Case Study: Putting evidence into practice - Developing a bundle of care to measure impact of ICH intervention at Salford Royal Hospital

Challenge:
Transform an established culture of nihilism to a 'can do', proactive approach in treating ICH patients which is embraced by clinicians

(Details on the research trial on which this QI case study is based is available here https://www.strokeaudit.org/AnnualReport/Case-Studies/Treating-Intracerebral.aspx)

Solution:
Apply the evidence in a simple, structured way: Developed approachable, realistic bundle of care processes called the "ABC care bundle", which combined a number of evidence based treatments for ICH patients
Take a standardised, measurable approach: Established process targets for:

- (A) anticoagulant (blood thinning drugs) reversal
- (B) blood pressure lowering
- (C) Agreed upon care pathway to ensure rapid and timely referral to neurosurgery for those likely to benefit

Establish a quick and steady flow of key data: collected just enough data to understand key processes

Test changes, measure impact, implement findings- Performed **'Plan-Do-Study-Act'** cycles to test changes and met regularly to discuss findings. For example, after reviewing records of cases, we quickly realised that the need for a doctor to administer the first line drug (labetalol) for BP lowering was delaying treatment. Therefore, we predicted that using another type of BP lowering drug (GTN) instead would allow the nursing team to take ownership of the dosing. We tested this change, which led to a dramatic reduction in the time to reach target BP. We thus implemented this change with long-term benefit.

Impact:

- **improvements in the speed of blood pressure lowering** (median needle-to-target time 65 min after vs. 371 min before)
- **increased number of patients undergoing neurosurgery** for ICH from 2 per month to 4 per month.
- an **increase in supportive care**, with more patients going to critical care (29.2% after vs. 18.4% before) and a reduction in early (<24 h) do-not-resuscitate orders (22.8% after vs. 33.7% before).

The project was associated with a 31% reduction in 30-day case fatality for patients admitted to our centre

Next Steps:
We are currently scaling this work up across the centralised stroke pathway in Greater Manchester and assessing impact on both recovery and survival by collecting modified Rankin scale scores at 6 months.

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