

Innovating for Improvement

An innovative service wide response to patients who contact the Yorkshire Ambulance Service (YAS) in an emergency following a fall.

Yorkshire Ambulance Service NHS Trust



About the project

Project title: An innovative service wide response to patients who contact the Yorkshire Ambulance Service (YAS) in an emergency following a fall.

Lead organisation: Yorkshire Ambulance Service NHS Trust

Project lead(s):

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Part 1: Abstract

Yorkshire Ambulance Service (YAS) receives many calls for patients who have fallen. Finite resources being sent to the most seriously ill patients, increases the risk of uninjured patients being on the floor for extended lengths of time. High staff dissatisfaction with the current provision was a main driver for change.

We successfully implemented these changes to create an innovative project covering a large area across 9 West Yorkshire Clinical Commissioning Groups (CCGs). The project analysed 5995 patients over a 119 day period.

We improved patients outcomes with measurable quality benefits to staff and patients including;

- Reduced the number of patients conveyed to the Emergency Department
- Freed paramedic resources to attend other patients by using a safe alternative.
- Reduced the time patients had to wait on the floor for someone to come to them.

The project was focussed on quality and safety, therefore an economic benefit was not demonstrated as an objective.

Our dedicated and engaged project team ensured we delivered our objectives and having an external evaluator on the project board were key enablers for success.

A challenge was to implement the innovation within a single service when economic benefit is thought to be seen by the system but not necessarily the implementation site.

The intervention successfully showed an improvement to patients and staff albeit not on the scale of numbers we had predicted. The interventions can be sustained with changes to scope and practices.

Part 2: Progress and outcome

Project aim:

'To develop, pilot and evaluate processes for responding to patients who access the ambulance service (via 999 or NHS111) after a fall'

Approximately 11% of Yorkshire Ambulance Service (YAS) demand is for patients who have fallen. Finite resources being sent to the most seriously ill patients, increases the risk of uninjured patients who need assistance to move being on the floor for extended lengths of time.

We successfully implemented changes to create an innovative project covering a large area across nine, West Yorkshire Clinical Commissioning Groups (CCGs).

There were 2 crucial interventions implemented for success.

- 1) A Dedicated Falls Advisor (DFA) situated in the ambulance control centre whose role was to:
 - Triage and treat patients who had fallen by telephone.
 - Allocate appropriate responses whilst offering clinical support.
- 2) Alternative response to a front line paramedic crew and vehicle. Two, trained Band 3 Falls Teams.

The project also gave us the opportunity to trial a specialised single person operated lifting chair used by Emergency Care Practitioners (ECPs) in Sheffield, who are higher skilled lone response practitioners.

This was a non-systematic trial on a patient by patient basis. The process of how ECPs were sent to falls calls was not changed

We implemented the improvement interventions (pilot) at different stages in the call process (Figure 1), which are highlighted in orange boxes with the DFA and Falls Team in **bold**.

