An Exploration of the Certified Health Informatician Australasia (CHIA) Participants Over 10 Years

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Abstract. An urgent global imperative is to ensure health workforces have a solid digital health capability to deliver consumer-centred services now and into the future. To address a lack of formal recognition of health informatics knowledge and skills in Australia, the Certified Health Informatician Australasian (CHIA) was launched ten years ago. In that time, 3125 CHIA candidates registered to have their capabilities assessed using a core set of health informatics competencies. This paper presents the demographic profile of people undertaking the examination and trend data of the pass rate over the decade, and identifies possible factors that may lead to higher achievement. Certifications such as CHIA are critical in the professionalisation of digital health specialists and health informatics.

Keywords. health informatics, digital health, certification, examination, digital health workforce.

1. Introduction

Certification examinations in health professions have long been established as a sound method for determining that an individual meets a minimal level of competency, typically assessed against a set of standards defined by a professional credentialing body [1-3]. The launch of several certification programs internationally in the discipline of health informatics and the need to address the lack of formal recognition of local knowledge and skills in this area was the impetus for the establishment of the Certified Health Informatician Australasia (CHIA) examination program [4-6]. Since the inception of CHIA, research has continued to identify the critical importance of including health informatics competencies within the education and training of specialist digital health roles and all healthcare professions more broadly [7-9].

The CHIA program was launched in 2013 as a 150-minute online examination comprising 104 multiple choice questions, with a pass requirement of 65% and a maximum of two attempts in an enrolment within 90 days of registration. A committee

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of academic and industry experts developed the question bank, based on the established set of core health informatics competencies, and subsequently met twice a year to review the existing question bank and formulate new questions reflective of developments in practice. In response to the increased workforce demand, due in part to the global COVID-19 pandemic escalating digital health options, the eligibility requirements were changed in September 2020 from three years of associated health experience to six months for those with a degree, and from five years of associated health experience to three cumulative years for participants with no degree. In 2022, the health informatics competencies were revised, and the CHIA examination expanded to 106 multiple choice questions. As CHIA surpasses its first decade, this paper presents an analysis of the participants, drawing conclusions about the cohort and the program evolution.

2. Methods

An analysis of all applicants who undertook a CHIA examination between 1 January 2014 and 31 December 2023 was undertaken. All de-identified applicant data for this period was extracted from the CHIA database. Other variables extracted for analysis included the date of registration, date of first and (if applicable) second attempt, score at each attempt, state/territory and (where not Australia) country of residence, professional background, and enrolment type (individual versus organisational). A descriptive analysis was undertaken to examine trends in the data over time.

3. Results

3.1. Demographics

The majority of the 3,125 CHIA participants were from the hospital industry (45%) and were employed in a healthcare professional role (40%). For educational background, most participants held clinical qualifications (46%), of which 41% comprised nursing or midwifery, 31% medicine, and 16% pharmacy (Figure 1). Twenty per cent of participants identified their role as a health informatician or within a digital health context. Two per cent listed a health informatics qualification, and 6% listed a health information management qualification (Figure 1).
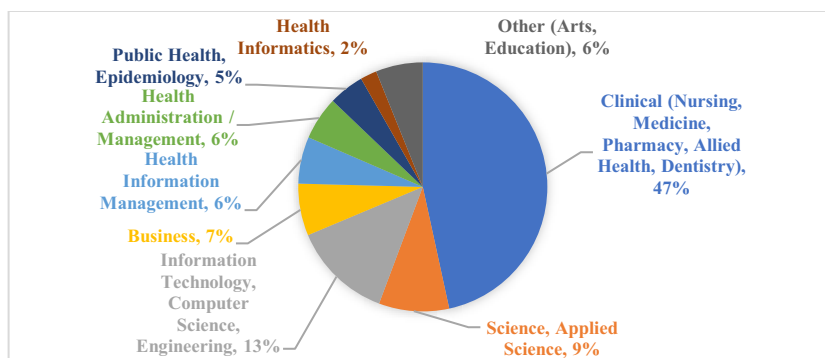

Figure 1. CHIA participants by educational background

3.2. Examination Results

Over the past ten years, 2797 participants have sat at least one attempt of the CHIA examination, and 328 participants forfeited by enrolling and not sitting any attempts. The examination results report the pass rate, which is the percentage of participants that pass out of the total that pass and fail, excluding forfeits.

