Advanced Therapy Treatment Centres

2022 ATMP Clinical Adoption Forum

The UK's role in the global ATMP ecosystem

24th March 2022

Forum Report

Funded by

UK Research and Innovation

Coordinated by

CATAPULT Cell and Gene Therapy

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Executive Summary

The ATTC Network Clinical Adoption Forum on 24th March 2022 hosted a series of discussions looking at how challenges could be overcome to ensure:

- The UK builds on its status as a **global leader** in cell and gene therapies.
- The UK ecosystem is attractive to **domestic and international investment**.
- The system embeds **routine clinical adoption** of ATMPs in healthcare settings.
- Healthcare systems have the **capacity to deliver ATMPs** across the UK.

Panellists and attendees agreed on a series of principles to meet these goals, including (but not limited to):

1. The UK is uniquely placed with its holistic ATMP ecosystem, including the NHS, government, regulators, industry and charities. This requires **ongoing collaboration** between all stakeholders to nurture these relationships and get the most out of the ecosystem.
2. Rapid **reimbursement assessments and a sharing of risk** between payers and manufacturers including innovative payment models, including annuity payment models or outcomes-based agreements.
3. Increasing treatment centre **capacity** to allow wider delivery and increase patient **access** to ATMPs.
4. Taking a **patient-centric** approach throughout the whole process, from clinical trial design, to post-commercialisation and integrating real-world data.

Introduction

On 24th March 2022, representatives from the NHS, industry and government organisations came together to celebrate the supportive ecosystem for Advanced Therapy Medicinal Products (ATMP) in the UK, including the highly successful Advanced Therapy Treatment Centre (ATTC) Network. The day also discussed the remaining barriers to clinical adoption and possible solutions as outlined in the *National Cell and Gene Therapy Vision for the UK* document. This paper summarises the key findings from the day's discussions.

Organisations in Attendance:

ABPI
Achilles Therapeutics
Advanced Therapies Wales
Amanda McMurray Limited
Anthony Nolan
Aptus Clinical
Astellas
AstraZeneca
Autolomous
Autolus
Bayer Plc
BioIndustry Association (BIA)
Boyds Consulting
Bristol Myers Squibb
Cardiff and Vale University Health Board
Cell & Gene Therapy Catapult
Chamber UK
CRN Wessex
Cryoport
Cytiva
Deltohn Ltd
EY Life Sciences Consulting
FarmaTrust
GSK
Human Tissue Authority
ICON
Image Box
Imperial College London
iMATCH
Innovate UK
Instil Bio UK
Janssen UK
Karolinska University hospital
King's College London
Kite, a Gilead Sciences company
Knowledge Transfer Network
LGC Ltd
LifeArc
Manchester University NHS Foundation Trust
MHRA
MW-ATTC
NA-ATTC
National Institute for Health and Care Excellence (NICE)
National Laboratories, LGC
NHS Blood & Transplant
NHS England
NHS England & NHS Improvement
NHS Lothian
NHS Wales
Novartis
Novartis Gene Therapies
Specialist Pharmacy Service
Oxford University Hospitals NHS Foundation Trust
Partners4Access
Pfizer Ltd
Pharmaron
Quell Therapeutics
RoslinCT
Sahlgrenska University Hospital
Scottish National Blood Transfusion Service
Terumo Blood and Cell Technologies
The Christie NHS Foundation Trust
The Leeds Teaching Hospitals NHS Trust
The Newcastle upon Tyne Hospitals NHS Foundation Trust
TrakCel
Trinity College of Dublin
UCL Great Ormond Street Institute of Child Health
University Hospitals of Leicester NHS Trust
University of Oxford
University Hospitals Birmingham NHS Foundation Trust
University of Birmingham
University of Edinburgh
VascVersa Ltd
Wellcome HRB Clinical Research Facility St. James's Hospital Dublin

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Scene Setting

The UK's favourable policy environment

The UK is a leading global player in cell and gene therapies. It is the largest advanced therapy cluster in Europe and the third largest in the world. This has been achieved through the UK's investment in the ecosystem for ATMPs, as well as:

- Innovative regulators
- Thriving research base, developing high quality novel therapeutics
- Adequate GMP capacity with access to a skilled workforce
- Support for clinical trials
- National healthcare system primed for the rapid adoption of new therapies

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Background – ATMPs in the UK

The UK is a leading global player in cell and gene therapies. It is the largest advanced therapy cluster in Europe and the third largest in the world.

