

i-ACT:

A new tool for optometrists to help improve diabetic eye care delivery

FEATURE ARTICLE

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The iCareTrack team has explored existing gaps in optometric diabetic eye care delivery in Australia and with the help of the optometry profession has developed an improvement program to address such gaps. An overview of the program was presented in the March 2022 issue of Optometry Connection ('i-ACT to improve glaucoma and diabetic eye care delivery in Australia', p.38). In this article we discuss the program further, in specific relation to diabetic eye care delivery, and highlight how it hopes to help optometrists further improve on the provision of appropriate eye care to their patients. This program will become widely available to Australian optometrists in early 2023.

With the increasing number of adult Australians with diabetes,¹ optometrists are likely to see more people requiring diabetic eye examination in their practice in coming years. Current national and international guidelines recommend diabetic eye examinations be conducted at least every 2 years.² However, only 50 to 77% of non-Indigenous and 20 to 44% of Indigenous Australians receive such diabetic eye examination.³ Initiatives such as KeepSight could aid in increasing the rate of diabetic retinopathy screening.⁴ As the major provider of primary eye care in Australia, optometrists have a key role to play in delivering high-quality, evidence-based, appropriate, and comprehensive eye care to people with diabetes. In addition, optometrists are faced on a daily basis with barriers that limit their ability to fully adhere to the care recommendations contained in evidence-based clinical practice guidelines,⁵ including those from the NHMRC guidelines for management of diabetic retinopathy.⁶ Any resultant evidence-to-practice gaps are likely to negatively affect patient outcomes.⁷

Gaps in diabetic eye care delivery

The iCareTrack team recently conducted a nationwide audit to establish the appropriateness of care delivery in optometry practices in Australia.⁷ The iCareTrack study investigated diabetic and preventative eye care, and glaucoma care; however, this paper will focus solely on the audit findings for diabetic eye care delivery.⁹

A random sample of 42 optometry practices from New South Wales, Victoria, Queensland and South Australia agreed to participate in the study. From each practice, 10 patient record cards were retrospectively examined against 12 clinical indicators (total records assessed=420). These clinical indicators were developed through a robust expert consensus process to represent small, measurable components of evidence-based clinical practice guidelines for diabetic eye care. Clinical indicators were grouped into the 4 domains of history taking, physical examination, recall period and referral. Appropriate care was defined as care in line with the clinical indicators, and appropriateness levels calculated as the proportion of patient record cards where a given indicator was met over the total number of eligible patient record cards (see example in **Figure 1**).

$$\text{Appropriateness \%} = \frac{\text{Record cards with documented duration of diabetes}}{\text{Total number of patients with diabetes}} \times 100$$

Figure 1.

Appropriateness for history taking: duration of diabetes

The nationwide practice audit revealed that optometrists deliver care appropriately for people with diabetes at 69% (95% confidence interval (CI) 66%, 73%) of patient encounters.⁸ As shown in **Figure 2**, while a high level of appropriateness was identified in some areas of diabetes eye care, such as recall period (93%, 95%CI 85%, 100%) and referral (100%, 95%CI 38%, 100%), larger gaps were found in other areas, such as history taking (46%, 95%CI 44%, 52%), dilated fundus examination (80%, 95%CI 76%, 84%) and iris examination (0%, 95%CI 0%, 56%). The level of appropriateness did not change between the various optometry practices (e.g., different business model or those with different types of patient record card management systems and those located in rural versus urban locations).⁹

The findings from this study suggested that while optometrists provide appropriate care for most of their patients of diabetes, there are opportunities for improvement, especially in the areas of history taking and physical examination.

