



Llywodraeth Cymru  
Welsh Government



# Broadening of the role of firefighters in Wales

2021 Thematic Review report by the  
Chief Fire and Rescue Advisor and  
Inspector for Wales

Mae'r ddogfen yma hefyd ar gael yn Gymraeg.  
This document is also available in Welsh.

## Contents

Introduction and background	Page 2
Executive Summary	Page 3
Headline findings	Page 6
Methodology	Page 7
Analysis of operational utilisation	Page 9
Analysis of programmed activity	Page 12
Training and exercising	Page 14
Risk reduction	Page 16
Issues around accessing additional capacity	Page 17
Analysis of non-incident related off station activity	Page 19
Analysis of WAST incident data	Page 20
Acknowledgements	Page 23
Recommendations	Page 24

## Introduction and background

In November 2020, the Welsh Government Cabinet approved a proposal to pursue a broader role for the Fire and Rescue Service (FRS) in support of the NHS. Following this approval, a Broadening of the Role Working Group was convened involving representatives from the FRS, Welsh Ambulance Service Trust (WAST), Health Boards (HBs) and Welsh Government (WG). Through the Working Group, an outline specification has been agreed which would see Welsh firefighters taking on additional duties in support of Health and Social Care colleagues. The specification covers response to incidents of out-of-hospital cardiac arrest, response to non-injured fallers and falls prevention.

At the time of writing, further engagement is underway with key stakeholders over how broadening of the role might be delivered in practice in order to bring certainty to any proposals. For an agreement to be reached, any proposals would have to be referred to the National Joint Council (NJC) to be progressed through to a negotiated settlement.

In my role as Chief Fire and Rescue Advisor, I have undertaken a review of the capacity within the 3 Welsh FRS to carry out the additional work arising from broadening of the role, in order to give the necessary assurances to Ministers that this can be done safely and without detriment to core functions.

This report sets out the findings of that review.

## Executive summary

The objective of this review is to establish if the Welsh FRS have the capacity to take on additional work in support of Health and Social Care, without detriment to core functions.

The review shows that FRS appliance utilisation rates (overall time spent at incidents) are low across the 3 duty systems in operation within Wales. At the fire stations with the highest operational activity levels across Wales, utilisation rates ranged from 0.3% of total time available on the retained duty system (RDS) to 8.1% of total time available on the wholetime shift system.

The data provided by WAST covered out-of-hospital cardiac arrest and non-injured fallers incidents across Wales for the period 2017/18 – 2019/20 inclusive. Analysis of the WAST data shows that activity levels are highest during the current FRS wholetime day shift (0900 – 1800) although the peak of activity levels is from 0700 – 1200 which encompasses the last 2 hours of the current FRS night shift.

The most frequently occurring WAST incident deployment duration is 31 – 60 minutes, although there were some incidents where time spent with the patient exceeded 4 hours.

The analysis demonstrates that there is significant capacity within the wholetime shift system (2 x 9 hour days, followed by 2 x 15 hour nights, followed by 4 days off) which predominantly falls between 2200 - 0700 on the night shift when there is limited or no programmed activity and when FRS and WAST incident activity levels are at their lowest.

What the analysis also demonstrates, in my view, is that more time should be allocated to training, exercising and risk reduction activity on the wholetime shift system through greater access to this capacity, irrespective of any agreement on broadening of the role. In any event, a fundamental review of station work routines is required to ensure that activity is appropriately scheduled to maximise output. As an example, it would not be realistic to programme practical training using a station yard in a residential area or to undertake home safety visits from 2200 – 0700. There is, however, activity that can be programmed during these times that is currently undertaken on the day shift, examples being routine maintenance of equipment, cleaning of appliances or classroom-based training.

The requirement to allocate more time to training, exercising and risk reduction activities would be compounded if the additional time demand arising from broadening of the role is then factored in as the analysis demonstrates that WAST incidents are consistently high during the wholetime day shift. This has fatigue and risk implications which are set out within this report. There is also an as yet unquantifiable time demand from falls prevention activities.

The analysis demonstrates that there is no unallocated capacity within the existing wholetime day crewing system as there is programmed activity throughout the full duration of the shift. The day crewing work routine affords up to over twice the amount of time allocated to training, exercising and risk reduction activity than on the shift

system. However, the Grey Book stipulates 7 hours within the weekly contracted 42 hours as standby from home address on the day crewing system. To achieve 42 hours per week over an 8 day reference period, shifts would need to be 12 hours in duration. In practice, the 7 hour standby at home stipulation results in shifts of 10 hours duration (acknowledging a 9 hour 30 minute duration in Mid & West Wales FRS). There are FRSs in England that have accessed this capacity through the introduction of 12 hour day shifts on day crewing type duty systems.

FRS incident utilisation rates on the retained duty system (RDS) are lower than on the shift or day crewing duty systems. This is to be expected as RDS stations cover areas with relatively low populations and/or levels of fire and rescue risk.

Contractually RDS firefighters are required to attend their fire station for 2 - 3 hours per week on a drill night so impact on training, exercising and risk reduction activity of a broader role should be minimal, provided the RDS firefighters are not mobilised during this period. In the simplest terms, therefore, capacity exists within the system to take on the additional health-related incident responses proposed through a broader role.

There will undoubtedly be fatigue and risk issues arising for RDS firefighters from taking on additional responses as a number will inevitably occur overnight. These issues will, however, rest with the primary employer as they do now, along with the impact of extended periods of time away from the primary workplace. That said the FRS should still actively monitor RDS mobilisations for any potentially adverse occurrences such as multiple or protracted night-time mobilisations of the same appliance (and crew).

In North and Mid & West Wales FRS, there will also be an additional cost in using firefighters on the RDS, as they are paid at the hourly rate per turnout along with a disturbance allowance. South Wales operate a salary scheme for RDS which would likely avoid the majority of additional costs arising from taking on additional responses.

When the WAST incident data is overlaid with existing FRS incident data and programmed activity, the need to create additional capacity on the shift duty system in particular becomes imperative. The addition of the WAST workload and any falls prevention activity will undoubtedly have an impact on programmed risk critical activity, much of which will need to be reprogrammed into the rest period within the existing night shift.

