Referring Sarcoma Patients for Cell Therapy Clinical Trials: A UK Wide Survey of Current Referral Routes and Practices to Identify Gaps in the Referrals Process and Maximise Patient Access to Cell Therapy Clinical Trials

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Referring Sarcoma Patients for Cell Therapy Clinical Trials: A UK Wide Survey of Current Referral Routes and Practices to Identify Gaps in the Referrals Process and Maximise Patient Access to Cell Therapy Clinical Trials

Project Report

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Abbreviations

ATMP	Advanced Therapy Medicinal Product
ACT	Adoptive Cell Therapy
CAR-T Therapy	Chimeric Antigen Receptor T-cell Therapy
CTA	Cancer Testis Antigen
EMA	European Medicines Agency
FDA	Food and Drug Administration
MDT	Multi-disciplinary team
MRCLS	Myxoid Round Cell / Liposarcoma
OTAT	Office of Tissues and Advanced Therapies
TCR T-cell therapy	T-cell Receptor T-cell therapy
TIL Therapy	Tumour Infiltrating Lymphocytes therapy
SAG	Sarcoma Advisory Group
STS	Soft tissue sarcoma
SS	Synovial sarcoma

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Abstract

Introduction:

Gene modified T cell therapy trials in soft tissue sarcomas are yielding exciting results. However, they are HLA restricted and require positive tumour antigen expression in these rare cancers, resulting in low rates of patient identification. Cell therapies also have a complex patient pathway from leukapheresis, product manufacturing and cell infusion. Moreover, limited clinical sites deliver these trials as few sites have suitable infrastructure to deliver them and the studies themselves often target rare disease groups. To maximise patient access, there is a need to optimise the referrals process and pathways for sarcoma cell therapy clinical trials.

Aims:

A survey was undertaken to:

- acquire a UK picture of sarcoma cell therapy trial referral activity by establishing current referral routes, practices, and preferences of sarcoma oncologists
- Identify gaps in clinical trial referral routes and practices for sarcoma cell therapy clinical trials.

Method:

Sarcoma oncologists (who currently refer patients for systemic anti-cancer treatment) were invited to participate in an online survey (via the online platform SurveyMonkey). Invitations were sent via email. Oncologists from across all UK specialist sarcoma centres were approached. The survey questions covered the following areas: 1) Current awareness of sarcoma cell therapy clinical trials, 2) Referring sarcoma patients for cell therapy trials, 3) Patient travel considerations / remote consenting for cell therapy trials. The results were presented using summary statistical methods and a ‘SWOT’ analysis.

Results:

A total of 17 sarcoma oncologists participated from across 11 geographical areas. 81% confirmed awareness of sarcoma cell therapy trials but many responders felt that their Multi-Disciplinary Team (MDT) members lacked awareness of cell therapy trial options. 62% reported

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they had referred patients for these trials, but referral numbers are small (between 1-4 per respondent). Knowledge of cell therapy trials was mainly via professional contacts and networks. There was also interest in a cell therapy trials referral form to facilitate referrals. The most common time point for patient referral was at relapse or recurrence after first line treatment. Standard referral methods are used currently (referral letter with or without email correspondence).

Conclusion:

There is a good level of awareness of cell therapy trials amongst sarcoma oncologists, however the survey findings highlight several knowledge and communication gaps amongst responders and their respective MDTs. There is a need to optimise the cell therapy referrals process and wider referral network to maximise patient access to these novel clinical trials. The survey work has facilitated engagement with the wider sarcoma referral network. Examples of outputs to be taken forward include development of an ATMP referral form/prompt sheet and evaluation of existing methods used to aid trial referrals. The findings of the project were presented at the virtual event: *'Emerging Advanced Therapies in Soft Tissue Sarcoma'* in September 2022, hosted by The Christie NHS Foundation Trust and iMATCH (funded by Sarcoma UK). This work will also be shared via the Advanced Therapy Treatment Centre (ATTC) Network and at the British Sarcoma Group 2023 conference.

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The Role of Immunotherapy, Adoptive Cell Therapies and Advanced Therapy Medicinal Products (ATMPs)

The field of immuno-oncology, namely, exploiting the underlying anti-tumour ability of the immune system, has revolutionised cancer care and resulted in significant improvements for patients in terms of survival and quality of life. Despite the role immune therapies have played in improving tumour responses and survival, many oncology patients still develop disease progression (Rohaan *et al* 2019). This has meant that next generation, immunotherapy treatment strategies required to overcome tumour resistance mechanisms (Tsimberidou et al 2021), with Adoptive Cell Therapy (ACT) being a key contender in this field.

Adoptive cell therapy is an example of an Advanced Therapy Medicinal Product (ATMP). ATMPs can be defined as the medicinal use of cells, genes and tissues to treat disease and therefore encompass – somatic cell therapy, gene therapies and tissue engineering. (The European Parliament and the Council of the European Union 2000). They have the potential to revolutionise patient care and offer novel ways of treating malignant and non-malignant diseases with an unmet clinical need. ACT delivered alone, or in combination with other treatments which prevent T-cell inhibition in the tumour microenvironment, have been shown to overcome the limitations of some current immunotherapies (Rohaan et al 2019).

Adoptive cell therapy (ACT) is one specific example of an advanced therapy product. ACT is a bespoke immune-oncology treatment which involves the transplant of immune effector cells (namely T-cells or T lymphocytes) into patients to target and kill cancer cells (Rosenberg *et al* 2008). The T-cells are collected from the patient or donor from surgical tissue samples or via leukapheresis procedure. Some approaches involve ex vivo cell expansion alone, whilst others involve the genetic modification of the cells before re-infusion so that they more powerfully target a particular tumour target. Following this, the patients commonly receive lymphodepleting

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chemotherapy before the cells are re-infused to the patient. Because of the nature of these therapies, they are often referred to as 'living drugs.' Examples of adoptive cell therapies include T-cell Receptor (TCR) T-cell therapy, Tumour Infiltrating Lymphocytes (TILs) and Chimeric Antigen Receptor (CAR) T-cell therapy.

Historically, advanced therapies were a very niche field – they now represent a rapidly growing area of medicine (Pillai, Davies and Thistlethwaite 2020) with active clinical development of these therapies taking place across mainly the pharma, biotech with activity also in academic/clinical sectors. This activity has inevitably been spurred on through the licensing of two CAR-T products (Kymriah® and Yescarta®) within the haematological setting in the UK and US. As of October 2021, there are a total of 22 licensed products in the US across a range of disease indications, as stated by the Food and Drug Administrations (FDA's) Office of Tissues and Advanced Therapies (OTAT) (U.S. FDA 2021).

Within solid tumours, these treatments are largely still being investigated and delivered within the context of clinical trials. Within the UK and Europe, Oncology remains the leading focus of advanced therapy clinical trials (Alliance for Regenerative Medicine (ARM), 2019; Cell and Gene Therapy Catapult, 2020). There are a growing number of trials within the sarcoma field, given that these tumours commonly express tumour markers which are attractive targets for cellular therapies (reference). Therefore, there has been an urgent need for NHS infrastructure to develop in line with the growth of cell therapy clinical trials and the emergence of licensed CAR-T therapy.

Sarcoma: Definition, Incidence and Statistics

Sarcomas are a rare malignancy originating from mesenchymal cells which have differentiated/developed into connective tissue, such as muscle, bone, nerves, tendons, blood vessels, cartilage, fatty tissue and blood vessels (Mamillan Cancer Support *(n.d)*, Sarcoma UK *n.d.*)).

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Sarcomas account for approximately:

- 1% of adult malignancies globally and have a mortality rate of approximately 2% (Amankwah et al 2013; Singer et al 2000).
- Represent 8% of adolescent cancers and 10% of paediatric malignancies and (Amankwah et al 2013; Singer et al 2000)
- 5,300 new diagnoses in the UK per year (Sarcoma UK, n.d.-a)
- There are greater than 50 different histological sub-types of sarcoma, as recognised by the World Health Organisation (Cleven & Bovée, *n.d.*).

Sarcoma's can be broadly divided into two categories – bone and soft tissue. Specifically, soft tissue sarcomas will be the focus of this project, namely, synovial sarcoma and liposarcomas, (specifically myxoid round cell liposarcoma). Refer to the fact summary in **Table 1** on the following page. To my knowledge, the two major cell therapy clinical trials in this field open in the UK recruit these sarcoma subtypes.

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Table 1: SS and MRCLS summary table

Synovial sarcoma (SS)	Myxoid Round Cell Liposarcoma (MRCLS)
• constitutes around 5% of soft tissue diagnoses (Thway & Fisher, 2014) (Rajwanshi *et al* 2009)	• Represents 5-10% of all adult STS and about 30-35% of liposarcomas (Marchiori 2013)
• Usually develops in cells near joints and tendons, such as the knee (Sarcoma UK, n.d.-d)	• Malignancy which arises from fat cells and mainly develops on limbs (Sarcoma UK n.d)
• The defining pathology is a chromosomal translocation between chromosome 18 and SSX 1, 2 or 4 (Stacchiotti & Van Tine 2018)	• Myxoid/Round Cell Liposarcoma is associated with specific translocation, t (12; 16 (q13; p11) or t (12; 22) (q13; q12) (Knight *et al* 1995)
• The disease commonly affects younger individuals with 70% of the diagnoses occurring in subjects under 40 years old (reference)	MRCLS commonly presents at an age ranging from 35-55 years (Sarcoma UK n.d.-c)

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Current treatment options for STS

The three main standard of care treatment modalities for sarcoma are surgical excision, chemotherapy and radiotherapy (Dangoor *et al* 2016). Clinical trial options may also be available to patients. The decision for single treatment versus multi-modality is based upon factors should as localised disease versus metastatic, the stage, histology, location of primary (Singer, Demetri and Baldini 2000).

The NHS sarcoma specification mandates that the management of sarcoma cases should be in line with British Sarcoma Group Guidelines (NHS England 2019).

Setting the Scene: How are Sarcoma Services Delivered in the UK?

Overview of Sarcoma service model/specification

Before describing the sarcoma patient pathway in more detail, it is important to highlight how sarcoma services in the UK are organised and managed. The NHS England sarcoma service specification outlines the provision of care for all UK patients diagnosed with a malignant sarcoma. It is publicly available and can be accessed via this link: https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2019/07/Sarcoma-Service-Specification.pdf (NHS England 2019). Because of the rare nature of sarcomas, care provision is concentrated to a smaller number of specialist centres.

There are currently fifteen Specialist Sarcoma Centres - ten of which currently host a soft-tissue sarcoma multi-disciplinary team (MDT), five of which host a combined bone and soft tissue sarcoma MDT (refer to **Figure 1** below).

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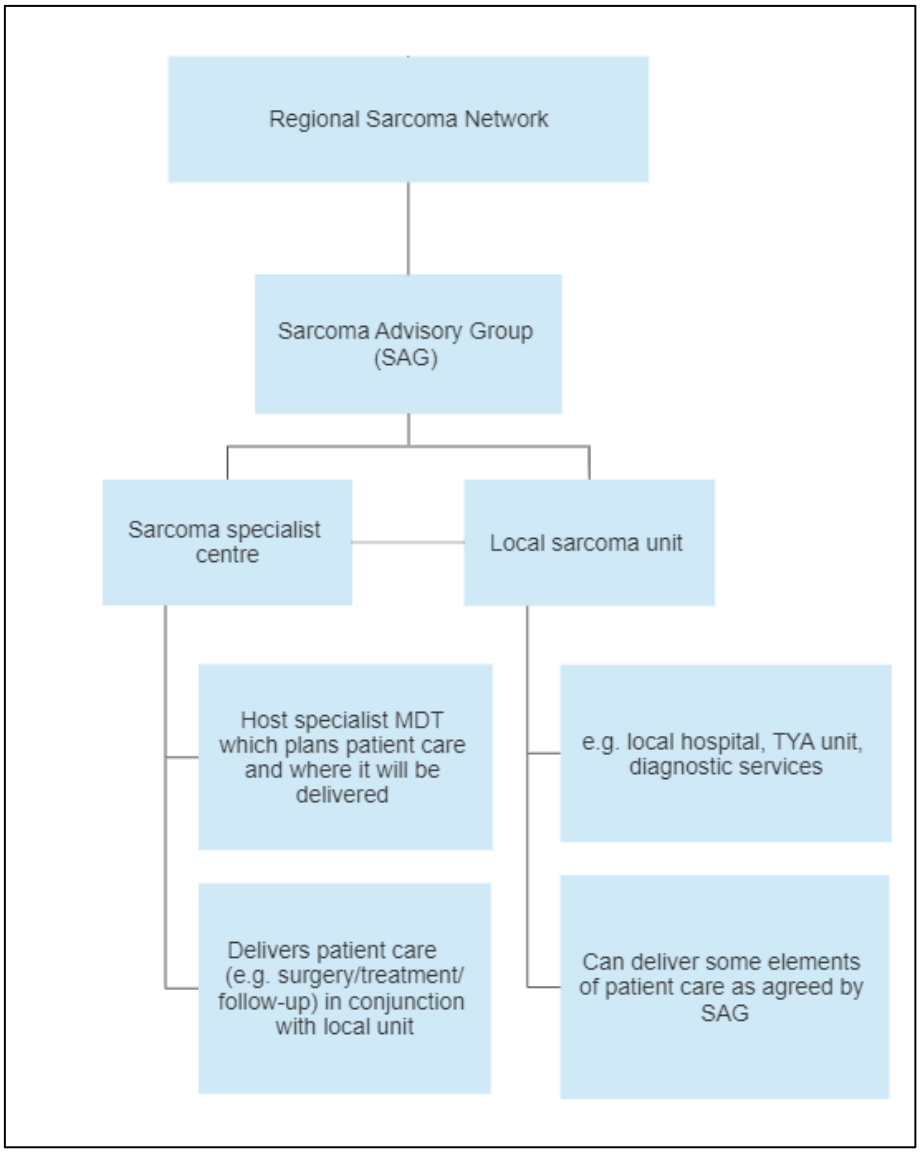
Figure 1: Schematic showing how sarcoma services are organised in England, taken from: NHS England (2019) Sarcoma service specification



- The Sarcoma Advisory Groups (SAG's) are partnerships between specialist sarcoma centres (who have a sarcoma MDT) and local sarcoma units who can deliver some aspects of sarcoma care to patients more locally.

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- SAGs agree service configuration for their network, agree diagnostic, treatment protocols (e.g. chemotherapy/radiotherapy/surgery) and patient pathways, and ensure clinical trial co-ordination and referral/communication processes between providers
- The SAG is the primary source of clinical opinion for sarcoma services and must include representation from each designated Specialist Sarcoma Centre and MDT, Local Sarcoma Units
- The role of the Sarcoma MDT is crucial to determine a care plan for all patients with bone and soft tissue sarcoma and to be responsible for its delivery either by members based at the Specialist Sarcoma Centre or by designated practitioners working at Local Sarcoma Units or by C/TYA Principal Treatment Centres following care pathways agreed with the SAG. Together with several designated Local Sarcoma Units which can deliver some elements of sarcoma care.

The Sarcoma Patient Pathway

The organisation of sarcoma services in the UK as described in the section above therefore underpins the sarcoma patient pathway. A generic example of patient pathway can be found in **Figure 2** on the next page

All suspected sarcoma cases will be referred from primary care services (i.e. GP's) will be referred to a specialist sarcoma centre, a diagnostic service attached to a local sarcoma unit or TYA treatment centre, depending on the guidance agreed by the Sarcoma Advisory Group (SAG). The patient will then be discussed at the Sarcoma MDT (including pathology review by sarcoma pathologist). Once diagnosis is confirmed, the patient's management, treatment plan and treatment location are agreed. The patient is then referred for treatment at the relevant sites and follow-up arranged as per local protocol.

Note that clinical trial opportunities are incorporated into the patient pathway in addition to the standard of care options available for this population.

