

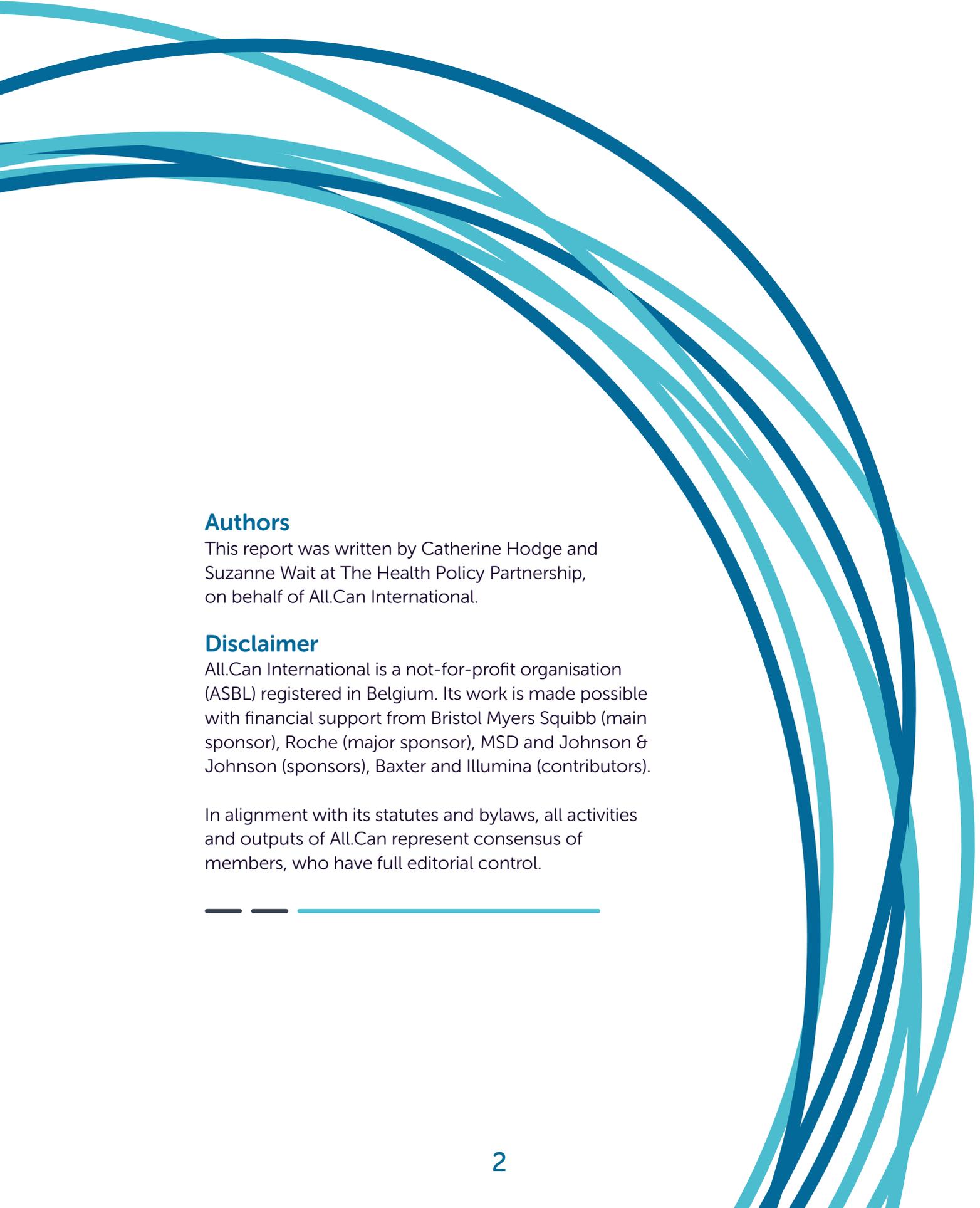


Changing cancer
care together

Achieving efficiency in practice

Lessons learnt from the
All.Can Efficiency Hub

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Authors

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Disclaimer

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Contents

Executive summary	4
Why focus on efficiency in cancer care?	5
What key lessons emerge from the Efficiency Hub's examples?	6
Lesson 1: Reduce diagnostic delays	7
Lesson 2: Move care closer to home	9
Lesson 3: Support people beyond active treatment	11
Lesson 4: Tailor care to the specific needs of different populations – a focus on children.....	13
Lesson 5: Help people navigate care pathways	15
Lesson 6: Develop solutions to maximise local resources	17
Lesson 7: Use data and online platforms to enable greater access to precision medicine	19
Reflections on how to achieve greater efficiency in practice	21
References	22



