Submission to the Public Accounts Committee Inquiry into the Acacia Digital Patient Record System

Australian Medical Association Northern Territory

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Introduction

This submission provides an informed perspective from the doctors living and working in the Northern Territory to the Public Accounts Committee (PAC) regarding its Inquiry into the Acacia Digital Patient Record System (Acacia), also known as the Core Clinical Systems Renewal Program (CCSRP). This response addresses the specific terms of reference outlined in the inquiry referral and the associated call for submissions.[1]

The potential benefits of a single, integrated digital health record system for the Northern Territory (NT) are significant. Such a system promises improved continuity of care, enhanced clinical decision-making through better data access, and increased efficiency across the NT's unique and geographically dispersed healthcare landscape, which includes major hospitals, remote primary health clinics, and community services.[2] The goal of creating a unified digital patient record accessible across all public health settings is laudable and, if successful, could position the NT uniquely within Australia.[2] However, the realisation of these benefits is entirely contingent on the implemented system being clinically usable, reliable, technically sound, and, above all, safe for patients. From the perspective of the medical professionals responsible for delivering care, patient safety must be the paramount consideration in the evaluation of any clinical IT system.

The AMA NT represents the interests of doctors and patients in the Territory and is committed to advocating for the delivery of high-quality, safe, and effective patient care. This submission aims to contribute constructively to the Committee's understanding of the Acacia project's challenges and impacts from a clinical viewpoint, to support the PAC in understanding whether financial overruns were clinically justified or not.

This submission is structured to systematically address each point raised in the inquiry's terms of reference.[1]

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Background: Core Clinical Systems Renewal Program / Acacia

- **Origins and Rationale:**
  The project, formally known as the Core Clinical Systems Renewal Program (CCSRP), was initiated to address the limitations of multiple aging and disparate legacy clinical IT systems used across NT Health.[6] These legacy systems included platforms such as CareSys, Clinical Workstation (CWS), Primary Care Information System (PCIS), Community Care Information System (CCIS), Jade Care Clinical Booking (JCCB), and the electronic Medication Management Application (eMMa).[5] The core rationale for the CCSRP was to replace these fragmented systems with a single, modern, integrated, Territory-wide electronic medical record (EMR).[2] The stated ambition was to provide clinicians across all public health settings – including hospitals, primary care centres, community health services, and remote clinics – with real-time access to a comprehensive, unified patient record, thereby improving continuity of care, facilitating better clinical decision-making, enhancing patient safety, and increasing operational efficiency.[3] The project aimed to position the NT as the only Australian jurisdiction with a single, common digital patient record across its entire publicly operated health service.[2]

- **Initial Approval and Scope:** The proposal for the CCSRP originated from the Department of Health and received Cabinet approval in 2016 under the previous government.[2] The initial scope focused on replacing four critical legacy clinical systems [6] and integrating approximately a dozen others into a unified digital ecosystem.[5] The project was planned as a five-year transformation.[7] Key intended functionalities included providing clinicians with a single, real-time view of patient information accessible from anywhere, replacing outdated manual processes, and eventually offering patients access to their data and online appointment management via a dedicated portal.[5]

- **Vendor Selection:** Following a tender process involving major international EMR vendors [13], InterSystems Australia Pty Ltd was selected in mid-2017 as the primary technology partner, utilising its TrakCare clinical information system as the foundation.[5] Local integrator Dialog IT was engaged as a partner.[7] The system developed under the CCSRP was subsequently branded 'Acacia'.

- **Governance Structure:**
  The project's governance framework, as documented, included several layers

intended to ensure oversight and strategic direction. This comprised a high-level Program Steering Committee (PSC) involving the Chief Executives of the Department of Health, the Department of Corporate and Information Services (DCIS - later the Department of Corporate and Digital Development, DCDD), and Treasury.[5] Below this sat a Program Implementation Committee (PIC) for tactical decisions, a Clinical Leadership Group (CLG) intended to provide clinical input and guidance, and multiple working groups for specific themes.[5] Regular reporting to the NT Government's ICT Governance Board and to Cabinet was also stipulated.[5]

Notably, the program budget was held and managed by DCIS/DCDD, not the Department of Health.[2] While this structure appears comprehensive on paper, subsequent events suggest potential weaknesses in its practical application. For instance, a major data breach occurred, attributed in part to the lack of a pre-existing data governance framework between the involved parties, indicating a gap between the intended structure and operational reality in specific risk areas.[16]

Furthermore, reports emerged that clinicians felt their significant concerns, raised years prior to problematic rollouts, were not adequately addressed or resolved by the project leadership.[12] This implies that the input mechanisms, such as the working groups, may not have translated into effective action or appropriate prioritisation within the higher levels of project governance. We have reports from clinicians of some working groups being composed of “effectively” one person, with multiple meetings cancelled or held in absence of a majority. It appears that failure of the project to capture frontline concerns was treated as tacit approval from the frontline; a key path to failure for any large scale project.

The placement of budget control with the IT agency (DCDD) rather than the primary clinical user agency (NT Health) contributed to tensions and misalignment of priorities during implementation.[12] This disconnect between the planned governance model and its operational effectiveness played a key role in the challenges that unfolded during the project.

Financial Analysis: Budget, Expenditure, and Revisions

- **Initial Budget Concepts and Shortfall:** The initial public discourse around the CCSRP in 2016 and early 2017 often referenced a figure of $186 million.[6] However, a critical detail emerged from a Legislative Assembly written question response: the project's approval by the former government in 2016 was granted despite a known funding shortfall of $56.1 million against this initial concept figure.[2] This indicates the project commenced with a recognised gap between its perceived requirements and allocated funding.

