

# MAGIC for General Practice

End of Fellowship report

**THE MANAGEMENT OF ACUTE EMERGENCIES IN GP SURGERIES  
USING IN SITU SIMULATION AND CHECKLISTS**

**SIMULATION FELLOW  
NHSE PRIMARY CARE FELLOWSHIP**

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# MAGIC for General Practice

## The Management of Acute emergencies in GP surgeries using In situ simulation and Checklists

### Introduction

It was a great privilege to have been one of the first simulation primary care fellows in the Thames Valley fellowship program. My mentor was Professor Helen Higham who is also on the MAGIC team.

Simulation is important in education as an immersive and experiential learning technique to safely teach and practice technical (practical) and non-technical skills (eg team work, communication). An immersive experience enables participants to experience learning as if it were in real life [1]. In situ simulation, is simulation that takes place in the real environment that a person or team is working in on a daily basis, with the team that would usually be working at the time of the event, using their own equipment, processes and systems. This allow the team to practice safely without harming patients. In the last few years, simulation has increased dramatically in healthcare to improve patient care and patient safety but simulation has been heavily used for much longer in other safety critical, high reliability organisations including aviation, the military and aerospace. All major secondary care organisations now have simulation suites for training their staff, however, the majority of GP teams do not have any access to this form of education [2].

A Cognitive capacity is limited in stressful situations, affecting higher level functions such as recall and calculating ability. Checklists or prompt cards are cognitive aids and remind clinicians of the correct steps to take when faced with a deteriorating patient, they are therefore an important tool in error management [3]. The association of anaesthetists have developed a Quick Reference Handbook of checklists for anaesthetic emergencies that are present on all anaesthetic trolleys and checklists for the emergency department are in development [4]

An initial scoping exercise with responses from 22 practices in the Thames Valley area showed that:

#### 1. **Emergencies occur in GP surgeries**

Over the previous 12 months:

- 97% of GPs had encountered an emergency.
- 300 emergencies were recorded over 22 practices in 13 clinical categories
- Ambulance delays were seen in 50% of cases, of up to 4 hours
- Less than 1% involved a cardiac arrest

#### 2. **There is no nationally recognised training for GP teams (outside basic life support)**

- 82% GPs no training in the last year
- 39% no training since hospital jobs up to 20y ago

#### 3. **There is very little easily accessible emergency guidance appropriate for primary care**

Guidance for emergency management has been written for secondary care, by secondary care clinicians but there is very little available in primary care. Even the guidance that is embedded in primary care, e.g. the anaphylaxis algorithm from the resuscitation council, was written by secondary care specialists in accordance to best practice in a hospital setting, with no evidence of use from primary care.

**It is unsafe that GP teams are in the position where they are suddenly expected to manage a situation they have not been trained or prepared for and with no guidance to manage these**

## Background

I am currently the clinical lead for the **MAGIC** project which has been funded by HEE. We have trained 22 practices in emergency management using in situ simulation using 3 standardised scenarios, together training the use of 3 corresponding checklists that can be used by GP teams as guidance in a real emergency. The feedback extremely positive with usefulness of checklists rated at 8.7 / 10 (likert) and 98% felt that in situ simulation prepared them better than BLS training to manage emergencies. Competence & confidence ratings improved after initial training and were maintained at a follow up visit 6 months later. Changes were also documented to equipment, systems and processes following the training.

In the current phase of the project, we are developing a handbook of 16 checklists for GP teams to use in emergencies; this is called the Quick Reference Handbook of Clinical Emergencies in General Practice, or the **GPQRH**. These are based on the commonest emergencies seen in our initial survey.

## Fellowship Project

My project was a side arm to the main MAGIC project.

### The aims of my project were to:

1. Drive forward the development of the GP Quick Reference Handbook (GPQRH)
2. Develop sustainable in situ simulation and checklist training within GP practices, using our current resources
3. To provide training and support materials in order to correctly use the checklists in an emergency situation.

### This is what I achieved:

#### 1. Drive forward the development of the GP Quick Reference Handbook (GPQRH)

Our team has developed the GPQRH, which is the world's first cognitive aid for GP teams to use in emergency situations in their practices. This contains 16 emergency checklists based on the list compiled after the initial survey including 14 of specific emergencies, one undifferentiated collapse and one checklist for our non-clinical teams.

They were developed using an iterative 'Delphi' process, by a core team of GPs, with subject matter specialists and were taken to GP practices for tabletop simulation to test fitness for use and finally reviewed by human factors and clarity counts experts to ensure that they appropriately designed for use in a stressful emergency situation. This was a painstaking iterative process.

The checklists are all of a similar design, so being familiar with one checklist enables teams to use all of them.