This will make the existing night shift duration untenable from a fatigue and risk perspective and therefore must be addressed if broadening of the role is to be pursued. In simple terms, it is unlikely that a rest period of any meaningful duration could be programmed in to the work routine, which if working for a full 15 hour shift would significantly increase fatigue and risk, particularly on the subsequent night shift 9 hours later. The solution is to equalise the length of day and night shifts, thus increasing the gap between night shifts to 12 hours to allow for meaningful rest whilst free from duty, or to reduce the shift duration to 8 hours to deliver at least a 16 hour break between shifts.

Whilst the time available for training, exercising and risk reduction activity is greater on the day crewing system than on the shift system, this time would be impacted upon by the additional responses arising from broadening of the role. In order to create additional capacity on the day crewing system to offset this impact, the FRS could pursue converting the 7 hours on standby at home into positive hours on station which would be utilised for training, exercising or risk reduction activity, along with making an immediate response to incidents. The latter point is particularly relevant to North Wales FRS who have a day crewing shift start time of 1200 at present, which means that the peak of WAST calls would occur during the retained duty period.

## Headline findings

In summary the significant findings from the review are that:

- There is capacity for the FRS to provide support to the NHS from within its existing resources. Appliance mobilisation and utilisation rates are low, reflecting the sustained success of the FRS in reducing the incidence of fires and other emergencies
- However, on the wholetime shift system, that capacity largely exists during the night shift, and in particular the period from 2200 - 0700. In contrast, health-related incidents peak during the day, and in particular in the period from 0700 - 1200. Any falls prevention activity would mostly have to take place during the day shift
- Realising this capacity will therefore necessitate changes to current station work routines on the wholetime shift system, such that almost all station-based duties would need to be routinely programmed into the night shift
- This will have fatigue and risk implications which would be addressed through equalisation of shift durations
- Such changes are, in my view, necessary in any event on the wholetime shift system, irrespective of broadening of the role. The current shift system does not meet Health & Safety Executive (HSE) guidance, nor does it allow, in my view, sufficient time for training, exercising and risk reduction activities all of which are critical to firefighter and public safety

I have made recommendations to give effect to these findings, which are listed at the end of this report.



## Methodology

On 9 June 2021, I wrote to the 3 Chief Fire Officers (CFOs) advising them of my intention to conduct a Thematic Review of the capacity of the FRS to take on additional responsibilities arising from broadening of the role. Within the letter I requested that the CFOs nominate a single point of contact from their FRS with whom I could liaise to access data to inform the review. I also set out within a separate document the methodology I intended to apply to the review along with the rationale. A copy of the Methodology document is appended to this report.

The Review consists of 4 areas of focus.

- i. An analysis of operational utilisation which establishes the amount of time that the appliances selected for the review are engaged at incidents
- ii. An analysis of pre-programmed non-incident related activity through a review of station work routines. Examples of such activity are risk critical training and skill maintenance (referred to as training and exercising within this report) or Site Specific Risk Information (SSRI) gathering and home safety visits (referred to as risk reduction within this report)
- iii. An analysis of actual non-incident off-station related activity to establish the amount of time that the selected fire appliances are utilised off station on non-incident related activity (typically risk reduction activity)
- iv. An analysis of the likely activity arising from broadening of the role to overlay with the previous three areas to determine the extent to which core activity may be impacted

There are three duty systems in operation across Wales; wholetime shift (2 x 9 hour day shifts, followed by 2 x 15 hour night shifts, followed by 4 days off), wholetime day crewing (4 x day shifts with each day shift immediately followed by a retained cover period, followed by 4 days off) and retained (on call firefighters providing up to 120 hours per week cover responding to incidents, and who typically live within a 5 minute radius of a station), known as the RDS.

For the purposes of the operational utilisation analysis, we selected in conjunction with and agreement from the 3 FRS, the most operationally active stations (based on historic incident data) from each duty system (6 stations from each FRS, 18 stations in total). Note: South Wales FRS do not currently operate the day crewing duty system so we selected 3 shift and 3 RDS stations. Where the station had more than one frontline firefighting appliance, we undertook a utilisation analysis of each frontline appliance based at the station, some of which are crewed using different duty systems<sup>1</sup>. We also undertook an analysis of primary crewed special appliances based at the selected stations.

The rationale for selecting what have historically been the stations with the highest levels of incident activity was to establish the most acute impact of taking on any additional responsibilities on the basis that the impact would in all likelihood be less at other stations with lower incident activity levels.

---

<sup>1</sup> For instance, Wrexham has two wholetime frontline appliances and one RDS appliance, Bangor and Carmarthen have one day crewed appliance and one RDS appliance.

The analysis covered the 3 financial years up to and including 2019/20. This is to recognise the impact Covid 19 restrictions may have had on off-station activity during 2020/21.

The station work routine and non-incident related off-station activity analysis is concerned only with the wholetime shift and day crewing duty systems. I have not reviewed these activity types on the RDS as contractually firefighters on this system are only required to attend their local station for 2-3 hours per week on a drill night. Whilst firefighters on the RDS can be contractually required to give up to 120 hours cover per week, this availability is almost exclusively for the purpose of responding to incidents within a designated period of time (typically 5 minutes from alert to attending the station to then responding to the incident).

We requested that WAST provide us with data for all out-of-hospital cardiac arrest and non-injured fallers incident responses. We specifically asked for time of call and duration of incident which we took as the WAST 'time spent with patient' data set after agreement with our WAST colleagues that this would be most reflective of the time the FRS would likely be engaged at WAST incidents. This was to enable us to overlay the WAST incidents by time of day and duration with FRS data.

This data was analysed by North Wales FRS on our behalf who extracted the data specific to the station areas featured within the review and presented it on heat maps by FRS area, highlighting the selected stations and also in graphical format on a pan-Wales basis.

North Wales FRS undertook a non-injured fallers' response trial which ran from August 2016 – May 2018. North Wales FRS provided us with the data from this trial for time of call and time on scene which most closely represents the WAST metric of time spent with patient. The trial data is not included within this report as it does not extend to out-of-hospital cardiac arrest responses and did not operate over the full 24 hour period of the day. It does, however, closely match WAST data.

