

Barriers to Patient Access of Minimally Invasive Cancer Therapies

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Welcome and Introduction from Greg Smith MP, Chair of the APPG on Minimally Invasive Cancer Therapies

I am proud to have been chair of the APPG on Minimally Invasive Cancer Therapies (MICTs) since 2021, and supported the delivery of its inaugural report on patient access to MICTs. The APPG seeks to ensure that patients have access to these proven therapies, which deliver more targeted and less invasive treatments for cancer.

I believe that through the work of the APPG we can improve outcomes for patients and become a world leader in these effective treatments.

The MICT report focuses on highlighting the key barriers to patient access to MICTs and provides important recommendations on how to improve the situation.

Through surveys and interviews we have uncovered concerning statistics, which highlight a significant lack of clinical and patient awareness of MICTs. The report also shines a stark light on the current postcode lottery of treatment across the country.

I hope that through the proposed solutions we can ensure that there is fair access to treatments, regardless of where a patient lives in the country, with well-structured pathways to ensure NICE approved treatments are better utilised by clinicians. Furthermore, we intend to raise awareness of treatment options, both to clinicians and patients, empowering patients to make the best possible choices for themselves.

I am committed to working with my parliamentary colleagues and others across the sector to ensure the best possible outcomes for patients. I look forward to carrying the report recommendations forward.



Greg Smith MP

Chair of the APPG on Minimally Invasive Cancer Therapies

The All-Party Parliamentary Group on Minimally Invasive Cancer Therapies (MICT) found that less than 10% of cancer patients had been offered any type of minimally invasive cancer therapy following diagnosis, and only 6% were offered a new innovative treatment for liver cancer. Through a survey and interviews with patient groups and individuals, the group found that patients were not getting information on a relevant choice of available therapies in many common cancer scenarios, making it extremely difficult for patients to decide the best care for themselves.

Even when potentially lifesaving critical cancer therapies have been approved, and in some cases recommended by NICE, patients are failing to routinely access them.

The report identifies three key barriers to patient access to MICT:

1 Lack of awareness from clinicians and patients

- Clinicians in some areas of the country are not aware of new therapies that are available for patients. This is because no hospital in their local area is offering MICT, or they are not aware of referral pathways to specialist centres.
- Many patients are not being informed or offered a choice of access to the new interventions, due to patchy provision across the UK.

2 NHS system and infrastructure are not set up to put patients at the heart of the system

- Patients are forced to travel long distances, in poor health, to access MICT as there are too few specialists interventional oncology centres.
- Patients are not informed that they can opt to travel to a specialist centre offering their cancer specific MICT outside of their area, if their local area does not offer them.

3 Funding barriers restrict funding to hospital Trusts and disincentivising hospitals from offering MICT

- Clinicians in some areas of the country are not able to access appropriate funding for therapies due to commissioning barriers or slow approval processes.
- Newer, more innovative therapies often fail to get the appropriate prioritisation within Trusts due to the lack of an obvious funding mechanism or tariff.
- Appropriate funding should be in place so that all eligible patients can benefit from available therapies, and so patients are funded to travel to specialist centres.

The APPG is calling for action to help cancer patients, and has set out the key recommendations below, to ensure that all patients in England have access to these proven interventional cancer therapies.

Recommendations:

- 1** Enable patient choice by improving awareness of new and emerging treatments for cancer:
 - The NHS website should include information on all available cancer interventions, referencing NICE recommendations where appropriate. All patients should be routinely informed about this website to enable them to make an informed choice about their care if they wish.
 - The NHS should ensure that interventional radiology/oncology representation is present at every relevant organ specific multidisciplinary team e.g. Liver, Kidney, Prostate to ensure appropriate expertise allowing patient choice.
- 2** Ensure appropriate processes and infrastructure:
 - The Government should prioritise a strategic workforce plan for radiologists and interventional radiologists. This should ensure the NHS has sufficient numbers of trained interventional radiologists to deliver interventional oncology therapies including Selective Internal Radiational Therapy (SIRT), High Intensity Focused Ultrasound (HIFU) and Ablation in more centres.
 - Build on the existing infrastructure created by the 21 Cancer Alliances to ensure that minimally invasive cancer therapies are offered across the country.
 - NHS England must ensure new centres have the resources to introduce new services when recommended by NICE, ensuring an equitable and timely service throughout the country and reducing the need for very sick patients to travel long distances.
- 3** Ensure sufficient funding for approved cancer therapies:
 - Ensure that the full benefits of current investment into diagnostic and imaging technology are realised, by making similar investments into MICT that utilise these imaging technologies. An increase in access to diagnosis via imaging alone, without a corresponding increase in access to therapies, will not improve cancer outcomes.
 - Provide a simple pathway to funding, to ensure swift access for patients.
 - Ensure that Integrated Care Systems (ICSs) are held to account, adhering to national guidance and ensuring patient access to treatments.