Titles easy to understand

Obvious starting point

Use of standard phrases

Guidance on finding additional information

Direction to use standardised SBAR handover sheet

Reminder to contact next of kin

Clear difference between adult and paediatric checklists

Standardised colour scheme for information boxes

Simple statements in information boxes

**3-7 Severe Shortness of Breath (Respiratory Failure)** **Adult** Version 16.1 4 April 2021

Consider all possible causes of respiratory failure one by one. Avoid spending too long on any one aspect until you have run through the whole checklist.

**CHECKLIST: START**

1. Breathe for help and request oxygen cylinder, emergency drugs, and equipment
  - Ensure you have a nurse and an additional doctor present if possible
  - Note the time
2. Check patient for severity (ABCDE approach)
  - Airway and consciousness
  - Breathing: • Assess respiratory rate, breath sounds, S<sub>at</sub>, and consider peak expiratory flow rate
  - Check Circulation: • pulse rate and rhythm, heart sounds
  - Check for Disability: • reflexes level, check pupils, check blood glucose
  - Exposure: • Check for signs for head-to-toe examination
  - Give oxygen: • (ABC 4) • aim for S<sub>at</sub> 94-98%
3. Check for causes of respiratory failure
  - (ABC 1)
  - Start treatment: • (ABC 4)
  - Progress of respiratory failure: • (ABC 1) • call blue-light ambulance
  - For critical changes: • (ABC 1) • call blue-light ambulance
  - Consider using SBAR
4. Check patient for signs of improvement:
  - If no improvement in RR, HR, or S<sub>at</sub> after 20 minutes: • call blue-light ambulance or consider endotracheal intubation
5. Prepare SBAR handover (referential letter for paediatrics (see SBAR checklist))
6. Call next of kin

**INFORMATION SECTION**

**BOX A: drug doses and equipment**

|                     |                                                                           |
|---------------------|---------------------------------------------------------------------------|
| • Nebuliser         | • Long-acting: • deliver with oxygen 6-8L/min, can repeat every 5 minutes |
| • Spontaneous       | • O <sub>2</sub> flow: • can be mixed with salbutamol                     |
| • Prednisolone      | • 40mg po if possible                                                     |
| • Hydrocortisone    | • 100mg iv (if not available not possible)                                |
| • Diuretic          | • 20-40mg po normal renal                                                 |
| • Furosemide 50/100 | • Give 1-2 times normal dose or 20-40mg if diuretic naïve                 |

**BOX B: critical changes**

If acute coronary syndrome: • S.1 ACUTE CORONARY SYNDROME

If asthma: • S.2 ACUTE ASTHMA (SEE ASTHMA)

If cardiac arrest: • S.3 CARDIAC ARREST

If stroke: • S.4 STROKE ADULT

If sepsis: • S.5 SEPSIS ADULT

If pulmonary: • S.6 PULMONARY EMBOLISM

**BOX C: other reference information**

Signs of respiratory failure include: tachypnoea, elevated respiratory rate, accessory muscle use, difficulty completing sentences

Consider differential diagnosis:

- Atrial fibrillation
- Atrial flutter
- Atrial tachycardia
- Atrial premature beats
- Atrial fibrillation
- Atrial tachycardia
- Atrial premature beats
- Atrial fibrillation
- Atrial tachycardia
- Atrial premature beats

Other causes: neurological conditions, anaphylaxis, drug overdose, trauma, toxics

This is a copy of one of the checklists with information about it's used.

## 2. Develop sustainable training within GP practices, using our current resources

Ideally, the checklists should be taught during in situ simulation training sessions, with the GP multidisciplinary team of patient facing clinical and non-clinical staff. One of the main aims for my fellowship project was to investigate how we could embed training into GP practices. There are important collateral benefits of in situ simulation which including testing of practical techniques, practising team work and reviewing surgery systems and processes to identify any latent threats so that changes can be made to improve practice and safety. Ideally, training should be interesting, engaging, enjoyable and bring tangible benefits to the individuals and team together with improvements in patient management and safety. At present, there is very little simulation taking place in GP practices. There is only one primary care simulation faculty in the UK, and few staff or funding is available elsewhere. The challenge is how to deliver training without resource or funding, which is sustainable, low cost and fits with usual working patterns.

I wanted to explore if there would be an opportunity for in situ simulation with checklist training to be delivered by primary care paramedics, who are one of our new roles in primary care, as part of the additional roles reimbursement scheme staff. This would also support the four pillars of advanced practice in their area of expertise: Clinical skills, education, leadership and research. Training primary care teams to manage emergencies would also help PC paramedics to retain their own emergency skills which are otherwise underused in primary care. Individual GP practices are also very agile and adaptable, changes can be made quickly and therefore bring more or less immediate benefit.