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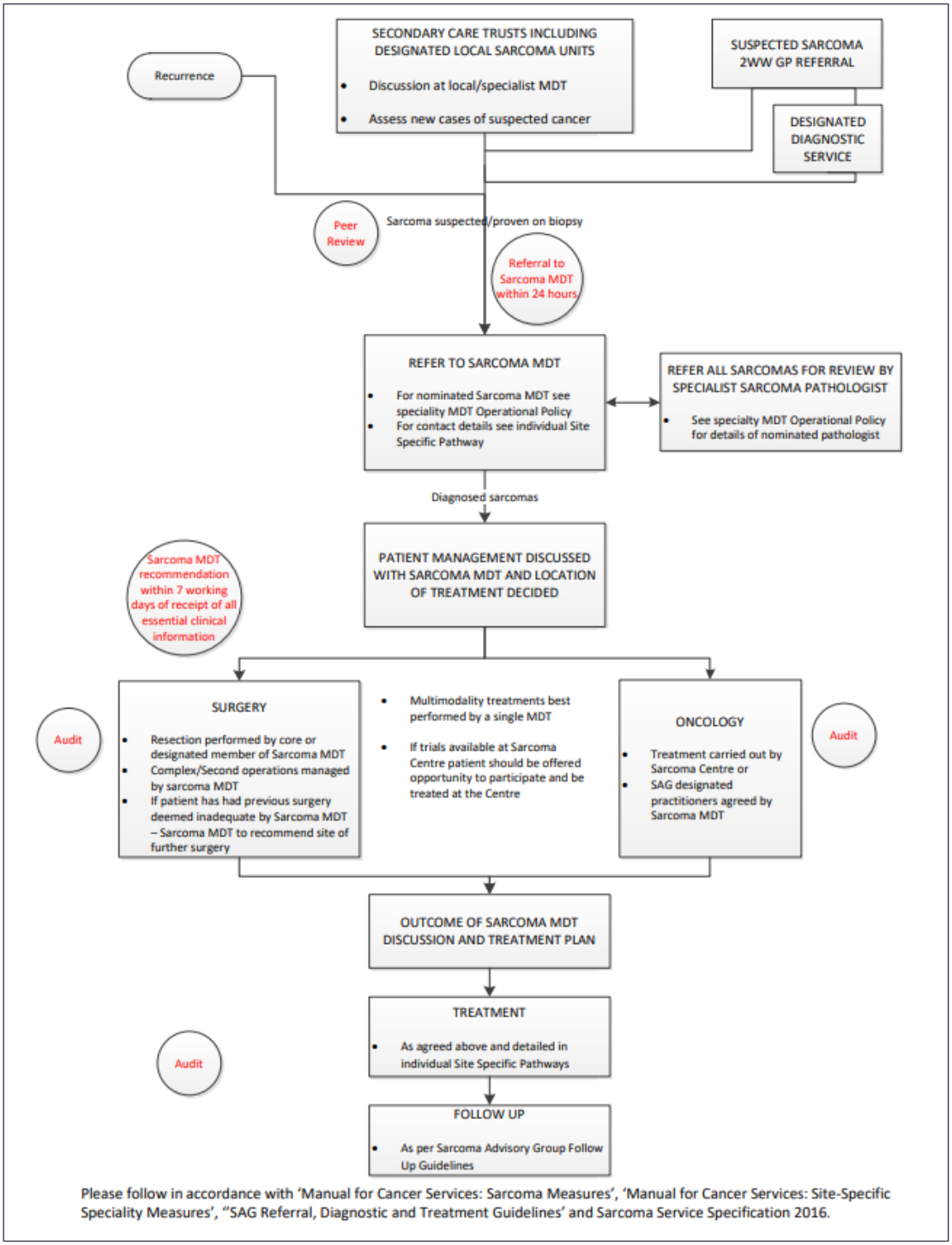
Figure 2: Example sarcoma patient pathway taken from (NHS England 2019) Sarcoma service specification



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T-cell Therapy in Soft Tissue Sarcoma - Rationale for Novel Treatments

Current treatment for localised disease (surgical resection) is effective and offer a more favourable prognosis for patients. Unfortunately, the available options for metastatic/relapsed disease are predominately focused on cytotoxic chemotherapy with varying efficacy, resulting in poor prognosis (Mata & Gottschalk 2015). To improve outcomes, novel approaches such as T-cell therapies and other immune-based treatments, are needed to retreat from conventional cytotoxic therapies (Perica *et al* 2015).

There are several cell therapy clinical trials with soft tissue sarcoma cohorts which are open to recruitment within the UK and worldwide. The strategy of T-cell-directed therapy involvers the collection of patients cells which are then genetically engineered to express a T-cell receptor against a cancer testis antigen (CTA) such as NYESO and MAGE.

Soft tissue sarcomas, such as synovial sarcoma and MRCLS, are highly attractive populations given that these tumours have high expression of cancer testis antigens (CTA's) (Mitchell *et al* 2021). CTA's are ideal tumour targets as there is limited or no expression of these markers in normal tissues, which reduces of 'on target off tumour' toxicities (Singh *et al* 2015). In addition, the synovial sarcoma patient group pose an attractive patient group for such intensive trials given that this sub-type disproportionally impacts young adults and children often with no other co-morbidities and a good performance status.

Historical and ongoing clinical trials in this area have shown significant potential with many participants benefiting from treatment responses (Butler *et al* 2019; D'Angelo *et al* 2018; Hong *et al* 2020; Morgan *et al* 2013; Ramachandran *et al* 2019; Robbins *et al* 2015). Consequently, trial activity and cell therapy product development in this field is ongoing.

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Advanced Therapy Treatment Centres

iMATCH ADVANCED THERAPY TREATMENT CENTRE

Sarcoma Cell Therapy Trials Referrals Project - Rationale

Cell therapies pose an exciting future treatment option for the sarcoma population. This is highly significant given that treatment options and prognosis for this patient group, especially within the metastatic setting, is limited.

It is commonplace for cell therapy and other ATMP trials to target rare malignancies, with the sarcoma population being a key example. Many solid tumour cell therapy studies require pre-screening tests (HLA typing and tumour antigen expression) to confirm patient eligibility. Due to this pre-screening step and the fact that target populations are often rare (such as sarcoma) there is often a low pick-up rate for eligible patients. There is also a need to ensure referrals are made as timely as possible to accommodate the lengthy 'vein to vein' process, including: pre-screening, leukapheresis, product manufacturing and then cell infusion. Optimising referral pathways is the key to maximising patient opportunities to participate in these ground-breaking trials. This will ensure all potential patients to access these novel trials and support the achievement of study recruitment targets.

The Advanced Immune and Cell Therapy (AICT) Team at The Christie Hospital specialises in the delivery of advanced therapy (specifically cell therapy) clinical trials within solid tumours. As the trials a wide range of tumour types, the team is reliant upon referrals for trial recruitment activity. The AICT team has two sarcoma cell therapy clinical trials open to recruitment and referral links have been well established internally between the Sarcoma team and the AICT research team. Despite these established referral links, anecdotal opinion within The Christie is that that sarcoma patient access to ATMP clinical trials could be more formally mapped out within the Christie and across the UK. In addition, the referral links, and practices of other sarcoma specialist sites elsewhere in the UK is unknown.

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Project aim and objectives

The aims of my project were to:

- acquire a UK picture of sarcoma cell therapy trial referral activity by establishing current referral routes, practices, and preferences of sarcoma oncologists
- Optimise the referrals process and maximise patient access to sarcoma cell therapy clinical trials.

To achieve my aim, I wanted to deliver against the following objectives:

- Establish current awareness of sarcoma oncologists of ATMP clinical trials
- Establishing current ATMP clinical trial referral routes for the sarcoma population and current referral practices and answer the following questions:
  - Are patients being referred for cell therapy trials?
  - If yes, at what point in the patient pathway are sarcoma patients referred?
  - How are patients referred?
- Identify what resources are used by sarcoma clinicians to identify ATMP clinical trial options and their preferences in terms of how ATMP patients should be referred.
- Identify gaps in clinical trial referral routes/practices for sarcoma patients for ATMP clinical trials.

Methodology

An online survey was created and sarcoma oncologists/clinicians working within the NHS who refer patients for systemic anti-cancer treatment were invited to participate. As many sarcoma oncologists as possible were approached across all the UK specialist sarcoma centres. A total of 21 named clinicians across all 15 UK soft tissue sarcoma specialist centres were contacted directly via email to participate in the survey. The survey sent to the generic sarcoma MDT email address for sites were named persons could not be identified and a request made for the

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email to be forwarded on to relevant clinicians. Because of this, the true number of participants invited is unknown.

The survey was created on the well-known *SurveyMonkey* platform. Use of an online survey allowed participants to complete in their own time and for ease of data analysis.

Identifying suitable participants

A list of the UK sarcoma specialist centres and appropriate clinicians from each organisation were identified (at least one clinician per centre). The Sarcoma UK *'Sarcoma specialist centres'* webpage was used to guide which centres should be contacted. Invitations to participate in the survey were emailed to sarcoma oncologists who work at NHS trusts all UK soft tissue sarcoma specialist centres. Sarcoma clinicians were contacted using existing professional contacts in the field held by consultant colleagues. The aim was to collect at least one response from each of the soft tissue specials centres. Please see the full list of sarcoma services below who were contacted:

- Oxford Sarcoma Service
- London and South East Sarcoma Network
- Bristol Sarcoma Service *(Bristol and Somerset)*
- Liverpool (*Merseyside and North Cheshire)*
- Greater Manchester and Oswestry Sarcoma Service
- Leeds Regional Sarcoma Service *(Leeds and Yorkshire)*
- North of England Bone and Soft Tissue Tumour service (*Cumbria, Newcastle, Scottish Borders*)

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- Sheffield Regional Sarcoma MDT *(Yorkshire, North Lincolnshire, North Derbyshire and North Nottinghamshire)*
- Northern Ireland *(Belfast)*
- South Wales Sarcoma Service *(Swansea, Cardiff)*
- Scottish Sarcoma Network *(Aberdeen, Glasgow, Edinburgh, Inverness, Dundee)*
- Exeter Sarcoma Centre
- Peninsula Soft Tissue Sarcoma Service *(Devon and Cornwall)*
- East Midlands Sarcoma Service *(Nottingham and wider East Midlands)*
- West Midlands Sarcoma Service *(Birmingham and surrounding area).*

Creation of survey questions and content

A list of questions was compiled in line with the aims and objectives of the survey. The initial draft of the survey questions underwent review by a colleague to ensure the questions were clear, relevant and succinct. Screenshots from the live survey can be found in **Figure 3** below.

- A total of 28 questions were included
- The first page of the online survey featured introductory paragraphs to explain the background and rationale of the survey
- The survey questions were divided into the following categories:
    - Current awareness of sarcoma cell therapy clinical trials,
    - Referring sarcoma patients for cell therapy trials and
    - Patient travel considerations and remote consenting for cell therapy trials.
- Significant efforts were made to keep the questions simplistic using closed questions formats such as dichotomous, multiple choice, and checklist questions.

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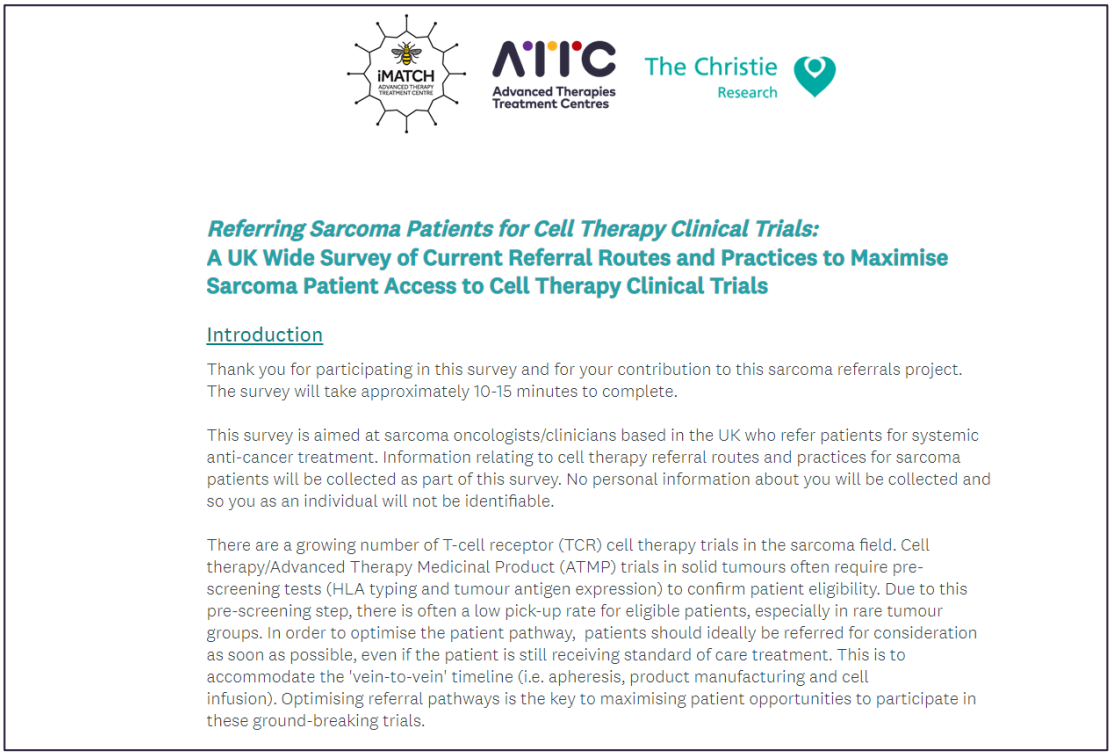
- Many of the survey questions were linked to the clinical trial development pathway to provide context and perspective.
- Participants were not asked any personally identifiable information to avoid any concerns regarding GDPR, however they were asked to identify the locality they work in to allow mapping of where responses had come from. Respondents were also asked to confirm their job title to ensure the survey was being completed by the correct target audience.

Figure 3: Screenshots from the live questionnaire



Referring Sarcoma Patients for Cell Therapy Clinical Trials:
A UK Wide Survey of Current Referral Routes and Practices to Maximise Sarcoma Patient Access to Cell Therapy Clinical Trials

Introduction

Thank you for participating in this survey and for your contribution to this sarcoma referrals project. The survey will take approximately 10-15 minutes to complete.

This survey is aimed at sarcoma oncologists/clinicians based in the UK who refer patients for systemic anti-cancer treatment. Information relating to cell therapy referral routes and practices for sarcoma patients will be collected as part of this survey. No personal information about you will be collected and so you as an individual will not be identifiable.

There are a growing number of T-cell receptor (TCR) cell therapy trials in the sarcoma field. Cell therapy/Advanced Therapy Medicinal Product (ATMP) trials in solid tumours often require pre-screening tests (HLA typing and tumour antigen expression) to confirm patient eligibility. Due to this pre-screening step, there is often a low pick-up rate for eligible patients, especially in rare tumour groups. In order to optimise the patient pathway, patients should ideally be referred for consideration as soon as possible, even if the patient is still receiving standard of care treatment. This is to accommodate the 'vein-to-vein' timeline (i.e. apheresis, product manufacturing and cell infusion). Optimising referral pathways is the key to maximising patient opportunities to participate in these ground-breaking trials.

