P-05-866 Sepsis Public Awareness Campaign – Wales, Correspondence – Public Health Wales to Chair, 02.05.19

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2 May 2019

Janet Finch-Saunders – AM/AC
National Assembly for Wales
Cardiff Bay
Cardiff CF99 1NA

Dear Janet,

P-05-866 Sepsis Public Awareness Campaign – Wales

Thank you for your letter of 3 April 2019 seeking details of Public Health Wales ongoing work in relation to Sepsis, including the development of a sepsis registry in Wales and the potential for increasing awareness of sepsis amongst health professionals and the public.

Please find attached a briefing that provides the information you have requested. If you have any further queries please don't hesitate to contact me.

Yours sincerely,

Dr Tracey Cooper
Chief Executive, Public Health Wales

Purpose of the briefing

This briefing provides a response to the questions raised in the letter to Tracey Cooper from the Chair of the Petitions Committee. Specifically to provide information on:

- details of your ongoing work in relation to sepsis, including the development of a sepsis registry in Wales; and
- the potential for increasing awareness of sepsis amongst health professionals and the public.

Background

Sepsis mortality and harm - Sepsis is estimated by the UK Sepsis Trust to cause the deaths of around 44,000 people in the UK annually. This equates to approximately 2,200 people in Wales each year, which represents approximately 13% of all hospital deaths. Not all death is avoidable but there is still likely to be a sizeable proportion that is. Sepsis also carries a terrible cost, not only in terms of mortality but also in the after effects that survivors may have to carry with them for the rest of their lives.

The main vehicle for the continued improvement of recognition and treatment of sepsis in Wales is through participation of all Health Boards and Trusts in the 1000 Lives Improvement service Acute Deterioration Programme led Rapid Response to Acute Illness Learning Set (RRAILS).

RRAILS was launched in 2011 with the aim of reducing avoidable harm and death from causes of acute deterioration (sepsis and acute kidney injury) in the Welsh population. The programme supports acute hospitals, primary and community care settings across every health board area in Wales; offering healthcare staff standardised quality improvement tools and resources to help identify and treat their patients. The current focus is mainly on:

- Improving patient outcomes and reducing variation in practice across secondary care by conducting peer reviews to identify and share areas of good practice and areas for improvement.
- Standardising the care of acutely deteriorating patients across the whole pathway of care by introducing the National Early Warning Score (NEWS) into community settings.
- Supporting development of a systematic method of review, communication of deterioration and rapid treatment in paediatric settings.
- Supporting developmental work with post-hospital Sepsis support groups.
- Developing and maintaining a Sepsis Registry

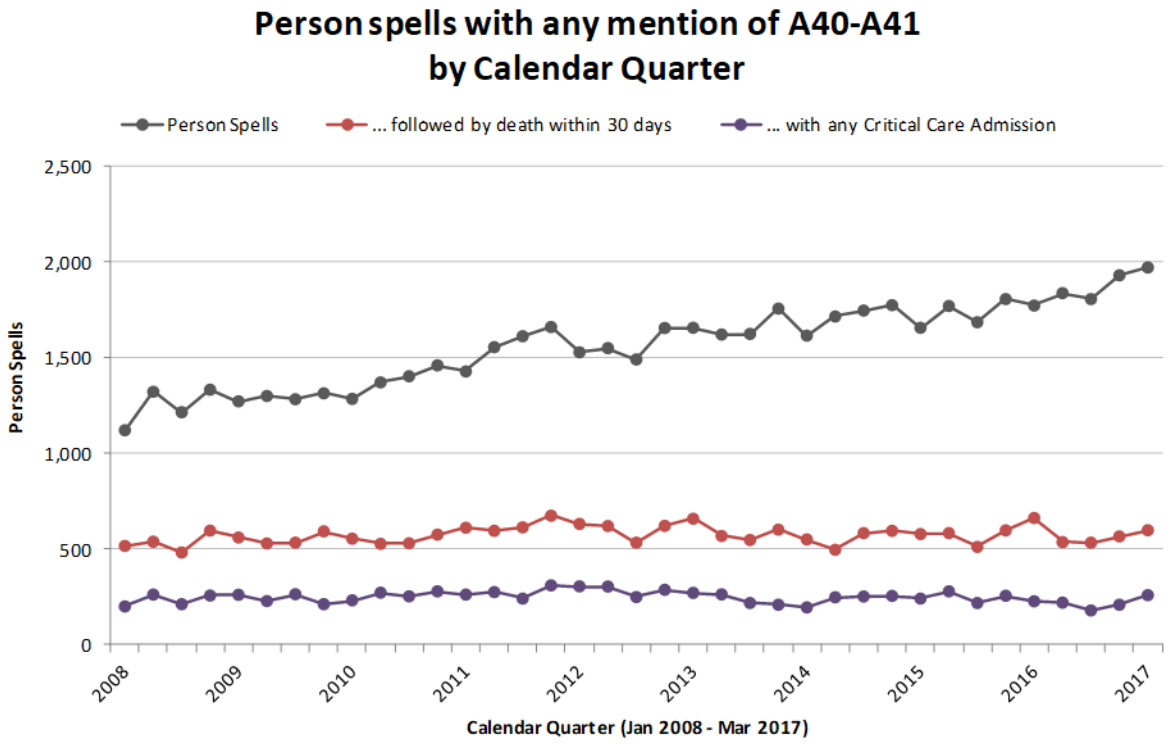
The approach has proved successful as detailed in the recent publication ICU Management & Practice (2017: Vol 17, Issue 4: p246-249)

