



**Scottish
Ambulance
Service**

Working in Partnership with Universities

**MACMILLAN
CANCER SUPPORT**

Macmillan Palliative & End of Life Care Programme Evaluation Report

A PARTNERSHIP TO IMPROVE PALLIATIVE AND END OF LIFE CARE
DELIVERY BY THE SCOTTISH AMBULANCE SERVICE

Contents

Foreword.....	2
Executive Summary.....	2
1. Introduction and Background	4
2. Strategic Context.....	5
3. Service Reach and Activity	6
4. Education and Workforce Development	7
5. Alternative Pathways and Clinical Impact.....	8
6. Just in Case Medications Workstream	10
7. Patient, Carer and Staff Experience.....	12
8. Digital Developments and Next Steps	14
9. Health Economic Impact	15
10. Lessons Learned and Recommendations	16
11. Conclusion and Next Steps	17
Next Steps.....	18

Foreword

On behalf of the Scottish Ambulance Service (SAS), we wish to express our gratitude to Macmillan Cancer Support for their outstanding partnership and considerable investment in the Palliative and End of Life Care (PEoLC) programme. This collaborative effort has been instrumental in driving innovation, facilitating learning, and effecting meaningful change in the way we care for individuals at some of the most crucial and sensitive times in their lives.

Thanks to Macmillan’s foresight and steadfast commitment, the Scottish Ambulance Service has been able to introduce new clinical pathways, further develop the skills and confidence of our workforce, and foster stronger relationships across health, social care, and third-sector organisations. These advances have ensured that our clinicians are better prepared and that our partnerships are more effective, collectively enhancing the quality of care provided.

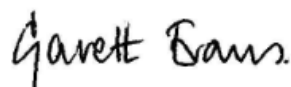
The successes described in this report are the direct result of a shared dedication among our clinicians, the SAS Macmillan PEoLC Team, and an extensive network of partners. Our united aim is to pledge that patients receive care that is timely, appropriate, and aligned with their preferences, ensuring that they are supported in the right place, at the right time, and according to their wishes.

We are deeply appreciative of all that has been achieved through this partnership and extend our sincere thanks to Macmillan for their trust and ongoing support. Their contribution has enabled us to deliver lasting positive outcomes for patients, families, and communities across Scotland.



Scott Mackinnon

Macmillan Partnership Programme Lead
National Clinical Directorate



Dr. Gareth Evans

Chair, Macmillan Strategic Steering Group

Executive Summary

Since its inception in 2019, the SAS Macmillan PEOLC partnership has transformed the way palliative and end-of-life care is delivered in the pre-hospital setting. Initially piloted in NHS Forth Valley, the programme expanded nationally in 2022 with the creation of the SAS Macmillan PEOLC Team, fully funded by Macmillan until March 2025. Its central aim has been to improve outcomes for patients with advanced illness, reduce unnecessary hospital admissions, and equip clinicians with the confidence and competence to manage complex end-of-life scenarios.

Over the course of the programme, thirty alternative care pathways have been developed, providing clinicians with a range of options that avoid Emergency Department (ED) attendance, such as direct hospice admissions and referral to specialist helplines. These pathways have contributed to a measurable reduction in avoidable conveyances, with approximately 1,600 fewer patients taken to hospital in 2023 compared to 2022. Education has been a core strand of the programme, with more than 4,400 SAS staff receiving formal palliative care training, and new materials embedded in Technician, Paramedic, and induction programmes.

The team has also led a notable change in practice by making SAS the first ambulance service in the UK to enable non-registered clinicians to administer subcutaneous Just in Case (JIC) medications, improving access to timely symptom control for patients, particularly in rural and remote areas. Patient and carer feedback demonstrates the impact of these changes, with 88 per cent rating SAS care as “Good” or “Excellent” in a national survey. A health economic analysis indicates that these clinical and operational improvements have delivered substantial system-wide value, with estimated cost avoidance to the wider health service of between £3.6 million and £5.6 million through reduced ED attendances and admissions.

The SAS Macmillan PEOLC Team has demonstrated its value through impactful contributions to the prehospital care setting, fostering recognition from Health and Social Care partners, hospices, and third-sector organisations. The model's success catalysed widespread support for its continuation, as evidenced by endorsements from the Scottish Hospice Leadership Group and other key stakeholders directly to the SAS Chief Executive.

In addition to this, the SAS Macmillan PEOLC Team were announced as the winners of the ‘Top Team Award’ at the 2024 Scottish Health Awards, standing out among over two

hundred nominations in this highly competitive category. The Cabinet Secretary for Health and Social Care presented the award, and support was also acknowledged by the Minister for Public Health and Women's Health, further emphasising the significance of this achievement. This prestigious recognition highlights not only the team's dedication and exceptional work but also the widespread acknowledgment of their impact across healthcare in Scotland. The success reflects the team's enthusiasm, commitment, and the vital role they play in delivering high-quality pre-hospital palliative care, underpinned by the wider support, leadership, and collaboration across the Scottish Ambulance Service that have enabled the team to thrive and deliver lasting impact.

Projected demographic trends, including a predicted 13.6 per cent rise in annual deaths for people with palliative care needs by 2040 and an increase in the proportion of people dying with multimorbidity, underscore the need for a sustainable model (Finucane et al., 2021). This evaluation presents the evidence, impact, and lessons learned from the partnership, providing a clear case for maintaining and further developing the approach.

1. Introduction and Background

The Scottish Ambulance Service plays a critical role in supporting patients who have expressed a preference to remain at home or in their chosen place of care at the end of life. In 2019, SAS partnered with Macmillan Cancer Support to explore new ways of improving care for patients with palliative and end-of-life care needs, particularly in the pre-hospital setting. The initial pilot, delivered in NHS Forth Valley, served as a proof of concept, testing whether a dedicated team could enhance clinician confidence, reduce avoidable hospital admissions, and strengthen links with community-based care.