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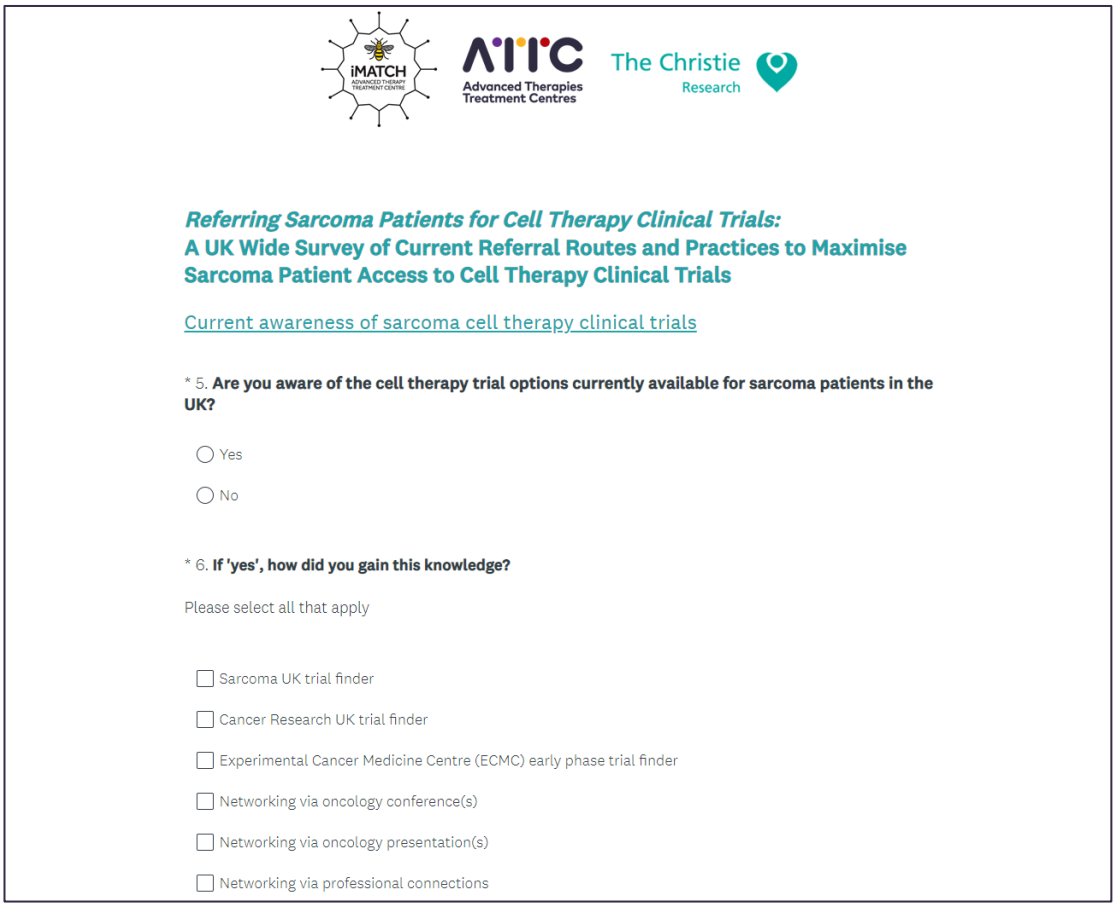
Figure 3 continued:



Referring Sarcoma Patients for Cell Therapy Clinical Trials:
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Current awareness of sarcoma cell therapy clinical trials

* 5. **Are you aware of the cell therapy trial options currently available for sarcoma patients in the UK?**

- ◯ Yes
- ◯ No

* 6. **If 'yes', how did you gain this knowledge?**

Please select all that apply

- ☐ Sarcoma UK trial finder
- ☐ Cancer Research UK trial finder
- ☐ Experimental Cancer Medicine Centre (ECMC) early phase trial finder
- ☐ Networking via oncology conference(s)
- ☐ Networking via oncology presentation(s)
- ☐ Networking via professional connections

Data collection process

An overview of the data collection process is outlined below: - **1)** *SurveyMonkey* questionnaire published online – 'go live.' Check performed to confirm that the survey link was working

2) Invitation email sent directly to a named person from each sarcoma specialist centre which invited them to participate (on behalf of their organisation). Where it was not possible to identify a direct contact, the invitation was sent to the generic sarcoma MDT email and a request made to forward the email to relevant participants at that site.

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3) Each email included an attached invitation letter (refer to Appendix 1) which provided background information regarding the purpose of the study etc. A covering letter was also attached to give the oncologists more background information on the survey with relevant links. Refer to appendix 1 for email template and appendix 2 for the covering letter.

4) Each contact was asked to complete the survey in their own time by the specified deadline, or forward to another individual within the organisation if appropriate.

5) Responses to the survey were received in real-time via an email notification system. As the deadline approached, the system could be checked for which organisations had not yet responded and email prompts were sent out accordingly.

Data analysis

After the final deadline, survey responses were accessed via the *SurveyMonkey* platform. Raw data was exported to a Microsoft Excel spreadsheet to aid data analysis.

A data assurance step was performed to ensure that all responses received were suitable for further analysis. Two responses were excluded:

- One set of responses was incomplete and incomprehensible,
- The second set was also incomplete and had partly been completed by a research nurse who was not the target audience of the survey.

Application of summary statistics to each survey question

The application of summary statistics was necessary to extract key themes and trends. Data was presented using a mixture of pie charts, bar graphs, tables, and other data presentation methods.

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Results

- A total of 19 sarcoma oncologists responded
- 17 sets of responses were taken forward for analysis (1 was removed as it was not completed by a sarcoma oncologist/clinician, the other removed as the answers were incoherent and incomplete)
    - ***Initial survey response rate:*** 19 (responses) ÷ 21 (direct invitees) x 100 = 90%
    - ***Survey response rate following removal of unsuitable responses:***

      17 ÷ 21 × 100 = 81%
- Responses were gathered from 11 out of 15 soft tissue sarcoma specialist centres.
- The survey data was collected between January and February 2022.

Please note that the figures for each question were reported per respondent and not per specialist centre and so their views are not representative of the whole centre.

Results by Question

Survey Question 1:

The responses to question 1 are visually represented in the word cloud. All responders confirmed they were consultant level oncologists.

Figure 4: Word cloud of job title responses.

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Q2. Please state the area/city that you work in

The survey captured data from specialist sarcoma centres across the UK (see **Figure 5** below). The presence and number of a red dots in a location visually represents the number of responders from a given sarcoma service.

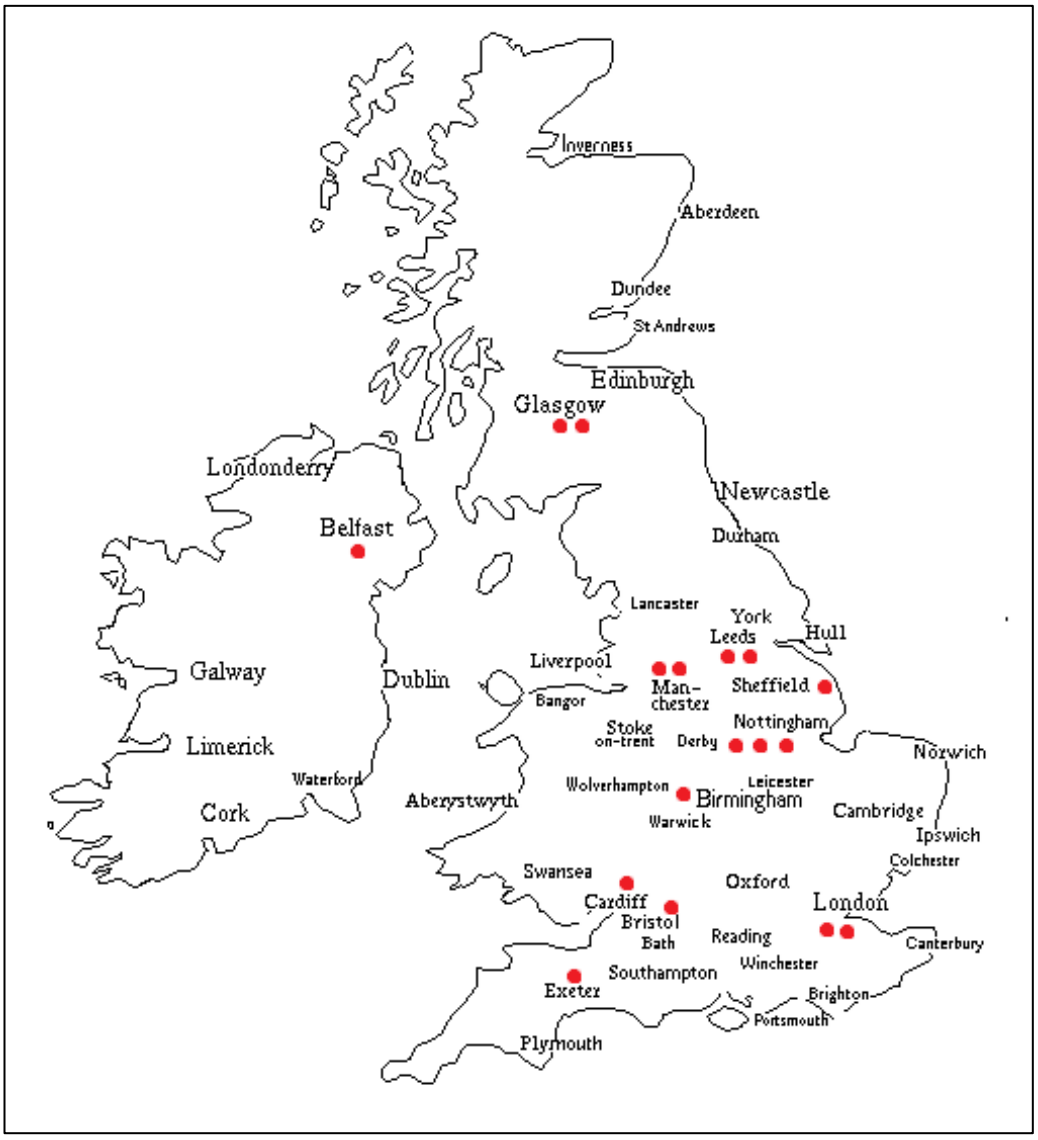

Figure 5: UK Heat map showing sarcoma services which participated in the survey (original image source: http://uk-map.blogspot.com/2011/06/uk-regional-maps.html)

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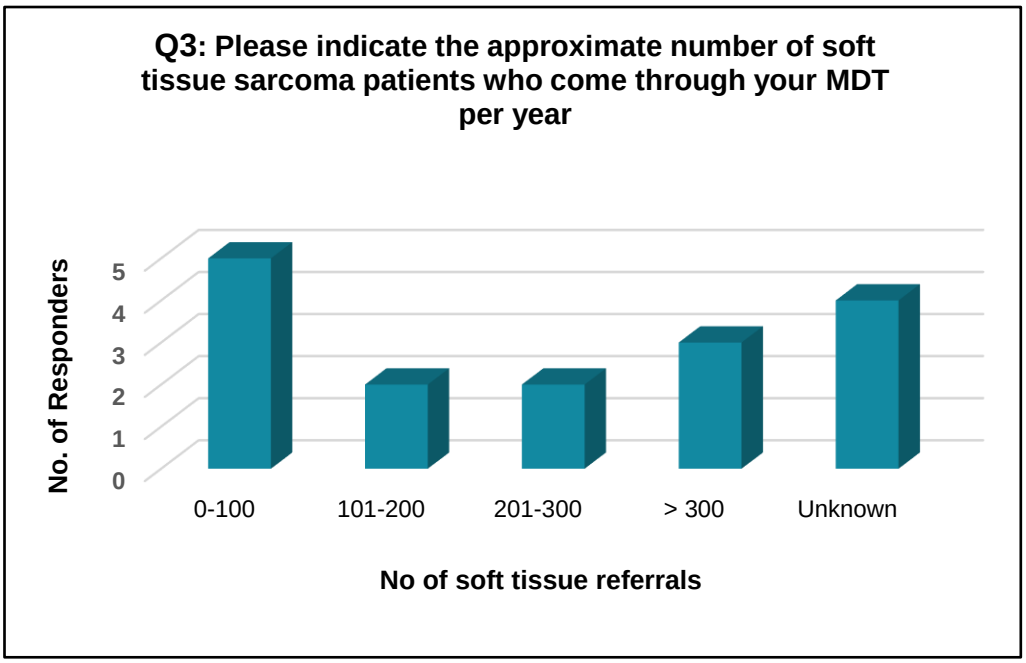
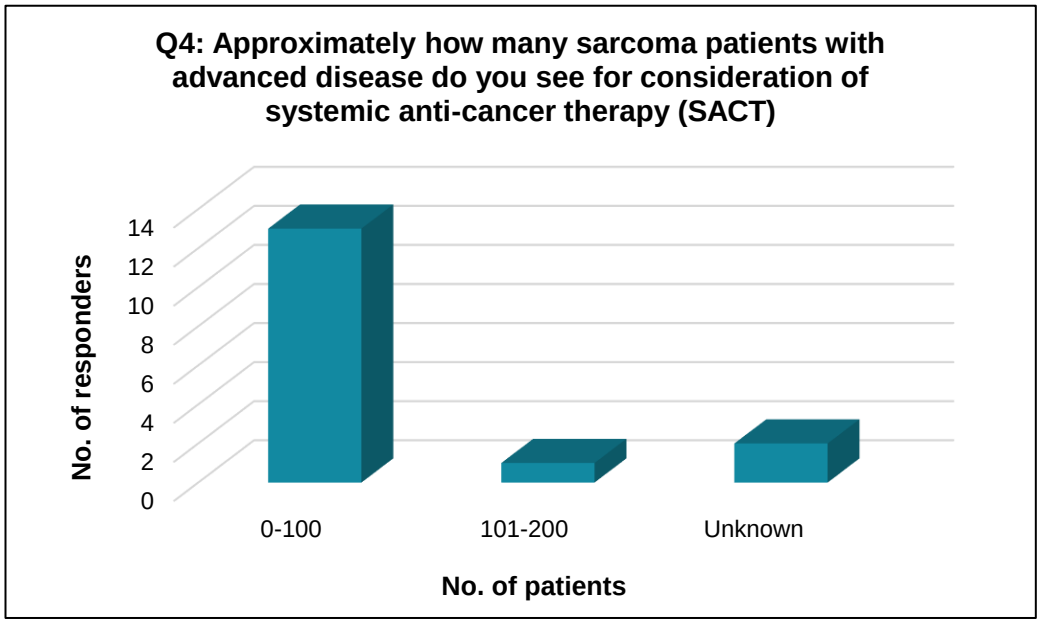
Survey Question 3:



This question was asked for the purpose of background information. Note the wide range of referrals reported. Most responders reported between 0-100 referrals. Some participants did not have the figures available and stated 'unknown.'

Survey Question 4:



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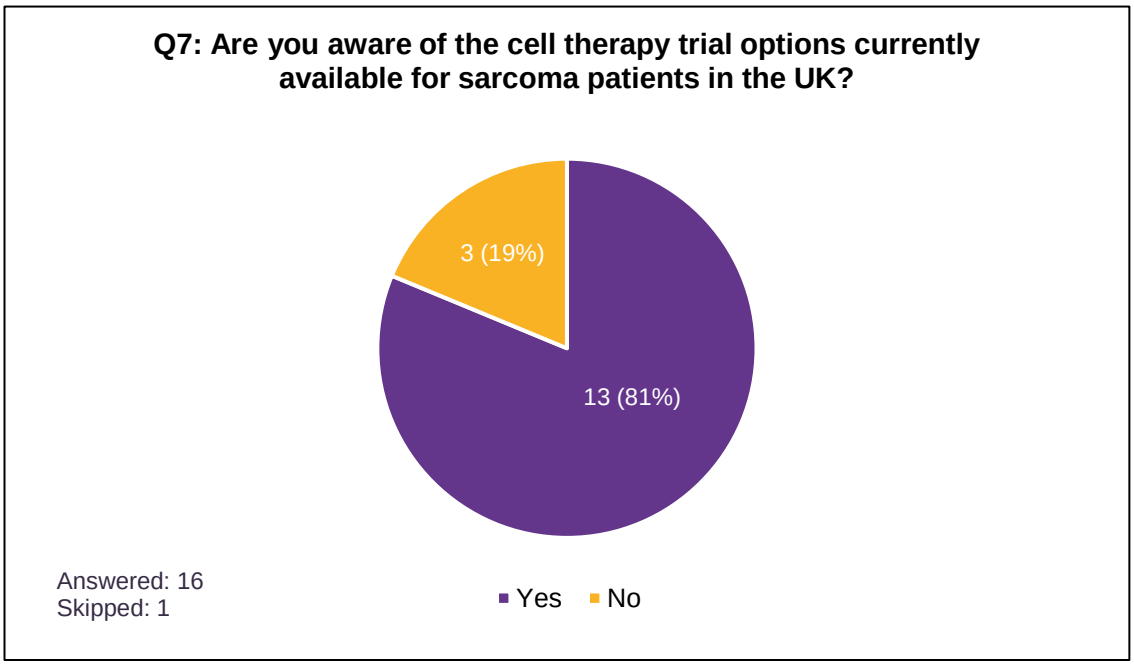
Again, question 4 was asked for the purpose of background information. The majority reported between 0-100 referrals as an estimate.

