	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
The difference between the initial project Budget and the cost of procuring, implementing and managing the Acacia system to date		
1	At the time the contract with InterSystems was signed in 2017, what were the agreed costs payable to InterSystems for: a. Licensing fees b. Milestone payments c. Annual product support	a. $14.41 million b. $28.59 million c. The contract provides $4.28 million per year, adjusted annually for CPI. Product support payments commence after each site and functional group achieves go-live. All amounts exclude GST and are based on the agreement signed 12/07/2017.
2	To date, what have been the total costs paid to InterSystems for: a. Licensing fees b. Milestone payments c. Annual product support	a. $7.87 million b. $19.96 million c. $3.28 million over 7 years (CCSRP - $0.49 million/Agency Business Systems - Human and Shared Services (ABS-HSS – a DCDD business unit) - $2.88 million) All amounts are ex-GST.
3	What additional costs, such as daily rates, have been paid to InterSystems outside of 2a-c?	a. Travel - $6,200 b. Consultancy (Application Specialist) - $93,900 c. Enhancements - $2.7 million d. Additional functionality licence (FG0) - $1.2 million
4	As of the most recent contract variation, if all remaining FGs were deployed, what would be the total costs payable to InterSystems for: a. Licensing fees a. Milestone payments b. Annual product support	a. $6.54 million b. $9.72 million c. $4.28 million per year over the life of the contract and subject to an annual CPI adjustment. Subject to all sites and FGs being delivered.
5	Throughout the life of the project, what have been the: a. staffing costs for DCDD for permanent staff working on the Acacia project?	a. $41.7 million b. $168.0 million - paid by CCSRP c. $24.9 million - paid by CCSRP

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	b. staffing costs for DCDD for contractors working on the Acacia project? c. staffing costs for NT Health for staff primarily working on the Acacia project?	
6	What budget does the ongoing cost of maintaining and upgrading the legacy systems that are no longer supported by their product vendors come from (e.g. Acacia project budget, NT Health operational budget)?	DCDD Agency Business Systems budget.
7	How much contingency was included in the original budget of $259 million?	$30.96 million (12%)
8	How much funding was associated with the separate approved business case for the implementation of the electronic medications management functionality that was run as an adjunct project within the Acacia program? a. Was this funding included in the initial budget of $259 million and current budget of $335 million? b. If not, how much of this funding has been spent? c. Are there any other projects with pre-existing funding that have been rolled into this program? If so, how much funding was associated with these programs, were these included in the budget figures provided to the Committee, and how much of that funding has been spent?	a. $18 million in funding for Electronic Medications Management was not included in the original budget but is now included in the $335 million figure. b. $18 million c. None

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
9	Has DCDD charged NT Health for any services in relation to the Acacia program or have any costs been absorbed by NT Health as a result of Acacia? If so, what is the value of these charges or costs, and were they included in the total spend to 31 December 2025 of $318.5 million?	$18 million. NT Health did not invoice for services but instead contributed stakeholders in-kind towards workshop participation and training.
10	On 12 March you provided the Committee a breakdown of costs per FG but did not include any information on FG5. How much has been spent developing FG5 to date?	FG5 costs totalled $91,000 in the Summary Care View Project as of 31 January 2026.
A timeline of each of these cost revisions with an explanation for each revision		
11	In 2016, following the initial tendering process and feedback from industry, a revised business case was developed that estimated the project costs to be $17 million higher than the original business case. Where did these additional costs arise?	The original figure of $242 million in the business case was an estimate, developed based on market research. A revised estimate of $259 million was developed following the tender process, which provided market pricing from vendors. The revised estimated costs factored in actual pricing from ISC as the successful vendor.
12	In 2018 you bought the perpetual legal right to CareSys for $6 million. Was this previously budgeted for and included in the business case and funding of the project? If not, what budget did this purchase come from?	The Jade platform software (CareSys, CWS, CCIS, and PCIS) was purchased from EMIS Health by NT Health, as it was not included in the CCSRP budget. Following Machinery of Government changes in 2019 when agency business systems were centralised in DCDD, ongoing support costs are now met by the DCDD ABS-HSS budget.
13	In 2022 DCDD and NT Health internally reprioritised $63.4 million budget to Acacia. a. What costs did this $63.4 million go toward? b. What was the $24 million reprioritised from NT Health budgeted for prior to reprioritisation, and were there any clinical impacts from the reprioritisation? Please provide a more detailed	a. The $63.4 million was allocated to the overall Program budget so was spent on FG1, RDPH ED Remediation, FG2 and aspects of FG3 and FG4. It was not tracked separately to the rest of the Program funds. b. $10 million was from 2024-25 and $14 million from 2025-2026. It was taken from bottom-line efficiency across Hospital and Support Services output, not taken from one area. There was no direct clinical impact from the reprioritisation.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	and specific answer than that provided in your response to the Committee on 12 March.	
14	The Auditor General's Report No. 6 2025-26 reports that in July 2023 there was an internal re-allocation of funding from the Acacia Remediation Fund to the SerPro project. a. Why was this authorised when Acacia needed additional funding to maintain the program (e.g. $12 million in Budget 2025-26)? b. Was this funding initially part of the $24 million re-allocated from the NT Heath budget that was reprioritised in 2022? c. Has this funding been returned to the project?	a. At that time, it was decided that funding requirements for the SerPro program were a higher priority. As a result, funds were redirected from CCSRP. b. No. c. No.
15	What costs has the $12 million provided in Budget 2025-26 been allocated to?	Delivery of FG2 to replace clinical documentation in CWS and paper clinical documentation in the hospitals with electronic documentation.
16	How much has the Menzies School of Health been funded to study the benefits of the Acacia program, and which budget has this been allocated from?	An amount of $100,000 has been funded from CCSRP to date for the Menzies engagement. Discussions regarding the future funding model are currently underway with NT Health.
17	Since Budget 2025-26, has any further budget been appropriated or internally reprioritised for the Acacia project? If so, where was this budget allocated from, and what has the funding gone toward?	No.
Any issues that were raised during implementation of the system, when the responsible Minister was notified of these issues, how long it took for these issues to be resolved, if they were resolved at all, and their cost		

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
18	In reviews and program health checks between 2016 and 2019 concerns were raised regarding the planning and resourcing of change and communications management. Following these, what actions were taken to address these concerns and strengthen the change and communications management processes?	The Change and Engagement Strategy and Change Management Plan were developed and approved in 2018 which outline the responsibilities of DCDD and NT Health. A change management, engagement and training team was established within CCSRP to work with NT Health to manage the change and engagement associated with each implementation. Lessons from each go live highlighted the importance of change and engagement being led by NT Health and supported by DCDD/CCSRP. These lessons were incorporated into the next go live which is evident with the successful go live of FG1 in Central Australia and Barkly.
19	In reviews and program health checks between 2016 and 2019 concerns were raised regarding benefits realisation. Following these, what actions were taken to address these concerns and plan benefits into the solutions build phase of the program?	A Benefits Management Strategy and Plan were developed and approved in 2019. Benefits were highlighted in the business case however it was noted through governance groups that these benefits would be experienced when Acacia had been implemented fully. A decision was made by the Program Steering Committee in 2023 to partner with Menzies to manage assessment of benefits. It was noted the immediate benefits would be experienced related to access to information however the full benefits would take many years to be realised.
20	Your April 2025 submission states that the opening of Palmerston Hospital delayed the program by nine months. When was the responsible Minister notified of the delays to the program associated with the opening of Palmerston Hospital and what was the estimated cost of the delays to the program?	Reporting to Government in 2018 reported to Ministers the delay being experienced due to the Palmerston Regional Hospital project. It is not possible to isolate the cost impact of NT Health staff being prioritised onto the Palmerston Regional Hospital project as there were two other delay factors at the same time (engaging contractors for CCSRP and system changes required for Primary and Remote Health Care).
21	When undertaking the procurement process in 2017, which version of the TrakCare solution did InterSystems use to demonstrate how their	The TCUI version of TrakCare was demonstrated and purchased as part of the procurement process. In 2019-20 the MEUI version was demonstrated, and a

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	solution met the requirements of the Northern Territory? Was this the same version of the TrakCare solution that has been licensed by the Territory, and if not, why not?	decision was made to adopt this version as the user interface and experience was far superior.
22	Can you outline the division of responsibilities between InterSystems and the CCSRP program regarding customisation of TrakCare from its off-the-shelf form to that deployed in healthcare settings in the Northern Territory?	InterSystems handles all customisations for their product. NTG uses the Australia/NZ edition of TrakCare, with some NT-specific custom features. CCSRP configures TrakCare for NT Health but cannot create customised views.
23	What is the decision-making process when the CCSRP project team receive an optimisation, rectification, or enhancement request? a. Who has the authority to decide that a modification request is agreed or rejected? b. Who is required to be consulted in that decision? c. When deployed, are modifications limited only to the version of TrakCare in use in the NT or are modifications deployed amongst global users of TrakCare? d. If (c) is the latter, do global users of TrakCare have input into the decision to accept or reject modification requests?	All requests to modify Acacia production, currently utilised by hospital staff, undergo an assessment process that involves input from stakeholders and a structured decision-making process. a. The decision process depends on the size and impact of the change: single team changes are decided by the relevant delegate, while broader impacts go to the appropriate governance group. b. Affected areas must be consulted. c. For core system changes, ISC leads decisions at the global or regional level. CCSRP handles certain configuration changes that only affect NT. d. ISC runs several global and regional projects annually to review and update system functions. While some customers contribute input, not all are involved. All customers can submit product suggestions to ISC teams for consideration in their projects.
24	Documents provided to the Committee, including the *CCSRP Integrated Master Program Schedule (November 2018)*, indicate that some delays to the program deployment are a result of InterSystems being unable to deliver to the program schedule	Determining the impact of ISC missing delivery dates is challenging due to numerous contributing factors. For example, NTG's delays affect ISC's schedules, COVID-19 had a significant impact and RDPH ED remediation was not included in ISC's contracted timelines.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	delivery date. How extensive were delays to the program schedule as a result of InterSystems not meeting agreed delivery dates throughout the life of the program?	
25	Documents provided to the Committee, including the Deloitte FG1 Top End Pre-Go-Live Assurance Review (September 2023), indicate that there may have been a misalignment of expectations regarding TrakCare's ability to meet NT Health needs 'out-of-the-box.' How extensive were the delays to the program schedule as a result of InterSystems needing to re-engineer their software to meet NT Health needs?	The Deloitte FG1 Top End Pre- Go Live Assurance Review did not result in any change to the date for the FG1 RDPH implementation. It is not possible to assess the impact to the Program schedule of the customisation required by NT Health as it occurred throughout the life of the Program including prior to changing from big bang implementation to implementation by functional groups.
26	Documents provided to the Committee, including *Briefing Paper: Central Australia and Barkly Implementation Schedule* (May 2025), indicate that remediation to some elements of FG1 caused delays to the deployment of FG1 in other locations. a. To what extent did parallel development of different Functional Groups occur throughout the life of this project? b. What delays were caused to the wider program schedule resulting from delays to FG1? c. What delays were caused to the wider program schedule resulting from the need to undertake remediation works on FG1?	a. Parallel activity occurred during FG1 with FG2, FG3 and FG4 however, during implementation, resources for other FGs were directed to FG1. The support teams are not organised by FG due to the nature of the work conducted by these teams (setup and configuration, testing, reporting, integration). Therefore, the support teams were prioritised to FG1 activities. b. The delays caused by FG1 and their effects on the other FGs cannot be separated. The last schedules developed for FG2 and FG3 were set before the RDPH FG1 was implemented and there have not been further FG2 and FG3 schedules approved therefore an impact cannot be assessed. FG1 was rolled out across all NT Health hospitals from July 2022 to August 2025 (a little over three years). The Central Australia and Barkly FG1 could have been implemented 10 months earlier if the RDPH ED rollback and remediation had not taken place. c. The overall Program schedule experienced an estimated 10-month delay due to the RPDH ED rollback and remediation.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
27	This program has suffered extensive delays. For example, the initial full deployment at Alice Springs Hospital was scheduled for September 2020 (outlined in the *CCSRP Integrated Master Program Schedule*, November 2018), yet FG1 was only deployed in Alice Springs Hospital in August 2025. Your April 2025 submission advises that 13 months' of these delays were attributable to the commissioning of Palmerston Hospital and the change to a phased implementation approach. a. How many months of delay are attributable to the effects of COVID-19? b. What caused the balance of delays? c. What actions were taken to strengthen program control and delivery timelines?	a. COVID-19 caused a 20-month delay for FG1, which was initially set for Katherine in November 2020. The schedule changed several times due to pandemic impacts and a global ISC outage, with further delays from a local lockdown redirecting NTH staff to COVID-19 response. FG1 was implemented successfully first in July 2022. b. Pandemic-related workforce shortages led NTH to prioritise frontline services, delaying CCSRP activities. c. A lessons learned exercise was conducted after each FG1 implementation and the findings included in the close reports to inform future implementations. One key takeaway was that participation by onsite NTH management and executives in developing the implementation schedule was essential, for example to provide input on times when engagement or training would be challenging (such as school holidays, intake periods, or major events). This approach has helped to ensure that stakeholder engagement activities were not planned during periods when NTH staff would be unavailable. It is also recognised that natural disasters like COVID- 19, cyclones, and floods are unavoidable.
28	How were updates to the program schedule communicated throughout DCDD and NT Health as timeline revisions occurred?	Timeframe changes were approved by the governance groups (CLG, PIC, PSC) and communicated using existing NT Health staff channels such as at the daily huddles in the hospital wards, newsletters, and meetings.
29	During the Top End Pre-Go-Live Assurance Review, Deloitte identified a lack of attendance and unclear responsibilities at both the Program Implementation Committee and the Top End Implementation Working Group. How extensive were these issues, what were the impact of these issues, and what actions were taken to resolve them?	Key NT Health stakeholders were unable to attend the Implementation Working Group meetings. Significant overlap between the Program Implementation Committee (PIC) and the Working Group led to some duplicate discussions on issues and activities at the PIC. Decisions had to be pre-prosecuted at the PIC by members who should have been at the Implementation Working Group, where the decisions were endorsed. This issue was avoided in the Central Australia, Barkly, and RDPH ED reimplementation working groups after applying this lesson.

