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Royal Australian College *of* General Practitioners

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Email: Sara.Linton@heartfoundation.org.au

Dear Heart Foundation Calcium Scoring Expert Reference Group,

Re: Public consultation: Coronary artery calcium scoring

The Royal Australian College of General Practitioners (RACGP) thanks the National Heart Foundation Australia for the opportunity to comment on the public consultation on coronary artery calcium (CAC) scoring. The RACGP provides specific comment on each of the draft recommendations and the draft evidence review, as outlined below.

I. Specific feedback about the draft recommendations

1. *CAC scoring could be considered for selected people with Intermediate absolute cardiovascular risk, as assessed by the National Vascular Disease Prevention Alliance (NVDPA) absolute cardiovascular risk algorithm, AND for whom there is uncertainty about the intensity of subsequent risk management treatment needed.*

In relation to this recommendation, the RACGP strongly advises that any clinical test should only be performed when the test result will influence the course of management. As such the RACGP proposes the following wording change:

- replace "*for whom there is uncertainty about the intensity of subsequent risk management treatment needed* " with "*where decisions about the intensity of subsequent risk management will be influenced*".

Thus a patient / clinician who has already decided how to proceed should have no need of a CAC score.

2. *CAC scoring could be considered for selected people with Low absolute cardiovascular risk, as assessed by the NVDPA absolute cardiovascular risk algorithm, AND for whom there is reasonable suspicion that the calculated risk may be underestimated.*

The RACGP recommends that this draft recommendation be re-written. Currently:

- the recommendation suggests that the current National Vascular Disease Prevention Alliance (NVDPA) algorithms fail to consider known risk factors for cardiovascular disease
- "*reasonable suspicion*" is poorly defined. This should be replaced with "*additional risk factors not included in the current NVDPA algorithms*".

The RACGP also recommends that a specific list of risk factors, or combinations of risk factors that are not included in the NVPDA absolute cardiovascular risk algorithm, be identified. Importantly, there should be some evidence that supports the claim that people having these "non-traditional" risk factors actually do have their risk underestimated using Framingham risk equation based calculators.

3. *If CAC scoring is undertaken, a CAC score = 0 Agatston Units (AU) could reclassify a person to a Low absolute cardiovascular risk status; with subsequent management to be informed by patient/clinician discussion and follow contemporary recommendations for Low absolute cardiovascular risk*

This recommendation should include a statement not to repeat the CAC score for "X" number of years.

4. *If CAC scoring is undertaken, a CAC score >99 Agatston units (AU) OR ≥75th percentile for age and gender could reclassify a person to a High absolute cardiovascular risk status; with subsequent management to be informed by patient/clinician discussion and follow contemporary recommendations for High absolute cardiovascular risk.*

This recommendation should include a statement to never repeat CAC scoring because once defined as "high risk", as a patient remains high risk for life.

II. Additional recommendation

The RACGP proposes the expert working group considers developing an additional recommendation to clearly state when CAC scoring should not be done. For instance:

> *CAC scores should not be done in patients already identified as high risk from the NVDPA absolute cardiovascular risk algorithm, should not be done to monitor preventative activities and should not be done in patients who have evidence of existing arterial vascular disease*.

III. Has the aim of the draft evidence review to define the role and provide practical advice for health professionals for the use of calcium scoring in the prevention of cardiovascular disease in Australia been achieved?

The RACGP commends the use of the GRADE (Grading of Recommendations Assessment, Development and Evaluation) process for guideline development. The GRADE process provides transparency of the evidence appraisal and states the quality, or strength of the evidence. The recommendations are all 'conditional' recommendations with low to very low certainty. As such it would be very helpful to include a description of the risks and benefits that have been discussed in the formulation of the recommendations, including any evidence on how patients, in particular, interpret these risks and benefits.

Given that this information about risks and benefits is not robustly described, the recommendations as they stand fall short in assisting health professionals to weigh up the best course of action for particular patient groups. Arguably, the most important aspect of the decision-making relates to whether or not the test will be undertaken if a patient falls within an intermediate risk group. From a population level context, the majority of the population who do not have unpredicted cardiovascular disease and live to a certain age will transition from low to intermediate cardiovascular risk, making this aspect of such a guideline most critical.

The algorithm (Figure 1) in the draft evidence review appears to contain a 'pro-testing' bias. The box "Consider CAC measurement, including discussion of benefits and harms with the patient. If performed:" leads to three possible outputs, all of which require testing. The RACGP recommends that this is algorithm is amended so that the possible outputs from this box are reduced to only two:

1. Do not test further, and manage risk as per guideline recommendations for intermediate absolute CVD risk

2. Do CAC

The second output may then lead to the three possible results that are listed in the algorithm.

Currently, the omission of the outcome of "not doing" the test, implies that such an option is either not important, or not valid. The RACGP strongly believes that this is likely to be the most valid outcome of the algorithm for most individuals who end up on that question in the algorithm.

IV. Additional feedback about the draft evidence review:

The RACGP provides the following additional comments on methods, and implementation of the guidelines.

1. *Methods*
   - Was a search conducted in trials registries to determine if new evidence is likely to emerge that could change these recommendations?

2. *Possible harms of CAC*
   - The RACGP recommends that a statement of the possible harms of CAC be included in the draft guideline. For example, insurance companies might use CAC results to assign risk weighting to individuals in the absence of clear evidence that this is justified.

   - Opportunity costs of making cardiovascular risk assessment requiring specialist services (radiological +/- cardiologist) will act as a financial and time barrier for many patients, especially rural populations. There is no evidence that reassuring results improve wellbeing.

   - It is also noted that currently there is no Medicare rebate for a CAC test, which may contribute to patient access and equity issues.

3. *Frequency of CAC scoring*
   - Evidence should be reported for the 5-year frequency of testing. It is not adequate to state that international guidelines recommend this frequency.

4. *Evaluation of CAC in an Australian setting*
   - There should be a recommendation that Australia set up an evaluation process that looks at the appropriateness of CAC requests in line with these recommendations. Furthermore, the evaluation should include a registry of CAC scores linked to future cardiovascular events so that with time, there will be an Australian data set to inform future guidelines.

   - The RACGP believes that further attention is required on the evidence of the sensitivity and specificity of CAC scoring in the intermediate and low risk groups and that this information should accompany this clinical resource. It is also noted that the studies listed to support CAC are based mainly on American risk scores, which are a 10-year scoring system versus Australian CVD risk tools that rate a 5-year risk and these do not correlate well.

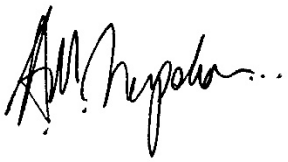
   - The strength of evidence supporting Australian risk calculators is also questionable.[1] Future work may consider the development of a patient decision aid to accompany this resource, including indicative costs and the reliability of scores in relation to absolute risk.

5. *Practicalities of CAC scoring*
   - If CAC scoring is recommended for selected patients in intermediate risk, the requesting of CAC testing and the interpretation and actions arising from CAC testing fall within the scope of practice of GPs. The RACGP would strongly oppose any requirement for CAC testing to be ordered by cardiologists.

[1] Albarqouni L, Doust J, Magliano D *et al*., External validation and comparison of four cardiovascular risk prediction models with data from the Australian Diabetes, Obesity and Lifestyle study. 2019 MJA 210(4):161-167

Thank you again for the opportunity to provide feedback on this report. Please contact Mr Stephan Groombridge, Manager, eHealth and Quality Care on (03) 8669 0544 or at stephan.groombridge@racgp.org.au if you have any further queries.

Yours sincerely



Dr Harry Nespolon
President