Survey question 5:



Most clinicians (over 80%) reported they were aware of sarcoma cell therapy trial options.

Key point:

- *It is promising that most clinicians surveyed are aware of sarcoma cell therapy trials, however - why are some clinicians aware and others are not?*

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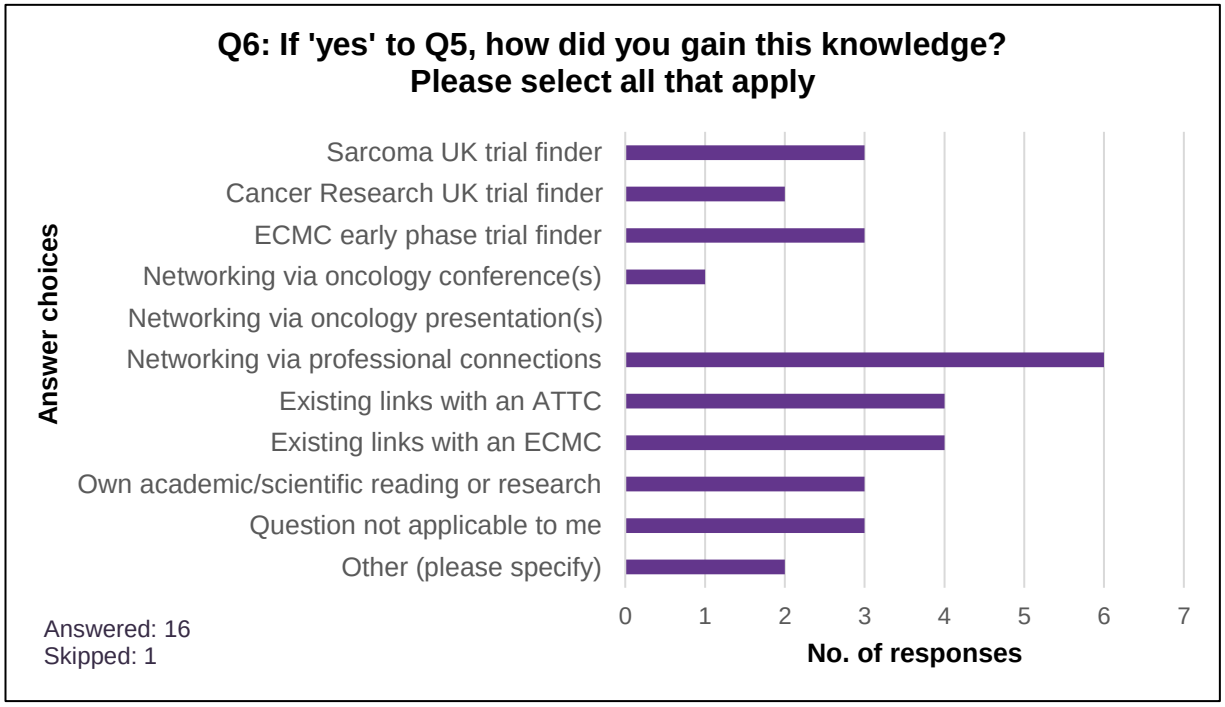
Survey Question 6:



ECMC = Experimental Cancer Medicine Centre, ATTC = Advanced Therapy Treatment Centre

Knowledge of sarcoma cell therapy trials was gained through a variety of sources; however, the most reported method was networking via professional connections closely followed by existing links with ECMT/ATTC sites. NOTE, the ECMC trial finder is currently in beta testing phase and only accessible to ECMC clinicians.

Key points:

- *Why is networking via professional connections the most common method?*
  - *Potential reason: There are a limited number of trials in this area so interaction with other professionals crucial for recruitment.*
  - *This would support the importance of engagement and education events (such as our 'Emerging Advanced Therapies in STS event in September 2022)*

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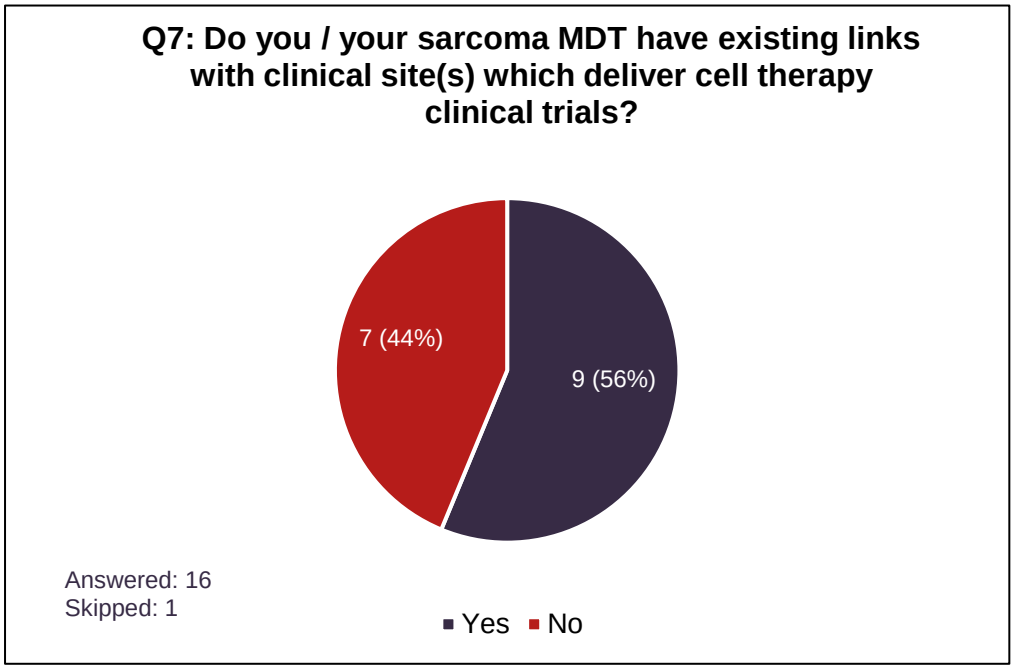
Key points (continued):

- *Use of trial finders a close second – online resources need to be up-to-date and accessible for clinicians all over the UK.*

Survey Question 7:



Just over half of responders reported to have existing links with cell therapy delivery sites. The sites who reported yes are broadly in line with the specialist centres and clinicians who are aware of sarcoma cell therapy trial options.

Key points:

- *Although most clinicians surveyed do have existing links, there is a close split between the two.*

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Key points (continued):

- *Responders who answered 'yes' are broadly in line with sites who are aware of cell therapy options*

Survey Question 8:
If you have existing links with clinical site(s) which deliver cell therapy clinical trials, please state the names of the site(s) below. If this question is not applicable to you, please write n/a in the box below.

Responders reported either working within or having existing links with the following clinical sites who deliver cell therapy trials:

- University College Hospital London (UCLH) only (3 responders)
- Royal Marsden Hospital (RMH) only (2 responders)
- The Christie Hospital only (3 responders)
- The Christie Hospital and Royal Marsden Hospital (2 responders).

It was expected that these sites would be named as the sites above have sarcoma cell therapy clinical trials open to recruitment. Note that since the survey questions were written, The Royal Marsden site now has a sarcoma cell therapy trial open to recruitment.

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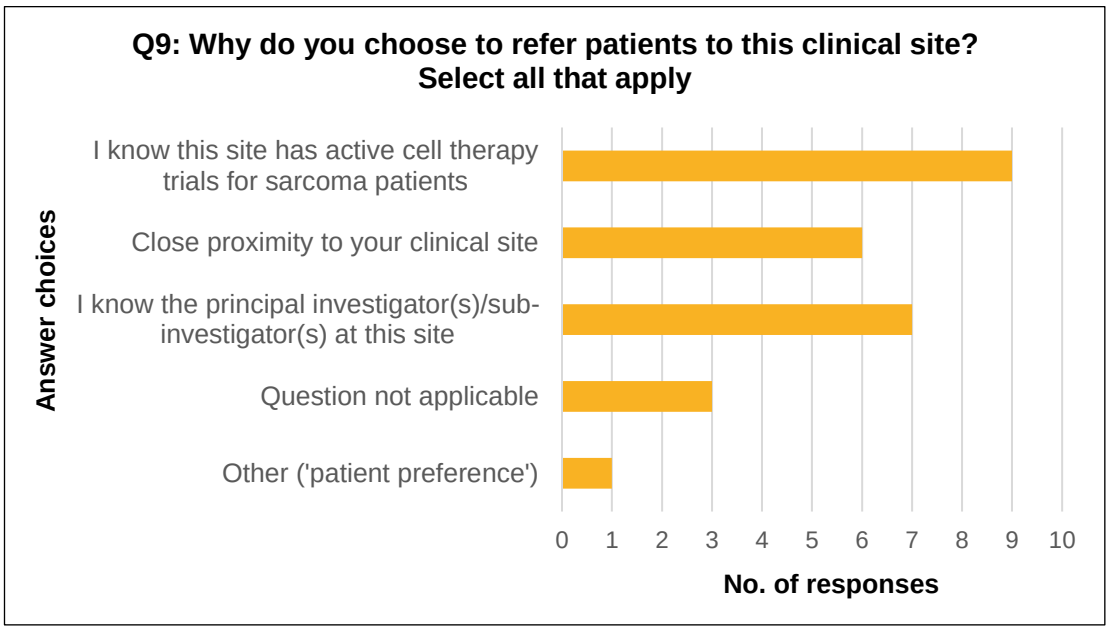
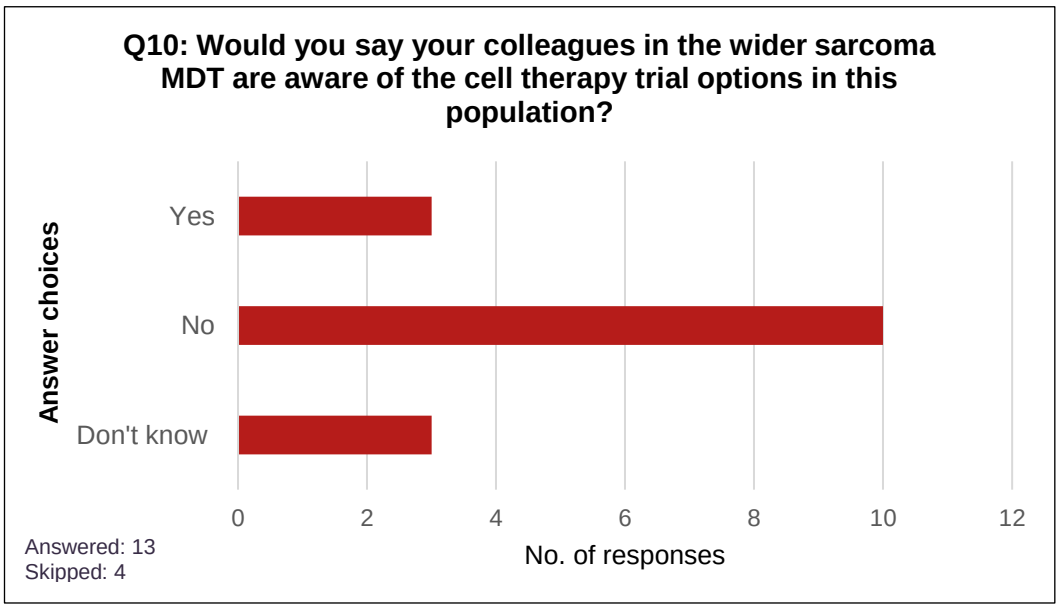
Survey question 9:



The most cited answer was responders being aware that the site they were referring to has actively recruiting cell therapy trials. This was closely followed by responders knowing the investigators at the sites they have referred patients to.

Survey Question 10:



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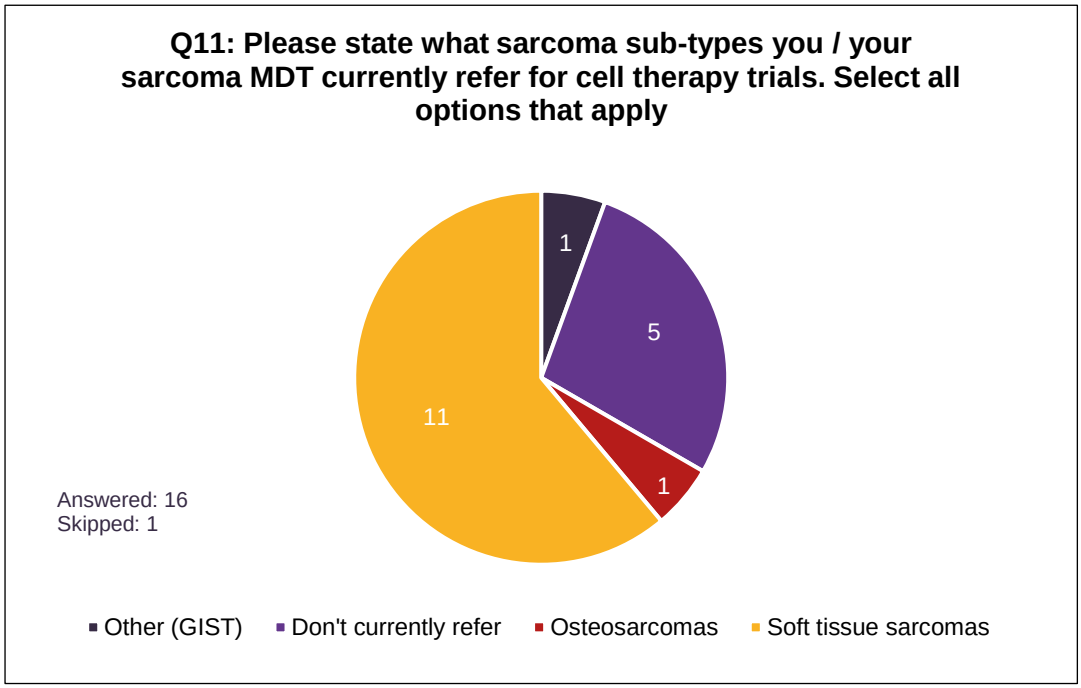
Over 60% of responders felt their MDT colleagues were not aware of cell therapy trials.

Key points:

- *Responding clinicians report they aware of sarcoma cell therapy trials but feel other colleagues in their sarcoma MDT are not aware*
- *This may suggest a potential knowledge/communication gap – this will be explored in the discussion.*

Survey Question 11:



As anticipated, soft tissue sarcomas constitute most referrals for cell therapy trials.

