NHS
West Midlands Ambulance Service
University NHS Foundation Trust

[redacted]

Ambulance Service Headquarters
Waterfront Business Park
Brierley Hill
West Midlands
DY5 1LX
[redacted]
website: www.wmas.nhs.uk

Mr Lane
HM Assistant Coroner for Worcestershire
The Civic
Martins Way
Stourport on Seven
DY13 8UN

1 June 2023

Dear Mr Lane

Re: Regulation 28 Report to Prevent Future Deaths – David Ernest Mason (Deceased)

Thank you for your email dated 20 April 2023 attaching your Regulation 28 Report.

Firstly, I am sorry that you have had to raise concerns with West Midlands Ambulance Service University NHS Foundation Trust (WMAS) following the inquest of Mr Mason. Can I please take this opportunirty to pass on my sincere condolences to the family of Mr Mason.

Please see our response to your concerns.

Concern 1
Evidence heard at the inquest demonstrated that no clinician involved in providing pre-hospital care to Mr Mason appreciated that, as someone who had Addison's disease and who had suffered the trauma of a fall, long lie and a fractured hip, Mr Mason required additional replacement steroid therapy, to prevent the development of an acute adrenal crisis.

Response
In 2017 there was an update in the Joint Royal Colleges Ambulance Liaison Committee (JRCALC) guidance emphasising the increased usage of Hydrocortisone for patients with adrenal crisis, including a further note stating if in doubt administer Hydrocortisone. This was communicated to all staff through the clinical times edition 30. The clinical times is an internal quarterly breifing which provides all staff with new or updated clinical guidance.

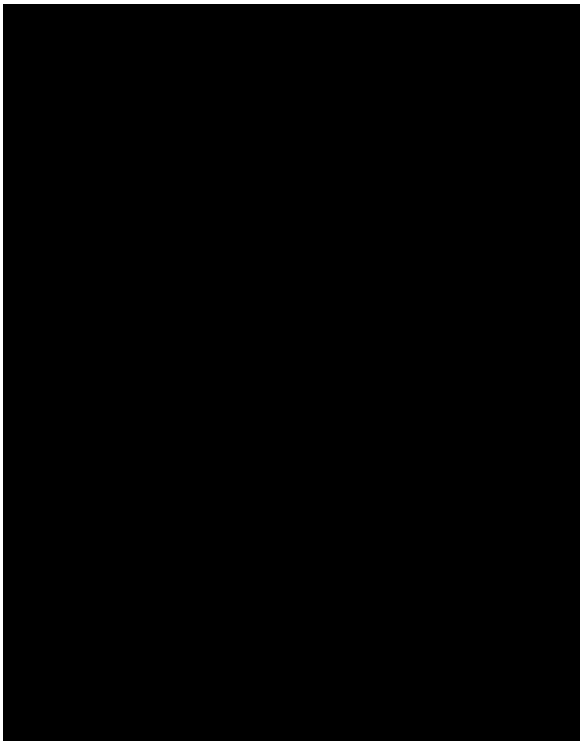
In September 2020 under the medical emergencies section of JRCALC was updated to highlight that a joint National Patient Safety Alert was issued by NHS Improvement and NHS England about Steroid Emergency Cards to support early recognition and treatment of adrenal crisis in adults. Small amendments were made in the guidelines to highlight the need to be alert for a patient having an emergency card for a specific condition. For example a steroid emergency card or an alert card for a patient with COPD regarding oxygen therapy. This was highlighted to all staff through clinical notice 431.

In February 2022 JRCALC issued a new guideline titled steroid dependant patients, this guideline was highlighted to all staff through clinical notice 484. This also included permitting WMAS ambulance technicians to administer hydrocortisone IM to patients as well as Paramedics.

All WMAS clinicians are given access to the JRCALC guidelines through individual licenses for the JRCALC Plus app. Staff are also provided a Trust personal issue Ipad and the app can be accessed through this device, or there is the option for the app to be also downloaded on other devices such as personal smart phones if they so choose so. This allows clinicians to access the guidelines whilst at the patient side.