The APPG on Minimally Invasive Cancer Therapies was formed to drive awareness of Minimally Invasive Cancer Therapies (MICT). MICTs are a group of proven cancer therapies that can often provide similar outcomes to cancer surgery, but are less invasive and more finely targeted compared to traditional surgical approaches. MICTs typically only require a small incision under local anaesthetic, allowing patients to recover more quickly and with reduced risk of treatment side-effects. The APPG wants to ensure that all eligible patients from across the UK can have timely access to these therapies. Examples of MICTs include, ablation, High-Intensity Focussed Ultrasound (HIFU) and Selective Internal Radiation Therapy (SIRT).

This report seeks to build awareness of MICTs and help make a difference to the lives of people who have been diagnosed with cancer. There are around 375,000 new cancer cases in the UK, which is around 1,000 every day. Cancer is the UK's biggest killer, with 166,000 cancer deaths in the UK every year.¹

Despite efforts in recent years to turn the tide on cancer, many expect the number of people dying from the disease to increase in the coming years. Much of this is down to the pandemic. With the government and the NHS focused on tackling COVID-19 and individuals taking measures to protect themselves and loved ones from the disease, the number of people diagnosed with cancer during the pandemic dramatically reduced. Experts believe that as many as one in seven cancer diagnoses were missed, and these patients are now expected to present with later stage cancers that have a higher chance of mortality.²

The benefits of MICTs as an alternative to traditional cancer therapies are clear. They can:

- Allow patients to recover more quickly
- Reduce pain and discomfort for patients
- Have fewer side-effects
- Decrease the risk of a patient acquiring a deadly infection
- Allow hospitals to treat more patients, often as a day-case
- Reduce the strain on the stretched NHS workforce
- Reduce the chances of a procedure being postponed³
- Reduce costs to NHS during procedure, secondary treatment and recovery

In Europe, the US and Australia, MICTs are ingrained in hospital cancer services, with the therapies widely available through their health systems.⁴ However, in the UK, MICTs are on the periphery of available cancer services, with only a handful of locations offering these life changing therapies, even though they have been approved for use in the NHS.

Through this report the APPG on MICT aimed to uncover why patients in the UK are not getting the same access compared to those living elsewhere in the world. The Group held a series of evidence sessions, interviewing leading clinicians from the field as well as patients who have personally experienced difficulties in accessing appropriate care. The Group sought to investigate why the UK is falling behind many developed economies in the standard of care it offers patients diagnosed with cancer.

This report is the result of this investigation. It found that there are several clearly identifiable reasons that these therapies are not offered to patients, and it sets out a series of clear and achievable recommendations for widening the availability of these therapies in the UK.

The Group found that there is no easy funding pathway for Trusts to access and offer patients minimally invasive cancer therapies, even when approved for use by NICE.

Further exacerbating a lack of clarity over funding routes, there are workforce shortages, with chronic underinvestment in staff meaning the NHS simply does not have the people and expertise to be able to offer these therapies. It found that interventional radiologists, who administer many of these therapies, are particularly hard hit, and immediate government action is needed for the UK to grow these and many other services.

In addition, awareness amongst clinicians of the therapies is limited. Therefore, even when a patient is eligible for a MICT and could travel to a specialist centre offering the service, they may never be offered the opportunity to do so. In effect the limited availability of therapies and low clinician awareness means patients are unaware they may be able to be treated with a MICT, meaning many are not able to make an informed choice about their care.

There are missed opportunities to take advantage of investments the government is already making. The Government's large-scale investment in imaging and diagnostic technologies, the tools that MICTs work in unison with, are not being optimised, as investment in MICTs is not happening at the same rate. This is causing inefficiencies in the system.

Similarly, infrastructure built in recent years to help tackle cancer is being underutilised. Local multidisciplinary teams need to have MICT specialists in them, as they are able to identify when a patient is eligible for a MICT. This can not only help improve outcomes, but also help the NHS tackle record waiting lists.

Finally, Cancer Alliances, structures designed to improve cancer outcomes at a local level, have the infrastructure and systems in place to facilitate greater access for patients to these technologies. Yet most lack the awareness, facilities and expertise to do so, with only a handful possessing specialist MICT services. This has created a postcode lottery of treatment. For instance, ablative therapies are not available outside of London and the South of England.

The report sets out a series of recommendations to overcome these challenges, helping to make sure these innovative technologies are available to all patients, no matter their background, deprivation index, postcode or education level. In this way, the Government can be supported in its aim to reduce the number of deaths from cancer and health inequalities each year.



What are Minimally Invasive Cancer Therapies?