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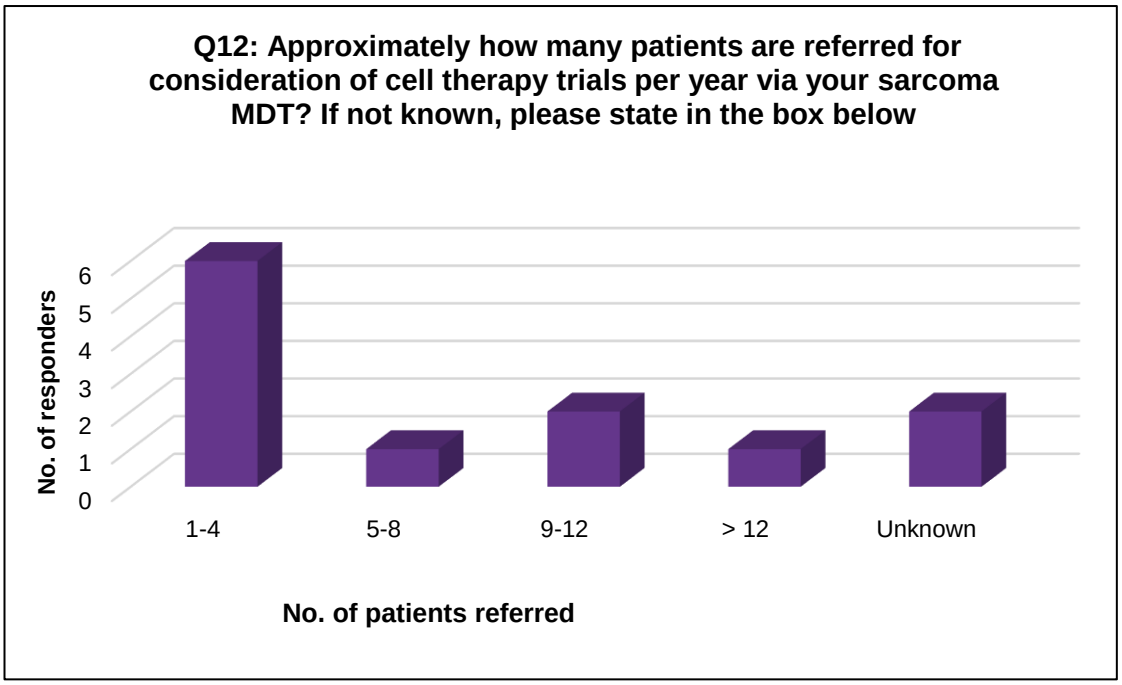
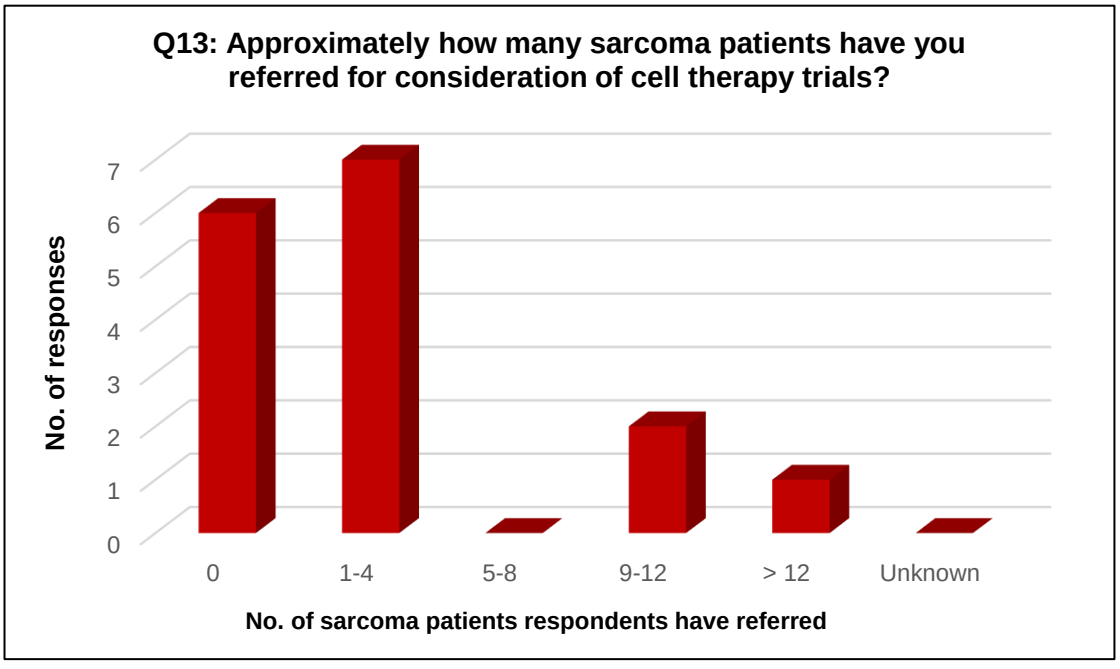
Survey Questions 12 and 13





Q13 states that 10 out of 16 responders (62%) have referred patients for cell therapy trials.

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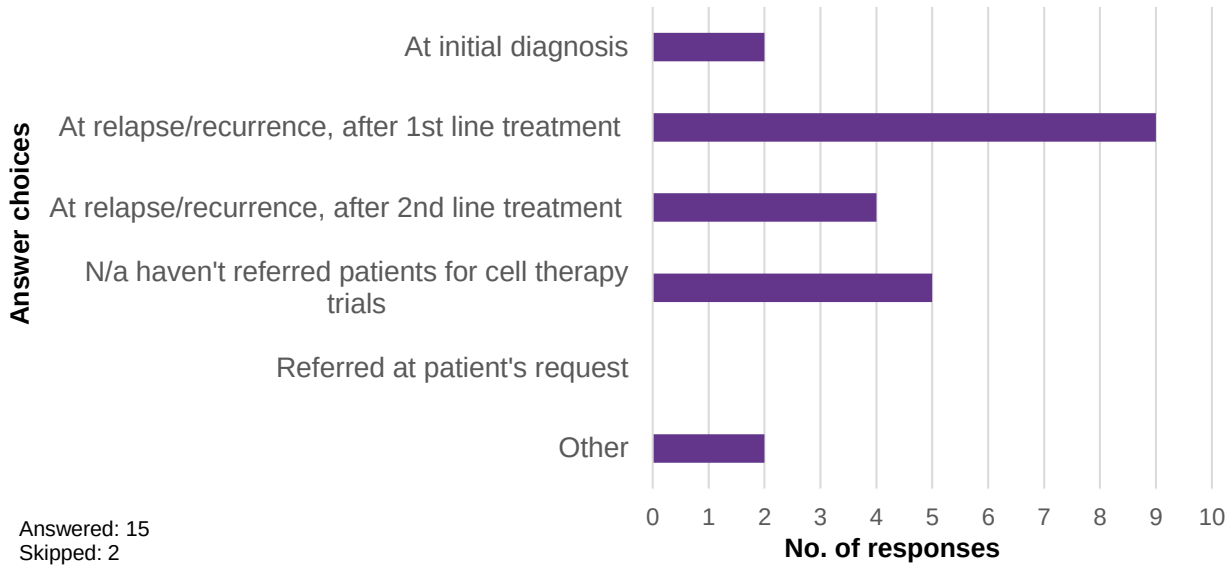
The responses to questions 12 and 13 confirm that overall, small numbers of sarcoma patients are currently referred for consideration of cell therapy trials, most commonly under 5 per year.

Key points:

- *The responses confirm that there is referral activity currently for sarcoma cell therapy clinical trials.*
- *Highlights the very small numbers of potential patients given the rare patient group.*
- *Smaller numbers may mean the future pathway would be manageable from a logistical perspective (in a similar way to the CAR-T pathway) if these treatments progress beyond clinical trial stages and become standard of care.*

Survey Question 14:

Q14: At what point in the patient pathway do you refer sarcoma patients for consideration of cell therapy trials? Select all options that apply



Answered: 15
Skipped: 2

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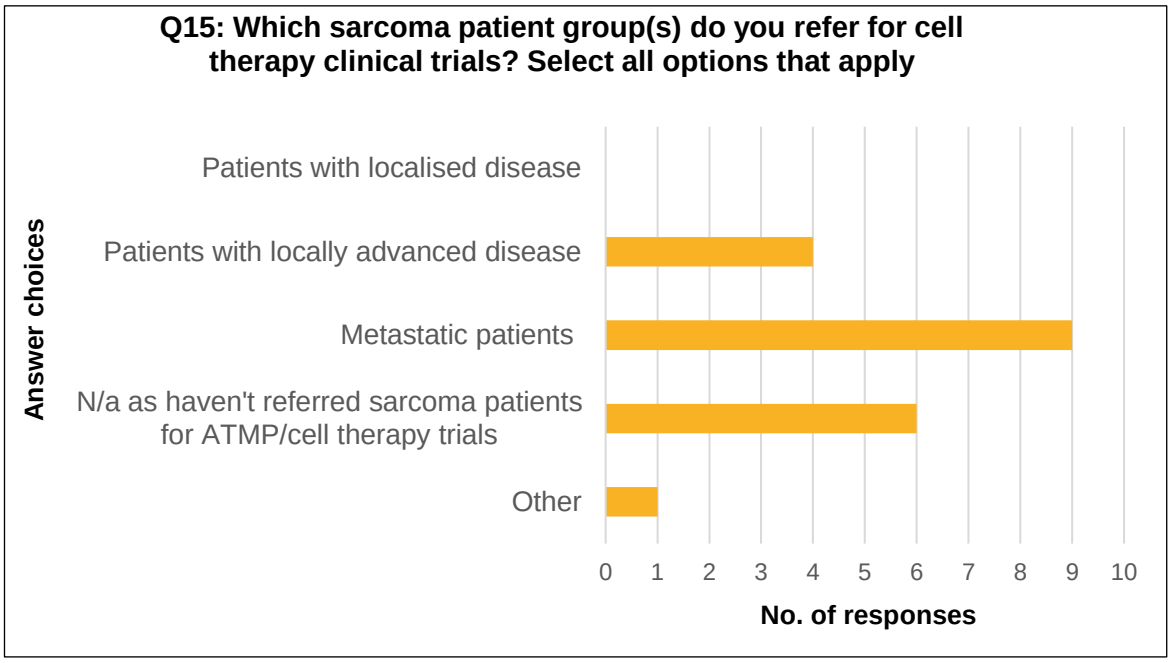
The most reported time point for referral was at relapse/recurrence after 1st line treatment, closely followed by after 2nd line treatment.

Key points:

- *Discussion: when the optimum time for patients to be referred for pre-screening?*
- *From anecdotal experience at The Christie site - referral shortly after starting 1st line treatment is an attractive time point for referral to accommodate pre-screening and the 'vein to vein' pathway (from leukapheresis to cell infusion).*

Survey Question 15:



Responders confirmed they refer mostly metastatic patients and patients with locally advanced disease, which is in line with the eligibility criteria for many early phase cell therapy trial protocols.

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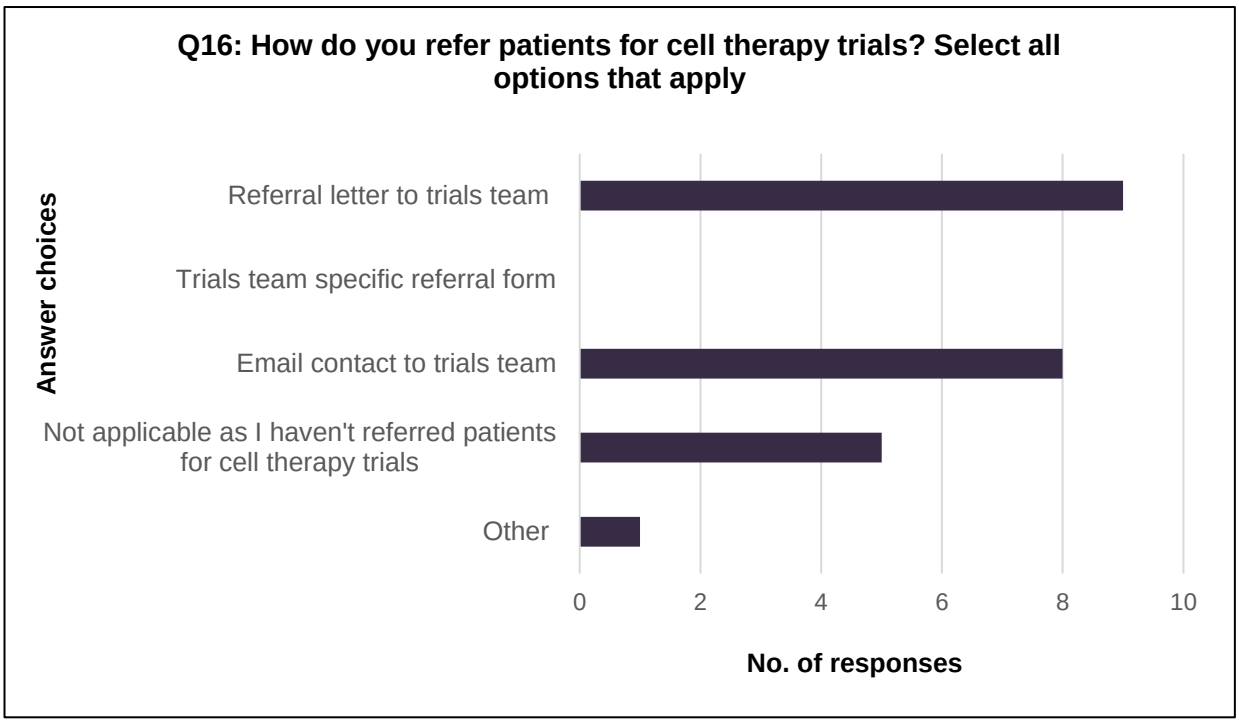
Survey Question 16:



Referral letter to the cell therapy trials team was the most cited referral method. One respondent stated *'we have trials open at our site'* under the *'other'* category. Email contact is also a popular method to discuss referrals.

Key points:

- *Use of referral letter and email is in-keeping with standard referral practices generally.*
- *Note that trials specific referral forms are for cell therapy study referrals are not currently being used by the clinicians surveyed.*

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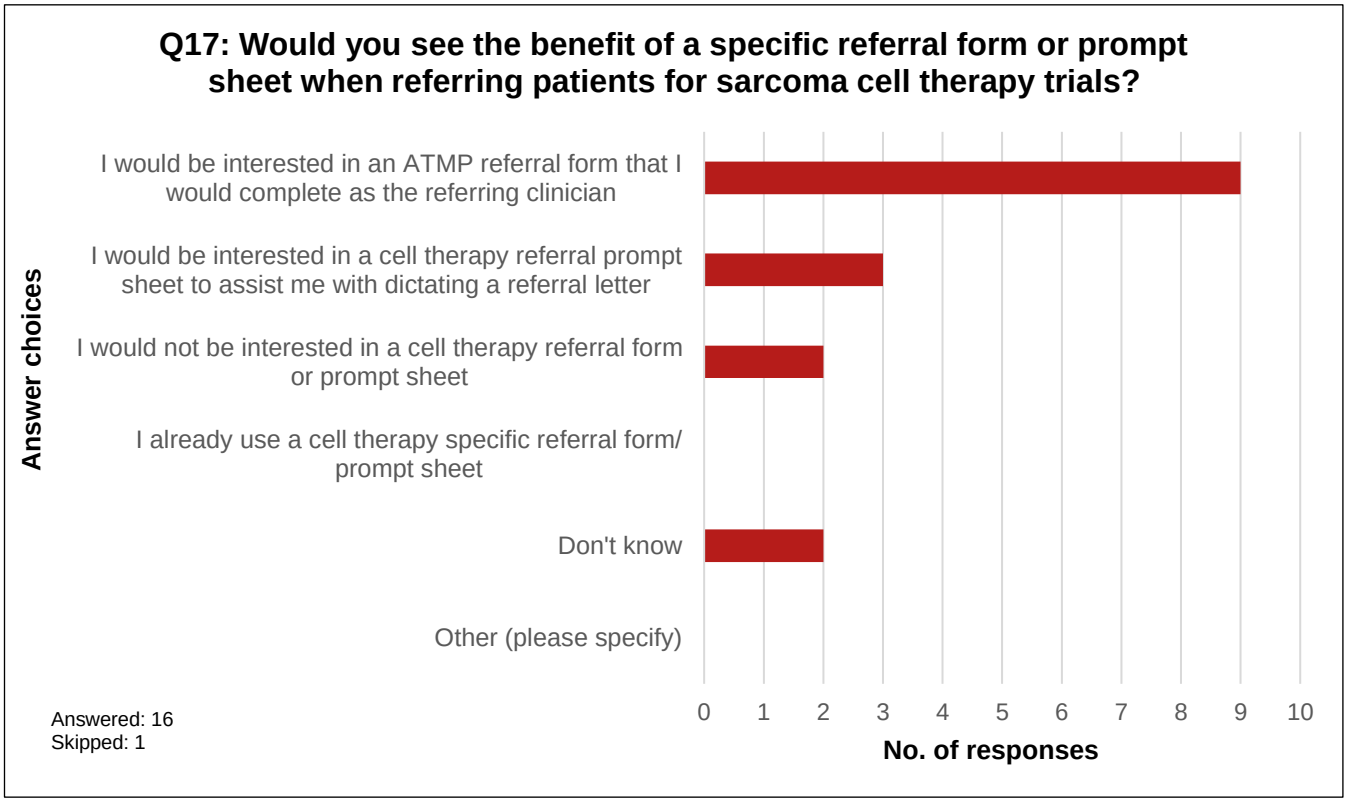
Survey Question 17:



(Note: The referral form/prompt sheet would be would ensure all relevant information is included in the referral letter to consider a patient for cell therapy trials (detailed history - no. of lines of treatment, performance status, previous toxicities, patient willingness to travel and an interest in participating in an intensive trial with apheresis, admission for chemotherapy/cell infusion etc.)