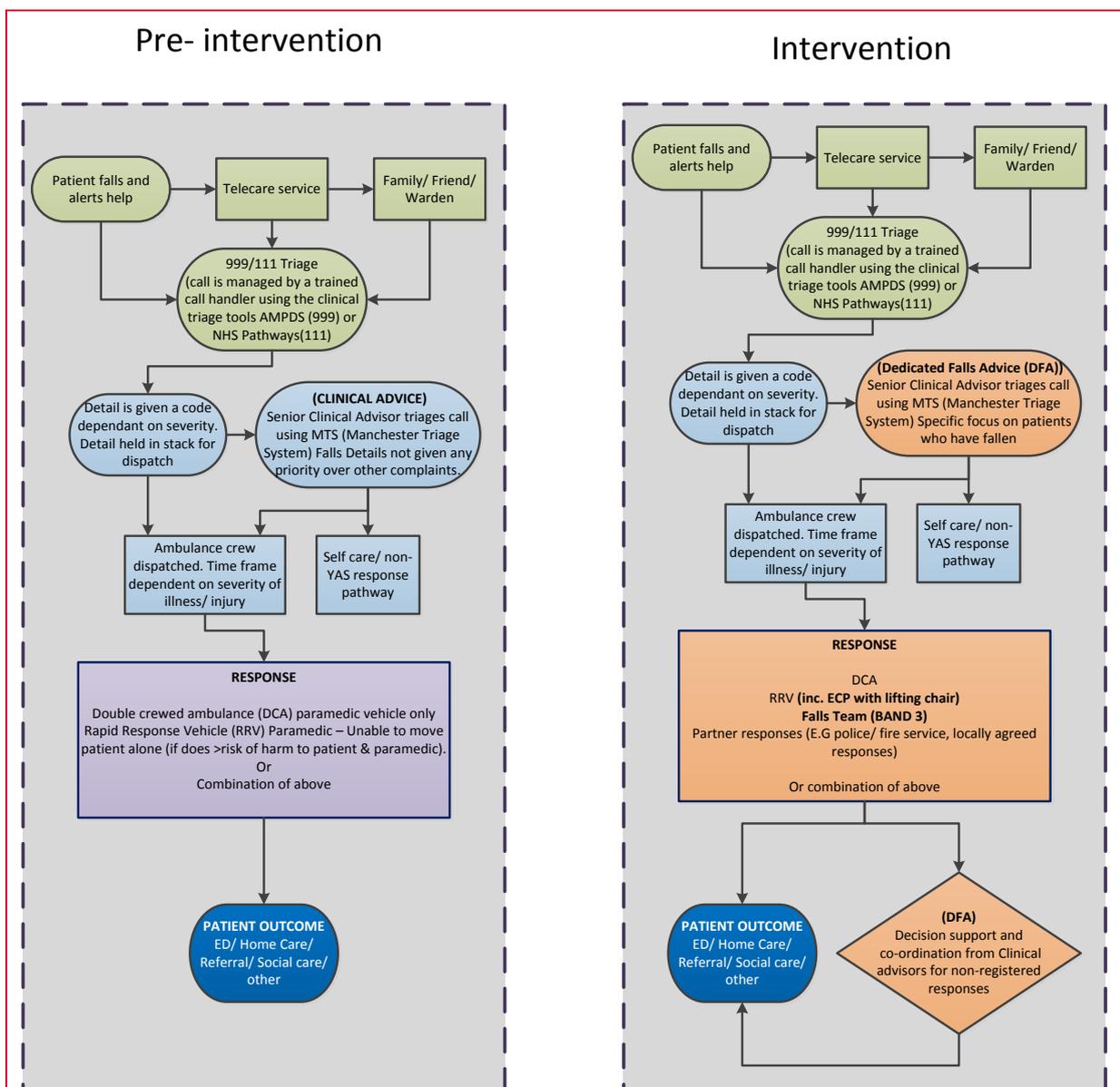


Figure 1.

Outcomes:

We successfully realised four of the five project objectives:

- To establish a Falls service that responds to patients in an appropriate time frame.
- To establish a Falls service which will reduce the need for A&E resource response.
- To provide a triage service which will identify suitable patients for managing by the Falls service.
- To provide Falls model which is adaptable to customer requirements.

Unmet objective:

- To provide an integrated Falls service with other health and social care communities.

Summary of outcomes below ensured we realised those objectives.

- Alternative responses are appropriate and safe to attend identified patients.
- Dedicated Falls Advisors positively identify patients, increased utilisation of alternative responses and improved non-conveyance rates.
- Lower proportion of patients experienced lies over 1 hour from call.
- High patient and staff satisfaction.
- Unable to develop new integrated partnerships in time frame of project.
- Overall utilisation of the Falls Team was lower than predicted.

Changes to the Plan

- We wanted to further scope the possibility of setting up a new falls response including referral pathways with partner organisations, but due to the short notification of when the pilot would start this could not take place.
- 6 weeks prior to the start of the pilot, the national Ambulance Response Programme coding changed (from ARP 2.1 to 2.2).

YAS was one of 3 sites piloting a new way in which ambulance responses were categorised. Priority 1 - 4 or Purple (P1) immediately life threatening, Amber (P2), Yellow (P3) which are all blue light responses and Green (P4) our least urgent calls.

We did not have enough time to fully understand the affect these changes to ARP would have on patients who fall. Predictions were based on ARP 2.1 data.

Data Collection Approach and Monitoring

We collected 6 weeks of baseline data. The intervention was implemented over 119 days from December 2016 to April 2017.

The Yorkshire & Humber Academic Health Science Network provided an independent external mixed methods developmental evaluation.