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<tr><th></th><th>Theme - Question</th><th>Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)</th></tr>
<tr><td></td><td></td><td>Following completion of FG1 implementation, the roles and membership of all CCSRP governance groups have been thoroughly evaluated and adjusted.</td></tr>
<tr><td>30</td><td>Did any Site User Validation reports have outstanding actions or resolutions at time of Go-Live in any hospital? If so:
a. How many outstanding actions and resolutions were there at Go-Live?
b. If so, did any of these cause issues at Go-Live?
c. What processes are in place to ensure that issues raised by clinicians during Site User Validation are resolved prior to Go-Live?</td><td>Every IT system implementation and release update inevitably includes some residual defects (bugs). During the decision-making process for system releases and go-lives,
NT Health evaluates and determines the acceptable threshold of defects.
a. Below are the outstanding defects in Production at time of go live. Noting that at each go live the defects were present in Production and there for other sites.
<table>
<tr><th></th><th>Big Rivers</th><th>East Arnhem</th><th>Top End (full hospital)</th><th>CA&B</th></tr>
<tr><td>Sev 2</td><td>0</td><td>0</td><td>9</td><td>10</td></tr>
<tr><td>Sev 3</td><td>51</td><td>8</td><td>109</td><td>114</td></tr>
<tr><td>Sev 4</td><td>6</td><td>1</td><td>36</td><td>12</td></tr>
<tr><td>Sev 5</td><td>0</td><td>0</td><td>0</td><td>89</td></tr>
</table>
Note: Sev is the severity of the risk. Severity 1 is the highest risk and severity 5 the lowest.
b. While some of these items could have caused problems at go-live, the defect report accepted by governance groups and approved by the Steering Committee for the go/no-go decision, includes recommended workarounds.
c. Each defect is assessed individually to determine if the workaround is adequate. Not all defects will be fixed before an implementation.</td></tr>
<tr><td>31</td><td>How is the success of User Acceptance Testing measured and what is the criteria for a session having been ‘accepted’ or ‘failing’?
a. What conditions would allow a requirement to pass? Are there any circumstances in which a</td><td>The Program provides test documentation, including Testing Strategy and Plans. UAT occurs when the FG functionality is released to Production for the first time, not tied to individual sites. Site Validation checks site configurations before implementation but does not re-validate functionality.</td></tr>
</table>

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	requirement would automatically pass without User Acceptance Testing? b. Does UAT occur within the context of workflows or patient journeys? c. Did any User Acceptance Testing reports have outstanding actions or resolutions at time of Go-Live in any hospital? d. If so, did any of these cause issues at Go-Live? e. What processes are in place to ensure that issues raised by clinicians during User Acceptance Testing are resolved prior to Go-Live?	Both testing and site validation are part of approved implementation plans overseen by governance groups. a. A pass means no defects are found during scenario or use case testing. After the first UAT, all further tests are performed by analysts using those same scenarios. b. UAT occurred using workflows in the system context given some steps in a workflow are completed outside of Acacia. c. Yes. d. Refer response to question 30. e. Refer response to question 30.
32	Were Clinical Safety Cases and Assurance Reviews undertaken prior to each of the Go-Lives, and did the results of any necessitate a delay to Go-Live in any location?	Clinical Safety Cases were prepared and included as part of the governance go live prerequisite packs used to inform the go / no go decision for each implementation. These packs were considered by all the governance groups: IWG, CLG, PIC and PSC before the final decision was taken to proceed to go live. Independent assurance reviews were conducted prior to the following implementations: • Katherine FG1 • Top End FG1 • RDPH ED FG1 Reimplementation The findings from these reviews did not warrant postponing the scheduled go-live dates.
33	Prior to the deployment of FG0, were any clinical safety issues or formal challenges to FG0 readiness raised with senior project staff or the project sponsor that sought to, or were justification for, halting deployment? If so:	No, there were no issues or challenges raised.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	a. what actions and decisions were taken in relation to these clinical safety issues or formal readiness challenge? b. did the deployment continue despite the clinical safety issue or formal readiness challenge? c. was the responsible Minister informed of the clinical safety issue or formal readiness challenge?	
34	Prior to Go-Live of FG1 in any hospital, were any clinical safety issues or formal challenges to FG 1 raised with senior project staff or the project sponsor that sought to or were justification for halting deployment? If so: a. what actions and decisions were taken in relation to these clinical safety issues or formal readiness challenge? b. did the deployment continue despite the clinical safety issue or formal readiness challenge? c. was the responsible Minister informed of the clinical safety issue or formal readiness challenge?	During the clinical safety case assessments, CCSRP conduct thorough risk determination, provide detailed descriptions of inherent risks, and establish clear go/no-go prerequisites. Risk-based decisions are evaluated by governance groups and consistently assessed against the inherent risks associated with not proceeding to go-live. Therefore, there have been clinical safety issues raised with FG1 however they are incorporated into the Clinical Safety Cases and assessments for each go live. These documents include the mitigation actions required. These documents were provided to PAC.
35	Was the FG1 solution at Katherine and Gove Emergency Departments deployed in full, or were some features of the Emergency Department deployment scaled back?	Katherine and Gove EDs do not use the full ED solution used in the RDPH and ASH EDs due to their small size and lower necessity, lower volume of patients, and lower acuity of care.

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	a. If some features were scaled back, what workarounds and remediations were implemented post-deployment? b. Was the FG1 solution deployed at the RDPH EDs the same as that deployed in Katherine and Gove? c. If not, were there any features that were deployed in the RDPH ED that had not been deployed in Katherine or Gove? d. If Katherine, Gove, and/or the RDPHs had different deployed versions of FG1, did this create any complexities, delays, or repetition in work to align software versions or provide remediation to software?	a. There were no features that were scaled back. There were some features that Katherine and Gove ED chose not to use as they were not required for their processes and patient load. b. It was not exactly the same as there had been a number of releases deployed between the hospital go lives which resolved previous defects, delivered system enhancements and also potentially introduced additional defects. c. There were pieces of functionality that Katherine and Gove were not using such as internal consults, bed requests and inpatients in ED. These were implemented in RDPH ED. d. No. There was additional User Acceptance Testing required for RDPH however this was always incorporated into planning.
36	Your April 2025 submission states that consultation occurred with ED staff at Darwin and Palmerston hospitals which identified that Acacia did not replicate the CareSys dashboard. It states that while InterSystems developed a custom functionality clinicians were given a choice of two solutions by the program team using other software code. a. When did the consultation occur that identified the dashboard issue? b. What were the clinical risks of the identified dashboard issue? c. Your submission states that on 9 November 2023, two days prior to deployment in RDPH, ED	a. The requirement of the dashboard was a result of the User Acceptance Testing for Acacia in ED. It was decided by ED that the delivery of the dashboard was a prerequisite for RDPH ED go live. b. A clinical safety risk identified in the Top End Clinical Safety Case was: *"The ability to quickly assess the patient load and acuity within the emergency department is hindered due to new system interfaces."* A mitigation for this was to create a dashboard to provide the ability for management to assess the current patient load. This was delivered through the PowerBI dashboard. c. ED staff could have advised that neither option was suitable. d. The PowerBI dashboard was only a viewer and the movement of patients were conducted in Acacia therefore additional training was not required. The PowerBI dashboard was to provide situational awareness.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	staff were presented with two possible dashboard options and chose one. Did they have the option to choose neither and instead delay deployment? d. What training of ED staff was made available between staff selection of their preferred dashboard on 9 November and the deployment of the dashboard on 11 November, and what percent of Emergency Department clinicians had been trained in use of the dashboard at the time of deployment? e. Why was the rollout not delayed until InterSystems delivered their custom functionality?	e. ISC were not planning changes to the Acacia floorplan at that point in time. It was decided, as part of the go / no go decision process, that the go live would proceed as ED had been provided the PowerBI dashboard.
37	What were the 34 issues that contributed to the decision to undertake a system reversion to CareSys in the Emergency Departments of RDPH?	The 34 issues were raised pre rollback with all resolved except for 11 that were being delivered as part of release T2024.1 which was available to Acacia users in May 2024. Please refer Attachment A – ED Acacia Summary 20 February 2024.
38	Can you provide a more detailed timeline of events regarding the issues that arose following deployment of FG1 in RDPH EDs, including when issues were identified, when these were escalated through each layer of governance, when planning and preparation for reversion to CareSys occurred, and when each layer of governance agreed to revert to CareSys?	Multiple workshops were held with RDPH ED representatives following the go live in November 2023. This resulted in the list of 34 issues to be resolved. The majority of these issues were resolved by January / February 2024 with the remaining 11 to be part of the next Acacia release. A PSC meeting was held on 18 December 2023 which provided an update on the issues raised by RDPH ED as well as options to address these issues. This is where a potential rollback was formally introduced as one of the options.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
		RDPH ED advised that the resolution of these issues was not sufficient to address the problems being experienced in RDPH ED. A Deloitte review was requested by the Program Steering Committee. The review was led by the NT Health Chief Clinical Information Officer. The outcome of the review showed that there were polarised views within the hospital on whether a rollback was necessary. The discussion to rollback was had directly between RDPH ED executive and the DCDD and DoH Chief Executives with the decision made by the Program Steering Committee on 24 February 2024. High level timeframe: 5 December 2023 - The Director of Emergency Medicine, RDPH provided briefing notes to CCSRP on the impact of Acacia on the RDPH EDs 14 December 2023 – Workshop held with CCSRP, RDPH ED and ISC on issues 18 December 2023 – PSC meeting to discuss rollback as an option January 2024 – weekly PSC meetings to discuss a potential rollback in RDPH ED 24 February 2024 – PSC decided on a rollback to CareSys for RDPH EDs
39	Following the Program Steering Committee's decision to rollback FG1 at the RDPH EDs on 24 February 2024, why did it take almost a month to commence the rollback on 20 March 2024?	Rolling back to CareSys meant RDPH would be operating on 2 systems concurrently – CareSys in the ED and CCSRP in the rest of the hospital. Extensive planning and preparation was required to operate both patient administration systems within one facility including the synchronisation of data between CareSys to Acacia to ensure inpatient clinicians had access to their patient's information from ED. New integrations were also required between CWS, Acacia and other NT Health systems given CareSys integrations had been disabled to allow for Acacia integration.

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		A clinical safety report had to be developed to capture any risks being introduced as part of the rollback as well as identify possible mitigations. A Central Administration Hub of 25 staff had to be established, recruited to and trained in both CareSys and Acacia processes, to manually synchronise data between CareSys and Acacia in real time. This hub operated 24/7 from 20 March 2024 to 13 November 2025, funded by CCSRP.
The impact to the health system, and the cost, of any rollbacks/suspensions of using the software in hospitals that occurred during implementation		
40	Do NT Health and DCDD have any Service Level Agreements, including for the delivery of the Acacia program? If there is no Service Level Agreement for Acacia, by what mechanisms can NT Health hold DCDD accountable for the successful delivery of Acacia?	Under the OneNTG model and the Administrative Arrangements Order, DCDD is responsible for the delivery of all NTG IT support and IT related projects. Service Statements set out the services to be provided, standards of service and respective responsibilities of DCDD and agencies. NT Health holds DCDD accountable for the delivery of Acacia through the Program Governance Committees which have representation from NT Health, DCDD and Department of Treasury and Finance.
41	How many high-severity Incident Severity Rating 1 or 2 reports related to Acacia have been reported in NT Health's RiskMan system?	Severity 1 – 5 reports • 4 are related to outages (system, internet, network, etc.) Severity 2 – 4 reports All related to clinical documentation
42	What was the average wait time at the RDPH Emergency Departments: a. across the 2021-2022 and 2022-2023 financial years (or as otherwise normally captured and reported in similar time periods); b. following the deployment of FG1 on 11 November 2023 until reversion to CareSys on 20 March 2024;	a.