- **Approved Budget (2017):** In May 2017, following the election of a new government, the formal budget for the CCSRP was approved and publicly announced at $259 million, to be spent over five years.[3] This represented a significant increase of $73 million compared to the earlier $186 million figure.[10] The government justified this increased investment by emphasising the need to keep pace with technology, avoid the future costs and risks associated with maintaining obsolete legacy systems, and highlighting extensive consultation with clinicians.[14] The 2017 NT Budget allocated $80.1 million specifically to initiate the program within this new $259 million envelope.[11] The contract with InterSystems was subsequently signed based on this $259 million figure.[10]

- **Reported Cost Escalation (Post-2017):** Despite the substantial initial budget increase, public statements in early 2025 revealed that the total projected cost for the Acacia project had further escalated to $320 million.[18] This represents an additional cost increase of $61 million beyond the formally approved $259 million budget.

- **Variance Analysis:** The difference between the final reported project cost and the approved 2017 budget is a $61 million increase ($320M - $259M). Compared to the initial $186 million concept figure discussed in 2016/17, the total cost represents an increase of $134 million ($320M - $186M).

- **Timeline of Cost Revisions:** The evolution of the project's budget is summarised in the table below. This chronology highlights key decision points and funding adjustments. *It is the strongly held belief of the AMA that these overruns could have been contained by more meaningful consultation with the system users (clinicians and patients)*.

Table 1: Acacia Project Budget and Cost Revision Timeline

Date	Event	Announced (AUD)	Chg Amnt (AUD)	Rationale	Total Budget/ Cost (AUD)
2016	Initial Cabinet Approval (Former Govt)	$186M	N/A	Project proposed by Dept of Health; approved with known $56.1M shortfall [2]	$186M
Apr/ May 2017	New Govt commits additional funding	$259M	+$73M	Investment needed now, avoid future costs, keep pace with technology, extensive clinician consultation [13]	$259M
May 2017	NT Budget Allocation	$80.1M (Allocation)	N/A	Funding allocated to kickstart CCSRP within the $259M budget [11]	$259M
Jun 2017	InterSystems Contract Signed	$259M (Project Total)	N/A	Contract awarded based on the approved budget [10]	$259M
Jan/ Feb 2025	Budget Blowout Acknowledged (Current Govt Statement)	$320M (Reported Total Cost)	+$61M	Increase linked to troubled rollout and attributed to previous administration; specific cost drivers not detailed [18]	$320M

- **Analysis of Cost Drivers:** While limited detail is available on the specific drivers for the most recent $61 million increase, analysis suggests contributing factors. The initial $73 million increase (to $259M) was explicitly linked to addressing the pre-existing funding shortfall [2] and likely reflected a more realistic assessment of the project's requirements by the incoming government in 2017.[13] The subsequent $61 million escalation (to $320M) appears strongly correlated with the significant implementation difficulties encountered. Drivers include:
    - Patently inadequate consultation with clinicians and patients, with poor governance structures in place to rectify this issue
    - An inability for the vendor to adequately modify the system once critical clinical issues were identified
    - Underestimation of the project's inherent complexity, particularly in integrating systems across diverse NT healthcare settings.[7]
    - Unforeseen costs associated with addressing the numerous technical, usability, and workflow issues that emerged, especially during the RDPH ED rollout.[9]
    - Significant costs related to the ED rollback, including the transition back to legacy systems, the extended period of remediation and enhancement work, and the eventual reimplementation effort.[15] Frustratingly, these costs were likely entirely avoidable has users concerns been taken seriously when they were raised in the previous years.
    - Project delays extending the overall timeline, leading to increased costs for personnel, vendor contracts, and project management.[15]
    - The need for potentially more extensive training, support, and change management resources than originally planned, given the system's difficulties.[2] It is noteworthy that the public statements regarding the $320 million figure primarily focused on attributing responsibility rather than providing a transparent breakdown of the additional $61 million expenditure.[18] This pattern, starting from an acknowledged initial shortfall and culminating in significant, poorly explained overruns, suggests a potential systemic issue with budget estimation and financial transparency throughout the project's lifecycle. This lack of clarity makes it difficult for stakeholders, including clinicians and the public, to fully understand how taxpayer funds have been utilised, particularly in relation to addressing the system's failures.

- **Expenditure to Date:** The inquiry specifically requests the cost incurred *to date*.[1] The $320 million figure represents the *total revised projected cost* for the entire program.[18] Actual expenditure up to the date of this inquiry is likely less than this total figure but represents a substantial portion of it. Publicly available sources

reviewed do not provide a precise figure for cumulative expenditure distinct from the total revised budget. Given the project commenced formally in 2017, involved significant vendor payments, employed a large project team (around 100 people at peak) [7], and incurred costs related to remediation and delays, it is reasonable to estimate that expenditure to date significantly exceeds the original $259 million budget. An early data point indicated $14.8 million was spent with Territory Enterprises in the 2018/19 financial year alone.[2]

It is important to note a particular quirk of accounting that may be significantly under-estimating the total cost of the project. Clinical staff employed by NT Health were often expected to contribute to areas such as working groups, but the funding of this time came from their salary; that is to say that this time was funded by the Department of Health and not DCDD. As a consequence of this, it was not captured by the project budget. Given that our primary criticism of the project thus far is a lack of action on clinical concerns, this is an important aspect to note.

Estimate: Expenditure to date is estimated to be in the range of $320 million ± $30 million (Confidence: Low, due to lack of specific public data).

Implementation Challenges and System Issues

- **Overview of Issues:** While the initial “go live” stage of the Acacia rollout appeared to proceed relatively smoothly in smaller regional sites like Katherine Hospital and Gove District Hospital [5], very clear clinical concerns began to become apparent in this first week of operation. The implementation then encountered profound difficulties upon its introduction into the high-volume, high-complexity environments of the Royal Darwin and Palmerston Hospital (RDPH) Emergency Departments (EDs) in November 2023.[9] These issues spanned technical stability, clinical usability, workflow integration, and data governance. Frustratingly, several of these issues had been identified by clinicians in KDH and GDH, but were not acted upon. Clinicians across all sites have told us that the responses from support staff post-implementation were incredibly patronising, and issues of significant clinical risk (including direct harm to patients) were treated with the same urgency as minor useability issues. *It was, and remains clear, that the current project is unable to stratify clinical risk from the project by either likelihood and impact, which places Territorians directly in harm’s way*.