- The UK is home to 12% of all global ATMP commercial trials in all phases and 9% of all trials.

- The number of ATMP trials in the UK continues to increase each year, with 168 trials reported as ongoing in 2021, an increase of 9% from 2020.

- In 2018, the NHS became the first national health system in Europe to make CAR-T therapy available and NICE has recommended several further treatments for NHS use.

Supportive Environment

Government driven initiatives which aim to deliver the key industry asks for ATMP therapies

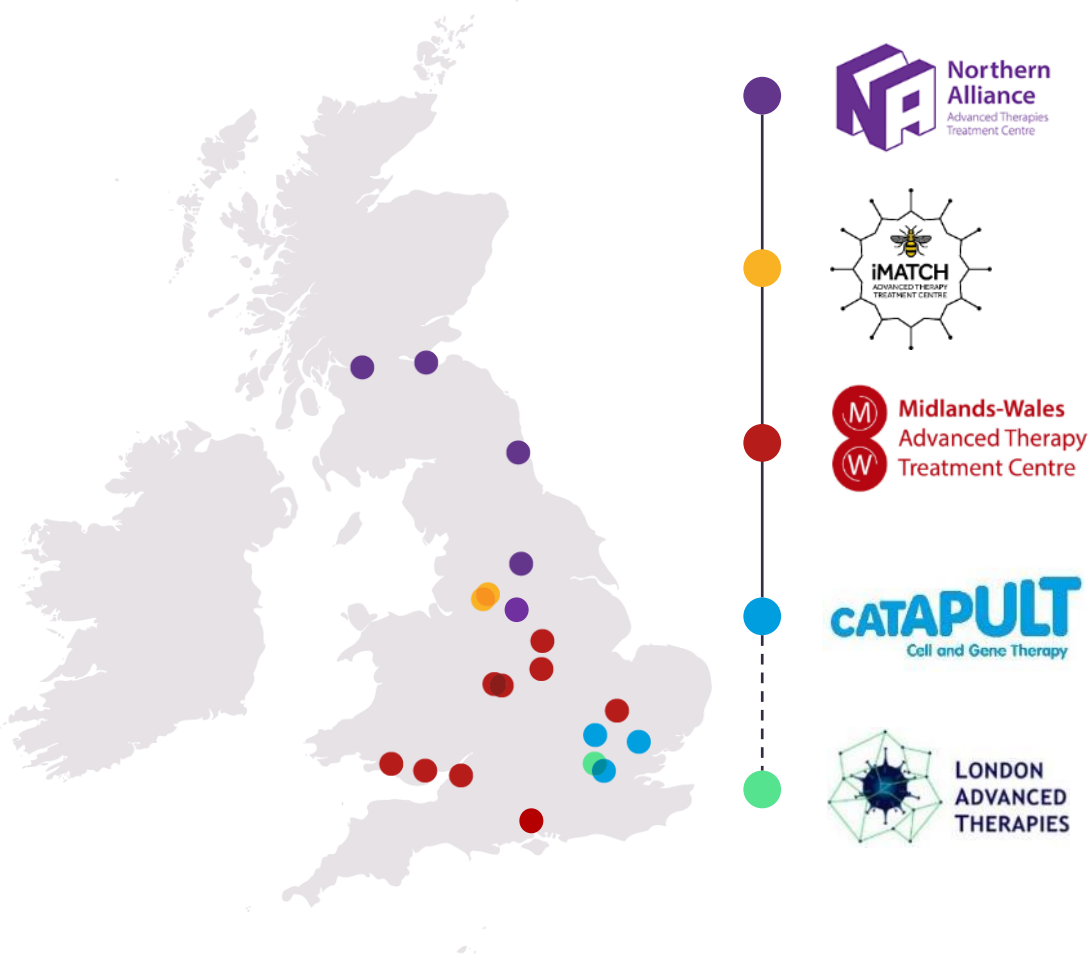
- Industry focused initiatives such as Industrial Strategy Challenge Fund and CGT Catapult, for instance:
  - Over £144M direct investment since 2012 in the Cell and Gene Therapy Catapult (CGT Catapult) Manufacturing and Innovation.
  - £6.7M investment in manufacturing skills development though the Advanced Therapy Skills training Network (ATSTN) and the Apprenticeship Community (ATAC).
  - £37M investment in the ATTC Network.

