

Masters: Professional Practice

Work-based Learning Project

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Abbreviations List:

ABD	Acute Behavioural Disturbance
CAD	Computer Aided Dispatch
EMS	Emergency Medical Services
EMD	Emergency Medical Dispatcher
ePCR	Electronic Patient Record
GDPR	General Data Protection Regulation
IAED	International Academy of Emergency Dispatch
JRCALC	Joint Royal Colleges Ambulance Liaison Committee
MPDS	Medical Priority Dispatch System
RCEM	Royal College of Emergency Medicine
TRiM	Trauma Risk Management
UK	United Kingdom
WAST	Welsh Ambulance Services University NHS Trust

Proposal:

Assessing the Impact of Medical Priority Dispatch System (MPDS) Protocol 38 on Emergency Medical Services (EMS) Responses to Acute Behavioural Disturbance (ABD) Incidents in Wales:

Introduction and Context:

ABD incidents are increasing in Wales. These episodes are often triggered by mental health crises, substance misuse, or medical conditions. These incidents frequently involve individuals displaying extreme agitation, aggression, or confusion, posing risks to both the patient and EMS responders. ABD incidents are unpredictable and, in severe cases, can be life-threatening or even fatal. Therefore, they demand fast, specialised responses to ensure the safety of all involved. EMS Ambulance Services must quickly dispatch the appropriate resources and coordinate responses with other emergency services, such as the police (Ellis, Hick & Fitch, 2020).

To address the complexities of ABD incidents, the MPDS Protocol 38 was developed. This protocol provides a structured framework for dispatching EMS to ABD cases, ensuring that resource allocation aligns with the severity and nature of each situation. Protocol 38 aims to streamline responses, safeguard patient and EMS personnel safety, and enhance overall efficiency by deploying appropriate resources, such as trained medical professionals and equipment, to the scene (National Academy of Emergency Dispatch, 2019). Protocol 38 supports police officers on scene to easily provide EMS call takers with the requisite information to elicit the most appropriate clinical response. Despite its potential, Protocol 38 has not yet been implemented in the Welsh Ambulance Services University NHS Trust (WAST).

Justification for the Research:

The researcher has identified that the clinically safe management of ABD is a high profile and complex challenge for WAST. ABD is a serious clinical condition that often manifests itself by a sudden onset of severe behavioural changes, often accompanied by aggression, agitation, and confusion, which can pose significant risks to the patient, healthcare providers, and the public (Brice, Pirrallo and Racht, 2012).

This research will evaluate the effectiveness of Protocol 38 in addressing the specific challenges posed by ABD incidents, which require rapid and bespoke interventions to ensure

the safety of patients and EMS personnel. One particular case that emphasises the importance of such evaluation is the tragic death of Mouayed Bashir in Newport, Wales in 2021. Bashir, a 29-year-old man, died following an ABD related emergency, during which police and EMS responded to his home address. The circumstances surrounding his death have raised serious concerns about the adequacy of response protocols for ABD incidents, particularly regarding resource allocation and the training of EMS personnel involved in such high-risk cases (South Wales Argus, 2021).

Bashir's death led to public outcry, with his family questioning whether better medical intervention and quicker EMS response might have prevented his death. This incident has drawn attention to the shortcomings in existing protocols and highlighted the need for EMS personnel to be adequately prepared to manage individuals experiencing ABD, particularly those related to mental health crises (ITV News, 2021). The researcher suggests that the significance of this case justifies the need for research into the practical application and effectiveness of Protocol 38, ensuring that lessons are learned to prevent similar tragedies occurring.

Without a comprehensive understanding of how Protocol 38 functions in real-life scenarios, WAST services may struggle to manage these incidents effectively. The researcher will investigate key factors such as response times, resource allocation, and clinical safety, providing essential data that could inform future improvements in the EMS system (Fitch, Thompson & Watson, 2022).

Anticipated Impact:

This study aims to have several significant impacts: -

- **Inform Policy and Practice:** The research will provide data-driven evidence to inform decision-making within WAST. This will help determine whether Protocol 38 is meeting its intended objectives and highlight areas that require further development (Thompson, 2019).
- **Improve Patient Outcomes and Safety:** By evaluating the effectiveness of EMS responses, the study aims to contribute to the improvement of patient outcomes, particularly for those experiencing ABD episodes. Better EMS interventions could help prevent the escalation of such incidents and reduce the risk of adverse events (Ellis, Hick & Fitch, 2020).

- **Enhance Resource Allocation:** The research will examine how well Protocol 38 facilitates efficient resource deployment, ensuring that EMS personnel are not overstretched while still providing the necessary care for ABD cases (Hick, Thompson & Rowe, 2021).
- **Guide Future Research and Development:** The study could set the foundation for further investigations into EMS protocols for managing complex behavioural emergencies, not only in Wales but also globally. This research may contribute to the refinement of emergency response frameworks for ABD incidents (Fitch, Thompson & Watson, 2022).

Intention of the Study:

The primary aim of this study is to assess the impact of Protocol 38 on EMS responses to ABD incidents in Wales, focusing on the following research question:

How does the implementation of MPDS Protocol 38 affect the effectiveness and clinical safety of EMS responses to Acute Behavioural Disturbance (ABD) incidents in Wales, and what specific improvements can be identified in terms of response time, appropriate resource allocation, and patient outcomes?

The project has four key objectives: -

1. Evaluate the implementation of Protocol 38 and how it integrates into the Welsh EMS framework (National Academy of Emergency Dispatch, 2019).
2. Assess the effectiveness of EMS responses after implementing Protocol 38, focusing on response times and the appropriateness of resource allocation (Thompson, 2019).
3. Evaluate clinical safety outcomes for patients and EMS personnel, determining whether the protocol has improved safety and reduced risks (Ellis, Hick & Fitch, 2020).
4. Identify areas for improvement and provide recommendations for refining Protocol 38 to optimise its performance in enhancing patient care and responder safety (Hick, Thompson & Rowe, 2021).

Anticipated Outcomes:

The study is expected to produce the following outcomes:

- **Improved Response Times:** It is anticipated that Protocol 38 will improve EMS response times by enabling more efficient dispatching based on the specific circumstances of ABD incidents (National Academy of Emergency Dispatch, 2019).
- **More Effective Resource Allocation:** The study aims to show that Protocol 38 has optimised resource allocation, dispatching appropriate personnel and equipment for ABD incidents without overwhelming EMS resources (Fitch, Thompson & Watson, 2022).
- **Enhanced Clinical Safety:** Another expected outcome is improved clinical safety for both patients and EMS responders, with fewer adverse incidents and reduced escalation of ABD cases (Ellis, Hick & Fitch, 2020).
- **Actionable Recommendations:** The research will provide evidence-based recommendations for refining Protocol 38 and enhancing responder training (Thompson, 2019).

Ethical Considerations:

The researcher will strictly adhere to ethical guidelines, ensuring the protection of patient and EMS personnel confidentiality. Ethical approval will be sought from relevant authorities, and participants will give **informed consent**. Data will be anonymised in accordance with the **General Data Protection Regulation (GDPR)** in the UK (Thompson, 2019).

Insider Research:

Given that the research may involve EMS personnel, the potential for insider research bias must be addressed. Researchers with pre-existing relationships with EMS staff will maintain objectivity by establishing boundaries and involving external experts in data analysis (Hick, Thompson & Rowe, 2021).

Conclusion:

The implementation of Protocol 38 provides a structured approach for managing ABD incidents, aiming to enhance EMS communication with police, improve response times, resource allocation, and safety. This research will provide essential insights into its operational impact in Wales, informing policy, guiding future research, and improving EMS practices (Thompson, 2019).

INTRODUCTION:

ABD represents a significant challenge for EMS due to its unpredictability and potential for severe and even fatal consequences. Often linked to mental health crises, substance abuse, or underlying medical conditions, ABD incidents require rapid, well-coordinated responses from all responding agencies to ensure the safety of patients and responders alike (Scott, Emslie & Jones, 2020). In Wales, the management of ABD incidents remains particularly demanding, given the increasing prevalence of such emergencies and the complex needs they present for EMS.

In the United Kingdom (UK), many ambulance services use the Medical Priority Dispatch System (MPDS) to prioritise and allocate EMS resources. This system uses a suite of protocols that assess and prioritise many clinical conditions. One such protocol is Protocol 38, which is specifically tailored to manage cases of ABD, (Clawson et al., 2008). In the UK, the ambulance service plays a critical role in responding to cases of ABD. The response strategy is informed by national guidelines and protocols, which emphasise the importance of a coordinated and multidisciplinary approach involving the police. According to the Joint Royal Colleges Ambulance Liaison Committee (JRCALC) guidelines, the primary objectives in managing ABD are to ensure the safety of all parties, provide immediate medical care, and facilitate the patient's access to appropriate mental health services (JRCALC, 2019).

MPDS Protocol 38 has been developed to enhance the management of ABD cases, offering a bespoke and standardised approach to dispatching EMS resources. Its design aims to ensure appropriate resource allocation, improve response times, and safeguard both responders and patients during high-risk incidents (Adams, 2018). However, despite its potential, Protocol 38 has yet to be implemented by the Welsh Ambulance Services University NHS Trust (WAST), leaving a gap in addressing the challenges posed by ABD emergencies effectively (National Academy of Emergency Dispatch, 2020).

The critical importance of this research is underscored by cases such as the death of Mouayed Bashir in Newport, Wales in 2021, which highlighted the inadequacies in existing response protocols and raised public concerns about EMS and Police preparedness for behavioural emergencies (BBC News, 2021). This tragic incident, along with similar events, has driven calls for improved protocols to mitigate risks and enhance the safety and efficiency of EMS operations during ABD incidents.

This study aims to evaluate the impact of MPDS Protocol 38 on EMS response to ABD cases, focusing on response times, resource allocation, multi-agency working and clinical safety outcomes. By examining its potential for improving outcomes and addressing existing deficiencies, the research seeks to provide actionable insights for EMS policy and practice, ensuring that lessons learned can prevent future tragedies and improve public trust in emergency services (Smith & Green, 2019).

