

# Specialist not tertiary: Providing intensive care medicine in a district general hospital

Chris Thorpe<sup>1</sup> and Louella Vaughan<sup>2</sup>

Intensive care medicine (ICM) is a relatively young specialty. The operational standards for high-quality care are still being established and during this process calls for centralisation of intensive care medicine services have been a consistent theme.<sup>1</sup> The appeal is seductive – the potential of concentration of expertise and development of economies of scale are attractive to politicians and these concepts underpin the rationale behind the development of sustainability and transformation partnerships in England.

The theme of centralisation is controversial however. An initial assumption that improved outcomes in ICM would be clearly seen in larger centres has failed to materialize, and despite a degree of consolidation we are still seeing the majority of ill patients being admitted to district general hospitals (DGHs). A recent UK wide survey conducted on behalf of the Intensive Care Society and the Faculty of Intensive Care Medicine showed a division of opinion between those working in tertiary centres and those working in smaller DGHs.<sup>2</sup>

Furthermore, there is a growing realisation that locally delivered ICM is an essential part of safe care of acutely ill patients across the whole hospital. The question still remains though – is it practical to have an intensive care unit in every hospital? Newer evidence has suggested that the relationships between hospital size, patient volume and outcomes are substantially more complex than previously thought.<sup>3</sup> Although trauma networks have brought about near universal improvements in care,<sup>4</sup> recent studies of elective<sup>5</sup> and emergency<sup>6</sup> general surgery demonstrate that patients do not necessarily benefit from treatment at higher volume sites. Monitor was unable to find any relationship between hospital size and a suite of quality indicators, including mortality, both at a whole hospital and individual service level.<sup>3</sup> The Kings fund looked at evidence behind reconfiguration and found that evidence of improved quality was mixed, and that evidence for financial savings was almost completely lacking for all types of services.<sup>7</sup>

The flip side to centralisation is rarely discussed – the benefits to patients of receiving care closer to home. Access times can make a difference to mortality that outweighs tertiary expertise.<sup>8</sup> There is also evidence of a ‘distance decay effect’, where patients are

less likely to utilise care with increasing distance.<sup>9</sup> This effect is particularly seen in vulnerable groups, such as the elderly, people on low incomes and those with disabilities, populations that have an increased need for local services. Distance also deters friends and relatives from visiting, particularly those who are older, depriving critically unwell patients of social and emotional support. Centralisation can also result in the ‘stranding’ of patients who can end up effectively out of area, potentially contributing to longer lengths of stay, poorer care and additional costs.<sup>7</sup>

Evidence on volume/outcome relationships is similarly unsatisfactory for UK delivered critical care, and centralisation of ICM services to improve outcome is not supported by consistent evidence. The drivers for this have therefore come from implementation of standards based on process (more easily achieved in bigger centres), extrapolation from other specialties and selective use of data from other countries but there are substantial risks in developing this model without clear evidence. ICM is arguably the most general of the acute specialties, taking in patients from all branches of medicine, surgery, obstetrics and paediatrics and crucially providing the essential cover for a deteriorating patient whose illness has reached the limits of usual ward care. At this point, the presence of on-site expertise is invaluable, not just for any intervention needed but also for triage of those patients that would not benefit from escalation. When planning the future of the specialty, we need to understand that on site critical care underpins safe care throughout the acute hospital and this is not dependent on the size of the hospital. Structures that work in tertiary centres may not translate to smaller hospitals and there is a need to explore in detail how safe care is being delivered across many different working environments,<sup>10</sup> and how we can build on this rather than remove it.

Emerging research gives us some clues how this can be achieved. More sophisticated studies have begun to

<sup>1</sup>Ysbyty Gwynedd, Bangor, UK

<sup>2</sup>Nuffield Trust, London, UK

#### Corresponding author:

Chris Thorpe, Ysbyty Gwynedd, Bangor LL57 2PW, UK.

Email: christhorpe@me.com

suggest that rather than there being a linear relationship between volume and outcomes, there is ‘threshold’ level of minimum volume, beyond which there is no benefit in continuing to increase numbers.<sup>11</sup> Evidence that dedicated daytime cover by intensivists is useful, but that nighttime cover does not add further value helps smaller units develop sustainable cover.<sup>12</sup> Others have shown that outcomes are influenced by the patient-to-intensivist ratio,<sup>13</sup> and that there is a difference between the ‘tactical’ skills needed in dealing with acute problems and the ‘strategic’ skills needed for longer term management.<sup>14</sup> The increased use of technology can potentially assist with remote support,<sup>15</sup> but also allows changes in care to be disseminated more rapidly as new evidence emerges.<sup>16</sup> The use of guidelines to ensure appropriate treatment can also be spread easily across networks and extends the uniformity of care. These aspects are safeguards against smaller hospitals becoming isolated, and the development of telemedicine will develop this integration further.

A pivotal concept for sustained quality of treatment in smaller hospitals is the presence of a local intensivist-led team supported by a well-developed network. This has been successful in Holland,<sup>17</sup> where different models are used to sustain local critical care under the umbrella of networks that share common quality assurance processes and robust communication channels. Transfers between units are relatively small, enabling the majority of patients to receive care close to home without any difference in outcome. The system allows smaller units to function with just two trained intensivists supported by a wider team, which raises the intriguing question of whether there could be a threshold effect for intensivists.

The challenge now is to develop systems that support smaller units and this requires a change in mindset away from the previously held opinion that centralisation to bigger units is the only future. In doing so we open up exciting new opportunities not least of which is an expanding specialty that offers a wide variety of consultant jobs in different geographical locations – potentially attracting a new cadre of trainees who do not see their future in large tertiary centres, but otherwise would regard ICM as their career of choice. For those of us working in a DGH we see the importance of locally delivered ICM. For those of us working in tertiary centres – would we prefer a referral from a disinterested doctor in a hospital devoid of intensivist input, or a discussion with a like-minded colleague singing cheerfully from the same hymn sheet?

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