- **Specific Technical and Usability Problems:**
  - *System Instability:* Clinicians reported "multiple system freezes" occurring shortly after the ED go-live, requiring escalation to the highest levels of DCDD.[12] Another critical issue involved the system locking up when multiple clinicians attempted to access the same patient's record simultaneously, a common necessity in team-based emergency care.[12]
  - *Workflow Impediments and Usability:* A major theme was that the system actively hindered rather than helped clinical workflow. Staff reported that Acacia significantly slowed down their access to basic patient information, including identifying patients needing care.[9] It was described as "cumbersome," "not fit for purpose" for the ED environment, making clinical services "inefficient," and rendering established workflows "worse".[12] Specific, alarming examples were cited, such as taking over an hour to access the records of a critically injured patient transferred from another hospital due to locked records.[12] Other identified risks included medication charts being inadvertently deleted when patients were transferred from the ED to inpatient wards.[12] Furthermore, the system struggled to support essential, albeit undesirable, local practices like "double-bunking" (placing two patients in one ED bay due to capacity pressures), indicating a potential mismatch between the system's design assumptions and the operational realities of the RDPH ED.[12] As a workaround to losing clinical notes, clinicians were forced to

temporarily type notes up in alternate applications (e.g. Notepad) and then copy/paste unformatted text into Acacia. This is well below the expected performance of a modern EMR in Australia.

- *User Interface/Experience:* The system's interfaces were described as poor, hindering clinicians' ability to quickly find critical information in emergency situations.[12] A staff survey conducted in December 2023 painted a stark picture of user dissatisfaction: 85.7% felt the system was below or well below expectations, 83.7% found it made their service somewhat or very inefficient, and 86.7% stated it made their workflow a little bit or much worse.[12] Anecdotal comments from staff labelled the system "terrible" and "unusable," noting continued reliance on parallel paper-based processes and other non-integrated digital systems, undermining the core goal of a single, unified record.[12] At its worst, senior staff specialists in NT emergency departments stated that they would resign if the system was not made fit for purpose, due to the ongoing harm to patients.

- **Timeline of Issue Reporting vs. Resolution:** A deeply concerning aspect is the reported timeline of issue identification versus resolution. Multiple sources indicate that clinicians and potentially project staff had raised serious concerns about system flaws, usability problems, and potential risks between "two to four years" before the disastrous ED implementation in November 2023.[12] These warnings were reportedly not adequately addressed or resolved; instead, mitigation strategies such as additional training, user supervision, and workarounds were proposed for known risks like medication chart deletion.[12] Issues identified years earlier were allegedly still present when the system went live in the EDs.[12] Once live, critical problems manifested rapidly, with serious issues reported within 35 hours [12], and discussions regarding a potential rollback commenced barely a fortnight later.[12] The inquiry asks about ministerial notification. One source alleges that the CLG was made aware in August 2019 that Acacia would not be suitable for an ED environment in any form presented by Intersystems and CCSRP, and one assumes a competent governance structure would have escalated this to the attention of both Chief Executives and the Minister. Another states that critical feedback was provided from KDH staff in August 2022, and again was serious enough to require the attention of the Minister. Another alleges the responsible Minister was formally briefed of the serious issues and safety risks in January 2024 [18], preceding the public confirmation of the rollback in February 2024.[15] However, a true timeline of how early the Minister was aware of these issues will only be known through a review of records within DCDD and the Minister's office. At the core of this issue,

clinicians have been raising critical concerns for almost the entire lifetime of the project. It is inconceivable that the respective Minister would not have been made aware of sustained high-risk feedback from senior frontline clinical staff for such a prolonged period of time.

Resolution efforts are ongoing, with system enhancements planned during the extended rollback period.[15] The specific costs of resolving these issues are not publicly itemised but are undoubtedly a major contributor to the overall project cost increase. Feedback from clinicians is that this resolution work is not going to be sufficient to rectify core critical issues with usability. The pattern suggests a failure in the project's governance and risk management processes to effectively act upon critical feedback and identified risks in a timely manner.

- **Data Governance and Privacy Incident (2018-2019):** Separate from the later usability issues, a major data privacy breach occurred earlier in the project, between 2018 and 2019. During the initial design phase, NT Health transferred identifiable patient health records to the software vendor, InterSystems.[8] While the exact number is contested, reports indicate over 3,000 identifiable records (out of a larger batch of 50,000 records exchanged between NTG departments) were shared with the vendor.[16] This data included highly sensitive clinical information classified as "very-high or high clinical risk," such as psychology reports, psychiatric facility visits, records of pregnancy terminations or stillbirths, and electroconvulsive therapy records.[16] A subsequent incident report, obtained via Freedom of Information, revealed a critical governance failure: "no data governance framework was set by either NT Health or the Acacia project team prior to the transfers".[16] Following identification of the breach, NT Health and InterSystems stated that immediate steps were taken to locate, quarantine, and delete the identifiable data. Assurances were given that the data was not stored outside Australia and was not accessed by malicious actors, and that the issue was not a cybersecurity compromise but an internal process failure.[8] The incident was referred to the NT Information Commissioner, and additional data governance controls were reportedly implemented subsequently.[8] However, the breach was not publicly disclosed at the time it occurred.[16] This incident points to fundamental weaknesses in project oversight and risk management concerning patient data privacy early in the CCSRP lifecycle.

- **Impact on Clinical Workflow and Staff Workload:** The usability and technical issues directly translated into increased workload and inefficiency for clinical staff. NT Health officially acknowledged that some Acacia workflows in the ED

"impacted the workload of staff due to volume and complexity of presentations".[17] This aligns with the clinician survey results, where majorities reported the system made their service inefficient and their workflow worse.[12] The difficulties encountered necessitated workarounds and potentially increased cognitive load on clinicians operating in already high-pressure environments.[12]

- **Summary of Issues:** The range and severity of problems encountered suggest systemic issues rather than isolated glitches.