As well as the above a number of articles have been run within the WMAS weekly briefing. The weekly breifing which is emailed to all WMAS employees provides all the latest information about WMAS and any changes to guidance that have been made by external bodies in relation to clinical practice that must be considered. An example of such is below:

Steroid Emergency Card
All clinicians are to be aware of recently published national guidance that promotes a new patient-held Steroid Emergency Card. The guidance and card are designed to help healthcare staff identify adrenal crisis in adults and gives information on the emergency treatment to start if the patient is acutely ill, or experience trauma, surgery or other major stressors. For further information please go to:
www.rcpjournals.org/content/clinmedicine/20/4/371
www.endocrinology.org/
www.pituitary.org.uk/
www.addisonsdisease.org.uk/
www.jrcalc.org.uk/guidelines/



Concern 2
Evidence heard at the inquest demonstrated that when information is given to an EOC (emergency operations centre) call-handler at WMAS that a patient has a diagnosis of Addison's disease and has suffered trauma, the call-handler question pathway (which, the inquest heard, is based on a computer-programmed logarithm (designed by NHS

Digital, now part of NHS England)) does not go on to consider the risk of adrenal insufficiency and the requirement for replacement steroid therapy to commence immediately. This appears to be potentially relevant both in respect of whether time-critical steroid treatment may be required (and thus for a holistic consideration of call categorisation) and safety-netting advice that should be given (for additional doses of steroid medication to be taken by the patient, prior to any ambulance arrival). Safety-netting advice takes on even greater significance in the current climate, where healthcare demand and pressures on capacity are often causing severe delays in ambulance attendance. Evidence heard at the inquest confirmed that the position is different if information is given that the patient is medically unwell, particularly if concerns of a cardiac nature are present or adrenal insufficiency may be the direct cause of current illness, with the call-handler question pathway then going on to consider the risk of adrenal insufficiency. Currently there is a cohort of patients (which included Mr Mason) whose risk of developing an adrenal crisis is not being considered by call-handlers at WMAS.

Response
Calls to 999 are assessed in accordance with the Department of Health National Guidelines using a process called NHS Pathways (NHSP).

NHSP is a patient assessment triage tool used to determine the most suitable level of care, appropriate to the presenting symptoms of the telephone call. It is a national requirement to use an assessment system to triage all 999 calls, to assist Ambulance Services in prioritising the high number of calls received. WMAS are unable to make changes to the system.

WMAS Integrated Emergency Urgent Care Clinical Commander who is the Lead for NHS Pathways (NHSP) has raised the above as a clinical concern on the NHSP log. WMAS are awaiting a response from Pathways.

Concern 3
The Serious Incident investigation report disclosed by WMAS did not make any recommendations in respect of improving clinicians' knowledge of adrenal insufficiency and the importance of considering administering replacement steroid therapy.

Response
Following review of the serious incident investigation and receipt of the PFD we agree a recommendation should have been made to raise awareness and improve clinicians knowledge of adrenal insufficiency and the importance of considering adminsertering replacement steroid therapy. Therefore we have reemphasised the care of the steroid dependant patient with an in depth article with appropriate links for further reading and education, publishing the below in the clinical times on the 12th of May 2023.

Steroid Dependant Patients - Jason Wiles, Consultant Paramedic for Emergency Care
Following a recent coronial inquest, the Trust received a Regulation 28 Report to Prevent Future Deaths in relation to clinicians' knowledge adrenal insufficiency and the importance of considering administering replacement steroid therapy particularly in the patient who has suffered the trauma of a fall, long lie and a fractured hip. In this

case the patient required additional replacement steroid therapy, to prevent the development of an acute adrenal crisis.
JRCALC provide guidance on the assessment and management of Steroid- dependent patient which are available to all clinicians through the JRCALC+ app.

Incidence

- Primary Adrenal insufficiency (when the adrenal glands cannot produce cortisol) affects 1 in 20,000 people in western Europe affecting around 3,400 people in the UK.
- Secondary Adrenal insufficiency (when the pituitary gland cannot produce ACTH, and therefore cannot stimulate the adrenal gland to produce cortisol) is more common with 150 – 280 people per million affected. It is more common in women than men. The peak age of onset is between 50 and 60 years.