Minimally invasive cancer therapies (MICT) is a 'catch-all' term used to describe a range of proven innovative therapies to treat patients who have been diagnosed with cancer. These techniques are less invasive than open surgery and local to the tumour site, they often lead to reductions in hospital stays and shorter recovery times.⁵

Minimally invasive medical procedures have been around for many years, and are used to treat a variety of conditions.

In recent years, advances in imaging and diagnostic technology have made it easier for healthcare professionals to detect cancerous tumours and to identify their exact size and location in a patient. These advances in technology have paved the way for the creation of these innovative and effective minimally invasive therapies to treat cancer. Working in conjunction with imaging technologies, the therapies enable the local targeting of cancerous cells, which have traditionally only been possible to treat through surgery, external radiotherapy or chemotherapy, each of which can carry major risks for patients.

MICTs can offer an array of benefits to patients compared to traditional treatments, and in some cases can be deployed to treat a patient when all other options have been deemed inappropriate.⁶ Additionally, MICTs have been clinically proven to improve oncological outcomes, including increasing overall survival⁷ and the quality of life for patients in comparison to other treatment options.⁸

Examples of MICTs include, ablation, High-Intensity Focussed Ultrasound (HIFU) and Selective Internal Radiation Therapy (SIRT).

What are the benefits of Minimally Invasive Cancer Therapies?

There are many potential benefits to a patient undergoing MICT instead of traditional treatment approaches:

- 1) **Quicker recovery to normal activity**⁹ for the patient.
As the therapies are more precision targeted compared to other treatments, there are fewer side-effects,¹⁰ as well as a reduction in pain and discomfort¹¹ for the patient, both of which increase the speed at which a patient can return to a full and active life.
- 2) The procedures also run **less risk of damaging normal healthy tissue**,¹² allowing clinicians to target only those cells which are cancerous and reducing the impact of the surgery on the patient.
- 3) MICTs help increase the efficiency of the NHS. They enable **greater patient throughput and can treat patients faster, also freeing up time for other procedures in the operating room**.¹³
- 4) Many MICT procedures can be undertaken via day case surgery, and there is less risk of postoperative complications to patients that would require them to receive additional care from the hospital. **This reduces length of hospital bed stays for patients, releasing valuable space in NHS hospitals**.¹⁴

This benefit is critical at a time when the NHS is facing record waiting times caused by COVID-19, with over 6 million people currently on an NHS waiting list to receive an operation.¹⁵ The Government has committed significant resource to help clear the elective backlog, announcing additional funding for the NHS to help treat those patients on a waiting list.

The situation is most severe for cancer patients, as many people did not present to their GP with their condition during the pandemic, and are now being diagnosed with later stage cancers, that are more difficult to treat. Recent data from the National Audit Office reported that between 240,000 and 740,000 potential cancer cases have been missed because people stayed away from GPs during the national lockdown.¹⁶ MICTs could be a key enabler in tackling this, helping the NHS treat more cancer patients faster.¹⁷



5) **Reduces strain on the NHS workforce.** As many of the procedures are performed as day case procedures, they require fewer hospital resources, helping to free up bed spaces and releasing healthcare professionals to treat other patients. Moreover, one of the clinicians explained that the less invasive nature of the procedures mean they do not necessarily have to be carried out at main site acute hospitals, freeing up capacity at these sites for more specialised care, a key objective in the NHS Long Term Plan.

6) **Reduced risk of a patient contracting an infection.**¹⁸

The World Health Organisation estimates that for every one hundred patients receiving care in the NHS, 7 will acquire a healthcare associated infection (HAI).¹⁹ Recent estimates suggest that in the UK alone, approximately 22,000 people die each year from a HAI.²⁰

The first reason for this reduction in HAIs in MICT patients is because the therapies are less invasive. It is estimated that 22% of all HAI's acquired by patients are surgical site infections (SSI). Studies have shown minimally invasive techniques significantly lower the incidence postoperative SSIs in patients.²¹

Secondly, this risk is further reduced as many MICTs can be delivered via day case surgery, meaning patients can be treated and return home on the same day, or have reduced length of stay in hospital. This helps to reduce the risk of a patient coming into contact with a harmful infection.

What are the different types of Minimally Invasive Cancer Therapies?

There are a number of different MICTs available to treat patients, each using different techniques and technologies to treat the disease. In this chapter we will highlight three different technologies which are able to treat a range of cancers.

SPOTLIGHT: Cryoablation

Cryoablation is an established method that uses extreme cold to destroy cancer cells. Cryoablation can be used for the treatment of multiple cancers, such as kidney, liver, prostate, breast, musculoskeletal and lung, as well as pre-cancerous conditions, and is approved by NICE.