It is not possible to quantify the additional activity demand which may arise from falls prevention work; however, for it to have a meaningful impact the number of interventions would have to be significant.

## Analysis of operational utilisation

The table below provides a summary of the utilisation rates of the selected appliances from each of the FRS. Whilst every effort has been made to ensure the robustness of the data, the table may, in some instances, not include mobilisations where an appliance has been stood down prior to attending an incident or when an appliance has been mobilised to standby at another station in a strategic cover move. The absence of these mobilisations has a negligible effect on the overall utilisation rate.

### Number of hours appliances are in use, and percentage of time they are in use.

Duty System Callsign			Hours in use			Percentage of time in use		
			2017-18	2018-19	2019-20	2017-18	2018-19	2019-20
<b>Mid and West Wales</b>								
Morrison	Wholetime	WM44P1	591.5	643.2	551.8	6.8	7.3	6.3
	RDS	WM44P2	150.7	128.6	98.1	1.7	1.5	1.1
Swansea Central	Wholetime	WM45P1	669.6	710.7	672.0	7.6	8.1	7.7
Pontardawe	Day Crewed	WM56P1	277.8	280.3	261.1	3.2	3.2	3.0
Carmarthen	Day Crewed	WM62P1	431.7	353.0	312.8	4.9	4.0	3.6
	RDS	WM62P2	188.2	92.7	102.6	2.1	1.1	1.2
Newtown	RDS	WM01M2	74.2	81.7	71.0	0.8	0.9	0.8
	RDS	WM01P1	213.4	206.2	251.6	2.4	2.4	2.9
Gorseinon	RDS	WM41P1	215.4	266.1	234.9	2.5	3.0	2.7
<b>North Wales</b>								
Wrexham	Wholetime	WN37P1	375.3	375.2	434.9	4.3	4.3	5.0
	Wholetime	WN37P2	511.2	484.1	481.4	5.8	5.5	5.5
	RDS	WN37P3	34.0	42.6	79.8	0.4	0.5	0.9
	Wholetime	WN37R1	8.3	10.2	12.2	0.1	0.1	0.1
Deeside	Wholetime	WN38P1	312.7	375.5	320.0	3.6	4.3	3.6
	RDS	WN38P2	76.4	104.9	60.5	0.9	1.2	0.7
Bangor	Day Crewed	WN2P1	225.6	314.9	294.0	2.6	3.6	3.3
	RDS	WN2P2	28.2	83.8	53.0	0.3	1.0	0.6
Caernarfon	Day Crewed	WN1P1	213.0	275.3	272.9	2.4	3.1	3.1
Holywell	RDS	WN42P1	134.5	220.4	94.0	1.5	2.5	1.1
Johnstown	RDS	WN43P1	63.3	144.9	120.4	0.7	1.7	1.4
<b>South Wales</b>								
Cardiff Central	Wholetime	WS51P1	462.5	431.1	487.1	5.3	4.9	5.5
	Wholetime	WS51P2	681.9	657.6	619.7	7.8	7.5	7.1
	Wholetime	WS51A4	82.7	92.4	68.2	0.9	1.1	0.8
Roath	Wholetime	WS50P1	488.4	567.1	543.6	5.6	6.5	6.2
Malpas	Wholetime	WS45P1	378.1	426.1	397.7	4.3	4.9	4.5
	Wholetime	WS45R5	100.6	113.2	120.0	1.1	1.3	1.4
Abergavenny	RDS	WS40P1	161.3	229.5	167.1	1.8	2.6	1.9
	RDS	WS40P2	41.3	65.1	30.4	0.5	0.7	0.3
Pontyclun	RDS	WS14P1	135.3	130.7	129.9	1.5	1.5	1.5
Abertillery	RDS	WS35P1	114.7	172.9	149.7	1.3	2.0	1.7

Call volumes and utilisation rates across the 3 duty systems are low. This is to be expected and is an indication of the success of the FRS in managing down incident numbers. FRS utilisation rates should be the lowest of all the emergency services. Indeed, it would be catastrophic if they were not.

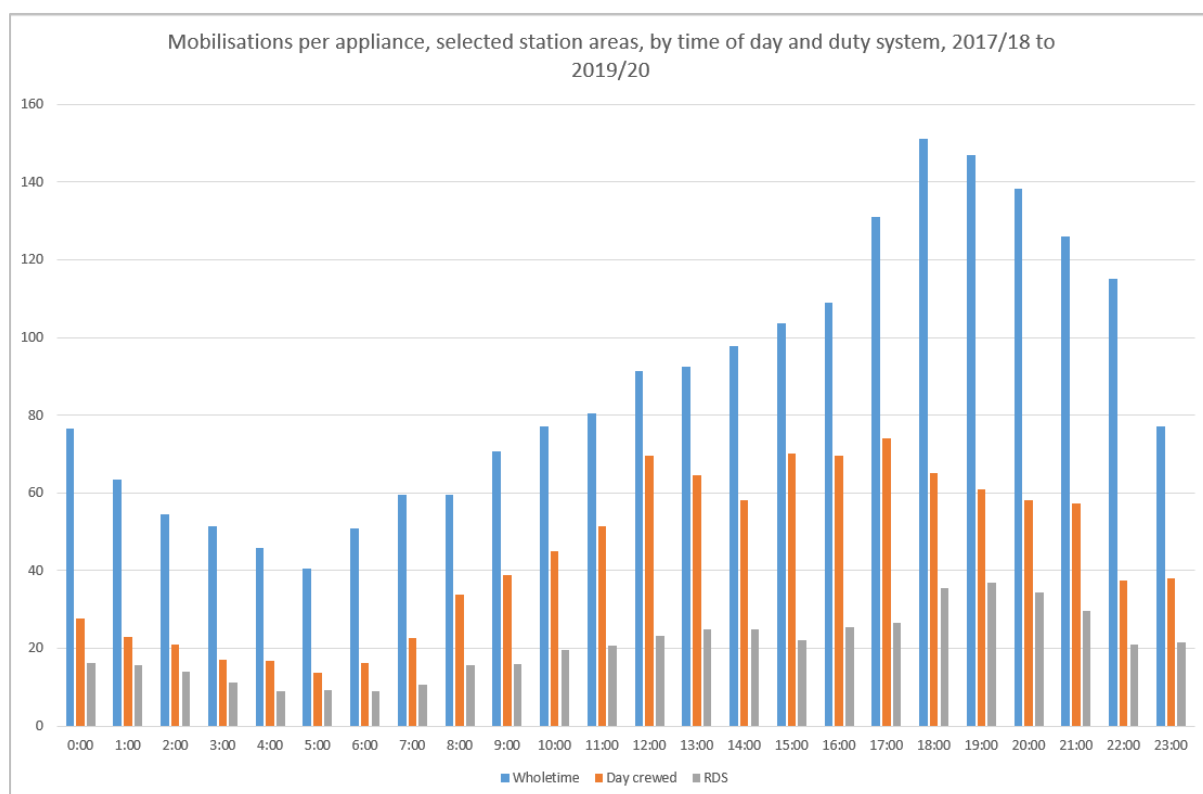
Utilisation rates for appliances at shift stations across Wales ranged between 3.6% at Deeside (WN38P1) in 2017/18 and 2019/20 to 8.1% at Swansea Central (WM45P1) in 2018/19.

