This article has been accepted for publication in LEADER following peer review.
The definitive copyedited, typeset version is available online at
10.1136/leader-2024-001152

Impact and outcomes of the Emerging Leaders Programme: A mixed-methods evaluation of a leadership development programme for healthcare professionals

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Tables: 5
Figures: 3
Word count: 3496
References: 40

Abstract

Background

The significance of effective medical leadership in enhancing healthcare outcomes has been widely acknowledged. This study evaluates the Emerging Leaders Programme (ELP), a multidisciplinary leadership development initiative for healthcare professionals at a UK Hospital Trust.

Methods

The evaluation spanned three cohorts (2017-2019) and a total of 54 participants, employing mixed methods to assess participant reactions, learning, behaviour changes, and organisational impact. Quantitative pre-/post- measures included the Primary Colours Questionnaire, Medical Leadership Competency Framework Questionnaire, and Brief Resilience Scale, while qualitative data were gathered via free-text comments and long-term follow-up interviews.

Results

The programme had high satisfaction ratings, with particularly positive feedback relating to the multidisciplinary cohort and experiential learning via Quality Improvement projects. Findings indicated improvements in participants' leadership skills, knowledge, confidence and job satisfaction. Organisational outcomes included increased organisational interest in Quality Improvement and individual career progression.

Conclusion

The results highlight the value of a structured leadership programme in developing healthcare leaders and driving organisational improvements, with long-term effects. Recommendations for future programmes include multidisciplinary involvement, experiential learning, inspiring speakers, and embedded mixed-methods evaluation.

What is already known on this topic

Leadership development in healthcare has been linked to improved individual, and less frequently, organisational outcomes. However, evidence on long-term impact and effective educational methods remains limited.

What this study adds

This study demonstrates that a structured leadership programme significantly improves individual leadership skills and drives organisational changes. Importantly, these outcomes were sustained in long-term follow-up, contributing new evidence to a field where longitudinal data is limited.

How this study might affect research, practice, or policy

The study identifies key components that enhance leadership programme effectiveness, including multidisciplinary cohorts, experiential learning, and mixed-methods evaluation. These findings can inform the design of future leadership programmes and provide a replicable model for evaluating their impact.

Introduction

The significance of effective leadership in enhancing healthcare efficiency and patient outcomes has been increasingly recognised over the past decade [1–4]. Numerous studies and systematic reviews identify positive correlations between leadership and improved patient care, staff satisfaction, and organisational performance [5,6]. Medical councils and professional bodies worldwide have acknowledged the critical role of medical leadership and have begun to provide resources and frameworks to support and regulate leadership development [7,8].

The growing body of literature on leadership development programmes in healthcare suggests these initiatives have a positive impact. However, much of this evidence is derived from self-reported measures that lack validation and rigour, leading to a weak evidence base regarding the effectiveness of these programmes on higher-order outcomes such as long-term behavioural change and organisational impact [9,10]. Additionally, there is limited understanding of which specific content or educational methods are most effective.

In this study we aimed to evaluate the impact and outcomes of the Emerging Leaders Programme (ELP), a multidisciplinary leadership development programme for healthcare professionals. Our evaluation focuses on both short- and long-term impacts of the programme on participants' leadership skills and behaviour, as well as overall organisational outcomes.

Methods

This study was reported in accordance with the TIDieR (template for intervention description and replication) checklist.[11]

Setting

We evaluated the first three cohorts of the ELP at a single UK Hospital Trust. The ELP was developed in response to a demand for formal leadership development opportunities identified by the Director of Medical Education.

Programme design and educational content was developed based on shared leadership principles, including Pendleton and Furnham's Primary Colours model[12]. Active learning principles [13] and situated learning principles [14] were also incorporated into the programme design.

Programme structure & participant demographics

Cohort One, starting in 2017, was the pilot of the ELP, followed by Cohort Two in 2018 and Cohort Three in 2019. The programme evolved iteratively, guided by feedback from programme evaluations. A total of 54 participants took part across the three cohorts and all completed the pre- and post-programme questionnaires (100% response rate). Forty-eight responses were paired using predetermined participant codes (12 from Cohort One, 15 from Cohort Two, 21 from Cohort Three). There were errors in participant codes for the remaining six pairs that precluded pairing. Table 1 presents the differences in duration, format, questionnaires used and participant demographics of the 48 paired respondents.