Cryoablation kills the cancer cells by freezing the tumour. It is also known as cryotherapy and cryosurgery. The doctor inserts one or more fine needles or probes into the tumour. Argon gas or liquid nitrogen is passed through the needles under pressure to freeze the tumour. Cryoablation is a localised interventional procedure, which means that it only treats the area where you have the cancer tumour and does not affect other parts of the body.

Cryoablation offers an alternative to surgery when removal of a tumour may be difficult or, for some patients, impossible.²⁹ In comparison to current surgery, cryoablation can offer diminished morbidity,³⁰ quicker recovery time, and reduced length of hospital stay.³¹



Image: BSIP SA/Alamy

Patient Case Study: Martyn's Story

Martyn was diagnosed with liver cancer in 2014 and was treated with selective internal radiation therapy (SIRT). Martyn initially visited the GP with a rash on his legs and a persistent cough. Following a referral to a dermatologist, which came back with nothing seriously wrong, a precautionary referral for a CT scan showed a shadow on his liver. A biopsy at the Freeman Hospital, Newcastle resulted in a diagnosis with liver cancer, which as can be imagined, came as a huge shock.

Despite having no symptoms of cancer, the tumour was extremely large and aggressive. The oncologists found that it was too advanced to be taken out directly from his liver. Any surgery without more treatment would have left Martyn with a severely damaged liver and he would have almost certainly died. However, with other options available to clinicians, patients are given a chance to extend their lives and even have curative treatment. It was decided that there was a possibility Martyn could be treated, and even become cancer free, if selective internal radiation therapy (SIRT) was used.

Luckily Martyn was eligible for the programme and had two rounds of the treatment. After the two treatments he felt OK and continued to work normally. Subsequently, Martyn's tumour shrank to a size it could be operated on. He found out that the half of his liver that had not had the tumour had been strengthened by the SIRT.

Martyn has said he was grateful there was an alternative treatment that he could access, as chemotherapy was not an option. However, it did take a long time from the first SIRT treatment until surgery (from 2014 until 2016). The removal of the tumour was successful, with the surgical team doing an excellent job. Martyn is very thankful to the team at the Freeman Hospital, and that he was eligible for the treatment. Looking back, he says this period was extremely tough for him and his family but it was a means to a successful end.

SPOTLIGHT: Selective Internal Radiation Therapy (SIRT)

Selective internal radiation therapy (SIRT) is used to treat primary and secondary liver tumours that cannot be removed with surgery. It is also known as radioembolisation or transarterial radioembolisation (TARE) and is approved by NICE.²²

SIRT is a minimally invasive cancer therapy involving no surgery and no full body radiotherapy. SIRT involves the delivery of small radioactive beads into the liver via the blood supply to treat the tumour.

In the UK, liver cancer patients with intermediate and advanced stage tumours currently have limited treatment options.²³ Systemic chemotherapy is available; however, treatment is often accompanied with severe side-effects. SIRT offers an alternative care option for liver cancer patients with fewer severe side effects, and improved quality of life during palliative treatment.²⁴ Additionally, a recent study has shown that patients with relatively short life expectancy may prefer receiving MICTs.²⁵

Recent data suggests that following SIRT, a small but significant number of patients with liver cancer may become eligible to undergo curative surgery following tumour response to SIRT.²⁶

Following a two-year review, NICE recommended the use of SIRT for Hepatocellular Carcinoma.²⁷ Hepatocellular Carcinoma (HCC) is the most common form of primary liver cancer, the sixth most common cancer and the third most common cause of cancer death worldwide.²⁸



Patient Case Study: Mike's Story

In the Summer of 2009, Mike started to feel pain in his testicle, an ultrasound revealed a tumour in his left kidney which was 9cmx4cm. His doctor initially recommended surgery as the most viable treatment option. Three months after the initial referral, Mike had surgery which was followed up with surveillance with six monthly CT scans for two years. These scans then became chest x-rays with an ultrasound of his chest area.

In follow up consultations Mike received the all clear, however in 2016 a small lesion was found on the solitary kidney. His urologist said his options were robotic nephron surgery which takes the lesion and healthy kidney around it. However, this left Mike with a 3-5% chance of losing his kidney. Mike felt this percentage was too high and he did not want to be put on dialysis. This was when he was offered the opportunity to monitor the tumour or ablation.

By the time Mike was offered ablation, he had already done his own research on the treatment. On the NHS, Mike was referred to an interventional radiologist, but the two months wait caused concern. Through his job, Mike was eligible for private healthcare which allowed him to see a clinician in Southampton. He received treatment on a Friday and was back home in Liverpool on the Saturday, able to walk and drive within a week and felt back to his normal self.

A recent scan revealed a lesion in Mike's lung and a follow up consultation also showed a lesion in the fat of his kidney. During a meeting with the Multi-Disciplinary Team (MDT), which an interventional radiologist attended, Mike was told they would be able to ablate the kidney tumour and a wedge resection would be used on the lung tumour.