Pathophysiology

Glucocorticoid Steroid Dependant Patients

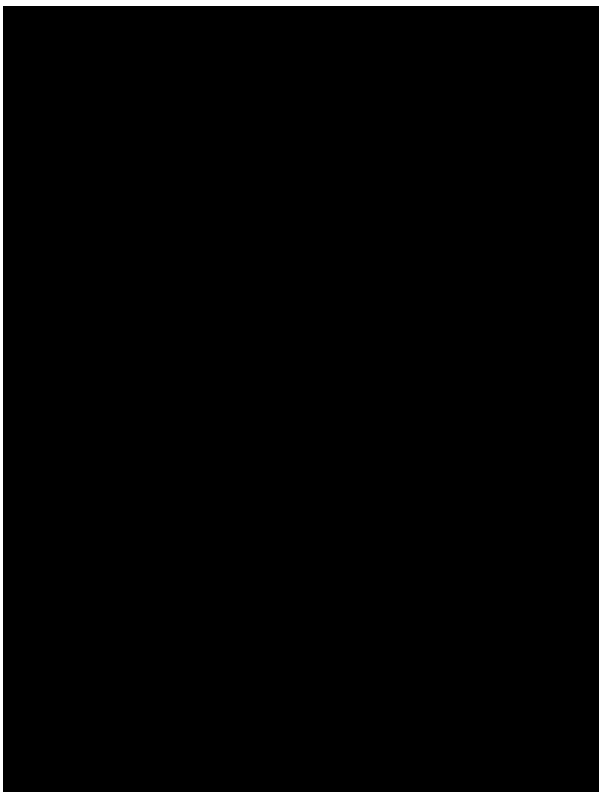
The cause of steroid dependency can be broken down into three types: primary, secondary, and tertiary.

1. Primary adrenal insufficiency occurs in patients who have direct impairment of the adrenal glands such as those with Addison's disease (autoimmune endocrine condition where the adrenal glands cease to function), congenital adrenal hyperplasia (genetic condition) or surgery or trauma to the adrenal glands.
2. Secondary adrenal insufficiency is caused by pituitary disease, hypothalamic or pituitary tumours and their treatment (surgery and radiotherapy) or brain injury.
3. Tertiary adrenal insufficiency may occur in patients who have taken steroids for prolonged periods of time, high doses, multiple courses, or via multiple routes.. Prolonged use may lead to a reduction or cessation of naturally occurring cortisol production by the adrenal glands.

Regardless of type, those with adrenal insufficiency are at risk of adrenal crisis which can be life threatening.

Adrenal Crisis

Adrenal crisis, also termed acute adrenal insufficiency, is a life-threatening endocrine emergency due to a lack of production of the adrenal hormone cortisol.
Adrenal crisis can also occur if existing cortisol replacement does not meet the body's increased need for cortisol due to illness such as fever, persistent vomiting or diarrhoea or trauma. Equally, sudden cessation of corticosteroid medication for conditions listed above, will risk adrenal crisis in those with adrenal insufficiency.
Identifying patients at risk and prompt management can save lives.
National guidance promotes a new patient-held Steroid Emergency Card to help healthcare staff identify patients with adrenal insufficiency and provide information on emergency treatment if the patient is acutely ill, experiences trauma, surgery or other major stressors.
https://www.england.nhs.uk/publication/national-patient-safety-alert-steroid-emergency-card-to-support-early-recognition-and-treatment-of-adrenal-crisis-in-adults/



Assessment and Management

Assessment and management of: Steroid Dependant Patients or at risk of adrenal insufficiency

Assessment

- Assess <C>ABCD MANAGEMENT
- If any of the following TIME CRITICAL features present:
- Major <C>ABCD problems, refer to Medical Emergencies in Adults – Overview and Medical Emergencies in Children – Overview
- Start correcting <C>ABCD problems.
- Undertake a TIME CRITICAL transfer to nearest receiving hospital.
- Continue patient management en-route.
- Provide an ATMIST information call.

Symptoms and signs of adrenal insufficiency include:

- Severe fatigue, lethargy, drowsiness, confusion, coma
- Low blood pressure, postural dizziness and hypotension (≥20 mmHg drop in BP from supine to standing position), dizziness, collapse, in severe cases hypovolaemic shock
- Abdominal pain, tenderness and guarding, anorexia, nausea, vomiting (in particular in primary adrenal insufficiency), diarrhoea
- Fever
- Patients may have a history of weight loss and increasing skin pigmentation over weeks to months (primary adrenal insufficiency)
- Assess patient for underlying acute conditions that may have precipitated the adrenal crisis and treat that condition too.

Follow Medical Emergencies in Adults – Overview and Medical Emergencies in Children – Overview in addition to the specific management detailed below.