	Duration	*Format*	*Gender (n)*	*Participant roles (n)*	*Questionnaires**

Cohort 1	4 months	6 half day workshops	Male (7) Female (5)	Junior (foundation level) doctors (13)	PCQ
Cohort 2	8 months	8 half day workshops	Male (2) Female (13)	Doctors (9), Physiotherapists (2), Managers (1), Other multidisciplinary healthcare professionals (3)	PCQ, MLCFQ
Cohort 3	6 months	7 full day workshops	Male (13) Female (8)	Doctors (12), Nurses (7), Physiotherapists (1), Managers (1)	PCQ, MLCFQ, BRS

*Table 1: Programme structure and participant demographics. *Questionnaires refer to Primary Colours Questionnaire (PCQ), Medical Leadership Competency Framework Questionnaire (MLCFQ), and Brief Resilience Scale (BRS).*

Participants were invited to participate in follow-up interviews via email and phone message. 16 participants agreed to be interviewed, including six from Cohort One, five from Cohort Two, and five from Cohort Three. Of these interviewees, nine were female and seven were male.

Programme content

In line with current consensus in the leadership development literature[5,15–21], experiential learning was prioritised. Groups of 2-5 individuals conducted a self-selected service leadership project in their real-world environment, with projects presented at the final workshop.

Each workshop included facilitated project work time, teaching sessions, and invited speakers. Teaching sessions were based around discussions and practical exercises, aiming to engage participants in reflection, challenge existing views and introduce evidence-informed content. Table 2 provides an overview of content areas. Content was adapted according to participant needs and availability of appropriate faculty. Speakers with experience in navigating leadership in the organisation were invited to provide real-world advice and experiences.

Team Leadership and Project Management	*Service Improvement*	*Organisational and Strategic Content*
• Stakeholder analysis and engagement • Leadership styles • Personality and working styles • Conflict resolution and mediation skills • Team dynamics and team leadership • Negotiation, influencing and dialogue skills	• Analysing healthcare systems • Analysing clinical care pathways • Understanding and acting on patient experience • Improving quality and flow in care pathways • Estimating impact	• Trust strategy • Chief executive perspective • Business cases • Healthcare systems • Healthcare and research policy and finances

Table 2: Programme content

Evaluation

In line with best practices[6], evaluation was embedded into programme design, to assess impact and identify areas for development. Kirkpatrick's framework was utilised as a basis for evaluation [9,10] (Table 3).

Kirkpatrick Level	*Description*	*Evaluation tools used*
Level 1: Reaction	Participant satisfaction with the programme	1,3,4
Level 2: Learning	2a: Changes in participants' attitudes or perceptions	2,3,4
	2b: Changes in participants' knowledge and skills	2,3,4
Level 3: Behaviour	3a: Self-reported transfer of learning to the workplace and changes to professional practice	2,3,4
	3b: Observed transfer of learning to the workplace and change to professional practice	4
Level 4: Results	Wider changes in organisation, attributable to the educational programme	4,5

Table 3: Evaluation framework, based on Kirkpatrick's educational outcomes. Evaluation tools consist of: workshop online surveys[1]; pre- and post-programme questionnaires[2]; free-text comments in questionnaires[3]; long-term follow-up interviews[4]; and quality improvement project outcomes[5].

Quantitative Methods

Participants rated themselves before and after the programme in the Primary Colours Questionnaire (PCQ), the Brief Resilience Scale (BRS) [22], and an adapted version of the Medical Leadership Competency Framework Questionnaire (MLCFQ) [23]. The PCQ was utilised in Cohorts One, Two and Three, the MLCFQ in Cohorts Two and Three, and the BRS in Cohort Three only. Pre- and post-programme questionnaires were paired using anonymised codes.

The PCQ was developed for this programme based on Pendleton and Furnham's Primary Colours model[12], and consisted of 14 items rated on a Likert scale anchored at 1 (very poor) and 10 (excellent). The PCQ was reviewed by a leadership expert (RC) and a layperson (AT) and was revised to increase content validity, face validity and question clarity.