Most clinicians surveyed disclosed an interested in an ATMP referral form, with a few showing an interest in a prompt sheet to assist with referral letters. This question confirmed that no responders are currently using a cell therapy specific referral form or prompt sheet.

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Survey Question 18: Are any other ways you would like to be kept informed of sarcoma cell therapy or other ATMP trial options?

The responses have been grouped together according to their theme

Q18: Are there any other ways you would like to be kept informed of Sarcoma cell therapy or ATMP trial options?
Use of communication tools: ➢ WhatsApp group for clinicians to discuss patients and potential options
Updates to relevant websites/trial finder sites to ensure up to date trial information is available: • Cancer Research UK • Sarcoma UK • National Institute for Health Research (NIHR) • National Cancer Research Institute (NCRI)
Better use of regional websites ➢ i.e. Scottish Sarcoma Service network website
➢ Quarterly newsletter sent via email
➢ Virtual study event
➢ Updates via conferences such as the British Sarcoma Group (BSG)
➢ Other comments: *'What I think my patients need is clear timely frequent information about the open trials, with clear preferred time points of preferred referral and a clear pathway. Who, what, when, why and how.'*

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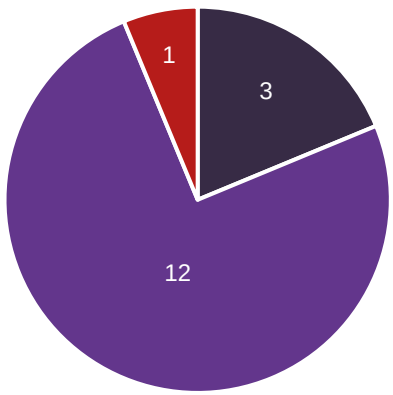
Key points:

- *Note that some of these methods in the table above are already being utilised to share cell therapy trial updates (i.e. trial finder websites and use of newsletter).*
- *Discussion point: Can any new methods be used based on the feedback above?*
- *Note – In March 2022, I [Jess Longland] delivered a talk at the British Sarcoma Group (BSG) National Sarcoma Forum on T-cell therapy clinical trials in Sarcoma.*
- *The AICT Research team at The Christie is hosting a 'Emerging Advanced Therapies in Soft Tissue Sarcoma' educational workshop event is being arranged by The Christie Advanced Immune and Cell Therapy on 21st September 2022.*

Survey Question 19:

Q19: After each patient is discussed at the sarcoma MDT and their treatment pathway is planned, are patients routinely re-discussed at your sarcoma MDT?



Answered: 16
Skipped: 1

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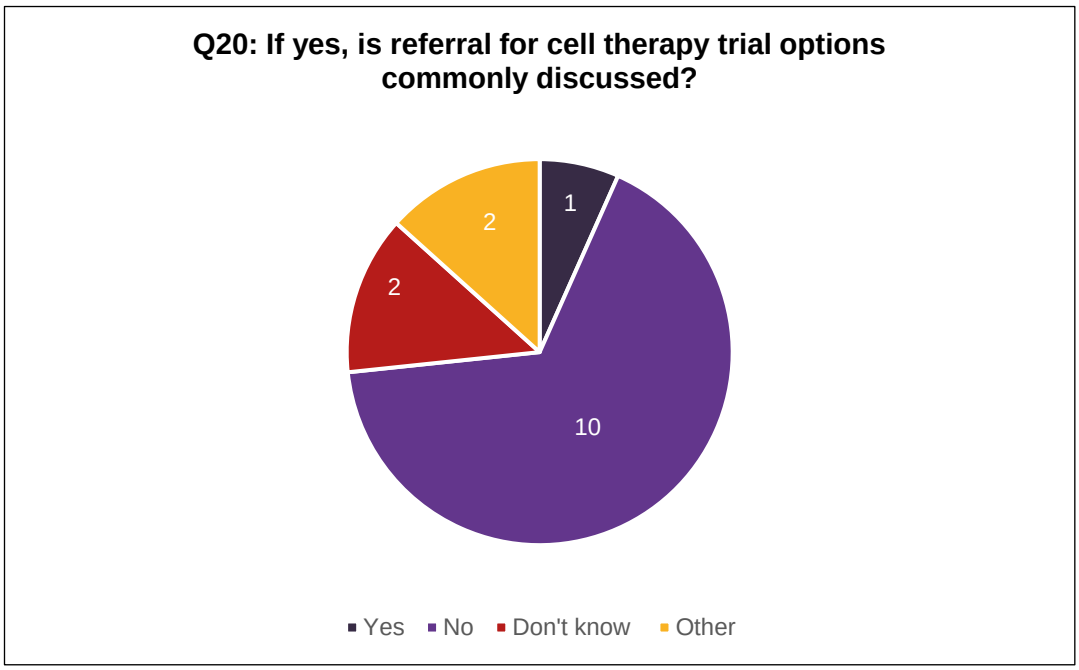
The Christie NHS NHS Foundation Trust

Q19 was asked for the purpose of background information. The results indicate that most patients are not re-discussed, although in practice this is likely to be on an ad hoc basis depending on a given patient's treatment pathway.

Survey Question 20:



In line with the responses to cell therapy trials not re-discussed as patients are not routinely re-discussed at the sarcoma MDT. Two 'other' responses were given:

- *'Not [discussed] in main MDT but [discussed] in weekly systemic therapy MDT*
- *'We don't have the full info to do so. We've asked.'*

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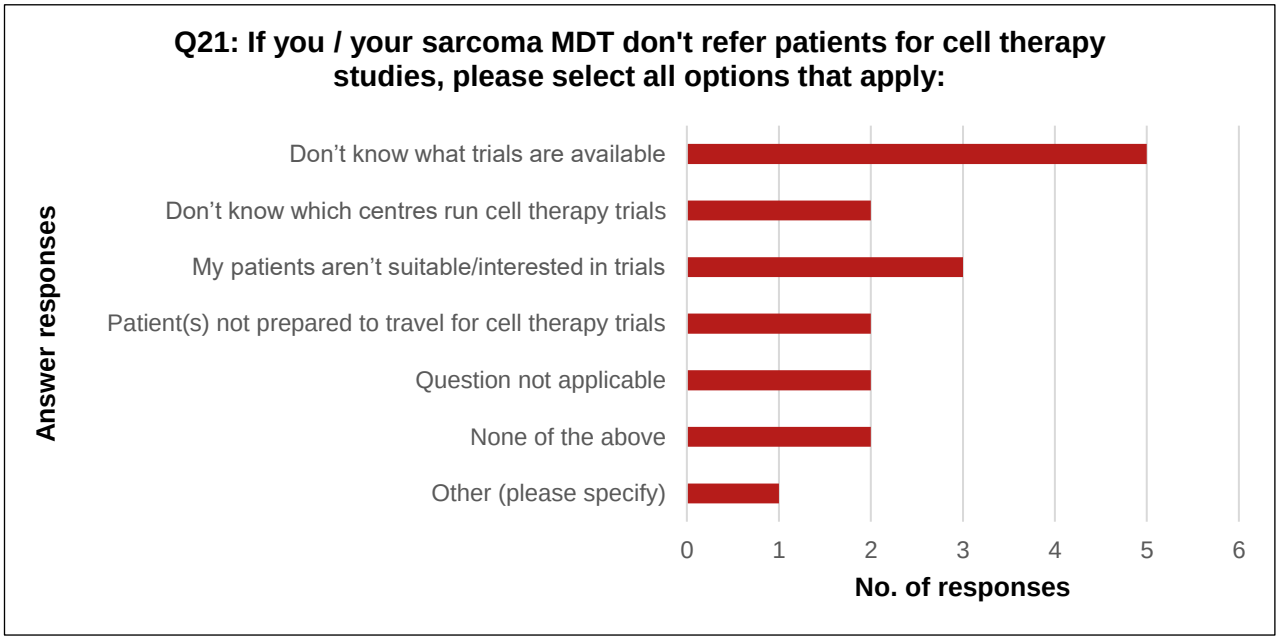
Discussion points:

- *Is their scope for discussions about cell therapy trial options to take place at the sarcoma MDT or is it more suitable for discussion at local MDT's? i.e. local systemic MDT*
- *Would discussion of cell therapy trials at specialist MDT's prompt sarcoma clinicians to discuss optimum times for eligible patients to be treated with cell therapy?*
    - *In turn, this may increase discussion around these therapies between sarcoma oncologists, their colleagues, and the wider MDT.*

Survey Question 21:



Not being aware of available cell therapy trials was the most common reason for patients not being referred. There was also identification of other barriers, such as lack of awareness of cell therapy sites with trials running, their patients not being interested in trial options and patients not prepared to travel.

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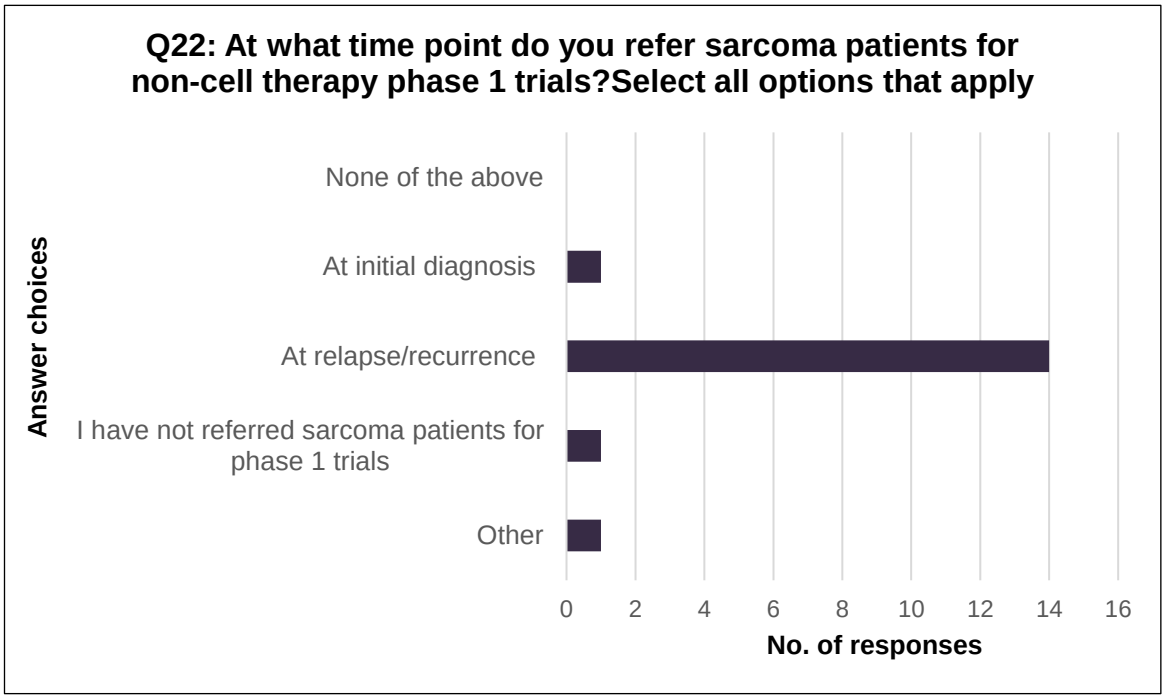
One respondent also stated: *'What the eligibility is and (from Scotland) needing to secure health Board of* residence *permission for funding - which would need to include info on the trial.'*

Key point:

- *The responses to question 21 highlight some key barriers when referring patients for cell therapy trials.*

Survey Questions 22 and 23:



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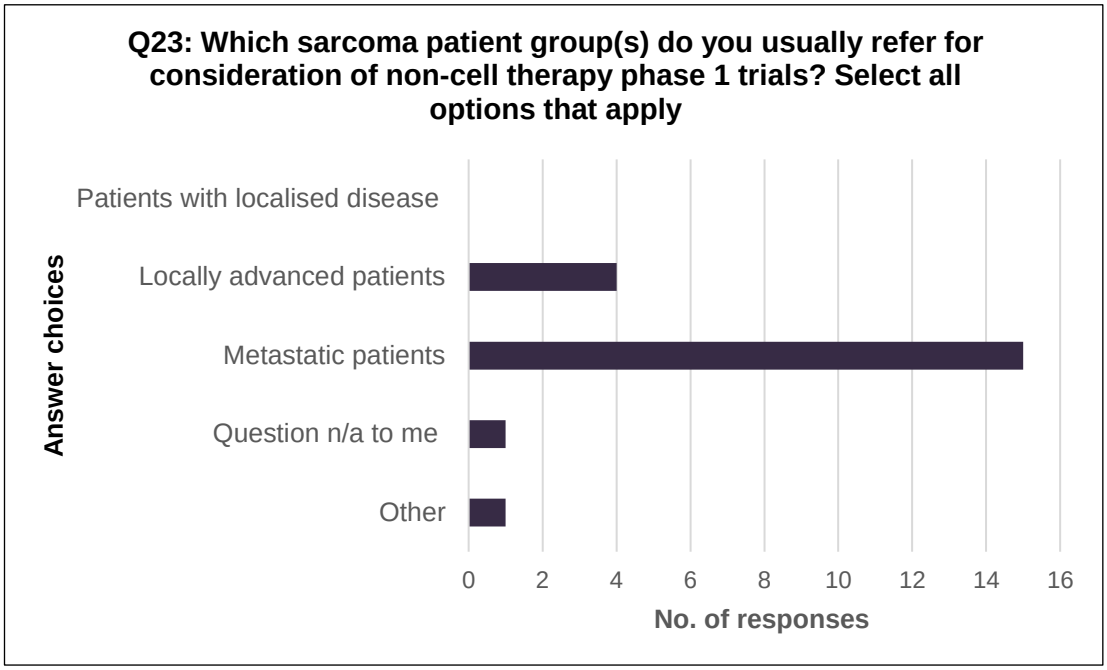
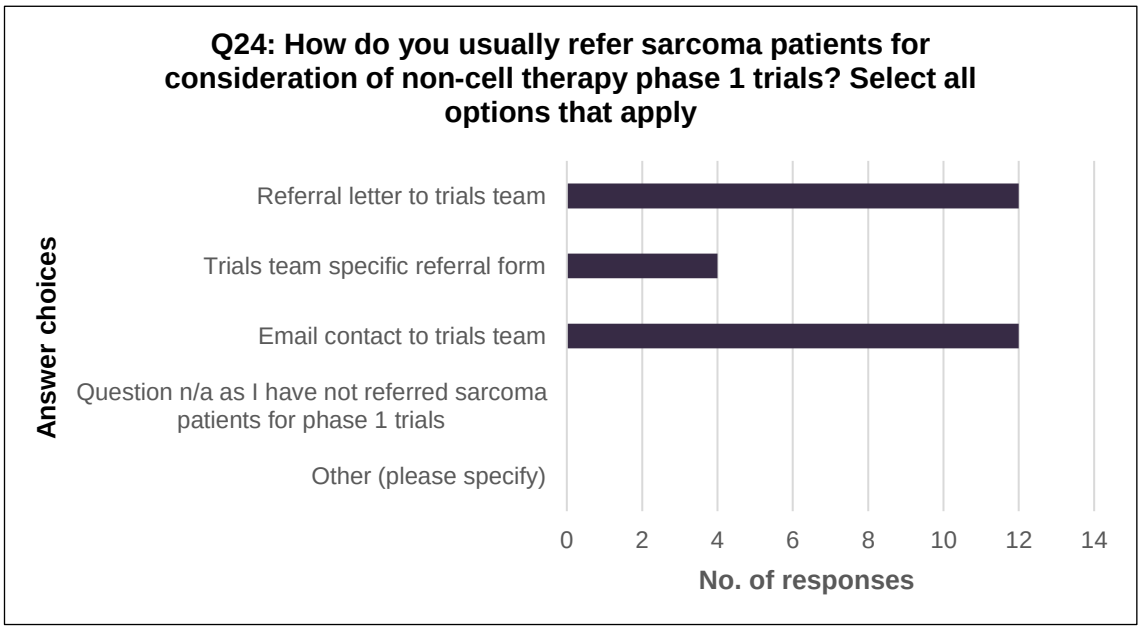


The most common timepoint for non-ATMP phase 1 referrals is at relapse/recurrence, with metastatic patients being the most frequently referred. This is in line with current referral practices for cell therapy trials.

