use has increased since 2006, despite recommendations to limit long-term use.

Reference

Better tracheostomy care through targeted education using social media
Manchester University Hospital, Manchester, UK

The National Tracheostomy Safety Project (NTSP) has published strategies to manage and prevent airway emergencies in patients with tracheostomies and laryngectomies. However, front-line healthcare professionals most likely to benefit from guidance may not have access to or are unlikely to read publications in traditional medical literature. To improve dissemination of such guidelines, The Health Foundation launched Evidence into Practice in 2017. The NTSP’s aim for this project was to produce assessable, digestible resources, and target and influence relevant front-line staff via social media platforms.

The NTSP engaged a social media marketing and production company (FeedFirst Ltd.) to produce short (<2 min) videos around key tracheostomy themes, coupled with a branding exercise. The themes were the following: (i) problems can be prevented by basic care, done well; (ii) emergencies can be managed by following NTSP algorithms; and (iii) vocalisation should be a routine goal of daily care. A marketing campaign was devised to target key staff groups (ICU nurses, ENT nurses, paramedics, physiotherapists, speech therapists, doctors, and hospital managers) identified via social media profiles on Facebook, LinkedIn, Twitter, and YouTube. Strategies included themed events, paid advertising, and encouraging peer-to-peer sharing of resources. Engagement metrics were captured using social media listening tools from January 1, 2018 to March 31, 2018.

A total of 629 270 social media impressions of new NTSP video and infographic resources were captured, including over 267 000 Twitter impressions, 275 430 Facebook impressions, 82 880 YouTube video views (over 80 000 min watched; Fig. 7), and 3960 LinkedIn impressions. Only 85 000 (31.8%) of the Twitter impressions resulted from paid advertising, demonstrating significant social mobilisation around the content, and peer-to-peer sharing.

By developing high-quality, professional content to convey key safety messages and targeting front-line staff via native and promoted social media activity, we have demonstrated an effective reach of our resources to target staff. In comparison, the NTSP paper underpinning this project had been cited only 89 times since publication in 2012. We recommend considering a similar social media marketing strategy to target key staff for similar educational projects in the future.

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References

Man vs machine: how good are clinicians at predicting perioperative risk?
D.J.N. Wong, A. Sahni, J.R. Bedford, S.K. Harris, S.R. Moonesinghe and The Second Sprint National Anaesthesia Project: Epidemiology of Critical Care provision after Surgery Investigators

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The Portsmouth physiological and operative severity score for the enumeration of mortality (P-POSSUM), surgical risk scale (SRS), and surgical outcome risk tool (SORT) have previously been used to predict 30-day perioperative mortality. However, their accuracy compared with clinical judgement alone remains unknown.

We conducted a planned analysis of data from 22 993 patients from the Second Sprint National Anaesthesia Project: Epidemiology of Critical Care provision after Surgery study. Surgical and anaesthesia teams provided preoperative predictions of their patients’ 30-day mortality risk, and reported how estimates were obtained. Mortality predictions for 11 089 patients (48.2%) were made solely using clinical judgement. We performed calibration curve and receiver-operating-characteristic-curve analysis on this patient subset, comparing clinician prediction performance against P-POSSUM, SRS, and SORT computed risks.

There were 109 in patient deaths (0.98%) within 30 days in this patient subset. Clinicians performed well with good discrimination [area under receiver-operating-characteristic curve (AUROC)=0.881; 95% confidence interval (CI): 0.841–0.916], but tended to overpredict risk at higher risk bands. They fared well (Fig. 8, red) against SORT (AUROC=0.920; 95% CI: 0.892–0.947), P-POSSUM (AUROC=0.892; 95% CI: 0.861–0.922), and SRS (AUROC=0.858; 95% CI: 0.819–0.897); however, differences in AUROC were not statistically significant.

In conclusion, clinician judgement and risk stratification tools both perform with equivalent discrimination. Future research into how predictions from man and machine could be synergistically combined to improve accuracy should be conducted.
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References


Cardiac-magnetic-resonance-derived strain rate: a novel technique for assessing right ventricular diastolic function post-lung resection

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Our research group has demonstrated a reduction in right ventricular (RV) function after lung resection with changes in pulmonary afterload and contractility. Cardiac magnetic resonance (CMR) imaging is now the gold standard for the assessment of the RV function and is capable of providing measures of myocardial relaxation. Myocardial CMR can estimate strain, a load-dependent measure of myocardial deformation. CMR-derived strain rate is a novel method that has been used to demonstrate diastolic dysfunction in left ventricular hypertrophy and pulmonary hypertension.12 We investigated the use of CMR-derived strain rate as a method of demonstrating RV diastolic function after lung resection.

27 patients undergoing lobectomy underwent serial trans-thoracic echocardiography (TTE) and CMR imaging: before operation, postoperative Day 2 (POD2), and at 2 months. Measurement of the global longitudinal strain for the RV was performed using QStrain (Medis, Leiden, the Netherlands) on 20 patients with complete CMR imaging. Strain rates were calculated using the R software package. The RV global peak early diastolic strain rate (SRe) and the peak atrial diastolic strain rate (SRa) were determined from the strain rate vs time curves. Changes in SRe and SRa over time were assessed using repeated measures analysis of variance or Friedman’s test as appropriate. An association was sought between CMR-derived SRe and SRa and the TTE-derived parameters of diastolic function e’ and a’ using Pearson’s or Spearman’s correlation coefficient.

SRe and SRa could be calculated at all time points. There was no significant change in SRe over time (P = 0.35). SRa was increased from baseline at POD2 (P = 0.02), but unchanged from baseline at 2 months (P = 0.72). The changes were mirrored in TTE-derived parameters with no significant change in e’ (P = 0.059) and a reduction in a’ at POD2 (P = 0.01) returning to baseline at 2 months (P = 0.72). On pooled analysis, SRe was associated with e’ (r = -0.28; P = 0.03) and SRa was associated with a’ (r = -0.27; P = 0.04).

There are limited data available regarding the measurement of RV diastolic function in this population. We have demonstrated the association between CMR-derived strain rates and traditional TTE-derived markers of diastolic function. We hypothesise that the increased SRa on POD2 occurs in response to acutely increased afterload, to which the RV has become adapted by 2 months. Further work is required to assess the clinical implications of the observed perioperative changes in RV diastolic dysfunction.

References


Visualising peripheral nerve trauma real time using micro-ultrasound during regional anaesthesia

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