

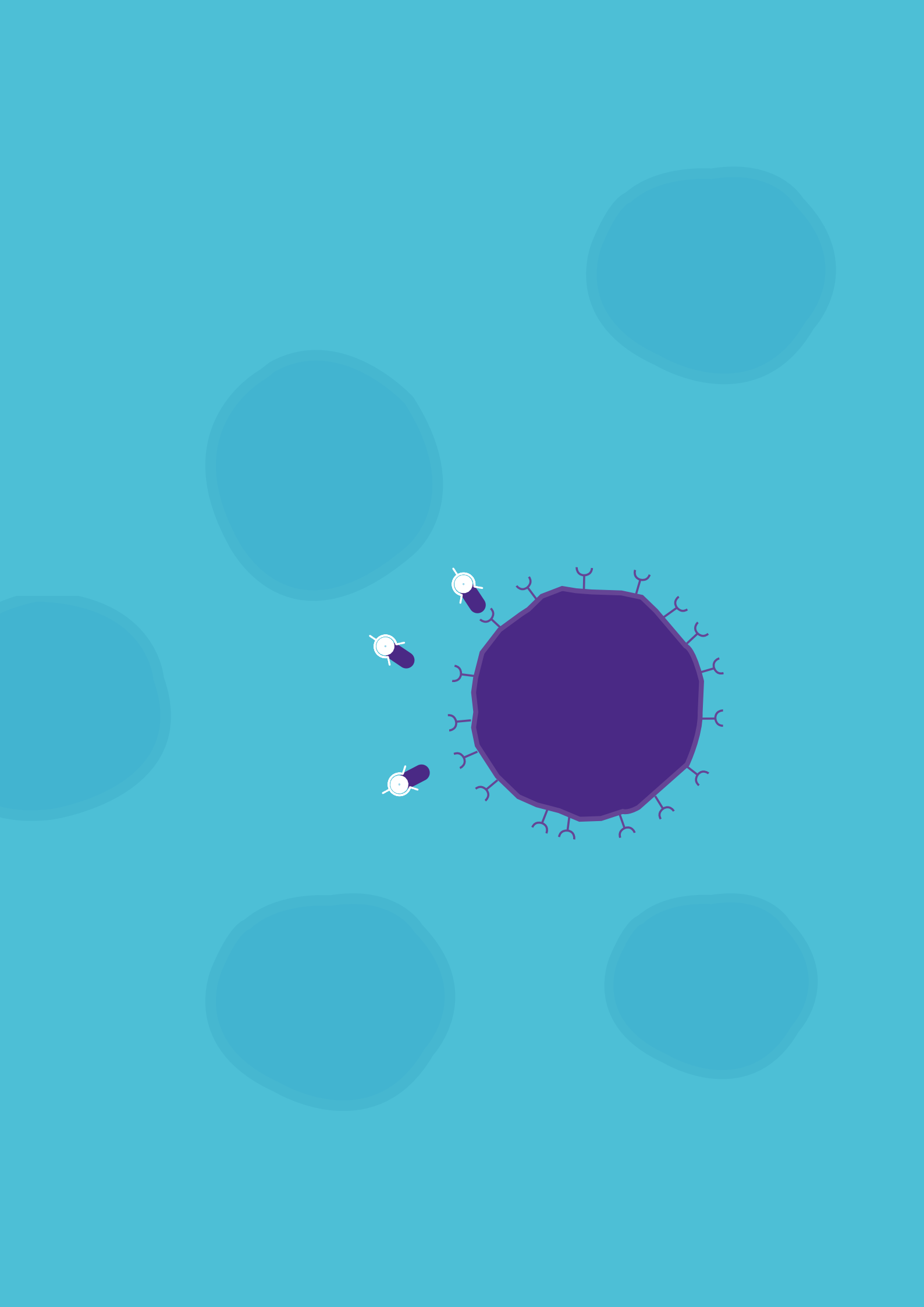
# Radioligand therapy: preparing for the future of targeted cancer care

**A YEAR IN REVIEW: 2021**

This report has been drafted by The Health Policy Partnership. It is part of a project that is supported with funding by Advanced Accelerator Applications, a Novartis Company, with additional support from Nordic Nanovector. Funding for the US outputs is in the form of an unrestricted grant.

