Implementing electronic discharge summaries: the JMO perspective

A submission to the National e-Health Transition Authority (NeHTA) prepared by the Australian Medical Association Council of Doctors-in-Training (AMACDT)

October 2010

Background

Audience, scope & purpose

The hospital discharge summary is a clinical and administrative document, which serves, among other purposes, to communicate information regarding a patient's admission to their community care provider. Most commonly, discharge summaries are authored by Junior Medical Officers (on behalf of an inpatient unit) and forwarded to a General Practitioner (GP) [1-3].

Increasingly, discharge summaries are being created and transmitted by electronic means; Australian health services are rapidly implementing new information communication technology (ICT) processes to this end. The country is also in the process of establishing national standards for an integrated eHealth environment. The National eHealth Transition Authority (NeHTA) is the intergovernmental agency primarily responsible for this work.

This paper responds to a request from NeHTA for intelligence about the practical issues in electronic discharge summary implementation. It will assist government agencies (as well as hospitals administrators, clinical leaders and ICT managers) in implementing electronic discharge summary strategies which align with the work practices of junior medical officers (JMOs). It examines, from the JMO perspective, impediments to the creation of high quality discharge summaries, and presents solutions to these identified barriers. It draws, in part, on the outcomes of two workshops convened for these purposes as well as the published literature. Intentionally, it is not technical in focus.

Consideration of the issues identified in this paper will help ensure electronic discharge summary systems, when deployed, match the requirements of junior medical staff. This will enhance the quality of discharge summary output, and impact positively on continuity of care for patients.

Context

Discharge summaries play a critical role in ensuring safe and effective continuity of care for patients being discharged from hospital [4-7]; they are often the only modality of communication between the inpatient and outpatient setting. They have been associated with decreased rates of readmission [8].

Despite their established utility, sub-optimal performance in the creation and transmission of discharge summaries has been reported for many decades. Tulloch (1975) identified that discharge summaries were "capable of improvement" [9]. Over thirty years on, the literature

still reports an "urgent need to improve communication and information transfer" [10]. Frequently reported issues, in both Australian and international settings, include format, timeliness, content, accuracy and legibility [11, 12].

Historically, there has been no Australian standard as to what data elements should be included in a discharge summary and, as a result, there is a great deal of heterogeneity in their content and format.

Creation

In Australia, a variety of systems are used to generate discharge summaries. While many hospitals continue to rely on handwritten documents, a number of providers have implemented software which allows for the electronic production of discharge summaries. The degree to which feeder systems (which automatically import relevant patient data from other clinical software components) have been implemented varies enormously between products, facilities and jurisdictions.

Transmission

There is significant variance in the means by which discharge summaries are transmitted, both electronically and otherwise. There is also great variance in the ability of primary care providers to receive discharge summaries of different formats. Modes of transmission include traditional mail, facsimile, email and other forms of electronic communication. In some settings, the patient remains the conduit for distribution of the summary. The lack of interoperability between highly heterogeneous systems, coupled with the lack of a unified approach, not only disrupts discharge summary transmission, but lessens confidence in the discharge summary process.

Going electronic

The use of ITC has long been proposed as a tool for enhancing the quality and transmission of discharge summaries [7, 10, 12-14]. The uptake of electronic discharge summaries has generally been welcomed by GPs [15]. Software and hardware components for this purpose are now being implemented by Australian health services, in the context of a much broader uptake of eHealth strategies, which aim to enhance the way health data is stored, exchanged and managed.

In this process of transition, NeHTA has been established by the Australian Commonwealth, State and Territory governments to undertake a series of interdependent projects to establish the standards, specifications and infrastructure requirements for secure, interoperable electronic health information (e-health) systems [14]. A component of NeHTA's work is the Continuity of Care Program - which is primarily concerned with information flow between primary, and specialist and tertiary, health care providers.

The Continuity of Care Program has led to the development of an e-Discharge Summary Package; it is aimed at understanding contemporary technologies and processes in discharge summary creation and transmission, and aligning these with national standards. Version 1 of the package was published in August 2009 and an updated release (1.1) followed in August 2010 [15].

As part of its extensive consultation strategy for the package, NeHTA conducted a workshop with a group of Australian JMOs in March 2010. This group was selected after consultation with the JMO members of the NeHTA Clinical Lead Program, and with the Australian Medical Association's Council of Doctors in Training (AMACDT). In follow up, a further workshop on the topic of electronic discharge summaries was convened by AMACDT in October 2010.

