intravenous thrombolytic therapy is the standard treatment for patients with ST elevation acute myocardial infarction (STEMI). It is widely available and has a well demonstrated ability to reduce infarct size or abort acute myocardial infarction, preserve ventricular function, and to reduce both short and long term mortality. However the effects of thrombolysis are time dependent, with maximum benefit when it is received within one hour of symptom onset, after which each 30 minute delay to reperfusion reduces life expectancy by about one year, and of little benefit if received more than 12 hours from symptom onset. The National Service Framework for coronary heart disease states that patients should receive thrombolysis within one hour of calling for professional help. For areas with long journey times to hospital this standard is achievable only if thrombolysis is administered before hospital arrival. The Department of Health is therefore introducing a national PHT strategy. By October 2004, 24 (77%) English ambulance services were providing PHT, and 1094 patients had been thrombolysed by paramedics. Westcountry Ambulance Services Trust introduced prehospital thrombolysis for the study area in April 2003, following a feasibility study demonstrating safety and a potential reduction in call-to-needle times of 48 minutes. The first patient was thrombolysed in September 2003. However, paramedics’ views about PHT are unknown. Observations during the local feasibility study and evidence elsewhere suggest that a proportion of paramedics will be unwilling or reluctant to administer thrombolysis (Chamberlain D. Personal communication, 2003), yet government claims that equipping ambulances for PHT will save 3000 lives a year are based on the assumption that all eligible patients will receive thrombolysis before reaching hospital (Quinn T. Personal communication, 2004). There are likely to be profound implications for service provision and commissioning if a significant proportion of paramedics are unwilling to thrombolysate patients. The aim of the study was to explore paramedics’ attitudes to administering thrombolysis to establish what factors influence their willingness or reluctance to administer intravenous thrombolytic therapy for patients with STEMI.

METHODS

Semistructured interview schedules were devised based on a literature review and interviews with seven key informants from the ambulance service management, the acute hospital trust, and a national policy organisation. Interviews were conducted so as to encourage expression of participants’ own concerns and relevancies. Twenty paramedics (four women and 16 men) were interviewed in depth. All had taken part in the local feasibility study. Four were in a junior management role, or had been in the past. Length of service in the ambulance trust ranged from four to 33 years (mean 19 years). All the ambulance stations serving the hospital were represented. Interviews were recorded (with participants’ consent), and transcripts analysed with QSR N6 software for emergent themes using the constant comparative method. The study was approved by the local research ethics committee. Participating paramedics were given the opportunity to review all written outputs from the study to ensure their concordance with the conclusions and as a check that their anonymity has been protected. Names attributed to quotes are pseudonyms.

RESULTS

Positive views of prehospital thrombolysis

Benefits to patients

Most paramedics accepted that the delivery of thrombolysis would bring benefits to STEMI patients. The study paramedics, in common with those in other studies had a strong occupational ethos of patient care in which “making a difference” to patients was a key aspect of a highly valued job. Thrombolysis was viewed as an addition to paramedics’ therapeutic repertoire which would enable them to save lives and limit myocardial damage, and thereby enhance their ability to benefit patients in their care. This positive orientation to PHT underpinned the views of many, but not all of the study paramedics: “With regards to thrombolysis it’s something that we can actually do that will save lives that will actually have a long term benefit with regards to people’s survival. It lengthens their life and it’s proven to be like that, so yeah, it’s obviously a worthwhile thing and I’ll give it when I can.” (Nick)
Benefits to paramedics
From being what was essentially a transport service staffed by people whose only requisite qualification was the ability to drive, the ambulance service is now an important part of the NHS emergency care service, providing immediate care to three quarters of emergency hospital admissions, and staffed by trained emergency technicians and paramedics qualified in advanced life support skills. For some paramedics thrombolysis was a symbol of the increasing status and value of the paramedic role: “And from that respect I feel valued that people trust me enough to do all these things, and to thrombolise and to read ECGs and whatever. I do feel valued that way.” (Geoff)

Blurring of territorial boundaries
The necessity to cooperate with the hospital encouraged this positive view, with a number of paramedics feeling that the blurring of territorial boundaries between hospital and community represented a real advancement of their profession as they became accepted by and integrated into the healthcare team: “I think we are going at leaps and bounds. Because it’s certainly, the thrombolysis certainly integrated us into the hospital as well. We never did anything really with the NHS. Although we were part of the NHS we weren’t, and the thrombolysis all of a sudden, you know … We know people in the hospital, we socialise with them, we can do talks with them now and we’re recognised in journals and I really do think that that was the big step and that’s been taken now.” (Sue)