**February 2022**

The  
**Health Policy  
Partnership**  
[research, people, action]



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## Introduction

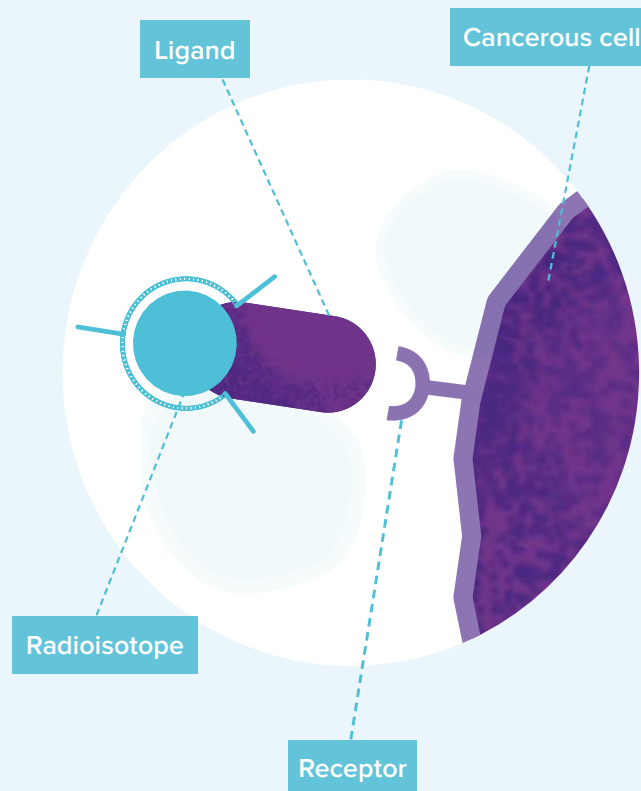
### What is radioligand therapy?

**Radioligand therapy is a highly targeted type of cancer treatment.**

A radioligand is made of two parts: a ligand, which can find cancer cells that have a particular surface molecule, and a radioisotope, which is able to kill these cells. Radioligands can find and deliver radiation to cells anywhere in the body. If the ligand is an antibody, the approach is known as radioimmunotherapy.

**Radioligand therapy could be applied to any cancer where a suitable receptor is**

**identified**, because the mechanism by which the therapy works is not specific to any particular tumour type. The therapy is currently licensed for use for certain types of neuroendocrine neoplasms and lymphoma. It is also under evaluation for metastatic castration-resistant prostate cancer and other cancers.



## About the project

The radioligand therapy project is run by **The Health Policy Partnership (HPP), an independent health policy research organisation**. The project began in 2019, with the aim to raise awareness of radioligand therapy among policymakers and the cancer community across Europe. This culminated in the launch of a [policy report](#) in early 2020, which outlined barriers to the integration of radioligand therapy across Europe.

Following this, our work over the course of 2020–2021 focused on:

- ↘ **defining** what is needed across all facets of health systems to support the integration of radioligand therapy and building this into a [readiness assessment framework](#) for radioligand therapy
- ↘ **applying** this framework to two countries (the [United Kingdom](#) and the [United States](#)) to offer concrete proposals on how to encourage system readiness for radioligand therapy's integration within these contexts
- ↘ **engaging** a multidisciplinary network of stakeholders to discuss and raise awareness of radioligand therapy and collectively drive change to achieve optimal system readiness.

This phase of the project was supported with funding by Advanced Accelerator Applications, a Novartis Company, with additional support from Nordic Nanovector. Funding for the US outputs was in the form of an unrestricted grant.

This report presents an overview of what we achieved in 2021.