Barriers

These two workshops resulted in the identification of barriers to the creation of high quality electronic discharge summaries - many of which were already established in the literature. The experiences of the participating JMOs have informed this briefing paper, which considers both issues and solutions in the implementation of electronic discharge summary packages, and a national e-discharge summary standard.

Issues

While some of the identified issues relate to ICT infrastructure specifically, others are concerned with how the workplace environment, more generally, impacts on discharge summary production. At the workshops, JMOs considered these elements to be inextricably linked and interdependent; for this reason they are discussed together.

Time and workforce

Workload impacts on the capacity of JMOs to author discharge summaries in a timely and efficient manner.

JMOs are under considerable time pressure to complete the tasks expected of them. Their working hours are long [16] and many feel their load is not fairly or equitably distributed [17]. Like their supervisors, the first concern of junior medical staff is direct patient care and they are frequently required to intervene in acute medical situations. Much of their time is spent communicating, planning care and documenting team decisions [18, 19].

The workshops revealed that, as a consequence of multiple competing interests, the authoring of discharge summaries is often low on the priority lists of JMOs. Many suggested they found it difficult to remain 'on top' of their outstanding summary list, and did not have the capacity to complete the documents within rostered hours. Despite this, some JMOs reported that their hospitals specifically precluded the payment of overtime for discharge summary creation.

Interruptions

Frequent interruptions make it difficult for JMOs to create discharge summaries during work hours.

The literature has established that JMOs are interrupted frequently in the course of their daily work and are commonly required to multi-task [18, 19]. It has been suggested that frequent interruptions causes both delays in discharge summary as well as errors [20]. This view was reinforced during the JMO workshops.

Access to infrastructure

Insufficient access to hardware in the workplace severely limits the capacity of JMOs to author DSs.

JMOs reported frequent difficulty in accessing computers in ward and office settings. That a majority of computers were needed for both urgent and non-urgent activities created problems in accessing them for the latter purpose. JMOs noted that computers frequently had to be shared with other health providers, and competing for access to them was not uncommon. A lack of office space, and functioning computer hardware therein, was also

identified as significant issue – confirming recent survey findings [17]. Being unable to locate and access computers is a source of immense frustration for JMOs.

Software inefficiencies

The speed and functionality of discharge summary software impacts on the content and timeliness of discharge summary creation.

A common experience of JMOs voiced at the workshops was the inefficiency of electronic discharge summary software. While (presumably) intended to accelerate discharge summary creation, JMOs reported issues with software rigidity and malfunctioning; others spoke to poor inter-operability and connectivity between clinical software components. In addition, there was consensus that feeder systems (whereby administrative and clinical data are directly imported into the summary) were poorly utilised; they felt that data entry consumed a considerable proportion of their time and that transcription errors were a real risk. Conversely, in other settings the auto-population of discharge summaries created problems; some JMOs reported that certain systems imported too much data (which was often irrelevant and clinically invalidated). The literature has established that brevity, in part, define a high quality discharge summary [21].

Emphasis on coding requirements

Emphasising the secondary roles of discharge summaries provides a disincentive for JMOs to complete comprehensive discharge summaries.

The workshops established that, in many hospitals, the only guidance and education provided to JMOs on discharge summaries was provided by administrative and casemix coding staff (where it is utilised). Many reported having been 'educated' about strategies to maximise hospital income by manipulating wording and writing exhaustive complication lists. JMOs suggested this was counter-productive.

Understanding of GP requirements

JMOs have a limited understanding of what GPs expect from discharge summaries.

The literature is populated with the concerns of general practitioners in relation to the sub-optimal quality of discharge summaries [12]. Likewise, the JMO workshops established that they received little education with respect to GP requirements. Some had been explicitly instructed to write discharge summaries in a style which maximised income (via coding structures) rather than communicated effectively. Few had access to feedback mechanisms on their discharge summary performance, and many reflected on their inability to undertake a prevocational placement in general practice to experience discharge summaries from 'the flip side'.

Cultural devaluation

The creation of discharge summaries is not a valued activity in hospitals.

Hospitals as well as JMOs often perceive the task of completing discharge summaries as an administrative, rather than a clinical, one. While JMOs considered the discharge summary to be a highly valuable document, they felt this attitude was not shared by all clinical and administrative staff. While the importance of the discharge summary was occasionally emphasised by medical workforce managers, this was not matched with the necessary supports to enable completion of summaries in a timely manner.

Solutions

Implementing electronic discharge summary systems in an effective manner requires reform of both ICT infrastructure as well as workplace practices. This section considers solutions to the identified barriers in both of these domains.