Project Outcomes – Quantitative Evidence

Band 3 Crews

- During the pilot period there were a total of 5995 calls of which 299 required a response from the Falls Team. This equated to approximately 2.5 responses per day or 4.98% of all falls calls. The clinical scope of the Falls team meant that they could only attend to patients without an identified injury or illness at

point of telephone triage (non-blue light response).

- Of the 299 responses 88% of these resulted in a non-conveyance to hospital. This is not directly comparable to pre-pilot figures as there was no pre-pilot falls crew. This demonstrates the suitability of alternative resources for when patients are targeted by a DFA.

Table 1 shows the overall comparison of the data with the **improvements** in **Green**:

1. The overall reduction in conveyance to the Emergency Department by 2.7%.
2. Reduction in proportion of patients waiting over 1 hour for a response fell from 6.5% to 5%.
3. Reduction in time it took to complete the job from initial call to crew being available again.

Table 1.

	Pre Pilot		Pilot Period	
Total Number of Days (10 hour days 7am-5pm)	41		119	
Number of Calls (which had a resource attend scene)	2201	53.68 Incidents/day	5995	50.37 Incidents/day
Total Resources in Attendance at Scene	2769	1.26	7464	1.25
Conveyance to the Emergency Department	1611	73.2%	4224	70.5%
Incidents Above 1 Hour to Scene	142	6.5%	299	5.0%
Average Job Cycle Time- Call to Clear	01:54:27		01:50:08	4m 19s
Average Job Cycle Time- Allocation to Clear	01:35:19		01:33:11	2m 8s

We also identified the following unintended consequence;

- The Falls Team experienced an **excess of 18 minutes on the average job cycle time and the number of patients waiting over an hour was higher when Falls Team were allocated***. This is due to the Falls Team not being able to attend on blue lights and their proximity to patients at time of allocation.

*All of these patients were specifically triaged so that the response time was suitable for their condition.

The Dedicated Falls Advisor (DFA)

On duty for 81 of the 119 days. The use of staff on alternative duties and sickness absence was identified as the reason for this.

The effect of the DFA are shown in tables 2 and 3 (data table in appendix c).

Table 2.

Incidents responded to by crew when DFA on/ not on duty.

Predominately used for green calls, the Falls Team were also sent to patients initially coded as an emergency (Yellow/ Amber) but are downgraded after clinical telephone triage. Having a DFA means emergency calls are more likely to be considered for further triage.

