# Safe paper-based chemotherapy prescribing in an electronic world

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**Background:**

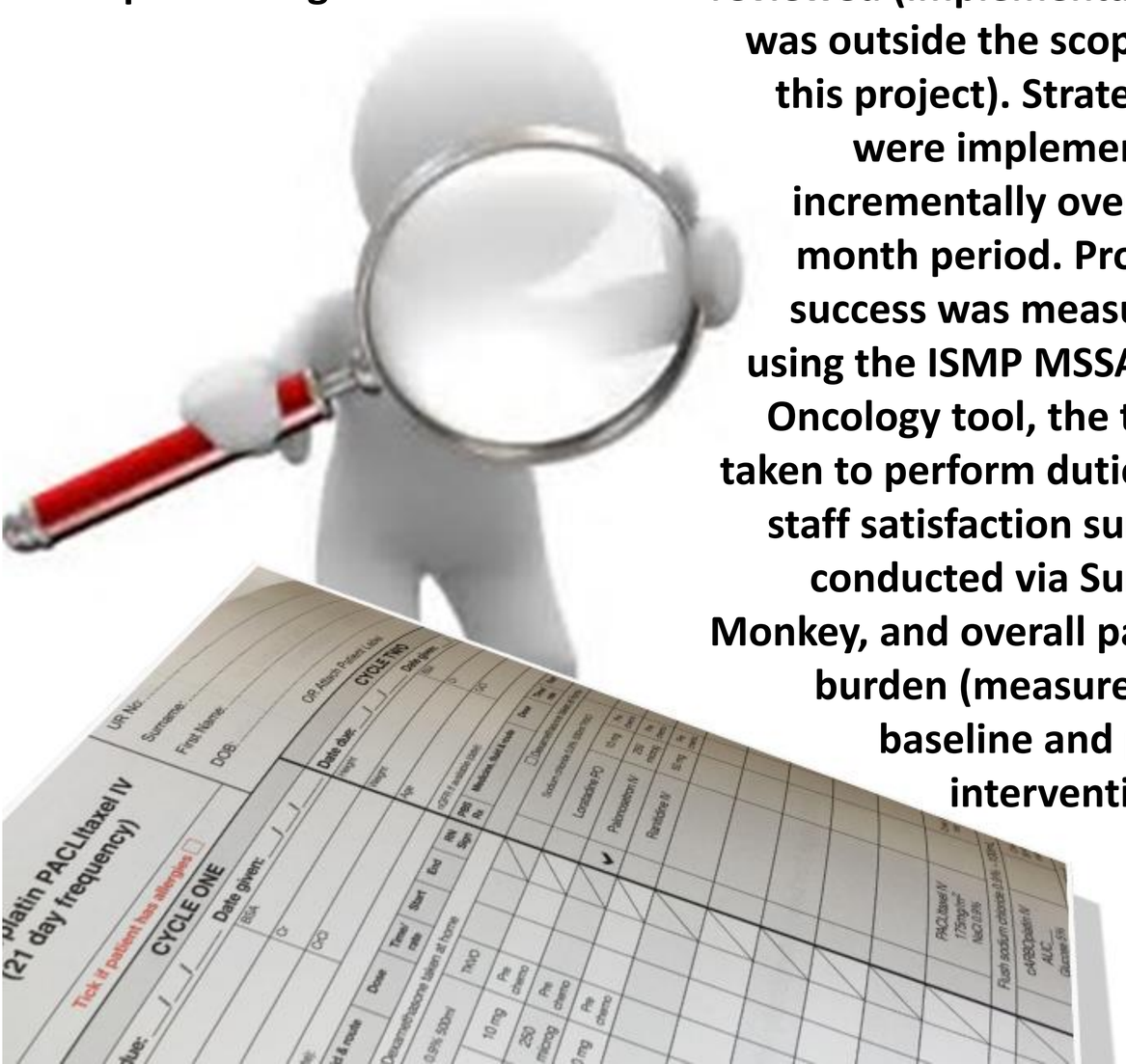
**Active risk management strategies result in the safe use of high risk medicines such as chemotherapy. Consequently, the Australian Commission on Safety and Quality in Health Care (ACSQHC) encourages introduction of medication charts, protocols and guidelines that encourage the "safe prescription and management of complex high risk medicines".[1] While electronic prescribing systems mitigate many of the potential risks and workflow issues present in a paper-based system, these programs are currently unavailable at Mercy Health (due to limited financial viability). Electronic systems are particularly advantageous for large centres that provide a diverse range of treatment regimens. Our scope of practice is restricted to providing therapy to women suffering from gynaecological cancers.**