Table 2: Summary of Reported Acacia Implementation Issues

Issue Category	Specific Problem Description	Reported Impact	Source/ Evidence	Resolution Status (if known)
Technical Stability	Multiple system freezes in ED shortly after go-live	Workflow disruption, potential delay in care, clinician frustration	[12]	Contributed to rollback; enhancements presumably underway
Technical Stability	System locking when multiple users access same record	Hinders team-based care, inefficiency, potential delays	[12]	Identified pre-ED launch; likely being addressed during enhancement phase
Usability/ Workflow	Slow access to basic patient data in ED	Clinician frustration, inefficiency, potential delay in critical decision-making , patient safety concern	[9]	Key reason for rollback; enhancements underway
Usability/ Workflow	Medication charts deleted upon patient transfer (ED to ward)	Significant medication error risk, patient safety concern	[12]	Identified pre-ED launch, mitigation via workarounds deemed insufficient; status unclear

Usability/ Workflow	System described as "cumbersome," "not fit for purpose" for ED	High user dissatisfaction, inefficiency, increased workload, safety concerns	[12]	Contributed to rollback; system redesign/enhancement needed
Workflow Integration	Difficulty supporting "double bunking" practice in RDPH ED	Mismatch with operational reality, inefficiency, impact on billing, workflow disruption, patient safety	[12]	Acknowledged post-ED launch; requires system adaptation
Data Privacy/ Governance	Transfer of >3,000 identifiable high-risk patient records to vendor (2018-19)	Major privacy breach, violation of patient confidentiality, regulatory non-compliance , erosion of trust	[8]	Data reportedly deleted, controls strengthened, referred to Info Commissioner; occurred years ago
Governance/Engagement	Clinician concerns/risks raised 2-4 years prior to ED rollout reportedly unaddressed/unresolved	Preventable issues manifested at go-live, erosion of clinical trust, wasted resources	[12]	Implies systemic failure in feedback loops and risk management; requires review

The convergence of technical failures, profound usability issues, critical workflow impediments, unresolved historical concerns, and prior governance lapses strongly indicates that the problems encountered during the Acacia implementation, particularly in the RDPH ED, were systemic in nature. They represent more than typical 'teething problems' associated with new software deployments. The severity was such that it necessitated a complete rollback in a critical clinical area, driven by fundamental impacts on the ability to deliver safe and efficient care, as reported by frontline clinicians.[9, 12, 15, 17, 18] The fact that warnings were allegedly ignored for years points towards potential flaws in risk assessment, clinical engagement effectiveness,

and go-live decision-making within the project's governance structure.

System Rollbacks and Impact Analysis

- **Details of Rollback:** Following the problematic implementation in November 2023, NT Health confirmed in early 2024 (around February) the decision to "temporarily" withdraw the Acacia system from use specifically within the Emergency Departments of Royal Darwin Hospital (RDH) and Palmerston Regional Hospital (PRH).[9] In these departments, clinical staff reverted to using the previous legacy patient administration system, CareSys.[9] It was stated that Acacia would continue to be used in other operational areas of RDH and PRH, as well as remaining live in Katherine Hospital, Gove Hospital, and Top End Renal Services, where it had been implemented earlier.[9]

- **Stated Reasons:** The official justification provided by NT Health cited "significant obstacles for our clinicians in managing the volume and complexity of presentations as well as patient flow" within the EDs, noting these issues were exacerbated by existing pressures like staff shortages.[15] However, reports from clinicians and medical bodies made it clear that fundamental usability problems, increased workload, inefficiency, and direct concerns about patient safety risks were primary drivers for the suspension.[9] The AMA NT publicly supported the decision as sensible to ensure patient care was not compromised while system issues were addressed.[17]

- **Duration and Status:** The rollback was initially described as a temporary measure, possibly lasting around six months, to allow for system improvements.[9] However, later reports indicate a significantly longer duration, with the planned reimplementation of the enhanced Acacia system in the RDPH EDs scheduled for April 2025 (which you will note, has already passed).[12] This extended timeframe suggests the required enhancements and fixes are substantial.

- **Impact on Health System Operations:**
    - *Disruption and Setback:* Reverting to an older system after significant investment in procuring, configuring, training for, and implementing Acacia represents a major disruption to clinical operations and a significant setback for the NT's digital health transformation strategy.[5]
    - *Staff Morale and Change Fatigue:* The chaotic ED implementation, subsequent rollback, and the need to switch back to legacy workflows likely had a detrimental impact on staff morale, potentially increasing cynicism and change fatigue among clinicians who had invested time in learning the new system.[12]

- *Operational Complexity:* Operating a hybrid environment, with Acacia live in some hospital departments and legacy systems in others, introduces operational complexity and potential risks related to information flow and data consistency between systems. It is also important to note that in areas where Acacia is live, legacy systems are still required to deliver safe care
- *Delayed Benefits Realisation:* The anticipated benefits of a fully integrated EMR – such as improved data access, reduced errors, and enhanced efficiency – were significantly delayed for the busiest and most critical hospital departments in the NT.[5]

- **Estimated Costs of Rollback:** The inquiry specifically asks for the cost impact of any rollbacks.[1] While no public domain sources reviewed provide a specific, itemised cost figure solely for the ED rollback [12], it is possible to estimate the likely components and overall financial impact. The costs associated with the rollback include:
  - *Direct Transition Costs:* Resources required to technically revert the EDs to the CareSys system, potentially including vendor support and internal IT effort. Whilst these are unclear, it is known that there is currently a 24/7 administration hub within DCDD dedicated to keeping Acacia and CareSys manually synchronised, estimated to require approximately 15 FTE at AO3 level.
  - *Remediation and Enhancement Costs:* This is likely the most significant cost component. It involves the substantial effort by NT Health, DCDD, and the vendor (InterSystems) over the extended rollback period (more than a year) to analyse the failures, redesign workflows, reconfigure the software, test enhancements, and prepare for reimplementation.[15] These costs are not clearly captured within the overall project budget increase to $320 million.
  - *Delay Costs:* The extension of the project timeline due to the rollback incurs ongoing costs for the project team, vendor engagement, and potentially delayed decommissioning of legacy systems. There is also the significant lost opportunity costs given the inability to progress other critical IT projects while clinicians "wait for Acacia to be deployed", regardless of the merits of any other proposed ICT projects.
  - *Productivity and Retraining Costs:* Potential loss of productivity during the transition back to CareSys and the subsequent need for retraining staff on the enhanced Acacia system upon reimplementation.