Education

Although JMOs are familiar with the purpose of the discharge summary, enhanced education at the undergraduate and prevocational levels would be of benefit. Sessions might provide advice on content, length and accuracy, including how to prioritise and highlight the most relevant data. They would necessarily include tailored information about local production and dissemination practices, and focus on the particular software package in use. Emphasis should be placed on the utility of the discharge summary as a clinical, rather than an administrative, tool and the value of discharge summaries in coding admissions should not be over-played. GPs should be directly involved with development, delivery and evaluation.

Greater exposure to General Practice would also enhance JMO understanding of from discharge summary requirements from the primary care point of view. This could be achieved through undergraduate placements as well as prevocational rotations, for instance through the Prevocational General Practice Placements Program (PGPPP) [22].

ICT

Software producers and implementers need to be cognisant of the issues identified above. Programs need to be intuitive and context-specific. Summaries should be pre-populated as much as practicable, and feeder systems should be introduced for investigative and diagnostic data – including, radiology, pathology and common investigations (e.g. angiography, echocardiography and lung function testing). The same applies for procedural (including surgical) notes. Any pre-population process, however, should allow for clinical vetting by the discharge summary author, to minimise the inclusion of extraneous or irrelevant information.

Investment in hardware (particularly ward and office computers) is essential. Equipment should be contemporary and regularly maintained. Help desk services should be readily at hand and minimum standards for response implemented. It must be recognised that the successful implementation of electronic discharge summary solutions is firstly dependent upon having computers readily accessible to those tasked with preparing the summaries.

Hospitals need to work closely with General Practice to ensure appropriate arrangements are in place for the electronic transmission of summaries. This includes alignment of content, format & encryption. The NEHTA Continuity of Care Program's Discharge Summary Package intends to provide national standards to this effect.

Workplace

Workplace policies and procedures should recognise discharge summary creation as a core clinical responsibility of JMOs. Rostered hours should reflect actual work requirements and arrangements should be put in place to ensure JMOs completing summaries out of hours are appropriately remunerated. Innovative scheduling arrangements should be implemented to ensure summaries can be completed in a timely fashion. Hospitals must also take a mature and balanced approach to JMO staffing and employ a quantum of staff that is commensurate with the facility's workload.

It is also important that health services implement robust communication strategies with JMOs. Frequently, junior medical staff are not involved in the decision-making processes that affect them. JMOs can provide advice from the coal-face, and engaging them is likely to impact positively on staff morale and effectiveness.

Monitoring, review & audit

Hospitals need to implement dynamic processes with respect to the monitoring of outstanding discharge summaries. Regular audits should be conducted and incentives put in place to ensure JMOs are inclined to complete summaries in a timely manner. Assistance should be available for JMOs having difficulty staying 'up to date'. Communication with General Practice should be optimised so that feedback can be provided to JMOs and hospitals about the quality and timeliness of discharge summaries.

Coordination & integration

There is a need for enhanced inter-operability of electronic discharge summary products and other clinical information systems. The establishment of recognised standards for core data components, implementation strategies, and transmission modalities of discharge summaries by NeHTA will greatly assist in the alignment of highly heterogenous practices in the Australian healthcare environment. The need for a multi-modal and whole-of-system approach cannot be understated however, and the pioneering work done by NeHTA's Continuity of Care Program in engaging local stakeholders and identifying areas for potential improvement will be critical to the success of the not only the discharge summary program, but eHealth as a whole.

Storage

Hospitals should also consider how they retain discharge summaries for internal purposes. They are an essential part of the medical record, and vital to ensuring timely investigation and management in the event of re-presentation. Making discharge summaries readily available and retrievable via clinical information software not only makes for better quality of care, but also reinforces their value and utility to hospital staff. Urgent consideration will also have to be given to our discharge summaries are incorporated into the Patient-controlled Electronic Health Record.

Incentivisation

Under arrangements for the new National Health and Hospitals Network program, key performance indicators could be implemented for electronic discharge summaries creation and transmission. These would infer minimum standards and encourage hospitals to implement the necessary conditions for the completion of high quality discharge summaries. As suggested by the National Health and Hospitals Reform Commission, a suite of incentives could be introduced for this same purpose [23].

<u>Summary</u>

The discharge summary fulfils an important role in providing continuity of care for patients. In the context of the broader implementation of e-health strategies across the entire Australian health sector, electronic generation and transmission of discharge summaries are becoming commonplace. Installation of this technology is not, however, without risks or challenges.