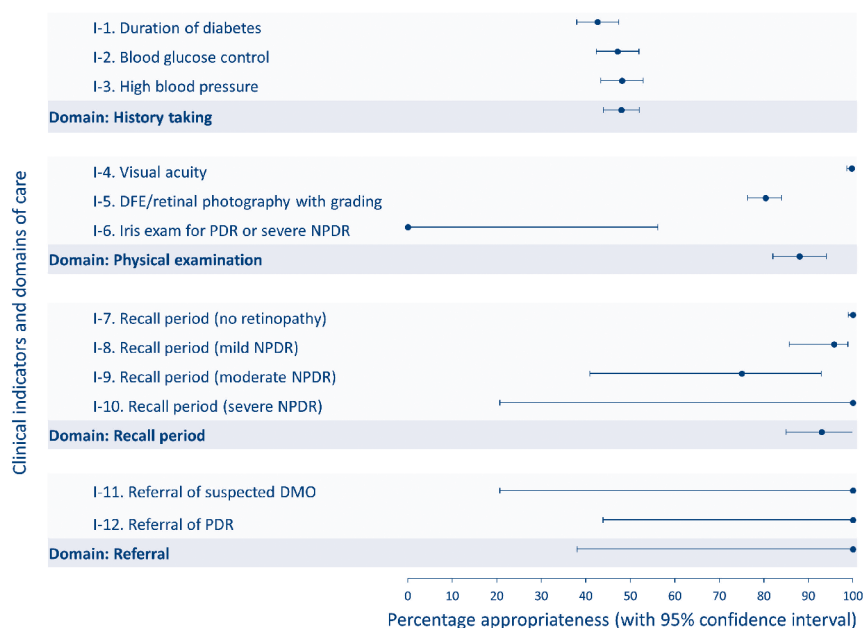


Figure 2: Appropriateness of diabetic eye care delivery by domain of care and clinical indicator.
DFE: Dilated Fundus Examination; PDR: Proliferative Diabetic Retinopathy;
NPDR: Non-proliferative Diabetic Retinopathy; DMO: Diabetic Macular Oedema

Barriers to diabetic eye care

Having identified some of the key gaps in diabetic eye care delivery above, and using inputs from stakeholders, the iCareTrack team has sought to scientifically determine what might be the best approach to address these gaps. The first step in this process involved gaining an understanding of the reasons or 'determinants' of diabetic eye care, in other words, identifying the barriers and facilitators to care delivery. A qualitative study was conducted, involving focus-group discussions and interviews with more than 30 Australian optometrists representing a wide range of practice settings, location, and experience. Optometrists were asked about their perceived barriers to adherence to the 4 underperforming clinical indicators identified in the record card audit above (documenting duration of diabetes and current blood sugar levels, dilated fundus examination and iris examination).⁵

Barriers to diabetic eye care identified related to environmental resources (e.g., limited chair time); beliefs about consequences (e.g., lack of perceived importance); knowledge (e.g., poor understanding); professional role/identity (e.g., the perceived role of optometry in the diabetic eye care process); social influences (e.g., the influence of senior optometrists) and intentions (e.g., apathy). Optometrists suggested that available resources (e.g., electronic record system and practice aids); up to date knowledge (e.g., keeping up with knowledge/professional development); reinforcements strategies (e.g., fear of legal actions) and behavioural regulations (e.g., self-monitoring/audit) were enablers to care delivery.

The qualitative study thus provided needed context to the key evidence-to-practice gaps identified by the nationwide optometry practice audit. It highlighted that several key interconnected factors related to an optometrist's individual capability, motivation and social and practice environment are likely to impact their ability to provide appropriate diabetic eye

care. These determinants then informed the design of an intervention program designed to optimise the delivery of diabetic eye care. Within the study scope, the iCareTrack study focused on developing an improvement program supporting optometrists to address individual clinician level barriers and enablers.

Improvement program and the i-ACT tool

Development

Simplistic approaches are often used in designing improvement programs, based solely on commonly used strategies (e.g., education) and these have had varied success.¹⁰ The iCareTrack project team adopted a more robust approach that involved use of established behavioural models and participatory research design. Such approaches allowed systematic consideration of all available behaviour change techniques, ensuring that the team could choose the ones most suited to the study context and most likely to address the barriers.¹¹ The chosen participatory co-design method allowed the optometrists involved to lead the program development, ensuring that their needs and preferences were carefully considered.^{12,13}

Using the Behaviour Change Wheel model, an established framework for developing and evaluating behaviour change interventions, the key barriers and facilitators described above were systematically mapped to potential behaviour change techniques likely to effectively overcome the barriers and leverage the facilitators.¹⁴ These techniques were then evaluated for their feasibility and suitability in an Australian optometry context. This theoretical identification of possible behaviour change techniques was followed by co-design workshops and interviews that engaged stakeholders, optometrists and people with diabetes. During these workshops, interactive design activities allowed participants (optometrists and stakeholders) to generate, explore and prioritise improvement ideas.¹³ The ideas generated along with the theoretically mapped behaviour change techniques were then used by the iCareTrack team to develop components of an improvement program. The program was then further refined using an iterative prototype testing and feedback process, with input from optometrists. →

More than 100 participants including optometrists, ophthalmologists, people with diabetes, health services researchers, clinical experts, educators, and stakeholders (e.g., patient advocacy groups, Optometry Australia) contributed to various phases of the development process above. This program development and its testing is supported by a grant from the Diabetes Australia Research Trust.