Utilisation rates for shift crewed special appliances ranged from 0.1% for the Rescue Unit at Wrexham (WN37R1) (all years) to 1.4% for the Rescue Unit at Malpas (WS45R5) in 2019/20. These appliances are only mobilised to specific types of incidents or on request so the lower utilisation rate is absolutely to be expected.

Utilisation rates for appliances at the day crewed stations in Mid & West and North Wales ranged between 2.4% at Caernarfon (WN1P1) during 2017/18 to 5% at Carmarthen (WM62P1) during 2017/18.

Utilisation rates for appliances at RDS stations across Wales ranged between 0.3% at Abergavenny (WS40P2) during 2019/20 and Bangor (WN2P2) during 2017/18 to 3% at Gorseinon (WM41P1) during 2018/19.

Utilisation rates are typically higher on the night shift than the day shift which is to be expected as activity levels increase in the evening – for instance as a result of domestic cooking fires and deliberately-set small grass and waste fires. Activity levels across the 3 FRS and the three duty systems are fairly consistent in that incident numbers tend to increase mid-afternoon before peaking around 1700 - 2100. Actual time engaged at incidents on the day shift is typically around the same or slightly less than the time engaged from 1800 – 0000 during the night shift.



Utilisation during the night shift rest period 0000 – 0700 is low. The highest utilisation recorded for a wholetime appliance was the second appliance at Cardiff Central

(WS51P2) with an overall utilisation of 167.4 hours (6.6%) over the year 2017/18. The lowest utilisation recorded was the appliance at Deeside (WN38P1) with an overall utilisation of 46.5 hours (1.8%) over the year 2017/18.

Despite the low utilisation rates during the rest period, firefighters are still being mobilised to and engaged at incidents. This has fatigue and risk implications not least because of the short duration of time off duty between the first and second night shift (9 hours) which is less than the statutory minimum requirement of 11 hours and falls outside of HSE guidance contained within HSG 256 Managing shift work: Health and safety guidance. This is before any additional activity is contemplated and, therefore, is something the FRS should consider whatever the outcome of the work on broadening of the role or before considering how additional capacity might best be accessed to deliver more training, exercising and risk reduction activity (see below).

## Analysis of programmed activity

The wholetime shift and day crewing duty systems were the focus for this area of analysis. The shift system in operation within the 3 FRS is identical with 2 day shifts of 9 hour duration (0900 – 1800) followed by 2 night shifts of 15 hour duration (1800 – 0900), followed by 4 days off.

The day crewing shift durations and start and finish times differs between North Wales and Mid & West Wales FRS. North Wales FRS operate 4 day shifts of 10 hour duration each immediately followed by 14 hours retained cover, followed by 4 days off. The day shift commences at 1200 and concludes at 2200.

Mid & West Wales FRS operate 4 day shifts of 9 hours 30 minutes duration each immediately followed by 14 hours and 30 minutes retained cover, followed by 4 days off. The day shift commences at 0830 and concludes at 1800 (9 hours 30 minutes duration).

South Wales FRS do not currently operate the day crewing duty system.

In order to undertake this analysis, I requested that the 3 FRS provide me with any guidance relating to station work routines for the shift and day crewing systems and in particular any methodology supporting the allocation of time for risk critical training and competency assessment.

There is no formalised work routine in operation within any of the 3 FRS, although South Wales have a Work Instruction for Station Procedures which sets out some high level principles and guidance for Watch Officers to follow. The preference within each FRS is to devolve responsibility to Watch Officers for on-shift activity.

To account for the absence of a formalised station work routine, each of the FRS single points of contact provided a spreadsheet which detailed typical activity across the day and night shift.

An example of a typical shift system work routine is shown below.

## Thematic Review – Broadening of the role of Firefighters

<b><u>Wholetime shift system day shift</u></b>		
Parade	9:00:00	09:10:00
BA, inventory and vehicle checks	9:10:00	09:45:00
Standard tests, maintenance, cleaning	9:45:00	11:00:00
Break	11:00:00	11:15:00
Training, exercises	11:15:00	13:00:00
Lunch break	13:00:00	14:00:00
Risk reduction (Integrated Safe and Well visits, SSRI, 72d visits)	14:00:00	15:45:00
Break	15:45:00	16:00:00
Gym/Physical Training	16:00:00	17:00:00
Station and vehicle cleaning, administration, preparation for change of shift	17:00:00	18:00:00
<b><u>Wholetime shift system night shift</u></b>		
Parade	18:00:00	18:10:00
BA, inventory and vehicle checks	18:10:00	18:45:00
Training, exercises or Risk reduction	18:45:00	20:00:00
Gym/Physical Training	20:00:00	21:00:00
Meal break	21:00:00	22:00:00
Essential work / Station Routines / Private Study	22:00:00	0:00:00
Stand Down	0:00:00	7:00:00
Cleaning routines	7:00:00	8:00:00
Breakfast	8:00:00	8:30:00
Cleaning routines	8:30:00	9:00:00

The submissions from each FRS show that there is work activity planned across the full day shift. On the night shift there is work activity planned from 1800 up until 2200. Thereafter there is a 2 hour period for either essential work (non-determined), station routines or private study followed by a rest period from 0000 to 0700. This 9 hour period on the night shift represents the only spare capacity within the work routine with the possible exception of the 1 hour 30 minutes allocated to cleaning routines at the conclusion of the night shift. It is also the period when there is least operational activity.