Training
Positive attitudes to PHT had also been fostered by the PHT training. The fact that it had been delivered by a team which included nurses and doctors from the hospital trust and the respect and confidence in their skills shown them on the course had given paramedics confidence about their ability to deliver PHT: “I think confidence is the main thing isn’t it? Certainly with thrombolysis there’s a lot of confidence there because [thrombolysis nurse trainer] treated us with respect and we’d never been treated like that before. And she stood there and said “I know you can do it”, and because she believes in you, you think “Oh maybe I can do it.”” (Sue)

Negative views of prehospital thrombolysis
Such positive orientations towards PHT were, however, compromised by a number of negative factors which related to the occupational, organisational, and policy context in which PHT operated. Negative factors competed with positive orientations and could represent strong countervailing imperatives to thrombolysis, affecting the willingness of some paramedics to thrombolise.

Risk to patients
Thrombolytic medication is associated with risks, particularly of bleeding and of stroke, and the benefits of the therapy must be balanced against these risks, which, unlike those associated with most other drugs and procedures administered by paramedics, can be irreversible. This risk challenged paramedics’ occupational ethos of helping, not harming patients and was a key factor in negative attitudes to thrombolysis: “Because it is something … you could give this drug and kill somebody. This is the first time this has ever happened in the ambulance service as far as I know. You can give things by mistake; you can give things that you shouldn’t be giving. You could be stepping outside your protocol. That is down to you. But this is something you could give to someone in complete and utter innocence, and kill them.” (Andy)

Paramedics processed risk in different ways. Some argued that the fear of harming patients was a feature of all new medication as it was introduced, one which would abate as people became accustomed to it. Others rationalised the fear of an adverse event by arguing that it would not happen until the patient was safely in hospital, or that it would have happened anyway, or by balancing risk against benefits. Fear of an adverse event related to the consequences for themselves as well as for patients, and although most felt that they would be protected from censure by rigorous adherence to their protocol, others were concerned that patients would not always tell them relevant facts, which would remove the protection of protocol compliance. There were worries about obtaining consent and about litigation. A minority of paramedics felt that thrombolysis was a uniquely risky procedure, and this made them reluctant to give it. This was exacerbated by the perception by some that policy makers and hospital staff lacked insight into the uniquely challenging conditions in which ambulance crews work. These include remote and lone working in sometimes difficult conditions and sole responsibility for the decision to thrombolise and its possible adverse consequences. They contrasted this to the hospital with its resources, records, back-up team, and pristine clinical conditions: “In hospital you’ve got all the backup and lots more brains. And more space. You know, and you’ve got a better ECG to look at and all these things like that. Because I think sometimes the A&E staff forget that there’s only two of us, one of us is driving, so you’re in the back with that patient on your own, and there’s only a number of things you can do, and you know, if someone is really poorly it is quite difficult.” (Ian)

A step too far
A number of paramedics believe strongly that patients are safest in hospital. This led them to question whether recent developments in the paramedic role which extend time at scene and delay hospital arrival had been well thought through. In contrast with those who felt that thrombolysis was a “pat on the back”, some paramedics expressed concern that it represented a step too far in terms of rapid changes to their role: “As I say, with this drug more than others because it’s … it is expensive and quite a potent drug. You know you do sort of … sometimes you sort of think ‘Well, perhaps we’re going a little bit too far’. It’s a lot more responsibility on us.” (Pete)

Because of the risks of thrombolysis, paramedics felt it should not be mandatory. If it were to become standard treatment (which evidence suggests it will be), they felt sure that those who were reluctant would find ways not to do it: “I think the ones that aren’t over keen on it will probably come up with a reason not to do it. If they really don’t want to. They can come up with a variety of reasons. I don’t think they will [thrombolise], no. Just opt with their feet.” (Tina)

Pay
Another source of negative attitudes towards administering thrombolysis was the question of pay. The majority of paramedics felt their pay scales had lagged behind the rapid development of the profession and no longer reflected their role. Despite the continual addition of new protocols, paramedic pay was not felt to have increased in relative terms, and was hardly more than that of emergency technicians, despite the latter having far less responsibility. In some cases, depending on their employment contracts, technicians could earn more than paramedics. The requirement to deliver PHT had revived frustrations about reported past unfulfilled promises of more pay, fuelling feelings of being exploited and undervalued. Paramedics felt that some colleagues (though not themselves) would not accept the
additional risks and responsibilities of thrombolysis unless these were reflected in their salary: “Because I mean ... I've spoke to a few paramedics who’re still ... you know, they're really not sure about giving the [thrombolytic] drug. They say, you know, there's so many things and we’ve had enough. You know, we’ve had enough—all these extra drugs, all these extra skills, we’ve taken on more and more. And we’re not getting any ... I know there's financial stuff, but you want to be paid what you think you’re worth. I mean we do think for ourselves and you know, we’re out there giving these sorts of drugs and stuff like that. Where's the extra incentive to do it, you know? I mean, we don’t really do it for the money but you’d want to feel valued in sort of ... society.” (Rob)