Executive summary

All.Can International is committed to improving the efficiency of cancer care around the world. Improving efficiency is not only about reducing the unnecessary wastage of resources or avoiding the duplication of labour. It is also about improving the experience and outcomes of people with cancer. For this reason, All.Can defines efficient cancer care as that which delivers the best possible health outcomes using the human, financial, infrastructural and technological resources available, with a focus on what really matters to patients and society. ¹

In 2019, All.Can International launched the Efficiency Hub. The Hub is an online repository of innovative initiatives that have successfully addressed issues in cancer care that cause inefficiency. Researchers collect examples using a stringent methodology.

With over 40 examples now featured in the Hub, we can begin to see some trends. Initiatives are selected from across the entire patient care pathway, from diagnosis to palliative care and survivorship; they can be from any country. Each of the featured initiatives exemplifies one or more of the following lessons about how to improve efficiency in cancer care:

1. Reduce diagnostic delays
2. Move care closer to home
3. Support people beyond active treatment
4. Tailor care to the specific needs of different populations (e.g. children)
5. Help people navigate care pathways
6. Maximise local resources
7. Use data and online platforms for precision medicine.

This think piece highlights the kind of solutions that have been identified to address some of the most prominent challenges facing cancer care. It is a tribute to the teams that have developed and implemented them. We hope that this document can inspire others to follow suit and look for ways to contribute to reducing inefficiency in their own settings and improving the lives of people with cancer.

Why focus on efficiency in cancer care?

Reducing inefficiency is key to ensuring the sustainability of cancer care and improving the experience of people with cancer. All.Can International, a non-governmental organisation aiming to improve the efficiency of cancer care, defines efficient cancer care as that which delivers the best possible health outcomes using the human, financial, infrastructural and technological resources available, with a focus on what really matters to patients and society.¹ This definition guides All.Can's work, looking beyond a narrow economic definition of efficiency to centre on making meaningful differences for people living with or beyond cancer.

In 2019, All.Can launched the **Efficiency Hub**, an online repository of initiatives designed to improve efficiency in cancer care. The Hub acts as a library of innovation, showcasing efficient practices to help organisations around the world find potential solutions they can implement to address common issues in cancer care.

All.Can follows a rigorous **methodology** with stringent inclusion and exclusion criteria when selecting initiatives to be featured on the Hub. The majority of examples are sourced through online literature searches, but some are submitted via an online form.

The examples featured in the Efficiency Hub cover the whole care pathway. They span screening and diagnosis, treatment and follow-up, rehabilitation, palliative care and survivorship. More than 40 examples are currently featured in the Hub, each presenting innovative ways of moving towards efficient cancer care. Examples can be from anywhere in the world and the Hub has broad international significance, with people from 50 countries accessing the web page in the year to June 2022.²

There are some common approaches and underlying principles that emerge from the examples. By presenting these, we aim to provide guidance to people with an interest in improving cancer care to help them develop their own initiatives or integrate the lessons learnt from these examples into their own policies and practice.

What key lessons emerge from the Efficiency Hub's examples?