Survey Question 24:



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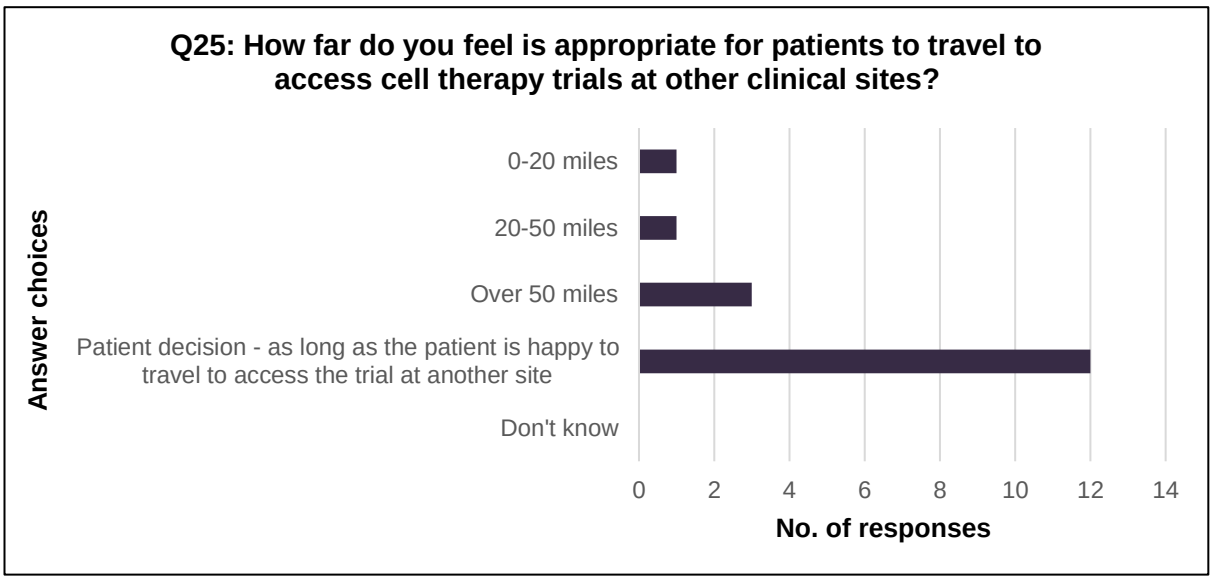
Key point:

- *The responses to question 21 highlight some key barriers when referring patients for cell therapy trials.*

Referral letter to trials team and email contact are the most common methods of referring patients for phase 1 trials. This is in line with cell therapy referral practices. Interestingly, two responders highlighted the use of a trial team specific referral form. This practice was not reported for cell therapy referrals.

Survey Question Q25:



(Note: To the best of our knowledge, there are currently two sarcoma cell therapy trials open to UK Manchester and London (at the time of writing the survey questions)).

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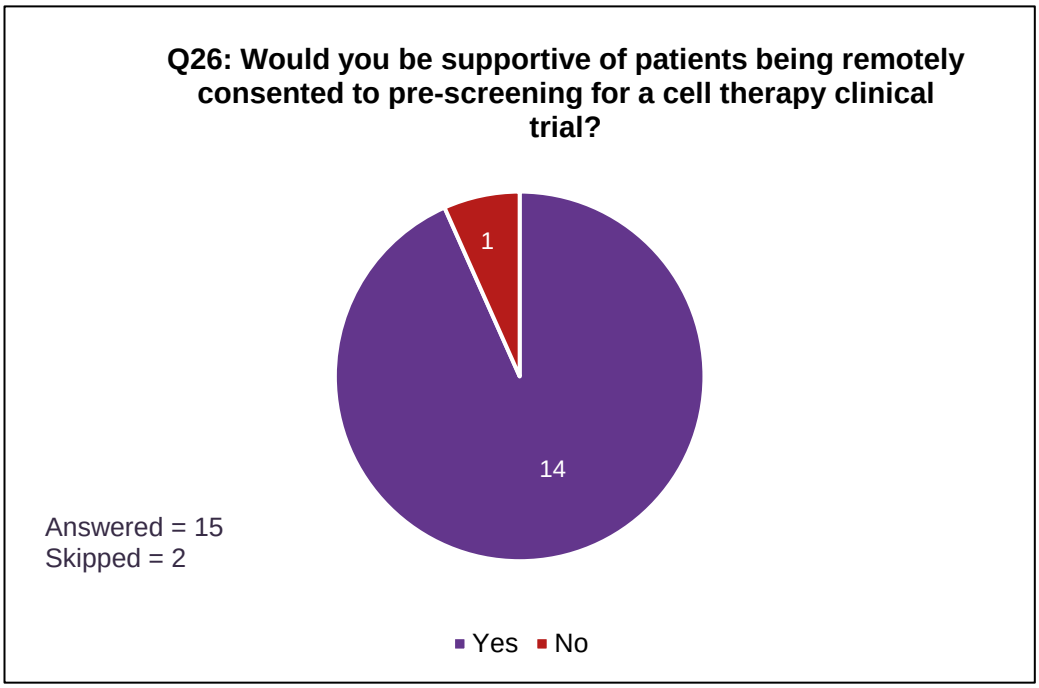
Most respondents felt that it was not their place to decide appropriate distances for patients to travel and that ultimately it is at the discretion of patients and if they are happy to travel to pursue trial treatment.

Key point:

- *Despite their intensive nature, cell therapy trials usually involve a 'one-off' cell treatment only with long-term follow-up post infusion.*

Survey Question 26:



(Note: A number of trial sponsors have allowed remote consenting for pre-screening. Subjects have been permitted to use home buccal swab kits instead of blood testing for initial HLA testing to speed up the pre-screening process and reduce footfall at clinical sites due to the COVID-19 pandemic).

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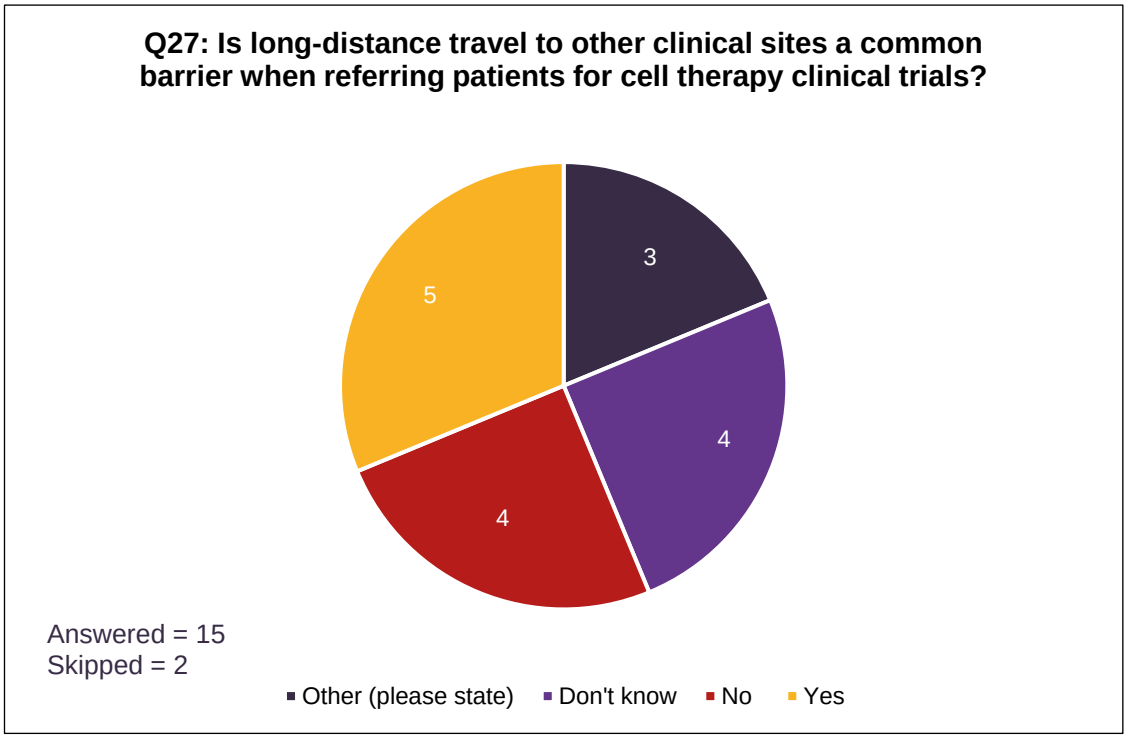
Nearly all respondents were in support of potential patients being consented remotely to pre-screening. Note that there may be certain situations where this practice is to be more likely employed (i.e. COVID restrictions) or other situations where travel to site is not possible.

Survey Question Q27:



This question was applicable to clinicians who currently refer sarcoma patients for cell therapy trials. The responses to this question were mixed. Long-distance travel was highlighted as a barrier when referring potential patients by 5 clinicians, however not all clinicians agreed. Three additional comments were provided by some responders:

Other comments from responders for Q27:

- *And funding, covid, physical challenges*

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- *[Long distance travel] is a potential barrier and any patient support to help this would be welcomed*
- *It depends on the trial - the benefit [of the trial], the time required in centre, the [individual] patient*

Survey Question 28: Please feel free to leave any further comments/feedback

Q28: Please feel free to leave any further comments/feedback
It's about information flow, both ways. Would be delighted to do more referrals with that in place.
I would love more education around this area

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Discussion

To my knowledge, this is the first project of its kind in this subject area to explore UK sarcoma cell therapy trial referral activity and to establish current referral routes, practices, and preferences of sarcoma oncologists. As such, the methodology for gathering and evaluating the data has been delivered as thoroughly as possible. Despite this, the findings of this survey cannot be considered absolute, only indicative, owing to the exploratory nature of the project. The results have been reported per respondent and are not representative of the sarcoma centre as whole given that some of the questions ask for individual referral practices and preferences.

Current awareness and cell therapy trial referral rates

Positively, the results indicate that there is a good level of awareness of cell therapy clinical trials amongst the sarcoma oncologists surveyed, with 81% of responders confirming awareness. Conversely, it was felt wider MDT members do not have awareness of available trials. It was found that patients are not routinely re-discussed at the sarcoma MDT and of the patients who are re-listed, cell therapy trials are not routinely discussed. This indicates a potential gap and triggers the discussion point - is there scope for discussions re: cell therapy options to take place at the sarcoma MDT or is this more suitable for local MDT's i.e. systemic MDT?

The survey also suggests that referral activity for sarcoma cell therapy trials is active, with over half (62%) reporting they had referred patients. Despite the referral activity and awareness, referral numbers remain small overall with an average of between 1-4 referrals per responder. This is to be expected, given the small number of patients within the sarcoma population who are both suitable for and interested in intensive ATMP trials.

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Knowledge of cell therapy trial options

Knowledge of cell therapy trials was mainly acquired by networking via professional connections, closely followed by sites have existing links with ECMT/ATTC sites. Moreover, responders (and sarcoma MDT's) with links to sites running cell therapy trials confirmed the principal reasons for referrals are an awareness of recruiting trials at that site and knowing investigator(s) at the clinical site. Collaboration with professionals is important for cell therapy trials, given that they are not available at many centres and generally reserved for early phase trial centres or centres with the specialist infrastructure to deliver them (Pillai *et al* 2020). This is even more pertinent to sarcoma cell therapy trials due to the rare nature of the patient group, meaning a small number of clinical sites have such studies open to recruitment.

Moreover, it is logical that if professional connections are already established, referring clinicians are more likely to initiate referral discussions about potential patients. Collaboration is necessary to facilitate referrals, ensure they are timely and appropriate to enable patient participation. This is supported by Brunetto *et al* (2011) and Fu *et al* (2013) who emphasised the importance of collaboration and regular communication between phase 1 trial centres and local centres for non-ATMP trials.

In addition to professional networks, the use of trial finder websites was also popular. Given that these resources are readily accessible, there is a need to ensure their contents is accurate and regularly updated to reflect any changes. In summary, awareness of cell therapy trials needs to increase amongst the sarcoma community to feed into the existing knowledge pool and maximise patient referrals.

Timepoint for patient referral

The most common time point for patient referral for consideration of cell therapy trials was at relapse or recurrence after first line treatment. Referral following first line treatment is favourable to allow adequate time for pre-screening, apheresis scheduling and product manufacture before treatment is required after standard of care lines. Although discussions as early as possible

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would be favoured, referral for pre-screening at diagnosis poses issues around whether it is appropriate to discuss phase 1 pre-screening options so early in the patient pathway. Patients are likely to have symptomatic disease and therefore it may be difficult for performance status to be assessed if patients are considered prior to first line systemic therapy. From anecdotal experience, referral during or after 2nd line treatment can be problematic if the patient has rapidly progressing disease. Moreover, scheduling apheresis during this time can be difficult, especially if patient counts are fluctuating on cytotoxic chemotherapy.
Ultimately, the most suitable time for referral may vary depending on the clinical case of the patient, however, there is still a broad discussion to be had on this area, especially if cell therapy treatments move into standard of care for sarcoma patients.

Method of patient referral

The survey results indicate sarcoma clinicians are utilising traditional methods to refer patients for cell therapy trials– standard referral letters with discussion via email in some cases. This was reflected in both cell therapy and general phase 1 trial referral practices. Interestingly, there was interest in an ATMP trials referral form to aid the referrals process. An ATMP prompt sheet was also of interest to some responders but to a lesser extent than the referral form. As stated within the survey question, the referral form/prompt sheet would ensure all relevant information is included in the referral letter to consider a patient for cell therapy trials: *(detailed history – number of previous treatment lines and treatment details, performance status, previous toxicities, patient willingness to travel and an interest in participating in an intensive trial with apheresis, admission for chemotherapy/cell infusion).* Use of a prompt sheet would ensure key referral details are communicated and reminds clinicians to discuss the general aspects of cell therapy trial enrolment ahead of referral, especially if patients live a distance away from the trial centre.

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Remote consent to pre-screening

One of survey questions highlighted that the consenting patient remotely to pre-screening has been utilised by some cell therapy trial sponsors to reduce patient travel and footfall on site during the COVID-19 pandemic. Within the context of TCR trials, consent to pre-screening is required to determine patient HLA and tumour antigen status to establish patient eligibility.