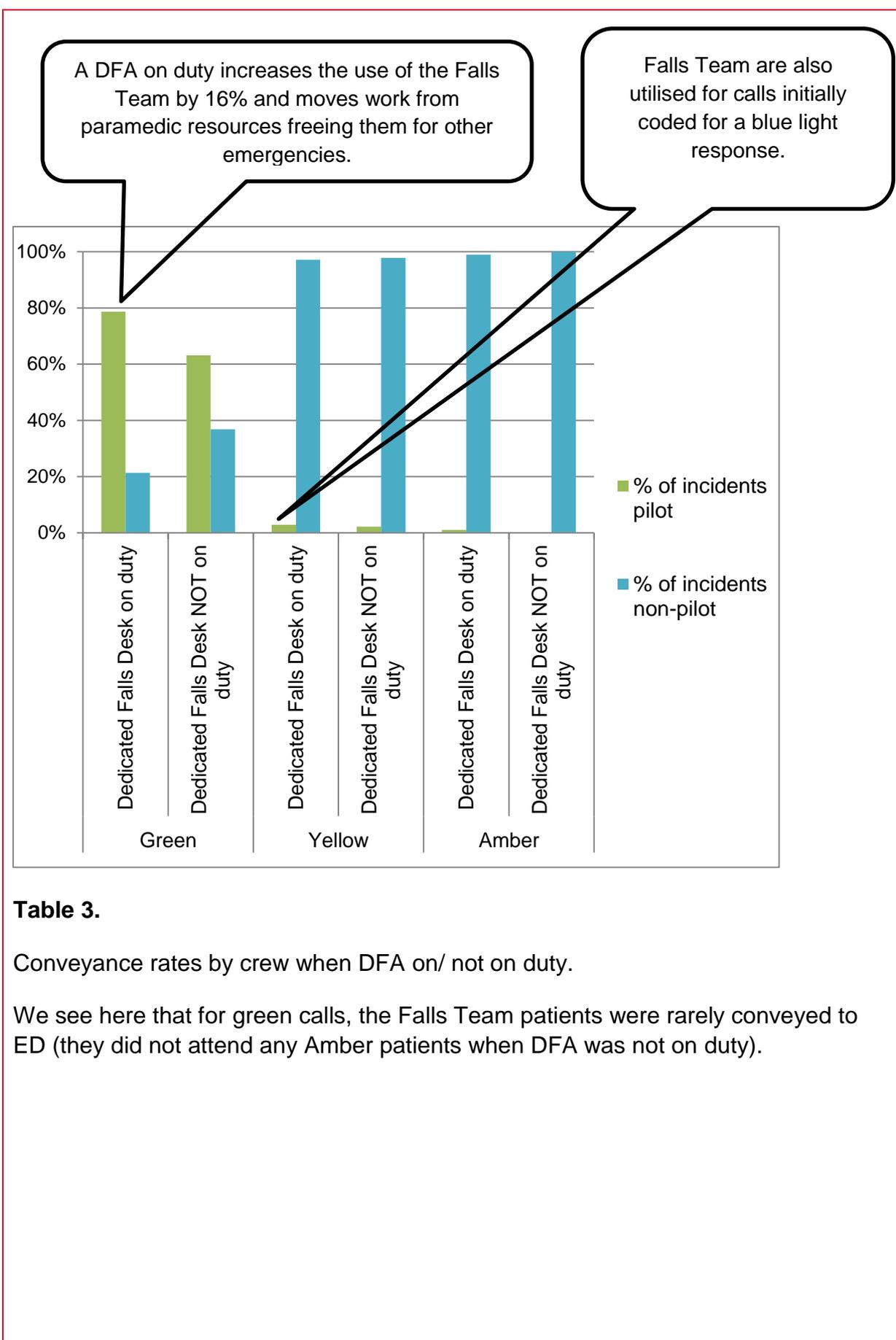
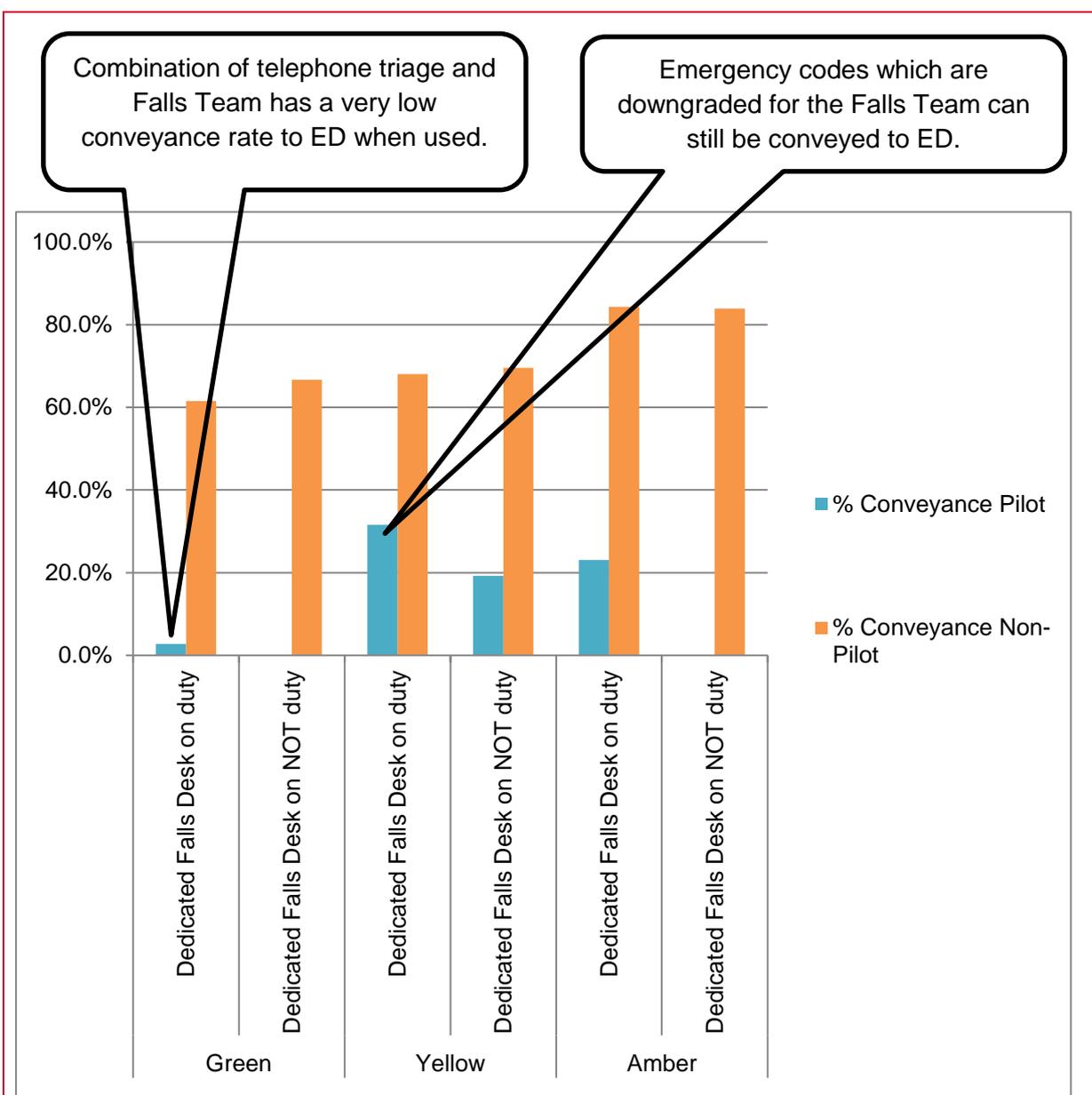