Lack of consultation and ownership
A further disincentive to providing thrombolysis was the sense that it had been introduced with limited consultation. Ambulance service management culture traditionally reflects its military origins in its hierarchical and non-consultative style,12 and while attempts had been made to improve top down communication, there was felt to be little access by ground staff to higher level decision making, and few means to communicate concerns to management. Lack of communication and failure to involve paramedics in policy decisions was felt to be inappropriate in the light of their increased professional responsibility and meant that some did not feel ownership of the decision to introduce PHT, which was then experienced as an imposition: “The ambulance, the actual ground ambulance weren’t consulted enough. Very, very little. It was just sort of like … imposed … is a sort of a harsh word for it I suppose. You could say ‘Well we’re going to do this’. That’s the way we learned about it, or that it was coming in.” (Barry)

Inappropriate and exploitation
Attitudes to thrombolysis were formulated in a context of year on year workload increase, resulting in shifts sometimes so busy that ambulance crews were missing meals and breaks, and a culture of increasing inappropriate use of the service. There were numerous accounts of “time wasting”, callers dialing 999 for trivial complaints and abuse by health and social care professionals such as nursing home staff calling an ambulance when a resident had fallen because of their “no lift” policies, and general paramedics, unwillling to be come out, inappropriately advising patients to call an ambulance: “This doctor wouldn’t come out and we had to take[e]lderly patient] to hospital. We had to take this old boy out in the cold at three o’clock in the morning. They had a look at him and literally 20 minutes later he was back. What a waste of resources.” (Charlie)

Paramedics felt it was inappropriate that although they were trained in advanced skills such as thrombolysis, they spent the majority of their time dealing with trivial, time wasting, and inappropriate jobs. Changes arising from the new GP contract, the failure of some GPs to turn out, and perceptions of suboptimal treatment by some GPs for patients in the surgery, led some paramedics to a suspicion that they were being “used” or exploited as cheap labour: “Thrombolysis, um, it’s a good thing in the community I think. I have got a few reservations about it. I think that perhaps the ambulance service does get ... how can I put it? Used, that it’s perhaps an easy option, well maybe not an easy option but it’s an inexpensive option, let’s put it that way.” (Andy)

“We get £20,000 a year, they get £120,000 a year. It doesn’t take genius to work out why we’ve got to do it.” (non-sample paramedic at ambulance station)

Response time targets
Perceptions of low pay made paramedics feel undervalued. Strategies introduced to meet government response time targets exacerbated this. The Department of Health requires ambulance services to respond to 75% of all Category A (calls involving life threatening situations) calls within eight minutes. Not all ambulance services can easily achieve these targets,11 particularly in areas with dispersed rural populations such as the study area. Westcountry Ambulance Service employs three major strategies in an attempt to meet the eight minute response; the deployment of vehicles at standby points rather than ambulance stations, the increased use of single manned rapid response vehicles (RRVs), and the use of community first responders. According to paramedics, standing by in an ambulance (or RRV), sometimes for half of a 12 hour shift is uncomfortable and cold, adversely impacts on their health and safety, and is inconsistent with the Improving Working Lives policy. Paramedics reported developing back pain from sitting in ergonomically inappropriate ambulance cabs, and they felt this was adversely affecting their patient care. Standby also has implications for the mental health of paramedics because it removes the possibility of discussing distressing incidents with colleagues in the crew room. This is the preferred coping mechanism for many in an occupation with an unusually high prevalence of stress related disorders.10 Standby was detrimental to morale, and that this had also affected some paramedics’ willingness to take on additional options such as PHT.