LITERATURE REVIEW

Introduction:

ABD, commonly associated with conditions such as excited delirium, represents a critical medical emergency that demands a rapid and efficient response. The MPDS Protocol 38, known as Advanced Specific Emergency Notification Dispatch (SEND), is a tool developed to address such emergencies by improving dispatch accuracy and resource allocation. This literature review examines the role of Protocol 38 in responding to ABD incidents in the UK, exploring its implementation, effectiveness, challenges, and impact on EMS.

Understanding ABD:

ABD incidents are often unpredictable and require immediate intervention to mitigate risks to the patient, responders, and the public. The Royal College of Emergency Medicine (RCEM) defines ABD as a complex state that may result from substance misuse, psychiatric conditions, or neurological disorders (Gillings, Grundlingh and Aw-Yong, 2016). Patients experiencing ABD exhibit extreme physical strength, high pain tolerance, and erratic behaviour, making them difficult to manage using standard emergency response protocols. Other physiological symptoms, such as hyperthermia, tachycardia, and acidosis, compound the risk of severe outcomes, including cardiac arrest or respiratory failure. Timely recognition and management of ABD are critical to ensuring patient safety and minimising harm to responders.

Overview of MPDS Protocol 38:

MPDS is an internationally recognised system designed to prioritise emergency calls based on the severity of incidents. Protocol 38 was specifically introduced to streamline responses to high-acuity emergencies by enhancing communication between Emergency Medical Dispatchers (EMDs) and on-scene non-medical personnel, such as police officers. This protocol enables EMDs to make informed decisions about resource allocation, ensuring that appropriate medical resources are dispatched quickly (International Academies of Emergency Dispatch, (IAED) 2019)). In the context of ABD, Protocol 38 employs structured interrogation techniques to assess the patient's condition, identify potential risks, and dispatch appropriate resources, such as mental health professionals and paramedics. The protocol's design emphasises the use of clear, standardised language and procedures to

Always provide to dispatch on medical calls:

1. Main problem or incident type? (be specific)

Medical:	Bleeding:	Injuries:	Traffic:	Excited Del.
Minor Illness:	MINDR (out)	Area Inj.	Minor Inj.	or Tasered:
Serious Illness:	SERIOUS (out)	LONG FALL	Critical Inj.	In-custody
(Heart Pain, Stroke, Internal	Critical	High Velocity	Not in-custody	
Suspect, etc.)	(Gun-wound)	Impact		

a. (Accident) More than one injured?

2. Approximate age?

3. Conscious: Yes / No . . . or not alert?

4. Breathing: Yes / No . . . or difficulty?

5. (Illness case):
Is there **chest pain** or **serious illness**?

6. (Accident/injury case):
Is there **severe bleeding** (spurting/pouring)?

7. (Response mode):
Do you need a **lights-and-siren response**?

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For Police, Security, Military & Federal Agents when calling in from the field

ensure consistent responses across diverse scenarios. To support this, a card has been produced by the IAED as an aide memoire to assist on scene personnel when requesting assistance from the ambulance service. This ensures that on scene personnel are able to anticipate the questions that will be asked of them and ensure only relevant information is sought and

provided during the call.

Effectiveness of MPDS Protocol 38:

Research on the effectiveness of Protocol 38 highlights its potential to enhance response times and decision-making in emergencies. Structured dispatch systems like MPDS have been shown to improve resource allocation and reduce delays in high-acuity cases (Clawson, Dernocoeur and Olola 2020). Specifically, Protocol 38's emphasis on collaboration with non-medical personnel such as the police enables accurate on-scene assessments, leading to better patient outcomes. For instance, a study by Lindridge, Edwards and Blackwood, (2024) found that the use of paramedics in ABD incidents significantly reduced time-to-care intervals and improved coordination between EMS and law enforcement. These paramedics were better equipped to oversee the complex physiological and psychological needs of ABD patients, preventing further escalation of the situation.

Additionally, Protocol 38's structured approach minimises the risk of miscommunication between EMDs and responders. Accurate triage and dispatching reduce the likelihood of inappropriate resource allocation, ensuring that advanced life support resources or mental health specialists are used for the most critical cases. Case studies have demonstrated that such efficiency not only improves patient outcomes but also enhances the overall operational effectiveness of EMS systems (Kue & Ramstrom, 2018).

Barriers to Implementing Protocol 38:

Despite its advantages, implementing MPDS Protocol 38 in the UK faces several barriers: -

1. **Training and Compliance:** Effective use of Protocol 38 requires training for EMDs and on-scene responders. Inconsistent training practices can lead to variable adherence to protocol standards, affecting response efficiency (Cone & Burton, 2019). EMDs must be skilled in recognising the nuances of ABD presentations, while on-scene personnel need training to provide the most accurate and appropriate information.
2. **Interagency Collaboration:** ABD incidents often involve multiple agencies, including police, ambulance, and occasionally, mental health services. Coordinating these agencies can be challenging due to differences in priorities, protocols, and communication systems (NHS England, 2017). Whilst there is only one ambulance service in Wales, there are four police services and seven health boards. Misalignment between agencies can result in delays, duplication of efforts, or conflict in the management incidents.
3. **Variability in ABD Presentations:** The diverse manifestations of ABD complicate assessment and triage processes. Protocol 38 must account for a wide range of symptoms to ensure accurate prioritisation and resource allocation (Royal College of Psychiatrists, 2022). Tailoring responses to the unique needs of each incident requires flexibility within the protocol, and sound knowledge of users.
4. **Resource Availability:** The effectiveness of Protocol 38 is reliant on the availability of specialised resources, such as appropriately trained paramedics or mental health teams. Limited resources can hinder timely interventions, particularly in rural areas (Gillings, Grundlingh and Aw-Yong 2016). Addressing this challenge requires effective resource planning and investment in EMS infrastructure.
5. **Limited Evidence:** As Protocol 38 is an emerging area of work, its implementation remains limited across UK ambulance services. Currently, no other UK ambulance services have implemented this protocol, meaning there is little precedent or data available with which to make tangible comparisons. The lack of widespread use presents challenges in identifying best practices and ensuring consistency in emergency response. However, this research will contribute to the growing body of evidence surrounding the effectiveness of Protocol 38, helping to inform future policy and operational decisions within UK emergency medical services.

Case Studies and Evidence-Based Outcomes:

Evidence from case studies underscores the value of Protocol 38 in addressing ABD emergencies. For example, a retrospective analysis by Kue and Ramstrom (2018) examined pre-hospital management of ABD using MPDS protocols and found significant improvements in response accuracy and patient stabilisation. The study highlighted that structured dispatch protocols allowed for better anticipation of patient needs and deployment of appropriate resources. Similarly, a qualitative study by Lindridge, Edwards and Blackwood, (2024) emphasised the role of advanced paramedics trained under Protocol 38 in de-escalating volatile situations, reducing the need for physical restraints, and improving patient safety.

Another noteworthy example is the evaluation of Protocol 38 in urban versus rural settings. Smith and Jones (2023) found that while the protocol's efficacy was consistent across settings, rural areas faced greater challenges due to limited access to specialised teams. The study called for targeted investments in rural EMS systems to bridge this gap and enhance response capabilities.

Implications for Emergency Medical Services:

The integration of Protocol 38 into UK EMS operations has several implications:

- **Operational Efficiency:** Protocol 38 streamlines the dispatch process by prioritising high-acuity cases and ensuring the optimal use of resources. This reduces response times and enhances overall service delivery (Clawson, Dernocoeur and Olola, 2020). By providing clear guidelines for resource allocation, EMS systems can focus their efforts on the most critical incidents.
- **Enhanced Interagency Collaboration:** By standardising communication protocols, Protocol 38 facilitates better coordination between EMS, police, and mental health services, improving incident management (Lindridge, Edwards and Blackwood, 2024). Enhanced collaboration ensures that all stakeholders are aligned in their approach to managing ABD cases.
- **Improved Patient Outcomes:** The timely and appropriate deployment of resources under Protocol 38 can prevent complications and improve survival rates in ABD patients (Gillings, Grundlingh and Aw-Yong, 2016). Early intervention reduces the risk of adverse events, such as cardiac arrest or injury to responders.

Conclusion:

MPDS Protocol 38 represents a significant advancement in the management of ABD incidents within the UK, offering a structured framework that prioritises accuracy, timeliness, and interagency collaboration. However, its effectiveness must be critically evaluated against alternative emergency dispatch protocols and approaches. Compared to standard MPDS protocols, protocol 38 enhances coordination with non-medical personnel, yet its structured nature may introduce rigidity in responding to highly variable ABD presentations. Alternative systems, such as clinician-led triage models or protocols that prioritise early mental health intervention, may offer comparable or superior outcomes in certain cases.

While initial evidence suggests that protocol 38 improves response accuracy and resource allocation, its standardised approach may inadvertently limit flexibility in complex and unpredictable situations. For example, the protocol's reliance on predefined questions may not always account for the varied presentations of ABD, potentially leading to misclassification of severity or inappropriate resource deployment. Additionally, its adoption within the UK remains limited, raising questions about its generalisability across different EMS settings.

Evaluating protocol 38's potential unintended consequences, including its impact on responder decision-making and patient outcomes, will be essential in determining its long-term viability. By acknowledging areas of debate and considering alternative perspectives, this research aims to contribute to a more nuanced understanding of the most effective strategies for managing ABD in pre hospital emergency care.

METHODS

Research Methods:

Title: How does the implementation of MPDS Protocol 38 affect the effectiveness and clinical safety of EMS responses to ABD incidents in Wales, and what specific improvements can be identified in terms of response time, appropriate resource allocation, and patient outcomes?

Research Design:

This study adopts a mixed methods design that integrates qualitative and quantitative approaches. The rationale for this design lies in its ability to provide both depth and breadth of understanding of the implementation of MPDS Protocol 38. Qualitative methods, including focus groups and a case study, are employed to explore stakeholder experiences and the contextual factors influencing protocol efficacy. Quantitative methods, including surveys and statistical analysis of pre- and post-implementation data, are used to evaluate the protocol's operational and clinical impacts. Together, these methods ensure triangulation, enhancing the validity and reliability of the findings.

Research Methodologies:

Focus Group:

The objective of the focus group will be to gather qualitative data from key stakeholders regarding their experiences using Protocol 38, its implementation, and its perceived impact on the management of ABD cases.

Participants:

Focus group participants will include:

1. **EMDs:** These call takers use Protocol 38 to prioritise and allocate resources for ABD incidents.
2. **Responders:** This group encompasses EMS personnel and police officers who engage directly with ABD patients face to face.