Table 3.

Conveyance rates by crew when DFA on/ not on duty.

We see here that for green calls, the Falls Team patients were rarely conveyed to ED (they did not attend any Amber patients when DFA was not on duty).



Higher conveyance by non-pilot crews (paramedics) is likely due to a patient being more unwell after clinical triage and needing a face to face paramedic response.

Re-contact rates:

Table 4 shows the number of incidents where patients had re-contacted the ambulance service within 48 hours.

We assume that non-conveyance is likely to be effective if patients do not call back. After being attended by the pilot, patients did re-contact slightly more for all reasons but not so when re-contacting because of another fall.

Table 4.

	Pilot			Non-Pilot		
	Incidents non-conveyed (all codes)	Re-contacted within 48hrs (patients)**	%	Incidents non-conveyed (all codes)	Re-contacted within 48hrs (patients)**	%
all re-contact reasons*	263	31	11.8	1508	146	9.7
Re-contact due to fall*	263	9	3.4	1508	51	3.4

*incidents can include multiple calls from the same patient.

** Re-contacts only include the first contact within the 48hr period not subsequent re-contacts in the same period.

Qualitative information

Patient Experience

90 patients took part in the survey pre and during the pilot (methods made a pre and post comparison difficult, results are collective):

- Patient satisfaction was > 95% across the board.
- However, 18 patients reported 'unacceptable' wait times for an ambulance.

It must be noted that those patients with an unacceptable wait time did have high satisfaction with the overall service from YAS.

Example patient quotes below:

- "Took a while for the ambulance to arrive. Otherwise very good service."
- "Service is wonderful. - Had to wait an hour for a response."

Even though we had shown to reduce wait times overall, this wasn't an experience perceived by all patients.

The patient survey also highlighted the issue of 'frequent fallers' with (64%) reporting using YAS two or more times after a fall in past 12 months. This has potential implications for the YAS service, falls referrals and wider system.

Staff Experience

Current Service Provision (from pre-pilot questionnaire)

On the whole staff felt the provision of service for Falls patients was inadequate with some of their comments below:

- “I believe it is inappropriate and unsafe for both patient and staff to send a lone responder to a Falls patient”
- “Currently Falls are not a high priority response”
- “Our current response to Falls is poor”
- “Older people who are left on floor for hours is unacceptable”
- “We are letting people down”

Post Pilot

Falls crew qualitative interviews highlighted benefits:

- Reduced long-lie-time for older people with non-injurious Falls;
- Freeing up emergency crews;
- Positive patient feedback about the service;
- Avoiding unnecessary hospital visits;

Selected staff comment:

- “It’s a much more effective use of resources and staff. We’ve now got another option of a vehicle and a responder and it gives us more options with the aim of getting to the patient on the floor quicker.” (Participant 5, Band 3 Pilot)

The extent to which the Band 3 crew response reduced pressure on A&E was debatable for some staff. All staff interviewed identified the DFA as crucial to deployment of Band 3 Crew.