This paper has explored the ICT and workplace barriers to the development of high quality electronic discharge summaries from the JMO perspective. It has also presented solutions to identified issues. While most of these are pitched at an organisational level, roles for national

players (including NeHTA) have also been identified. Health funding systems need to recognise the value of the discharge summary and policy decisions made to this end.

JMOs represent a critical stakeholder in hospital operations and can provide useful analysis on everyday processes that impact on patient care and throughput - including the generation and transmission of discharge summaries. While the latter remains a critical tool in the care of patients in both in-patent and out-patient settings, government agencies and health services would be well-served by considering the advice presented in this paper. This will have flow-on benefits for hospital-community communication, and enhance the continuity of care provided to patients.

References

1. Myers, J.S., et al., *Are discharge summaries teachable? The effects of a discharge summary curriculum on the quality of discharge summaries in an internal medicine residency program.* Acad Med, 2006. **81**(10 Suppl): p. S5-8.
2. McMillan, T.E., W. Allan, and P.N. Black, *Accuracy of information on medicines in hospital discharge summaries.* Intern Med J, 2006. **36**(4): p. 221-5.
3. Callen, J., J. McIntosh, and J. Li, *Accuracy of medication documentation in hospital discharge summaries: A retrospective analysis of medication transcription errors in manual and electronic discharge summaries.* Int J Med Inform. **79**(1): p. 58-64.
4. Bolton, P., *A quality assurance activity to improve discharge communication with general practice.* J Qual Clin Pract, 2001. **21**(3): p. 69-70.
5. Bolton, P., *A review of the role of information technology in discharge communications in Australia.* Aust Health Rev, 1999. **22**(3): p. 56-64.
6. Chow, K.M. and C.C. Szeto, *Secular trends in the medical discharge summary in an acute medical hospital.* Postgrad Med J, 2006. **82**(971): p. 615-8.
7. O'Leary, K.J., et al., *Outpatient physicians' satisfaction with discharge summaries and perceived need for an electronic discharge summary.* J Hosp Med, 2006. **1**(5): p. 317-20.
8. van Walraven, C., et al., *Effect of discharge summary availability during post-discharge visits on hospital readmission.* J Gen Intern Med, 2002. **17**(3): p. 186-92.
9. Tulloch, A.J., et al., *Hospital discharge reports: content and design.* Br Med J, 1975. **4**(5994): p. 443-6.
10. Kripalani, S., et al., *Deficits in communication and information transfer between hospital-based and primary care physicians: implications for patient safety and continuity of care.* JAMA, 2007. **297**(8): p. 831-41.
11. van Walraven, C., et al., *Dictated versus database-generated discharge summaries: a randomized clinical trial.* CMAJ, 1999. **160**(3): p. 319-26.
12. Wilson, S., et al., *General practitioner-hospital communications: a review of discharge summaries.* J Qual Clin Pract, 2001. **21**(4): p. 104-8.
13. Schabetsberger, T., et al., *From a paper-based transmission of discharge summaries to electronic communication in health care regions.* Int J Med Inform, 2006. **75**(3-4): p. 209-15.
14. Mann, L., *From "silos" to seamless healthcare: bringing hospitals and GPs back together again.* Med J Aust, 2005. **182**(1): p. 34-7.
15. Alderton, M. and J. Callen, *Are general practitioners satisfied with electronic discharge summaries?* HIM J, 2007. **36**(1): p. 7-12.
16. *AMA Safe Hours Audit 2006.* 2006, Australian Medical Assocation.
17. *AMA Junior Doctor Training, Education and Supervision Survey: Report of Findings.* 2009, Australian Medical Association.
18. Westbrook, J.I., et al., *All in a day's work: an observational study to quantify how and with whom doctors on hospital wards spend their time.* Med J Aust, 2008. **188**(9): p. 506-9.

19. Zhu, J.N., et al., *An observational study of emergency department intern activities.* Med J Aust, 2008. **188**(9): p. 514-9.

20. Volpp, K.G. and D. Grande, *Residents' suggestions for reducing errors in teaching hospitals.* N Engl J Med, 2003. **348**(9): p. 851-5.

21. King, M.H. and S.G. Barber, *Towards better discharge summaries: brevity and structure.* West Engl Med J, 1991. **106**(2): p. 40-1, 55.

22. *Prevocational General Practice Placements Program - Brochure.* 2010, Australian General Practice Training.

23. *A Healthier Future for All: Final Report.* 2009, National Health and Hospitals Reform Commission.