Achievements to date

- **NEWS** – The National Early Warning Score (NEWS) has been introduced in all acute clinical areas, in the Welsh Ambulance Service Trust (WAST) and in many community and primary care settings. NHS Wales was the first large healthcare economy in the UK and Ireland to implement NEWS as standard in 2013. This has had the effect of

changing the national culture around acute deterioration and has hugely raised the awareness of sepsis amongst health care professionals.

- **Sepsis screening and treatment –** A standardised approach to sepsis screening and treatment with the sepsis 6 care bundle has been integrated with the implementation of NEWS and so the escalation process for sepsis in Welsh hospitals has been embedded in the everyday clinical protocols and procedures for many years.
- **Improved National Outcomes -** In October 2015, the then Deputy Health Minister announced a significant reduction in mortality associated with two sepsis codes that had appeared to coincide with the changes made in healthcare systems occurring because of the 1000 Lives Rapid Response for Acute Illness Learning Set (RRAILS) programme. Whilst causation is impossible to attribute it does seem probable that these outcome improvements are associated with this initiative (see chart below)



- **Sepsis metrics reporting to WG** - NHS Wales, facilitated by the RRAILS programme, has developed and spread a sepsis screening and escalation tool and has worked to improve systems for delivery of the Sepsis 6 care bundle within a 1-hour window. All Health Boards now report metrics on sepsis screening and treatment to WG on a monthly basis and this data is evaluated as measurement for improvement as part of the RRAILS Steering Group meetings.
- **Significant improvements in recognition and treatment of sepsis at the hospital 'front door'** – Following a 1000 Lives Improvement study tour to Dartmouth Hitchcock medical facility in the US, a joint RRAILS/ ABUHB team developed and established the practice of DRIPS (Data, review, improve, plot the dots, share)

meetings in two emergency departments and one hospital in 2015. This method has since been spread as part of the Acute Deterioration programme and peer review process to the receiving units in eight hospitals. In every one of these hospitals the number of cases of sepsis identified in emergency departments and medical assessment units has significantly increased and the compliance with delivering sepsis treatment within one hour has increased to between 70-100% on a regular basis. This is a remarkable achievement which may well be an international first in non-electronic health care systems.

- **Standardised tools** - Work with the Health Foundation and Helen Hamlyn Institute on development of simple tools to make it easy and attractive for clinicians to comply with best practice. These include such developments as the Wee Wheel, NEWS Card and Kidney Safe Bracelet. Demand for these has been high in Wales but also in England and worldwide. For example, over 20,000 NEWS cards, which explicitly suggest that sepsis be considered for patients with a high NEWS, are in use across Wales. Typically worn on the HCP's name badge and evidence from the peer reviews indicates that they are a practical and well used clinical tool.
- **Sepsis Box/trolley** – Following the sepsis box study coordinated by the RRAILS group with CTUHB, the concept of giving clinicians 'permission to act' by using a dedicated box or trolley has been adopted by most Welsh hospitals.
- **RRAILS Online** – RRAILS online is a modular e-learning tool developed and funded by the RRAILS group that sits upon the electronic staff record (ESR) and 'Learning@Wales' platforms and serves to ensure that all NHS Wales staff can access a standard level of training
- **NEWS Wales App -** The NEWS Wales App, which enables users to calculate NEWS and suggests the likelihood of sepsis, has been re-developed by the RRAILS group and re-released because of popular demand, particularly from paramedics who find it an invaluable tool. It is intended that the app will play a central role in the roll out of NEWS and sepsis screening to community settings this year.
- **Sepsis Guidance** – NHS Wales's ability to standardise best practice at scale has been demonstrated by the publication by Richard Jones, Clinical Lead and Chris Hancock, Programme Lead for the 1000 Lives Acute Deterioration programme, of the guidance letter on the 'recognition and management of the adult with sepsis', as well as guidance on maternal sepsis, identification of sepsis by the Welsh Ambulance Service and with Dr Clare Dieppe, a position statement on acute deterioration in Children.
- **National and international recognition** - The RRAILS group has also published guidance on the NHS Wales response to the publication of the RCP paper on NEWS 2, the standard self-assessment for the RRAILS peer review and is in the process of publishing the all Wales guidelines for Acute Kidney Injury. Chris Hancock frequently promotes the work of NHS Wales and ensures that the improvements in sepsis care are recognised via membership of the UK National Outreach Forum (NOrF) Executive Board and the International Society of Rapid Response Systems (ISRRS) third consensus statement working group.