Building on early success, Macmillan fully funded the establishment of a national SAS Macmillan PEOLC team in April 2022. The team was assigned responsibility for providing tailored education to SAS clinicians, collaborating with health and social care partners to develop alternative pathways, and implementing a comprehensive system-wide approach that acknowledges the vital contribution of SAS clinicians to high-quality palliative care delivery. This work has been informed by evidence on population need. Research by Finucane et al. (2021) indicates that deaths in Scotland will increase by 13.6 per cent between 2017 and 2040 for people with palliative care needs, and that between 74 and 95 per cent of people who die could benefit from a palliative care approach. The greatest increases are expected in deaths from dementia (up 185 per cent) and cancer (up 21 per cent), alongside an 82 per cent rise in the number of people dying with multimorbidity.

Against this backdrop, the PEOLC programme was designed to prepare SAS for rising demand, to ensure that patients receive timely and appropriate care in line with their wishes, and to reduce avoidable hospital attendances and admissions.

2. Strategic Context

The vision and mission of the Scottish Ambulance Service 2030 Strategy is outlined below:

Our Vision: Saving more lives, reducing inequalities, improving health and wellbeing

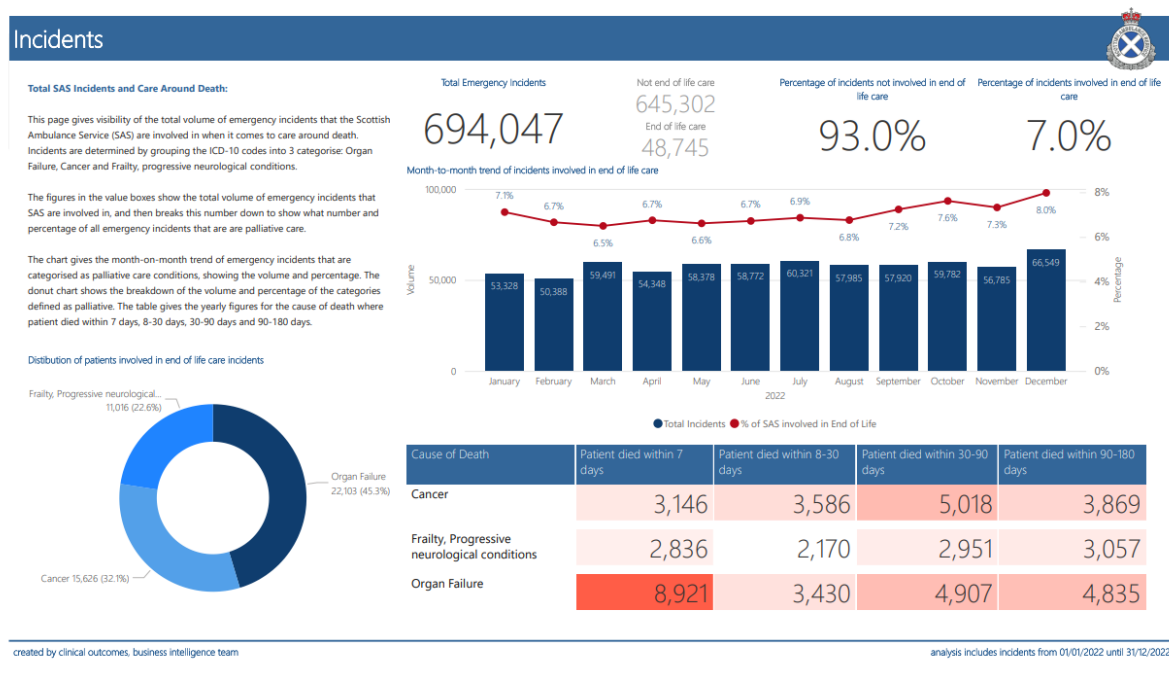
Our Mission: Working together with the people of Scotland, our staff and partners to deliver sustainable and effective care, experience and treatment, anticipating needs and preventing ill health

The PEoLC programme aligns directly with the ambitions of the SAS 2030 Strategy and with national health policy priorities. It contributes to the strategic goal of shifting the balance of care away from acute hospitals towards people’s homes and local communities, improving patient experience and avoiding unnecessary hospital admissions. The programme also supports the national commitment to deliver “right care, right place, right time” and to anticipate and respond to patient needs as quickly and safely as possible.

Through the partnership, SAS has gained a stronger voice in national policy and strategy development. The team has played an active role in the Scottish Partnership for Palliative Care, the Cross-Party Group on Palliative Care in the Scottish Parliament, and the Paediatric End of Life Care Network. It has contributed to the development of the Scottish Government’s draft *Palliative Care Strategy: Palliative Care Matters for All* and has been involved in policy initiatives relating to care homes, and the review of national palliative care guidelines. This engagement ensures that the unique perspective of pre-hospital care is represented in decisions that shape the wider system.

3. Service Reach and Activity

Demand for palliative and end-of-life care within SAS operations is significant and increasing. Analysis carried out by the SAS Business Intelligence team showed that from January to December 2023 SAS received a total of 684,881 emergency calls of which almost 20% of these calls related to patients who had palliative care considerations to be understood and managed in the context of their acute presentation to SAS. This is based on the ICD 10 codes relating to palliative care as outlined below and putting this into perspective equalled a total of 136,811 calls. This is a slight increase (1%) on January to December 2022 where SAS received 694,047 emergency calls of which 134,633 were for palliative care needs. Further to this, it is evident that end of life care demand to SAS (where the patient subsequently dies within 6 months of call) over the last three years accounts for approximately 7% of the annual emergency demand- equating to approximately 50,000 incidents each year.



