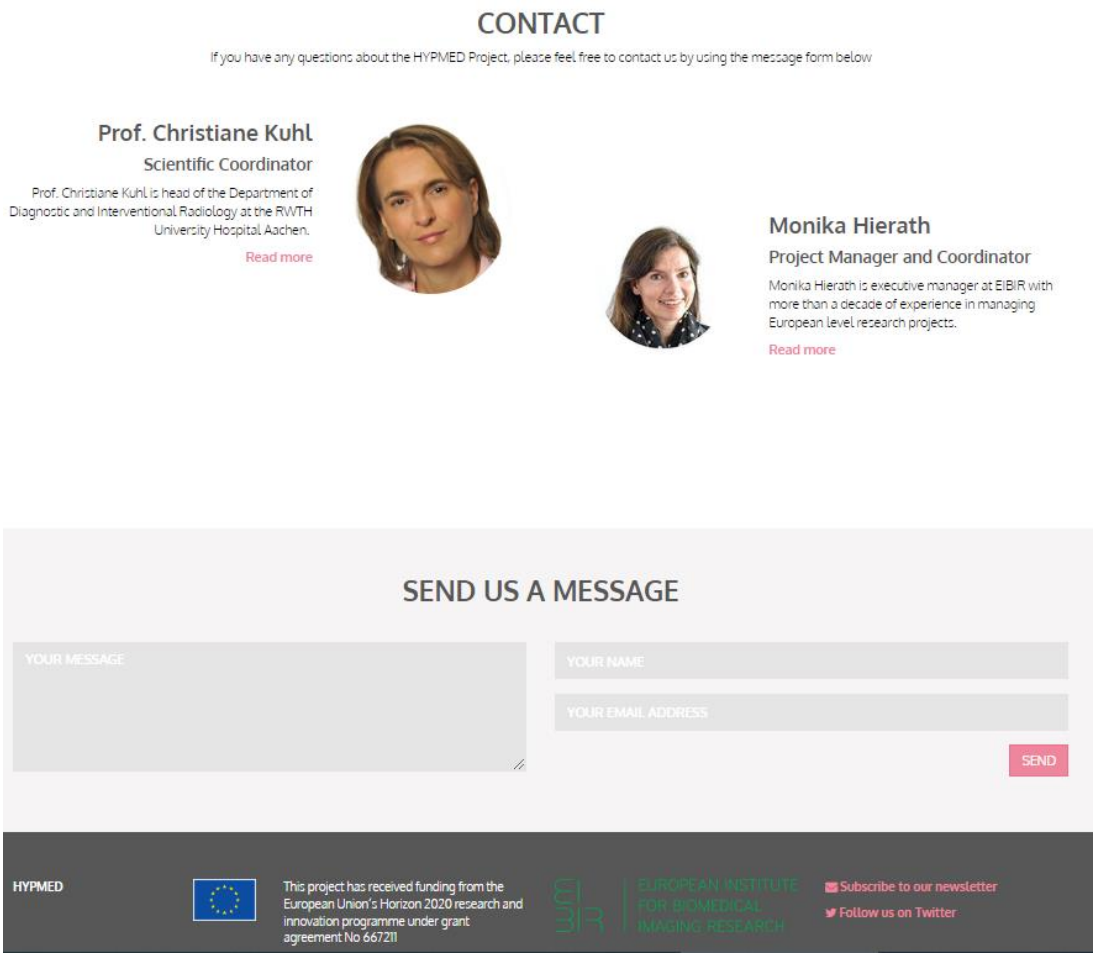