“Morale is non-existent and that’s why you’re getting the people that are really low and saying that they’re not interested or they’ll not do the [thrombolysis] course. Some have got no enthusiasm and that’s the reason, really, I think.” (Barry)

Working alone in RRVs can be stressful, can increase the risk of assault, precludes a number of procedures, and the transfer of most patients. Paramedics believed that the way to achieve response time targets was to invest in more ambulances. Measures introduced to meet response time targets represent a strong countervailing imperative to the rational and equitable provision of PHT. Paramedics claimed that standby points focus on populous areas where targets are likely to be met, to the detriment of more remote areas, leading to a “postcode lottery”. RRVs do not carry the necessary equipment for recording and transmitting 12-lead ECGs, and community first responders have only basic skills and a defibrillator. Paramedics claimed that once these responders had met the eight minute target, ambulance back-up could take up to an hour to arrive, seriously delaying transport to hospital, which could leave STEMI patients outside the time frame for PHT and delay hospital reperfusion. There was a universal belief that achieving the eight minute target had had an adverse effect on patient care generally, representing a conflicting target to that stipulating a one hour call-to-needle time: “You see, it’s an unfortunate situation. With this eight minutes, if you arrive in seven minutes and the patient dies it’s a success. If you arrive in nine minutes and the patient lives and it’s a good outcome, you’ve failed. We are now treating the clock and not the patient. The patient care, in my view, is gone, absolutely.” (Andy)

“The patient’s not exactly benefiting. We’re benefiting, because we get our response within the eight minutes response times but the patient’s still having that MI.” (Rob)

* Twenty nine per cent of services in 2003/04 and 45% in 2002/03 failed to achieve the target of 75% of Category A calls reached in eight minutes.
Equipment issues and autonomous PHT

An additional factor affecting attitudes to PHT was the fact that the telemetric equipment provided for the recording and transmission of ECGs lacked the facility for printing out the rhythm strip, making ECG interpretation difficult, especially in a moving vehicle. Paramedics reported incidents of equipment failure where PHT had been denied to patients because ECGs could not be recorded or transmitted. The telemetric link to the hospital provided by the Mobimed was crucial to the acceptability of PHT by paramedics. Although they were aware of the Joint Royal Colleges Ambulance Liaison Committee’s ultimate objective of autonomous PHT, none found this appropriate in view of their remote working conditions and the lack of a colleague with whom to share and confirm their decisions.

DISCUSSION

Paramedics’ attitudes to PHT are contradictory. There is a great underlying enthusiasm for a procedure which brings enormous benefits to patients and also to the emergent profession of the paramedic. This competes with factors which undermine these positive views. Some of these are directly related to thrombolysis itself, most notably its risks, which represent a challenge to a role identity which stresses making patients feel better, not worse. There is a range of individual approaches to risk, and it is likely that for many it becomes less salient as they gain experience in PHT without mishap, and as it becomes a more routine part of their role over time. It is likely however, that a minority of paramedics will never find this increased risk acceptable, and ambulance services must find a way of accommodating this unless they are willing to lose dedicated and experienced staff. There was some concern that the rapid addition of advanced skills to the therapeutic repertoire, with associated increase in at-scene time, was moving the profession away from its original function of speedy transport of patients to hospital. It is worth noting that such doubts are reflected in the medical literature, as writers highlight the absence of an evidence base to justify many taken for granted paramedic interventions.15 16 Countervailing imperatives within the occupational and organisational context in which paramedics work militate against the rational and equitable provision of PHT. Centrally imposed response time targets may be locally inappropriate, are unrelated to patient outcomes in most cases, and can create inequity of provision as ambulances are deployed at standby points in more populous areas at the expense of the more remote locations. Strategies such as the use of RRVs and community first responders can delay thrombolysis and transferal to hospital. The government urgently needs to develop a coherent quality strategy which does not create one set of targets which contradicts another.

In order to overcome doubts related to the risks of PHT it is important that paramedics are valued, and pay and conditions, and consultation and communication with management all need to be high priorities. Investment in telemetric equipment should take account of paramedics’ perspectives. Paramedics are the experts in prehospital care, and it is important that policy makers tap into this expertise, avoiding reliance on protocols based on in-hospital care, which may not be appropriate in the community. Managers need also to ensure communication and consultation are sufficiently open and robust so that those who deliver the service feel ownership of the guidelines and policies that determine what they do. The problem of the increased workload of ambulance services and, relatedly, the perceived inappropriate use of the service by some patients and health professionals needs to be addressed so that paramedics’ advanced skills are rationally deployed.

CONCLUSION

Despite appreciation of the benefits of PHT, it is likely that a minority of paramedics in the ambulance service will not wish to deliver PHT because of a combination of personal and organisational factors which override the incentive of benefit to patients. Service providers and commissioners need to take this into account. It is possible that this reluctance may be a function of the fact that thrombolysis is new and has been introduced at a time of rapid change and development of the paramedic role, and will fade away as paramedics become accustomed to it, particularly if they are appropriately valued and rewarded, and if infrastructural and organisational countermelting imperatives are addressed.

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