Mike continues to receive regular scans to monitor his condition and is awaiting a further kidney ablation.

Patient Case Study: Paul Sayer – Founder of Prost8 UK

Paul Sayer, founder of charity Prost8 UK, received minimally invasive treatment for prostate cancer in 2018. He underwent high-intensity focused ultrasound (HIFU) which inspired him to set up the charity Prost8 UK. The charity creates awareness of less invasive treatment options available in the NHS. Prost8 UK aims to improve access to these treatments by donating focal ablative therapy equipment to strategic and receptive NHS hospitals across the UK.

When Paul was first diagnosed with prostate cancer he was offered radiotherapy or surgery to treat the cancer. However, through his own persistence he discovered other less impactful treatment options. This research allowed him to go to his appointments with more knowledge than most patients. However, through lack of knowledge his consultant at the time said these options were not suitable for the type of cancer he had. One consultant said HIFU was only available via clinical trials, with another even describing it as 'flaky'.

Only when Paul pushed further did he find out that treatment is available as a NICE approved procedure in the NHS (albeit in very limited hospitals), with several hundred successful procedures completed at that time. He chose to pursue focal ablative therapy for his treatment and approached Professor Hashim Ahmed at Imperial College London, who reviewed his case and declared Paul an ideal patient for HIFU.

Paul noted that many treatment options are not public knowledge and medical practitioners are not given sufficient evidence to refer patients. This lack of awareness can lead to unnecessarily invasive and lifestyle impacting outcomes for patients, with a lack of available equipment further hindering this issue.

SPOTLIGHT: HIFU (High-Intensity Focussed Ultrasound)

HIFU is NICE approved prostate cancer therapy that uses the energy of highly focussed ultrasound to pinpoint, heat and kill cancer cells. Unlike radiation and surgery, HIFU is a non-invasive (no incisions) outpatient procedure that leaves healthy tissue unharmed.³²

Ultrasound has wide use in the medical field, including providing imaging during pregnancy. In HIFU, the normally harmless ultrasound waves are produced at a higher intensity and in a highly focused form. Similar to how a magnifying glass focuses light on a target, in HIFU multiple beams of ultrasound focus on the exact tissue area within the prostate that requires treatment. The highly focused energy from the ultrasound causes the temperature of the tissue to rise, and the heat destroys (ablates) the targeted tissue area.³³ The ultrasound beams are able to pass through layers of tissue, leaving them unharmed, until they reach their target.³⁴

The advantages of HIFU therapy for prostate cancer to most current alternatives is it is usually a day stay procedure with a short recovery time of one to two weeks. HIFU enables surgeons to target and treat small amounts of tissue, helping to minimise damage to nerves around the prostate responsible for preserving urinary continence and sexual function.

How widely used are minimally invasive cancer therapies in the NHS?

MICTs are not widely available in the UK. Most cancer patients eligible for the therapies in the UK will go through their complete care plan for the disease without ever being made aware of the option of MICTs.

- This is highlighted by data from a recent survey carried out by the charity the British Liver Trust. The survey found that when asking respondents which treatment options they had discussed with their doctor following the cancer diagnosis only 6% of respondents were offered SIRT, a potentially suitable minimally invasive procedure, by their doctor.³⁵
- Moreover, none of the respondents had even discussed the option of cryoablation, an alternative MICT, with their doctor and subsequently none had gone on to receive the therapy either.³⁶
- In the Kidney Cancer UK 2021 patient survey, less than 2% of respondents had cryo-ablative surgery and under 1% had radio-ablative surgery.³⁷

The single biggest determinant of whether a patient is treated using a MICT is the patient's postcode. In most cases only those patients fortunate enough to live in the vicinity of one of the few centres in the UK with suitable MICT will be routinely offered these life-enhancing therapies.

MICTs are part of a fast-growing innovative space, with new products entering the marketplace all the time and several innovations in the immediate pipeline. There are many well-established and proven technologies available for use. These are being utilised to a much greater extent in Europe and the US.

- Some of these technologies, such as SIRT, have been recommended for use by NICE with the launch of its technology assessment.³⁸ This should mean that NHS commissioners have a statutory responsibility to make funding available for the services. However, uptake remains patchy at best. The APPG welcomes the news that NHSE have released a tender of £26.7m to increase SIRT delivery over the next 3 years. However, the APPG calls for a quicker and more effective increase in centres, ensuring equitable access for all eligible patients across the country.³⁹

Figure 1: Initial centres offering SIRT⁴⁰



North West 1 Centre	The Christie NHS Foundation Trust
London 2 Centres	The Royal Free London NHS Foundation Trust Kings College Hospital NHS Foundation Trust
North East & Yorkshire 2 Centres	Newcastle-Upon-Tyne Hospitals NHS Trust Leeds Teaching Hospitals NHS Trust
Midlands 2 Centres	Birmingham NHS Foundation Trust Nottingham University Hospitals NHS Trust
East 1 Centre	Cambridge University Hospitals NHS Foundation Trust
South East 2 Centres	Southampton NHS Foundation Trust Oxford University Hospitals NHS Foundations Trust

There are a number of different reasons why MICTs are not being routinely offered to eligible patients throughout the UK. In chapter two, we go on to explore why this is happening, and the blockages in the system preventing patients receiving the best possible care for their cancer.

