

## **Editorial**

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# **Computerised medical record systems that guide and protect – reflections on the Bawa-Garba case**

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## **ABSTRACT**

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Lawrence Weed proposed we develop computerised, problem-oriented medical records that guide and teach. The Bawa-Garba case outcomes might have been different if care had been supported by computerised medical record (CMR) systems. CMR systems can reduce prescribing errors and could be developed to flag gaps in supervision. However, CMR systems are not a panacea and need to be fit for purpose. Our informatics perspective on this case is to call for widespread use of CMR systems – designed to guide and protect.

**Keywords:** medical records systems, computerised, patients, medical errors, malpractice, risk, risk management

## COMPUTERISED MEDICAL RECORDS TO SUPPORT CARE

Lawrence Weed's perspective on medical errors is pertinent to the Bawa-Garba case. This case was one where Hadiza Bawa-Garba, an unsupervised junior doctor who was found guilty of mistakes in care and was removed from the UK medical register following the death of a 6-year-old boy.<sup>1</sup>

Almost exactly 50 years ago, Lawrence Weed wrote his seminal articles on 'Medical Records that guide and teach'.<sup>2,3</sup> Weed looked at the chaos of the medical record and reported:

"When I pick up a chart that is a bunch of scribbles, I say: 'That's not art. It certainly isn't science. Now, God knows what it is'."<sup>4</sup>

And, his view of how we as a medical professional try to analyse patients' problems:

'An epidemic of errors and waste is occurring as we persist in trying to do the impossible'.<sup>5</sup>

Weed saw an intractable problem in medicine – the unrealistic expectation, that one's brain, no matter how well-trained, can store all the information required to make a proper decision.<sup>6</sup>

His solution was to look to organise medical records around problems – he invented the problem-oriented medical record (POMR); computerise these records; and link knowledge bases to these records.

## COMPUTERISED MEDICAL RECORD SYSTEMS TO SUPPORT SAFE PRESCRIBING?

One of the errors in the Bawa-Garba case was the administration of a blood pressure-lowering drug by a nurse. We might anticipate that a computerised medical record (CMR) system might have questioned or blocked that prescription. There is some evidence from systematic reviews that computerised prescribing – often referred to in USA as computerised physician order entry (CPOE), might make a difference:

'Clearly reduces medication prescription errors; however, clinical benefit of CPOE systems in paediatric or ICU settings has not yet been demonstrated'.<sup>7</sup>

'Studies of computerised provider order entry with clinical decision support compared with the studies without clinical decision support reported a 36%–87% reduction in prescribing errors'.<sup>8</sup>

'The transition from paper-based ordering to commercial CPOE systems in ICUs was associated with an 85% reduction in medication prescribing error rates and a 12% reduction in ICU mortality rates'.<sup>9</sup>

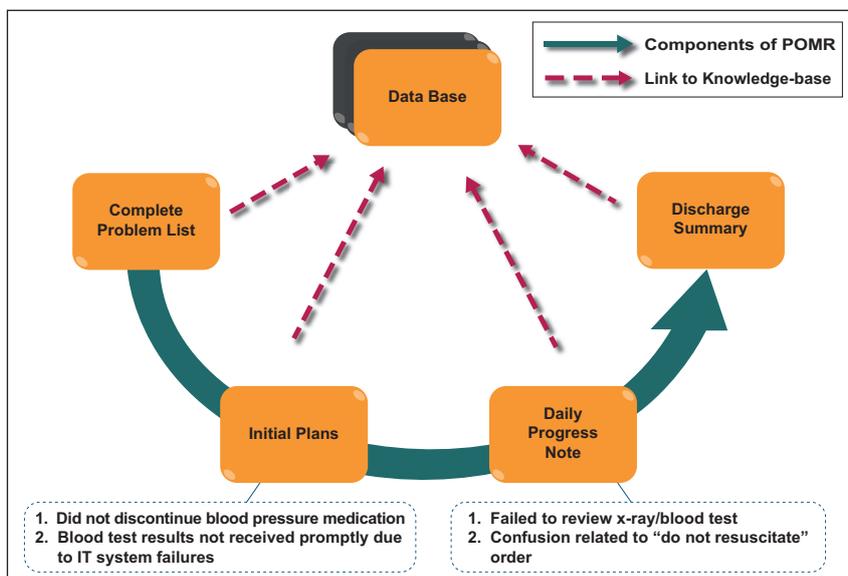
## INCLUDING SUPERVISION ARRANGEMENTS IN CMRs

Compared with the complexity of prescribing, it should be relatively simple to incorporate into junior and senior doctors' rotas information about who is supervising or supervised by whom. However, as far as I can see this is not a part of the current initiatives around rostering software (e.g. <https://www.drusers.nhs.uk/>). Such applications could inform hospital medical directors and executives if there are any, or list of the number of trainees without supervision live via a dashboard or other media.

## USING ROBUST CMR SYSTEMS

Part of the narrative of the Bawa-Garba case, is that an incorrect decision was made about whether to continue with resuscitation. We are not clear whether information about this was recorded on physical paper records or CMR system or a combination of both. It should be possible to specify that CMR systems readily make available this information.

With a fully-fledged and fail-safe CMR system been used, it is possible that it might have impacted on the outcome of this case. Weed suggested elements of a computerised POMR system (Figure 1) that might have impacted on this case and supported better decision making.



**Figure 1** Function of a POMR system that might have impacted on elements of the Bawa-Garba case

## ETHICAL CONSIDERATIONS FOR CMR SYSTEMS

Another aspect of this case was a 4-hour delay in receiving a test result due to an information technology (IT) failure. Downtime is a recognised ethical issue in health IT<sup>10</sup> and exposes the fact that there is a broader range of ethical concerns raised by both CMR use and non-use. These considerations include dimensions such as perceived workload impact,<sup>11</sup> usability<sup>12</sup> and commercial barriers to quality regulation of CMR systems.<sup>13,14</sup>

## CALL TO ACTION FOR THE HEALTH AND CARE INFORMATICS COMMUNITY

Weed flagged half a century ago that we are asking doctors to process more information that one person can possibly do

and that CMRs systems were the way to improve quality. Our discipline should be arguing more strongly for the introduction of systems that might reduce errors and leave managers and executives in our systems aware of the load placed upon junior staff.

Whilst far from perfect,<sup>15</sup> such systems might prevent and if not help us to learn from cases such as this to reduce the chance that it may happen again.

An important priority for health services should be ensuring that patient data are held on CMR systems that guide and protect – the patient as well as their doctor and nurse.

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