In the MLCFQ, participants rated themselves on 56 behaviours grouped into the seven MLCFQ self-assessment domains, using a 7-point Likert scale of 1 (strongly disagree) to 7 (strongly agree). The combined score for each of the domains was then scaled to 1–7 for ease of interpretation. The MLCFQ has been tested for content and face validity[24].

The Brief Resilience Scale (BRS) is a self-report questionnaire designed to measure an individual's ability to bounce back or recover from stress [22]. It consists of six items rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). It has been tested for construct, convergent, discriminant and predictive validity [22].

A further questionnaire was also employed to measure changes to individuals' confidence, motivation, job satisfaction, and resilience. This tool was developed in a separate programme based on participant input and was not validated beyond face validity.

Qualitative Methods

Qualitative data were collected via follow-up interviews conducted between 2022 and 2024 via video-call (3-5 years after programme completion). Interviews were 20-30 minutes in length, conducted by one or two researchers (TS, or JP and MF) and were digitally transcribed and anonymised. The research team acknowledges their potential influence on the qualitative data collection and analysis processes. TS and JP are medical doctors, and MF has been faculty on later iterations of the ELP. To mitigate bias standardised interview techniques were utilised, alongside reflexive discussions. The interview guide is available in the supplementary material.

Data analysis

Quantitative Data

Changes in pre-and post-programme PCQ, BRS and MLCFQ scores were compared using Wilcoxon signed-rank tests for paired non-parametric data, with alpha of 0.05. The conservative Bonferroni correction was applied to correct for multiple comparisons for each set of tests.

Qualitative Data

Themes from follow-up interviews were generated using thematic analysis, based on Braun and Clarke's standard approach [25]. Two authors (JP and MF) independently conducted the first three steps of the analysis: (1) Familiarisation with the data; (2) Generating initial codes; and (3) Searching for themes. They collaborated for: (4) Reviewing themes; (5) Defining and naming themes; and (6) Producing the report. Themes were integrated with quantitative data and presented in relation to the Kirkpatrick framework.

Ethics

As evaluation of a service delivery, these evaluations were approved for an ethics exemption by the University of Oxford Clinical Trials Research Governance Committee.

Patient and Public Involvement

No patient involved.

Results

Kirkpatrick Level 1: Reaction

One theme generated from follow-up interviews was "Diverse Perspectives" (Table 4). Programme speakers were described as "interesting", "inspiring" and "insightful". Many interviewees commented that speakers helped them understand that high-level positions are attainable, challenging existing perceptions that senior leadership roles require special connections or extraordinary skills. Interviewees valued speaker's candour relating to challenges faced in their journeys, as well as insights into organisational, political and financial elements of healthcare leadership. Many recalled specific speakers or stories that resonated with them.

> *"I really enjoyed learning about the diversity of leadership and hearing from different people about their perspectives and kind of understanding that it's not one shape and size fits all. And also that these great leaders are just people as well. Having that kind of overlay of humanity to it." – Interviewee 8 (Female, Cohort Three)*

The programme was described as well-organised. Experiential learning via leadership project work was widely appreciated, although one interviewee found the leadership project *"slightly*

unstructured and ever so slightly token" – Interviewee 8 (Female, Cohort Three). Networking within the cohort was valued, and many felt that the multidisciplinary cohort enriched the learning experience. The opportunity to engage with colleagues from other disciplines in a non-clinical setting built confidence and provided valuable insights and learning opportunities.

> *"I suddenly met all of these people I'd never crossed paths with. And it was really quite enlightening and interesting just to share stories and share, I guess both frustrations with how the system doesn't work as well as it could and the inefficiencies that patients face as well as staff." – Interviewee 15 (Male, Cohort Three)*

> *"It wasn't just the course itself, it was also being amongst other people who were in similar positions or were better suited to a leadership kind of course, and just kind of pulling on their skills as well and learning from them." – Interviewee 1 (Female, Cohort One)*