An example of a typical day crewing work routine is shown below.

<b><u>Wholetime day crewed shift</u></b>		
Parade	12:00:00	12:10:00
BA, inventory and vehicle checks, Standard tests, maintenance, cleaning	12:10:00	13:00:00
Training and exercises	13:00:00	15:00:00
Break	15:00:00	15:15:00
Risk reduction (Integrated Safe and Well visits, SSRI, 72d visits)	15:15:00	16:30:00
Gym/Physical Training	16:30:00	17:30:00
Meal break	17:30:00	18:30:00
Training, exercises and Risk reduction	18:30:00	20:30:00
Break	20:30:00	20:45:00
Cleaning routines	20:45:00	21:45:00
Preparation for end of shift	21:45:00	22:00:00

## Training and exercising

The time allocated to training and exercising within the work routine across the 3 FRS varies between 5 hours 30 minutes - 6 hours per tour of duty on the shift system and between 8 - 16 hours per tour of duty on the day crewing system. The variation is because periods of time are allocated within the work routines to training and exercises or risk reduction activity. The upper figure would only be achieved if no risk reduction activity had been undertaken during the night shift on the shift system or at all during the 4 day tour of duty on the day crewing system. It would also only be achieved if there had been no mobilisations during this time.

I have not been able to definitively establish the extent to which the FRS have a formalised and documented methodology to support the allocation of time to risk critical training. To do so would necessitate a Thematic Review in its own right (which I intend to undertake). The 3 FRS all have competency recording systems set around periodic frequencies for training and assessment but there is no standardised methodology within the UK FRS that sets out a rationale for either the frequency of assessment or the amount of training required to maintain competence on items of equipment or through partaking in standard practices and practicing techniques as detailed within the FRS Training and Development Manual. In the absence of standardised methodology I can only offer professional judgement which is that I am not convinced the maximum of 6 hours that is allocated to training each tour of duty across the FRS on the shift system is likely to be sufficient to meet all risk critical training and assessment needs inclusive of a working knowledge of National Operational Guidance (NOG). I make this comment acknowledging that all firefighters undertake formalised crew-based and/or off-shift training along with periodic mandatory Breathing Apparatus and Compartment Fire Behaviour courses.

The scope of NOG which forms the basis of the essential underpinning knowledge for all firefighters is significant. All firefighters require a good understanding of the all incident hazard and control measure knowledge detailed within NOG. As NOG is relatively new and continues to evolve, the Welsh and indeed all FRS across the UK are still developing a full understanding of what this means for training demand.

Firefighters also need to be competent in the techniques to safely and effectively deploy every single item of equipment on a fire appliance. This includes firefighting pumps, ladders, methods of entry, breathing apparatus, safe working at height, hazardous materials, road traffic collision and water rescue equipment. The training demand to meet this need is significant. This is compounded on stations with a special appliance such as a Heavy Rescue Tender (Malpas and Wrexham in the utilisation analysis) which have many additional items of equipment.

Such is the importance of this issue, and in order to do it sufficient justice, I intend to undertake a Thematic Review of risk critical training in the coming months.

RDS firefighters have 2 - 3 hours contact time per week contractually allocated to maintain competence across all of these areas, which is around half that available to their wholetime colleagues on the shift system. As the analysis of appliance deployments shows, RDS crews are also deployed less often to actual incidents, and so gain less practical experience. This is not an issue I intend to address here as it is



too important and stands as an issue in its own right. It is something I will revisit, however, within a Thematic Review into risk critical training mentioned earlier. I intend that one of the central themes of that Review will be the challenges of maintaining competence within the RDS as it stands.

## Risk reduction

As well as providing an emergency response, the FRS has duties to prevent fires and promote fire safety, and to gather risk information to support an assertive and effective response. This requires firefighters to work away from the station on a routine and regular basis on SSRI gathering visits but also on other activities such as fire safety audits, hydrant inspections and home safety visits. The importance of gathering comprehensive and reliable SSRI was noted in the Phase One report of the Grenfell Tower public inquiry, and was among its recommendations.

The time allocated to these activities within the work routine across the 3 FRSs varies between 4 - 8 hours per tour of duty on the shift system and 10 - 13 hours per tour of duty on the day crewing system. As stated previously, the higher figure is only achieved if less training or exercising has been undertaken and there has been no mobilisations during the time period.

Activity should be dependent on the risk profile of the station area, such as the number of premises requiring an SSRI visit, and the numbers of people at particular risk of fire who might benefit from a home safety visit. It is not obvious from the station work routines that time is allocated based on risk profile. I accept that this is devolved to Watch Managers but it appears to me that time allocations are based on longstanding custom and practice and are constrained by the time available rather than being primarily driven by risk-based need.

My professional judgement is that more time should be allocated to risk reduction activity than is currently the case, given the scope and complexity of the built environment and the demographics across Wales.

## Issues around accessing additional capacity

In order to safely access the capacity within the wholetime shift system of 2 day shifts followed by 2 night shifts followed by 4 days off (commonly known as 2, 2, 4), the FRS would need to equalise the day and night shift durations to 12 hours which is permissible within the parameters set within the National Scheme of Conditions of Service (Grey Book) for the shift system. This is because the fatigue and risk implications of programming work into the existing night shift rest period would be unacceptable both to firefighters and to those whom they sought to protect by responding to emergencies.