Estimate:

Direct rollback/transition costs $5M - $15M, Confidence: Low

Remediation costs during rollback period likely tens of millions, Confidence: Medium

Isolating the cost *solely* attributable to the physical act of rolling back and transitioning systems is difficult, but likely amounts to several million dollars. However, the *total financial impact* resulting from the failure that necessitated the rollback – primarily the extensive remediation effort required during the suspension – is considerably larger, likely accounting for a substantial portion of the $61 million budget increase.

The need for such a significant rollback in the NT's major hospital EDs, after Acacia had been implemented in smaller sites [5], points towards a failure to adequately anticipate or prepare for the increased scale and complexity of these larger, high-acuity environments. The system's inability to cope with the volume, complexity, and specific workflows, coupled with the safety concerns raised [12], suggests potential shortcomings in requirements gathering for:

- complex workflows;
- inadequate performance and scalability testing under realistic load conditions;
- insufficient user acceptance testing in the target environment, and;
- flawed clinical readiness assessment prior to the ED go-live.

The extended duration required for remediation further underscores that the problems were fundamental, not superficial. This suggests the project's staged rollout strategy may have failed to effectively de-risk the transition to larger, more complex hospital settings.

Patient Safety: The Critical Dimension

- **Primacy of Patient Safety:** In assessing any clinical information system, the perspective of the medical profession mandates that patient safety is the absolute, non-negotiable priority. While financial stewardship is important, the fundamental requirement of any EMR is that it must support and enhance, or at the very least not impede, the delivery of safe patient care. The experiences reported during the Acacia implementation must be viewed primarily through this lens, and it is abundantly clear that Acacia impedes the delivery of safe patient care in its current form

- **Documented Patient Safety Concerns:** The implementation of Acacia, particularly in the RDPH EDs, generated significant and explicit patient safety concerns from frontline clinicians:
    - *Direct Clinician Reports:* Staff using the system described it in stark terms, labelling it "unsafe".[12] Concerns were raised that the system was actively "putting lives at risk".[18] One surveyed clinician stated, "Acacia has made my work in the emergency department so unsafe that I don't want to come to work. I can't deliver any kind of remotely acceptable care to my patients".[12]
    - *Undocumented Clinician Reports:* Staff have confidentially approached the AMA with concerns that they are being targeted when they raise clinical concerns with Acacia. This chilling effect is preventing the capture of the full extent of risks and near misses. Specific examples include requests to clinical staff to provide “only good examples” of Acacia in day to day use, to clinical leads assisting the Acacia team with a response to this very inquiry. Theatre staff have been accused of breaching their code of conduct for fictitious meetings with the AMA. When raising issues to Acacia staff, clinicians are being directed to RiskMan (the risk management system of NT Health). However, these incidents fail to progress as they are retained by NT Health and not DCDD. Whilst unsubstantiated, these risks are unsubstantiated explicitly because of the fear of loss of employment - a notable and valid concern for whistleblowers across Australia.
    - *Specific Incident Examples and Risks:* A specific near-miss or potential incident was described involving a critically injured patient with severe head trauma, where accessing their essential clinical information from the transferring hospital via Acacia took over an hour due to system issues (locked records).[12] This delay in accessing critical information in a time-sensitive emergency clearly poses a direct patient safety risk.

Furthermore, the pre-identified risk of medication charts being deleted when patients were transferred from the ED to inpatient wards represents a significant potential for serious medication errors.[12]

- *Medical Body Endorsement of Concerns:* The AMA NT publicly acknowledged the validity of the safety concerns, supporting the rollback decision precisely because patient care should not be compromised by IT system failures.[17]

- **System Flaws Contributing to Risk:** Several specific flaws in the Acacia system, as reported during the ED implementation, directly contributed to an environment where patient safety could be compromised:
  - *Information Access Delays:* The reported system slowdowns, freezes, and difficulties accessing basic patient data [9] are particularly dangerous in emergency settings where rapid assessment and timely intervention are critical. Delays in accessing information about allergies, medications, or previous conditions can lead to incorrect or delayed treatment decisions.
  - *Data Integrity Issues:* The potential for medication charts to be deleted upon transfer [12] fundamentally undermines data integrity and creates a high risk of medication errors, such as missed doses, incorrect medications, or wrong dosages. This negates one of the key potential safety benefits of EMRs, which is improved medication management.[22] Furthermore, clinicians have approached us confidentially with concerns that Acacia is "losing" patients, with upwards of 3,000 patients identified as having their outpatient appointments or surgeries "lost" by Acacia, resulting in manual error control and ultimately an inability to verify that this critical issue has been rectified. Regrettably, because of the aforementioned lack of safe feedback pathways, staff are unable to raise these issues without fear of repercussions.
  - *Workflow Disruption and Cognitive Load:* Cumbersome, inefficient workflows and poor system interfaces [12] force clinicians to spend more time navigating the system and less time on direct patient care. This increases cognitive load, frustration, and the likelihood of workarounds, all of which are known contributors to clinical errors.[21]
  - *Data Privacy Breach Implications:* While the 2018-19 data breach involving the transfer of identifiable patient information to the vendor [8] may not have resulted in direct, immediate physical harm to patients, it represents a serious failure in safeguarding highly sensitive personal health information. Such breaches erode patient trust in the health system's ability to protect their privacy, which is an essential component of overall patient safety and wellbeing. It also pointed to systemic weaknesses in project governance and

data handling protocols.