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<tr><td></td><td>c. across the 2024-2025 financial year (or as otherwise normally captured and reported in similar time periods);
d. following the redeployment of FG1 on 13 November 2025.</td><td>2021-2022 and 2022-2023 Financial Years.
<table><tr><td>Hospital</td><td>RDPH</td></tr><tr><td>FY</td><td>2021/22</td></tr><tr><td>Average Time Waiting to be Seen (Mins)</td><td>61.54408403</td></tr><tr><td>Longest Wait Time to be Seen (Mins)</td><td>1109</td></tr><tr><td>Average Time from IP Admission to Transfer out of ED (Mins)</td><td>387.1541758</td></tr></table>
<table><tr><td>Hospital</td><td>RDPH</td></tr><tr><td>FY</td><td>2022/23</td></tr><tr><td>Average Time Waiting to be Seen (Mins)</td><td>73.83598084</td></tr><tr><td>Longest Wait Time to be Seen (Mins)</td><td>1793</td></tr><tr><td>Average Time from IP Admission to Transfer out of ED (Mins)</td><td>349.7422958</td></tr></table>
b.</td></tr>
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<tr><th></th><th>Theme - Question</th><th>Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)</th></tr>
<tr><td></td><td></td><td>November 2023 until March 2024.
<table><tr><td>Hospital</td><td>RDPH</td></tr><tr><td>FY</td><td>2023/24</td></tr><tr><td>Average Time Waiting to be Seen (Mins)</td><td>109.0002998</td></tr><tr><td>Longest Wait Time to be Seen (Mins)</td><td>3428</td></tr><tr><td>Average Time from IP Admission to Transfer out of ED (Mins)</td><td>205.4292453</td></tr></table>
c.
2024-2025 Financial Year.
<table><tr><td>Hospital</td><td>RDPH</td></tr><tr><td>FY</td><td>2024/25</td></tr><tr><td>Average Time Waiting to be Seen (Mins)</td><td>83.73024593</td></tr><tr><td>Longest Wait Time to be Seen (Mins)</td><td>1932</td></tr><tr><td>Average Time from IP Admission to Transfer out of ED (Mins)</td><td>300.3704022</td></tr></table>
d.
November 2025 until February 2026
<table><tr><td>Hospital</td><td>RDPH</td></tr><tr><td>FY</td><td>2025/26</td></tr><tr><td>Average Time Waiting to be Seen (Mins)</td><td>130.5154837</td></tr><tr><td>Longest Wait Time to be Seen (Mins)</td><td>3612</td></tr><tr><td>Average Time from IP Admission to Transfer out of ED (Mins)</td><td>161.4627383</td></tr></table></td></tr>
<tr><td>43</td><td>What clinical risks were there resulting from RDPH Emergency Departments not using Acacia whilst</td><td>A clinical safety report was developed as part of the RDPH ED rollback to CareSys that identified 13 clinical safety risks. These were accepted as part</td></tr>
</table>

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	all other parts of hospitals did so, and how were these risks managed?	of the decision to rollback to CareSys. The Clinical safety report outlines the risks and proposed mitigations. Please refer Attachment B - Clinical Safety Report Acacia Rollback 2024.
44	Were there any clinical issues resulting from use of the CareSys legacy system while the Emergency Departments had reverted to its use?	Yes, 74 RiskMan issues were raised during the rollback period (20 March 2024 to 13 November 2025) that were directly related to operating two patient administration systems at the same time in one facility. The main clinical safety risk that arose was having two inpatient episodes at the same time for one patient. This resulted in issues with documenting against the correct episode in CWS which is where clinicians write documentation as well as eMMa medications being attached to the wrong episode or not having a current eMMa chart. This would often result in CWS showing a patient was still in the hospital even though the patient had been discharged. This resulted in inpatient clinicians not being able to trust the patient lists in Acacia, CWS or eMMa. This meant patients were not seen by a medical team for a day or were not provided with their medication.
45	The Committee understands that after reversion to CareSys in RDPH EDs, remediation and redeployment of Acacia was scheduled to be completed within 6 months. This was then extended to April 2025, and then again to the eventual deployment date of November 2025. What were the key contributors to the length of time it took to resolve the issues the ED were facing with Acacia?	TrakCare is a global product that has an Australian version. Changes requested by RDPH ED required core code changes in the system. These required engagement and changes to be made by multiple global and regional ISC teams. Changes to TrakCare code are made available to regional ISC teams through releases (rather than continuously). The teams would receive part of the release from the global team prior to being able to make the regional changes. Once the code changes occurred the changes were demonstrated to the ED stakeholders through multiple proof of concept sessions.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
		The above process occurred over a 6-month period. The RDPH ED reimplementation of Acacia was originally planned for February 2025 however was postponed to April 2025 due to issues experienced in receiving the changes through the above ad hoc process (receiving specific code changes as they became available, rather than waiting for a system release). The April 2025 reimplementation was rescheduled for November 2025 as the RDPH ED simulation held in March 2025 identified issues that needed to be resolved prior to implementation. The decision in March 2025 was to not delay the Central Australia and Barkly FG1 implementation any further and instead to reimplement Acacia into RDPH ED after the CA&B implementation. Note that the same staff and contractors were required for each implementation so they could not have been achieved concurrently.
46	Across RDPH, how many staff have been hired to maintain system functionality upon the introduction of Acacia? a. How much has this cost? b. Where has this funding come from? c. If this funding has been supplied internally to NT Health's budget, how has this impacted clinical care? d. How long are these staff expenses projected to last?	a. DCDD $4.2 million - ED Rollback b. Acacia budget c. Acacia budget d. DCDD 2 resources through to April/May 2026
47	Upon re-introduction of Acacia to the Emergency Departments at Darwin and Palmerston, have any further issues been raised by clinicians, and if so, what clinical safety risks do these pose?	[redacted]

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
		[redacted]
	The current status of implementation against the original staged project plan and the outstanding steps, and their cost, required for project completion	
48	What patient information can clinicians' access through Acacia following the deployment of FG0?	FG0 delivered the Acacia Read Only Electronic Patient Record (EPR). The EPR contains real time and historical data from CareSys, CWS, PCIS, CCIS and MedChart / eMMa. It provides clinicians a view of the full patient history of treatment at NT Health facilities including visits at remote and primary health care clinics, mental health clinics and all NT Health hospitals. The EPR provides access to certain clinical documentation contained within the above systems without individuals needing access to each system. This is not something clinicians were able to see previously. The Read Only EPR also provides access to patients' My Health Record, Territory Kidney Care record, pathology and radiology results. Since implementing FG1, all NT Health clinicians can now see hospital presentations as they occur instead of relying on notifications from hospitals. The data recorded in the hospitals is visible to users who are currently not using Acacia FG1 (eg in remote health clinics) through their FG0 Read Only EPR access.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
49	Does Acacia allow for the full capture and reporting of data necessary for mandatory reporting? If not, what data is not captured or able to be reported?	All the data required for funding (IHACPA - Independent Health and Aged Care Pricing Authority) and the Commonwealth (AIHW Hospital Data) for hospital reporting is captured within Acacia as the source system and extracted to the data warehouse for reporting. Mandatory statutory reporting is not managed within Acacia as it is managed through the NT Health Data Warehouse.
50	What is the episode limit per patient record? Has this limit been altered at any point throughout the program, and if so, when?	There is no episode limit in Acacia. A performance issue was experienced during the Katherine FG1 implementation where patients with over 1000 episodes had a loading delay. This was resolved immediately.
51	Has CareSys been decommissioned? If not, why not?	CareSys has been withdrawn for daily use by hospital staff to capture patient information. Central Australia and Barkly information for July and August 2025 was captured in CareSys and is needed for 2025-26 reporting. CareSys also contains the Client Master Index which controls a patient's demographic details. This is currently used for all NT Health systems however is in the process of being replaced by the Enterprise Master Person Index. Once this project is complete, CareSys will be retired.
52	Are paper records still in use in any hospitals? If so: a. In which settings? b. Are there any areas in which Acacia and paper must be used concurrently (e.g. information must be captured in both Acacia and on paper)?	Yes. a. All areas of the hospitals still currently use paper as electronic Acacia clinical documentation is being implemented as part of FG2. There are aspects of clinical documentation being captured in Acacia FG1 by renal clinics, ED, theatre and maternity units however the remainder of the documentation is captured on paper and in CWS. b. There is information that is captured by one user group on paper and transcribed into Acacia by another user group. This will be transitioned out as part of the FG2 implementation.
53	Which elements of FG2 are planned to be deployed, and by what date?	FG2 will see the retirement of Clinical Workstations as well as clinical paper documentation. The replacement of clinical paper documentation

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	a. Which features will not be deployed without additional funding? b. How much additional funding is necessary to deploy these features?	(particularly forms) will be an ongoing process that will be handed over to the BAU team to continue. FG2 has four main phases: A – Early Clinical Adoption providing clinical documentation including notes, diagnosis and a priority workbench. B – Orders Communications providing clinical orders (such as pathology and radiology orders), results viewing and patient journey boards. C – Clinical Summaries providing clinical handovers, discharge summaries and inpatient clients. D – Advanced Clinical Adoption providing care plans, flow sheets, clinical observations, critical care and theatre documentation. Timeframes are being worked through in conjunction with NT Health however the replacement of CWS is anticipated for June 2027. a. There are thousands of paper clinical documents used within NT Health hospitals. These will not all be replaced by June 2027 and will transition to a business-as-usual process between DCDD and NT Health. b. Additional resources would be required within the DCDD ABS team to be able to continue to replacement of clinical documents.
54	FG2 and FG3 were planned to be deployed simultaneously at secondary care sites to minimise clinical risk (*Acacia Deployment and Adoption Strategy*, 2019). What are the clinical risks of only partially deploying FG2 without deploying FG3?	Parts of FG2 require information from FG3 such as discharge medication being available in the discharge summaries. FG2 and FG3 not being implemented simultaneously will mean that additional work is required to understand the impact of medication requirements for FG2. The Acacia Deployment and Adoption Strategy outlines the clinical impacts to delivering FG2 and FG3 simultaneously at secondary care sites prior to the primary site (Katherine Hospital before Royal Darwin Hospital) given the transfer of patients between the hospitals.

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
		This is being taken into consideration with the planning of FG2 and will need to be included in the planning of FG3 sequencing.
55	How far through the Implementation Planning Study, design, solution confirmation, build and configuration, and testing phases are Functional Groups 2-5? a. What are the projected costs for full deployment of FG2-5? b. If you had the funding to complete FG2-5, what is the projected timeline for full deployment of FG2-5?	FG2 is in the solution build stage with the first phase of functionality to commence implementation mid-2026. FG3 is in the solution build stage however aspects need to be revalidated given the time the project has been on hold. FG4 is in the planning stage however some aspects need to be revalidated given the time the project has been on hold. FG5 is at the start of the planning stage. a. This will be estimated as part of a future business case to complete the program and will exclude the FG2 and FG5 activities that will be completed in 2025-26 and 2026-27. b. Refer a.
56	In your April 2025 submission you stated that you expect the completion, testing, training and deployment of FG2-5 to require less time and investment than FG1. On what basis do you hold this expectation?	FG1 is the foundation for FG2, FG3, FG4 and FG5 as it implemented all the patient administration processes which will be used across all functional groups. From an implementation perspective, end users are already trained in the use of Acacia, and therefore only need to be trained in the new functionality as it becomes available. Therefore, the training requirements are much reduced. FG5 will provide access to data already in Acacia. Therefore, the only activity required relates to the policy settings for accessing this data, the setup activities to implement the policy and education regarding the use of Acacia for new users (eg external health services such as St John, Aboriginal health services). There is no new functionality introduced as part of FG5.
57	In your January 2026 submission you note that FG3 and 4 have been deferred and may not be progressed. If the project were to be halted following partial deployment of FG2:	a. The key risks include: • Sentinel events occur due to IT system failure • Adverse clinical outcomes occur due to unavailable, incomplete or incorrect essential clinical information at point-of-care delivery

	Theme - Question	Answer Department of Corporate and Digital Development (DCDD) / Department of Health (DoH)
	a. what are the risks of continued reliance on the legacy systems PCIS and CCIS, and how do you plan to manage these risks? b. if FG3 is permanently deferred, will the medical chart overwriting issue persist with only the workaround to prevent loss of medical data?	• Reduced operational effectiveness due to IT systems not supporting efficient work practices • Reduced operational effectiveness due to IT system failure • Failure to collect revenue due to IT systems not supporting efficient work practices. PCIS and CCIS are owned by NTG therefore are no longer supported by the vendor. There is a higher reliance on integration between PCIS, CCIS and Acacia which would not be required if PCIS and CCIS were retired. Work to update the servers on which these systems operate on is underway. This activity will assist with mitigating the stability of the systems however does not remove this risk. eMMa would also need to be upgraded as it currently cannot be integrated with other systems including Acacia. b. Yes as this is due to a fundamental structural difference between Acacia and eMMa.
58	To date, which parts of the Acacia project have been handed over to NT Health for business-as-usual operational maintenance? a. What is the annual ongoing cost for NT Health to maintain these elements of Acacia? b. What is the annual ongoing cost for DCDD to maintain the elements of Acacia that have not been handed over?	As part of the OneNTG model, DCDD provides system support on behalf of NTG agencies which includes Acacia. The business unit that manages business-as-usual systems on behalf of NT Health is different to the Acacia Program team. a. there is no cost to NT Health for operational maintenance of Acacia. b. Acacia will not be handed over to NT Health.