**PROFESSOR JOLANTA KUNIKOWSKA**, President of the European Association of Nuclear Medicine (EANM):

I am delighted to join this very important initiative on behalf of the EANM. Radioligand therapy is truly multidisciplinary and, thus, needs to be discussed in a multidisciplinary team. Working collaboratively allows for better planning of complex diagnosis and treatment methods.

# The Radioligand Therapy Readiness Assessment Framework

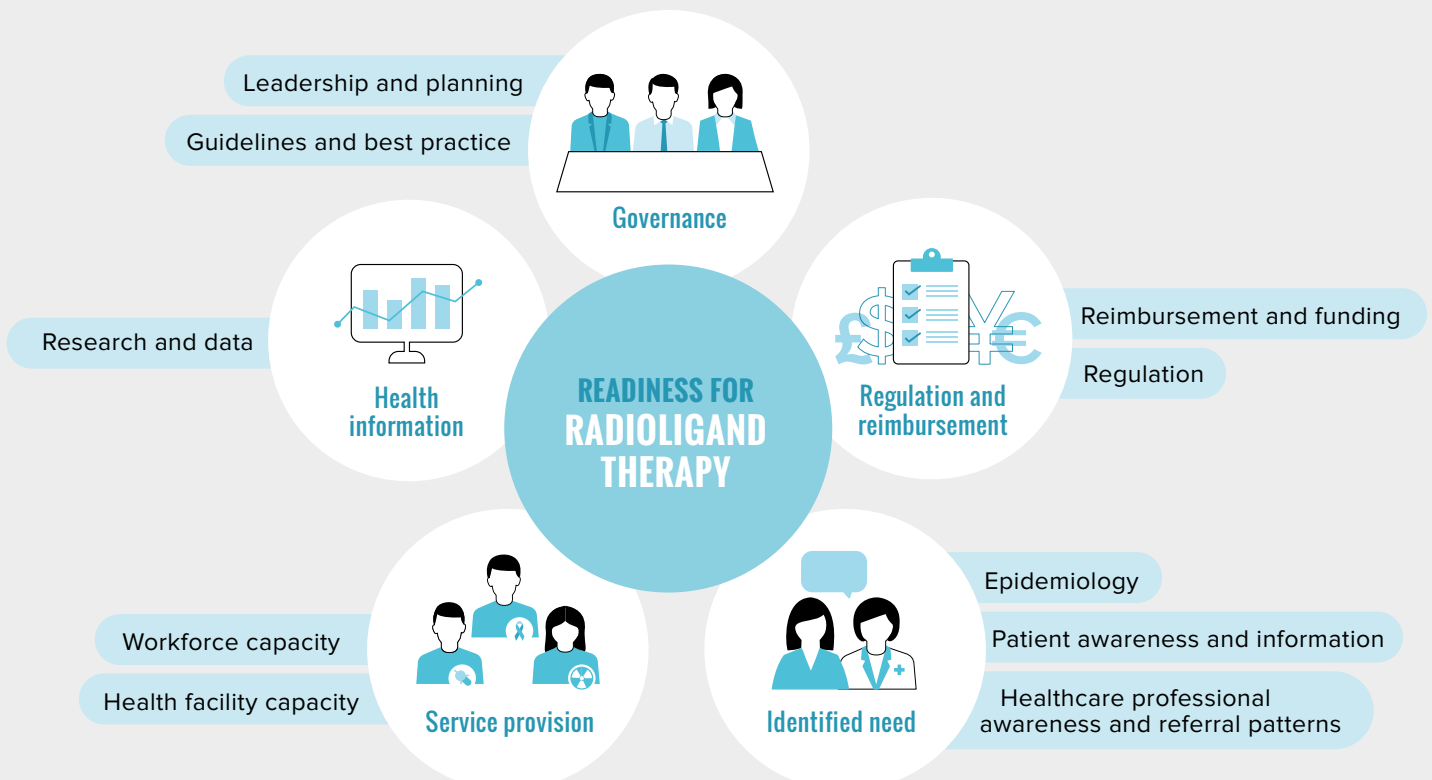
## The international framework

Across 2020 and 2021, we developed and finalised the international **Radioligand Therapy Readiness Assessment Framework**. This first-of-its-kind framework was developed in collaboration with our multidisciplinary International Advisory Group. We refined the framework using a grounded theory approach, updating it based on our insights from applying it in the UK and US, before launching the document.