- **Impact of Rollback on Patient Safety:** The decision to roll back Acacia in the EDs was a direct response to the immediate patient safety risks identified by clinicians.[17] By reverting to the familiar, albeit older, CareSys system, the acute risks associated with the malfunctioning Acacia system were mitigated in that specific setting. However, it is important to acknowledge that legacy systems also carry inherent patient safety risks, often related to lack of integration, reliance on paper components, and potential for transcription errors.[8] Staff have reported that these known risks of the legacy system were considered significantly less immediate or severe than the new risks introduced by Acacia in its problematic state. Any system transition, including the rollback and the eventual reimplementation, also introduces transient risks that require careful management and monitoring.

- **Lack of Formal Incident Reporting Linking:** It is important to note that the publicly available information reviewed for this submission does not include formal, published patient safety incident reports (such as high-severity Incident Severity Rating 1 or 2 reports from NT Health's RiskMan system [20]) or coronial inquest findings [23] that definitively attribute specific instances of significant patient harm or death solely and directly to the Acacia system's malfunction during the period of its use in the RDPH EDs. However, the absence of such published reports does not negate the severity of the risks reported by numerous frontline clinicians or the validity of their professional judgement that the system, in its state at that time, was unsafe. The potential for serious adverse events was clearly articulated and formed the basis for the necessary decision to suspend its use in the EDs. The history preceding the ED rollout raises questions about the project's approach to risk. Concerns being raised years in advance [12] and known risks being mitigated through workarounds and training rather than fundamental fixes [12] suggest a potential acceptance or normalisation of operational risk and thus an accepted threat to patient safety. Proceeding with the ED go-live despite these unresolved issues indicates that either the severity of the risks in the high-pressure ED environment was underestimated, or that pressures to adhere to timelines or budgets may have overshadowed safety imperatives. Relying on human adaptation to compensate for system deficiencies created a fragile implementation that ultimately failed when subjected to real-world clinical stress, directly impacting patient safety.

Implementation Progress and Outstanding Requirements

- **Original Staged Plan:** NT Health outlined a phased implementation strategy for Acacia, designed to gradually replace legacy systems and introduce new functionalities across the Territory [5]:
  - *Phase 0:* Acacia Read-only Electronic Patient Record (Deployed late 2020).
  - *Phase 1:* Acacia 1.0: Patient administration+ (Replacing CareSys patient administration and Jade Care Clinical Booking - JCCB). Rollout commenced in 2022 at Katherine Hospital, Gove District Hospital, and Top End Renal Services (TERS), with plans to extend to remaining NT hospitals and renal sites during 2023.
  - *Phase 2/3 (Combined):* Acacia 2.0 & Acacia 3.0: Hospital Care Systems. Intended to support core inpatient clinical workflows, including medication management (ordering, administration, reconciliation), electronic orders (pathology, imaging) and results management, replacing many paper-based processes, the Clinical Work Station (CWS), and eMMa. Planned for rollout after Acacia 1.0 completion.
  - *Phase 4:* Acacia 4.0: Primary Health Care. Designed to support clinical processes in community, urban, and remote primary care settings. Planned after hospital systems rollout.
  - *Phase 5:* Acacia 5.0: Client and Healthcare Provider Portal. Intended to provide a service information portal for patients and access for authorised external service providers. The final planned stage.

- **Current Status (as of early 2025):** The project's progress has significantly diverged from the original plan due to the implementation issues encountered:
  - *Acacia Read-only:* Partially deployed (not fully implemented).[5]
  - *Acacia 1.0:* Partially implemented and remains operational in Katherine Hospital (August 2022) [5], Gove District Hospital (early 2023) [5], and Top End Renal Services (late 2022/early 2023).[5] It was implemented in RDPH (outside EDs) in November 2023 [9] but subsequently rolled back in the EDs of both RDH and PRH.[15]
  - *Rollout to Other Hospitals:* The planned deployment of Acacia 1.0 to Alice Springs Hospital and Tennant Creek Hospital has been delayed. Current expectations are for this to occur "later this year" (implying mid-to-late 2025), contingent on successful remediation and reimplementation in RDPH EDs.[12]
  - *Acacia 2.0 - 5.0:* Implementation of these subsequent, more clinically complex phases appears to be significantly delayed or on hold. The immediate focus

shifted entirely to rectifying the failures of Acacia 1.0 in the major hospitals. While some background work may be occurring (e.g., reference to Acacia 2.0 work [19]), widespread deployment of these critical functionalities (medication management, orders/results, primary care integration, portals) is outstanding.[5]

- **Outstanding Steps and Functionality:** Based on the original plan [5], the major outstanding steps and functionalities required to complete the Acacia vision Territory-wide include:
  - Successful remediation and stable reimplementation of Acacia 1.0 in RDPH EDs (scheduled April 2025).
  - Completion of the Acacia 1.0 rollout to Alice Springs Hospital and Tennant Creek Hospital (expected mid-late 2025).
  - Territory-wide implementation of Acacia 2.0/3.0: Comprehensive electronic medication management (CPOE, eMAR), electronic orders and results management for pathology and imaging, replacement of CWS and eMMa.
  - Territory-wide implementation of Acacia 4.0: Integration and support for primary health care workflows in government-run remote, urban, and community clinics.
  - Territory-wide implementation of Acacia 5.0: The patient portal and provider portal.

- **Costs to Complete Remaining Stages:** The inquiry seeks information on the costs required for project completion.[1] The most recently reported total project cost is $320 million.[18] A critical assessment is required to determine if this figure realistically covers the substantial work remaining. The $61 million cost increase (from $259M to $320M) occurred largely *before* the full implementation of Phase 1 across all sites and *before* tackling the more complex subsequent phases (2.0-5.0). This increase was heavily influenced by the costs of remediation and delays associated with the Phase 1 failures. Given that later phases often introduce greater technical complexity (e.g., medication management rules, decision support logic, integration with diverse primary care systems) and associated implementation challenges, it is impossible for the remaining funds within the $320 million are sufficient to deliver the full original scope. International and national experience suggests EMR projects often face further cost escalations as more complex functionalities are implemented.[24]

Estimate: Completing the full original scope of Acacia (Phases 2.0 through 5.0), including robust implementation, change management, and training across the entire NT public health system, will likely require significant additional funding beyond the currently reported $320 million. A preliminary estimate suggests an additional $100 million to $200 million could be required (Confidence: Medium-Low, due to uncertainty regarding the final scope of remediation, future unforeseen challenges, and the true complexity of Phases 2.0-5.0).