The End-of-Life data model identifies all deaths recorded within the Unscheduled Care Datamart (UCD) and links these to patients who had an ambulance incident within 90 days prior to death. This dataset is then filtered using ICD-10 codes to include only those with a palliative care condition. The codes applied, as recommended by the Scottish Government (Finucane et al., 2021), strengthen the validity of identifying patients requiring palliative care. For analysis, these codes are grouped into three categories:

1. Cancer
2. Organ Failure and Frailty
3. Progressive Neurological Conditions

The Current Patients data model captures all hospital incidents within the past year where a patient has been diagnosed with a palliative care condition, using the same ICD-10 code set as above. This is then linked with Scottish Ambulance Service (SAS) data to determine whether these patients had any ambulance involvement within the same year.

The key distinction between the two models is their orientation: the End-of-Life model begins with the date of death and looks retrospectively, whereas the Current Patients model focuses on patients currently diagnosed with a palliative care condition and examines subsequent engagement with the ambulance service.

The SAS Macmillan PEoLC team has worked with all 14 territorial Health Boards and 31 Health and Social Care Partnerships to expand access to alternatives to ED admission. Engagement has extended to 17 adult hospices, 2 children’s hospices, and multiple third-sector organisations. This collaborative approach has enabled the development and implementation of 30 alternative pathways tailored to local contexts, giving clinicians practical options for keeping patients in their preferred place of care whenever clinically appropriate.

4. Education and Workforce Development

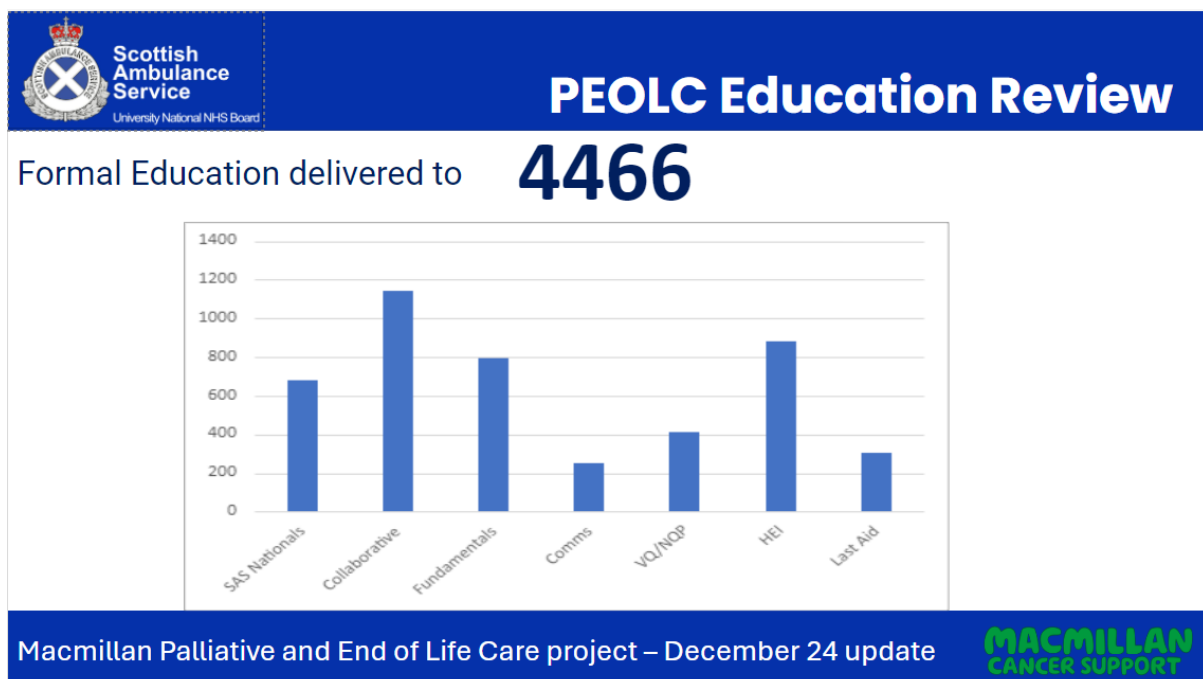
Education has been a cornerstone of the PEoLC programme, aimed at embedding palliative and end-of-life care knowledge and skills across the SAS workforce. The team has designed and delivered bespoke continuing professional development (CPD) sessions covering symptom control, communication skills, and the fundamentals of palliative care. Training has been incorporated into the Technician Vocational Qualification programme, the Newly Qualified Paramedic induction, and Advanced Practice education.

In addition, the team has introduced the *Last Aid* course to SAS, offering accessible, community-focused training on basic palliative care and end-of-life issues to both clinical and non-clinical staff. This initiative has helped to normalise conversations about death and dying within the organisation and to provide practical skills for supporting patients and their families.

Collaboration with Scotland’s Higher Education Institutions has ensured that all BSc Paramedic Practice students receive dedicated PEoLC input, with further sessions requested for 2025 and beyond. The development of seven bespoke e-learning modules on the TURAS platform covering topics from recognising dying patients to managing death in the community has provided additional flexibility for learning. To date, approximately 1000 staff have completed these modules as part of their CPD.