**The framework is meant to be used as a tool to assess current integration of and future system readiness for radioligand therapy in different settings.**

It contains a series of questions, based around the five domains of health systems: governance, regulation and reimbursement, identified need, service provision and health information (Figure 1). Each domain is divided into subdomains that help focus the assessment. Ultimately, the findings from applying the framework can be used to define the policy actions that are needed to support health system readiness for radioligand therapy.

FIGURE 1. The domains and subdomains of the Radioligand Therapy Readiness Assessment Framework



## User guide and supportive templates

To support independent applications of the framework, we developed a [user guide](#), which outlines a standard methodology. It also describes how to validate findings and use them to identify areas for policy action.

We also developed a series of templates to further encourage independent applications of the framework. [The templates \(Figure 2\)](#) provide a step-by-step guide on how to apply the framework, and have been incorporated into the user guide .

**FIGURE 2.** Templates to assist with applying the framework



The framework and supporting materials are available on the [radioligand therapy website](#).

## Launch event to disseminate international framework materials

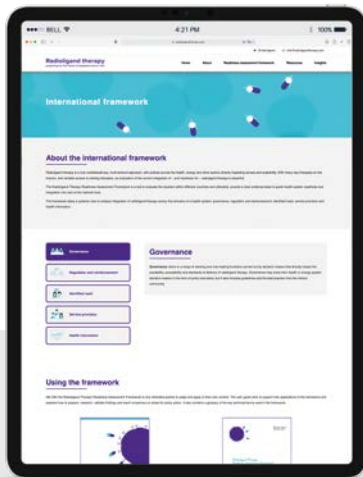
The framework and accompanying user guide were launched on 9 June 2021 at an online event, which was ancillary to the American Society of Clinical Oncology (ASCO) Annual Meeting. Speakers were:

- ↘ Professor Ronald Ennis, American Society of Radiation Oncology (ASTRO)
- ↘ Dr Ajay Gopal, University of Washington and Fred Hutchinson Cancer Research Center
- ↘ Professor Ken Herrmann, Universitätsmedizin Essen
- ↘ Professor Jolanta Kunikowska, European Association of Nuclear Medicine
- ↘ Josh Mailman, Northern California CarciNET Community
- ↘ Dr Mike Morris, Memorial Sloan Kettering Cancer Center
- ↘ Dr Diana Paez, International Atomic Energy Agency
- ↘ Professor Hein Van Poppel, European Association of Urology
- ↘ Dr Richard Wahl, Society of Nuclear Medicine and Molecular Imaging (SNMMI)

You can learn more about the launch in this [post](#) and accompanying [event report](#).

## Endorsements and dissemination

The international framework has been endorsed by:

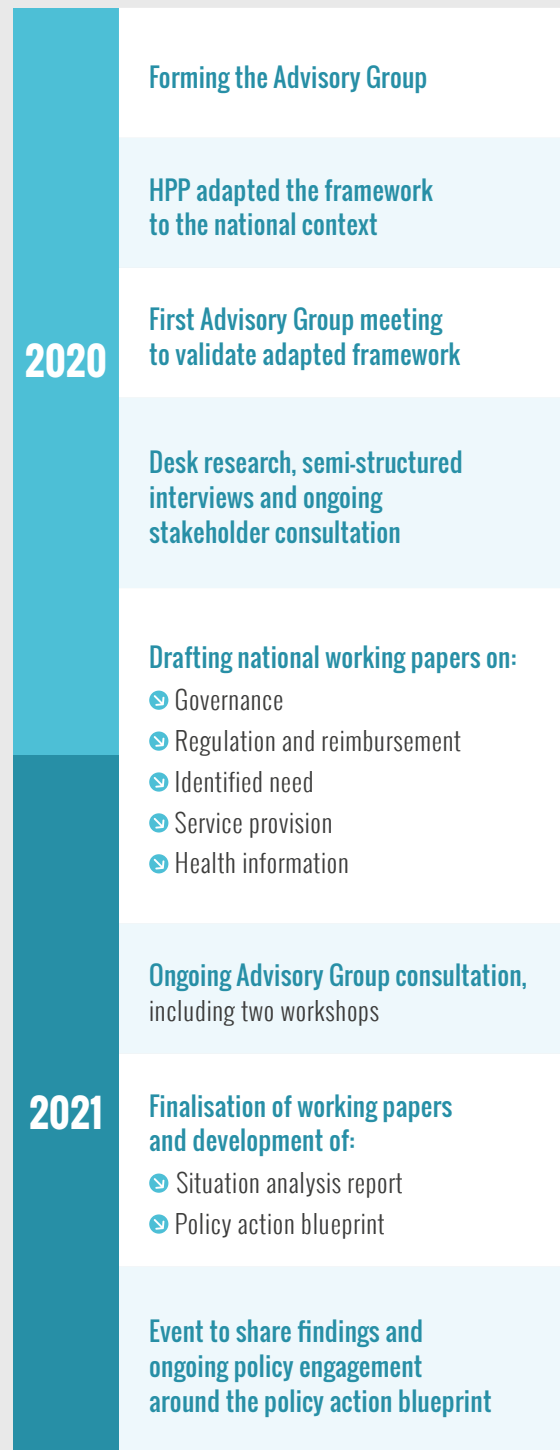


**AS OF 1 JANUARY 2022,  
WE HAVE HAD:**

**261 downloads**  
of the user guide

**346 downloads**  
of the readiness  
assessment framework

**FIGURE 3.** Methodology for the US and UK applications of the framework



## National applications of the framework: UK and US

We adapted the readiness assessment framework to the UK and US context, applied it in these countries and used these findings to derive specific policy proposals. Using a rigorous research process (Figure 3), we produced country-specific situation analysis reports that provide a comprehensive summary of the current integration of and readiness for radioligand therapy, and describe six strategic barriers to appropriate use of the therapy (Figure 4).

The reports are accompanied by policy action blueprints, which identify potential ways to address these barriers, and call on specific organisations and groups of people to help enact change. These documents are underpinned by a series of working papers, one for each of the five health system domains in both countries.

FIGURE 4. Strategic challenges to the integration of and readiness for radioligand therapy in the UK and the US





## Dissemination of UK materials<sup>1</sup>

The [UK materials](#) were launched at an online event on 9 September 2021. Speakers included representatives from the British Nuclear Medicine Society, Neuroendocrine Cancer UK, Prostate Cancer UK, Wales Cancer Network and UK parliament.

You can learn more about the event in this [post](#).

## Endorsements and downloads

The UK situation analysis report has been endorsed by:



AS OF 1 JANUARY 2022, WE HAVE HAD:

**151 downloads** of the UK situation analysis report

**282 downloads** of the UK policy action blueprint

<sup>1</sup> The application of the framework in the UK was supported through funding from Advanced Accelerator Applications, a Novartis Company, with additional support from Nordic Nanovector.



## Dissemination of US materials<sup>2</sup>

The [US materials](#) were shared at a webinar held by HPP and Avalere Health, our US research partner, on 3 November 2021. Speakers included representatives from the Society of Nuclear Medicine and Molecular Imaging (SNMMI), the American Society for Radiation Oncology (ASTRO), the Northern California CarciNET Community, the Lymphoma Research Foundation and the Patient Advocate Foundation.

You can find out more about the event and view a recording in [this radioligand therapy website](#).