Raizer Chair Staff quote.

- “Potential benefits identified include: use in limited/restricted space, with bariatric patients, and by a single ECP who can treat and discharge on scene where appropriate, or lifting patient from floor to wait for crew if conveyance necessary, as well as backing up other ECPs to assist with lift.”

Full external evaluation summary with patient and staff quotes can be found in Appendix 1, item a.

Part 3: Cost impact

Financial Evaluation

As a quality improvement project we have had no external financial examination of the project; however, the Trust Finance Department has been fully involved from the start of the project but purely from a cost control aspect.

Part way through the pilot they attempted to provide a ROI model with little success because;

- Overall utilisation of the Falls Team was lower than the predicted 4 - 5 jobs a shift, it was 2.5. Therefore there was little confidence in the validity of the results to model and demonstrate a financial saving.
- Although there was a benefit to patients in lower conveyance rates of 2.7%, they could not demonstrate that this would have significant impact to overall response performance times.

It is clear there was a benefit in terms of reduced lay times and paramedic time saved, but we need to note:

- Unqualified subjective benefits. Reduction of lay times in the exacerbation of other conditions such as pressure sore risk and its subsequent impact on attendance/ admission to hospital.
- The pilot was an additional ring fenced resource, therefore, would provide benefit as it provided additional capacity – basically we paid for an extra resource to get the associated benefits.
- Even though response time and conveyance reduced, the volume was not deemed of significance for ROI, – if it was shown to affect length of stay there would be a system ROI, but without data from the hospitals it's not possible to measure. This issue is backed up by the literature review analysis (Gray 2017, Appendix 1, item b).

From the information above it is clear, for the Trust, the cost of service provision against the small number of jobs they attended, the proposed service is not cost effective. However, we are at present unable to quantify a system saving which would require a longer economically detailed project.

It was reassuring to hear positive comments from the commissioners. It was however, disappointing but understandable at the Trust's decision to stop the pilot.

To be sustainable, ongoing funds would have to be secured in the short term by the trust and an economic benefit modelled. The recommendations we have put forward

to the trust are based on the project findings.

There is opportunity expand the scope of the interventions to increase utilisation, merge with other internal change programmes and look further at the impact if the lifting chair. Therefore being financially more attractive to invest in patient quality intervention even though any economic benefit is not immediately apparent.

Project Costs

The calculation for the project was completed in two parts. The first part was the funding needed to set up the project. The project followed the Prince II methodology so identifying the costs was a fairly simple task with regards to personnel etc. The second part, the pilot, was also fairly simple. We analysed past data to determine the requirement for personnel, vehicles etc. As we used currently employed staff and vehicles we managed to keep the cost base fairly low. This enabled us to secure the costs of the pilot from the trust.

Part 4: Learning from your project

It is not possible single out one individual's efforts for making the project a success. However we need to acknowledge the effort of every member of the project team. All project board members tackled the project with an objective conviction to improve patient care. We established a team with the mixture of talent and experience required.

What assisted the success of the project was the implementation of a structured project methodology. This ensured the project was focused, had clear objectives, timelines and was well managed. Also having a Senior Responsible Officer (SRO), who had direct access to the trust board, was invaluable when time critical decisions needed making which were outside of the project board's scope.

Challenges

During the project we encountered three main challenges:

- **Funding**

Capital funding was a challenge. Although the project was granted £75k from the Health Foundation, this money only provided for the management and evaluation of the project. Much lobbying by the project SRO both internally and externally resulted in funding being made available via the West Yorkshire Accelerator Zone.

- **Data collection**

Collating, understanding and interpreting data was time consuming due to variable response times, per treatment and intention to treat methods. It was difficult to provide accurate succinct headline data without giving false results. One reason was due to the fact that this was the first time data had been collated this way. It involved a trial and error approach to understand which data collection methods produced the most accurate results.

- **Staffing**

It was challenging to provide the number of DFAs in the time required. The length of the pilot did not warrant the recruitment of fully dedicated staff. It was noted in the evaluation that staffing the desk in this manner had some 'fidelity' issues on the overall evaluation of the effectiveness of dedicated triage.