Innovative Medicines Regulator - MHRA

- A transformed pro-innovation, patient focused, regulator.
- Demonstration of their global leadership through national and international partnerships.
- Risk based regulation addressed in new working practices.
- Introduction of the Innovative Licensing and Access Pathway (ILAP) scheme, that enables regulatory, reimbursement, commissioning considerations and patient perspectives to be accounted from an early stage in new therapy development.

ATTC Network

Overview of the ATTC network



- Fully developed and extremely successful network – world first in ATMPs.
- Alignment with Biomedical Research Centres, Clinical Research Facilities and Advanced Research Centres (translational and experimental medicine to adoption).
- True collaboration between NHS, industry and academia.
- **200 – 250 people** working on the programme.
- Collaboration with London Advanced Therapies (separately funded through Research England) with a commitment to have a London ATTC from 2022.

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Aims of the ATTC Network

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Using exemplar products to:

- Create easily-run and ready-to-use systems and solutions that can be rolled out more widely to the NHS.
- Increase institutional readiness and patient access to licensed and investigational ATMPs.
- Share learning across UK hospitals to accelerate adoption of ATMPs.

Build the UK ecosystem for the delivery of these disruptive therapies.

Build knowledge and shared learnings to provide a favourable environment for developers.

Increase patient access to these potentially life-changing medicines.

Develop new technologies and approaches to make adoption efficient, and facilitate novel payment practices.

Make UK attractive to investment by accelerating UK adoption.

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Work of the ATTC Network

Co-ordinated by the CGT Catapult, the ATTC Network provides developers of ATMPs with a route to adoption and commercialisation in the UK, helping to develop a world leading advanced therapy industry and maximising patient access to these therapies.

As of February 2022:

- The ATTC Network has grown to 114 organisations. This number includes 25 NHS Trusts and 59 ATMP industry partners.
- The proportion of ongoing clinical trials run via the ATTC Network has increased within the UK (39% to 55% over the last four years), and globally (2% to 5% over the last four years).
- Over 500 patients are receiving ATMPs across the ATTC Network, with over 5,000 people trained across multiple industries.
- ATTC NHS Readiness Toolkit was visited by 10,000 viewers within the first nine months of its launch.

For more information: [PowerPoint Presentation (kxcdn.com)]

Summary of Panel Discussion:

Making the UK a global leader in Advanced Therapies

In position

- Supportive ecosystem with strong collaboration between players
- Exceptional science, technology and research
- Regulator focused on innovation

Affordability

- Drive down cost of manufacture
- Understanding persistence of effect of ATMP
- Risk sharing
- Innovative payment mechanisms

Future

- A national strategy that coordinates all actors and driven by government
- Greater alignment to accelerate approvals and uptake
- Improved access by improving ability to generate real world evidence
- Increased patient engagement
- Clinical trial acceleration

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Summary of Panel Discussion:

Challenges and solutions from the industry

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Challenges

- Incomplete patient access due to poor patient identification and inequality of access
- Manufacturing time in very sick patient groups
- Perceived high cost of treatment
- New treatment modality with complex patient pathways
- Large pipeline with many products treating different indications

Solutions

- Improved, coordinated use of NHS data
- Greater clinical trial support
- Coordinated development of uptake solutions in NHS
- Better use of genomic screening capability
- Improve ability to handle uncertainty in Health Technology Assessment frameworks and commissioning decisions

Future

- Adapt model to accommodate number of ATMPs in the pipeline
- Innovative solutions developed for ATMPs can be deployed for other innovative medicines
- Collaborative ATMP ‘taskforce’ looking at challenges across entire value chain
- Ensure we are competitive with other countries

Summary of Panel Discussion:

Spotlight on clinical adoption of Advanced Therapies into the NHS

Progress to date

- ATTC provided a coordinated approach to improving ATMP adoption
- Greater collaboration and communication between industry and NHS
- Knowledge sharing and education

What could have been improved

- Structural, staffing and interdepartmental communication issues
- Digitisation of treatment pathway
- Data access and sharing
- ATTC Network did not include key players in London
- Better visibility of products in the horizon
- Stronger patient voice
- Patient-centric care

Future

- Improved patient referral pathways and treatment options
- Patient input into trial design
- ATMP taskforce to look at areas of digital advancement
- Power and political will to enact significant change

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Industry Vision Document

Preparing for the future of advanced therapies

The need for a National Cell and Gene Therapy Vision for the UK

Advanced Therapy Treatment Centres

What are cell and gene therapies?

Cell and gene therapies, also known as Advanced Therapy Medicinal Products (ATMPs), are a class of potentially transformative products with the ability to provide profound, long-term benefits for certain patients with debilitating or life-shortening diseases.[1] They are different from other therapies because they use genes, cells or tissues to fight the underlying cause of disease.[2]

The number of ATMPs coming to market in the coming years is expected to rise significantly.[1] However, as a result, they are likely to pose a range of challenges to the health system.

The UK is currently a world leader in the provision of these therapies having made a number available to patients to date.[3,4]

The case for a national vision to support clinical adoption

Despite early leadership, for the UK to retain its position as a world leader in the delivery of these treatments, the system will need to adapt to ensure it is ready to accommodate the increase in cell and gene therapies being brought to market and to overcome the known barriers to expanded patient access.

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March 2022

UK-COR-0026

Recommended actions for a National Vision to deliver

Horizon scanning

Enhance horizon scanning processes to inform commercial discussions and support service planning.

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Manufacturing

Outline how the UK will catch up on manufacturing to level up all parts of the UK.

Clinical trials

Invest in the UK clinical trials environment so that trials can be approved and set up more quickly, including an increased focus on patient enrolment.

Health technology assessment (HTA)

Undertake a review of the challenges that ATMPs pose to HTA bodies and make recommendations for reform.

NHS workforce

Set out the steps that are required to improve awareness of ATMPs across the workforce, as well as the training and educational requirements to deliver them.

Reimbursement

Explore alternative approaches to paying for ATMPs to ensure payer sustainability and value for money.

Health service capacity

Commit to Increase capacity within existing centres and support the creation of new centres.

Ongoing patient care and support

Outline how centres will be supported to provide ongoing patient care, support and monitoring.

Data collection

Provide the NHS a mandate to develop its data infrastructure to inform continued improvements in care.

Collaboration

The success of any vision will be dependent on every stakeholder playing their part and working collaboratively. This must include Government, HTA bodies, payers, regulators, treatment centres, industry and patient groups. We welcome the commitment from the Rare Diseases Action Plan to publish a 'strategic approach' to ATMPs and we call on all parties to contribute to its development. This will be vital to understand the initiatives already underway and to prioritise action in areas of remaining unmet need.

1 Medicine Manufacturing Industry Partnership (2016) Advanced Therapies Manufacturing Action Plan
2 European Medicines Agency (2016) Advanced therapy medicinal products: Overview
3 NHS England (2018) NHS England strikes deal for ground breaking cancer treatment in a new European first
4 NICE (2021) NHS England strikes deal on life-saving gene-therapy drug that can help babies with rare genetic disease move and walk

Barriers, approaches and recommendations to accelerate adoption of ATMPs in the UK:

Correlation between the Clinical Adoption Forum & The National Vision Document

1. Horizon Scanning

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A key theme of discussion across all panels was the critical importance of effective horizon scanning for ATMPs:

- To provide information to HTA on potentially disruptive technologies and therapies, any regulatory challenges they may pose, and flexibilities they might require.
- To ensure healthcare systems are prepared for clinical adoption ranging from infrastructure requirements, service reconfigurations and service planning.

