

Research Round Up-

Introduction

The last research round up provided you with an overview of nurse and midwife prescribing. The articles reviewed looked at the principles of prescribing practice and the implementation and evaluation of nurse prescribing as well as exploring attitudes and beliefs. The papers chosen offered a global perspective rather than being UK centric. This month we are looking at the areas of prescribing errors and of electronic prescribing. Prescribing errors do happen, and electronic prescribing has been seen by some as a way to reduce prescribing errors. The following studies look at prescribing error rates between doctors in pharmacists in one trust and then at errors using an electronic prescribing system for discharge prescriptions. The final paper looks at the impact of electronic prescribing on prescribing opioids and the issue of overprescribing.

An investigation into prescribing errors made by independent pharmacist prescribers and medical prescribers at a large acute NHS hospital trust: a cross-sectional study

E.Turner, M. Kennedy & A. Barrowcliffe

This original research article published in the European Journal of Hospital Pharmacy aimed to investigate any differences in rates of prescribing errors made by medical prescribers as compared to independent pharmacist prescribers. The authors had found that there was a lack of information or evidence in the literature around errors in independent pharmacist prescriptions despite the profession having had prescribing rights equivalent to medical professionals since 2009. They wished to elucidate the type and frequency of prescribing errors in this professional group. The study was conducted in the UK in one NHS trust site and covered a one week period and this data was collected in May 2018. Data collection forms and error definitions as used in the EQUIP study (a large study to identify prescribing errors in junior doctors) were employed. All prescriptions in that period validated as being from an independent pharmacist prescriber or a junior doctor was included. This amounted to 5840 prescriptions in total with 1026 of those being from independent pharmacist prescribers (amounting to 17.6% of total prescriptions). Of this 5840 prescriptions, 479 were found to contain errors under the definitions of the EQUIP study coding. The researchers found that overall pharmacist prescribers had an error rate of 0.7% with the error rate among junior doctors prescriptions being considerably higher at 9.8%. Furthermore they were able to differentiate between recently qualified pharmacist prescribers and those with more experience of prescribing. This revealed that the less experienced prescribers had 0% errors and the more experienced having 1% error rate. Continued examination of the data revealed that 85.7% of the pharmacist prescriber errors were coded as minimally significant in comparison to that coding being attributed to only 31.7% of junior doctors' errors. In all prescribing errors only 0.4% resulted in actual patient harm.

The authors conclude that independent pharmacist prescribers are safe and make significantly less errors in their prescriptions than their junior doctor counterparts and recommend that pharmacist prescribers should be embedded and integrated into multidisciplinary teams. They acknowledge the nature of this single site study and the lack of ability to generalise this to the wider population and suggest that further, larger trials are required to validate their findings.

<https://ejhp.bmj.com/content/28/3/149>

Assessment of an electronic patient record system on discharge prescribing errors in a Tertiary University Hospital

M O'Shea, C Kennedy, E Relihan, K Harkin, M Hennessy & M Barry

This research article published in the BMC Medical Informatics and Decision Making journal this year aimed to assess the impact of an education package for prescribers alongside the introduction of an electronic prescribing record on the phenomenon of pre-admission medication prescribing omission at the point of discharge. The study was conducted at a single tertiary hospital in Ireland. The driver for this study was the rate of prescribing errors at the point of discharge with omission of vital medication being identified as common by the patients GPs. This is considered a significant source of preventable patient harm requiring investigation. The researchers used a pragmatic design for data collection and conducted a survey of newly qualified medical staff to contextualise the findings. They analysed the discharge prescriptions and the discharge summaries and reviewed their content at the time of discharge and then compared the contents to the list of medications on the patients admission. This was done using a paper-based system. Any discrepancies were noted using Health Information and Quality Authority guidelines for discharge prescribing.

An educational intervention was conducted which relied on standard hospital medication safety practices. Further review of discharge prescriptions and discharge summaries was then conducted to detect any change in omission rates of pre admission medication. Subsequent to this an electronic patient record was introduced and a further review of discharge summaries and discharge prescriptions was conducted to analyse impact. After the data collection on prescriptions and summaries a survey was administered to recently qualified doctors and analysed using descriptive statistics and thematic analysis.

The authors found that omission of pre admission medication as prescribed or discontinued items at discharge occurs frequently. The educational intervention did not significantly change prescribing error rates. The introduction of the electronic patient record did significantly reduce omission of pre admission medications on discharge prescribing however there was also a reduction in the rate of deliberate discontinuation of PAM at discharge. An analysis of the survey results demonstrated that multiple sources are required to develop a discharge prescription. Time pressure, access to documentation and lack of admission medicine reconciliation are frequently cited as contributors or causes of discharge prescribing error.

The authors conclude that a multi component educational intervention had little effect on error rates but the introduction of electronic patient records significantly reduced prescribing errors and omissions at discharge. They suggest this will have a positive impact in reducing iatrogenic risk.

<https://link.springer.com/article/10.1186/s12911-021-01551-5>

Impact of Electronic Prescribing of Controlled Substances on Opioid Prescribing: Evidence From I-STOP Program in New York

Y Pylypchuk , S Parasrampur, C Smiley, and T Searcy

This piece of original research published in the journal of Medical Care Research and Review was conducted as part of the I-STOP programme in New York. The Internet System for Tracking Overprescribing (I-STOP) is one of many initiatives to combat the perceived opioid epidemic in the

United States. New York State has been seen to be at the forefront of many such initiatives in an attempt to reduce opioid overprescribing. I-STOP is a mandated system that requires transactions of controlled substances to be secure and accurate. This is documented in patients notes and law mandates that any prescriber must access these notes before prescribing or dispensing controlled substances. The driver for this study was from insurance companies but the researchers aim was to examine the effects of the mandate on prescribing patterns. Data was obtained from the Medicare (insurance) database from 2014-2017, with the mandate being implemented into law in 2016, allowing comparison of before and after implementation. The researchers focussed on opioid prescriptions. They found that in the first year of implementation, the number of opioid prescriptions per prescriber decreased by 5.7 per year. They further explain that the implementation of the mandate policy had a larger effect on the prescription of short-acting opioids and on prescribers prescribing medication for patients who were predominantly younger in age. They conclude that the I-STOP mandate resulted in a reduction in the number of individuals being prescribed opioids and in the number of opioid claims overall in the state of New York. They suggest that this has positive implications for other states who seek to curtail opioid overprescribing and their misuse through the use of this mandated electronic prescribing system. They recommend that roll out across the United States could curb opioid overprescribing especially in those states with the highest level of opioid misuse.

<https://journals.sagepub.com/doi/pdf/10.1177/1077558721994994>

Conclusion

Whilst it is improbable that errors in prescribing can be eliminated it is clear that there are ways to reduce prescribing error rates. Differences between professional groups and error rates shows in inequity in the rate of error but clearly further research is needed in this area before any firm conclusions can be drawn. Electronic prescribing does not eliminate error it can help with reduction. Furthermore, educational interventions alone are not effective in reducing prescribing errors as seen by study two. Electronic prescribing can be as effective if not more so in some situations as highlighted by study three but here also more evidence in other areas of prescribing would strengthen the evidence.