ALL ROLES				
SUMMARY	**ISSUE**	**PROPOSED CHANGE**	**STATUS**	**DELIVERY**
Useability	Unnecessary information is visible on a number of screens. This is creating cognitive clutter and slows down end user workflows or navigation in Acacia. The EPR screen should be reviewed as part of this, however it would be beneficial to review all screens.	Floor plan view will be similar to current PowerBI and CareSys. This also allows for a direct click through to the patient record (which is a limitation within PowerBI).	In Production	*Delivered*
		Floor plan patient banner can be one colour, not a stripe.	In Production	*Delivered*
		Change to clinical view based on preference for their location each day. For example; Fast Track view only, without requiring closing of accordions. This would resolve existing preference reset issues.	In Production	*Delivered*
		Ability to have the Acacia floor plan open, in addition to another Acacia screen for navigating patients (in a separate browser).	Closed, not required	*Closed*
		Consideration to include 'progress note' on the slide in menu, to transition from use of the 'floor plan note'.	ISC Development	***Delivered 2024.1*** *Pending implementation to production*
		Remove unnecessary information from the slide in menu, which will then display 'triage note' and 'floor plan note'.	ISC Development	***Delivered 2024.1*** *Pending implementation to production*
Wait Room Views	Waiting room views do not display all patients. This requires the end user to click across on a number of pages. The views do not sort patients by next to be seen, therefore staff have missed CAT 1 and CAT 2 patients. This then contributes to reasons for CATs breaching their timeframes to be seen.	Waiting room views do not display all patients. This requires the end user to click across on a number of pages. The views do not sort patients by next to be seen, therefore staff have missed CAT 1 and CAT 2 patients. This then contributes to reasons for CATs breaching their timeframes to be seen.	In Production	*Delivered*
		Future Rank Sort Change - The waiting room will be sorted by rank, to list the next most urgent patient at the top of the list.	In Production	*Delivered*
Floor Plan View	The Acacia floor plan view does not provide the ED with overall awareness of the department, and results in significant amounts of scrolling which is frustrating to the end user.	Future – As above, alternate floor plan views will be presented and are similar to the PowerBI dashboard/CareSys. A whole of department view will be considered in this development, to support 'situational awareness'	In Production	*Delivered*
Time Out Periods	Timeout periods require extension as end users are being logged off, when entering notes, as they are not navigating on the page.	The timeout will be extended to 30 minutes for users and 120 minutes for inactivity. Consideration will be given to what roles in the ED could have the ability to unlock a record, for example Team Leaders.	In Production	*Delivered*
ED Streaming	Streaming currently defaults to 'emergency', which is suitable for Gove and Katherine sites. Within the top end ED, multiple streams are allocated and they do not use 'Emergency'. Streaming is used to provide a view of the department. End users would like the stream not to default at RDPH.	The stream default currently set to 'emergency' will no longer pre populate in RDPH. The end user will be required to select an appropriate stream. Note: The Triage Nurse will not be able to complete triage without selecting a stream.	In Production	*Delivered*
Patient List View	Sorting by stream is no longer available, following deployment of the 'quick print' functionality.	The quick print functionally is being revised to be a 'toggle box' selection at the top of the list view. This will then not impact the ability to sort by stream.	Replaced by Print Label Action Menu	*Closed*
Preferences	Preferences constantly reset. This occurs on the list preferences and the floor plan accordions, which reset when you click the home button. This has resulted in significant scrolling throughout shift, and at handover. It can be very onerous when using list views. For example: If an ED doctor is assigned to Majors, they will close the accordions for all other areas. If the end user then navigates to another page, the accordions will default back to expanding all accordions.	ISC are considering alternate views by 'security group/profile' to support preferences. This will also allow for specific work location views, being Fast Track, Paeds, Majors, etc. This will remove the need to shrink accordions repeatedly.	ISC Development	*Delivered*
		This occurs on the floor plan accordions	In Production	*Delivered*
		This occurs on the list preferences	ISC Development	*Delivered*
Order Logic	The logic applied to list views does not support oversight of the department. For example; when sorting by bed, it is not in ascending bed numbers and can seem random, which makes the list unusable.	ISC have confirmed that this is a setup change which can be remediated. It will be delivered as part of the ED package.	In Production	*Delivered*

FRONT DESK – Admin, Registration and Triage				
WORKFLOW	**DETAIL**	**PROPOSED ACTION**	**STATUS**	**DELIVERY**

Medical Record Requests	The current workflow for a medical record request is frequently missed. The end user is required to separately make a request, on a different screen. All other screens for this user are stepped through by Acacia. A tick box to request a medical record during the current registration process is not enabled. End users have requested this be enabled.	End users will not be required to enter another screen to request the medical record. There is auto Request Medical Record function that can be turned "on" by default, on completion of the ED Registration workflow. This will be checked by default and send a request to Medical Records automatically including the Triage Category details. Medical Records would receive the request electronically and deliver the chart to the ED Front Reception.	In Production	*Delivered*
Medical Record Requests	End users would like the ability to identify a specific location for delivery of a medical record, to a location in the ED. This is as per CareSys practices. For example, the delivery location could be; Front Desk or Flight Deck.	CCSRP SME has documented a solution. The delivery location will automatically populate to front desk, however if the end user would like to select an alternate location they can note in the comment field on the medical record request screen.	RDH Internal Process, handed over to business	*Delivered*
Streaming	Streaming by triage nurse takes 3 clicks, however in CIN it takes 5 clicks. End users would like this to be seamless. For example; one click dropdown.	Alternate direct Triage Menu provided for nurses	In Production	*Delivered*
EPC Bookings	ED administrative/clerk staff have advised they are not in a position to commence booking of EPC via Acacia, due to the workload increase post go live.	EPC workflows were discussed internally with ED and Women's and Child Health representatives on 24 November 2023. An interim approach has been agreed, and will be reviewed in the new year. If there is opportunity to simplify this workflow could it be considered.	RDH Internal Process, handed over to business	*Closed*

FLIGHT DECK – Team Leader and Clerk

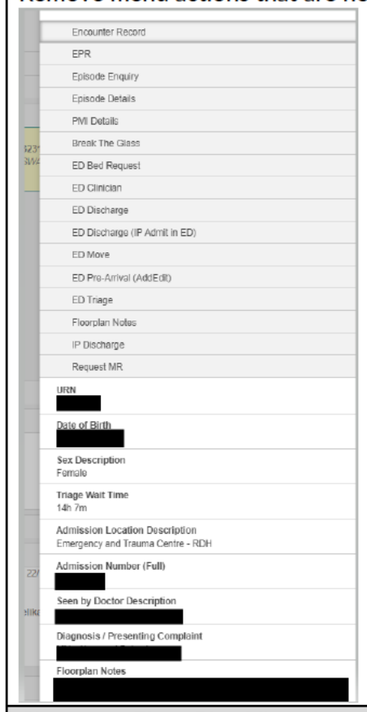
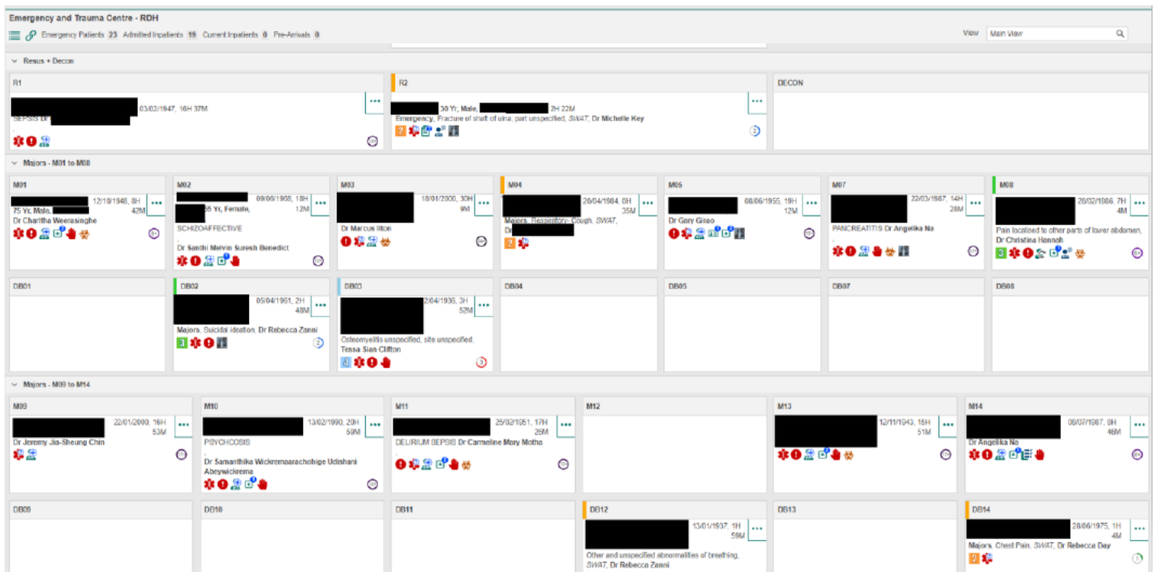
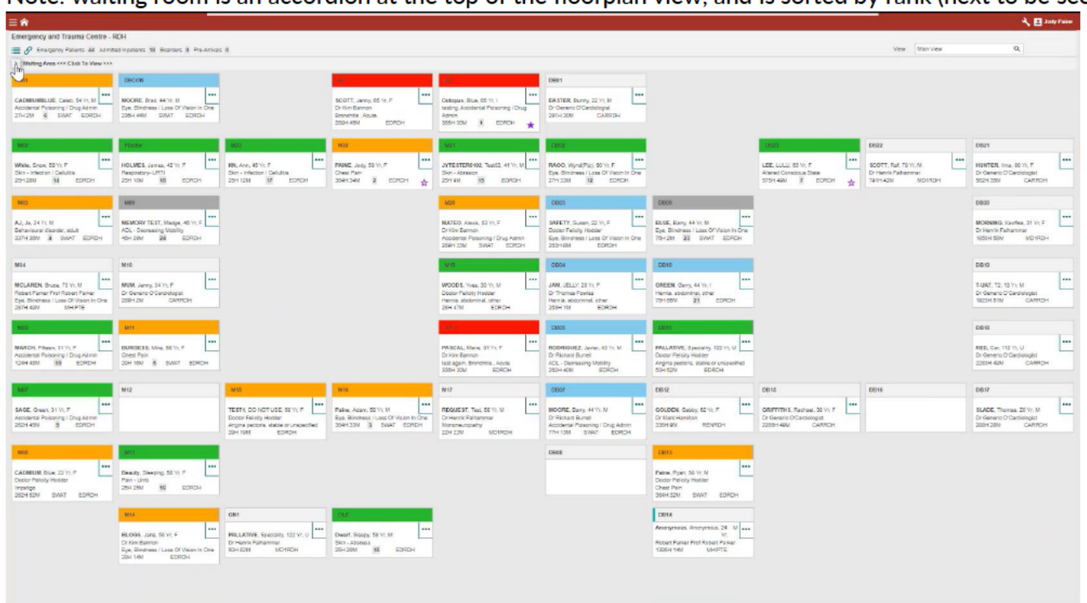
WORKFLOW	DETAIL	PROPOSED ACTION	STATUS	DELIVERY
ED to IP	Ward Clerks need to use multiple workflows to complete their business processes. Can this be reviewed for ED to IP, and EEMU	ED to IP was workshopped in November 2023. Following delivery of the changes as a result of the workshop, this can be discussed.	In Production	*Delivered*
	Internal consult worklist preferences are not filtering the list of internal consults.	Testing confirms that preference filtering is working as expected.	In Production (Monitor)	*Delivered*
	Issues have been identified with the Bed Request Summary Screen. This impacts the capability to maintain an accurate representation of the number of patients in ED awaiting an inpatient bed.	Pending issue being documented to allow for review.	Resolved	*Closed*
Business	Due to issues within Acacia, a shared teams spreadsheet is used to manage bed location and movements, and is referred to as the source of truth. Proposed future state would see cessation of this spreadsheet.	CCSRP will communicate with ED Team Leaders to confirm if this is occurring for all end users, or only some.	CCSRP/RDH Internal Process	*Closed*

WORKFLOW	DETAIL	PROPOSED ACTION	STATUS	DELIVERY
Floor Plan Note	Floor plan note error 5521 continues to occur. The end user is required to copy and paste as a new note. This is causing frustration in handovers and on shift.	The error has been fixed and will be delivered.	In Production	*Delivered*
	When a patient in the ED becomes an Inpatient (still located in ED), their ED floor plan note disappears. This causes frustration in handovers as doctors need to re-enter the notes.	Interim: ISC will be considering a temporary feature to automatically copy the ED floor plan note, to the IP episode (ISC would need to write a code for this). Future: Transition use of the floor plan note, to be the progress note. This support documenting of clinical information also and would benefit NT Health.	ISC Development	***Delivered 2024.1*** *Pending implementation to production*
Laboratory Results	Acacia is not intuitive when reviewing multiple results. You are required to open and close each result, without the option to click next. Doctors would like the ability to click next result once opened. There is a next button on the results screen, however it does not work (currently greyed out).	The current build and configuration of results has been reviewed. The alternate view allows for a doctor to navigate results and clinical information in one screen, for simplified patient care and assessment. Configuration of the laboratory items will be considered to support this change.	CCSRP/ISC Configuration	***Delivered 2024.1*** *Pending implementation to production*
	Haematology and Biochemistry results are not displayed in a cumulative view, so the end user must select individual results.		CCSRP/ISC Configuration	***Delivered 2024.1*** *Pending implementation to production*