Theme	*Relevant Codes*
Understanding of Leadership	• Leadership skills and knowledge • Influence skills and how to affect change • Informal leadership roles • Understanding of roles available • Negotiation skills • Conflict resolution skills • Understanding of QI skills • ELP as prompt to starting leadership journey
Diverse Perspectives	• Inspiring speakers • Multidisciplinary cohort benefits • Networking with cohort • Feedback from others • Skills in working with others
Personal Development	• Self-confidence • Self-awareness • Listening skills • Role-modelling for others • Inspiration to learn more • Teaching others • Further study in leadership • Taking on leadership roles
Practical Application of Skills	• Using skills or knowledge in role at the time of ELP • Putting knowledge into practice • Ongoing interest in QI • QI project success • QI project work (positive feedback) • Coaching subsequent cohorts • Coaching outside of ELP
Wider Impact	• Fast-tracking career trajectory • CV or certification benefits • Recommending ELP to others

• Continuing connection with ELP • Ripple effect to a wider audience • Increased organisational interest in QI

Table 4: Results from thematic analysis of follow-up interviews

Kirkpatrick Level 2: Knowledge

There were statistically significant increases in 11 of 12 PCQ questions, indicating improvements in all domains except "relationships with doctors" (Figure 1, Supplementary Table 1). The overall median change across all questions was +1, with a range from 1 to 3.

Kirkpatrick Level Two outcomes identified in follow-up interviews were captured within the themes "Understanding of Leadership" and "Personal Development" (Table 4). Codes within these themes included skills in: negotiation; conflict resolution; influence; listening; stakeholder engagement; quality improvement; and working with others. Participants described a greater understanding of leadership and roles available to them. Self-awareness and accepting uncertainty were also common, with many commenting on increased understanding of personal strengths and weaknesses and how these differ from others.

> *"I still sort of have [facilitator's] voice occasionally in my head about certain things like when you want to influence change, I always think about, "Who are my key stakeholders here? Who's got the influence? Who do I need to get onside?" So it definitely has stuck with me, what I learned from the course." – Interviewee 4 (Female, Cohort Two)*

> *"It allowed me to be a little bit better at recognising certain things and employing certain skills. Being a bit more conscious about the decision-making I make, because I'm far more aware of what and why I'm doing it." – Interviewee 13 (Male, Cohort One)*

Of note, one interviewee described a negative reaction to the programme. She attributed this to time commitments adding additional stress to a number of concurrent life stressors, including a challenging new role. She felt her specific leadership development needs were not met by the programme. Despite this, she described programme content as "interesting" and appreciated the networking opportunities.

> *"It was a nice atmosphere ... I enjoyed talking to the physios, and I got a little bit of camaraderie from that, and also a realisation of what I'd been feeling about my own role." – Interviewee 3 (Female, Cohort Two)*

There were no significant changes in median BRS scores from pre- to post-programme. Raw data is available as Supplementary Table 2.

Kirkpatrick Level 3: Behaviour

There were statistically significant increases in all seven domains of the MLCFQ. The overall median change across all domains was +0.9375 (range 0.5625 – 1.125) (Figure 2).

Kirkpatrick Level Three outcomes in follow-up interviews were spread across the themes Personal Development, Practical Application of Skills and Wider Impact (Table 4). Interviewees reported the use of new skills in leadership, communication, influence, self-reflection,

negotiation and conflict management in their day-to-day practice. Role-modelling behaviours, teaching others and informal leadership roles were also frequently mentioned. Inspiration to learn more and further study in related areas were common, with nine of 16 interviewees describing subsequent academic pursuits in leadership, quality improvement, or coaching.

> *"My role as a doctor has incorporated more of a natural leadership role. So within the teams I work in that I've rotated through, I've kind of naturally felt a lot more comfortable in taking that leadership position in terms of navigating a team or directing tricky care or discussing with relatives" – Interviewee 15 (Male, Cohort Three)*

> *"I'm just trying to make sure that [junior staff] are getting learning and teaching experiences out of quite a busy shift. So to make sure my colleagues are getting something out of it as well. So, I mean, that's the way I'm trying to lead, I guess, so that they get better." – Interviewee 1 (Female, Cohort One)*

> *"I did some teaching jobs after that. And again, I found myself more proactive if I didn't like something. I would set out to change it knowing that I've got the skills to convince people and show them what I want." – Interviewee 11 (Male, Cohort One)*

Kirkpatrick Level 4: Results

There were no statistically significant changes in Brief Resilience Scale scores (Supplementary Table 3). However, the programme had a broadly positive impact on self-reported job satisfaction, resilience, confidence, and motivation (Figure 3). At least 56% of respondents reported increases in each domain, with 81% specifically noting an increase in motivation. Interestingly, two respondents reported a detrimental effect on their job satisfaction.