Infrastructure

One of the major obstacles preventing patients accessing MICTs is the lack of infrastructure in place to support the number of patients eligible for these therapies. Up to now, there has been low investment in hospital infrastructure meaning only a handful of Trusts have expended the capital needed to invest in these services. This is partly due to a lack of trained staff, lack of physical facilities and variations in NHS reimbursement for these therapies in different parts of the UK. Additionally, NHS tariffs need reconsidering to better account for these innovative technologies. This has created a situation where a patient's proximity to a hospital that has invested in these services is the biggest determinant of the patient's likelihood of receiving one of these therapies.

Distribution of these technologies is patchy at best, for example HIFU, a treatment for prostate cancer, is available for use at only three NHS sites, with Imperial College Hospital, University College London Hospital and Southampton General Hospital currently able to offer the therapy. This means that the vast majority of patients would need to travel across the country to receive the therapy, with people living in remote areas at a particular disadvantage.

In an APPG evidence session, we heard from Founder of charity Prost8 UK, Paul Sayer, who have launched a campaign called "one in eight" which is aiming to raise £3m. This would be used to fund the deployment of six focal-therapy suites in NHS hospitals, enabling a more even distribution of HIFU technology across the United Kingdom. This will help in some part to reduce the postcode lottery for treatment, and put pressure on health authorities and government to speed up deployment.

However, the NHS cannot rely on charitable donations to fulfil demand for the therapy, and the current lack of MICT at centres means that there is limited capacity and demand for the therapies is outstripping supply. For example, a patient may be eligible for the therapy and be willing and able to travel to a centre to undergo the procedure, but then be prevented from receiving it as there is simply not enough capacity in the system to treat them. These patients are given no option but to undertake more invasive surgery or pharmacological treatments with greater-known side-effects.

The ability for the NHS to offer these services is also hampered by the UK's poor diagnostic and imaging capabilities,⁴¹ with the UK having some of the lowest number of MRI and CT scans per head of population in Europe.⁴² As most MICTs work in unison with imaging technology, and clinicians relying on accurate imaging to direct the therapies, building the NHS's provision of these innovative therapies will not be possible without also investing in the NHS's imaging capabilities.

The UK's relatively poor performance in this area was identified in a landmark report in 2019 from Professor Mike Richards, who recommended that the NHS create 40 new diagnostic hubs to build the NHS's diagnostic and imaging capacity.⁴³ The Government has made steps to act on these recommendations and recently announced a £350 million investment in new community diagnostic centres, which would help build the services fleet of imaging technologies.⁴⁴ This needs to be urgently implemented.

Optimising the benefits of the prevention agenda

Efforts to build the UK's diagnostic capabilities are part of a wider aim of building a preventative health service, a key theme in the NHS Long Term Plan. Advances in medicines and medical technologies mean that people are living longer. However, the cost of treating an ageing population is increasing too, and creating a preventative healthcare model is viewed by many as key to putting the NHS on a sustainable long-term financial footing.

With the NHS investing heavily in imaging and diagnostic technologies, there is an opportunity to optimise these planned investments by funding MICT technologies. This is because there is a close alignment between the technologies and workforce skills needed to deliver both MICT therapies and the aims of the Long Term Plan. MICTs offer a cost-effective solution to the NHS for treating cancer patients, allowing the NHS to maximise the potential benefits of investment it has already committed to, and reducing its reliance on other less cost-efficient, or effective, services or therapies.

This offers an opportunity for the UK to become world leaders in MICTs, giving patients access to life changing therapies, reducing the impact of cancer on society and strengthening the UK's life-sciences sector.

Building on the foundations of the Cancer Strategy

In 2015, the NHS published its Cancer Strategy for England, with the key aim of improving outcomes and survival rates of cancer patients. One of the most notable recommendations from the strategy was the creation of 21 Cancer Alliances in England. These were formed to help drive local change in the quality of cancer services, and transform treatment and diagnosis of the disease for the area in which they are based.