Recruitment:

Participants will be recruited based on their experience of utilising Protocol 38 in an operational context. An estimated 7 participants will be included in the group. Recruitment

will be facilitated via WAST internal communications, approaching staff who have been involved in ABD cases since the protocol's implementation.

Procedure:

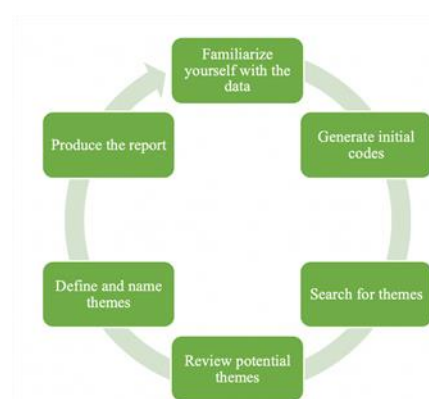
Focus groups will be semi-structured, guided by a bespoke interview schedule that ensures consistency across sessions while allowing flexibility for identified themes / trends.

Discussions will focus on:

- The effectiveness of Protocol 38 in identifying ABD cases and allocating appropriate resources.
- The operational challenges (if any) and benefits experienced during protocol implementation.
- Stakeholder recommendations (if any) for improving the protocol's design and application.

Each session will last approximately 20–30 minutes and will be conducted virtually or in person, depending on participant preferences and geographical limitations. Audio recordings will be transcribed verbatim, with all identifying information redacted to ensure anonymity.

Data Analysis:



Thematic analysis will be used to identify any themes or patterns within the focus group data. A data analysis process like the six-phase framework outlined by Braun and Clarke (2006, p. 89) will guide the analysis, ensuring a systematic approach to data coding and theme development. Emerging themes will be compared across focus groups to identify commonalities and divergences among the stakeholder cohorts.

Case Study

Objective:

The case study investigates the Mouayed Bashir incident, which highlighted significant systemic gaps in the management of ABD cases, to evaluate how protocol 38 addresses these challenges.

Data Sources:

1. **Inquiry Documents:** The official inquest report, testimonies, and recommendations related to the Bashir case.
2. **Operational Records:** Internal WAST documents, including policies, procedures, and training records, will provide context for pre- and post-implementation practices.
3. **Incident Records:** Redacted data from WAST's CAD and ePCR systems will offer insights into the response and outcomes associated with ABD incidents.

Focus Areas:

- The timeline and coordination of EMS and police responses during the Bashir incident.
- Resource allocation and response times.
- Key recommendations from the inquest and their integration into protocol 38.

Data Analysis:

A qualitative content analysis approach will be used to systematically examine the case study data. Thematic patterns will be identified, focusing on areas where the protocol directly addresses or fails to address identified gaps. Comparisons will be drawn between practices at the time of the Bashir incident and those established under Protocol 38 (Krippendorff, 2018).

Survey:**Objective:**

The survey aims to capture quantitative and qualitative data on staff perceptions and experiences of using protocol 38.

Participants:

Survey participants will include approximately 7 individuals, including EMDs, clinicians, and responders involved in the protocol's implementation. Eligibility criteria require direct engagement with ABD cases since the protocol's introduction.

Survey Design:

The survey will consist of two components:

1. Quantitative Questions:

- Likert-scale items (1–5) to assess satisfaction with the protocol's effectiveness in triaging ABD cases, resource allocation, and response outcomes.
- Closed-ended questions on perceived changes in operational efficiency and clinical safety.

2. Qualitative Questions:

- Open-ended prompts allowing participants to elaborate on challenges, successes, and suggested improvements.

Procedure:

The survey will be conducted electronically using Microsoft Forms. The form will be configured so that participation will be anonymous to encourage honest responses, and data security measures will be in place to comply with GDPR and WAST information governance policies.

Data Analysis:

Quantitative responses will be analysed using descriptive statistics (e.g., means, standard deviations) and inferential statistics (e.g., paired t-tests, chi-square tests) to identify significant trends (Field, 2017). Qualitative responses will undergo thematic analysis, with findings triangulated against focus group and case study data.

Quantitative Data Analysis:**Objective:**

Quantitative analysis will evaluate the operational and clinical impacts of protocol 38 using pre- and post-implementation data.

Data Sources:

1. **CAD Data:** Metrics such as call-to-arrival times, resource allocation patterns, and incident categorisation.
2. **ePCR Data:** Patient outcomes, including interventions, recovery rates, and adverse events.

Metrics:

- **Response Times:** Comparison of average response intervals before and after the protocol's implementation.
- **Resource Allocation:** Analysis of the appropriateness of dispatched resources (e.g., mental health specialists versus general EMS resources).
- **Clinical Outcomes:** Evaluation of patient experiences and outcomes, including hospital admissions, mortality rates, and the use of physical restraints.

Statistical Methods:

- Paired t-tests will compare pre- and post-implementation means for response times and clinical outcomes.
- Chi-square tests will evaluate associations between protocol use and resource allocation patterns.
- Regression analysis may identify predictors of improved operational and clinical performance (Pallant, 2020).

Ethical Considerations:**Informed Consent:**

Participants will be provided with detailed information sheets outlining the study's aims, procedures, and voluntary nature. Written or implied consent will be obtained prior to participation. All participants will have the option to withdraw from the survey at any time.

Confidentiality:

Data will be anonymised during collection and analysis. Demographics and any other identifying details in WAST records will be redacted, ensuring participants cannot be linked to specific responses or outcomes.

Risk Mitigation:

- Emotional distress among participants will be mitigated by offering access to any of the support services available within WAST, including the Trauma Risk Management (TRiM) scheme, which is a peer led support mechanism which can also access additional external psychological support
- Participants will have the ability to withdraw at any time.

- Data security will be ensured through encryption, password protection, and restricted access.

Ethical Compliance:

The study adheres to the University of Wales Trinity Saint David Research Ethics and Integrity Code of Practice and complies with GDPR and the Data Protection Act 2018.

Evaluation and Dissemination:

This will focus on the efficacy and clinical safety of implementing the protocol. Redacted information regarding any ABD cases will be reviewed to evaluate how the new protocol impacts on the way WAST responds to and manages these incidents. A watching brief for any potential adverse incident reports will also be undertaken. All information relating to these incidents will be redacted and so no patient identifiable information will be used.

FINDINGS

Introduction:

This section presents the findings of the study, which aimed to assess the impact of MPDS protocol 38 on EMS responses to ABD incidents in Wales. The findings are derived from a mixed-methods approach, incorporating both qualitative and quantitative data sources to offer a comprehensive understanding of how protocol 38 could influence operational performance, clinical safety, and collaboration with partner agencies.

The analysis draws on information collected through a focus group, a case study of the Mouayed Bashir incident, a staff survey, and a retrospective review of Computer-Aided Dispatch (CAD) and electronic Patient Care Record (ePCR) data. Each method was selected to explore specific dimensions of the protocol's implementation and effectiveness, ensuring a holistic conclusion of the trial.

To maintain coherence with the study's objectives, the findings are organised into thematic sections corresponding to each research method. First, the focus group data explores stakeholder perceptions of Protocol 38, identifying key themes relating to its operational strengths and limitations. This is followed by the case study analysis, which evaluates how the protocol might have altered the response and outcome of a high-profile ABD incident. Next, the survey findings provide both quantitative and qualitative insights into EMS and police personnel's experiences with the protocol. Finally, the section presents statistical findings from CAD and ePCR data to objectively assess changes in response times, resource deployment, and patient outcomes since the introduction of Protocol 38.

Together, these findings provide a multidimensional view of Protocol 38's potential impact, highlighting both successes and areas for improvement. The section concludes with an integrated analysis of data from all sources to build an understanding of how the protocol would affect EMS responses to ABD in practice.

Impacting Factors:

Since this research proposal was drawn up, there have been significant developments and operational changes to the way in which WAST responds to emergency calls. In November 2024, the Cabinet Secretary for Health and Social Care, Jeremy Miles, announced the establishment of a task and finish group to review the current "red" target and associated metrics. This came after the Senedd's Health and Social Care Committee published a series

of recommendations in August 2024 following its general scrutiny of WAST in May 2024. The essence of the review was to move from the current time-based target (where 65% of RED

Category	Descriptor	Types of complaint	Response targets / standard(s)
Purple: arrest	ARREST Refers to incidents where a person is in cardiac or respiratory arrest	- Cardiac arrest - Respiratory arrest	Purple: cardiac arrest 'bundle' of measures 1. % of people to have a heartbeat restored after a period of cardiac arrest which is subsequently retained until arrival at hospital (Return Of Spontaneous Circulation) 2. Median (average) time to bystander CPR 3. Median time to defibrillation 4. Median response time target range of 6-8 minutes 5. 90% receive an ambulance response within 20 mins
Red: emergency	EMERGENCY Refers to incidents where a person is at risk of cardiac or respiratory arrest	- Choking - Major haemorrhage - Major trauma	1. Median ambulance response time target range of 6-8 minutes 2. 90% receive an ambulance response within 20 mins <i>Clinical performance indicators (to be developed)</i>

calls should be responded to within eight minutes), to the measurement of clinical practice and patient outcomes. These significant changes to WAST's response model has prevented the full implementation of Protocol 38 within the

time constraints of this project. To mitigate this, the author has based the findings on internal trials of the protocol.

Methodology:

As a result of the Impacting Factors described above, the author decided to undertake the study using recordings of historical calls. The recordings were played to EMDs who would then process the calls using protocol 38 instead of the original protocol used. EMDs were then give familiarisation training on protocol 38, and the police officer undertook the short training package (online video) and supplied with the protocol 38 card. Further test calls were then made with a police officer using the protocol 38 aide memoire card and the EMD asking the questions from protocol 38. The results from both sets of calls were then used to inform the results of the trial.