Lesson 1:
Reduce diagnostic delays



Lesson 2:
Move care closer to home



Lesson 3:
Support people beyond active treatment



Lesson 4:
Tailor care to the specific needs of different populations – a focus on children



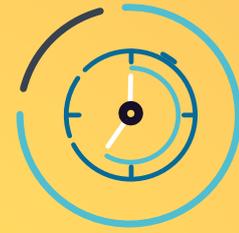
Lesson 5:
Help people navigate care pathways



Lesson 6:
Develop solutions to maximise local resources



Lesson 7:
Use data and online platforms to enable greater access to precision medicines



Lesson 1:

Reduce diagnostic delays

The challenge

Early detection plays an essential role in optimising survival in many types of cancer – and delays in diagnosis are typically associated with poorer outcomes.^{3,4} In an All.Can International survey of nearly 4,000 people with cancer and their loved ones, conducted in 2018, 26% of respondents identified diagnosis as the area of cancer care in which they had experienced the most inefficiency.⁵ Diagnostic processes can be lengthened by long waiting times, multiple (often inappropriate) referrals, and fragmentation of care between different specialists and primary care physicians. In addition, some signs and symptoms may not be immediately recognised as potential signs of cancer – either by the person experiencing them or by healthcare professionals.^{6,7} In many countries, backlogs formed during the COVID-19 pandemic have created even longer waiting lists and delayed cancer diagnoses.^{8,9}

Solutions

Reducing delays and unnecessary referrals can significantly improve outcomes for people with cancer.¹⁰ Creating dedicated diagnostic pathways for particular types of cancer can help improve the speed and efficiency of diagnosis, minimising unnecessary delays.¹¹ Given that many people will first contact their family physician with potential symptoms, efforts to streamline referrals to specialist centres from family physicians or general practitioners are also important.¹¹ One such example is that of specialist rapid diagnostic clinics. They enable people with so-called ‘vague’ symptoms (i.e. non-specific symptoms that could potentially be indicative of cancer) to receive all their tests and see multiple specialists to explore potential diagnoses in a coordinated way and over a short period of time (*Case study 1*).



Case study 1.

Acute diagnostic oncology clinics (UK)

In 2015, staff at Chelsea and Westminster Hospital NHS Foundation Trust in London launched an acute diagnostic oncology clinic.¹² The service is run by an oncologist-led multidisciplinary team, which includes a specialist cancer nurse, a general practitioner (GP) with a special interest in cancer, and a pathway coordinator.¹³

GPs can refer adults presenting with vague symptoms that may be indicative of cancer to the clinic if they are not eligible for other specific diagnostic pathways or are too unwell to wait for an appointment with a specialist.^{13 14} Referrals are reviewed and approved by a specialist nurse who works in the clinic.⁷ The service aims to rule out or diagnose cancer within 7–18 days.^{13 14}

People referred to the clinic are booked in for an appointment with a clinic GP who assesses their medical history, orders diagnostic tests, and consults with oncologists and radiologists to establish a diagnosis.^{7 13} As the clinic is based in a large hospital, people may receive additional tests from other departments after their first consultation.¹³ People who receive a cancer diagnosis are then referred directly to a multidisciplinary care team.¹⁴ In cases where cancer is ruled out but another serious condition is suspected, the person is referred to a relevant specialist.

The clinic has been recognised as a best-practice example for non-site-specific rapid diagnostic oncology centres. As a result, this model has been scaled up and expanded to other hospitals, serving more people across a wider area of London.^{7 14}

A 2021 evaluation found that the hospital's costs were reduced when people with vague symptoms were referred to the acute diagnostic oncology clinic rather than other diagnostic pathways.¹⁵



Lesson 2:

Move care closer to home

The challenge

The cost of travelling long distances to treatment facilities and accommodation can be prohibitive, especially for people who live in rural areas or in countries where specialist care is sparsely available.¹⁶ This can add to the wider ‘financial toxicity’ of cancer treatment. The All.Can survey found that 36% of respondents had incurred significant costs as a result of travelling to and from their treatment appointments.⁵ In some cases, the burden of travel can lead to people not completing their treatment or not receiving adequate follow-up. This is especially so if a person finds travelling and long waits uncomfortable owing to their symptoms or side effects of treatment, or if they are at a high risk of contracting an infection.