Components

The quality improvement program is held on a secure online platform available at www.icaretrack.com.au. A schematic representation of the website is shown in **Figure 3**. The program (the website) is initially available only to optometrists who have volunteered and registered to participate in the iCareTrack cluster randomised controlled trial (see Evaluation below for more on this). It is anticipated that the program will be made available to all optometrists from early 2023.

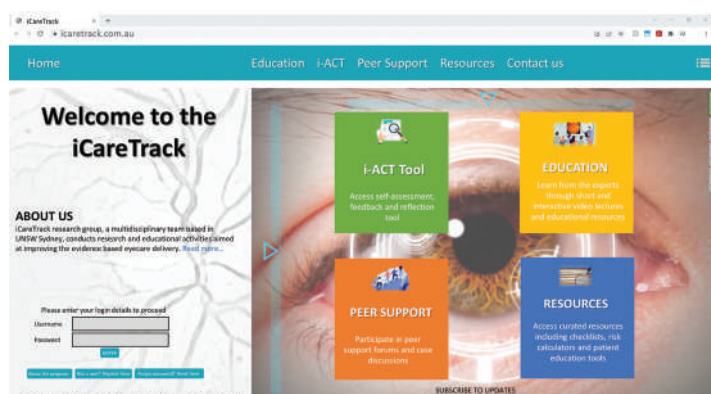


Figure 3:

Conceptual representation of the iCareTrack website. The website is only available to registered participants in the ongoing cluster randomised trial.

The key component of the program is the i-ACT (iCareTrack assessment of Appropriateness in Clinical practice) tool (described in detail below). Other supporting components include education, peer support and resources. The educational components (short video lectures and case studies) provide a quick review of the evidence-based care process for people with diabetes. The resources include specifically designed checklists and risk analysis tools as well links to useful external resources for optometrists and people with diabetes. The peer support component involves a series of interactive webinars focused on clinical and practical aspects of what evidence-based management of people with diabetes should look like in optometry practices.

The i-ACT tool is a self-assessment tool that allows optometrists to evaluate the appropriateness of the care they provide to their patients. Assessment (or external audit) and self-assessment (or self-audit) and feedback have been shown to improve compliance to care standards in various healthcare settings.^{15,16} In contrast to external assessment, the self-assessment process provides a mechanism for prompting self-reflection and action, and thus is more likely to be accepted by optometrists.¹⁶ Repeated engagement with the tool can also act as a reminder of and reinforce the elements of appropriate care.

The i-ACT diabetic eye care module features 32 clinical indicators. Optometrists extract and de-identify data from their patient record cards and enter these in the tool to receive feedback in the form of appropriateness percentages. The tool also provides comparative data against the average performance of optometry peers, as well as compared to desired benchmarks of care (**Figure 4**).

These benchmarks of care were derived based on the data from the top 10% optometry practices that participated in the nationwide iCareTrack record audit described earlier. These benchmarks thus represent realistic and achievable levels of excellence in primary diabetic eye care delivery for optometry practices, providing ideal improvement goals.⁹ (see **Figure 4**)

The i-ACT tool also provides opportunity for self-reflection, asking optometrists to identify areas of strengths and opportunities to improve. Optometrists are encouraged to select improvement goals and asked to assess their progress over repeated self-assessment cycles on the tool. This reflection activity (as all other activities included in the intervention) can be lodged into optometrists' Optometry Board of Australia's continuing professional development portfolios or added to CPD learning plans in the Optometry Australia Institute of Excellence.

Evaluation

The improvement program is currently being evaluated using a cluster randomised controlled trial (ACTRN12622000076774). In this trial, optometry practices (clusters) are randomly allocated to intervention groups (diabetic eye care and glaucoma) and control group (no intervention). Optometrists in the intervention groups access the iCareTrack website and participate in multiple rounds of self-assessment using the i-ACT tool and peer support webinars.

The effectiveness of the program will be measured through retrospective patient record card audits at the completion of the trial. Both the fidelity (the extent to which the intervention is implemented as designed and intended) and feasibility (ease of implementation and resources required) of the intervention will be evaluated, this through routinely collected administrative data and interviews with optometrists.