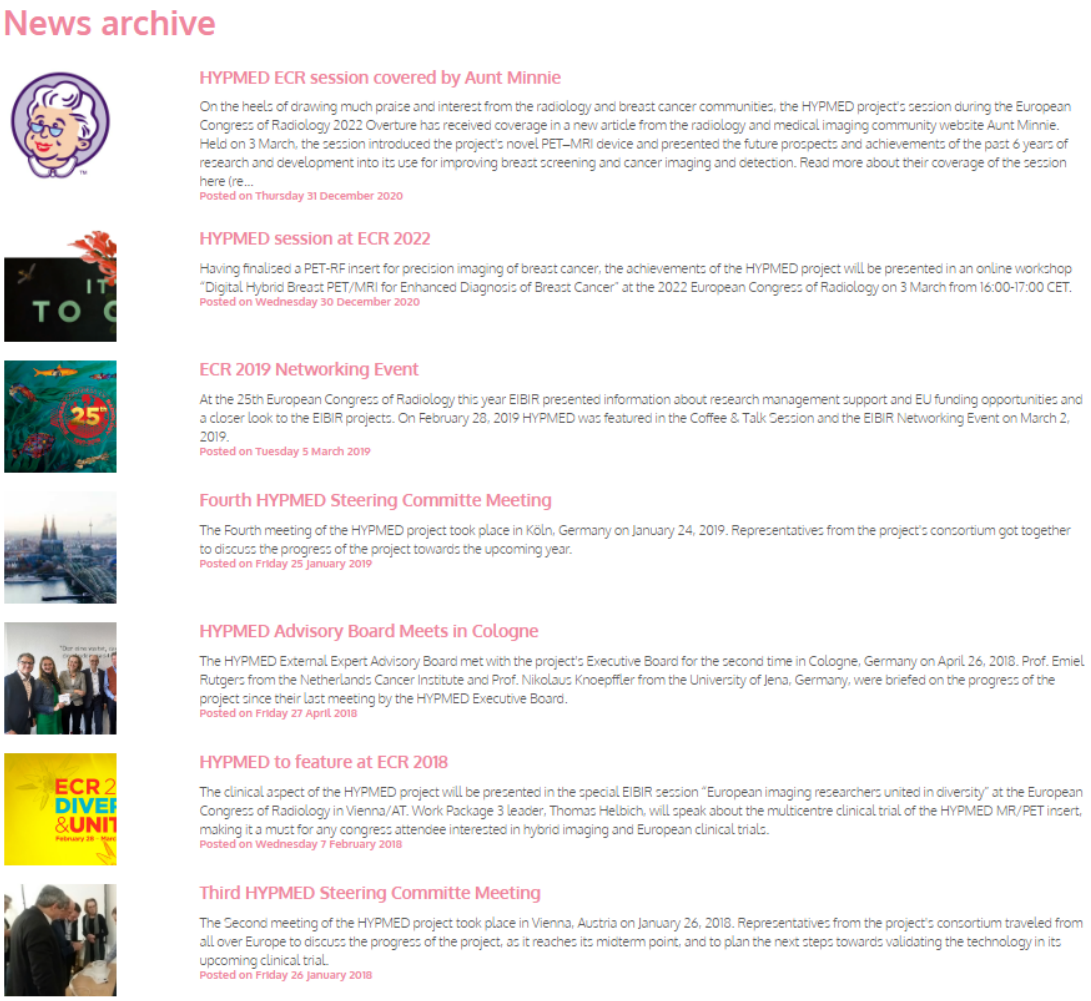