Clinical Summary	Clinical Summary is a separate workflow to the Encounter Record.	ISC have clinical summary functionality which can be considered. Opportunity to assess the current ED workflow. Currently entry of information is via the 'discharge comment/note', however could be in the 'clinical summary'. Should this occur, it would resolve some locking issues due to the screen doctors are navigating. This would be available as a direct click on the doctor slide in menu.	ISC Development	***Delivered 2024.1*** *Pending implementation to production*
Time Stamp	Acacia is preventing ED Discharge without adjustment to time stamp for patient movements.	If the doctors slide in menu items are revised to only display their workflow actions (or information), the adjustment to time stamps will not be an issue as tasks will be completed in the correct order.	In Production	*Delivered*
Bed Request	If an ED Bed Request is used, it does not populate information to the IP Bed Request. This does not support continued care of the patient.	Currently being considered by the vendor.	ISC Development	*Delivered*
ED Floor Plan – Clinical Feedback	The consultant needs to be able to easily identify/view within Acacia situational awareness and safety in the department. This could be as an entire map for their work area (majors/paeds/FT/EEMU) on a single screen.	The double bunk screen could sit in a separate toggle-able tab if space for majors stream is an issue.	Closed, not required	*Closed*
		Needs to viewed in entirety without scrolling or closing accordion tabs.	In Production	*Delivered*
		Whether patient is waiting to be seen, has been seen by swat, or is allocated to a clinician. The allocated clinician and time of allocation. This allows the specialist to see if a patient has been picked up by a junior doctor and pending senior review, for an extended period of time.	In Production	*Delivered*
		The Triage Category stripe on the left of the bed number is too small and preference would be to have the entire stripe of the bed number coloured.	In Production	*Delivered*
		Triage category tag disappears when patients are admitted and needs to remain.	ISC Development	*Delivered*
Diagnosis	Unable to identify if the 'displayed diagnosis' is the 'triage diagnosis' or the 'ED Diagnosis' that the doctor has allocated. This is Important as it delays administrative tasks if no diagnosis has been entered. End users would like this to be bold or a different colour, to differentiate triage tag from ED Diagnosis.	CCSRP to review current PowerBI floorplan and confirm what data is being pulled regarding triage.	ISC Development	*Delivered*
Floor Plan/Results	While reviewing patients with juniors, the FACEM usually does 2 tasks side by side, this is not currently possible within Acacia.	HRN currently displayed is too small to see on floorplan view, and is not on the floor plan note to allow transfer into Jadecare	Closed, will not do	*Closed*
		There is an ability to have clinical notes and mini EPR open at once. • Writes the floorplan note. • Views results (currently in Jadecare/Synapse as impossible in Acacia). The pathology/radiology tab in Acacia is not functional due to the below: • Too many clicks. • Unable to click "next" through multiple results (greyed out). • Unable to have floorplan notes and results open simultaneously. • Ideally it would be preferable to have a link button to auto-open Jadecare results (as per previous eMR).	Please see **Laboratory Results**	***Delivered 2024.1*** *Pending implementation to production*
Floor Plan Notes	The floorplan notes are used heavily by the ED doctors, predominantly consultants/senior registrars for: • Recording clinical information provided by junior staff about patients they have assessed. • Handover. • Tasks to follow up. • Referrals made/to be made. • Patients identified as EEMU suitable.	Enormous amount of wasted real estate.	In Production	*Delivered*
		The + button to add a new note are too small.	In Production	*Delivered*
		During junior doctor patient review whilst documenting a floorplan note, the results are usually viewed in Jadecare because the pathology/radiology tab in Acacia is requires multiple clicks out of floorplan and has other viewing issues The HRN is too small to see on the floorplan for this task to quickly completed	Closed, will not do	*Closed*
		Ideally it would be preferable to have a link button to auto-open Jadecare results (as for previous eMR).	Closed, will not do	*Closed*
		The bed number is not visible in Floorplan Notes	In Production	*Delivered*

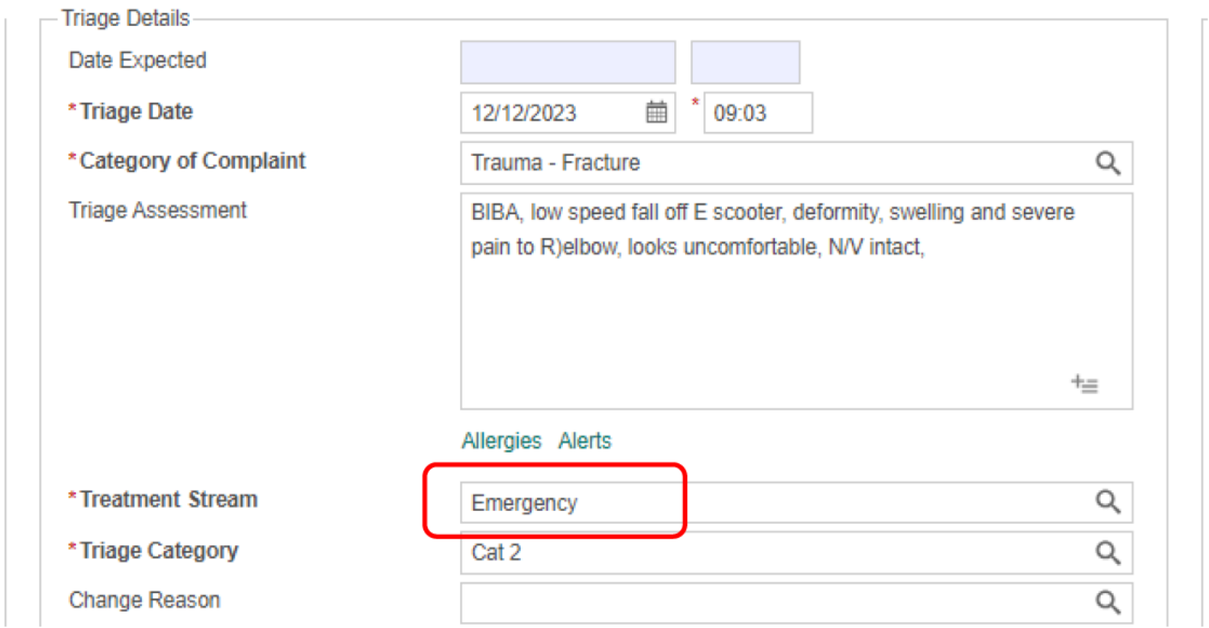
		The doctors refer to patients by their bed number, and name. After hearing a clinical story and writing a floorplan note they usually go to the bedside to review the patient. Therefore they need to see a clearly displayed bed number at the top of floorplan notes.		
		Alternatively could have link to most recent Acacia results (but only once other issues with results viewing are fixed as currently not functional) ○ The example is, patient has abdo pain, needs a CT scan, need to see current renal function to allow contrast administration and if elevated the previous results to determine if chronic or acute issue. This and similar is done many times per day by each senior clinician.	Please see **Laboratory Results**	***Delivered 2024.1*** *Pending implementation to production*
Changing Stream/Allocated Clinician	When allocating a clinician a notification is activated advising that the patient will/has breached the triage category wait time. End users have advised that they do not want to see this (as it is an extra click and creates frustration). Concerns were also raised regarding the number of clicks to change the stream: • Encounter Record = 8 clicks. • Triage screen = 7 clicks. • Then directed to a "bed move" screen after allocating a stream in this view which is not helpful in most instances.	Undertake review of the doctor workflow to change the stream of a patient, not requiring access through the triage screen.	In Production	*Delivered*
Encounter Record	The + Buttons for a new encounter entry are too small.	This is unable to be changed.	Closed, will not do	*Closed*
Progress Notes	The number of clicks to open a progress note are too high. End user would prefer one click process from the floorplan (map and list view).	Progress note can be available on the slide in menu.	In Production	*Delivered*
Inpatients in ED		Difficult to tell which team has admitted as it only notes a clinician name. End users would like to see an identifier for the team assigned (for example MED/SACU/O&G).	In Production	*Delivered*
		Unable to edit floorplan after admission, end user is required to copy information, delete and make a new floorplan, paste then edit.	Closed, will not do	*Closed*
		Loss of triage category colour tab.	ISC Development	***Delivered 2024.1*** *Pending implementation to production*
		Loss of Triage details, only visible on navigation to episode details.	ISC Development	***Delivered 2024.1*** *Pending implementation to production*
		Loss of floorplan notes from list and right side horizontal dots dropdown menu.	ISC Development	***Delivered 2024.1*** *Pending implementation to production*
Handover	Senior clinicians managing the ED need a view to support their shift handover, Different clinicians prefer map versus list view. However, both require significant modifications to make them fit for purpose.	Both views require leaving the view to make a floorplan note for each patient (multiple clicks).	In Production	*Delivered*
		If navigating to floor plan note, then returning to map view, the minimised accordions all default to open, and require scrolling (view resets).	In Production	*Delivered*
		Visual triggers for patients: a. SWAT WAIT	In Production	*Delivered*
		b. Ability to easily identify patients not yet seen.	In Production	*Delivered*

		Ability to view of all patients in main waiting room to support decision making regarding 'next patient' to be seen. Single list grouped by 'triage category' and sorted by 'time' (similar to CareSys).	In Production	*Delivered*
		At present only map view is useable due to grouping/sorting/display limitations in list view.	In Production	*Delivered*
		If list view was configured to allow sorting by bed number (in majors the order would be resus, then M1-23, then DB1-23, then oleander, decon and GN) it would be functional as a handover tool.	In Production	*Delivered*
Handover Lists	List View does not have a bed location column. End users need to be able to see all patients in a functional area (majors, paeds/FT, EEMU and waiting room) in order of beds.	The ability to group and sort has been removed (greyed out)	In Production	*Delivered*
		Clicking each tab at the top of the list view sorts alphabetically/numerically and not by logical bed order. This continues to create an unusable list for clinicians.	In Production	*Delivered*
General	Map view needs frequently used shortcut menus, and if possible tailored to each clinician's preferences.	Assign clinician.	In Production	*Delivered*
		New Progress Note.	In Production	*Delivered*
		Triage Comment.	In Production	*Delivered*
		View floorplan note ideally with hover-over pop up that can be edited within map or in list view can be edited in situ.	In Production	*Delivered*

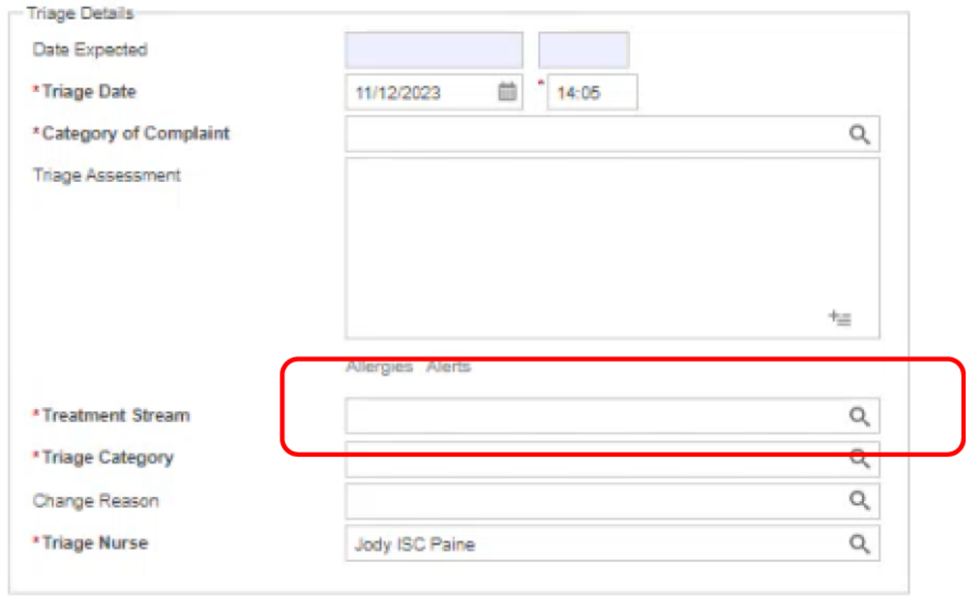
CURRENT	PROPOSED CHANGE
Clinician Slide in Menu	
Remove menu actions that are not required in the Clinician Workflow: 	Revised to include Clinician workflow specific actions: 
Change to Floor Plan View (is an interactive map and can click direct to edit patient record)	
Current Floor Plan – Requires scrolling and shrinking of accordions, Clinicians feel they do not have situation awareness. 	**Revised Floor Plan** – Built similar to the CareSys view. Note: waiting room is an accordion at the top of the floorplan view, and is sorted by rank (next to be seen). 