In follow-up interviews, the theme "Wider impact" captured a range of Kirkpatrick Level Four outcomes. Many reported increases in self-confidence, and referred to the ELP as the catalyst that started their leadership journey. Elaborating on this, many subsequently took on formal leadership roles, or felt that the programme had fast-tracked their career.

> *"I genuinely think it accelerated to my career by a good 10 years." – Interviewee 4 (Female, Cohort Two)*

Some participants had ongoing connections with the ELP, including coaching or teaching on the programme or recommending the programme to others, whilst others had taken on unrelated coaching and mentoring roles. Many reported an ongoing interest in quality improvement.

> *"It opened up the windows that then made me drive to want to go higher to look at what the differences were, how we can manage not just one unit, but look across the network to try and deliver leadership at that systems level rather than just local leadership. And I think if I hadn't have done the ELP, I probably wouldn't have known that all of that was available out there." – Interviewee 7 (Female, Cohort Three)*

> *"It's ignited a real passion for leadership. I didn't realise how much I enjoyed this stuff until we did the programme. And it's meant that I've kept on looking for positions where I can have a leadership role." – Interviewee 11 (Male, Cohort One)*

"It gave me a little bit of confidence that I'd actually had some formal training about leadership and sort of developing myself as a leader. I'm confident that I wouldn't have thought about applying for leadership jobs and stuff if I hadn't been on that course" – Interviewee 4 (Female, Cohort 2)

Leadership Projects

Projects in Cohort One were audit-based due to time constraints, whereas Cohorts Two and Three were able to on implement an intervention and assess impact. Project impact included Trust-wide introduction of Schwartz rounds at a specialist palliative care unit (which secured two years of funding and formed a steering group for implementation), spinal opioid electronic prescription changes and a new care plan for one hospital; improving the discharge process for homeless patients in one Emergency Department, introducing an annual awards ceremony for junior doctors at one hospital, and expanding telemedicine video consults across specialties at one hospital, all of which received positive feedback and recognition. A full summary of projects is shown in Table 5.

Cohort	*Leadership project summary*	*Outcomes*
Cohort One Projects	Identified factors contributing to discharge delays on a neurosurgical ward	Proposed methods to reduced discharge delays
	Audited insulin prescribing in a single hospital to assess whether guidelines were being followed	Generated recommendations to improve safety of insulin prescribing
	Audited presentations of homeless patients to ED and subsequent hospital admissions	Identified factors contributing to high admission rate. Proposed interventions and educational methods to reduce presentations and streamline resources.
	Identified factors contributing to ward round inefficiency	Suggested changes to improve work flow and rate on hospital ward rounds.
Cohort Two Projects	Organised reflective lunches based on principles of Schwartz rounds to improve peer support between staff at an OUH specialist palliative care unit	Became part of a steering group for trust-wide implementation of Schwartz rounds. 2 years of funding secured as a result.
	Raised staff awareness of risk factors for spinal opioids. Created alerts on electronic prescriptions and introduced a spinal opioid care plan.	Findings presented at anaesthetic governance meetings and colorectal meeting. Electronic prescription changes and care plan introduced. Planned audit to monitor impact.
	Educated frontline ED staff to utilise existing resources to improve discharge of homeless patients from ED via teaching and intranet.	Survey results demonstrating increased awareness of discharge process and tools and increased confidence discharging homeless patients.
Cohort Three Projects	Designed a website to provide health and wellbeing resources and information to staff in critical care services.	Launch was not completed due to the COVID-19 pandemic.
	Implemented a mobile on-call bag, containing essential pieces of physical	On-call bag was included in the induction of new trainees. Project led to

health equipment, for use during out-of-hours ward cover at two hospitals.	re-introduction of ward managers checklists for appropriate stocking of equipment.
Introduced an annual awards ceremony to celebrate achievements of junior doctors.	100 nominations received and recognition given to all nominated doctors.
Introduced telemedicine video consults for neuro-rehabilitation patients.	Video consults extended to all doctor-led clinics with overwhelmingly positive feedback from patients and clinicians. Expanded into other medical specialties/teams.