The Alliances have had some success, helping to build local networks and infrastructures for delivering cancer care, encouraging collaboration and joined-up working for a clearly defined patient population. These existing structures can be supported and utilised to help ensure wider access to MICTs. With a clearly defined patient population and systems in place to encourage the sharing of expertise and information, the Alliances offer a blueprint for how centres offering MICT could be evenly distributed throughout England, ensuring more consistent access for patients up and down the country. The APPG believes that every Cancer Alliance should be able to offer access to MICTs, ensuring appropriate referrals pathways and wherever possible, reducing the average travel time for patients to receive the therapies.

Patient / clinician awareness

Access to minimally invasive cancer therapies for patients is further reduced by a general lack of awareness of them from both patients and clinicians. Many patients will go through their whole cancer treatment without ever having been made aware of the option to be treated via a MICT. Moreover, for many of these patients a MICT would have been the most desirable mode of treatment for their condition.

More effort needs to be made by the NHS to ensure that patients are aware of all available treatment options for their condition. One way to do this would be through the creation of resources and information for a patient, outlining in simple and easy to understand language the various treatments available to them and the pros and cons of each. This could be done through ensuring the literature given to a patient at the time of diagnosis is consistent, accurate and up to date, and through the development of online resources, helping guide patients to NHS supported websites that offer detailed, trusted and impartial advice.

Signposting patients to supportive organisations, such as charities and patient groups, also has a role to play in ensuring that patients understand all options available to them and make an informed choice about the care they receive. However, underpinning all of this is a need for greater awareness from clinicians.

During the APPG's evidence sessions, it was cited that many clinicians are not aware of therapies or treatments that exist outside of their hospital's services. This cements the issue of a postcode lottery existing for the treatments, with patients not even made aware of a treatment that they may be eligible for, and which may be the best treatment for their condition.

This is supported by data from a survey of cancer patients carried out by the APPG. When asking respondents which treatment options they had been offered following their diagnosis the APPG found that 70% had been offered radiotherapy, 73% had been offered surgery, but **less than 13% had been offered any type of minimally invasive therapy**.⁴⁵ Patient choice is a key element of the NHS, and all patients have a right to make an informed choice about their treatment, regardless of where they live. In the Kidney Cancer UK 2021 patient survey, over 46% of respondents said they were not given enough information to take with them when they were diagnosed.⁴⁶

Even when a clinician is aware of MICTs they often do not have the requisite knowledge or understanding to correctly identify whether a patient is suitable for a treatment. Witnesses from the APPG's evidence sessions spoke of a regular pattern of patients being referred to specialist MICT centres that were not eligible for the therapies. This has a negative impact on the patient as it increases the time it takes for them to receive care for their condition, and increases the wait time for those patients that would be eligible. In the immediate term secondary care clinicians and radiologists are unable to deliver MICT themselves. They should have the knowledge to signpost patients to appropriate centres, working as regional collaboratives.

The Government and the NHS should commit to a programme to improve the education of healthcare professionals in both the availability of these therapies, and to understand when it is the suitable mode of care for a patient, helping to ensure timely access to the treatments for patients.

Once a patient has been diagnosed with cancer a team of health professionals, known as a MDT, works together to plan the treatment for the patient. The MDT is made up from a cross-section of clinical expertise, with for example, radiologists, surgeons, medical oncologists and special cancer nurses.

It was cited in the evidence given to the Group that there is a lack of expertise on MICTs in MDTs across the UK. To ensure patients can make an informed choice about their care, and so they are referred in a timely manner to centres that are able to offer MICTs, the Government and the NHS need to ensure that each MDT has the requisite knowledge and understanding of these therapies.

The APPG is therefore calling for interventional oncologists to be present at every relevant organ specific multidisciplinary team. This would ensure an even spread of expertise across the UK, reducing the postcode lottery that currently exists and ensuring all patients are offered the opportunity to make an informed choice about their treatment.

Workforce challenges

Workforce is widely recognised as one of the NHS's largest challenges, with many suggesting there is a crisis in NHS workforce in England and arguing for urgent action from Government.⁴⁷ Jeremy Hunt, the longest serving Health Secretary in British political history, who was in office from 2012 – 2018, has himself stated that he was too slow to act on boosting the NHS workforce during his six-year tenure.⁴⁸

COVID-19 has only served to exacerbate these issues, adding additional strain on the workforce, and causing wide-spread burn-out across the system.⁴⁹ In addition, COVID-19 helped to create record waiting lists. With over 6 million people awaiting treatment the intense pressure on the NHS workforce is set to continue in the medium to long term.⁵⁰

These pressures are likely to be particularly acute for cancer services, where it is widely predicted there will be a wave of new cancer referrals for patients who did not present during the pandemic. Moreover, these patients are likely to have more advanced staged cancer and require more urgent care.