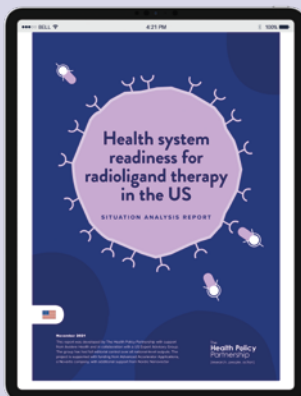
**Dr Anshu Jain**  
(Community  
Oncology Alliance)



**Ms Michelle Bruno**  
(Avalere)

**Dr Ronald Ennis**  
(ASTRO)

**Ms Fran Castellow**  
(Patient Advocate Foundation)



**AS OF 1 JANUARY 2022, WE HAVE HAD:**

**85 downloads** of the US situation analysis report

**88 downloads** of the US policy action blueprint

**JOSH MAILMAN, President of the Northern California CarciNET Community:** The readiness assessment framework is a valuable tool for identifying barriers to sustainable and timely integration of radioligand therapy into care. The US healthcare system is complex, and there are challenges in providing equitable care. Applying the framework helps show what is needed at all levels to ensure that radioligand therapy is available to people who would benefit from it. This research has also highlighted how careful systems planning is crucial to ensure innovative therapies do not intensify existing inequalities.

<sup>2</sup> The application of the framework in the US was supported through an unrestricted grant from Advanced Accelerator Applications, a Novartis Company, with additional support from Nordic Nanovector.

## Expanding our work to new geographies

Towards the end of 2021, we explored the feasibility of applying the assessment framework in other countries. We completed scoping research for Japan, South Korea and China (Guangdong province), assessing whether:

- ↳ it would be an appropriate time to apply the framework
- ↳ there was sufficient information about the national or local health system and if a research partner could help identify this information
- ↳ there was sufficient stakeholder interest in radioligand therapy to create a multi-stakeholder advisory group.

We also began to explore the possibility of applying the framework in Germany.

Based on our research, we developed a recommended approach for applying the framework in each location, and have incorporated this into our work plan for 2022.

● Japan

● South Korea

● China (Guangdong)

● Germany

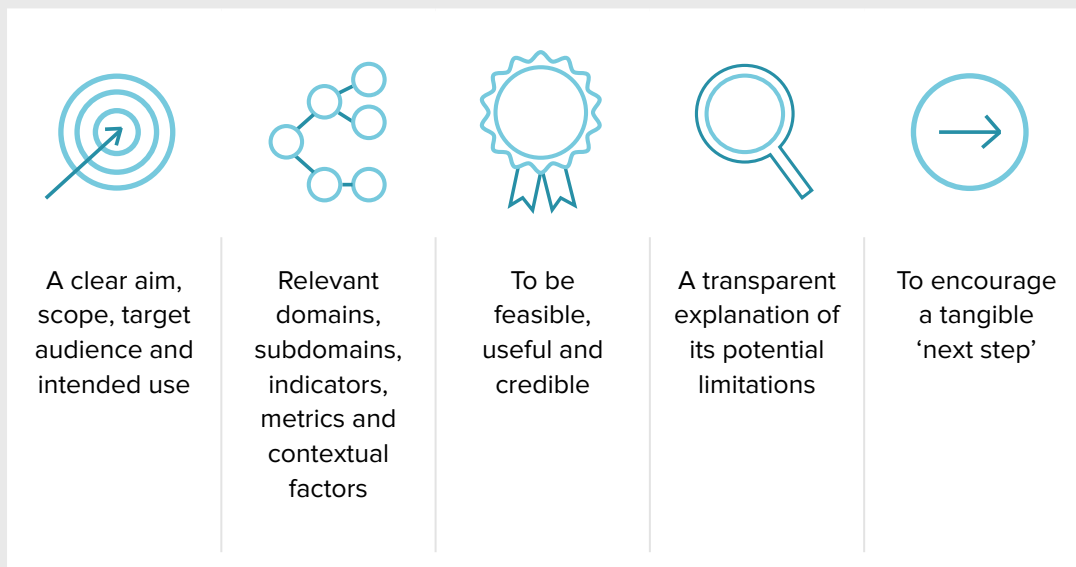


## Fostering readiness in cancer care

**With cancer care rapidly evolving and the burden of cancer growing, it is increasingly important that health systems are able to rapidly adapt to new diagnostic and treatment approaches.** The disruptions caused by the COVID-19 pandemic have shown that cancer care, and health systems more broadly, need the capacity to change in order to maintain and continuously improve patient care.