Table 5: Leadership projects and associated outcomes

Interviewees reflected on leadership project success in follow-up interviews, with some observing increased organisational interest in Quality Improvement. Other outcomes included CV or certification benefits and career progression. Interviewees felt that participation in the programme had a ripple effect to a wider audience, influencing organisational culture.

> *"It was very much a springboard into the world of I guess both Quality Improvement and leadership. And I think without ELP, I can hand on heart, probably say I never would've even considered it." – Interviewee 15 (Male, Cohort Three)*

> *"I don't think I would've got there then and there if it wasn't for [the ELP]. I'm almost confident I wouldn't have applied for the lead specialist palliative health care nurse job, so it definitely, definitely gave me confidence at that point in time." – Interviewee 4 (Female, Cohort Two)*

> *"ELP has organically grown and strengthened, has sustained and has then laid the foundations from an organisational perspective to change their stance on Quality Improvement and leadership. So I think beyond the couple of a hundred participants it's directly impacted that have participated in the programme there's a ripple effect to probably many thousands of employees that have had indirect touching from that Quality Improvement or from that leadership learning."- Interviewee 15 (Male, Cohort Three)*

Changes recommended by participants

More frequent sessions, additional preparation material, and more multidisciplinary or individually tailored content were suggested. Time constraints were frequently cited as an issue particularly due to shift patterns. Many felt there was insufficient time to implement a leadership project cycle. Suggestions included clearer advance warning of time commitment and more organised group working time. Others felt that the leadership project should be removed from the course altogether.

> *"I even remember as a participant, it was quite a lot of work to be done. It was quite a large time commitment and quite a lot of effort." – Interviewee 15 (Male, Cohort Three)*

Some participants commented on dysfunctional project teams, or a perceived hierarchy across disciplines in the course. Mentoring and coaching were also suggested.

Discussion

The ELP had a positive impact across all Kirkpatrick framework domains, with significant improvements in participants' attitudes, perceptions, and acquisition of skills. Areas of knowledge gains included leadership, quality improvement, project management, and self-awareness. Participants demonstrated transfer of learning to the workplace, applying new skills in negotiation, conflict resolution, influence, listening, and collaboration. Notably, follow-up interviews confirmed the sustained application of these skills. The programme also led to positive organisational changes, as evidenced by the impact of leadership projects, increased interest in Quality Improvement, and individual career progression. Participants praised the programme's organisation, content, speakers, experiential learning opportunities and the multidisciplinary cohort. A minority of participants felt that time constraints were limiting and that leadership projects did not supplement course content. The were no significant changes in resilience scores as a result of the programme.

The impact of leadership interventions in healthcare, as reflected in various systematic reviews, shows primarily positive outcomes, but with a notable gap in evaluation of long-term and higher level outcomes [9,15,17,18,26–31]. Our findings are consistent with existing literature [9,15,17,18,26–31] in identifying beneficial effects on individual performance and leadership behaviour, with the important addition of demonstrating long-term success and organisational impact.

Interprofessional collaboration has been found to improve quality and continuity of care, patient satisfaction, team functioning, and job satisfaction[32]. Based largely on theoretical benefits and positive participant feedback, many have begun recommending an interprofessional approach to leadership development[19,20,33]. Feedback from participants in this study supports the benefits of including multidisciplinary participants. Our findings also support existing evidence that experiential learning enhances knowledge transfer and promotes sustained skill application[9,15–17,28,31,34–37].

Participants recommended inclusion of formal coaching or mentoring, which have been found to increase leadership development effectiveness and are theorised to improve long-term support of knowledge and skills [9,15,16,18,21,34,36–38]. Coaching or mentoring are associated with significant financial costs[39] but should be considered when designing a leadership development programme, if budget allows.

The lack of significant change in resilience scores may be due to the small sample size, suggest that leadership improvements don't directly translate to resilience, or indicate that resilience improvements take longer to manifest. This could also represent a protective effect, as Cohort Three was delivered during the COVID-19 pandemic, which was widely associated with decreases in resilience [40]. Further study into interventions that improve resilience may be beneficial in tailoring programme content to increase impact on resilience.