By December 2024, more than 4,400 SAS staff had received formal palliative care education through the programme. Feedback demonstrates that this training has strengthened

clinician confidence in managing end-of-life care in the community. As a result, patients are increasingly able to remain in their home or preferred place of care, experiencing care that respects their wishes, maintains familiarity and comfort, and provides continuity of support. This has improved both patient and family experience, while also contributing to a reduction in avoidable hospital conveyances, ensuring that care is both person-centred and efficient. The investment in education and workforce development described above has been pivotal in creating the conditions for change within the Scottish Ambulance Service. Clinicians who are confident in their skills are better equipped to make informed decisions that prioritise patient choice and align with best practice. This has provided the foundation for one of the programme’s most significant achievements: the design and implementation of alternative pathways that allow patients to be treated in the most appropriate setting for their needs, without defaulting to Emergency Department (ED) attendance and potential admission.

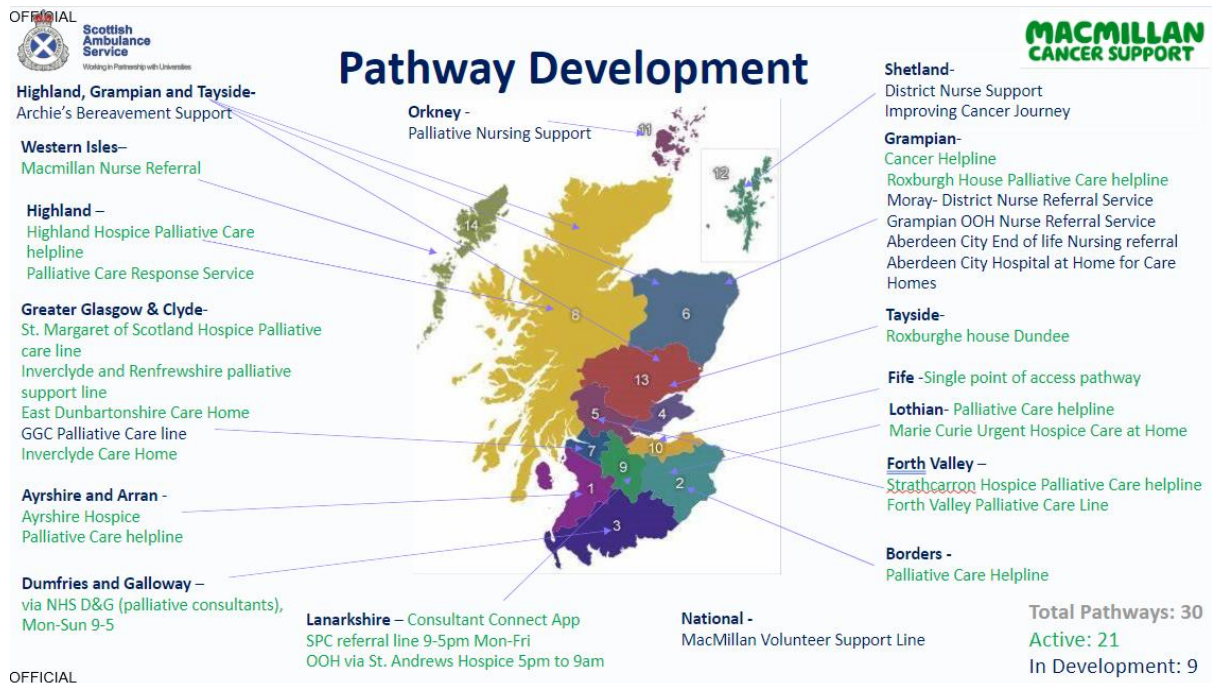


5. Alternative Pathways and Clinical Impact

A central focus of the SAS Macmillan PEoLC programme has been the development and implementation of alternative clinical pathways to ensure that patients with advanced illness can access timely, person-centred care at home or their preferred place of care. These pathways have been designed in collaboration with health boards, Health and Social Care Partnerships, hospices, and third-sector organisations, with the aim of delivering care that reflects patient preferences and helping to alleviate pressure on acute services.

Since the national roll-out in 2022, the team has worked across all 14 territorial health boards and 31 Health and Social Care Partnerships to establish thirty distinct alternative pathways to ED admission. These include direct referral routes to hospice care, specialist

palliative care teams, community nursing services, and dedicated helplines such as Macmillan Cancer Support’s volunteer support service. Each pathway has been tailored to reflect local service availability, geography, and population needs, ensuring that clinicians are provided with realistic and workable alternatives during their shifts.



The clinical impact of these pathways is evident in SAS operational data. Between January and December 2023, there was a reduction of approximately 1,600 avoidable hospital conveyances compared with the previous year. This equates to around 15,000 patients who, once assessed and stabilised, were able to remain in their home or preferred place of care rather than being transported to an ED. The decision to keep a patient at home is not taken lightly and relies on the clinician’s assessment of safety, available community support, and the patient’s expressed wishes — a process that is now consistently supported by the availability of alternative referral options.

Qualitative feedback from frontline crews indicates that the presence of these pathways has transformed clinical decision-making. Crews report increased confidence in discussing care options with patients and families, particularly in sensitive situations where a hospital transfer might not be in the patient’s best interests. This is reinforced by feedback from partner organisations, who have noted that earlier engagement by SAS clinicians — supported by these pathways — has improved continuity of care and reduced the likelihood of emergency re-admissions.