Ongoing work and new programmes

Peer reviews

- This process was requested by Welsh Government as a response to the publication of the PSMO report on 'out of hours' services and is expected to be complete before the December 2019. All Acute hospitals have been visited so far and reports delivered to five out of the seven local Health boards.
- To give examples of the impact of the Peer review reports, this has resulted in:
    - Implementation of a BCUHB sepsis collaborative programme with the intention of using 'DRIPS' meetings to improve the recognition and treatment of sepsis in emergency departments.
    - ABMU – development of an acute deterioration dashboard and submission of data on sepsis metrics to WG in line with other organisations.
      Implementation of DRIPS meetings in the MAU at Singleton hospital resulting in a significant increase in the number of patients with sepsis identified and consistent compliance with delivery of the sepsis 6 bundle of 80-100%.

  ABUHB, Velindre NHS Trust and Cardiff & Vale UHB have more recently completed their Peer reviews, therefore it is too early to see new initiatives within their respective areas.

Community NEWS and Sepsis Screening

- On March 21st 1000 Lives launched a programme to spread NEWS and sepsis screening in community following the successful work of piloting amongst GPs, Community Nurses and the Wales Ambulance Service. Some of the tools used in secondary care have been adapted for use in community settings and care homes. All health boards and trusts have been involved in the development of the programme that aims to implement NEWS in all 160 Welsh district nursing teams by September 2020. It is expected that, in addition to providing and extending the use of NEWS as a common language of risk in Welsh Healthcare, this initiative will result in a similar positive effect upon patient outcomes for sepsis as that experienced in Welsh hospitals with the introduction of NEWS in secondary care.
- There has been considerable analysis performed with the aid of the NEWS group into the suitability of NEWS for community usage. This analysis indicates that NEWS works well at identifying sick people but more importantly as a standardised communication tool.
- The programme is supported by the creation of a common NEWS dataset, spreadsheet, equipment standards, a smartphone app and online training resources.
- A first draft of an All Wales, out of acute hospital observation chart, which is compliant with the Royal College of Physicians recommendations and principles of NEWS 2 has been launched. Following testing during the roll out of NEWS, it is anticipated that this chart will become standard in all non-acute hospital settings in early 2019, meaning that increasing numbers of people will be identified as sick and given appropriate treatment without need for admission to hospital.

Paediatric Acute Deterioration Programme

- Clare Dieppe, a specialist ED Paediatric Consultant in ABMUHB has been appointed as Chair of the RRAILS Paediatric sub group and to lead on the paediatric acute deterioration programme in NHS Wales. 1000 Lives Improvement have published a statement outlining the expected scope and direction of paediatric acute deterioration work. With the ongoing work around the Paediatric Early Warning Score Utilization & Mortality Avoidance (PUMA) study yet to conclude, clinicians within the specialty are reluctant to develop a 'score'. They are more comfortable with an approach that improves and standardises the review and communication process.
- In 2019 the Acute Deterioration programme is supporting the roll out of the Paediatric Observation Priority Score (POPS) within WAST and all NHS Wales Emergency Departments.

Sepsis registry

To understand long-term outcomes for patients with sepsis and identify those who may need support following sepsis, a sepsis registry has been established in collaboration with the Cardiff and Vale UHB, UK Sepsis Trust, 1000 Lives Improvement Service, the Healthcare Associated Infection, Antimicrobial Resistance & Prescribing Programme (HARP) and the Critical Care Network. This is the first sepsis registry in the UK and will launch later this year.

The registry will be hosted by Public Health Wales as a part of its critical care surveillance programme This is complemented by the establishment of an agreed standard dataset for use by the teams as part of the expansion of Critical Care Outreach. This is ready for activation once the governance issues covering the information held in PHW are resolved.