The HSE produce guidance for employers on shift work including the steps to be taken to minimise fatigue and risk (HSG 256 Managing shift work: Health and safety guidance). This guidance sets out best practice in relation to shift durations and breaks between shifts. The HSE have produced a calculation tool that determines Fatigue and Risk scores for shift systems. The calculator has recently been removed from the HSE website; however the Welsh FRS could request that English FRSs who have experience of using the calculator, of which there are several, undertake this analysis on their behalf.

Several English FRSs have introduced 12 hour duration shifts on the wholetime shift system in order to increase productivity and at the same time address fatigue and risk issues. This has been achieved through recourse to the Resolution Advisory Panel (RAP) facilitated through the NJC mechanisms.

The HSE guidance advises that shifts should be no longer than 8 hours in duration. The Welsh FRS could consider the introduction of a new system with shifts of 8 hour duration to further manage fatigue and risk issues and which meets the principles for the shift system set out within the Grey Book. If the Welsh FRS were minded to pursue 8 hour shifts this could be achieved through recourse to the NJC Technical Advisory Panel (TAP) if a negotiated settlement could not be reached with the representative bodies.

The analysis demonstrates that there is no unallocated capacity within the existing wholetime day crewing system as there is programmed activity throughout the full duration of the shift. The day crewing work routine affords over twice the amount of time allocated to training, exercising and risk reduction activity than on the shift system. However, the Grey Book stipulates 7 hours within the weekly contracted 42 hours as standby from home address on the day crewing system. To achieve 42 hours per week over an 8 day reference period shifts would need to be 12 hours in duration. In practice, the 7 hour standby at home stipulation results in shifts of 10 hours duration (acknowledging a 9 hour 30 minute duration in Mid & West Wales FRS).

There are several English FRSs who have introduced 12 hour day shifts on day crewing type duty systems in order to increase productivity. This has been achieved through recourse to the Technical Advisory Panel (TAP) facilitated through the NJC.

Any changes to the existing shift and day crewing systems would be significant for firefighters and would need to be the subject of full engagement with their

representatives through the NJC. The NJC processes can be very resource intensive and take a significant period of time to conclude.

***Recommendation 1:*** that the FRS review the existing shift system to identify how best the additional capacity identified within this report can be accessed to increase training, exercising and risk reduction activity. This should be done irrespective of whether broadening of the role is pursued

***Recommendation 2:*** that the FRS review the existing shift system and any proposed new shift system against HSG 256 Managing shift work: Health and safety guidance to ensure that the fatigue and risk implications are appropriately considered

***Recommendation 3:*** that the FRS undertake an analysis of training, exercising and risk reduction activity requirements based on risk and allocate blocks of time to each within a formalised station work routine framework. These blocks should be interchangeable at the discretion of Watch Officers to ensure appropriate flexibility

It should be noted that in the context of broadening the role and specifically falls prevention activity, this activity would typically be integrated within a home fire safety visit. The practical consequence is that the visit will take longer to complete so unless more time is allocated within the work routine, the actual number of visits, inclusive of the core function home fire safety aspect, will reduce. In order to achieve a substantive effect for Health and Social Care, it is likely that the number of interventions would need to be significant; therefore, the amount of additional time demand arising from falls prevention activity should not be understated.

It should be possible to quantify the opportunity cost of these interventions by simply multiplying the hourly rate of the crew by the amount of time engaged on home safety (inclusive of falls prevention) activity. The benefit may be more difficult to quantify but it should result in reduced number of incidents of fallers in the home, and thus fewer admissions to hospital and less reliance on long-term care. This would serve to give an indication to Health and Social Care colleagues of the value of any investment in this area.

## Analysis of non-incident off-station related activity

The focus of this analysis was the amount of time spent on off-station non-incident related activity. Typically this is risk reduction activity (SSRI, home safety checks, schools visits etc) or training and exercising at off-station locations.

I initially requested that the FRS interrogate off-station activity status codes within their mobilising systems which would show time deployed by appliance on each specific activity. On further investigation none of the 3 FRSs have as yet built in the functionality within their mobilising systems to be able to undertake this analysis (which would be achieved by coding each individual activity).

As an alternative, I requested that instead the FRS carry out an analysis of the total amount of time per appliance spent on off-station activity as this would at least allow me to triangulate actual activity with the predicted activity provided within the station work routine spreadsheets on which the WAST incident data would be overlaid.

All 3 FRSs undertook lengthy investigations of their systems to establish if this could be achieved. What became evident was that the amount of work required to extract the information would be significant and in my view disproportionate to the potential benefit to be realised. I therefore withdrew this request and paused this element of the review. However, I remain concerned that this data is not available, not simply because it frustrates the review, but because in my view the FRS should be able to receive assurance that such activities are being undertaken at sufficient frequency and with the appropriate amounts of time devoted to them.

***Recommendation 4:*** that the 3 FRSs build in the functionality to their mobilising system to allocate status codes to specific activities (such as SSRI visits) in order to generate management assurance that these activities are being undertaken with sufficient frequency, and to facilitate more precise analysis of time spent on such activities.

