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James Bennett
Area Coroner Birmingham and Solihull
The Coroner's Court
50 Newton Street
Birmingham
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By Email: [redacted]
Our reference: LT02223

5th September 2019

Dear Mr Bennett

Inquest into the death of Allan Davies

I am writing in response to the Regulation 28 report received from HM Senior Coroner, dated 9th July 2019. This follows the death of Allan Davies who sadly passed away on 7th February 2019. This was followed by an investigation and inquest which concluded on 26th June 2019. NHS Pathways is the clinical decision support software used by all 111 service providers, and some 999 ambulance service providers including West Midlands Ambulance Service. I am [redacted], RGN, RSCN, BSc, SPQ and am writing in my capacity as Deputy Clinical Director, NHS Pathways, NHS Digital.

HM Coroner has raised the following matters of concern with regards to NHS Pathways:

1. NHSP triaging of overdoes cases is too generic, namely it fails to have regard to the type of drug(s) taken and the potential for sudden collapse in certain patients: and
2. Not all NHS trusts/ambulance services that utilise NHSP are aware of the apparent deficiency.

NHS DIGITAL'S RESPONSE

For information, I have provided below a short summary of the functions that NHS Pathways performs and the governance that underpins it.

Function of NHS Pathways

NHS Pathways is a programme providing the Clinical Decision Support System (CDSS) used in NHS 111 and half of English ambulance services. This triage system supports the remote assessment of over 16.7 million calls per annum. These calls are managed by non-clinical specially trained call handlers who refer the patient into suitable services based on the patient's health needs at the time of the call. These call handlers are supported by clinicians who are able to provide advice and guidance or who can take over the call if the situation requires it. The system is built around a clinical hierarchy, meaning that life-threatening problems assessed at the start of the call trigger ambulance responses, progressing through to less urgent conditions which require a less urgent response (or disposition) in other settings.

Please note that where an NHS Pathways question is answered in such a manner as to prompt the asking of a further question along the same pathway this is referred to as a 'negative' answer. Where a response (in most cases indicative of more serious clinical symptoms) to a question or string of questions is such that it prompts different questions or a clinical endpoint specifying the level of care and time frame that a patient needs ('disposition') being reached this is generally referred to as a 'positive' answer.

Governance of NHS Pathways

The safety of the clinical triage process endpoints resulting from a 111 or 999 assessment using NHS Pathways is overseen by the National Clinical Governance Group, hosted by the Royal College of General Practitioners. This group is made up of representatives from the relevant Medical Royal Colleges. Senior clinicians from the Colleges provide independent oversight and scrutiny of the NHS Pathways clinical content. Changes to the NHS Pathways clinical content cannot be made unless there is a majority agreement at NCGG.

Alongside this independent oversight, NHS Pathways ensures its clinical content and assessment protocols are consistent with the latest advice from respected bodies that provide evidence and guidance for medical practice in the UK. In particular, we are consistent with the latest guidelines from

- NICE (National Institute for Health and Clinical Excellence)
- The UK Resuscitation Council
- The UK Sepsis Trust

To specifically address the concerns raised:

1) **NHSP triaging of overdoes cases is too generic, namely it fails to have regard to the type of drug(s) taken and the potential for sudden collapse in certain patients.**

NHS Digital (along with NHS England and NHS Improvement as detailed below) is aware of issues associated with the unpredictability of deterioration in overdose cases and ensuring care is provided when needed.

Our response to the specific concerns raised and details of measures in place and actions taken and ongoing in this area are detailed below.

1) Drugs taken by a patient is not a determinative factor in NHS Pathways reaching a disposition

NHS Pathways triages symptoms presenting at the time of the call and directs patients to the most appropriate services based on these symptoms rather than making a diagnosis.

Overdose cases (whether with suicidal intent or not) are very complex to assess within telephone triage due to different methods, lethality and social circumstances. In overdose cases the capacity of any drug to cause harm is dependent on multiple factors; for example, quantity of drug taken, interactions of other medication, the patient's medical history and time of overdose, as well as the patient's understanding of what exactly has been taken.