**Building on the work we had done in radioligand therapy, we sought to explore system readiness more broadly across cancer care.** As part of this work, we developed a [policy brief](#) which collated best-practice examples of assessment frameworks, explaining how readiness in cancer care can best be defined, evaluated and operationalised. The policy brief also considered different methodological approaches to assessing readiness and outlined the five core requirements for an effective readiness assessment framework (*Figure 5*).

**FIGURE 5.** Core requirements for an effective readiness assessment framework

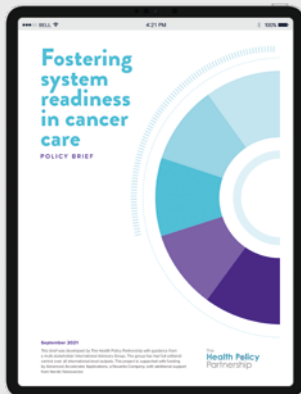


## Multidisciplinary discussion of how to operationalise cancer readiness

The policy brief was launched on 23 September 2021 at a webinar coinciding with the European Society for Medical Oncology (ESMO) Congress. Speakers were:

- ↘ **Dr Anne-Marie Baird**, Lung Cancer Europe
- ↘ **Antonella Cardone**, European Cancer Patient Coalition
- ↘ **Alex Filicevas**, World Bladder Cancer Patient Coalition and All.Can International
- ↘ **Pascal Garel**, European Hospital and Healthcare Federation (HOPE)
- ↘ **Professor Ken Herrmann**, Universitätsmedizin Essen
- ↘ **George Wharton**, London School of Economics and Political Science

You can learn more about the event on the [radioligand therapy website](#).



**AS OF 1 JANUARY 2022, WE HAVE HAD:**

**370 downloads** of the policy brief

# External communications

## Website expansion

We updated the [radioligandtherapy.com](http://radioligandtherapy.com) website, to complement the launch of the readiness assessment framework in June 2021. The website now includes an insights page with news, opinion and events posts related to radioligand therapy and wider system readiness. As of 1 January 2022, the website has had 7,996 users.



## Twitter

We have continued to engage with and expand our Twitter audience. Throughout 2021, we have promoted our events and posted about awareness days, conferences and publications.



**THE RADIOLIGAND THERAPY TWITTER ACCOUNT HAS PERFORMED WELL, ACHIEVING:**

**505 followers**    **174,986 views**  
**1,500 likes**      **538 retweets**

## Conference attendance and external engagement

During 2021, we engaged with various external organisations to help disseminate our work. Highlights included:

Photo taken at the 13th  
European Multidisciplinary  
Congress on Urological  
Cancers (EMUC21)  
by Denis Abbonato-Bei



- A [session](#) titled 'Radioligand therapy: multidisciplinary collaboration for health system readiness' at the European Multidisciplinary Congress on Urological Cancers (EMUC), 25–28 November in Athens
- A [poster](#) titled *System-level barriers to uptake of existing and novel radioimmunotherapy for people with lymphoma* at the annual meeting of the American Society of Hematology (ASH), 11–14 December 2021.
- An [article](#), 'Proactive planning for the future of cancer care', published in the *Guardian* supplement *Innovations in Oncology*, which had a circulation of over 900,000, 16 December 2021.

## Expert advisory groups

We have been honoured to work with a highly engaged, multidisciplinary group of experts at the international, US and UK levels. The advisory groups play an integral role in the project and hold full editorial control over project outputs.