Limitations of this study include reliance on self-report questionnaires and interviews for data collection, due to the potential to introduce response or recall bias. We would note that at least one interview was conducted with an individual who felt the programme had not been effective

for them, and that we also collected observational data on leadership project impacts. Our study design did not include a control group, which limits our ability to differentiate environmental factors from intervention factors. Differences in programme implementation across different cohorts could affect the consistency of the results or introduce confounding factors. Although this evaluation was conducted within a single NHS Trust with a relatively small sample, the inclusion of diverse professional roles and long-term follow-up suggest that findings may be cautiously generalisable to similar leadership development programmes in other healthcare settings.

Despite these limitations, this study is more comprehensive than much of the existing literature evaluating leadership development interventions. An important strength is the use of long-term follow up to assess sustained impact, in keeping with evaluation recommendations from multiple systematic reviews [16,21,34,36]. The mixed-methods design, use of validated instruments, and alignment with the Kirkpatrick framework provide a transparent, adaptable model for evaluating similar programmes.

In summary, the ELP demonstrated sustained significant positive outcomes across multiple dimensions of leadership, at both an individual and organisational level. These results underscore the potential value of structured leadership programmes in developing effective healthcare leaders, promoting interprofessional collaboration, and driving organisational improvements. Future iterations of the ELP may benefit from incorporating formal coaching or mentoring, and from addressing time constraints to better accommodate participants' professional commitments.

We recommend that programmes include multidisciplinary participation, experiential learning, and engagement of inspiring speakers from within an organisation. In order to improve programmes and to contribute to the wider literature, mixed-methods evaluation should be embedded into programme design, combining validated tools with qualitative data and long-term follow-up.

Contribution Statement

OL planned the evaluation with support from NF and RC. TS, JP and MF conducted the interviews. OL and JP conducted the quantitative analysis. JP and MF conducted the thematic analysis. JP, KK and OL integrated the mixed-methods results and drafted the manuscript. OL is responsible for the overall content (as guarantor).

Conflict of Interest Statement

OL designed and delivered the Emerging Leaders Programme with support from RC. MF has been programme director for later cohorts of the ELP.

Funding Statement

This study received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Acknowledgements

OL and KK are grateful to the Rhodes Trust for their doctoral funding during this work. The Oxford University Hospitals Director of Medical Education provided funding for sandwiches and

coffee in the first two cohorts, and Health Education England Thames Valley provided funding for lunches for the third cohort. We are grateful to all of the speakers for voluntarily contributing to teaching on the programme, including in alphabetical order (programme graduates starred*): Gionathan Amante*, Rajinder Andeev*, Richard Canter, Tamsin Cargill*, Clare Dollery, Mike English, Nick Fahy, William Flight, João Galante*, Sarah Gandhi*, Rahul Gandi, Richard Gleave, Helen Higham, Shona Johnston, Will Jones, Alex Lee, Oscar Lyons, Oscar Mathew, Karandeep Nandra*, Manny Nijjar, Katharina Nücken*, Meghana Pandit, Sue Pavord, Alok Prassad*, Claire Pulford, Mridula Rajwani, Peter Sullivan, and Keith Willett. We are particularly grateful to Joao Galante and Karandeep Nandra for supporting the programme as graduate programme directors after completing ELP Cohort One.

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Figure 1: Primary Colours Questionnaire responses pre-programme and post-programme. Each question was answered on a Likert scale from 1 (very poor) to 10 (excellent). Blue dots indicate statistically significant results from the Wilcoxon signed rank test. P-values were adjusted using the conservative Bonferroni correction for multiple comparisons. Raw data available as supplementary material.

Figure 2: Medical Leadership Competency Framework Questionnaire responses pre-programme and post-programme. Each question was answered on a Likert scale from 1 (strongly disagree) to 7 (strongly agree) and combined scores were calculated for each domain. Blue dots indicate statistically significant results from the Wilcoxon signed rank test. P-values were adjusted using the conservative Bonferroni correction for multiple comparisons. Raw data available as supplementary material.

Figure 3: Programme impact as rated by participants in the post-programme questionnaire.