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Title	Screening for diabetic foot complications using telemonitoring: measuring cost effectiveness using a mathematical model
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Reviewer 1	Xuanqian Xie
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General comments (author response in bold)	This manuscript discussed a potential important area, the prevention of diabetic foot complications by telemonitoring. But, I do not entirely understand this manuscript. I have some questions and comments for authors' considerations. Authors used the time horizon of 5 years. I do not understand how authors obtained around 11 QALYs in 5 years (See Table 2). **We have reexamined the QALYs calculation and caught a minor calculation error (now corrected, please see Results and Table 2). We thank the reviewer for their attention to detail.** Authors conducted Probabilistic Sensitivity Analysis (PSA), but the parameters of distributions for PSA were not reported. **We now report the parameters of distributions for PSA: "Gamma distributions were used for all cost parameters and beta distributions for utility values. Dirichlet distributions were used for all multinomial transition parameters, and beta distributions for binomial transition parameters."** Authors stated that "there is mixed evidence on the effectiveness of telemedicine for monitoring DFUs" and "no studies have examined the use of TM for the prevention of DFUs" in the Introduction. In this situation, maybe it more reasonable to assume a small benefit with large uncertainty for the intervention. **Although no studies have examined the use of TM specifically, it is well established that regular monitoring programs confer significant advantages in the prevention of DFUs. In this analysis, the authors assumed a range of benefits, between 5-40% effectiveness accounting for the uncertainty in the intervention.** In the Figure 2, authors used a considerable benefit of "effectiveness of 30%" of the intervention. Also, the consistent simulation results suggested a small uncertainty of the assumed effectiveness. **There is considerable evidence in the literature that regular monitoring is highly effective in preventing DFUs. For the purposes of the analysis presented in Figure 2, we estimated an effectiveness of 20-40%, with 30% being the mean of those values. We have added further information throughout the text to justify the values chosen.** It is unclear to me why authors estimated incremental QALY cost and incremental QALY of "population based approach" using the effectiveness of 0 in "high-risk approach" as control. "If adopting population-based TM approach decreased DFU incidence by 20%-40%, the resulting health benefit was 0.01196 –0.02369 QALYs per person, respectively. A population-based approach using TM was a more widespread screening strategy than is currently in place in Canada, which translated into incremental costs of $479 - $402 per person and ICERs of $40,034 - $16,971, respectively." If understand correctly, authors calculated IE at 20% effectiveness = 10.96409 (population based approach) – 10.95213 (high-risk approach) = 0.01196. I am sure this calculation was appropriate. **The estimated incremental QALY cost and incremental QALY were calculated using current "Standard Care" as a control, which was 51% current screening rate in Canada without TM. We have made edits to the language of the manuscript and to Table 2 to make this distinction clearer (previous mentions of "control" have now been changed to Standard Care (SC)).** The cost components were not very clear to me. TM device and TM service incurred once, ore every visit? Is the cost of intervention equal to cost of TM device and TM service plus the physician fee? Author provided CIHI cost data in Appendix, but it is unclear to me how to derive the cost estimates of amputation and DFU from CIHI data (Table 1). In addition, the overall costs of diabetes in the 5 years seems very low (Table 2). Authors need clarify the costs included and excluded in analysis. **The cost of the TM device was incurred once, while TM service is incurred every 4-month cycle the individual has the device. The cost of the intervention is the cost of the TM device (only once), TM service and physician fee. This has been clarified in the Resource Use and Costs section; "The cost of TM device was incurred once, and the cost of the TM service was incurred every 4-months it was used." Also, clarifications were made in the Supplementary Information in the Cost and Utilities Values section.** **The costs of amputations and DFUs were taken from the Patient Cost Estimator by CIHI (https://apps.cihi.ca/mstrapp/asp/Main.aspx), an online web application that lists average annual costs of services provided at hospitals. The link to this was added to the Supplementary Information in the Cost and Utilities Values section.** **The overall costs of diabetes were not included in this analysis, only costs associated with DFUs. In the Model section, "the cost of diabetes was not included in this analysis" was added to clarify this.** This study also has several small things. For example, it is not accurate to state "Intervention effectiveness, defined as rate of DFU prevention…" in abstract. For another example, in Table 2, authors used "RR for DFUs" of "0" for the effectiveness of "0". I think the RR should be 1. Indeed, it is very clear to use risk ratio (i.e. a common measure), instead of defining the effectiveness by authors. **The wording of the specified statement in the abstract has been edited according to the reviewer's suggestions. The error in Table 2 has been changed. RR now equals 1.** The title of this article may be revised to reflect that the estimated benefits were based on assumptions, not the evidence. **We have changed the title according to the reviewer's suggestion.**
Reviewer 2	Douglas Coyle
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General comments (author response in bold)	This was a well conducted study for which I only have a few minor comments. I found the explanation of how screening would influence transitions within the model and the costs within the model difficult to follow. Would unscreened patients experience the cost of being at a low or moderate risk of DFU or is that only for screened patients? **Unscreened patients would not experience this cost. The unscreened population was split into low-moderate risk groups to keep both model structures (screened vs unscreened) the same for comparison purposes. We have added this information to the Definitions of Study Parameters in the Supplementary Information for clarification.** How the utilities and costs for a healed DFU would be applied wasn't clear. Is this once only cost and disutility or is this

	permanent. A disutility of 0.105 each cycle seems very high – is this valid. I see the value comes from a different study –are there concerns about this? Would results vary if the utility value was closer to that of no ulcer? **The healed DFU would incur the cost and disutility permanently. We appreciate the reviewer's concern regarding the source of the source of this value being from a different study, and have included this concern in our limitations section ("In addition, the utility value for a healed DFU was sourced from a different study, as Beaudet et al. 2014 did not report such value. This uncertainty may increase or decrease the impact of TM. Its effect was explored in the one-way analysis in SI 3 and 4.").** **We saw 0.680 being a conservative estimate for having a healed ulcer, as a population prone to DFUs generally has a lower quality of life. The variations to the results were explored in the one-way analysis in Supplementary Results 3&4.** Please provide details of all probability distribution within the appendix. **The details of probability distributions were added to the Methods section in subsection Sensitivity Analysis of the manuscript.** **"Gamma distributions were used for all cost parameters and beta distributions for utility values. Dirichlet distributions were used for all multinomial transition parameters, and beta distributions for binomial transition parameters."**