- Measure and record pulse rate.
- Measure and record respiratory rate.
- Measure oxygen saturations
- Measure and record blood glucose for hypoglycaemia.
- Treat hypoglycaemia. Refer to Glycaemic Emergencies in Adults and Children.
- Measure and record temperature.
- These observations along with a blood pressure will enable you to calculate a NEWS2 Score, refer to Sepsis.
- If required, monitor and record 12-Lead ECG. Assess for abnormality, refer to Cardiac Rhythm Disturbance.
- Measure and record blood pressure, if required administer fluids, refer to Intravascular Fluid Therapy in Adults and Intravascular Fluid Therapy in Children.
- Patients with adrenal crisis may be hypotensive or have postural hypotension. Assess for postural hypotension if normotensive when lying / sitting.
- There may be a profound postural drop in blood pressure when the patient is moved from the lying position to semi-recumbent or sitting position. It may be necessary to give IV fluids prior to moving the patient if extrication requires head up posture.

Administer Hydrocortisone Administer hydrocortisone to:

- Patients in an established adrenal crisis (IV or IM administration). Ensure parenteral hydrocortisone is given prior to transportation.
- Patients with suspected adrenal insufficiency or on long-term steroid therapy who have become unwell or experience trauma to prevent them having an adrenal crisis. IM administration is usually sufficient.
- If in doubt about adrenal insufficiency hydrocortisone should be administered.
- Pregnant women who have Addison's disease who are established in labour (regular painful contractions) should receive Hydrocortisone.
- Refer to Hydrocortisone drug guideline.

Conveyance to hospital

- Convey patients who have required intravenous fluids or management of hypoglycaemia.
- Convey patients if the underlying condition precipitating the adrenal crisis needs hospital assessment / management.

Consider management in the community or referral to other services for:

- Patients with mild illness / injury where they have followed their treatment plan to increase steroid dose and have normal physiological parameters.

Appropriate advice

- Patients on replacement steroids (e.g., Addison's disease/hypopituitarism) may have a treatment plan to increase their maintenance steroids in the event of illness / injury. This should be followed but they may require monitoring and higher doses for more significant illness / injury.

Key points

- Adrenal Crisis is a Medical Emergency requiring prompt treatment with Hydrocortisone and IV fluids.
- Steroid Dependant Patients can have an Adrenal Crisis triggered when the body's requirement for corticosteroids increases such as due to infection or trauma as the body is unable to increase its own production.
- If extrication requires a head up posture, IV fluids may be required before moving the patient to prevent profound postural hypotension.
- Look for an underlying cause that may have triggered the episode and treat that condition too.

Further reading

https://bnf.nice.org.uk/treatment-summaries/adrenal-insufficiency/#management-of-adrenal-crisis
https://www.addisonsdisease.org.uk/emergency
https://www.pituitary.org.uk/information/adrenal-insufficiency/

Joint Royal Colleges Ambulance Liaison Committee, Association of Ambulance Chief Executives. Steroid-dependant Patients. JRCALC Clinical Guidelines 2022: Class Professional Publishing 2022.

Concern 4

Evidence heard at the inquest confirmed that the investigation lead at WMAS had not been shown the inquest disclosure bundle, which had been disclosed to the legal department at WMAS a number of months prior to the inquest. This bundle contained relevant evidence from a different internal investigation (by WAHT), suggesting that the likely cause of Mr Mason's deterioration and death was an acute adrenal crisis and not, as had been considered when a coronial referral had initially been made, hyperkalaemia and rhabdomyolysis (following a fall and long lie). This lack of internal co-ordination within WMAS prevented full internal investigation and learning in respect of the care given to Mr Mason by WMAS. The legal department of WMAS did not attend the inquest (it was their right not to) nor were WMAS legally represented by an external solicitor or barrister (it was their right not to be). Greater engagement and participation in the coronial investigation and inquest process would improve the Trust's ability to learn from patient-safety incidents and enable the legal, governance and safety departments to better co-ordinate such investigations.

Response

Due to new staff starting within within the WMAS Coroners team, sending the bundle to the Lead investigator was missed on this occasion. Please accept our sincere apologise for this error in administration.

The legal team at WMAS aim to attend as many inquests a possible. However, due to the increasing number of inquests throughout the West Midlands it is not possible to attend all inquests.

May I once again please pass on my sincere condolences to the family of Mr Mason.

I hope this response provides you and the family with the appropriate level of assurance that as a Trust we have dealt with the concerns highlighted within your report.

If you require any further assistance, please do not hesitate contact me.

Yours sincerely

Chief Executive Officer