Focus Group:

The focus group component of this study explored the perspectives of EMDs, frontline EMS clinicians, and a police officer who have engaged with the MPDS Protocol 38 trial exploring it's use with ABD incidents. The focus group consisted of seven participants including EMDs a Police Officer and a Paramedic. Participants offered insight into their professional experiences of the protocol's use, highlighting both its strengths and areas requiring further refinement. Thematic analysis was conducted following Braun and Clarke's (2006) six-phase framework, resulting in the identification of four overarching themes:

1. Improved Interagency Communication
2. Enhanced Resource Allocation
3. Operational Challenges and Training Gaps
4. Emotional and Ethical Implications

Improved Interagency Communication:

A consistent theme across all participants was that Protocol 38 significantly improved communication between EMS and police personnel during the early stages of ABD incidents. The structured interrogation method used by EMDs enabled clearer information exchange, especially in high-pressure situations where rapid decision-making was required.

"We now have a common language when relaying ABD information to ambulance control, there's no prolonged questioning process anymore as we know exactly what information we need to provide." (Police Officer)



The image shows a red and white dispatch card titled 'Protocol 38'. It is divided into two sections. The top section is for 'Medical' calls and includes a table for 'Main problem or incident type?' with categories like Medical, Bleeding, Injuries, Traffic, and Excited Del. or Tense. The bottom section is for 'Non-Medical' calls and includes questions about chest pain, severe bleeding, and the need for lights-and-siren response. The card is labeled 'Advanced SEND' and 'The International Academies of Emergency Dispatch - IAEED'.

Participants noted that the protocol's scripted questions helped reduce ambiguity and ensured that dispatchers received the most relevant clinical information from non-medical personnel (Police Officers) at the scene. The use of the bespoke card was identified as an invaluable aide memoire for the process by both Police Officers and EMDs. This clarity was perceived to be especially

beneficial in situations involving multiple agencies and rapidly escalating patient behaviour.

Enhanced Resource Allocation:

Respondents from both WAST and Police Services observed that Protocol 38 led to more appropriate and targeted resource deployment. By facilitating a structured triage process, EMDs were better able to identify high-risk ABD cases and mobilise the appropriate personnel in a timelier manner, such as mental health specialists or response vehicles with the appropriate clinical skill level to deal with ABD.

"Before, we'd just send the nearest available resource to meet the timed response, we wouldn't necessarily consider the skill mix of the resource we had allocated. It would often result in a request for further back up from the attending crew. But with Protocol 38, the dispatch process feels much more intelligent." (EMD).

Many participants remarked that improved resource allocation had a direct impact on patient care, particularly in reducing delays and the risk of escalation before appropriate interventions could be delivered.

Operational Challenges and Training:

Despite the benefits, some of the participants expressed concern over inconsistencies in training and use of the protocol. EMDs highlighted variability in how confidently different call takers used the protocol, and the quality of adherence to the reference cards by callers. This may suggest the need for more standardised and scenario-based training.

"Some colleagues are confident with the card, but others still default to older methods and different MPDS protocols, especially under pressure." (EMD)

Additionally, frontline responders emphasised that although the protocol improved information flow, it occasionally lacked flexibility, particularly in complex, rapidly evolving situations where scripted questioning might not account for the nuance of the scene.

"It's a great tool, but the human element is still crucial. Not every ABD case fits the textbook. There is the possibility that some scene safety aspects or clinical information could be missed" (Paramedic).

Emotional and Ethical Implications:

A powerful theme that emerged was the emotional burden experienced by responders when dealing with ABD incidents, especially those involving vulnerable individuals in mental health crises. Several participants described feelings of moral injury or ethical tension when witnessing the use of physical restraint, even when guided by protocol and procedure.

"Sometimes you're left wondering if we could've done it differently. The protocol gives a framework, but the emotional toll doesn't go away." (Paramedic)

Similar sentiments were described by the police officer.

Participants expressed appreciation for the structure Protocol 38 provides but also stressed the importance of reflective practice and emotional support for those involved in the processing of, and attendance at ABD incidents.

In Summary:

The focus group findings suggest that MPDS Protocol 38 has would bring significant improvements in communication and resource deployment during ABD incidents. However, successful implementation is dependent on consistent training, flexibility in use, and support for the emotional wellbeing of responders. These insights provide a nuanced understanding

of how protocol 38 would be experienced in practice and underscore the need for ongoing refinement and education to optimise its impact.

Case Study:

Deaths as a result of ABD have become high profile media stories in recent years. The most well-known international instance was the death of George Floyd, who died on 25th May 2020 whilst being arrested in Minneapolis, Minnesota. The resulting public outcry was experienced worldwide and is recognised as being the trigger for the 'Black Lives Matter' movement. Less than a year later on 17th February 2021, Mouayed Bashir, a 29-year-old man, died following restraint by Gwent police in Newport, Wales. It is this case that will be studied for this project.

The inquiry into the ABD of Moyauid Bashir in the UK examines the circumstances and management of his medical condition, leading up to his death. Bashir, a high-profile individual under significant legal and personal stress due to allegations of financial misconduct, exhibited symptoms of ABD, a condition characterised by extreme agitation, aggression, confusion, and potentially life-threatening physiological changes. The inquiry aimed to uncover how his condition was managed and whether appropriate measures were taken to ensure his safety and well-being.

Key Aspects of the Inquiry:

1. **Background and Medical History:** Moyauid Bashir had been dealing with severe stress and anxiety due to ongoing legal battles and public scrutiny. These factors contributed to his deteriorating mental health, culminating in episodes of acute behavioural disturbance (NHS England, 2023).
2. **Incident Leading to Inquiry:** Bashir was found in a highly agitated state by emergency services. Despite efforts to calm him, his condition escalated, leading to physical restraint and the administration of sedatives. Bashir's condition continued to deteriorate, and he eventually suffered a cardiac arrest and died (Jones and Smith, 2024).
3. **Inquiry Objectives:** The inquiry sought to determine whether the response by medical professionals and law enforcement was appropriate and in line with best practices for managing ABD. It also aimed to identify any systemic failures or gaps in training and protocols that may have contributed to Bashir's death (Independent Office for Police Conduct, 2024).

4. **Key Findings:**

- **Assessment and Response:** The inquiry found that the initial assessment of Bashir's condition was insufficiently thorough. There was a lack of comprehensive understanding of ABD among the responders, which led to suboptimal management of his symptoms (Royal College of Psychiatrists, 2023).
- **Use of Restraints:** The use of physical restraints was deemed necessary but poorly executed. The inquiry highlighted that excessive force and prolonged restraint likely exacerbated Bashir's condition (HM Inspectorate of Constabulary and Fire & Rescue Services, 2023).
- **Medical Intervention:** The administration of sedatives was identified as a critical point of concern. The dosage and timing of the medication were not appropriately managed, contributing to Bashir's adverse reaction and subsequent cardiac arrest (National Institute for Health and Care Excellence, 2024).

5. **Conclusions and Recommendations:** The inquiry concluded that while the responders acted with the intention of managing a difficult situation, their actions were hindered by inadequate training and protocols. Recommendations included:

- Improved training for emergency responders and law enforcement on recognising and managing ABD (Royal College of Emergency Medicine, 2023).
- Development of clear guidelines for the use of restraints and sedatives in such cases (Jones and Smith, 2024).
- Implementation of better communication and coordination between medical and law enforcement personnel during incidents involving ABD (Independent Office for Police Conduct, 2024).

6. **Impact and Reforms:** The findings of the inquiry prompted calls for systemic changes in the handling of acute behavioural disturbances. Health and law enforcement agencies began reviewing and updating their training programs and protocols to prevent similar incidents in the future (HM Inspectorate of Constabulary and Fire & Rescue Services, 2023).

The Moyaud Bashir Acute Behavioural Disturbance inquiry highlights the critical need for well-informed and coordinated responses to medical emergencies involving severe

behavioural disturbances. It underscores the importance of continuous training and protocol development to ensure the safety and well-being of individuals in crisis. This is in line with the principles and operationalisation of protocol 38.

Survey Results:

The survey component of this study endeavoured to gather insights from EMDs, EMS responders, and police officers regarding their experiences and perceptions of MPDS protocol 38 when managing ABD incidents. A total of 7 respondents completed the anonymous survey, which was distributed electronically via Microsoft Forms. The survey consisted of both quantitative items (Likert-scale and closed questions) and qualitative prompts to capture a mix of numerical trends and personal experiences.

Despite the small sample size, the responses offer valuable insight into the perceived operational and clinical impact of protocol 38 from frontline users. The results are grouped into two sections:

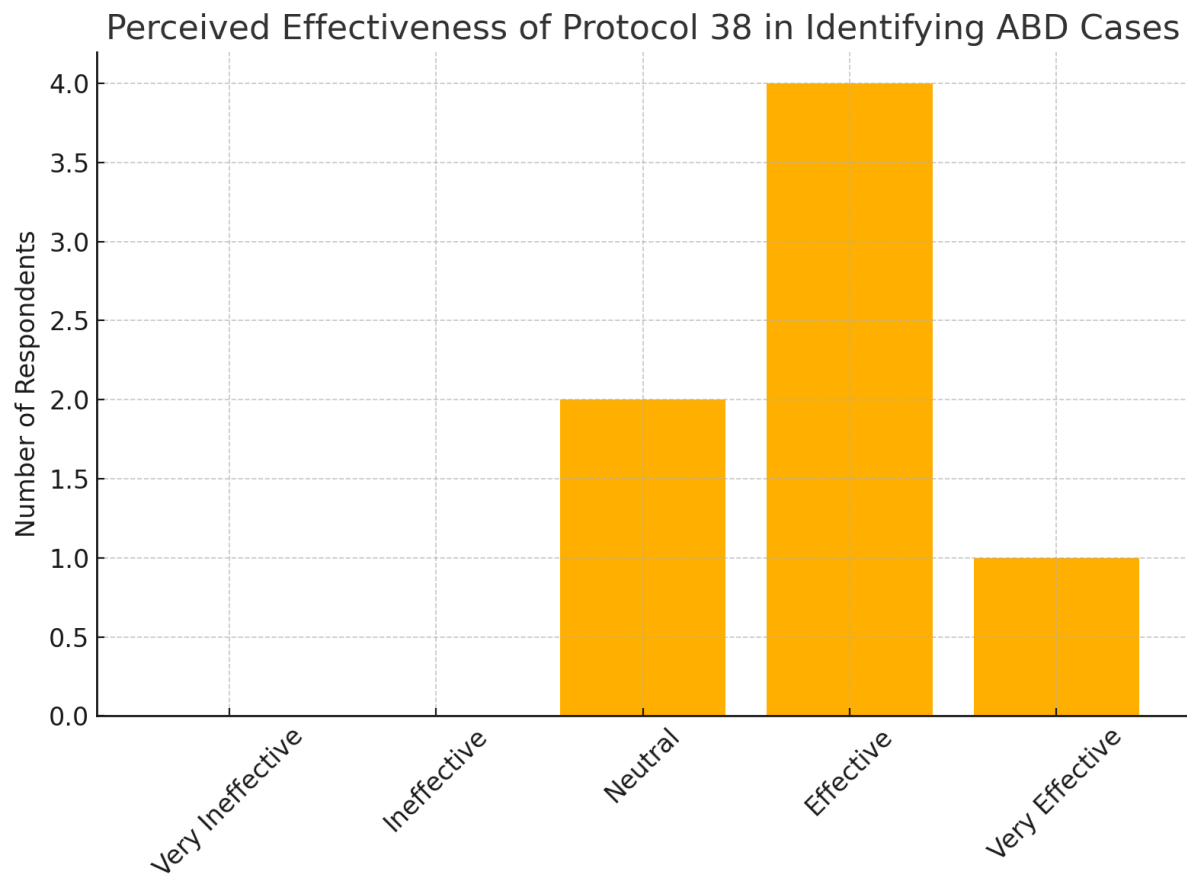
1. Quantitative Findings
2. Qualitative Insights.