The plan is to collect data on all acutely unwell patients, particularly those exhibiting an acute deterioration. While not all such patients will have sepsis, a significant proportion of them will. To date, no common dataset exists (e.g. from outreach teams, acute deterioration teams, etc.) on which to begin the development of an all-encompassing Acute Deterioration Registry. We have therefore taken the pragmatic step of beginning a project with a dataset that is common to all acute hospitals with a Critical Care Unit (CCU) in Wales. Currently, all CCUs submit data to the Intensive Care National Audit and Research Centre (ICNARC) using a case management system (WardWatcher) and provide HARP with surveillance data. The Sepsis Registry will utilise Ward Watcher for the required data extraction, identifying patients admitted to critical care units with sepsis and the care received (e.g. organ support delivered, lengths of stay). This will give a clear picture of what sepsis care looks like for each critical care unit, hospital and Health Board and provide outcome data for the project.

The new data extraction required from Ward Watcher should be complete by June. The data will be analysed prospectively and retrospectively. There is also a future plan to look in more detail at a sample of the patients identified to map their journey to critical care. A recent letter, sent out to health board Caldicott Guardians for a new sharing agreement for collecting the data, is attached.

Post Sepsis Syndrome Group

The activation of the registry will enable the identification of individuals to be offered support by the Post Sepsis Syndrome Group

Measurement - Suspicion of Sepsis

The Acute Deterioration team of 1000 Lives have continued to look at routine national data in order to understand the impact we are having on mortality from sepsis and to help identify where to focus our efforts. Unfortunately, methods that we have used in the past have become unusable due to UK-wide changes in diagnostic coding and we are having to investigate new approaches to analysing this data. 'Suspicion of Sepsis' (SoS; Inada-Kim et al. 2016) is one such approach, looking at emergency admissions with an infection-related diagnosis. NHS England launched an 'SoS dashboard' in September based on this approach.

We have worked to replicate this new approach using Wales's data, and have been in contact with Inada-Kim to ensure consistency and enable collaboration. Having sought advice from the Public Health Wales Observatory, we are also looking at the demographics and comorbidities of these admissions to check that any positive findings aren't the result of a changing patient-mix.

When we have assured ourselves that we thoroughly understand the SoS data, we hope to share our findings more widely and use it to support local improvement work and to accurately represent what impact this improvement is having.

Public Awareness Campaign

Tracey Cooper addressed this question in her evidence given to the Health and Social Care Committee last July (transcript attached).

This is a difficult issue. It is questionable whether the public awareness campaigns that have been run in England and Scotland have produced any evidence for improvement. Also it is extremely difficult to maintain the delicate balance between 'spreading the message' to the public and possibly overloading GPs and Emergency Departments with inappropriate admissions of 'worried well'. Instead we have focussed on raising professional awareness as part of the campaign that we have been effectively running as part of RRAILS for 10 years.

The awareness campaign for professionals has focussed on ensuring:

- Training on the recognition, escalation and response to sepsis has been integrated since 2013 into Life Support courses that are delivered as part of mandatory training by the resuscitation training departments within each HB.
- The exact numbers of staff trained at any one time will be known by each HB
- There is a focus on doctors, nurses and support workers repeating this training on an annual or bi-annual basis.

To support this training 1000 Lives have developed a suite of e-learning modules that can be accessed through the ESR and Learning@Wales. Each module takes approximately 15 minutes to complete and there would certainly be scope to make some of the modules mandatory for some professional groups. It would also be relatively easy to use this platform for the hosting of more modules on, for example, sepsis in primary care settings.

It is important to remember that Sepsis, although a major cause of harm, is not the only cause and so the training that we have developed has been focused upon identifying the

deteriorating patient quickly and escalating to a professional to make an appropriate diagnosis swiftly. It is this focus which we believe has resulted in the favourable sepsis outcomes that we have seen in Wales

Closing statement

There has been excellent work done and commitment displayed by all HBs on implementing the peer review process, the sepsis registry, the pre hospital work stream and the post sepsis support group.

In addition there is some excellent progress on integrating education and training on sepsis and other causes of acute deterioration in the pre and post registration medical and nursing curricula.

All of this has served to ensure that Wales maintains its place as an international front-runner in the prevention of harm, death and misery due to sepsis but we wish to further improve on this.

The continuation and gathering pace of this work, particularly in the non-acute hospital setting, will be invaluable in addressing the A Healthier Wales priorities of acute illness, the frail elderly and end of life care as well as in ensuring the detection and prevention of acute deterioration closer to where people live.