Solutions

Moving care away from hospitals into primary care and community clinics – or into people’s homes – can alleviate some of the financial and time pressures on people affected by cancer.¹⁶ It also reduces the carbon footprint of healthcare by reducing travel emissions, and frees up hospital beds.¹⁷⁻²⁰

Many of the initiatives featured in the Efficiency Hub aim to move treatment and care from large, tertiary hospitals into smaller community settings and people’s homes (*Case study 2*). Providing local, community-based monitoring and follow-up care can limit the continuing disruption to people’s lives from travelling to hospital appointments. Access to specialist care – either in person or remotely – is important to facilitate escalation of care when necessary. Workforce delegation can be crucial to enabling this kind of care in the community, with nurses, pharmacists and other allied health professionals delivering front-line care with the support of oncologists and other specialists available for remote consultation.



Case study 2.

Chemotherapy infusion toolkit (US)

In 2015, the National Comprehensive Cancer Network formed an Infusion Efficiency Workgroup to identify best practices for chemotherapy infusion centres.²¹ Four years later, the group published a paper calling for standardised procedures and shorter infusion times for common chemotherapies.²² It also created a best-practice toolkit to help move inpatient chemotherapy to outpatient settings and reduce the amount of time people spend in hospital.²¹

The toolkit was developed with input from doctors, nurses, pharmacists, social workers and IT professionals.²¹ It includes information on 12 common chemotherapies, with fact sheets for both healthcare professionals and patients, providing information on dosages, treatment duration and common side effects.

The toolkit was used by Houston Lee Moffitt Cancer Center and Research Institute in Florida to move inpatient chemotherapy to an outpatient infusion centre led by a physician's assistant.²¹ This process:

- **shortened waiting times between chemotherapy cycles²²**
- **helped people spend fewer days in hospital¹⁹**
- **reduced healthcare costs for chemotherapy.²¹**



Lesson 3:

Support people beyond active treatment

The challenge

Cancer can affect every facet of a person's life – and its impact can continue well beyond the end of active treatment.²³ The number of people surviving cancer for many years is increasing, a testament to the power of research and improvements in care.^{23 24} However, people who have been treated for cancer often face a complex combination of ongoing issues that can significantly impact their quality of life; these may be physical, psychological, social and emotional.²⁴⁻²⁶ For example, around 75% of adults who have survived childhood cancer will live with one or more physical health problems, ranging from fertility issues to developing heart failure as a result of treatment.²⁷

Many people report feeling abandoned and anxious once their active cancer treatment has ended. In the All.Can survey, 39% of respondents felt that they had not received adequate support to deal with any side effects, either during or after active treatment, while 35% said that they did not have enough information on how to recognise whether their cancer might be recurring or getting worse.⁵ Close to 70% of respondents felt that they needed psychological support during or after receiving cancer care, but 34% of this group found that such support was unavailable to them.

Solutions

Initiatives to support people living beyond cancer must be truly person-centred. As cancer affects people in different ways, a wide range of relevant examples in the Hub fall into this category. These have included psychological support, supportive coaching to help people return to work, informational resources, and dedicated multidisciplinary teams delivering individualised, person-centred rehabilitative care (*Case study 3*).



Case study 3.

Centre for Cancer Rehabilitation (Sweden)

Since 2016, the Centre for Cancer Rehabilitation in Stockholm has offered comprehensive rehabilitation programmes for people who have been treated for cancer in the region.²⁸ It has a multidisciplinary team, currently led by a physiotherapist specialising in oncology, which also includes physicians, nurses, occupational therapists, dietitians and psychologists.²⁹ Most people are referred to the centre from primary care or specialist cancer centres, but it is also possible to self-refer.^{28 30} The rehabilitation programme is funded by the national public health system.²⁸

Rehabilitation programmes offered by the centre are tailored to the concerns, needs and goals of each individual.²⁹ These goals are often focused on everyday activities that may have become difficult owing to the impact of cancer and its treatment.²⁸ People are encouraged to be active partners in the development and implementation of their programme,²⁹ which typically includes counselling to manage the psychological and physical impact of cancer, support to return to work, and physical exercise programmes such as medical yoga.^{28 31}

Following completion of an initial programme, participants receive a rehabilitation plan with recommendations for self-management and, if needed, follow-up care with other healthcare professionals. The centre also hosts support groups for people affected by cancer.