We also identified a number of things that could have been done better.

- **Communication**

Communication of the Project and its progress was not as effective as it should have been. Assumptions were made that progress was being spread

by project board members within their departments. We did not establish effective communication lines within the trust.

- **Operational support**

Stronger senior operational support could have assisted in communicating the positive aspects of the pilot. Although not vital, help and advice on frontline operational cross over would have been of benefit.

- **Reporting**

A set reporting structure from the start would have been ideal. The complexity of data and developmental nature of the project made this difficult.

We were encouraged by the positive comments we received from the band 3 crews during and after the pilot. Also on how well the service was received by the front line clinicians.

We were reassured at the lack of negative comments and feedback, the recognition the project received and the will to implement change.

Personally:

Tom

As my first project, I now have a wealth of learning already taken into other work I am doing.

- The importance of early developmental evaluation in forming your intervention or implementation framework.
- Data – working with what you do know not with what you want it to tell you. Making sure that it cannot be manipulated or misunderstood and its relevance to your project.
- ROI – financial levers are crucial to localised implementation; however a move to a systems approach must be conveyed in the current climate. This may though make it hard to implement locally, but is key to scale and spread.

Mike (Project Manager)

This is the first time I have worked so closely with clinically driven people. It has been a big but enjoyable learning curve, understanding new ways of working, learning a new language and processes of work, also an appreciation of the work they do and the manner in which they work and accomplish their tasks. Also the challenge of preparing them for the what-if's.

Team

The team has learned :

- The value of structured project management and how it ensures success through an end to end approach. The project manager was excellent at keeping the project on track. Leading the project board to continually engage which can be difficult in an organisation with varied priorities across departments.
- Communicate properly; how misinterpretation of unsubstantiated information can form wrong interpretations of the project outputs.
- Fully understand the organisation's requirements with regards to outcomes and not to underestimate the organisations requirement for a ROI.
- We also learnt that no matter how much analysis you do at the start of the project with regards to the predicted outcomes, you have to be prepared to accept they may not materialise.

Organisation

As an organisation the pilot has demonstrated the value of allowing this type of developmental project to take place so as to evaluate a theory. Without this type of approach it is difficult to identify alternative approaches to patient care.

Valued at the Start

Should we attempt this type of project again there are three things we would do to ensure a more complete project:

- Ensure we have a full understanding of the organisation's requirements for success, what is their main driver? I.E. saving money, adding quality to services or achieving targets.
- Ensure we have a robust reporting framework at the start of the project. This would allow accurate reporting on progress of the project and negate miss-information.
- Communication is important and although we had a communication strategy, it was not effective enough, due in part to factors outside of our control. The trust has also learnt that some board structures could and have been improved to enable better communication lines to executive members.

Key Understanding for Others

We were aware of the requirements for success but would like to reinforce the value these below:

- Follow a structured Project Methodology.
- Ensure you understand the required objectives/benefits.
- Ensure you fully understand the organisation's requirements.
- Always carry out some form of economic modelling even if this is not the main objective.
- Benchmark the present so you can accurately measure the final outputs. This will allow you to see if you have achieved your objectives/benefits.
- Do your ground work and detailed analysis prior to starting the project.
- If possible invite an external organisation to help design and evaluate the project. This proved invaluable as it provided a non-biased validation to the project findings.
- Ensure you have a reporting framework in place as soon as possible so as to inform all interested parties of the project progress.
- Effective, engaging communication strategy and plan.

Part 5: Sustainability and spread

At the time of this report, although a success, there has not been a commitment to future funding for the intervention in its original form.

The challenges with regards to the sustainability of the original pilot has been recognised both internally and externally specifically with the lack of return on investment modelling.

The project board, at the time of developing a business case to fund the components of the pilot, took the decision that a return on investment was not to be a main objective. This was due to the driver for the intervention being formed on quality measures including:

- i) Frontline staff dissatisfaction of overall current provision
- ii) Ambulance Response times to patients (those experiencing a response over 1 hour)

The funding was agreed with the objectives and this allowed the project to focus on measures that demonstrate quality.

Only when the project started to gain traction within the organisation, did the issue of sustainability through investment return come to the fore. This meant that the drivers externally of the project board become more financially focussed.