We have built collaborative relationships with many of them, as evidenced in their ongoing support, dissemination of our outputs and enthusiasm to continue to contribute to this project in 2022. All members provided their time for free.

Members of the advisory groups in 2021 were:<sup>3</sup>

### International Advisory Group

**Natacha Bolaños**, Lymphoma Coalition

**Dr Erik Briers**, Europa Uomo

**Dr John Buscombe**, Barts Health NHS Trust

**Professor Martin Dreyling**, LMU Klinikum

**Dr Ajay Gopal**, Fred Hutchinson Cancer Research Center

**Professor Boris Hadaschik**, Universitätsmedizin Essen

**Professor Ken Herrmann**, Universitätsmedizin Essen

**Nikie Jervis**, Neuroendocrine Cancer UK

**Professor Jolanta Kunikowska**, European Association of Nuclear Medicine

**Josh Mailman**, Northern California CarciNET Community

**Professor Nicolas Mottet**, University Jean Monnet

**Professor Jens Siveke**, Bridge Institute of Experimental Tumor Therapy

**Professor Hein Van Poppel**, European Association of Urology

**Lorna Warwick**, Lymphoma Coalition

<sup>3</sup> All affiliations were correct at the time the project took place.

## UK Expert Advisory Group



**Dr John Buscombe**, Barts Health NHS Trust

**Nikie Jervis**, Neuroendocrine Cancer UK

**Professor Jamshed Bomanji**, University College London Hospitals NHS Foundation Trust

**Dr Glenn Flux**, Royal Marsden Hospital NHS Foundation Trust

**Ropinder Gill**, Lymphoma Action

**Professor Neil Hartman**, Swansea Bay University Health Board

**Dr Angela Lamarca**, The Christie NHS Foundation Trust

**Professor Heather Payne**, University College London Hospitals NHS Foundation Trust

**Karen Stalbow**, Prostate Cancer UK

## US Expert Advisory Group



**Josh Mailman**, Northern California CarciNET Community

**Dr Ronald Ennis**, Rutgers Cancer Institute of New Jersey

**Peter Friend**, Us TOO International

**Dr Leo Gordon**, Northwestern University Feinberg School of Medicine

**Professor Suzanne Lapi**, The University of Alabama at Birmingham

**Dr Daniel Lee**, Ochsner Medical Center

**Dr Erik Mittra**, Oregon Health & Science University

**Dr Todd Morgan**, University of Michigan

**Dr Michael Morris**, Memorial Sloan Kettering Cancer Center

**Thomas Paivanas**, The CUSP Group, LLC

**Professor Jonathan Strosberg**, Moffitt Cancer Center

## Looking to the future

In 2022, our aim is to consolidate and build on the work we have produced throughout the past two years, leveraging existing relationships while also engaging with new partners and expanding our research.

**PROFESSOR KEN HERRMANN**, Chair of the Department of Nuclear Medicine at Universitätsmedizin Essen: It is important that we identify barriers to integration of radioligand therapy and work with experts and advocates from across sectors to address these issues. It has been a pleasure to be involved in the creation of the readiness assessment framework, and I am looking forward to the next steps of this project, particularly the potential of applying the framework in new countries.

### WE AIM TO:

- ↘ keep momentum and disseminate ongoing project activities
- ↘ grow leadership in cancer readiness through activities, including an interactive meeting at the European Health Forum Gastein
- ↘ drive change in readiness for radioligand therapy through outputs, including a patient advocacy toolkit that explains what radioligand therapy is
- ↘ continue expansion of the assessment framework to other countries.

We hope to foster new relationships with organisations and individuals focused on radioligand therapy and wider health system readiness, to ensure that we can amplify our vision for better readiness for new approaches to diagnostics and therapeutics. We hope to continue discussions with potential funders throughout 2022 with a view to secure sustainable and diverse funding for the project, so we can deliver lasting impact.

## CONTACT INFORMATION

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**Readiness for  
radioligand therapy**