Auto population of 'Emergency'

Current Stream is auto-populated to 'Emergency'

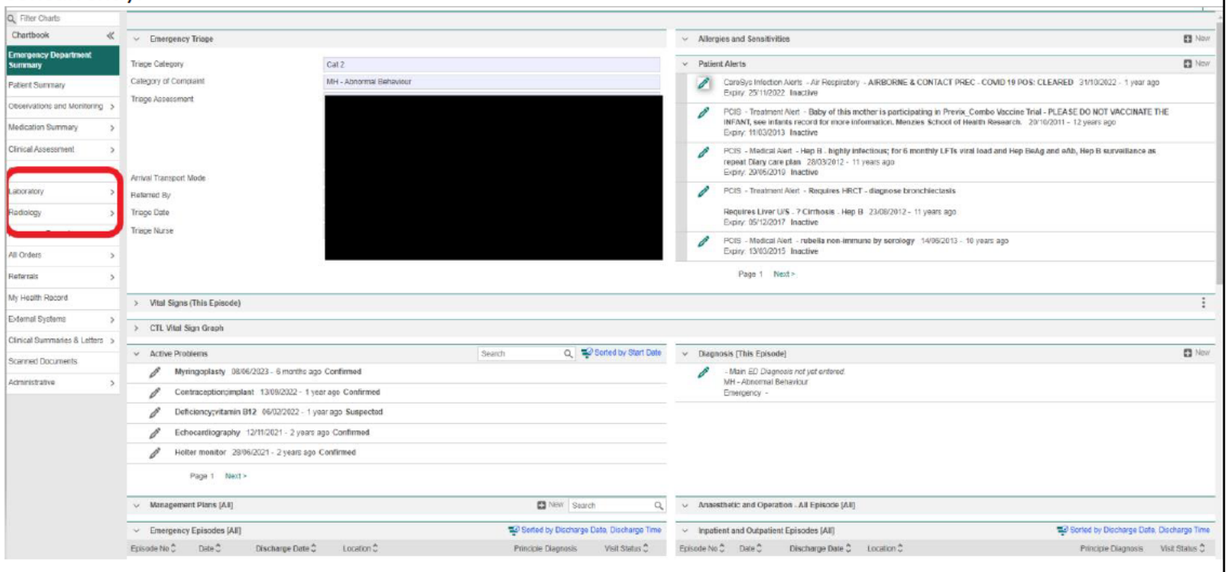


Future Stream will not auto-populate and end user will be required to select a triage stream

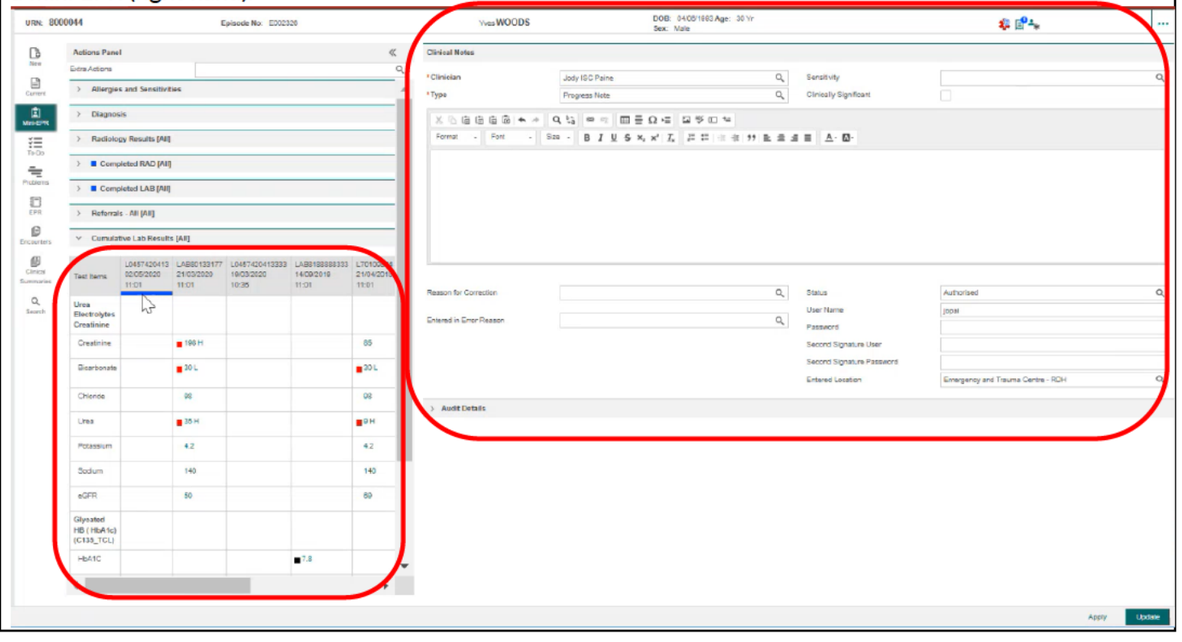


Results view and ability to update Clinical information at one time

Current View of results is difficult for Clinicians to navigate easily, and does not allow for updating of Clinical notes concurrently.



Future View will allow for a Clinician to review laboratory results (left hand), whilst updating Clinical notes via a mini EPR (right hand).



Clinical Safety Report- Reintroduction of CareSys to RDPH Emergency Departments

NORTHERN TERRITORY GOVERNMENT

Document title	Clinical Safety Report- Reintroduction of CareSys to RDPH Emergency Departments
Contact details	NTH Clinical Safety Team- Clinical Information Systems
Approved by	
Date approved	
Document review	
TRM number	

Revision history

Version	Date	Author	Changes made
0.1	21-26/02/2024	Helen Shute/Dave Wallace	First draft

Reviewers

Reviewers	Date	Title/role	version
Helen Shute	21/02/2024	Clinical Safety Officer-NTH	0.1
Dave Wallace	21/02/2024	Clinical Safety Officer-CCSRP	0.1
Alison Jeanne	21/02/24	Executive Director Healthcare Improvement	0.1
Andrew Bell	26/02/24	Clinical Architect- CCSRP	0.1
Katie Roberts	26/02/24	Director of Clinical Operations-RDPH	0.1
Roma Smythe	26/02/24	Project officer- Clinical Redesign & Quality Improvement-NTH	0.1
Steven Schatz	26/02/24	Senior Research Officer Health-Information Exchange-OCCIO	0.1
Shaun Joyce	26/02/24	Technical Delivery Lead-CCSRP	0.1
Claire Tieleman	26/02/24	Senior Informatician-CCSRP	0.1
Matthew Chambers	26/02/24	Product Specialist-CCSRP	0.1
Samantha Sewell	26/02/24	SME ED SME-CCSRP	0.1

Related and referenced documents

Acronyms	Full form

NTH	Northern Territory Health
CCSRP	Core Clinical Systems Renewal Project
CSO	Clinical Safety Officer
SME	Subject Matter Expert
RDPH	Royal Darwin and Palmerston Hospitals
ED	Emergency Department
IP	Inpatient
NTHAIG	Northern Territory Health Acacia Implementation Group
TEIWG	Top End Implementation Working Group
PSC	Project Steering Committee

Contents

1. Background

It is well recognised from research that introducing healthcare related technology into complex healthcare environments has the potential to introduce unintentional patient harm. This adverse impact warrants dedicated risk management activities and processes, which apply standards and regulations, best practice guidelines and are supported by valid and research.

A decision by Northern Territory Health (NTH) Executive and Clinical Leadership has been made to re-introduce the legacy Patient Administration System (PAS) CareSys, for limited utilisation within the Emergency Departments of Royal Darwin and Palmerston Regional Hospitals. This Clinical Risk Assessment was requested as part of the risk analysis prior to implementing this plan. Both NTH and CCSRP CSO's collaborated on completing this report and the attached Hazard Log at the request of the respective agencies.

The reversion to CareSys within the Emergency Departments will include the introduction of new business processes and administrative service models across the RDPH Emergency Departments, with the objective to support the added administrative workloads and data entries needed for alignment of dual PAS's at the same health service.

This assessment includes an outline of how the hazards were identified, the clinical safety impacts estimated, and the preventative mitigations considered. This report also acknowledges the limitations of this analysis and assessment processes and the proposed controls.

2. Purpose

This Clinical Safety Report is intended to inform the NTH and DCDD/CCSRP stakeholders of the potential clinical safety hazards, their causes, and consequences with the utilisation of dual Patient Administrative Systems across RDPH.

This report outlines the approach to clinical safety for this initiative with evidence of the clinical safety assurance processes. This includes; clinical safety assessments for identified hazards, the causes associated with each hazard and controls that exist or are proposed. In addition, the limitations in providing a valid and comprehensive assessment are included, and this report should be read with an understanding of these factors.

3. Scope/limitations

- Unlike a Clinical Safety Case this is NOT intended to make safety claims that control measures have been taken to reduce risks to an As Low As Reasonably Practical (ALARP) or a tolerable risk level to proceed to Go-Live.
- The re-introduction of CareSys has been accepted by the agencies as a mitigation option for issues and problems using Acacia in the RDPH ED's. An argument that this will provide an acceptable level of risk mitigation, and therefore identify a change in the current level of clinical safety risk, is beyond the scope of this document.
- This report does not include a comprehensive clinical risk assessment for the cutover activities [the re-introduction of CareSys and plans for this data transition across the 2 systems]. The planning and requirements to undertake this task are still under discussion and development, however this cut over is a high-risk activity for any introduction of a health information system, involving multiple manual processes, data migration and synchronisation
- Some stakeholder groups may have been underrepresented in workshops due to the short notification and staffing shortages.

- Time constraints did not facilitate evaluation of the effectiveness of controls or a comprehensive risk identification and assurance processes such as testing or workflow validation. This includes the integration with other systems; a significant cause of both clinical safety and business risk.

4. Clinical Safety Approach

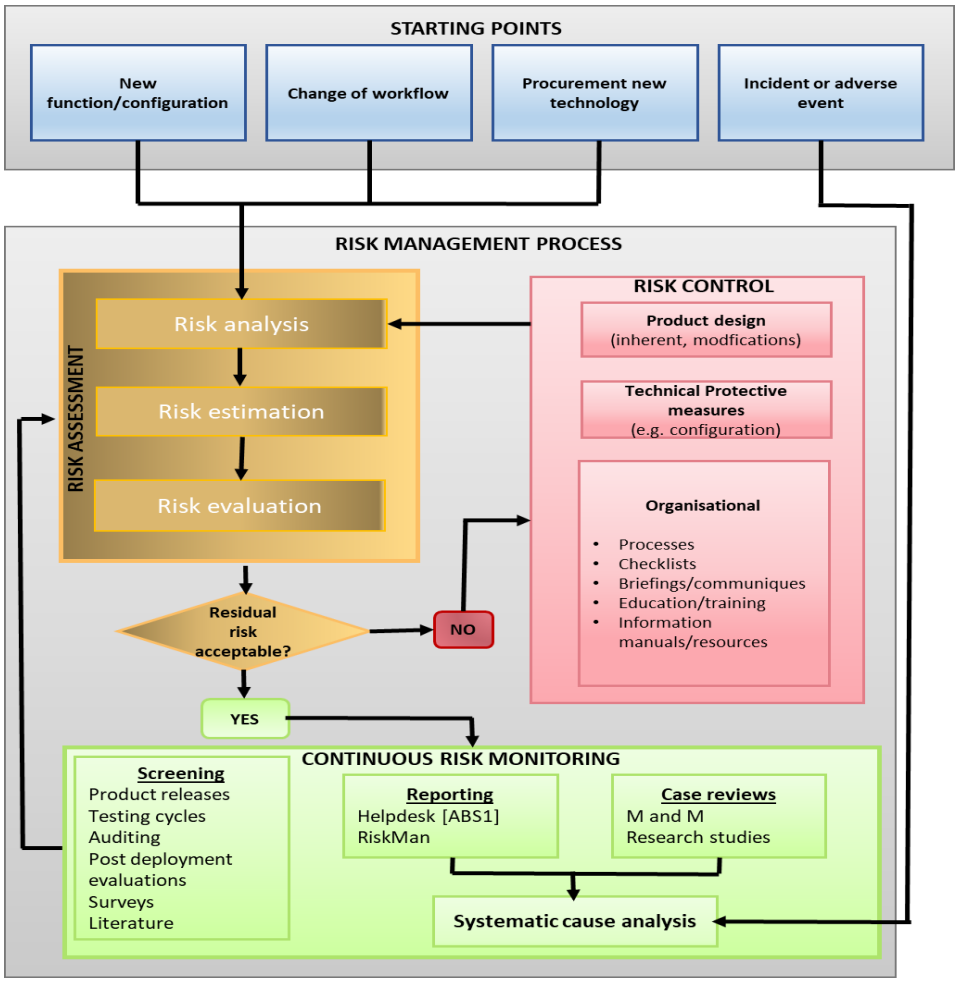


Figure 2. Risk Management and HIT
(Adapted Borycki et al 2016)

4.1 Risk identification

As mentioned in section 3 the identification may have failed to capture some potential hazards. This is a known limitation even with adequate hazard workshops.

Initially CCSRP conducted internal tabletop exercises [Hazard Workshops]to identify hazards and risks for the proposed business processes, integration, data migration, configuration, IT infrastructure and human interfaces in the use of systems.