NHS Pathways previously considered whether there was a way of identifying higher risk overdose patients automatically within the system based on drugs taken. Our assessment was that this is not possible given that NHS Pathways is a computer-based system operated by non-clinical call handlers. There are too many variables to address this in multiple choice / closed type questions. NHS Pathways does not rely on non-clinical call handlers being able to recognise particular conditions or the likely consequences of factors such as drugs taken, as: i) this requires knowledge and discretion that non-clinical call handlers are not expected to have, and that a training programme for individuals who are not medical professionals could not deliver; and ii) therefore to do so may introduce further risks if relied upon to determine a disposition.

2) Information about drugs taken is recorded by NHS Pathways

Within the Accidental Poisoning/ Inhalation pathway there is a specific question which allows the call handler to document (if known, from information given by the patient or caller) 'what, when and how much was taken' in a free text box. When there is suicidal attempt, after reaching the emergency ambulance disposition/outcome, "what was the method of the suicide attempt" is asked, each of the answers, overdose of medication, swallowing something harmful, breathing in poisonous fumes, and other has a free-text 'specify' box for documenting further details.

This information is not taken account of in reaching a disposition (due to the risks of non-clinical call handlers being unable to accurately analyse and record the relevant information as above) but it is transferred into the call report and call summary. These reports are visible to clinicians working within the 999 or 111 services when reviewing cases and for any onward health care professionals to see (including any clinician to whom the call is transferred).

3) Safeguards in respect of the potential for sudden collapse in certain overdose patients

Mr Davies was assessed using the Accidental Poisoning / Inhalation pathway. Due to the complex nature of accidental poisoning cases, the lowest disposition that can be reached by a patient presenting with any symptoms is a Category 3 (Dx012) emergency ambulance response (with more severe symptoms generating a higher disposition/outcome).

(Dx012 is a generic ambulance disposition within NHS Pathways associated with urgent / emergency calls but not immediately life-threatening symptoms.)

If asymptomatic the outcome reached is “speak to a clinician from our service immediately – toxic ingestion/inhalation”. This outcome is to allow immediate transfer to a clinician to clinically assess the risk to life, apply their expertise to information about drugs taken or other relevant factors and triage to an appropriate level of response. Mr Davies had symptoms of breathlessness which resulted in a Category 3 (Dx012) ambulance response.

If self-harm, or suicidal intent is present, even if asymptomatic, the lowest disposition is an emergency ambulance response (Dx012 /Category 3).

NHS Pathways dispositions have unique codes, for example Dx012 is the disposition code for a Category 3 emergency ambulance response. Where symptoms require a disposition related to an ambulance needing to be dispatched this is then ‘mapped’ to the clinically appropriate ambulance standards which are set by NHS England and results in the specific disposition code indicating the category of ambulance. NHS Pathways does not set the Ambulance response standards or the Ambulance Quality Indicators and these can be found at https://www.england.nhs.uk/urgent-emergency-care/arp

4) Use of disposition Dx012 /Category 3 ambulance response

The Ambulance Response Programme in December 2018 discussed and agreed that re-categorisation of all suicidal cases from Dx012 (Category 3 ambulance) responses to Category 2 ambulance responses without first differentiating the clinical risks of the method, toxicity and social circumstance of the case is unlikely to offer benefits of a faster response due to the volume of patients involved and would likely introduce new clinical risks across the wider emergency care system. This approach is also in line with the other national triage system in use in 999 services.

It is important that the presumed illness/risk posed to a patient following triage is accurate in NHS Pathways, not only to ensure that patients receive the appropriate level of care when seriously ill, but also to ensure that patients are not over-referred. When the questions within NHS Pathways are created, the clinical team must ensure that a careful balance between 'sensitivity' and 'specificity' is struck. By way of brief summary, the ‘sensitivity of a test’ is the ability to correctly identify those with a disease or condition (true positive rate), whereas ‘specificity’ is the ability to correctly identify those without the disease (true negative rate). More than 16.7 million calls are triaged every year using NHS Pathways, so it is critically important that the content of the system has an appropriate and safe balance between sensitivity and specifically, since an imbalance in either direction carries significant risks.