Overall pass rates have steadily increased over the last ten years, with the first five years averaging 67.5% and the most recent five years averaging 74.2% (Figure 2). The number of CHIA participants forfeiting has fluctuated between 5.5% to 16.7%.
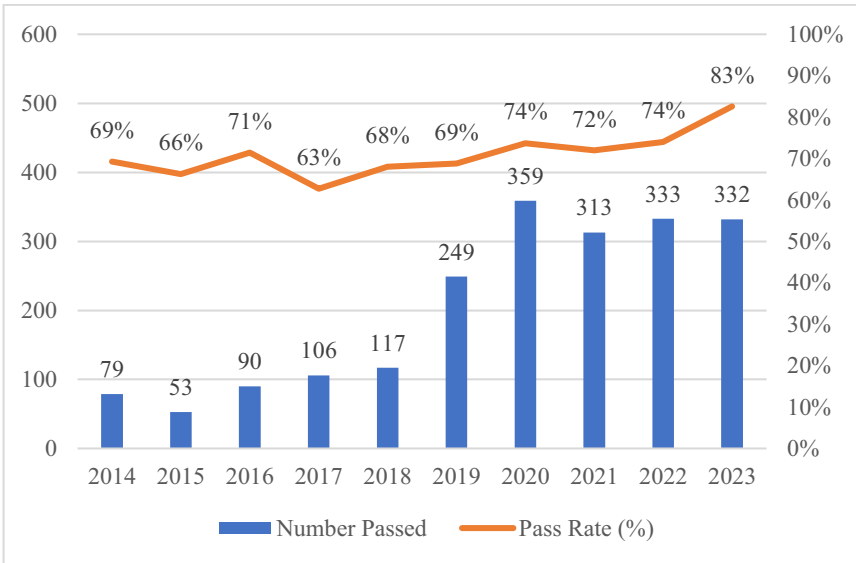

Figure 2. Overall examination results for years 2014 to 2023, number of passed examinations and percentage pass rate

Over the past decade, 2797 first examination attempts and 1123 second examination attempts have been recorded. The upper and lower range for the pass rate differs between attempts. The first attempt ranged from 42.9% to 70.1%, and the second was 31.8% to 55.4% (Figure 3). From 2017 onwards, the pass rate for the first attempt has been higher than the second attempt, by margins between 6% and 22%.
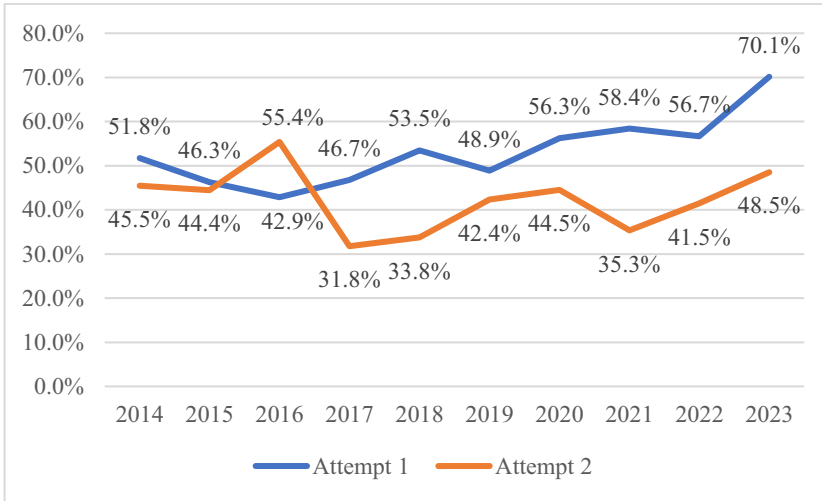
Figure 3. Comparison of pass rate between examination attempts