Prior to the start of my fellowship, I had a very positive meeting with the HEE paramedic education program leads in Thames Valley and Wessex area. Unfortunately, I was not able to get further engagement with this team, despite months of trying. However, I managed to contact the south of England paramedic workforce lead who was very enthusiastic about this possibility. In early October, I presented at the college of paramedics annual conference, primary and urgent care group who have had enquiries from over 80 paramedics about attending a train the trainer course, so that they could deliver this training, possibly with the inclusion of basic life support training which would enable them to take on the mandatory BLS training for their practices. I have a further meetings planned to discuss how we can support them by developing the training, going forwards.

## 3. To provide training and support materials in order to correctly use the checklists in an emergency situation.

I also worked with iris [5] which is a specialised platform to create scenarios for simulations. I have written standardised simulation training scenarios for each checklist and these are now available to guide training. Each scenario will include a copies of the corresponding checklists needed for that scenario. These can assist practices for training, especially those that have less expertise in simulation.

Simulation in GP surgeries does not require high fidelity manikins, as we will not be performing interventional procedures or using monitoring equipment. The scenarios can therefore be simpler and I worked with iRIS to complete a new suite of new MiniSim scenarios. This was a lot of hard work because I have never written a scenario before and so had to understand and learn this technique before I could write the simulations. Once these are complete, they will be freely available worldwide to any healthcare team who has an account with iRIS.

I am hopeful that I will be able to engage with the RCGP and that we can have discussions about holding the checklists on their website with open access to all GP practices. I had a discussion with the RCGP CPD lead at the RCGP annual conference in October, who was open to a further meeting to discuss these.

## Other Achievements

### Conferences attended:

**IMSH:** I have presented the project at IMSH (the International Meeting of Simulation in Healthcare) in Florida. It was very interesting to see teams work from around the world. Only one other primary care team was present and due to data sharing concerns by the organization, we were unable to meet them. The quality of the work from other secondary care teams was often less robust and the scope narrower than the work we have undertaken. It was useful to get our work known internationally.

**RCGPAC:** I also presented at the RCGP annual conference both as a poster and oral presentation, and had a lot of interest from participants, particularly about how they could get hold of the checklists!

**ASPiH:** I am presenting at the Association of Simulation Practice in Healthcare conference in November. This is the key UK organization for those involved in simulation.

**NHSE Fellowship conference:** I presented here and shared some of the learning experiences that I had during the year

**Simnet conference** I attended this as a delegate, it took place in Canterbury and was very interesting. Like other simulation conferences, the iRIS team were present and it was good to catch up about our work together.

Also:

- Attended a debriefing training course at OxSTaR
- Joined the OxSTaR simulation research group – I am presenting our project at them next week.
- I did the elfh human factors training modules as this particularly interests me, together with the lack of recognition of the multiple human factors issues in primary care which are a significant risk to patient safety.

### Learning points

I used an A4 spiral backed notebook to keep notes of all the meetings I had, this was very useful to keep track of everything in date order & easy to flick through.

There were some frustrations over the year that hindered progress. HEE and NHSE merged this year and the teams were changing so it was difficult for them to be autonomous or make decisions. However, the fellowship team and especially Katie Collins, was always supportive and helpful, Katie enabled the meeting with the HEE paramedic team, even though the outcome was not what I hoped for. I advised the new fellows to engage with the team earlier if they have similar problems.

I shared my mentoring sessions with Jeremy Ferguson, who was doing a simulation fellowship on joint injections. It was very interesting to hear how he was managing his project and this gave me ideas for my own. Our mentor, Helen Higham, was very enthusiastic and supportive of my project, but is also extremely busy and is involved in many other projects and groups, and is a mentor to several others, I suspect due to low staffing levels. This limited our mentoring meetings.

As a GP partner, I was not able to take time out of my usual working time to do my fellowship and so this was done in my day off. I found this challenging to fit in as partnership work spills over to every day of the week and weekends which meant that I regularly worked on weekends and during holidays to complete some parts of the project.

## My recommendations

It would be helpful both for the mentors and for those they are mentoring, if there was a clear scope of expectations

The opportunity for ongoing support and funding following fellowship for successful projects to pursue further work

Better communication, accountability for NHSE to answer emails and prioritise meetings with fellows so as not to delay projects as both time and financial resource are very valuable.

## Conclusion

This was a wonderful opportunity for me to spend more time on a project that I feel is of great importance in GP teams and their patients. I think I made significant progress and am very grateful to NHSE/HEE for allowing me this opportunity. I hope someday that the GPQRH is an integrated part of the support for GP teams and that simulation training expands in primary care after teams become more aware of its potential, if paramedics start training in primary care.

## References

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