5) Changes implemented to disposition Dx012

NHS Pathways has however continued to review the category of response for suicidal patient groups alongside the recommendation as documented in the letter in Appendix A where the Ambulance Response Programme requested that “all services should review the identification and management of these patients to ensure they are receiving the correct type of response and timely clinical assessment”.

To support this recommendation NHS Pathways have introduced a new disposition code (Dx0124), ratified by the NHS Pathways National Clinical Governance Group (NCGG) in February 2019. This new code, '*Dx0124 Emergency Ambulance Response for Risk of Suicide (Category 3)*' is designed to facilitate the early identification of higher risk suicidal patients either following an intentional toxic overdose or persons who intend to end their life by violent means, so that they can undergo early clinical review within 111 and 999 call-handling centres.

The purpose of this new disposition code is to raise the visibility of higher risk suicide cases within the larger Dx012 Emergency Ambulance Response (Category 3) cohort so they can be targeted by clinicians in the control rooms for urgent remote clinical assessment of the risk to life, using their expertise to clinically re-triage to alternative levels of response if required, e.g. a higher Category 2 ambulance response if appropriate.

This new disposition code to support further clinical assessment was finalised and included in Release 18 of NHS Pathways content. Beta testing occurred in August 2019 and widescale deployment of Release 18 to all providers of NHS111 and all ambulance services in England that use the NHS Pathways system begins on 7th October 2019, with services then having an 8 week period to update their staff and deploy in their systems.

6) Future changes to disposition Dx012

NHS Pathways has also recognised that those patients who have overdosed without suicidal intent and have symptoms (and so receive a Dx012 disposition and Category 3 ambulance) would benefit from having the same visibility within the Category 3 cohort as those with suicidal intent, so they can also be easily identified by clinicians working within ambulance control rooms for urgent remote clinical assessment of the risk to life. Further work by the NHS Pathways team is commencing in this area and, subject to review by the National Clinical Governance Group, a new disposition code will be introduced (similar to Dx0124) to enable this to occur. The Ambulance Response Programme will be made aware of this proposed change.

We are happy to provide an update on the progress of this work if required.

2) Not all NHS trusts/ambulance services that utilise NHSP are aware of the apparent deficiency.

NHS England and NHS Improvement, through the Ambulance Response Programme and Joint Ambulance Improvement Programme Board, are aware of issues associated with the unpredictability of deterioration in overdose and suicide cases and ensuring care is provided when needed and have sought to address this with NHS Trusts and Ambulance Services.

The National Clinical Director for Urgent and Emergency Care, NHS England issued a letter as outlined in Appendix A, to all Ambulance Service Chief Executives and Ambulance Service Medical Directors in England on 21st January 2019 following a meeting of the Ambulance Response programme (ARP) implementation group on 18th December 2018 to request Trusts review how they monitor self-harm and suicidal patients. The ARP group is attended by all 999 Ambulance trusts.

On 2nd April 2019 the National Clinical Director for Urgent and Emergency Care NHS England wrote a further letter to all Ambulance Service Chief Executives and Ambulance Service Medical Directors in England to again highlight these issues and ask them to:

- "ensure they have robust clinical oversight in place in control rooms to monitor self-harm and suicidal patients safely and effectively, particularly those who have been allocated a Category 3 or 4 response initially".
- And stated that "Consideration should be given, at the point of call, to the type of overdose and quantity taken (where relevant), and to the intent to end life, all of which will determine the necessary response including the need to upgrade a call for clinical reasons...".

This letter also offered to promote and share good practice in this regard, which several ambulance services have done.

Through our standard deployment process all users of NHS Pathways are aware of the new disposition code Dx0124 coming in Release 18.

We trust that this addresses your concerns but please let us know if we can answer any further enquiries from HM Coroner.

Yours sincerely

[redacted]
Deputy Clinical Director
NHS Pathways