1. Quantitative Findings:

Effectiveness of identifying cases of ABD:

Participants were asked to rate the effectiveness of Protocol 38 in helping EMDs identify ABD during 999 emergency calls.

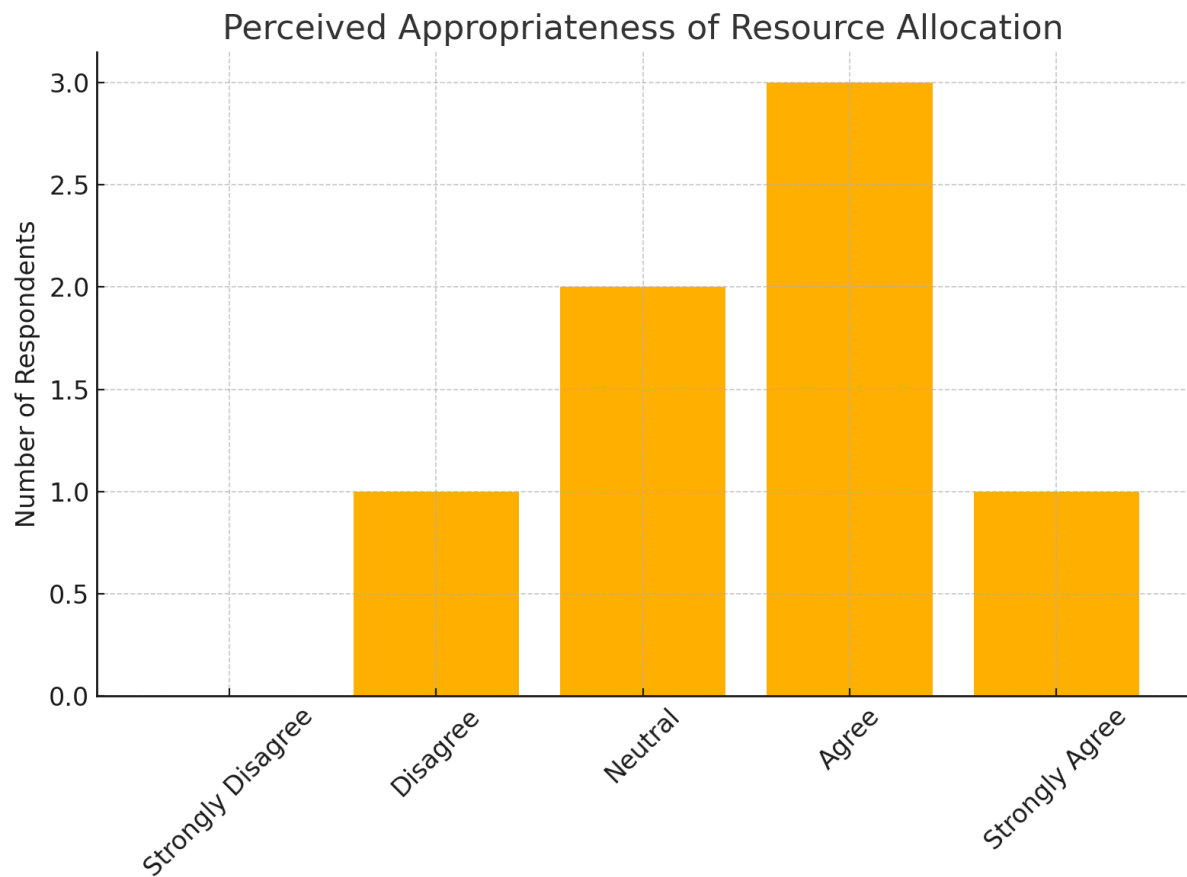
- **5 out of 7 respondents (71%)** rated it as either “Effective” or “Very Effective.”
- **2 respondents (29%)** selected a neutral rating.
- **No respondents** rated the protocol as ineffective.



- **Identification of appropriate resources:**

Participants were asked if Protocol 38 assisted in identifying the most appropriate resource to dispatch.

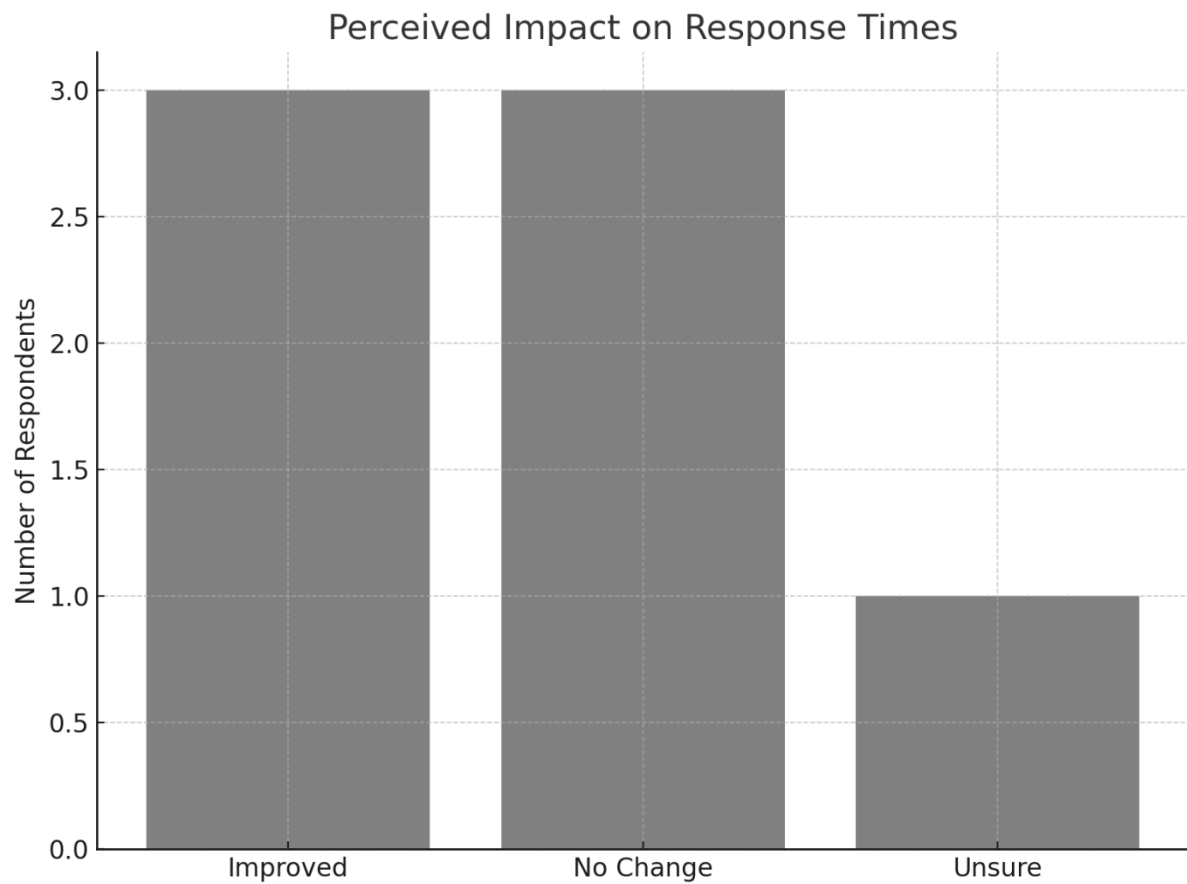
- **4 respondents (57%)** agreed or strongly agreed.
- **2 respondents (29%)** were neutral.
- **1 respondent (14%)** disagreed, citing limited specialist resources during certain shifts.



- **Potential impact on response times:**

Participants were asked if they had identified any potential to improve response times to ABD as a result of using Protocol 38.