In addition to the above challenges, there is a particularly acute shortage of radiologists in the NHS, a specialism that is vital to the delivery of MICTs and cancer care more broadly. A recent study by the Royal College of Radiologists (RCR) found that the NHS is now short-staffed by 33% for radiologists and needs at least another 1,939 consultants to meet safe staffing levels and pre-coronavirus levels of demand for scans.⁵¹

MICT procedures are carried out by interventional oncologists, specialists trained to use real-time imaging techniques to guide and navigate instruments in an operation. A recent report by the RCR found that

approximately 4% of the RCR workforce are due to retire over the next 5 years. There are currently no provisions in place to help grow the workforce and prevent a shortfall.⁵² It was noted in the Group's evidence sessions that it takes seven years to train an interventional radiologist, so resolving this potential shortfall urgently requires both planning and resources from the Government and the NHS.

A major benefit of MICTs are their ability to help reduce the strain on the NHS workforce, with patients recovering faster, requiring less long-term care from the service, and the less invasive nature of the procedures helping increase patient throughput. Investment in a workforce to deliver these therapies would therefore help relieve pressures elsewhere in the system.

In Germany there are 92 radiologists per million of population, in Spain that figure is 112, and in France it is 130. The UK has 48 trained radiologists per million of population.⁵³ The APPG is therefore calling for the Government to form a strategic workforce plan, to boost the number of radiologists and interventional radiologists in the NHS, to help prevent the NHS and care in England falling behind the standards elsewhere in Europe.

Technology assessment and uptake

One of the largest obstacles cited to the Group which is preventing a wider uptake of MICTs across the system is that commissioning routes are complex and difficult to navigate. We heard evidence that clinicians throughout the NHS had seen the value of offering MICTs but had been impeded by the difficulties in having the therapies commissioned at their hospital.

This is in part down to some of the requirements for evidence of a technology's efficacy required by NICE for approving their use in the system. One example of this is the requirement of randomised controlled data, which can be difficult to produce for these types of technologies, particularly where they may only be aiming to serve a small patient population in the short to immediate term. NICE's Five Year Strategy does look to address some of these concerns and should in time begin to ease some of the restrictions faced by clinicians looking to offer these services.⁵⁴ However, a clear message from NICE that they are adjusting the bar for the amount of evidence required would send a clear signal to clinicians, saying that it is ok to offer these therapies and removing a significant barrier to entry.

Uptake of technologies is not only slow for technologies that are still working to achieve a positive guidance from NICE, but also with those technologies that have received a positive NICE Technology Assessment (TA).

SIRT received a positive TA from NICE for treating hepatocellular carcinoma (HCC), a primary liver cancer in March 2021. This should have been the signal for commissioners to provide funding for the service, however to date, this has not happened, and the service has not been commissioned for use in any new locations. This aligns with witness statements given to the Group that stated there are structural problems with the NHS, where even when innovative technologies have been approved, the system is slow to adopt the technologies.

One reason for this slow adoption is the way payments are structured in the NHS, and the knock-on effects of the incentives these payment structures create within the system. There is no clear funding pathway, such as with the innovative Cancer Drugs Fund, meaning that providers lack the incentives to both offer the therapy and make the upfront capital cost of purchasing the infrastructure for them to be able to offer the full range of treatments. This is exacerbated by NHS England not providing clear funding streams for NICE approved MICT.

A way to address this would be to implement an improved tariff system or widen the Cancer Drugs Fund to ensure that other treatments, such as MICTs, were included within this. NHS England must also commit to ensure funding streams for NICE approved therapies.



In conclusion, this APPG believes that much more can be done to ensure that patients have access to proven, cutting-edge therapies. Through the report we have seen how MICTs can contribute to providing better outcomes for patients, including reduced length of bed stays in hospitals, quicker recovery times for patients and less side effects from treatment. However, in order to realise these benefits we must insure strong patient and clinical awareness.

Additionally, more focus must be put on developing the infrastructure to support the use of MICTs across the country. This includes ensuring new centres have the correct resources to offer these proven therapies, but also that staff are appropriately trained, particularly interventional radiologists.

If delivered effectively, new investment will reduce geographic inequality by tackling the current postcode lottery of treatment. This of course cannot happen without the correct funding pathways being implemented, allowing clinicians better access to these therapies.

In short, I believe that with some clear intentions and the correct investment we can ensure all patients across the country have access to, and benefit from, these treatments. Both patients and the healthcare system will see the rewards of this.

Greg Smith MP

Chair of the APPG on Minimally Invasive Cancer Therapies

APPG on Minimally Invasive Cancer Therapies patient survey completion – 33 responses in total.

In addition to the APPG on MICT, the survey was shared and disseminated by the following organisations:

- The Patients Association
- Prost8 UK
- Kidney Cancer UK

British Liver Trust patient survey completion – 104 responses in total.

The Kidney Cancer UK 2021 patient survey – 432 responses in total.

Both these surveys were self-selecting in nature and were carried out in 2021.

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