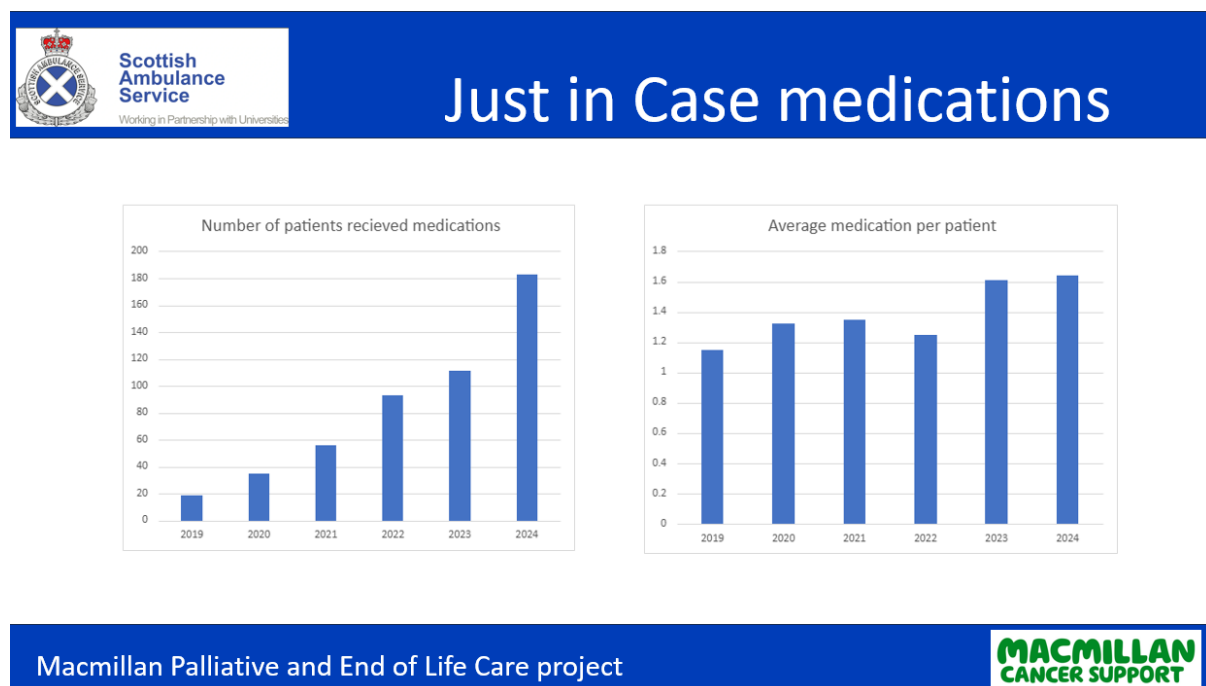
The success of the alternative pathways workstream lies not only in the quantitative reductions in ED admissions, but also in the qualitative improvements to patient and family experience. By enabling patients to remain in familiar surroundings, cared for by people they know, the pathways have contributed to a more compassionate and dignified approach to the final stages of life.

However, pathways alone are not enough to achieve this aim. Timely access to appropriate symptom control is essential for maintaining comfort and dignity, particularly in the final stages of life. Recognising this, the SAS Macmillan PEOLC Team has driven a major national change in the way Just in Case (JIC) medications are accessed and administered in the pre-hospital environment.

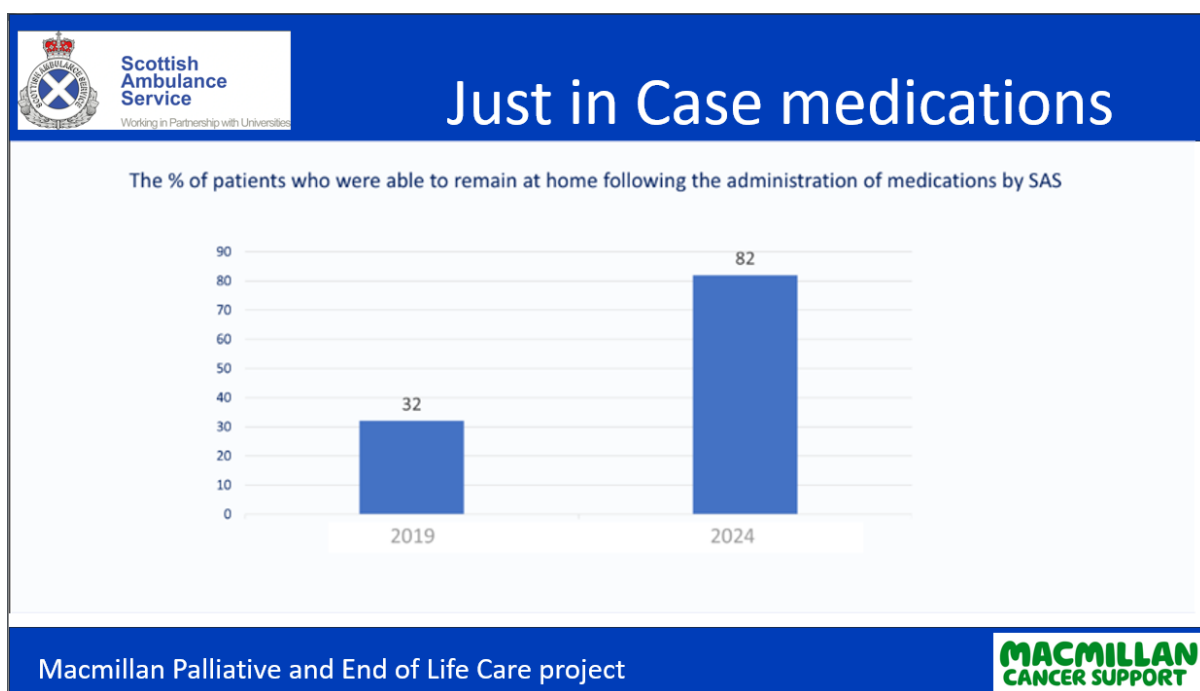
6. Just in Case Medications Workstream

The ability to deliver timely symptom relief is a cornerstone of high-quality palliative and end-of-life care. Before the introduction of this workstream, SAS clinicians faced significant barriers to administering JIC medications, which are prescribed in anticipation of a patient’s potential needs at the end of life. While Paramedics could administer SAS stock morphine and a patient’s own prescribed JIC medication they were unable to use SAS stock Midazolam. Technicians, meanwhile, could not administer any JIC medications, even if these were prescribed and available in the patient’s home.