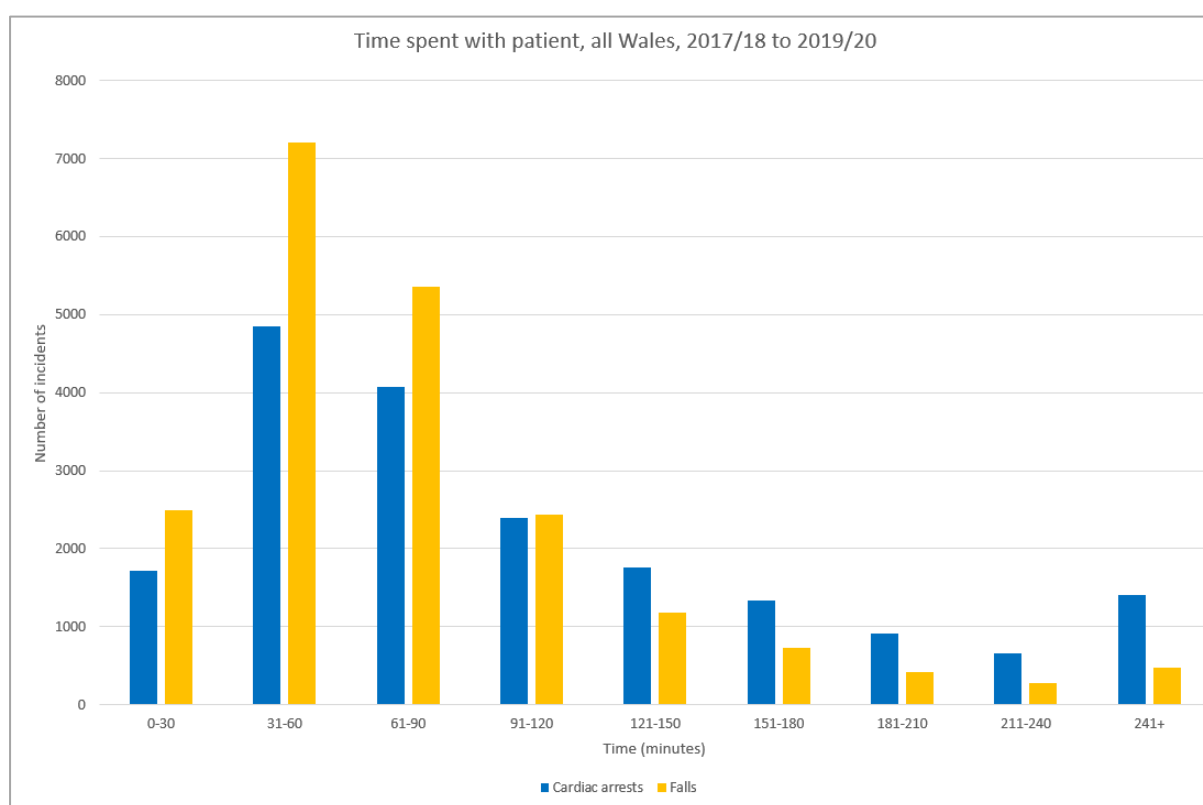
## Analysis of the additional workload arising from WAST incidents

I engaged with colleagues from WAST to access data on out-of-hospital cardiac arrest and non-injured fallers incidents occurring across 2017/18 – 2019/20.

The WAST data included total number of incidents, duration of the incident (expressed as 'time spent with the patient') and time of day that the call was received.

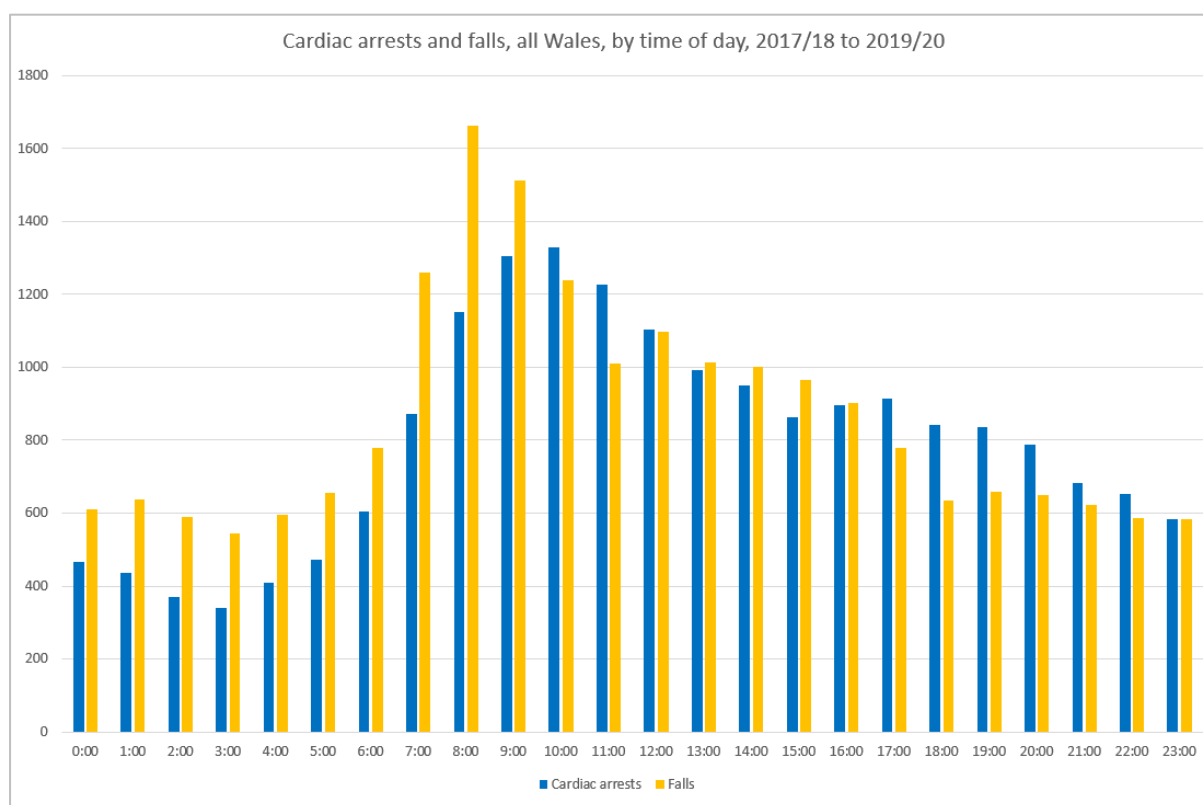
North Wales FRS data analysts extracted and mapped the data for the 18 station areas selected for the purposes of the review. They also produced a number of graphs showing all-Wales data which I use below in order to present the most accurate picture when overlaying with FRS data.

The graph below shows the time that paramedics spent with the patient for the three years covered by this review. The most frequently occurring incident duration is 31 - 60 minutes followed by 61 – 90 minutes.