This exercise also considered the preventative (pro-active) controls that may be possible within the limited timelines, for example mapping and alignment of data fields across the 2 systems, and reactive controls using data corrections. (see appendix 1)

These CCSRP Hazard Workshops included Subject Matter Experts (SME), technical and integration specialists and Business Analysts.

4.1 Risk analysis

NTH, RDPH and CCSRP collaborated to facilitate stakeholder consultation workshops to conduct and review the clinical risk assessments. Key stakeholders were identified with the assistance of departmental leaders, SMEs, and the Director of Clinical Operations RDPH Katie Roberts. The selection was made to ensure that contributors had knowledge of business and clinical and/or administrative workflows. Many of the stakeholders were also familiar with the use of CareSys.

Technical experts and health informaticians from all agencies also participated at one or more workshops.

4.2 Risk estimation

Risk estimation aligns with the NT Health Risk Management Guidelines and NT Health Risk Assessment Guide (Matrix) (appendix2) with consequences (impact) and likelihood providing 4 possible risk score ratings of Severe, High, Medium, and Low. These guidelines also include risk levels: Inherent (risk rating with any existing controls in place) and Residual (after proposed controls considered).

Subsequent stakeholder workshops were undertaken with NTH, RDPH and CCSRP team members identifying the hazards with clinical safety impacts and an estimated the level of risk. The group calculated the risk ranking applying the principles of *reasonable foreseeability* for operating or use scenarios to provide standardisation and reproducibility with risk ratings. These ratings considered the feedback from the stakeholders, the existing controls and their potential effectiveness as a mitigation applying the hierarchy of controls and an aggregate of the identified control measures.

These hazards were then documented in the Hazard Log and a draft provided for review by the team collaborative to ensure accuracy of the log and the substantiation for the assessment findings.

4.3 Control effectiveness

Many risk mitigations are dependent on the effective establishment and implementation of a new workforce initiative, the *ED Admin Hub* to complete data reconciliations and duplicate entries to align the 2 PAS. This will introduce new work processes, end users unfamiliar with the systems or the health industry and incorporate untested or partially tested workflows. The hierarchy of controls categorises this mitigation as administrative and one of the less effective of controls. Consideration of this and the context of time constraints on recruitment, on boarding and training as well as the need for mentoring, support, and instructional guides this Hub has been considered a weak control.

Furthermore, the limitation of time does not allow assurances of adequate mitigation by user validation including simulation. These crucial safety assurance steps enable changes to be made to reduce potential risks and can identify the potential for additional controls or adverse impacts that a proposed control may unintentionally create.

5. Findings

The following section includes risk ratings medium or high for hazard causes estimated with proposed controls implemented.

Those hazards rated with a low residual risk score have not been included in this summary section however these and those in this summary are comprehensively documented in the attached Hazard Log.

5.1 Residual risks-rated medium and high

A total of 14 hazards have been identified for the rollback to the use of CareSys at Royal Darwin and Palmerston Hospitals emergency departments. A total that includes the cutover hazards and an introduced risk by utilising manual transcriptions for mitigation.

In total there are 16 identified causes with a residual risk rating of high or medium that are introducing this hazard

- 6 causes of potential clinical risk rated with a residual rating of High (this includes 2 high level causes introduced during the cutover period)
- 10 causes of potential clinical risks rated with a residual rating of Medium

Ref #	Hazard	Residual Hazard rating	Causes	Mitigations
ARB02 CCSRP / NTH CSED08	Patient visibility is lost.	High	The patient's allocated care provider displayed within CareSys will not reflect patient reallocation undertaken by medical and surgical teams. These changes are being undertaken within Acacia. Clinicians using CareSys for Inpatients located within the ED will not have accurate information regarding the allocated care provider.	1) A report of care provider changes in Acacia is developed to allow the support hub to reallocate the correct care provider within CareSys. 2) Priority given to correcting the allocated care provider.
			Patient reallocation is overwritten in Acacia from the out-of-date care provider allocation within CareSys. All Inpatients within the hospital may have the Acacia allocated care provider overwritten from superseded information. Patients do not present on the correct care providers patient list, within Acacia or CWS. Patients are lost to follow-up and review by the allocated care team, as the patient does not appear on the inpatient list for the team.	1) Mapping of care provider values from CareSys to Acacia Values.
			Care-providers within CareSys do not match those utilised within Acacia. This would generate inaccurate patient lists as patients would be allocated to differing care providers. Patients are lost to follow-up and review by the allocated care team, as the patient does not appear on the inpatient list for the team.	1) Mapping of care provider values from CareSys to Acacia Values.
			Patients returning to the ED after having inpatient treatment/investigations are not moved back to a re-admitted state within CareSys, resulting in no views within the ED management toolset. Patient allocation within the Emergency Department is not conducted. Patient follow-up notation is not visible within CareSys due to the patient's ED admission not being re-activated.	1) Processes of handover are re-enforced to ensure returning patients are re-activated back into CareSys. 2) Checklists developed for the handover process.
			Management of patients located in the Emergency Department requiring inpatient services located external to the ED before acceptance and admission to the ward, requires actions outside of	1) Establish a workflow and process documents explicitly

			CareSys. Loss of patient visibility and visibility of expected patient returns to the department.	defining roles and responsibilities involved in these scenarios.
ARB10 CCSRP / NTH CSED09	Patient bed allocation and movements within CareSys are not automatically reflected within Acacia or other systems.	High	The ability for non-emergency department teams to locate their allocated patients that are housed within the ED (but are admitted inpatients) is impeded because Inpatient teams would be required to utilise multiple systems. This will apply across all clinician groups and switchboard operators.	1) Provisioning of all hospital staff and Training in the utilisation of CareSys.
			The ability to find patients will require inquiry across Acacia and CareSys. This may impact family members and external parties (police/etc.). Delays to locating patients.	1) Provide training to the front facing roles on how to perform patient searches across CareSys and Acacia. 2) Ensure appropriate CareSys access. 3) Ensure CareSys application is installed on hardware devices utilised.
			Reports utilised for management of hospital capacity are impacted by multiple admissions and discharges required to manage patient visibility. Capacity management is impeded	1) Blend data appropriately and ensure adequate validation is conducted. 2) Manual management of bed allocation and requests to be re-introduced.
			Patient locations within downstream systems may not be accurate, impacting the ability to effectively manage the provision of care. Patient locations within Miya may not be reflective of the locations of patients within CareSys.	1) Users of other systems will require additional focus to find patients. 2) Manual actions required to correct patient locations and admission status if messaging is asynchronous
ARB05 CCSRP/ NTH CSED04	Patient middle names are duplicated when using CareSys and Acacia in the same facility. Leading to	Medium	This is caused by the Acacia recorded middle-name and the first name being concatenated into the first name field in CareSys. Patient names are inaccurate and therefore patient identification will be hindered.	1) Work instruction of the administrative support hub & ED administrative to not modify the concatenation of the middle name in Acacia and CareSys.

	multiple middle names.			2) Investigate technical solutions to remediate issue.
ARB08 CCSRP/ NTH CSED05	Delays in progressing patient care	High	Delays in the episode synchronisation for the IP CareSys episode to reach the Acacia system. Inhibits the ability to progress the processes required to initiate patient theatre bookings/emergency care. Delays the initiation and recording of relevant information in the theatre components of Acacia.	1) Booking for theatres are progressed through Acacia and an independent episode is initiated within Acacia. This episode will require correction. 2) Analysis if the creation of the independent Acacia episode for booking and progression of the theatre activities results in "Blocked records". 3) Timely data corrections are initiated.
			CareSys system messages are delayed from updating Acacia due to failing to be processed by Acacia. This results in Acacia not being up-to-date with the current admission details from CareSys. This can be caused by a user accessing a patient record while a message is being processed by Acacia. Patient care is delayed and not optimised.	1) A report and dashboard is available for the Hub to see patient records that have not received updates. 2) Functionality provisioned to Hub leaders to unlock patient records from being locked to a user. 3) Escalation process for patient records that are not updating to have timely investigation.
ARB11 CCSRP/ NTH CSED 12	CareSys Outages impacting the progression of patients out of ED and transition to other clinical systems	Medium	During a CareSys outage the generation of an inpatient episode for the initiation of inpatient activity is not able to be generated. The patient journey can be initiated and continued in Acacia, but the correct episode structure will not be maintained, overlapping episodes causing the patient record to be impacted by the blocked HRN processes. Utilisation of Health Information Systems that are reliant on episodes from the PAS will need processes to be enabled.	1) Processes are defined for the appropriate actions to be undertaken during a CareSys Outages. 2) Develop multiple plans based on patient situation, duration, and timing of outages.
ARB12 CCSRP/ NTH CSED10	Concurrent Inpatient and ED episodes of care	High	At Triage presentation there is no visibility of additional episodes of care. Leading to new ED presentation being initiated. Once the ED presentation is completed the discharge of this episode results in eMMa medication records being discharged.	1) Stop the ED presentation being sent to eMMa and allow the medication chart to remain active in the original location - reducing

			The medication record is discharged and unavailable. Requiring service provider intervention to restore availability.	the lost medication record. 2) Establish a robust process of management of the different scenarios envisaged when IP present to the ED.
ARB15 CCSRP/ NTH CSED 02.	Alerts and Allergies impacted by the use of CareSys	Medium	Allergies discovered when providing care to patients within the Emergency Department and record in CareSys will not trigger decision support in other systems. Allergy information is not transferred to other systems and patients are ordered substances they are allergic to.	1) Acacia Allergy Sync will present the information as a free text entry within Acacia. 2) Users will transcribe allergy information into eMMa.
			Allergies encountered by patients attending the health service since Acacia Go-live Nov 2023 will not have been recorded within CareSys. No visibility within CareSys of allergies recorded within any other system.	1) Output the allergy and alert information from Acacia onto an approved medical record compliant document.

6. Conclusion

To interpret the findings of this risk analysis some clarification of the residual risk estimation is required and why it may potentially be higher than stated:

1. Proposed controls are dependent of the rapid establishment of an administrative support hub that will introduce a new workforce, business process and require specific work instructions and training to complete complex data corrections accurately, efficiently, and frequently in close to real time.
2. Hazards were identified from tabletop workshops and incomplete preliminary testing of some workflows with many workflows still to be identified.
3. This analysis in unable to provide detailed consideration of those hazards that may be introduced during cutover activities.
4. Testing and simulation have been incomplete with limitations due to time constraints, validated workflows, and integration solutions with other systems.
5. Limited timeframes for the re-introducing CareSys and the planned brief duration of this dual PAS deployment has resulted in limited design fixes. Impacting the utilisation of stronger engineering controls than administrative.

Contextual factors in a highly complex health care setting are important considerations for any change management as well as a clinical safety. Introduction of any change to a clinical health information system requires strategies to support the changes and ensure the likelihood of success. Attempts during the stakeholder consultations have been made to identify the enablers and barriers;

- Some ED end users still have knowledge and familiarity of the CareSys functionality.
- Critical staffing shortages exist within ED particularly in the senior nursing cohort (Triage nurses, Team Leaders and Navigators, who coordinate patient care and flow).
- RDH frequently experiences overcapacity issues with high occupancy within the RDH ED.
- Since deployment of Acacia in November last year there has been high staff turnover, with a new intake of medical staff and large nursing turnover.

Furthermore, should this period of use for CareSys utilisation extend then it is recommended that evaluation and implementation of more robust system design and configuration controls be a priority for ongoing risk management.

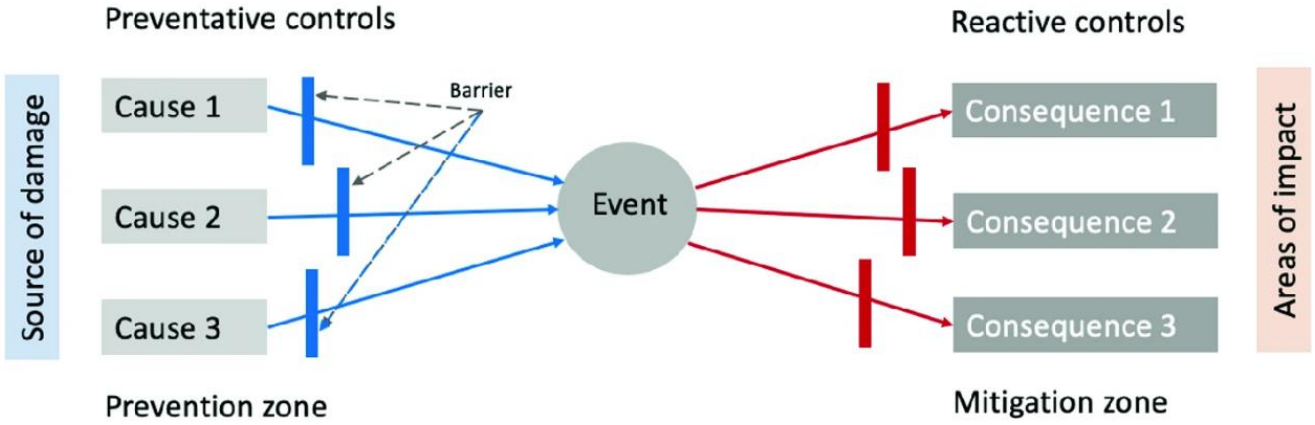
7. Appendix 1 – Summary hazard register

Clinical%20Safety

8. Appendix 2 - Hazard Log full extract

Detailed%20Clinic

9. Appendix 3 - Risk assessment toolset



Bow-tie model used for the risk assessment.