Consent for pre-screening has been conducted over the telephone and a home buccal swab testing kit sent to patients to confirm HLA status, instead of a blood draw in the first instance. Historically within clinical trials, remote consent process has been difficult to implement, however, use of this process has increased within the clinical research space given the impact of the COVID-19 pandemic. There was support for use of the remote consent process from the clinicians surveyed for cell therapy trial pre-screening. From anecdotal experience at our site, review of patients face-to-face from the outset is very important, given that suitability is highly dependent on performance status and patient interest in phase 1 trials in addition to pre-screening tests.

Barriers to referral

Not being aware of sarcoma cell therapy trial options and which sites are running the trials was one of the leading barriers for current non-refers. Potential reasons for this include the fact sarcoma cell therapy trials are run at a very select number clinical sites (not across all sarcoma specialist centres). This is because they are complex and require suitable infrastructure to support the patient pathway (i.e. from apheresis to lymphodepletion, cell infusion and beyond). In addition, patient numbers treated with these therapies are usually small, given that they are often HLA restricted and require positive tumour antigen expression.

Other barriers highlighted are more difficult to influence, such as patient's not being interested in trial participation and not being prepared to travel trial sites. As previously stated, the impact of a lack of referral activity is that not all potential patients are being referred for consideration of

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ATMP trial options which is significant given the rare nature of sarcoma and the need for clinical trial sponsors to recruit to specified targets. There is a need to maximise patient referrals, to identify the small sub-set of patients who are double positive on pre-screening (HLA and tumour antigen testing), medically fit enough to be enrolled and willing to comply with an intensive treatment and follow-up schedule.

Identifying gaps in sarcoma cell therapy trial referral routes/practices

The SWOT analysis below summarises the key strengths, weaknesses, opportunities, and threats in relation to current referral practices for sarcoma cell therapy clinical trials.

Table 2: SWOT analysis of current practices based on survey results

Strengths	**Weaknesses**
• Many sarcoma oncologists confirmed they are referring patients for cell therapy trials • Most sarcoma oncologists are aware of cell therapy trial options • Responders are interested in the field and are demonstrating engagement	• Not all sarcoma oncologists are aware of cell therapy trials and sites running them – **knowledge gap** • Not all sarcoma oncologists are referring patients meaning not all potential patients are being given the opportunity to participate. • Responders feel MDT colleagues are not aware of cell therapy trial options – **knowledge/communication gap** • Some barriers to referral identified by responders are difficult to mitigate (lack of patient interest in trials or travel to trial delivery sites).

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Opportunities	Threats
• Optimise cell therapy referral pathway/patient pathway and maximise number of patients referred for consideration • Increase knowledge and collaboration between sarcoma oncologists and wider sarcoma community • Improve quality of referrals - Interest in ATMP referral form / prompt sheet • Opportunity to discuss (with sarcoma professionals) the wider delivery of these treatments outside of clinical trials if these treatments were to move into the standard of care space in the future.	• There could be resistance to change or difficultly enacting changes (i.e. earlier patient referral, use of new referral form, integration of cell therapy trials into MDT) • Current clinical trials are closing to recruitment – need for further trials to open to maintain momentum of this work.

Despite the current level of cell therapy trial awareness and referral activity, the survey data has highlighted gaps in knowledge and communication - awareness of cell therapy trials is not universal amongst all clinicians and consequently, some clinicians who have not referred patients for these therapies. The knowledge gap is on an individual level for certain clinicians, with others feeling they are aware but colleagues and wider members of their MDT are not. This could indicate a lack of discussion amongst sarcoma professionals in this area. It is understandable that wider MDT colleagues may not be aware if sarcoma cell therapy trials are not being run directly at their clinical site. In turn, it would be anticipated that sarcoma cell therapy trials are not embedded into the patient pathway at these sites.

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On an internal level:

- Is their scope for discussions re: cell therapy options to take place at the sarcoma MDT or is this more suitable for local MDT's i.e. systemic MDT? The example patient pathway in the NHS England sarcoma service specification states that clinical trials options are discussed in the sarcoma MDT, however, findings from the survey indicate cell therapy trial options are not being discussed.
- This in turn would increase discussion generally around these therapies between sarcoma oncologists, their colleagues and the wider MDT in terms of optimum timepoint for pre-screening referral etc.

In addition to internal discussions within sarcoma MDT's, external communication between cell therapy trial sites and referring sarcoma teams is very important, as previously stated. To promote networking and open discussion in the field, The Christie Advanced Immune and Cell Therapy Research Team are hosted a virtual educational workshop – *'Emerging Advanced Therapies in Soft Tissue Sarcoma'* in September 2022 which aimed to promote learning and collaboration within the field of sarcoma T-cell therapy research. A summary of this meeting is included as an addendum at the end of this document (refer to page 55).

Ongoing communication is vital not only to maximise trial recruitment, but also to initiate UK wide discussions regarding the potential of cell therapies beyond the clinical trial space. It may be possible that these therapies may become licensed therapies in the future depending on trial efficacy and toxicity data. If so, it is important that sarcoma professionals and cell therapy colleagues to discuss the logistics of and map out a well-defined NHS pathway for wider delivery of sarcoma cell therapy trials. Several parallels can be drawn here between the sarcoma patient group eventually and the integration of the standard of care CAR-T patient pathway within the NHS for leukaemia and lymphoma indications, in terms of logistical factors and comparable patient numbers.

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Next steps

Based on the results of the survey, there are several outputs which have taken place/ or need to be taken forward for review and development, including:

- Delivery of virtual event *'Emerging Advanced Therapies in Soft Tissue Sarcoma'* which took place on Wednesday 21st September 2022 (hosted by The Christie NHS Foundation Trust and iMATCH and funded by Sarcoma UK). Refer to page 55 for a summary of this event.
    - The event included educational talks plus panel discussions: How can we ensure all potential patients have access to sarcoma cell therapy trials? Looking to the future - wider delivery of cell therapies for sarcoma.
- Establish which trial finder websites are most useful and relevant for sarcoma professionals to identify sarcoma cell therapy trials.
    - Key examples which were identified in the survey include the Sarcoma UK and CRUK websites. Note, the ECMC trial finder remains in beta testing and is only accessible to ECMC professionals currently, however, it is expected to be launched to the public in the future.
    - The AICT team to confirm that Cancer Research UK, Sarcoma UK and ECMC trial finders are up to date with relevant trial details and reflect that The Christie is a recruiting site
    - Link to most useful trial finder(s) to be sign-posted on relevant websites such as ATTC network and Scottish Sarcoma Network website (as highlighted by survey responses).
- Creation of an ATMP referral form and/or prompt sheet to be used alongside or as a replacement for traditional referral methods (letter and email discussion). A first draft will be created and circulated for review.

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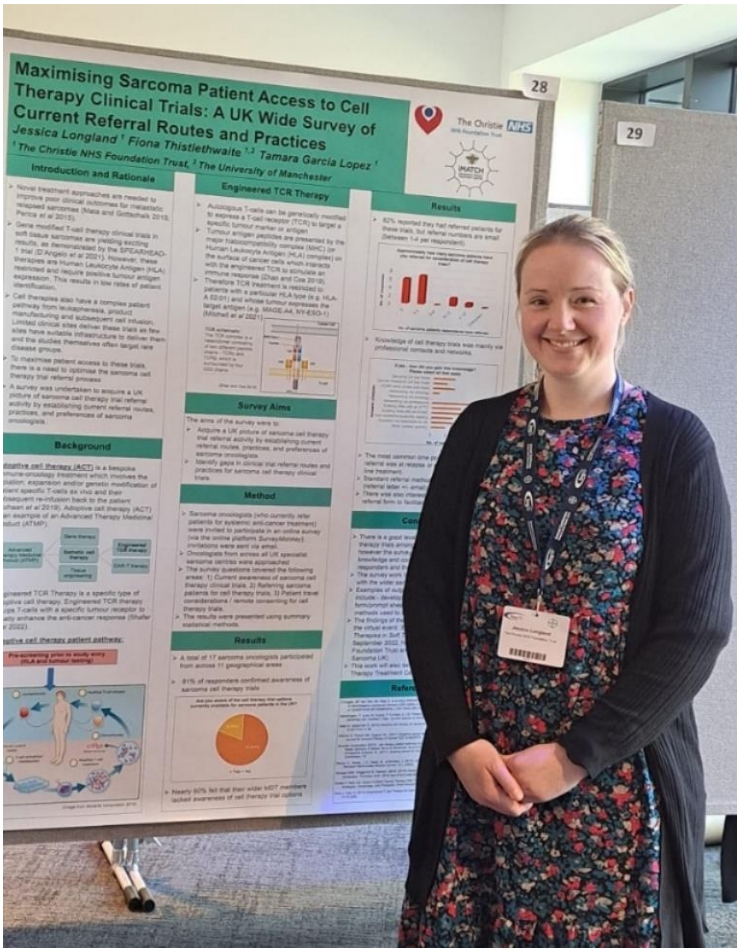
- The Christie's Advanced Immune and Cell Therapy team circulate a newsletter (internally and externally) which includes all trials in the team open to recruitment (including sarcoma studies).
    - Ensure this is up to date and circulated more widely to sarcoma clinicians included in the survey mailshot.
- Aim to disseminate the project report and findings within the ATTC network and the wider sarcoma community to promote best practice. Note that I gave a talk at the British Sarcoma Group (BSG) conference in March 2022 on T-cell therapy Clinical trials in sarcoma.



- *Update March 2023*:

I submitted an abstract to the British Sarcoma Group Conference which was accepted as a poster presentation. I attended the conference in March 2023 at the International Convention Centre (ICC) Wales. This was a great opportunity to showcase the sarcoma referrals project work and network with the wider sarcoma community.

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Addendum following the 'Emerging Advanced Therapies in Soft Tissue Sarcoma' virtual event:

An educational workshop exploring the landscape of cellular therapy clinical trials for healthcare professionals in the sarcoma field

The event was held virtually on Wednesday 21st September 2022 and was hosted by The Christie NHS Foundation Trust and iMATCH (funded by Sarcoma UK).

Overview of the sessions:

Session 1: *Soft tissue sarcoma*
Presentation by Dr Alex Lee (Consultant Medical Oncologist, The Christie NHS Foundation Trust)

Session 2: *T-cell therapies in solid tumours: science and background*
Presentation by Professor Fiona Thistlethwaite (Consultant Medical Oncologist, The Christie NHS Foundation Trust)

Session 3: *Delivering sarcoma cell therapy clinical trials at The Christie: Nursing experience*
Presentation by Jess Longland (Senior Clinical Research Nurse, The Christie NHS Foundation Trust)

Session 4: *UK referrals project for Sarcoma cell therapy clinical trials*
Presentation by Jess Longland Senior Clinical Research Nurse, The Christie NHS Foundation Trust)

Panel discussion 1: *How can we ensure all potential patients have access to sarcoma cell therapy trials?*

Panel Discussion 2: *Looking to the future - wider delivery of cell therapies for sarcoma*

Wrap up and close

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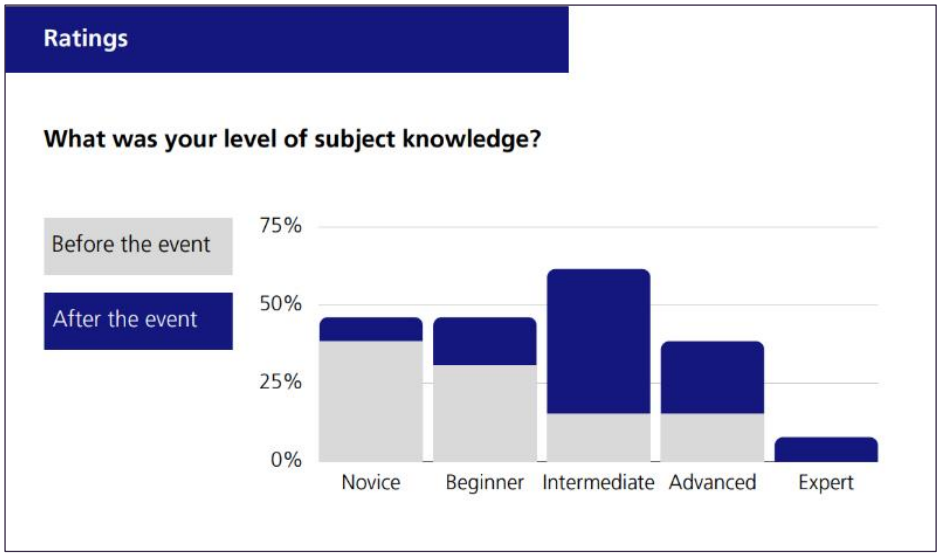
This one-day educational workshop aimed to enable sarcoma healthcare professionals to network, collaborate and increase their awareness and knowledge of T-cell therapy research. The event provided a mixture of educational talks in the current sarcoma landscape, T-cell therapies in sarcoma and showcased relevant project work in this field. The afternoon sessions prompted open discussions between nursing, medical and non-clinical professionals from NHS specialist centres and beyond, including: the implications of sarcoma cell therapy trials progressing to the standard of care space and how we can further maximise access to sarcoma cell therapy clinical trials (building on the existing sarcoma referrals/pathway exploration work done as part of this project).

Summary of event feedback:

- 43 delegates attended the event and 30% of attendees completed the feedback form.
- Mostly medical, surgical and nursing staff within the field of sarcoma were represented, plus some non-clinical staff. Feedback was received from clinical staff from specialist sarcoma centres across England, Wales and Scotland.
- Feedback on the talks and panel sessions was positive in terms of the quality and relevance of the content, with most being scored as either ‘good’ or ‘excellent’.

Screenshots have been included from the evaluation report and feature below:



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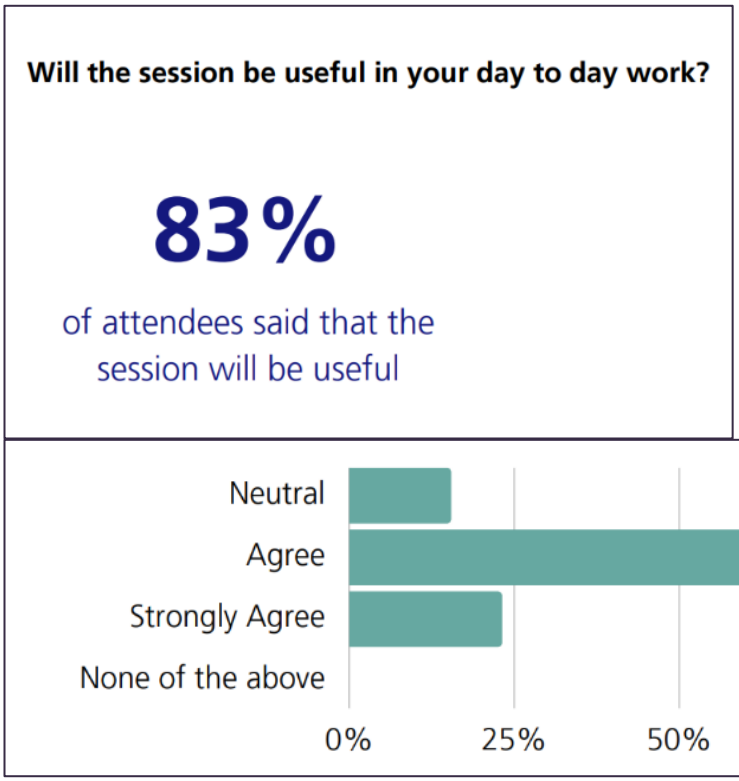

Other Comments from attendees:

Q) Do you have any ideas/would you be interested in future meetings like this?

- *Yes, I would be interested*
- *I would be interested in hearing about future developments*
- *I would always be happy to further my knowledge on ATMPs - would be good to gain more knowledge from a nursing perspective*
- *So interesting, exploring subjects I am not overly familiar with - more of the same please.*

Q) Use this box for any further comments you would like to make about the education meeting?

- *Very enjoyable meeting with talks pitched appropriately for different levels of experience*
- *Well organised with a good breath of speakers; and highly educational in a rapidly developing field*
- *You may want to share this work at a session at British Sarcoma group*

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