**Aim:**

**To develop strategies that facilitate standardised care and reduce non-evidence based variation in therapy while maintaining paper-based prescribing.**

**Method:**

**The National Safety and Quality Health Service Standards, the Institute for Safe Medication Practice (ISMP) International Medication Safety Self-Assessment (MSSA) for Oncology tool[2] and the recommendations from the NSW Health Inquiry into off-protocol prescribing[3] were analysed. A multidisciplinary working group reviewed the findings of this process and categorised the risks. Risk mitigation strategies included development of chemotherapy order sets (in line with the Cancer Institute of NSW guidelines), standardising and formalising the checking procedure, and investigating the use of dose error reduction software on drug pumps.[4] Electronic prescribing solutions were also reviewed (implementation was outside the scope of this project). Strategies were implemented incrementally over a 6 month period. Project success was measured using the ISMP MSSA for Oncology tool, the time taken to perform duties, a staff satisfaction survey conducted via Survey Monkey, and overall paper burden (measured at baseline and post intervention).**




**Results:**

**The number of MSSA for Oncology recommendations fully implemented significantly improved from baseline. The difference between baseline and post-intervention results is expressed in Table 1. An improvement of particular note was related to the standardisation of therapy (the consequence of order set development) which improved by 28%. Time savings were reported in pharmacy (chemotherapy delivery time improved by 30 minutes) and in the chemotherapy unit (administrative burden was reduced). Clinicians reported improved satisfaction with the system as a result of reduced time pressure and changed prescriber roles.**

**Table 1: Improvement in MSSA for Oncology Core Characteristic Areas**

| MSSA for Oncology Core Characteristic Content related to: | Improvement resulting from intervention |
|---|---|
| Collection and recording of information prior to chemotherapy prescribing | 30% |
| Monitoring and managing the effects of chemotherapy and dose adjustments | 34% |
| Communication of medication orders in a standardised manner with built in error-reduction | 28% |
| Formalisation of local guidelines consistent with best practice chemotherapy prescribing principles | 47% |
| Formalisation of local guidelines in line with best practice chemotherapy dosing principles | 36% |

**Discussion:**

**The development of order sets in our chemotherapy unit was a cost-effective way to reduce the risk of non-standardised therapy. Order sets have strengthened multidisciplinary checking processes, supported staff education and training and improved workflow. The limited number of regimens delivered by our unit enabled this approach, and this is a likely limitation for units with more variable practice.**

**Conclusion:**

**Low cost, quality improvement measures can be used to improve the safety and efficacy of paper-based chemotherapy ordering systems.**

REFERENCES
1. Australian Commission on Safety and Quality in Health Care. National Quality Use of Medicines Indicators for Australian Hospitals. Sydney: Commonwealth of Australia and NSW Therapeutic Advisory Group Inc. 2014
2. Institute for Safe Medication Practices. ISMP Medication Safety Self-Assessment for Oncology. 2012
3. Legislative Council. Off-protocol prescribing of chemotherapy in New South Wales. Sydney. 2017.
4. Cancer Institute NSW . eviQ Cancer Treatments Online. Available from: https://www.eviq.org.au/