Figure 2.5: Contact section and footer of the website

3 Project information dissemination

Given the changes to the project workplan as a result of two approved amendment requests, all sections of the website had to be updated throughout the duration of the project, though the majority concerned the Latest News, About HYPMED and Press and Publications sections. Of the remaining sections, the most notable updates were the change in 2021 in EIBIR's project manager and coordinator from Pamela Zolda to Monika Hierath, who guided the project to its completion, and the exclusion of the partner Intrasense in 2021.

The Latest News section served as a blog for all project news items, linking to the News Archive page (Figure 3.1), which informed readers of events and milestone from the kickoff meeting to the final project workshop during the 2022 European Congress on Radiology (ECR) Overture. The blog will also communicate the final project results.



News archive

HYPMED ECR session covered by Aunt Minnie

On the heels of drawing much praise and interest from the radiology and breast cancer communities, the HYPMED project's session during the European Congress of Radiology 2022 Overture has received coverage in a new article from the radiology and medical imaging community website Aunt Minnie. Held on 3 March, the session introduced the project's novel PET–MRI device and presented the future prospects and achievements of the past 6 years of research and development into its use for improving breast screening and cancer imaging and detection. Read more about their coverage of the session here (re...

Posted on Thursday 31 December 2020

HYPMED session at ECR 2022

Having finalised a PET-RF insert for precision imaging of breast cancer, the achievements of the HYPMED project will be presented in an online workshop "Digital Hybrid Breast PET/MRI for Enhanced Diagnosis of Breast Cancer" at the 2022 European Congress of Radiology on 3 March from 16:00-17:00 CET.

Posted on Wednesday 30 December 2020

ECR 2019 Networking Event

At the 25th European Congress of Radiology this year EIBIR presented information about research management support and EU funding opportunities and a closer look to the EIBIR projects. On February 28, 2019 HYPMED was featured in the Coffee & Talk Session and the EIBIR Networking Event on March 2, 2019.

Posted on Tuesday 5 March 2019

Fourth HYPMED Steering Committe Meeting

The Fourth meeting of the HYPMED project took place in Köln, Germany on January 24, 2019. Representatives from the project's consortium got together to discuss the progress of the project towards the upcoming year.

Posted on Friday 25 January 2019

HYPMED Advisory Board Meets in Cologne

The HYPMED External Expert Advisory Board met with the project's Executive Board for the second time in Cologne, Germany on April 26, 2018. Prof. Emiel Rutgers from the Netherlands Cancer Institute and Prof. Nikolaus Knoepffler from the University of Jena, Germany, were briefed on the progress of the project since their last meeting by the HYPMED Executive Board.

Posted on Friday 27 April 2018

HYPMED to feature at ECR 2018

The clinical aspect of the HYPMED project will be presented in the special EIBIR session "European imaging researchers united in diversity" at the European Congress of Radiology in Vienna/AT. Work Package 3 leader, Thomas Helbich, will speak about the multicentre clinical trial of the HYPMED MR/PET insert, making it a must for any congress attendee interested in hybrid imaging and European clinical trials.

Posted on Wednesday 7 February 2018

Third HYPMED Steering Committe Meeting

The Second meeting of the HYPMED project took place in Vienna, Austria on January 26, 2018. Representatives from the project's consortium traveled from all over Europe to discuss the progress of the project, as it reaches its midterm point, and to plan the next steps towards validating the technology in its upcoming clinical trial.

Posted on Friday 26 January 2018

Figure 3.1: News Archive page

In the About HYPMED section, the Work Packages page was updated after the addition of work package 7 and changes to the overall objective of work package 3 due to the removal of the clinical study. As relatively few project deliverables were assigned for public release, the Results page (Figure 3.2) was primarily prepared for the dissemination of that group. Three public deliverables have been added, and it should be noted the release of deliverable 2.3 is pending corrections per EC instructions. The remaining deliverables will be uploaded at the end of the project.

Results

Over its four years of research the HYPMED project will achieve a number of key results on its path to creating a hybrid PET-MRI system. The list below contains the project's public deliverables which will be updated as the project progresses.

Name	Date	File
Deliverable 2.3: Quantitative reconstruction environment	2018-10-01	
Deliverable 4.1: Definition of different types of immune infiltrates - immunoscore	2020-05-20	immunoscore.pdf
Deliverable 4.2: Correlation of histopathological parameters, tumour micro-environment and PET–MR imaging		
Deliverable 4.3: Definition of biomarker signatures correlated to PET–MR imaging		
Deliverable 5.1: Project website and corporate identity	2018-11-06	Website.pdf
Deliverable 5.3: End user workshop	2020-04-01	Workshop.pdf
Deliverable 5.5: Report on maintenance of website, updating with project news, results, success information		

Figure 3.2: Results page

The Press and Publications section was also updated throughout the project to present the project newsletter and conference materials on the Press and Media page (Figure 3.3) and the consortium member's open-access scientific work published by various journals on the Publications page (Figure 3.4). As noted in the figure, the Press and Media page also provides a link for users to subscribe to the project newsletter. Publications released during reporting period 5 and following the conclusion of the project as well as a final project newsletter will also be uploaded to the website.