3.3. Examination Results By Weeks Since Registration

Over one-third of participants undertake their first examination attempt in the 12th or 13th week following registration, and 10% sit their first attempt within the first six weeks after enrolment. Approximately 84% of second examination attempts occur in weeks 12 or 13, with 70% in week 13. Across both the first and second attempts, there is a trend whereby the later participant's leave their sitting, the fewer pass (Figure 4). Note, for the second examination attempt, only weeks 10-13 were represented as there were not enough sittings in weeks 1-9 for a percentage to be statistically accurate. This is also reflected in the variability seen between weeks 1-7 for the first examination attempt.
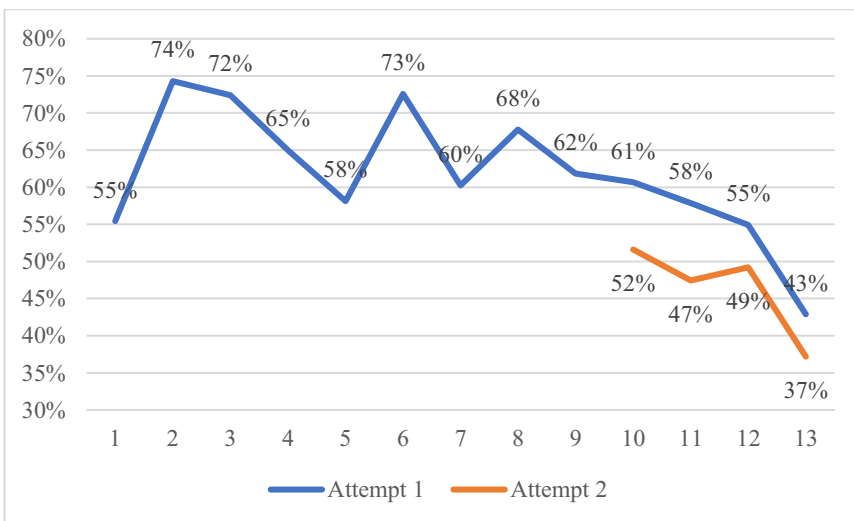

Figure 4. Pass rate of the first and second examination attempts, grouped by the week the attempt was taken.

3.4. Examination Results By Days Between Attempts

Following an unsuccessful first attempt, 1123 participants undertook a second attempt. When analysing the days between attempts, 146 participants were excluded due to missing data or the granting of an extension, leaving a total of 977 in this analysis. Almost half of the participants sit the second attempt within seven or fewer days of the first attempt. Sixteen per cent of participants leave more than 21 days between their examination attempts. The pass rate on the second attempt only increases for the participants who leave 21 or greater days between attempts. The pass rate increases as follows: 0-7 days (40.3%), 8-14 days (40.4%), 15-21 days (40.3%), and 22-90 days (47.8%).

3.5. Examination Resit Attempts

Of the participants who failed or chose not to sit one or both attempts in their original enrolment, 209 (7%) decided to enrol in at least one resit, giving participants a further 90 days and two attempts at the examination. Of these participants, 178 engaged in a second examination enrolment, with 54% passing, 28% failing one or both attempts, and 19% forfeiting/ not sitting either attempt. Thirty-one participants undertook two or more resits, with 40% passing, 33% failing one or both attempts, and 27% forfeiting.

4. Discussion

The improving overall pass rate is probably indicative of increasing familiarity with digital health systems and greater support by organisations for staff to understand and acquire these capabilities. The comparison between the first and second attempts identified that the pass rate is higher for participants sitting on their first attempt. Another trend from this comparative data identified that the pass rate falls significantly as the later participants leave their attempts. This is consistent with the data on the days between attempts, which suggests that having more than 21 days between the first and second attempts increases a participant's likelihood of passing.

The location of participants is notable for the disproportionate number from the eastern states of Australia. This is most likely a reflection of the widespread adoption of electronic medical records by healthcare organisations in these states. Implementation of such digital systems has identified the need for staff qualified in digital health capabilities to support this transition.

5. Conclusions

CHIA has evolved to be a premier program in the certification of health informaticians in the Australasian region. Over the last decade, it has grown to become an employer choice in some Australian jurisdictions, and its evolution is a testament to the agility of the program to meet current and future workforce needs. Given two-thirds of participants have an educational background in a clinical, information technology, computer science, engineering, health information management, or health informatics fields, the CHIA

credential is sought after by the specialist digital health workforce. Yet, the statistics shared here demonstrate it is not a simple, easy examination, but a comprehensive assessment of an individual's knowledge about health informatics. Lessons for participants can be gained from the data shared in this article, such as when to undertake the first attempt after registration and the benefit of allowing more than three weeks between examination attempts. Ongoing analysis of the program data is required to monitor the impact of recent changes to the program, and evaluation of the recertification process is recommended. As the demand for knowledgeable and skilled health informaticians increases in the digital healthcare ecosystem, it is highly recommended that the career impacts of the CHIA program be monitored, categorised by those who certify, those who do not, and those who recertify.

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