Lesson 4:

Tailor care to the specific needs of different populations – a focus on children

The challenge

Being treated for cancer can be disruptive and traumatic for people of all ages, but it can be particularly difficult for children. Having cancer and receiving treatment can be overwhelming for children if care is not well adapted to their needs. Some procedures, such as surgery and radiotherapy, may cause distress, especially when children are in an unfamiliar environment or are isolated from their loved ones.³² A survey of children being treated for cancer in the UK found that 33% of those aged 8–11 felt that healthcare practitioners did not always speak to them in a way that they could understand.³³

Distress can lead to serious consequences for a child's treatment. For example, if children cannot stay still when undergoing radiotherapy, they may need to have a general anaesthetic, exposing them to avoidable risk of complications and leading to higher costs for the health system.^{32 34 35}

Children with cancer may also face significant disruption to their education and family life. A survey of over 1,000 children with cancer in the UK showed that around 70% of those aged 8–11 and 69% of those aged 12–15 had missed school due to the timing of their treatment.³³

Solutions

Adapting care settings to make children feel more comfortable and reduce disruption to their lives can not only have a significant impact on their quality of care, but may also lead to better outcomes and efficiency for health settings (*Case study 4*).

A number of initiatives featured in the Hub have adapted clinical environments to minimise distress and disruption for children and young people with cancer. Several have also found ways of increasing access to education in hospital to minimise long-term educational disruption and social exclusion.



Case study 4.

Radiotherapy masks (UK)

Leeds Teaching Hospitals NHS Trust in England employs a play specialist who supports children and teenagers undergoing radiotherapy on their heads or necks.^{36 37} People having radiotherapy on these areas of the body must wear a fitted mask to keep their head still while inside the radiotherapy machine.³⁸ This can be particularly distressing for children and young people. If they are unable to remain still, children may have to receive treatment under general anaesthetic.^{34 39}

The play therapist encourages children with head, neck or brain cancer to design their own radiotherapy masks, often based on their favourite superhero, cartoon character or animal.³⁶ She then paints the masks using water-based acrylic paints, which do not interfere with radiotherapy.

Children and young people who design their masks feel less fearful about wearing them and more involved in their care.³⁶ Many choose to keep their mask as a reminder of their bravery after they finish treatment.

Since the project began in 2016, the play specialist has painted hundreds of radiotherapy masks.³⁹ While it is difficult to prove that the initiative has reduced the use of general anaesthetic, as many factors may influence such clinical decisions, parents have reported that:

- their children have experienced less anxiety by being involved in designing their masks
- their children had needed general anaesthetic for previous scans, but not for radiotherapy.³⁹

The play specialist states that children as young as three have undergone radiotherapy without general anaesthetic.³⁹ Some children have even reported feeling excited about wearing their mask and undergoing treatment.³⁶ Older children have also said that they appreciate having more control over their treatment; while the duration, frequency or type of radiotherapy cannot be changed, designing masks helps them feel more involved in choices about their care.³⁹



Lesson 5:

Help people navigate care pathways

The challenge

Cancer care pathways can be complex and overwhelming. From the point of diagnosis, people with cancer are often catapulted into a situation where they must juggle multiple appointments with different specialists.⁴⁰ For many, cancer is a chronic disease and they will be engaging with cancer care services for many years.⁴¹ Active treatment can be a lengthy process, including multiple different modalities and phases, but palliative and follow-up care can also be daunting and complex to navigate. The realities of life after receiving treatment for cancer can also present challenges (see [Lesson 3](#)).

Many people with cancer feel that they do not receive enough reliable, accessible information about their care. Nearly a third (31%) of respondents to the All.Can patient survey felt that they had not been given adequate information about their diagnosis and care plan in a format which they could understand. Meanwhile, 47% felt that they were not sufficiently involved in decisions made about their care.⁵

Even where information is readily available, for example via the internet, it can be difficult to assess whether that information is reliable and relevant.^{42 43} Having access to appropriate information at all stages of the care pathway increases people's overall satisfaction with the care they receive and improves health-related quality of life.⁴⁰

Solutions

Having access to guidance and reliable information can help people to make informed decisions about their care, alongside healthcare professionals.