Press and Media

The results of the HYPMED Project will have a significant impact on breast cancer diagnosis and treatment. As a result, keeping all stakeholders informed and up-to-date is also a key aim of the project and a range of press and dissemination material will be created at each stage of the project to announce the latest results.

Subscribe to our newsletter

Name	Date	File
HYPMED Newsletter - February/March 2019	2019-03-05	HYPMED_NL_3_Feb2019.pdf
HYPMED roll-up ECR 2019	2019-03-05	HYPMED roll up - ECR 2019.pdf
ECR Today 2019	2019-03-01	HYPMED_ECR Today 2019_Friday_March 1.pdf
HYPMED Newsletter - February/March 2018	2018-02-19	HYPMED NL2.pdf
HYPMED flyer	2017-08-08	HYPMEDFolder2016.pdf
HYPMED Newsletter - February/March 2017	2017-02-28	HYPMED_NL_Feb2017.pdf
Project Fact Sheet	2016-03-02	HYPMED Fact Sheet.pdf
Press Release	2016-01-27	HYPMED_Press_release_Jan_2016.pdf
Project Logo	2016-01-01	hyp-logo-horizontalclaim-rgb.png

Figure 3.3: Press and Media page

Publications

During the course of its four-year research period, HYPMED researchers will publish a range of scientific articles and every effort will be made to make these available on an open-access basis.

Below is a list of publications related to the HYPMED Project, which will be updated as the project progresses.

Name	Date	File
'Confounding factors in breast magnetic resonance fingerprinting: B+1, slice profile, and diffusion effects' (2020)	2020-09-16	Nolte 2020.pdf
'Emerging methods in radiology' (2020)	2020-05-22	Theek 2020.pdf
'Spiral blurring correction with water–fat separation for magnetic resonance fingerprinting in the breast' (2019)	2019-08-30	Nolte 2019.pdf
'MR image corrections for PET-induced gradient distortions.' (2018)	2019-02-12	gross-weege-2018-medical-physics.pdf
'Imaging Phenotypes in Women at High Risk for Breast Cancer on Mammography, Ultrasound, and Magnetic Resonance Imaging Using the Fifth Edition of the Breast Imaging Reporting and Data System.'	2019-01-15	marino-m-2018-eur-j-radiol.pdf
'Diffusion-Weighted Imaging With Apparent Diffusion Coefficient Mapping for Breast Cancer Detection as a Stand-Alone Parameter: Comparison With Dynamic Contrast-Enhanced and Multiparametric Magnetic Resonance Imaging.'	2019-01-15	pinker-2018-invest-radiol.pdf
'Multiparametric MRI model with dynamic contrast-enhanced and diffusion-weighted imaging enables breast cancer diagnosis with high accuracy'. J Magn Reson Imaging (2018)	2019-01-04	Zhang 2018.pdf
'Development of a Non-invasive Assessment of Hypoxia and Neovascularization with Magnetic Resonance Imaging in Benign and Malignant Breast Tumors: Initial Results'. Mol Imaging Biol (2018)	2019-01-04	Stadlbauer 2018.pdf
'Novel PET/MRI Technology for Enhanced Breast Cancer Diagnosis'. DIAGNOSTIC IMAGING EUROPE (November 2017) Pg. 18-19	2017-11-15	DIEurope November 2017 final.pdf
'Crystal Delay and Time Walk Correction Methods for Coincidence Resolving Time Improvements of a Digital-Silicon-Photomultiplier-Based PET/MRI Insert'. IEEE TRPMS (2017)	2017-10-31	IEEE_ Crystal Delay.pdf
'Intercrystal Scatter Rejection for Pixelated PET Detectors' Christian Ritzer, Patrick Hallen, David Schug, and Volkmar Schulz - IEEE TRANSACTIONS ON RADIATION AND PLASMA MEDICAL SCIENCES	2017-03-31	IEEE_Intercrystal Scatter Rejection.pdf