"It's not just, 'what do we think is coming down the line?' It's actually getting beneath those high-level figures. What are the treatments? What are the clinical opportunities that we will see from those treatments? What are the operational challenges? What are some of the technical challenges?" - Claire Foreman, Director of Medicines Policy and Strategy at NHS England and NHS Improvement

The Opportunities of ILAP

The MHRA has already stated that horizon scanning will be at the heart of ILAP. Participants including Dame June Raine, CEO at MHRA noted that manufacturers will be able to use the process to highlight to health services the potential service reconfigurations required by their therapies.

Any cell and gene therapy vision for the UK must ensure that horizon scanning is used effectively to improve collaboration between NHS and industry, to ensure the NHS is ready for the challenges that ATMPs might present.

2. Patient Experience Data

A key area of consensus between panellists was around developing data infrastructure in order to capture metrics that matter to patients, to facilitate outcomes-based approaches to reimbursement and inform improvements to clinical practice:

- As it stands, some areas of data collection (in particular, oncology data within the SACT) are fairly robust, however the same is not necessarily true across other groups of diseases.
- Integration of data remains a key sticking point. To ensure that the long-term benefits of ATMPs are captured and fed into reimbursement models, information sharing post-commercialisation requires significant improvement.

How can a cell and gene therapy vision address this problem?

Panellists and speakers alike agreed that a key priority was not only the improvement of existing datasets, but also a digital infrastructure that enables capturing data from routine clinical practice and cross-linking / interoperability between datasets. However, such recommendations raise the issue of who should pay for the necessary data infrastructure, and subsequently who should have relevant ownership and access rights over that data.

Reflecting on issues with data collection across the ATMP ecosystem:

"You can't just point a finger to one part of the system and say 'it's your fault'. In the absence of a co-ordinating task force, I think we won't see the pace of change we need to [in the data landscape]." – Owen Marks, Head of Rare Disease at Pfizer

3. Treatment Centre Capacity

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The expected increase in cell and gene therapies in the UK means that increasing treatment centre capacity is of the utmost priority. While there has been progress in this area, much more needs to be done:

- The ATTC Network has delivered ATMPs to over 500 patients, training over 5,000 members of staff across multiple industries.

Recommendations from the Forum:
There must be concerted efforts to scale-up capacity for the delivery of cell and gene therapies in the UK. This will include:

- Sharing knowledge and best practice between NHS trusts and boards to navigate barriers to adoption.
- Increasing efficiencies at delivery sites, including logistical estate management and dedicated cell and gene therapy teams.
- A roadmap to allow for the expansion of existing treatment centres, and the development of new centres. This will include the development of guidance as well as increased investment and resource.

4. Alternative Reimbursement Models

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There was consensus among all panellists that the current system of reimbursement is challenging. The high upfront cost of ATMPs coupled with data uncertainty can adversely impact reimbursement decisions and prevent patients benefiting from advancement in treatments, unless appropriate mechanisms are put in place.

Although Managed Access mechanisms are now becoming available outside oncology (through the Innovative Medicines Fund), there are ATMPs in development that may not meet the entry criteria.

The wider deployment of innovative reimbursement models would be to the benefit of all parts of the ATMP ecosystem, from patients and industry to the NHS. Outcomes-based models will ensure value for money, where the NHS only pays for the benefit provided by the treatment.

"Current HTA assessment methodology does not facilitate early and faster access for ATMPs in the UK. ILAP has not addressed this challenge." – Chris Vann, Chief Operating Officer, Autolus

"It's fine when there are a trickle of ATMPs coming onto the market. When you get a scenario when there's going to be 30 or 40 coming in every year, with high front-loaded costs, that model really desperately needs to change to make sure that patients get access. Parties need to meet in the middle as is already happening in other countries." – Amit Aggarwal, Executive Director, Medical Affairs, ABPI

5. Manufacturing

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While the UK is widely recognised as a world leader in ATMP research and innovation, it does not have manufacturing capacity to match. The delivery of ATMPs in the UK has often relied on cells being shipped to other countries where modifications are delivered, before they are returned to the UK – this is particularly the case for ex vivo products.