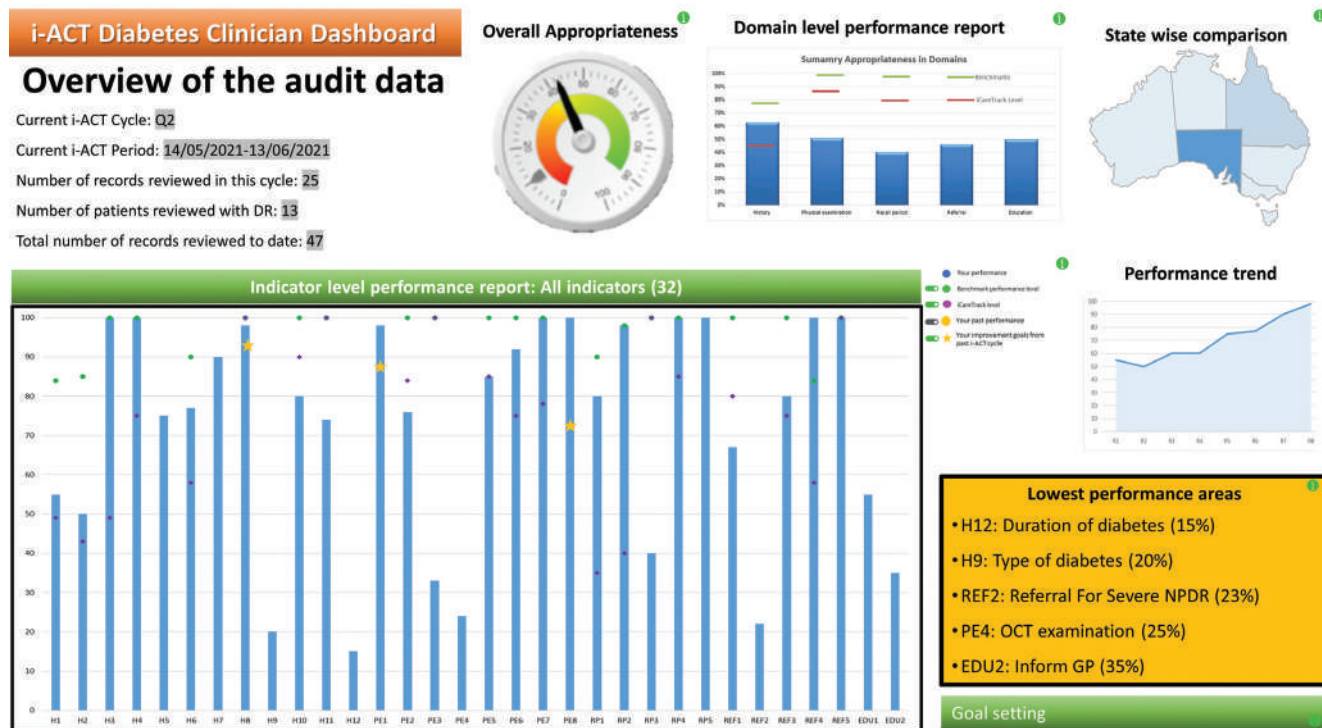


Figure 4:
i-ACT Diabetes clinician dashboard (conceptual representation)

The way forward

The cluster randomised controlled trial should be completed, and it is hoped that the effectiveness of the intervention will be established, by year end 2022. The intervention will then be made available to all optometrists. However, as passive implementation (simply making an evidence or intervention available) is known to be less likely to facilitate change, active implementation or scaling up efforts may yet be required.¹⁷ To scale up the intervention in the broader optometry community in Australia, control could be transferred to local stakeholders or institutions such as Optometry Australia, for active implementation with an expanded coverage while maintaining intervention effectiveness.

Currently, the intervention focuses optimizing primary diabetic eye care delivery. In future, more eye conditions (e.g., age-related macular degeneration, paediatric eye care including myopia, geriatric eye care including falls, contact lens and dry eye) could be added. Automated extraction of data from commonly used electronic data management systems in optometry practices directly to the i-ACT tool could be considered.

Conclusion

The iCareTrack program is an optometry-led, novel quality improvement program aimed at enhancing the role optometry plays in the care of chronic eye conditions such as diabetic retinopathy. The intervention was rigorously developed based on the appropriateness of eye care gaps and barriers to optometric care delivery measured directly from an Australian context. The i-ACT tool allows optometrists to self-assess the appropriateness in their care delivery and enables them to identify opportunities for improvement and act accordingly, setting up achievable goals and accessing learning activities. Any improvement in appropriateness of eye care delivery resulting from optometrists' participation in the intervention will likely have significant benefits including improved health and visual outcomes and better patient satisfaction. •

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