To address this inequity, the SAS Macmillan team worked with national clinical governance structures to revise guidelines and expand the scope of practice. These changes positioned SAS as the first UK ambulance service to permit non-registered clinicians to deliver subcutaneous JIC medications. In addition, a new national guideline now enables Paramedics to utilise SAS stock Midazolam for end-of-life symptom control. This reform has significantly enhanced the ability of clinicians to manage pain, agitation, and distress in a timely and effective manner, particularly in remote and rural areas where alternative care may be hours away.



Data illustrates the impact of these changes. From April 2022 — when the SAS Macmillan PEOLC Team began operating nationally — there has been a marked increase in the number of JIC administrations. In 2021, 56 individual patients received JIC medications from SAS clinicians, with a total of 72 medications administered (1.3 per patient). By December 2024, this had risen to 183 individual patients and 294 medications (1.6 per patient). This growth reflects both increased access to appropriate medications and improved clinician confidence resulting from targeted education.



The benefits extend beyond numbers. Audits show that in 2019, approximately 30 per cent of patients who received JIC medications from SAS were able to remain at home. By 2024, this figure had risen to over 80 per cent, representing a significant shift towards delivering care in the preferred place of death – a key objective of the programme. Clinicians report that the guideline changes have removed a major barrier to delivering compassionate, effective care, while patients and families have expressed relief at being able to avoid distressing transfers to hospital purely for symptom control.

7. Patient, Carer and Staff Experience

Quantitative data tells only part of the story. The programme has placed equal emphasis on capturing the experiences of patients, carers, and staff to build a comprehensive picture of impact. Feedback has been gathered through surveys, debriefs, and ongoing dialogue with partner organisations.

A national carer survey conducted as part of the Macmillan Strategic Steering Group found that 82 per cent of respondents had experienced an ambulance attendance for their family member with palliative care needs. Of these, 88 per cent rated the care provided by SAS as “Good” or “Excellent”, and 87 per cent reported that clinicians mostly always explained what was happening during the interaction. Respondents highlighted the value of SAS clinicians being able to:

- Administer medication for symptom relief.
- Contact other health professionals to coordinate care.
- Support the patient to remain at home when appropriate.

Staff feedback reveals a similar pattern of positive change. Clinicians consistently describe increased confidence in recognising the dying phase, managing complex symptoms, and initiating sensitive conversations with patients and families. Many attribute this to the education provided by the SAS–Macmillan team and the availability of practical tools such as the care home aide-memoire. Importantly, staff also note the positive effect on their own wellbeing, as being able to deliver appropriate, person-centred care reduces the moral distress associated with unnecessary hospital transfers.

Partner organisations have echoed these sentiments, noting that earlier and more informed engagement from SAS crews has improved continuity of care and strengthened collaborative working. Hospices and community nursing teams report that referrals from SAS are now more appropriate, timely, and accompanied by clearer clinical information. This has facilitated smoother transitions and reduced duplication of effort in care planning.

Overall, the qualitative evidence demonstrates that the programme has not only improved clinical outcomes but has also enriched the experience of care for patients and families, while enhancing professional satisfaction and interagency trust.

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FOCUS ON PROFESSIONAL FEEDBACK

I feel it was 100% the correct call by the crew. A great example of how SAS crews can make these judgements and joined up working with the hospices.
St Columbus Hospice

I would like to express our extreme gratitude in facilitating an emergency transfer of our new patient this evening. From the call handler through to the paramedics, the care and compassion shown to our new patient was exemplary. These are challenging times and it's nice to be appreciated for all the hard work you are all doing. Keep up the great work!
Kilbride Hospice

The patient's husband was effusive in his praise for two SAS teams who saw his wife over the weekend. He said that they were so very helpful, professional and supportive.
Jo, Palliative Consultant

Our community CNS shared how fantastic a crew were who were at a patient's home when she was there with the DN team last week. They went above and beyond to make sure a patient was comfortable.
Gill, Palliative Consultant

One of our palliative patients died unexpectedly. The husband called DNs and paramedics. The paramedics stayed with the patient's husband and arranged for support for the husband, cancelled the POC and arranged the undertakers. Allowing myself and Claire to attend to last offices and provide emotional support to the next of kin. Both paramedics were amazing and also worked past their finishing time, we would like to pass on our thanks.
Edinburgh Nursing Team

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FOCUS ON SAS FEEDBACK

It was an absolute pleasure to for fill this patients wishes and having the confidence to do this was down to completing the End of life course. (Tracey, Paramedic)

I have used the on-call palliative care line several times now, since attending a CPD session. I have always found them very useful and reassuring. One particular job springs to mind where the patients wishes were to stay at home but the son had no care set up and was struggling as his Mum had deteriorated that day. I called palliative care line and we managed to organise a District nurse visit that night, McMillan nurses to come round the next day (which was a Sunday) and started the patient on her JIC medications. All in all a very rewarding pathway for crews and patients.
(Kathryn, Paramedic)

My experience of this pathway has been nothing other than positive. The availability of the professional conversation has been a massive help. The people on the other end of the phone particularly in end of life situations I feel have been amazing.
(Gordon, Paramedic)