A number of initiatives featured in the Efficiency Hub focus on supporting people with cancer to understand and navigate their care pathways. This can include providing nominated case managers or coordinators, or 'hub-and-spoke' models where the person returns to the same centre to receive advice and referrals to other services as part of a multidisciplinary approach. These initiatives can reduce inefficiencies by preventing people from seeking care that is not appropriate to their needs, or that is delivered further away from their home than is necessary (*Case study 5*).



Case study 5.

Oncology orientation centres (Italy)

In Italy, the organisation and delivery of cancer care are determined at a regional level.⁴⁴ However, people can choose any provider within the public health system for their care, including those in other regions.

Many people diagnosed with cancer in southern Italy will travel to other regions for treatment, often because they are unaware of cancer expertise available locally and assume better services are available in the north of the country.⁴⁵ To address this issue in Apulia, a southern part of Italy, the regional cancer network launched 18 oncology orientation cancer centres.^{46 47} These centres, located in or near hospitals, are staffed by multidisciplinary teams that can coordinate diagnostic tests, develop care plans and refer people to appropriate specialists in Apulia. In their first two years, the centres had supported more than 10,000 people.⁴⁵



Lesson 6:

Develop solutions to maximise local resources

The challenge

Initiatives that work well in one context may not be appropriate in others. This may be due to differences in the structure of health systems, the availability of resources, or even the geography of the setting in which they are being applied. It may be particularly true for the use of technologies that work well in high-income countries but prove unrealistic in low- and middle-income countries.⁴⁸ However, the fact that an initiative may not be immediately transferrable to other contexts or settings does not mean that it cannot be adapted to fit local conditions.

Solutions

The Efficiency Hub features a number of examples from low- and middle-income countries, where local knowledge has been used as a foundation for innovations that work in local contexts. Examples include workforce delegation and teleconsultations to expand access to remote areas, and selecting technologies and practices that are feasible with the resources available in each health context (*Case study 6*).



Case study 6.

Cost-effective prevention of cervical cancer (El Salvador)

Comprehensive vaccination and screening programmes can reduce the incidence and mortality rate of cervical cancer,⁴⁹ an outcome seen in many high-income countries which have introduced such programmes.⁵⁰ However, low- and middle-income countries may not have the infrastructure and resources needed to implement them.⁵¹

In 2012, the Salvadoran Ministry of Health partnered with Basic Health International to launch the Cervical Cancer Prevention in El Salvador (CAPE) programme.^{52 53} It introduced HPV testing and treatment for abnormal cervical cells into the public health system.

The programme relies on HPV DNA tests, which offer a low-cost solution to countries that may not have the resources for other screening procedures, such as Pap (cervical) smears and colposcopies.⁵⁴ HPV DNA tests are portable, do not require refrigeration, and return results within three hours. They are more sensitive than Pap smears and do not need to be repeated as regularly, reducing the number of medical appointments needed.⁵⁵

Women with an HPV-positive result are offered immediate treatment with cryotherapy, which freezes and removes abnormal cells in the cervix. This treatment approach is safe and cost-effective for low-resource settings, ensuring that women receive appropriate care and reducing the need for follow-up appointments.⁵⁶

The CAPE programme has lowered women's risk of developing cervical cancer by an estimated 59% in El Salvador.⁵⁶ In 2017, the Ministry of Health secured USD \$1 million to integrate HPV DNA testing and cryotherapy into the public health system,^{52 57} making El Salvador the first country in Central America to adopt HPV testing at a national level.



Lesson 7:

Use data and online platforms to enable greater access to precision medicine

The challenge

Despite significant advances in cancer treatments, the way in which each person's cancer is treated is still often 'trial and error', with patients often having to try multiple approaches in succession. This can lead to some people receiving treatments that are ineffective for them and have considerable side effects, resulting in poor quality of life.⁵⁸ This is also inefficient for health systems, as treatments, equipment and staff time are used without improving patient outcomes.