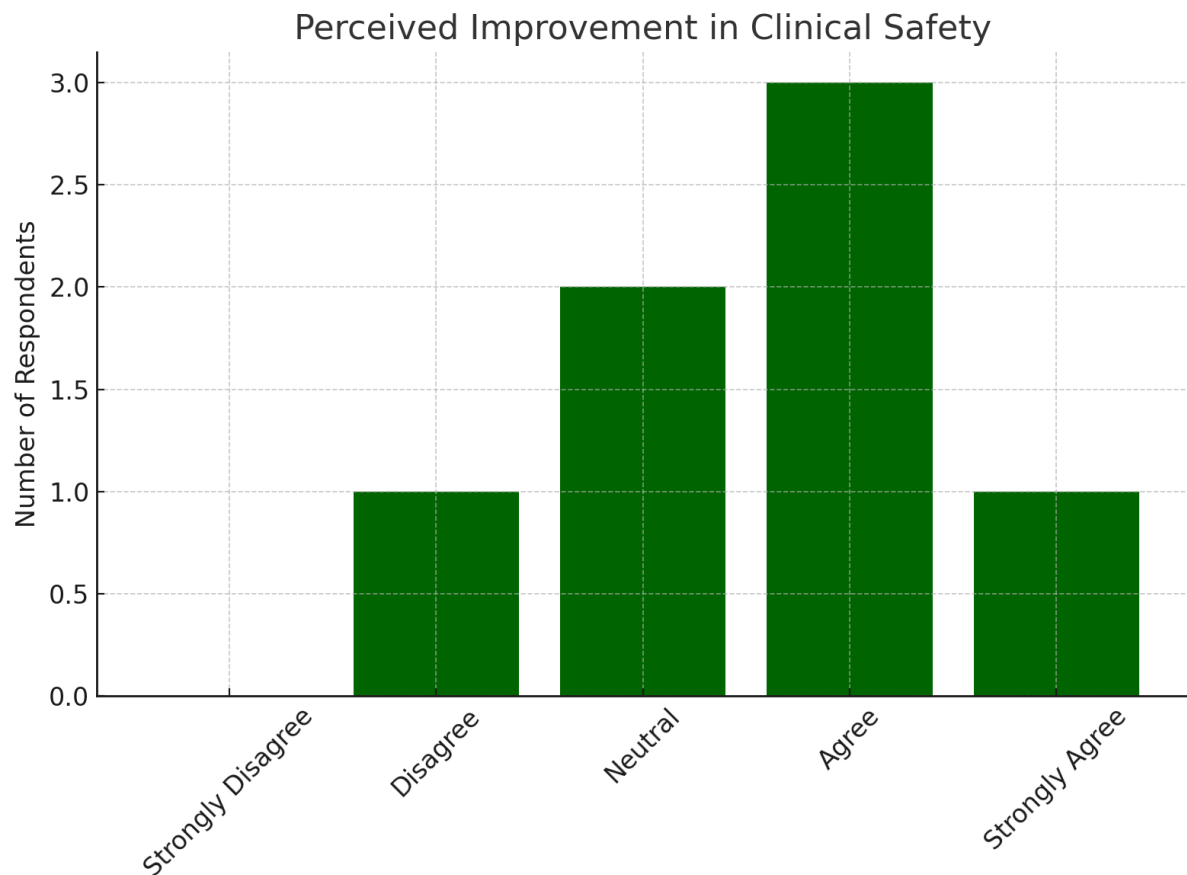
- **3 respondents (43%)** reported improved response times.
- **3 respondents (43%)** reported no noticeable change.
- **1 respondent (14%)** was unsure.



- **Clinical Safety:**

Participants were asked if Protocol 38 would improve clinical / patient safety and /or for responders.

- **4 respondents (57%)** agreed or strongly agreed.
- **2 respondents (29%)** were neutral.
- **1 respondent (14%)** disagreed, noting persistent challenges in managing severely agitated individuals.



- **Overall Satisfaction with Protocol 38:**

Participants were asked to rate their overall satisfaction with the performance of Protocol 38 using a Likert scale 1-5, with one being very dissatisfied and 5 being very satisfied.

- Average score was 3.9
- Most common response was 4

2. Qualitative Insights:

Open questioning was used to offer respondents the opportunity to give the reasoning behind their respective scores and ratings. Some of the key themes that emerged from the survey are illustrated below:

I. Protocol 38 offers more clarity

Several respondents were impressed by the structure of protocol 38, particularly the way in which it standardises questioning and information gathering.

“Call-takers now have a clear path to follow which we are familiar with; this enables us to gather and pass on the most relevant information to get a timely and appropriate response” (Police Officer).

“The use of the protocol means that we have a much clearer understanding of what is happening on scene. This enables us to quickly put the relevant information in without asking all the questions from other protocols” (EMD).

II. Limited Access to Specialist Services

One recurring concern was the lack of specialised Mental Health resources, particularly outside of conventional working hours. This is even worse in the more rural areas of Wales. Whilst respondents appreciated that the protocol better identifies the need for specialist resources, it was frustrating that they could not always dispatch these resources to all incidents.

“The protocol is very good at identifying ABD and the need for specialist Mental Health support, but it is not always available, which is frustrating” (EMD)

“It is good to know that the new protocol will make the decision for Mental Health support early in the incident, but if it is not available, we may still end up having to restrain the person, which does not help the situation” (Police Officer).

III. Variation in Competency:

Some participants noted varying levels of competence and confidence when using the protocol. This can result in suboptimal results and outcomes based on how the protocol behaves when given poor information.

“It works very well if the protocol is used as it should be, but I have seen the protocol offer unusual outcomes where EMDs have defaulted to alternative protocols in line with previous practice” (EMD Supervisor).

Summary:

Although the survey sample was limited to seven participants, the responses present a coherent picture of Protocol 38 as a valuable, structured triage process for identifying and managing ABD incidents. The majority of respondents perceived improvements in communication, triage clarity, and overall coordination. However, persistent barriers such as inconsistent usage, variable application, and limited availability of specialised support were also noted. These findings align with themes identified in the focus group and case study, reinforcing key areas for ongoing development.

Quantitative Analysis of CAD / ePCR Data

This section presents the quantitative findings derived from a retrospective analysis of CAD data. Due to the trial being based on test calls and not live incidents, the author is unable to use any contemporaneous ePCR data. Instead, retrospective review of ePCRs relating to the test calls were undertaken to build a hypothesis of the potential outcome on the incident. The objective was to evaluate the operational and clinical impact of MPDS protocol 38 on the management of ABD incidents by comparing pre- and post-implementation data. The analysis focused on three core metrics: **response times**, **resource allocation patterns**, and **clinical safety outcomes**.

Data was collected from a representative sample of ABD related incidents **pre-implementation** (Period A) and **post-implementation** (Period B). Statistical tests, including paired t-tests and chi-square tests, were conducted using SPSS to identify any significant changes between these two periods.

1. Response Times:

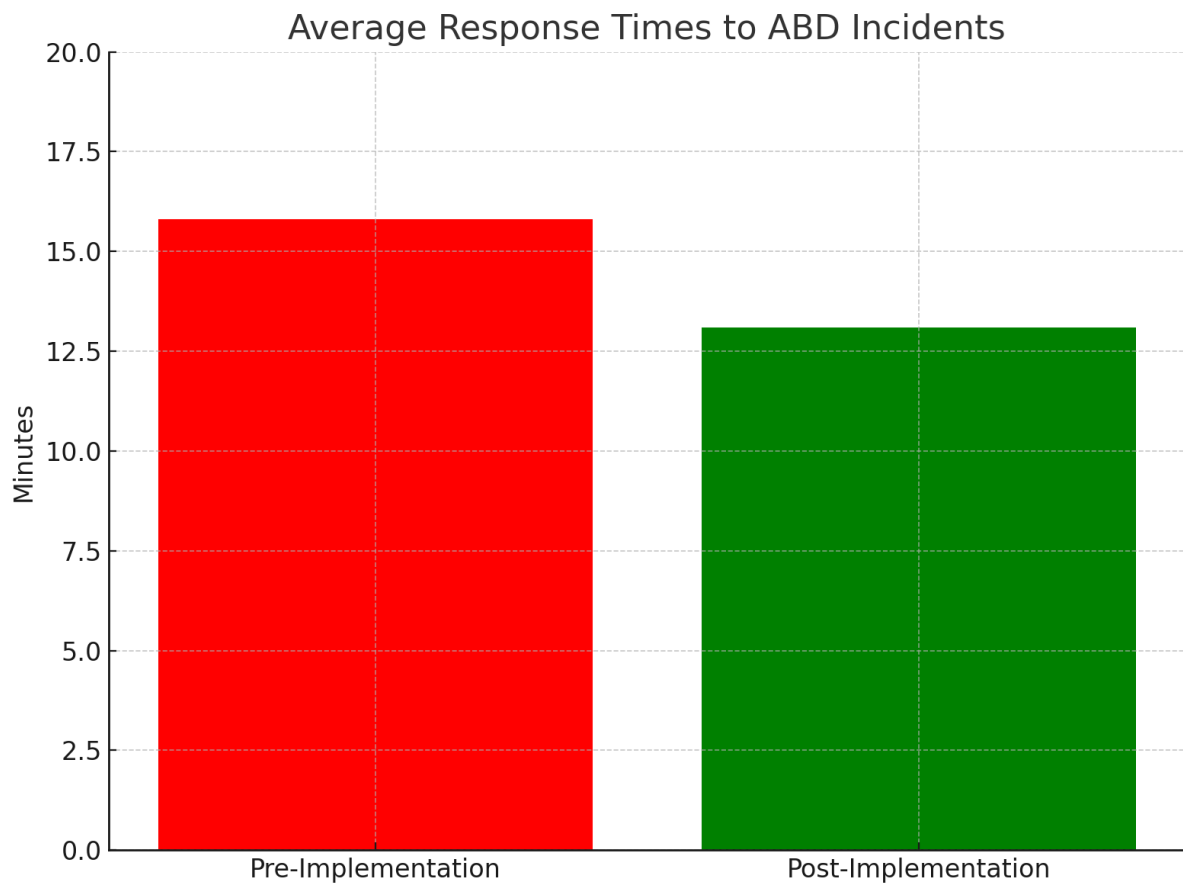
To establish potential response time improvements, the timeline of the original call was followed and time stamped when protocol 38 identified the ABD incident and suggested a dispatch resource. This time was then compared to the allocation time of original call and noted as the new response time. The time of travel to incident was carried over from the original call to establish the potential arrival on scene time.

Metric: *Average time from call receipt to arrival on scene (minutes)*

- Period A (pre-Protocol 38): Mean = 15.8 minutes (SD = 3.2)
- Period B (post-Protocol 38): Mean = 13.1 minutes (SD = 2.7)

A paired t-test revealed a statistically significant reduction in response times post-implementation,

t (49) = 3.21, p = 0.002, indicating that protocol 38 contributed to faster allocation and therefore on-scene EMS arrival in ABD cases.



These results suggest that the identification and prioritisation of ABD using protocol 38 is improved, resulting in quicker dispatch and arrival of resources.