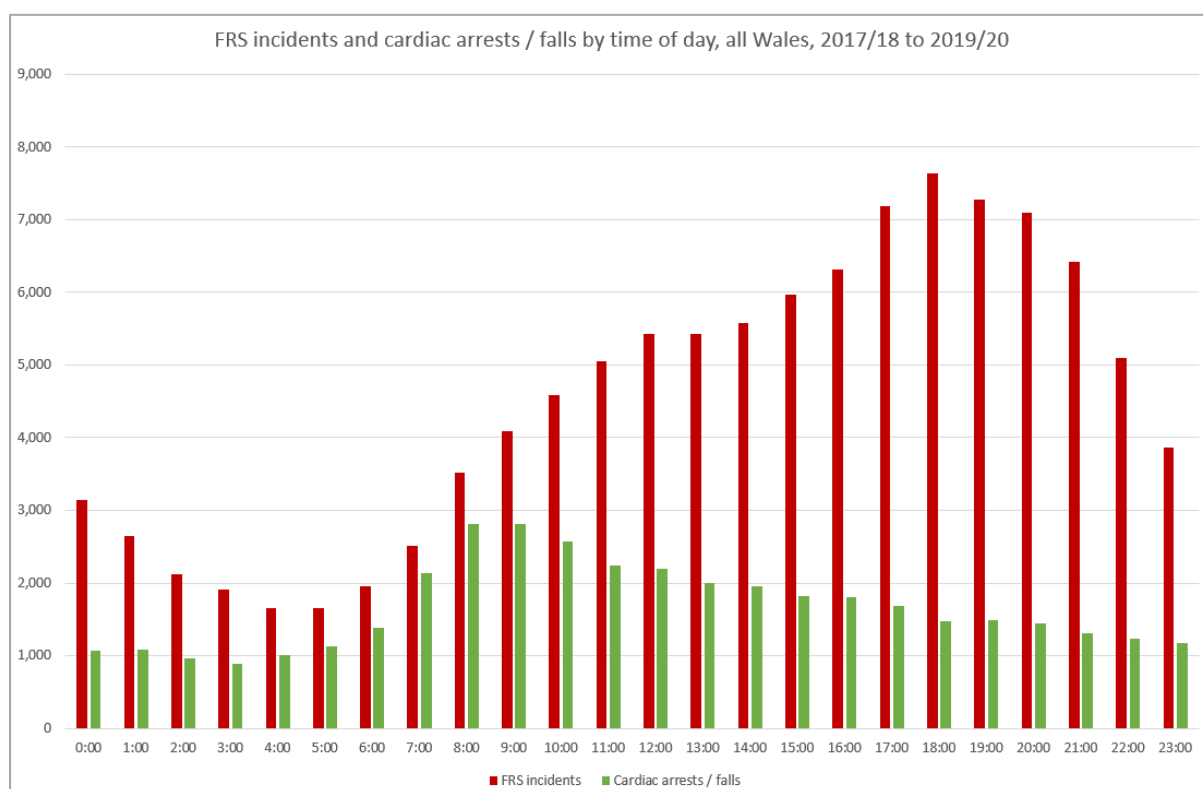


The graph below shows incidents by time of day for the three years covered by this review. Like the FRS data, the WAST data shows higher call volumes during the day than overnight. Unlike the FRS data the peak for out-of-hospital cardiac arrest and non-injured fallers occurs from 0700 – 1200 although incident numbers remain high throughout the existing FRS day shift.

## Thematic Review – Broadening of the role of Firefighters



The WAST data can also be combined with those for FRS mobilisations. Overall, and on an all-Wales basis, the call volumes are understandably lower as they only cover 2 incident types but there is a notable morning peak in out-of-hospital cardiac arrest and falls, although there are less occurring during the evening peak in fire incidents.



Overall, the WAST data suggest the following:

- The potential extra workload for the FRS from broadening of the role may be significant. On an all-Wales basis, and for the three-year period used, there were 39,667 cardiac arrest and falls incidents in addition to 108,340 incidents to which the FRS responded. During the period from 0700 - 1000 in particular these calls amounted to 75% or more of core FRS mobilisations. The FRS would not attend all of the WAST incidents but the volumes are still significant
- The majority of health incidents (55% of cardiac arrests and 73% of falls) required an attendance of up to 90 minutes which demonstrates the extent of the additional workload
- This workload may be disproportionately high in station areas which did not feature in the review. For instance, the WAST data appear to show a high volume of falls incidents in areas with a relatively elderly population, such as in some of the towns on the North Wales coast, which may experience a relatively low level of fire-related incidents
- Health-related incidents are spread throughout the 24-hour period, but most frequently occur in the daytime, especially the morning. This underlines the point made earlier over the need to release capacity during the FRS wholetime day shift by moving substantial amounts of station-based activity to the night shift rest period



## Acknowledgements

My thanks to the Lead Officers from the 3 FRSs, Assistant Chief Fire Officer Dewi Rose and Group Manager Stuart Townsend from South Wales FRS, Area Manager Craig Flannery from Mid & West Wales FRS and Assistant Chief Fire Officer Richard Fairhead from North Wales FRS for their support to this Review.

My thanks also to the Lead Officers nominated to support us with data capture and analysis and in particular Pippa Hardwick and Rich Noble from North Wales FRS for their analysis of the WAST data on behalf of the 3 FRSs.

For the WAST data my thanks to Sonia Thompson, WAST Director of Operations and Adam Thomas, WAST Senior Information Analyst.

Finally my thanks to Claire Davey, Welsh Government Knowledge and Analytical Services Directorate, for all of her work on the incident utilisation analysis.

## Recommendations

**Recommendation 1:** that the FRS review the existing shift system to identify how best the additional capacity identified within this report can be accessed to increase training, exercising and risk reduction activity. This should be done irrespective of whether broadening of the role is pursued

**Recommendation 2:** that the FRS review the existing shift system and any proposed new shift system against HSG 256 Managing shift work: Health and safety guidance, to ensure that fatigue and risk implications are appropriately considered

**Recommendation 3:** that the FRS undertake an analysis of training, exercising and risk reduction activity requirements based on risk and allocate blocks of time to each within a formalised station work routine framework. These blocks should be interchangeable at the discretion of Watch Officers to ensure appropriate flexibility.

**Recommendation 4:** that the 3 FRSs build in the functionality to their mobilising system to allocate status codes to specific activities (such as SSRI visits) in order to generate management assurance that these activities are being undertaken with sufficient frequency, and to facilitate more precise analysis of time spent on such activities.