The role of data in developing targeted treatments has evolved significantly in recent years, allowing the growth of precision medicine.⁵⁹ The ability to assemble and analyse large data sets (e.g. genomic data) can help determine which treatments work for which specific types of cancer, enabling a personalised approach to care whereby treatments are tailored to the molecular characteristics of each person's tumour.⁵⁹ Data on different social determinants of health can also be useful to tailor information and treatment approaches based on underlying risks, health literacy levels and other factors.

There are significant disparities in access to targeted therapies and associated genomic testing both between and within countries, with large, urban or university-associated hospitals often being better equipped.⁶⁰ These disparities in access may exacerbate health inequalities, if availability of genomic testing and other data collection activities is not improved.⁶¹ For people with cancer who live outside of major cities, or whose healthcare professionals are not aware of clinical trials and emerging treatments, inappropriate treatments may still be offered, with an impact on patient outcomes.

Solutions

The Hub has featured a number of examples showing how data solutions can be used to expand access to precision medicine for people with cancer and further build knowledge for the future. Data sharing has also played a considerable role in enabling greater access to high-quality care (*Case study 7*).



Case study 7.

A urology network to enhance access to personalised therapies (Germany)

Urology specialists at Charité – Universitätsmedizin Berlin hospital launched DNA-Med, a pilot urology network for the Berlin-Brandenburg region, which is home to over six million people.⁶²⁻⁶⁴ The network aims to make the hospital's specialist expertise and technology available beyond its immediate catchment area.⁶³

All urologists practising in Berlin-Brandenburg can register to become part of the network, giving them access to a digital platform, through which their patients can anonymously input information about their diagnosis, treatment side effects and quality of life.⁶² These data are continuously fed into an algorithm, which is used by the specialists at Charité – Universitätsmedizin Berlin to identify what has worked for people with similar tumour characteristics. The specialists then send information on recommended treatments and relevant clinical trials to local urologists. In addition, DNA-Med offers recommendations on personalised care beyond active treatment, including follow-up monitoring and palliative care.

Since it was established in 2020, the network has supported more than 3,000 people with metastatic prostate cancer. Over half of the 240 urologists working in Berlin-Brandenburg have registered with the network. There are plans to expand the network to other parts of Germany and other cancer types, with regional centres of excellence in oncology providing the expertise, research capacity and technology required to deliver personalised medicine.⁶⁰

Reflections on how to achieve greater efficiency in practice

Aiming to achieve greater efficiency in cancer care is an uncontroversial goal. However, finding practical ways of reducing inefficiency that are applicable, replicable and scalable can be challenging.

The different examples featured in this think piece, along with others found in the Efficiency Hub, are a reminder that there are two components to efficiency:

- 1) a focus on what will make the greatest difference, and achieve the best outcomes, for people with cancer
- 2) how to use available resources, being mindful of the specific context of each health system and setting, to achieve these outcomes.

Taking a global view of efficiency, it is clear that context matters: solutions that are effective in one setting may not be easily transposable to another, and feasibility of implementation as well as sustainability of each initiative given local resources and manpower is always an important consideration. Feasibility analysis also needs to consider whether successful pockets of innovation can be scaled up, expanding benefits to larger populations with available resources.

The different examples in the Hub also reinforce some of the foundational principles of 'efficient cancer care', as highlighted in the most recent All.Can International policy blueprint⁶⁵ – and echo findings from All.Can's earlier patient survey.⁵ Cancer care must be multidisciplinary and address the complexity of needs – clinical, emotional, psychological, financial – that people and their families experience with a diagnosis of cancer. Taking a person-centred approach requires nimble, multidisciplinary teams, able to respond to people's evolving needs over time. Offering such services closer to people's homes has efficiency benefits for people and their families, health systems and the environment – and data can enable linkages and knowledge sharing between specialist centres and community-based clinical teams.

Finally, it is important to note that many of the initiatives featured in the Hub stem from healthcare professionals themselves – innovation from the ground up. Healthcare professionals are often best positioned to know how to respond to their patients' needs; health system leaders should create opportunities for them to contribute ideas on how to compose their clinical teams and adapt care to best meet patient needs. Similarly, involving people with cancer and their families in finding and crafting care that works for them can ensure efficiency remains rooted in what matters most to people with cancer.



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