Figure 3.4: Publications page

4 Results and success

Up to the final project month of June 2022, the HYPMED website has attracted in total more than 7600 users and nearly 10 000 sessions from the majority of countries in the world (Figure 4.1).

Figure 4.1: Depiction of traffic received by country (Courtesy of Google Analytics)

In a depiction of traffic versus time (Figure 4.2), consistent interest is evident during the first year of the website but remained low until the period leading to the 2019 ECR, when sessions peaked sharply. Smaller peaks can also be seen around the 2020 and 2021 ECR as well as HYPMED's resumption of Twitter activity in October 2021 as more final results became available. In 2022 the peak also corresponds to the end-user workshop during the ECR Overture in March.

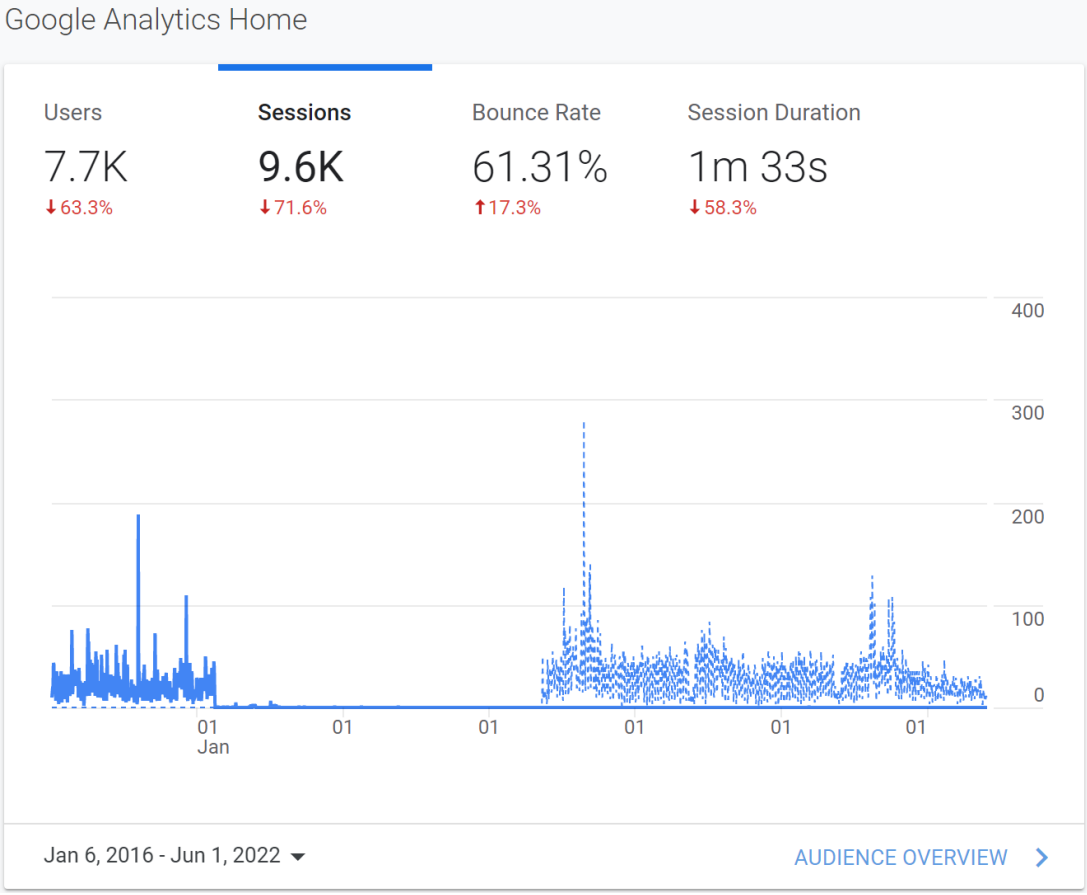


Figure 4.2: Trend in number of website sessions from 2016–22 (Courtesy of Google Analytics)