The pathway's are such a great opportunity to be able to give patients the opportunity to - The right care, at the right time and by the right speciality that they require. We are lucky to have such pathways as this that allows us to provide the highest and best care.
(Eddie, Technician)

What I can say with conviction, is that without your CPD session, we would have been far less confident in our approach, and for that we thank you. It was clear from the get go what was happening and due to our learning from yourself, we could explain to the family and have complete faith in the decision making.
(Stuart, SORT Paramedic)

Thanks to the CPD provided by your team to us as staff it made our discussions with the family a lot easier and to explain the process to the family and allow them to make good decisions. (Gavin, NQP)

It was an absolute pleasure to for fill this patients wishes and having the confidence to do this was down to completing the End of life course.
(Tracy, Paramedic)

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FOCUS ON EDUCATION FEEDBACK

Was the course helpful to your practice?
Can't recommend this course enough and had very positive interactions with palliative care teams since

The course was AMAZING!
I feel the course was excellent and helped with confidence to make the right decision for the right patient.

Did you feel confident in managing the patient you attended with palliative or end of life care needs?
The courses are well delivered with people who are clearly passionate about people
It has helped me become more confident in my understanding of the management of palliative conditions

How confident do you feel about managing a patient with palliative or end of life care needs in the future?
Really helpful content within all of the Macmillan team courses
I appreciate the fact that if you do have any questions the team go out of their way to assist you and answer any queries and have a professional discussion which further aides our development

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FOCUS ON CARE AT HOME

The project distributed a survey via the carers Scotland network, the following quotes were received as part of that survey about their experiences of SAS clinicians managing Palliative needs.

We have had (too many) wonderful experiences from the ambulance service and we could not ask for better.
My son has complex health needs. When we have required an ambulance for him, we have been impressed at how much staff listen to what we say about his needs or support. There is much respect and acknowledging our views and opinions. We feel respected and valued.

The crews were professional, efficient but most of all compassionate. The communication (listening and hearing our concerns) was key and most helpful for my parents and myself. This is what I found most helpful.
They're always very good to us!

The teams do an amazing job!
They were empathetic to our situation, made attempts for other pathways to keep the patient at home. They respected the patients wishes and included us in the decision making process.

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8. Digital Developments and Next Steps

Digital systems play a central role in supporting timely, safe, and person-centred care for patients requiring palliative and end-of-life services. Over the course of the project, significant progress has been made in strengthening the digital foundations that support palliative and end of life care within the SAS.

The following sections outline the work completed, its impact on patient care and clinician practice, and the next steps planned to further embed and scale these digital improvements across Scotland.

- Integration of data models – Development of the End of Life and Live Patients data models, linking ambulance data with hospital datasets to provide a clearer picture of service use and patient needs.
- System improvements – Initial updates to the TerraPACE 3 patient reporting platform, enabling more consistent recording of palliative care activity and incidents.
- ECS user interface redesign – Introduction of a stylesheet to improve the Emergency Care Summary (ECS) user interface, ensuring that key information is prioritised and easier to access. This work increased visibility of critical data by bringing forward priority diagnoses and special notes for ambulance clinicians. As a result, staff are now able to make faster, better-informed clinical decisions at the point of care, directly improving the quality and safety of patient interactions.
- Improved access and visibility of ReSPECT forms – Enhancements to digital systems have increased clinicians' ability to view and act on ReSPECT documentation at the point of care, supporting adherence to patient wishes and improving end-of-life decision-making.
- Data quality and governance – Refinement of coding frameworks (aligned to Scottish Government recommendations) to ensure accuracy and comparability of palliative care datasets.
- Staff access and usability – Engagement with frontline clinicians and managers to test digital tools, ensuring that system changes are practical and aligned with service needs.

Collectively, these developments have improved the accessibility and relevance of digital information, reduced variation in practice, and supported ambulance clinicians in delivering safer, more person-centred care.

Building on this foundation, the next phase of digital development will focus on embedding and scaling improvements across Scotland. Planned actions include:

- National rollout of updated digital systems – Completing the introduction of new functionality within TerraPACE 3 patient reporting platform, including the dedicated Palliative Care screen.
- Interoperability with wider health systems – Strengthening digital links with NHS boards, hospices, and primary care to ensure ambulance clinicians can access and share relevant information in real time, including ReSPECT documentation.
- Ongoing refinement of data models – Expanding analysis to include additional patient groups and refining outputs to support both service evaluation and national policy planning.
- Improved staff experience – Continuing to test and optimise user interfaces to reduce digital burden and make data capture easier for ambulance staff.

9. Health Economic Impact

In line with the Value Based Health and Care Action Plan (Scottish Government, 2023) that describes the need for healthcare to be delivered differently to face both the financial and workforce challenges, the presence of a palliative care team in SAS has undoubtedly created value for the organisation and contributed to savings for all Health Boards.

The team have worked with and supported by a Health Economist specialising in Cancer Health from Queens University Belfast to understand the likely budget impact associated with the project, particularly in relation to the economic impact of the development of alternative pathways which have led to the avoidance of hospital admissions. Costings were based on unit costs of health and social care 2022, Personal Social Services Research Unit – University of Kent and the Centre of Health Economics – University of York. Reflecting all costs in 2022 prices ensures comparability across years. This eliminates the effect of inflation or cost adjustments over time, isolating the true impact of the change in service structure.