The literature review conducted as part of the award recognised a need for clarity on this topic especially at a system rather than service level (Gray 2017 appendix b).

Internally, when a retrospective RoI was attempted, it was also recognised that it was not possible to ascertain value of the intervention and a system investment model would be needed.

Frustratingly for the project board, the shift from a quality outcome based project was always going to put the sustainability of the intervention in doubt. We had not indicated that the intervention was going to be the golden bullet. The project was primarily looking at how the intervention achieves the objectives and informs what is needed to enable a sustained and spreadable strategy.

The external evaluators recognised throughout the complexity of this project in a changing landscape. The nature of the data was complicated to draw pre and post comparisons. Having academics analyse the intervention however has given the project outcomes credibility.

For these reasons, in hindsight, this project would have benefited from being a multi organisational system project. Unfortunately, at the time of bidding and implementation, the health service was not in a place to test an intervention in this way. The landscape has changed now, and future work would be able to show system benefits if developed with health and social care partners.

Due to some of the challenges outlined above, the trust has not yet been in a position to externally showcase our findings.

We are currently formulating the strategy for the next phase of the project with our trust executive team. This has not been at the pace we intended but has gained momentum and is likely to accelerate due to winter planning arrangements and an internal recognition to change how we deliver our service.

Commissioners were supportive of the project and wanted it to continue albeit this decision was not made with final validated data. However, we felt that the intervention wasn't showing enough firm evidence to our trust board. To continue in the same vein would not be prudent spend of public monies.

We were confident we have demonstrated there has to be a change in approach; the project did show in part, solutions that would be of benefit at scale.

Once agreed, we aim to share our project via the Northern Alliance of Ambulance Services clinical network, national ambulance service urgent and emergency care forum, STP footprint stakeholders. We also hope to publish a paper of our findings with the AHSN.

An unintentional consequence, due to the trust being a pilot site for Ambulance Response Programme (ARP), these project findings will be of benefit to all the other ambulance services to learn from in the context of ARP.

The innovation must be seen within a system and not in silo to the organisation. Where we initially hoped to breakdown silo working in a geographical context. It is clear that cross organisational buy-in must also happen for any great success to be realised.

The original focus set out to implement a new regional response to patients who had fallen. We have demonstrated that the status quo needed to be challenged. By nature, the Ambulance Service works across a range of stakeholders and geography with matching infrastructure. So naturally has the ability to spread quickly once the effective model(s) are proven.

Short term aim is to finalise the trust strategy to agree the direction of change. We have to be sensitive to corporate strategy; some findings will create

challenges to this.

Secondly is the implementation of that strategy which must be sustainable over population, time and place. The invaluable learning from this project, especially the developmental evaluation and project set-up will help us achieve our aim; that patients who fall shall receive the appropriate response to their need at the right time, every time and an avoidable long lie, in this vulnerable patient group shall be a never event.

Appendix 1: Resources and appendices

a.



August_2017_YHAH
SN_McDonach_Moham

Original Evaluation Prepared by:

Dr Eileen McDonach and Professor Mohammed A. Mohammed.

Yorkshire and Humber Academic Health Science Network, AHSN .

Date August 2017

b.



Falls Issues Paper
FINAL- branded.pdf

Literature Review:

Urgent ambulance services for older people who fall; a rapid review of the evidence for their impact .

Dr Jackie Gray

Date: May 2017

C.

Dedicated Falls Advisor data table.

		Total incidents	Incidents Attended				Per Day		Conveyed		% Conveyance	
			Pilot	% of incidents	Non-pilot	% of incidents	Pilot	Non-Pilot	Pilot	Non-pilot	Pilot	Non-pilot
Green	Falls team on duty	183	144	79%	39	21%	1.23	0.33	4	24	2.8%	61.5%
	Falls team not on duty	57	36	63%	21	37%	0.31	0.18	0	14	0.0%	66.7%
Yellow	Falls team on duty	2631	76	3%	2555	97%	0.6	21.8	24	1738	31.6%	68.0%
	Falls team not on duty	1179	26	2%	1153	98%	0.2	9.9	5	802	19.2%	69.6%
Amber	Falls team on duty	1269	13	1%	1256	99%	0.1	10.7	3	1059	23.1%	84.3%
	Falls team not on duty	589	0	0%	589	100%	0	5.0	0	494	0.0%	83.9%