Australian Government
Australian Digital Health Agency

PATCHING:

Protecting healthcare information by updating systems and software

A briefing for
senior managers

This guide has been prepared for senior managers in the healthcare sector who are responsible for managing the risk of systems or software being inaccessible or compromised due to exploitation of a known security vulnerability. A companion document has been prepared for information and communication technology (ICT) teams to provide further information on the approach to applying patches that fix known security vulnerabilities.

Summary

Protecting sensitive healthcare and corporate information is essential in the provision of healthcare services. One way to mitigate the risk of information being accessed is to use the latest versions for systems and software applications on all devices, including digital medical equipment.

Using older versions of systems and software or failing to apply security patches, can increase the risk of a cyber security incident. A sensible risk assessment approach is required to determine the best approach and timing for the installation of specific patches in your ICT structure.

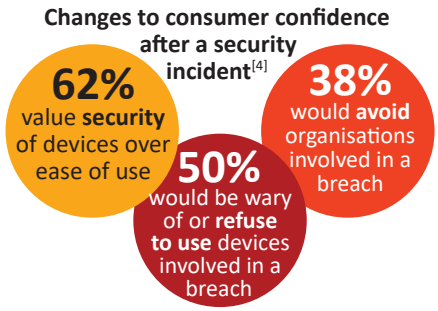
Malicious actors often use known security vulnerabilities to access systems that hold sensitive information. In 2016, 96% of attacks used known vulnerabilities to exploit networks and compromise data. Patching is one of the most effective lines of defence against these types of attacks.[1]

Cyber security incidents may disrupt service delivery to consumers and could lead to clinical and administrative errors due to lack of access to vital records. An incident can result in compromised consumer confidentiality; and reputational, financial and individual loss as outlined in the case study below.

Protect your organisation's healthcare information from being compromised by a cyber attack — ***Case Study***

On Friday 12 May 2017, over 230,000 computers in 150 countries were impacted by the Wannacry ransomware attack. It also impacted over 70,000 devices connected to operating systems including mobile devices and medical equipment. At least 81 healthcare organisations, 595 general practices, five hospital emergency departments and 1,220 medical devices used by the National Health Service in the United Kingdom.[2] The attack targeted computers running the Microsoft Windows operating system and was successful in infecting systems running older versions that were no longer supported. Two months prior, Microsoft had released a patch that addressed the security vulnerability that was exploited in the Wannacry incident. It is estimated that 19,000 appointments were cancelled and the financial cost of the incident was in excess of $4 billion.[3]

Surveys following the Wannacry incident outlined above, revealed that 38 per cent of consumers would leave or avoid using a health organisation or hospital that had experienced an incident where healthcare information was accessed. If consumers were aware a medical device had been involved with a breach of healthcare information, then 50 per cent would be wary of, or refuse to use the device. Further 62 per cent of consumers valued the level of security a device could offer, over ease of use.[4]



Key Points

1. Given the financial and non-financial impacts associated with the risk of using older versions of systems or software applications, it is important that senior managers understand their organisation's risk exposure and appropriate mitigations. Suggested questions to ask your ICT team include:
   - Are all our operating systems the most current versions available? If not, do we have a plan in place to update them?
   - Are the software applications running on physical and virtual machines, mobile devices and other digital equipment the most current versions available? If not when are we planning to update them?
   - How do we receive, evaluate and action bulletins about security and non-security patches for our systems and software? How do we assess patches in the context of our network structure? What is the time frame we take to apply a security patch that has been evaluated as a high priority for our ICT environment? (Industry best practice is to apply high priority security patches within 48 hours).
   - Are our patch management processes automated? Does the ICT team need additional support or resources to better manage this process and mitigate our risk? Are there additional mitigation strategies or solutions, such as those outlined in the companion document for IT Professionals, which could be implemented?

2. There are a range of information security frameworks and standards, including those applicable to public and private organisations in the health sector, which can be used to improve the security and resilience of their digital health system. This can also help with meeting professional and legal obligations to protect individual health information.

3. If your organisation doesn't have the resources or expertise to assess its risks or to implement adequate security measures, it is recommended that you seek professional advice from a reputable IT service provider or information security consultant.

4. If your systems or software are compromised, please note the following:

   - Under recently introduced amendments to the *Privacy Act 1988* (Cth), healthcare organisations will need to report individual health information breaches. Refer to advice from the Office of the Australian Information Commissioner (OAIC) for details of your requirements and the amendments to the Act, effective 22 February 2018.[5]
   - For any event or situation where there is a suspected or actual data breach of the My Health Record system, organisations are required to notify the Australian Digital Health Agency (the System Operator).[6] In addition, organisations in the private sector are required to notify the OAIC.[7]
   - In the event of an incident, or to seek more information or specific advice, you can contact:
     - Government organisations – Australian Cyber Security Centre: www.acsc.gov.au
     - Private sector – Computer Emergency Response Team (CERT) Australia: www.cert.gov.au
   - Additional information about how to protect your systems and software is available on the Stay Smart Online website: www.staysmartonline.gov.au

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