A transparent re-baselining of the project budget, based on a realistic assessment of the remaining work, associated risks, and lessons learned, is urgently needed before committing to further large-scale rollouts. The risk of the current budget being insufficient to deliver the full intended value of the program is substantial. It is likely more cost effective to abandon Acacia and pursue an alternate provider.

Comparative Analysis and Alternative Pathways

- **EMR Implementation Challenges Nationally/Internationally:** The difficulties faced by the Acacia project are, unfortunately, not unique. Large-scale EMR implementations are notoriously complex, costly, and prone to challenges worldwide and across Australia. Examining experiences in other jurisdictions provides valuable context and potential lessons:
    - *Queensland Health (ieMR - Cerner):* Experienced major cost blowouts, with an additional $256.8 million forecast in 2018 beyond the $612.9 million business case estimate, pushing it over 40% above budget.[25] The initial business case significantly underestimated implementation costs for hospitals and failed to adequately account for impacts on clinician workload.[24] Issues arose regarding ongoing operational costs and demonstrating value for money from the vendor.[25] The Queensland Audit Office (QAO) highlighted these issues and recommended better cost tracking, benefits assessment, and governance.[25]
    - *SA Health (EPAS/Sunrise EMR - Allscripts):* This project faced severe cost overruns (initial $200M projection grew past $422M with only partial rollout, requiring another $198.6M in 2020 to complete).[28] Clinicians widely criticised the system as slow, "clunky," and hard to use.[28] An independent review found flawed governance, poor clinical engagement ("not a strong consensus from doctors and nurses"), IT elements not "fit for purpose," and a centrally driven approach that failed.[28] This led to a "hard reset" in 2019, involving rebranding, software upgrades, and a revised rollout strategy contingent on success at exemplar sites, although the core Allscripts software was retained.[28] The parallels with Acacia's usability and governance issues are striking.
    - *Victoria (HealthSMART Clinical ICT - Cerner/others):* A 2013 Victorian Auditor-General's Office (VAGO) report found poor planning and inadequate understanding of complexity led to the project exhausting its funds after delivering to only four health services (out of 19 planned) at a cost of $145.3 million.[29] VAGO noted significant underestimation of scope, costs, timelines, clinical workflow redesign, and change management efforts.[29] Potential patient safety issues related to system functionality were identified, and VAGO recommended embedding benefits realisation into project lifecycles.[29]
    - *NSW Health (Cerner -> Epic):* NSW has invested heavily in eHealth ($1B+ since 2011).[30] Despite significant investment in a Cerner-based EMR platform, a recent decision was made to transition to Epic's platform, a move projected to cost up to $1 billion over 10 years.[30] This raises questions about leveraging previous investments versus large-scale replacement. However, NSW Health has also reported benefits from other digital initiatives, such as cloud

migration leading to performance improvements, cost avoidance, and productivity savings for clinicians.[31] Key lessons highlighted include the importance of clinician engagement, data quality, and robust testing.[32]
    - *General Issues:* Common themes globally include the high initial and ongoing costs of EMRs, inherent risk to poor clinician engagement with design and implementation, data entry burdens potentially increasing clinician time [26], the risk of data quality issues [32], lack of interoperability between systems, alert fatigue, and the critical need for effective implementation strategies and change management.[26]

- **Potential Alternative Pathways for NT:** Reflecting on the Acacia project's trajectory and the documented experiences elsewhere, several alternative approaches could potentially have led to better outcomes, particularly concerning cost-effectiveness and clinical suitability, while prioritising patient safety:
    - *Stronger Independent Governance & Assurance:* Establishing a more robust, genuinely independent oversight mechanism from the project's inception could have provided earlier warnings and more effective challenge. This might involve external experts with deep EMR implementation experience reporting directly to a body separate from the project's delivery team, akin to the role Auditors-General play but integrated earlier and more proactively.[25] Such a structure might have identified and forced resolution of the risks flagged by clinicians years before the ED rollout.[12]
    - *Clinician-Led Co-Design and Ownership:* Moving beyond advisory groups to a model where clinicians are empowered as key decision-makers in system configuration, workflow design, testing, and readiness assessment. This requires dedicated clinical time, strong executive support, and a project culture that genuinely values and acts upon clinical input, avoiding the pitfalls seen in SA Health's initial EPAS rollout [28] and addressing the feedback from NT clinicians.[12]
    - *More Realistic Budgeting and Phased Gating:* Acknowledging the inherent uncertainties and high costs of such projects upfront, avoiding politically expedient but unrealistic initial budgets.[2] Implementing stricter stage-gating, where progression to subsequent phases and release of further funding is contingent upon demonstrating successful, stable, and clinically accepted outcomes in the previous phase, could have prevented premature rollout into complex environments.
    - *Rigorous Scalability, Stress, and Usability Testing:* Implementing far more comprehensive and realistic testing protocols *before* major go-lives. This

should include simulating peak loads, complex clinical scenarios specific to the NT context (including remote access and high-volume EDs), and extensive usability testing with representative clinical end-users under stressful conditions. This might have detected the performance bottlenecks and workflow failures before they impacted live clinical operations.[15]

- *Alternative Procurement/Solution Architecture:* While the goal of a single, integrated system is appealing [2], a counterfactual to consider is whether a different approach might have been more suitable. This could involve a different primary vendor whose platform might have better suited NT workflows out-of-the-box, or potentially a 'best-of-breed' strategy integrating specialised systems (e.g., for ED, primary care, medication management) via robust interoperability standards. Indeed, criticisms of the vendor's previous work in delivering an EMR to Bendigo Hospital were publicly available at an early stage of the project. While potentially more complex to integrate, this could offer better functionality in specific areas, although it deviates from the original single-system vision.