Were the Government to demonstrate their commitment to setting out how a UK ATMP manufacturing sector might be developed in a national cell and gene therapy strategy, this could attract investment from across the world. There has been some progress in this area already:

- £188 million invested in medicine manufacturing as part of the Industrial Strategy Challenge Fund, with £12 million dedicated to the Cell and Gene Therapy Manufacturing Centre in the Stevenage Cluster.
- "We have just announced £60 million for the life sciences innovative manufacturing fund to support commercial scale manufacturing investments by companies at the cutting edge of cell and gene therapies." – George Freeman MP, Minister for Science, Research and Innovation

There is a clear need to get more out of the available space and staff via the digitisation of the manufacturing process and taking advantage of technological advancements.

"We need to move this industry from an artisan manufacturing operation to Industry 4.0 in ATMP manufacturing. No individual company should take the burden of making that transition, the risk should be shared with the innovation agencies." – Andy Jones, Challenge Director for Medicines Manufacturing, Innovate UK

6. Patient Centricity

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It was a point of consensus among all speakers and panellists that the future of ATMP delivery must be firmly grounded in the needs of patients, and that a patient-centric approach must guide any national cell and gene therapy vision. This will mean prioritising the needs of patients across all parts of the ecosystem and in all stages of the process:

- *"[Patient centricity] is from very early clinical design… all the way to post-commercialisation, looking at that real world data into how we distribute the product."* – Liza Loidolt, Senior Business Unit Director, Cell Therapy, Kite Pharma

Though there was little disagreement over the importance of patient-centricity throughout the life cycle, several participants expressed concern that it is often not taken as seriously as it should be:

- *"We talk about co-creation of research with patients, but do we really ask patients what matters to them and how to measure it? We talked about diversity, but if you look at our trials, are they really representative of the patients that need the treatments, do we really include underserved groups?"* – Phil Newsome, Midlands and Wales ATTC Director

Participants concluded that decisions about everything from clinical study design, licensing, access and disease management must be made in consultation with patient organisations:

- *"Living with a condition gives you an insight that nobody else can offer, and the more we listen to that, the better the designs that we will come up with." – Owen Marks*, Head of Rare Diseases at Pfizer

7. Collaboration

The NHS rollout of CAR-T therapy in the UK has shown what is possible with effective collaboration between industry and the NHS. This example highlights the power of partnership working with all parties in good faith. Ongoing efforts to embed and further develop this partnership approach will be critical to retaining the UK's status as a leader in ATMP delivery, and to this end MHRA has recently appointed a new Chief Partnerships Officer. Similarly, the Accelerated Access Collaborative had workstreams designated to ATMPs, enabling dialogue between key stakeholders; however, it stopped operating as from April 2022, leaving certain valuable initiatives uncompleted.

Partnership working has very much been the operational norm for the ATTC network from the outset:

- *"We have always looked at this as a partnership between the healthcare environment and commercial companies, which is not the usual way in which the healthcare environment interacts with the pharmaceutical environment. Traditionally it has been a somewhat transactional relationship, but ATMPs require a partnership approach to getting those embedded."* – Marc Turner, Northern Alliance ATTC Co-Director

While much has been achieved, there remain parts of the system that are siloed in their working. Several panellists supported an ATMP taskforce to oversee a collaborative and joined-up approach from across the sector: *"We have some great parts of the system which in and of themselves work brilliantly… what we don't have is that alignment." – Imran Kausar, VP & General Manager, Northern Europe, Novartis Gene Therapies*

Conclusion

Conclusion

While many different components of the ATMP ecosystem were discussed, many participants were united in their call for a nationally co-ordinated approach:

- *"We need a national strategy, and it needs to involve people at Innovate UK, the NHS, the Department of Health and Social Care… we need a co-ordinated government response to support this industry, which is strategically led, with ministerial accountability."* – Andy Jones, Challenge Director for Medicines Manufacturing, Innovate UK

The CGT Catapult vision document seeks to provide an overview of what the content of such a strategy might look like, setting out the key challenges, approaches and recommended actions involved. The document received widespread support during the Clinical Adoption Forum. In the keynote address it was welcomed by the Minister for Science, Research and Innovation, and now concerted action is needed to make it a reality:

- *"It sets out a strong cell and gene therapy vision for the UK, to make sure that we remain a leader. As Minister for Science, Research and Innovation, I fully support it and I look forward to working with you to deliver it."* – George Freeman MP, Minister for Science Research and Innovation