Most traffic to the website has primarily come via organic search (via search engines such as Google), with strong contributions from direct visits (website access by URL entry or bookmarks) and referrals (access via hyperlink, e.g.), which indicates that dissemination and communication activities carried out by the project have been successfully driving traffic to the website. Regular search engine optimisation measures carried out by EIBIR have ensured that the website is receiving prominent page rankings in search engine results, and sustained project outreach and network building is likely responsible for the direct traffic and referrals.

Default Channel Grouping	Acquisition			Behavior		
	Users	New Users	Sessions	Bounce Rate	Pages / Session	Avg. Session Duration
	0 % of Total: 0.00% (0)	7,645 % of Total: 100.05% (7,641)	9,578 % of Total: 100.00% (9,578)	61.31% Avg for View: 61.31% (0.00%)	2.74 Avg for View: 2.74 (0.00%)	00:01:34 Avg for View: 00:01:34 (0.00%)
1. (Other)	0 (0.00%)	3 (0.04%)	3 (0.03%)	100.00%	1.00	00:00:00
2. Direct	0 (0.00%)	1,926 (25.19%)	2,339 (24.42%)	64.04%	2.82	00:01:34
3. Email	0 (0.00%)	82 (1.07%)	125 (1.31%)	53.60%	2.92	00:01:41
4. Organic Search	0 (0.00%)	3,906 (51.09%)	5,005 (52.26%)	58.18%	2.89	00:01:41
5. Referral	0 (0.00%)	1,516 (19.83%)	1,802 (18.81%)	66.59%	2.36	00:01:16
6. Social	0 (0.00%)	212 (2.77%)	304 (3.17%)	63.16%	1.93	00:01:21

Figure 4.3: Channels by which users accessed the HYPMED website (Courtesy of Google Analytics)

Although the website has helped raise awareness of the project globally, the European character of the consortium and its promotional events can be correlated to the strong proportion of visitors coming from EU countries and the UK (Figure 4.4). Notably, important non-EU countries such as the United States, India and Brazil also expressed considerable interest. All these countries could host large potential markets for commercially exploitable results of the project. In addition, Portugal, Switzerland, Austria, Greece, Turkey and Canada also contributed more than 100 users of the website.

Country	Acquisition		
	Users	New Users	Sessions
	0 % of Total: 0.00% (0)	7,645 % of Total: 100.05% (7,641)	9,578 % of Total: 100.00% (9,578)
1. United Kingdom	0 (0.00%)	1,007 (13.17%)	1,225 (12.79%)
2. Germany	0 (0.00%)	692 (9.05%)	936 (9.77%)
3. United States	0 (0.00%)	678 (8.87%)	732 (7.64%)
4. Italy	0 (0.00%)	542 (7.09%)	764 (7.98%)
5. Spain	0 (0.00%)	445 (5.82%)	610 (6.37%)
6. France	0 (0.00%)	381 (4.98%)	502 (5.24%)
7. Netherlands	0 (0.00%)	330 (4.32%)	411 (4.29%)
8. India	0 (0.00%)	273 (3.57%)	303 (3.16%)
9. Brazil	0 (0.00%)	256 (3.35%)	261 (2.72%)
10. Belgium	0 (0.00%)	245 (3.20%)	299 (3.12%)

Figure 4.4: Top 10 countries of website users (Courtesy of Google Analytics)