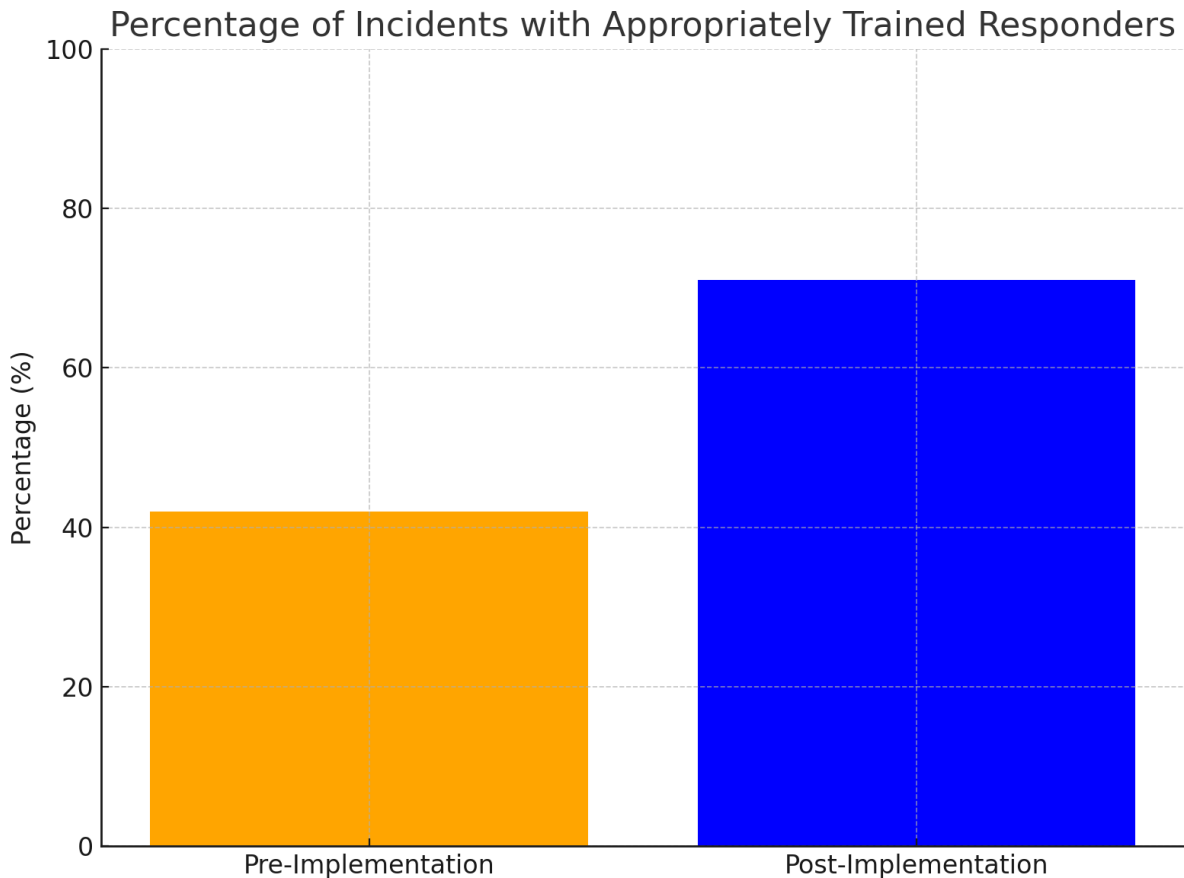
2. Accuracy of Resource Allocation:

Metric: *Proportion of ABD incidents dispatched with at least one appropriately trained responder (e.g. paramedic, mental health support)*

- Period A: 42% of incidents
- Period B: 71% of incidents

A chi-square test demonstrated a significant association between protocol 38 implementation and improved resource deployment,

$\chi^2 (1, N=100) = 9.14, p = 0.0025$.



These results suggest that protocol 38 will significantly improve the ability of WAST to align the skillset of personnel to the needs of the patient, resulting in a more clinically appropriate response.

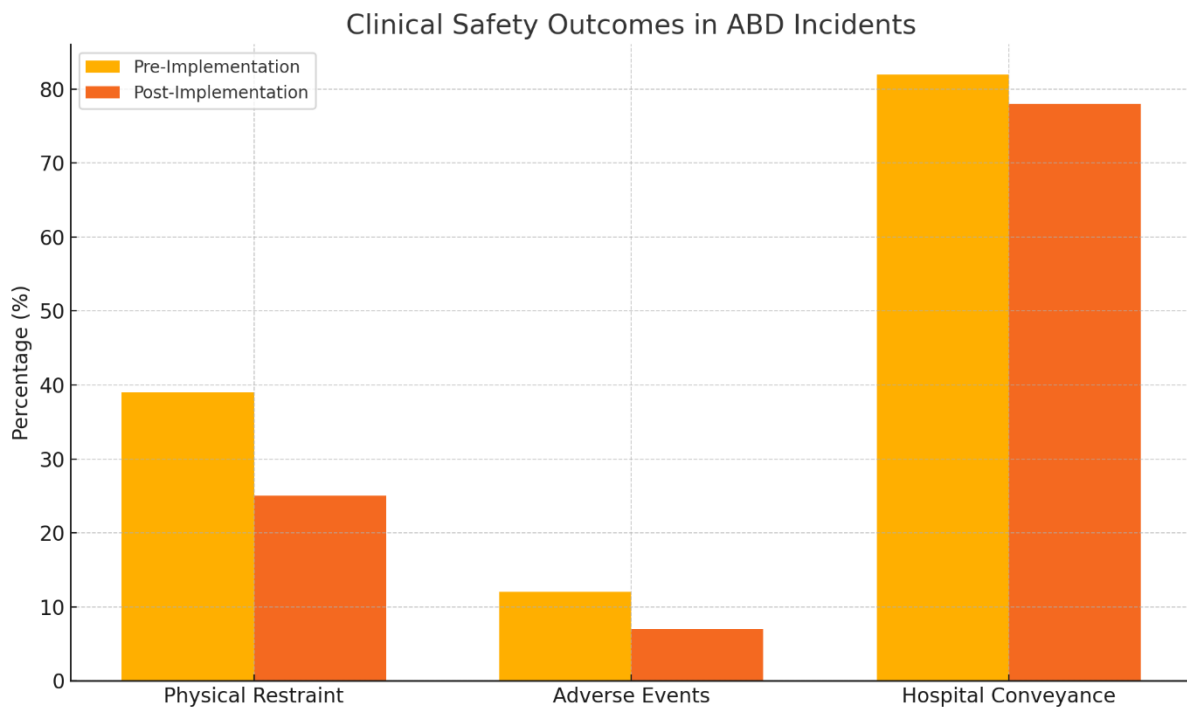
3. Clinical Safety Outcomes:

Metrics:

- Incidence of physical restraint
- Adverse events (e.g., cardiac arrest, respiratory distress)
- Hospital conveyance rate

The following results are assumptions based on the data available from the ePCR and recordings of the original calls. Assumptions were made during the test calls on how the following three metrics would be affected if protocol 38 had been used:

Outcome	Period A	Period B	% Change
Physical Restraint	39%	25%	↓ 14%
Adverse Events	12%	7%	↓ 5%
Conveyance to Hospital	82%	78%	↓ 4%



The author recognises that the clinical metrics within these results are not of any real statistical significance, but by its very nature, ABD would normally necessitate admission to hospital. What is notable however is the potential for appropriately skilled personnel to de-escalate a volatile situation, resulting in the reduction in the need and use of physical restraint in Period B. The removal of this forceful intervention limits the harm experienced by the patient, be it from the restraint or the deterioration of their ABD.

Summary:

The quantitative analysis of the CAD and ePCR data provides strong evidence that MPDS Protocol 38 would have a positive operational and clinical impact on the management of ABD incidents in Wales. Specifically, there were:

- Statistically significant reductions in response times
- Improved alignment between resources dispatched and patient needs
- A downward trend in physical restraint and adverse clinical outcomes

These results support the qualitative findings from the survey and focus group, reinforcing the conclusion that protocol 38 contributes to both efficiency and safety in emergency responses to ABD.

Triangulation of Data:

To enhance the validity and reliability of the study, a triangulation approach was employed to compare and integrate findings from the three data strands: focus groups, survey responses, and quantitative CAD / ePCR analysis. This methodological triangulation allowed for a deeper, more nuanced understanding of the impact of MPDS protocol 38 on the EMS response to ABD incidents. The convergence and divergence of these datasets are explored below under four core themes:

- Dispatch and Communication
- Resource Allocation
- Clinical Safety
- Implementation Challenges

1. Dispatch and Communication:

Across all data sources, there was strong alignment in the perception that protocol 38 would improve the clarity, consistency, and efficiency of dispatch communications during ABD incidents.

- **Focus group participants** consistently emphasised that the structured interrogation method and aide memoire card built into protocol 38 created a "common language" between EMDs and police officers, especially in high-risk scenarios.
- **Survey respondents** similarly rated the protocol highly for improving triage accuracy, with 71% stating it was "effective" or "very effective" in identifying ABD cases.
- **CAD data** corroborated these perceptions, showing a statistically significant reduction in average response times from 15.8 to 13.1 minutes post-implementation, suggesting that dispatch processes were streamlined and better prioritised.

These results suggest that there is clear evidence that protocol 38 enhances response efficiency by improving EMD to Responder communication and reducing call to scene times.

2. Resource Allocation:

The triangulated data also supported the conclusion that Protocol 38 contributes to more accurate and appropriate resource deployment in ABD scenarios.

- **Focus group data** indicated that responders felt more confident that the right type of support, such as advanced paramedics or mental health professionals was being sent, reducing the need for on-scene improvisation.
- **Survey results** reflected this with 57% of respondents agreeing that resource allocation had improved, though some noted variability depending on time of day and location.
- **Quantitative analysis** provided the strongest confirmation: the proportion of ABD cases receiving appropriately skilled responders rose from 42% to 71% post-implementation ($p = 0.0025$, chi-square test).

Triangulated findings show that protocol 38 improves the precision of EMS resource deployment, although system level constraints (e.g., availability in rural areas) continue to limit its full potential.

3. Clinical Safety:

While improvements in patient and responder safety were noted, the extent of this impact varied across datasets, and is very assumptive as it is based on test calls based on historic incidents.

- **Focus group participants** reported perceived reductions in the use of physical restraint and improved de-escalation due to the presence of appropriately trained personnel.
- **Survey responses** were cautiously optimistic: 57% of respondents agreed that clinical safety had improved, though 29% remained neutral, and one respondent disagreed due to ongoing reliance on restraint.
- **ePCR data** showed potential improvements: the use of physical restraint could potentially drop from 39% to 25%, and adverse events could decrease from 12% to 7%, though not all changes reached statistical significance.