Reference-Hazards, consequences, causes and controls available @ https://www.linkedin.com/pulse/hazard-logs-4-importance-effective-controls-i8d5e?trk=public_post

9.1. Risk assessment matrix

NT Health Risk Assessment Guide (matrix)

To be read in conjunction with NT Health's Risk Management Policy and Framework

1 - Consequence (Outcome or Impact of an Event)

Controlled Document DOC-ID: HEALTHINTRA-1550-14555

Descriptors	A - Minor	B - Moderate	C - Major	D - Severe
Service Delivery (Includes workforce, culture, IT, facilities, data, security)	Short term temporary suspension of Services. Backlog cleared in a day. No public impact.	Medium term temporary suspension of Services. Backlog requires extended work or overtime. Manageable impact.	Prolonged suspension of Services. Additional resources, budget, management assistance required. Compromised performance criteria.	Complete and indefinite disruption to Services and impact is not manageable. Non-performance and/or other health providers appointed.
Strategic Objectives (Includes strategic goals, election commitments, KPIs and cabinet decisions)	Negligible difficulty in achieving strategic objectives. Briefing/s required to Senior Executive. Failure in meeting one or several KPIs (2DA).	Moderate difficulties in achieving strategic objectives. Management required by Senior Executive. Failure in meeting several priority KPIs (2DA).	Major difficulties in achieving strategic objectives. Intervention required by the Chief Executive. Failure in meeting a significant number of priority KPIs (2DA).	Total and permanent failure in achieving strategic objectives. Failure in meeting most critical KPIs (2DA).
Compliance (Includes: legal, regulatory and NTG/NT Health policy and procedures)	Breach of legal obligations unlikely to result in an adverse regulatory response. Non-compliance with internal policy requiring Executive Officer action.	Breach of legal obligations with potential to result in regulatory action. Non-compliance with internal policy requiring disciplinary action.	Systematic breach or malpractice with adverse regulatory attention, investigation and potential damages or fines. Non-compliance with internal policy requiring cessation of the employee's services.	Serious systematic breach or malpractice resulting in withdrawal of accreditation, Commonwealth funding or significant prosecution.
Finance (Includes procurement, asset replacement, significant projects)	Budget overrun +/- 0.5%. Impact reduced by reallocation of resources.	Budget overrun +0.5% to +/-1%. Introduction of internal efficiency measures required.	Budget overrun +1% - +2%. Mandated implementation of a whole of Government savings strategy required.	Budget overrun +2% and mitigating controls resulting in unacceptable impact on clinical safety.
Reputation (Includes image, political risk and stakeholder management)	Local media coverage with short period of loss of public confidence. Elements of public expectation not being met.	Sustained adverse media attention with limited short term impact on community confidence. Escalating patient / consumer complaints.	Significant adverse media event. Prolonged loss of public confidence. Chief Executive/Ministerial intervention.	Significant sustained adverse media attention. Complete loss of community confidence. Parliamentary enquiry/ Intervention and/or Royal Commission.
WHS (Includes: remote safety and physical security and encompass staff, contractors and other stakeholders)	Near miss or hit. Minor injury/illness requiring first aid treatment. Lost Time Injury less than 1 week. Remote visit/call out with potential risk of escalation.	Moderate injury/exposure requiring medical intervention/treatment. Lost time injury 1 week to 1 month. Remote visit/call out requiring police contact.	Health crisis/injury resulting in prolonged incapacity/absence or reversible disability. A safety event impacting on a number of patients. Lost time injury greater than 1 month. Remote visit /call out with direct threat.	Death or permanent disability. Physical attack during remote visit/call out. Severe physical security or terrorism event.
Clinical Risk (Includes clinical risk and safety & quality)	Minimal harm unrelated to the person's natural course of illness. Increased level of care required.	Moderate harm unrelated to the person's natural course of illness with no loss or reduced function. A higher level of care or observation required.	Significant harm unrelated to the person's natural cause of illness with loss/reduced function and differing from expected outcome of patient management.	Unexpected death/permanent disability unrelated to the person's natural course of illness. All Sentinel events/Critical Incidents to be rated Very High (Severe in Risk Man)

2 - Likelihood (Chance / Frequency of an Event Happening)

	Descriptor	Description
1	Unlikely	Unlikely to occur or event expected to occur once in the next 12 months.
2	Possible	May occur infrequently or event expected to occur in the next 6 months.
3	Likely	May occur within a short timeframe, or event could occur within a month.
4	Almost Certain	Expected to occur within 1-2 weeks or has already occurred.

5 - Risk Response

Tolerance	Risk Response	Definition
If tolerable	Tolerate	Management have no undue concern with the current level of risk and no further action is required. The risk is tolerated.
If intolerable	Treat	Management is uncomfortable with the current risk level, however risk treatment actions can be implemented to reduce the risk to a tolerable level.
	Transfer	Management plan to transfer the risk to another party (e.g. outsource by contract or obtain insurance)
	Terminate	Management is uncomfortable with the current risk level and no risk treatment actions can be implemented to reduce the risk to an acceptable level. The activities leading to the risk are terminated.

4 – Risk Priority, Ownership and Monitoring

Descriptors	Low	Medium	High	Very High
Tolerance guidance	All risks in this category are tolerable except in certain circumstances.	Most risks in the category are tolerable except in certain circumstances.	Most risks in this category are tolerable unless the risk is considered intolerable by the risk owner.	Risks in the category are intolerable unless otherwise stated (e.g. as a systemic risk) by a Senior Executive or the Chief Executive.
Escalation (new risks)	Branch/Function Manager as soon as practicable	Branch/Function Manager as soon as practicable	Director/Executive as soon as practicable.	Senior Executive within five working day for decision if escalation to Chief Executive is required.
Risk Ownership	Branch/Function Manager	Branch/Function Manager	Director/Executive	Senior Executive
Treatment plan	N/A	Optional	Optional unless intolerable	Mandatory
Monitoring/Reporting frequency	Annually or as required	Annually or as required	Quarterly or as required	Monthly or as required
Oversight	Branch/Function Manager	Branch/Function Manager	Division Heads and Sub-Committees	Senior Executive Committee NT Health Leadership Committee Governance & Assurance Committee

3 - Risk Rating (Consequence and Likelihood)

Likelihood	A- Minor	B- Moderate	C- Major	D-Severe
Almost Certain (4)	Medium (4 or 4A)	High (8 or 4B)	Very High (12 or 4C)	Very High (16 or 4D)
Likely (3)	Low (3 or 3A)	Medium (6 or 3B)	High (9 or 3C)	Very High (12 or 3D)
Possible (2)	Low (2 or 2A)	Medium (4 or 2B)	Medium (6 or 2C)	High (8 or 2D)
Unlikely (1)	Low (1 or 1A)	Low (2 or 1B)	Low (3 or 1C)	Medium (4 or 1D)

DEPARTMENT OF HEALTH April 2021

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9.2. Data Risk assessment matrix

CLINICAL DATA RISK ANALYSIS TOOL 1-LIKELIHOOD

Matrix for Clinical Data Risk Likelihood

Likelihood of Clinical Information Causing Incident	Almost Certain	Likely	Possible	Unlikely
Proximity	A known use of the data is highly likely to lead to an accident.	A possible use of the data could lead to an accident.	A use of the data could lead to harm only if controls are ineffective.	All currently foreseen uses of the data could lead to harm only via lengthy and indirect routes.
Dependency	Data is completely relied upon	Data is indirectly relied upon	There are secondary data sources	Little reliance on data
Detection	Low or no chance of anything else detecting an error	Some other people / systems are involved in checking the data	Detection is likely through use of the data	Many other people / systems are involved in checking the data
Prevention	Difficult or impossible to guard / barrier against errors	Possible to guard / barrier against errors	Some difficulty to guard / barrier against error	Easy to guard / barrier against error
Correction	Difficult or impossible to correct or workaround errors	Possible to correct or workaround errors	Moderate difficulty to correct or workaround errors	Easy to correct or workaround errors

	Descriptor	Description
1	Unlikely	Unlikely to occur or event expected to occur once in the next 12 months.
2	Possible	May occur infrequently or event expected to occur in the next 3 months.
3	Likely	May occur within a short timeframe, or event could occur within a month
4	Almost Certain	Expected to occur within 1-2 weeks or has already occurred.

CLINICAL DATA RISK ANALYSIS TOOL 4-RISK PRIORITY, OWNERSHIP AND MONITORING

Descriptors	Low	Medium	High	Very High
Tolerance guidance	All risks in this category are tolerable except in certain circumstances.	Most risks in the category are tolerable except in certain circumstances.	Most risks in this category are tolerable unless the risk is considered intolerable by the risk owner.	Risks in the category are intolerable unless otherwise stated (e.g. as a systemic risk) by a Senior Executive or the Chief Executive.
Escalation (new risks)	Branch/Function Manager as soon as practicable	Branch/Function Manager as soon as practicable	Director/Executive as soon as practicable.	Senior Executive within five working day for decision if escalation to Chief Executive is required.
Risk Ownership	Branch/Function Manager	Branch/Function Manager	Director/Executive	Senior Executive
Treatment plan	N/A	Optional	Optional unless intolerable	Mandatory
Monitoring/Reporting frequency	Annually or as required	Annually or as required	Quarterly or as required	Monthly or as required
Oversight	Branch/Function Manager	Branch/Function Manager	Division Heads and Sub-Committees	Senior Executive Committee NT Health Leadership Committee Governance & Assurance Committee

10. Appendix 4 – Reference and policy documents

Ref	title	Author	link
1	CCSRP. Clinical Safety Management Plan (2021),	Dave Wallace (CSO-CCSRP)	https://epsprojects.nt.gov.au/confluence/pages/viewpage.action?spaceKey=CCSRP&title=Acacia+Clinical+Safety&preview=/44241665/92542043/Clinical%20Safety%20Management%20Plan%20v.07.docx
2	CCSRP. Clinical Safety Approach (2021)	Dave Wallace (CSO-CCSRP)	https://epsprojects.nt.gov.au/confluence/pages/viewpage.action?spaceKey=CCSRP&title=Acacia+Clinical+Safety&preview=/44241665/92542042/Patient%20Safety%20-%20Management%20Approach%20v.05.docx
3	DCB0160: Clinical Risk Management: It's Application in The Deployment and Use of Health IT Systems-Implementation Guidance, UK standard v4.2	UK Standards-NHS Digital	DCB0160
4	On the importance of systems thinking when using the ALARP principle for risk management. Reliability Engineering & System Safety	Langdalen, H., Abrahamsen, E.B., Selvik, J.T. (2020)	10.1016/j.ress.2020.107222
5	DCB0129: Clinical Risk Management: its Application in the Manufacture of Health IT Systems-Implementation Guidance, UK Standard v3.2	UK Standards-NHS Digital	DCB0129
6	NT Health Clinical Information Systems safety Management Procedure	John Shanks –Chief Health Officer	NT Health Clinical Information Systems Safety Management Procedure
7	NT Health Risk Management Guidelines	Yvonne Sundmark Director Risk Management & Audit	NT Health Risk Management Guidelines
8	NT Health Clinical Information Systems Governance Framework	John Shanks-Chief Health Officer	NT Health Clinical Information Systems Governance Framework
9	NT Health Risk Assessment Matrix	NT Department of Health	NT Health Risk Assessment Guide (Matrix)
10	Assuring Patient Safety in Relation to E-Health Systems and Applications. A Professional Practice. Part A: Information Paper	Health Informatics Society of Australia, 2016	
11	ICT Patient Safety Risk Assessment PSRA Guide for ICT Projects.	WA Health, 2023,	WA Health risk assessment ICT
12	Health Information Systems: Managing Clinical Risk	Stavert-Dobson, Adrian., 2016	
13	Methods for Addressing Technology-induced Errors: The Current State.	Borycki E, Dexheimer JW, Hullin Lucay Cossio C, Gong Y, Jensen S, Kaipio J, Kennebeck S, Kirkendall E, Kushniruk AW, Kuziemsky C, Marcilly R, Röhrig R, Saranto K, Senathirajah Y, Weber J, Takeda H.	Yearb Med Inform. 2016 Nov 10;(1):30-40. doi: 10.15265/IY-2016-029. PMID: 27830228; PMCID: PMC5171580.
13	Risk Analysis in Healthcare Organizations: Methodological Framework and Critical Variables	Pascarella, Giacomo & Rossi, Matteo & Montella, Emma & Capasso, Arturo & Feo, Gianfranco & Botti, Gerardo & Nardone, Antonio & Montuori, Paolo & Triassi, Maria & D'Auria, Stefania & Morabito, Alessandro. (2021).	Risk Management and Healthcare Policy. Volume 14. 2897-2911. 10.2147/RMHP.S309098.
14	Trends in Health Information Technology Safety: From Technology-Induced Errors to Current Approaches for Ensuring Technology Safety.	Borycki, E. 2013	Healthcare Information Resources 2013 Jun;19(2):69-78. Retrieved from http://synapse.koreamed.org/Synapse/Data/PDFData/1088HIR/hir-19-69.pdf.