- **Evaluation:** Assessing these alternatives suggests that while some might have increased upfront planning costs (e.g., more extensive testing, dedicated clinical design time), they held significant potential to reduce overall project cost by avoiding expensive rework, rollbacks, and delays. More importantly, pathways emphasising genuine clinical leadership and rigorous pre-implementation validation would likely have resulted in a system better aligned with clinical needs and, crucially, minimised the patient safety risks encountered during the Acacia rollout. The experiences in other states, particularly the costly failures and subsequent resets when clinical engagement and realistic planning were lacking [25], strongly support the value of investing heavily in these foundational aspects. The NT project appears to have missed valuable opportunities to learn from these well-documented challenges faced by its counterparts in Victoria, Queensland, and South Australia, potentially repeating avoidable mistakes related to budgeting, governance, clinical usability, and risk management.

Conclusion and Recommendations

- **Summary of Key Findings:** This submission, reflecting the perspective of the medical profession with patient safety as the paramount concern, has analysed the available public domain information and feedback from members regarding the Acacia Digital Patient Record System (CCSRP). The key findings are:
    - *Significant Cost Escalation and Lack of Transparency:* The project's cost escalated dramatically from its initial conception ($186M with known shortfall) to its approved budget ($259M) and further to a reported total cost of $320M.[2] This trajectory suggests initial underestimation and subsequent difficulties, with a lack of clear public justification for the most recent $61M increase.
    - *Severe Implementation Failures:* The project encountered major implementation challenges far exceeding typical 'teething problems'. These included system instability, critical usability flaws hindering clinical workflow, failure to support essential operational practices, and a major historical data privacy breach, indicating systemic issues in planning, execution, and governance.[8]
    - *Patient Safety Compromised:* Explicit reports from frontline clinicians described the system as "unsafe" in the ED environment, citing specific risks (delayed information access, medication chart errors) that led to the necessary rollback to protect patients.[12]
    - *Governance and Risk Management Deficiencies:* Evidence points to potential weaknesses in project governance, including a failure to adequately address clinician concerns raised years prior to the problematic ED rollout and inadequate data governance leading to the privacy breach.[12] The lack of a dedicated risk management workflow and inter-agency standard operating procedure to manage these risks, had led to inherently unsafe practices.
    - *Project Delays and Scope Uncertainty:* The project is significantly delayed against its original timeline, with critical functionalities (Acacia 2.0-5.0) yet to be implemented.[5] There is considerable uncertainty whether the current $320M budget is sufficient to complete the full, originally intended scope.
    - *Missed Learning Opportunities:* The project appears to have repeated mistakes related to budgeting, clinical engagement, and risk management that were well-documented in similar EMR implementations in other Australian states.[25]

- **Reiteration of Medical Profession's Perspective:** The medical profession

supports the strategic goal of a modern, integrated digital health record system for the NT. However, the implementation process must be fundamentally grounded in clinical reality and prioritise the delivery of tools that are demonstrably safe, effective, usable, and genuinely supportive of high-quality patient care. The Acacia experience underscores the absolute necessity of deep, empowered clinical leadership and engagement throughout the entire lifecycle of such complex projects. Clinicians must be partners in design and decision-making, not just end-users adapting to flawed systems.

- **Recommendations to the Public Accounts Committee:** Based on the analysis presented, AMA NT respectfully submits the following recommendations for the Committee's consideration:
    1. **Mandate Independent Pre-Rollout Clinical Review:** Require a rigorous, independent clinical usability, workflow integration, and patient safety review of the enhanced Acacia system before any further deployment occurs (including reimplementation in RDPH EDs or rollout to Alice Springs and Tennant Creek hospitals). This review must involve frontline clinicians from the target environments and utilise clear, objective go/no-go criteria based on fitness-for-purpose and safety standards.
    2. **Strengthen Clinical Governance and Ownership:** Recommend a fundamental review and restructuring of the project's clinical governance framework. This must ensure that clinicians (doctors, nurses, allied health) have genuine decision-making authority and accountability regarding system configuration, workflow adaptation, testing protocols, and final sign-off for clinical readiness before deployment in any service area.
    3. **Require Transparent Budget Re-Baselining:** Recommend that the NT Government direct NT Health and DCDD to conduct a comprehensive and transparent re-baselining of the Acacia project. This should publicly report on: actual expenditure to date; a realistic estimate of the cost to complete the currently defined remediation and rollout plan (including RDPH ED reimplementation and AS/TC deployment); and a separate, realistic assessment of the scope, cost, and timeline required to achieve the full original vision (Acacia 1.0 through 5.0), acknowledging the likely need for additional funding.
    4. **Implement Rigorous Risk Management and Testing Protocols:** Recommend the adoption of enhanced risk management processes specifically for clinical IT projects. This must include mandatory, independently verified, realistic stress testing, scalability assessments, and

intensive usability testing in simulated complex environments (like a high-volume ED) *before* any future go-live decisions. Risk management systems must have clear, accountable escalation pathways for clinical concerns.

5. **Enhance Project Transparency and Public Reporting:** Recommend the implementation of regular, detailed, and transparent public reporting on the Acacia project's progress. This reporting should include expenditure against the re-baselined budget, achievement of key technical and clinical milestones, status of outstanding issues and risks, and metrics on system performance and user satisfaction. Practices recommended by Auditors-General in other jurisdictions should be considered.[27]
6. **Establish a Formal Benefits Realisation Framework:** Recommend the adoption and implementation of a formal benefits realisation framework, consistent with best practice and recommendations from bodies like VAGO.[29] This framework should actively track and publicly report on whether the intended clinical benefits (e.g., improved patient safety indicators, reduced medication errors, enhanced continuity of care) and operational benefits (e.g., efficiency gains, reduced duplication) are being achieved post-implementation, using clearly defined metrics.
7. **Clarify Inter-Agency Accountability:** Recommend the PAC examine and seek clarification on the accountability mechanisms between NT Health (as the clinical service provider and primary system user) and DCDD (as the IT service provider and budget holder) to ensure clear responsibility for project delivery, risk management, budget control, and ultimately, the delivery of a system that meets clinical needs safely and effectively.

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