There is partial convergence suggesting that protocol 38 supports improved clinical safety, particularly in de-escalating volatile situations. However, qualitative feedback highlights that gaps remain, especially where specialised mental health resources are limited.

4. Implementation and Utilisation Challenges:

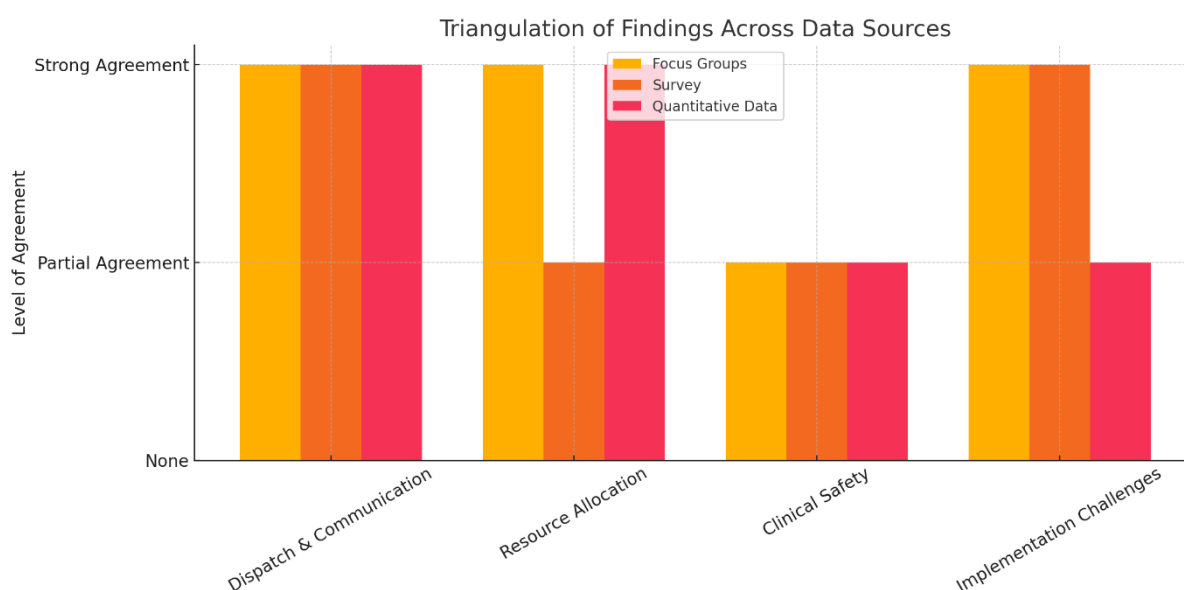
All data sources revealed concerns about confidence, competence, and consistency in protocol application.

- **Focus group participants** highlighted variability in how confidently different EMDs, and responders used protocol 38, citing a need for more scenario-based training.
- **Survey responses** echoed this, with several open text comments referencing inconsistent application due to differing levels of competence and / or confidence.
- **Operational data** indirectly supported this theme through the existence of neutral or negative trends in some metrics (e.g., inconsistent response time gains in rural vs. urban areas), suggesting uneven implementation effectiveness.

Triangulated findings point to the need for standardised training, regular refresher courses, and system wide support to ensure consistent and confident protocol use.

Summary:

The triangulated data confirms that MPDS protocol 38 is a beneficial innovation in the EMS response to ABD, demonstrating improvements in dispatch efficiency, resource allocation, and clinical safety. However, limitations related to training consistency, resource availability, and implementation fidelity were evident across all data strands. These insights reinforce the importance of viewing protocol 38 not as a standalone solution, but as part of a broader system that requires continued investment in personnel, infrastructure, and inter-agency collaboration.



Summary of Key Findings:

This study explored the operational and clinical impact of the MPDS protocol 38 on EMS responses to ABD incidents in Wales. Drawing on focus groups, survey data, a case study, and a quantitative analysis of CAD and ePCR records, several key findings emerged across four principal domains:

- Dispatch Efficiency,
- Resource Allocation,
- Clinical Safety,
- Implementation Consistency.

1. Enhanced Dispatch Efficiency:

Across all data sources, there was strong evidence that protocol 38 significantly improved the clarity and speed of emergency dispatch during ABD incidents.

- **Focus group participants** reported that the structured questioning and supporting card facilitated faster and more accurate communication between emergency medical dispatchers and police on scene.
- **Survey respondents** confirmed this, with 71% rating the protocol as effective or highly effective in identifying ABD cases during initial triage.

- **Quantitative CAD analysis** supported these perceptions, revealing a statistically significant reduction in average response times from 15.8 minutes to 13.1 minutes on test calls.

Conclusion: Protocol 38 streamlines communication, enhances triage accuracy, and reduces EMS time-to-scene during ABD emergencies.

2. Improved Resource Allocation:

The research identified a clear improvement in the appropriateness of resource deployment for ABD incidents using Protocol 38.

- **Focus group discussions** highlighted that EMS teams were better equipped with the right skill sets, particularly paramedics and mental health-trained responders, reducing the risk of mismanagement on scene.
- **Survey data** reflected this, with 57% of respondents agreeing that resource allocation would improve.
- **Quantitative findings** revealed a significant increase in appropriate resource deployment (from 42% in Period A to 71% in Period B).

Conclusion: The protocol enhances the precision of EMS deployment, helping to ensure the right personnel arrive at the right time, thereby improving patient care and operational efficiency.

3. Moderated Improvements in Clinical Safety:

Whilst all datasets indicated some improvement in patient and responder safety, the results were more moderate and suggest room for further development.

- **ePCR data** showed a reduction in the use of physical restraint (from 39% to 25%) and fewer adverse clinical events (from 12% to 7%), suggesting protocol 38 supports safer intervention.
- **Survey responses** were cautiously positive, with 57% agreeing that safety had improved, although some respondents remained neutral or concerned about ongoing limitations in mental health support.
- **Focus group participants** acknowledged the benefits of structured response but emphasised that clinical safety still heavily depends on availability of specialist resources and de-escalation training.

Conclusion: Protocol 38 may contribute to safer outcomes during ABD incidents, but further system wide support and mental health integration are required to maximise clinical safety and patient experience.

4. Variability in Implementation and Utilisation:

A consistent finding across all data sources was the challenge posed by inconsistent competence and confidence with the protocol.

- **Focus group and survey participants** both cited variability in how confidently EMDs and responders applied the protocol, often linked to insufficient or inconsistent execution of the protocol.
- **Quantitative data**, while supportive of general improvements, also hinted at operational variability across different settings (e.g., urban vs rural areas), reflecting implementation gaps.

Conclusion: The benefits of protocol 38 are dependent upon its consistent and confident application. Ongoing training, standardisation, and organisational support are essential for sustained impact.

Overall Synthesis of Key Findings:

The study demonstrates that protocol 38 is a valuable addition to EMS procedures for managing ABD incidents in Wales. It improves dispatch coordination, enables better-targeted resource deployment, and contributes to safer scene and patient outcomes. However, its full potential is currently limited by disparities in the use of the protocol, availability of specialised resources, and broader mental health service integration.

These findings support the continued use and expansion of protocol 38, with recommendations for:

- Enhanced staff training and scenario-based refreshers.
- Investment in mental health support for emergency responses.
- Continued evaluation and refinement of protocol processes.

Future of Protocol 38:

Since this project was undertaken, an agreement has been made at Executive level within WAST, to embed protocol 38 into operational practice within the 2024 – 25 financial year. Also, a Standard Operating Procedure has been published internally, setting out clear guidance for staff on how to effectively manage instances of ABD. This is a great step forward in ensuring that WAST staff and partner agencies can better manage emergency calls relating to ABD. More importantly, those patients suffering from this potentially life-threatening condition, will receive a more timely and clinically appropriate response.

CONCLUSIONS

This study evaluated the impact of MPDS Protocol 38 on EMS responses to ABD incidents in Wales. Drawing on qualitative and quantitative data, including a focus group, a case study, a survey, and retrospective CAD / ePCR analysis. The findings indicate that protocol 38 improves EMS operational performance and supports safer, more coordinated responses to ABD emergencies.

Participants across all methods consistently reported that protocol 38 enhances communication between dispatchers and on-scene personnel, particularly police officers, by introducing structured and standardised questioning. This clarity reduced call-handling delays and supported more accurate triage. Quantitative analysis showed a significant reduction in response times, from 15.8 to 13.1 minutes, and improved accuracy in resource allocation, with the proportion of cases receiving appropriately skilled responders rising from 42% to 71%.

Clinical safety also improved modestly. Reductions in the use of physical restraint and adverse events suggest that protocol 38 contributes to more appropriate, less confrontational patient management. However, the full potential of the protocol is currently limited by inconsistent staff competence and confidence, variable confidence in its application, and the limited availability of mental health resources, particularly in rural areas and outside regular hours.

The research confirms that protocol 38 is a valuable step forward in managing high-risk behavioural emergencies, aligning with broader EMS goals of prioritising patient outcomes over rigid time targets. However, successful implementation requires system-wide commitment, inter-agency collaboration, and continued evaluation.

RECOMMENDATIONS

1. **Standardise Training and Support:** Implement mandatory, scenario-based training for all Emergency Medical Dispatchers (EMDs) and frontline responders to ensure consistent and confident use of protocol 38.
2. **Expand Mental Health Resources:** Invest in specialist mental health response capabilities, particularly for rural regions and during out-of-hours periods, to support safe de-escalation and reduce reliance on restraint.
3. **Embed Ongoing Evaluation:** Conduct longitudinal studies using real-time incident data to monitor the sustained impact of protocol 38 on clinical outcomes, operational efficiency, and patient experience.
4. **Strengthen Interagency Protocols:** Establish formalised agreements and shared training between WAST and police services in Wales to enhance joint responses to ABD incidents.
5. **Promote Reflective Practice:** Introduce support mechanisms for responders, including debriefing and psychological support, to address the emotional toll of ABD incidents.

By addressing these areas, WAST and other UK ambulance services can take full advantage of protocol 38's benefits, improving safety, efficiency, and the quality of care for some of the most vulnerable patients in emergency settings.

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