Costed Attribute	Year		SAS NET IMPACT
	2022 (n=)	2023 (n=)	
	2022 (£)	2023 (£)	£
EOL identified emergent calls	4,089,995	3,955,078	-134,917
EOL attended		-	
EOL non-attended (Hear & Treat)	394,545	369,750	-24,795
EOL conveyed (See, Treat, Convey)	10,736,585	10,149,385	-587,200
EOL Non-conveyed (See & Treat)	4,127,580	4,168,704	41,124
SUB TOTAL ASSESSMENT COSTS	15,258,710	14,687,839	-570,871
ED all			
a) ED & Admitted (90% long stay)	91,035,340	85,494,894	-5,540,446
b) ED & Admitted (75% long stay)	79,129,372	74,313,527	-4,815,844
c) ED & Admitted (50% long stay)	59,286,091	55,677,917	-3,608,175
ED & non admitted (low)	279,372	264,740	-14,632
ED & non admitted (high)	1,162,278	1,101,404	-60,874
SUB TOTAL ED COSTS (MINIMUM)			-3,622,807
SUB TOTAL ED COSTS (MAXIMUM)			-5,601,320

In summary, the total costs for end-of-life care delivered by SAS have decreased significantly from 2022 to 2023, with a total net reduction of £570,871 (a decrease of 3.7% in costs). This result is largely attributed to the reduction in the volume of patients who are conveyed at end of life, and who have remained in their home as identified within the data detailed above.

The impact of the SAS Macmillan Palliative and End of Life Care Teams work is more critically reflected in the proportion of patients conveyed to emergency departments. Over the 12-month period January to December 2023 more than 1,600 fewer patients were conveyed to emergency departments, illustrating the value of the investment in frontline clinicians having alternative pathways and enhanced decision-making skills and confidence to manage this patient group out with a hospital setting.

Consequently, the costs associated with emergency department attendances have shown a significant reduction, ranging from a minimum of £3,622,807 to a maximum of £5,601,320 (depending on the assumptions for length of stay), indicating a significant trend towards decreased healthcare expenditure because of the SAS Macmillan Palliative and End of Life Care Team actions.

The implementation of Just in Case (JIC) medication administration by SAS clinicians has enhanced economic efficiency. This approach facilitates prompt symptom management within the community, thereby preventing unnecessary hospital admissions, especially in remote and rural locations where patient transportation can be both costly and resource intensive.

Beyond measurable cost savings, the programme generates substantial system-wide value by aligning with national strategic priorities to deliver care closer to home, reduce hospital pressure, and improve patient experience. This represents a clear example of how targeted investment in pre-hospital care can deliver both quality improvements and financial sustainability.

10. Lessons Learned and Recommendations

The SAS Macmillan partnership has generated several important lessons that will shape the future development of palliative and end-of-life care in Scotland.

First, the programme has demonstrated the importance of dedicated leadership capacity within SAS. Having a national team focused solely on PEOLC has enabled consistent progress, strengthened external partnerships, enabled digital developments and provided visible leadership for frontline staff. Without this resource, it is unlikely that the scale of change achieved would have been possible.

Second, the evaluation underscores the value of partnership working. Close collaboration with hospices, community teams, Health and Social Care Partnerships, and the third sector has ensured that pathways are both clinically safe and practically workable. This has fostered

trust between agencies and helped establish SAS as a key contributor to the wider palliative care system.

Third, the programme has highlighted the need for continued investment in education. While more than 4,400 staff have been trained, ongoing support will be required to ensure new recruits, as well as experienced clinicians, maintain and update their skills. Embedding PEOLC training permanently into induction and CPD frameworks will help safeguard this progress.

Finally, the introduction of JIC medication administration has revealed the potential for policy innovation within pre-hospital care. Expanding the scope of practice for SAS clinicians has delivered tangible patient benefits and demonstrated that national guideline reform can be both safe and impactful. Future work should build on this precedent to explore other areas where pre-hospital clinicians can support patients more effectively at home.

Based on these lessons, the following recommendations are made:

- Sustain a dedicated PEOLC leadership team within SAS beyond the current Macmillan funding period.
- Embed PEOLC training permanently within SAS education and CPD frameworks.
- Continue developing alternative pathways in collaboration with partners, with a focus on rural and underserved areas.
- Monitor and expand JIC medication use, ensuring robust governance and evaluation.
- Strengthen data collection and evaluation, particularly on patient outcomes and preferences, to build an even stronger evidence base.

11. Conclusion and Next Steps

The SAS Macmillan PEOLC programme has delivered significant improvements in the way care is provided to patients at some of the most vulnerable times in their lives. Through innovative education, the development of alternative pathways, digital developments and the removal of barriers to effective symptom management, the programme has enhanced patient choice, reduced avoidable hospital attendances, and improved the confidence and wellbeing of frontline staff.

The health economic analysis demonstrates that these changes have delivered clear financial benefits to the wider health system, with estimated cost avoidance of between £3.6 million and £5.6 million. Equally important, feedback from patients and carers shows that care is now delivered with greater quality and dignity. There is also a strong focus on helping patients stay in the care setting they prefer whenever possible.

The lessons from this programme point to the importance of sustained leadership, strong partnership working, and a willingness to innovate in pre-hospital practice.

Next Steps

The evidence presented in this evaluation strongly supports the continued presence of a dedicated Palliative and End of Life Care (PEoLC) team within the Scottish Ambulance Service (SAS) to lead this agenda nationally. Progress achieved thus far has been enabled through the valuable partnership and funding provided by Macmillan Cancer Support, whose collaboration has played a critical role in establishing and advancing this initiative.

Moving forward, SAS is committed to building on this foundation by pursuing long-term sustainability and forming a permanent team to further enhance its contribution to palliative and end-of-life care delivery across Scotland.

Through ongoing investment and strengthened collaboration with health boards, hospices, and other stakeholders, the Scottish Ambulance Service can consolidate the gains realised through the SAS–Macmillan partnership and establish a sustainable model for delivering compassionate and effective pre-hospital palliative care.