Appendix 1

Search strategy

As this study aimed to identify the current evidence for the advantages and disadvantages of designing and implementing an intelligent online triage tool in a primary care context, a systematic literature search was carried out. This process was initiated by exploring and identifying the most relevant MeSH terms in order to capture all the relevant articles. Two databases (PubMed and the Cochrane Library) were searched, using similar MeSH term Boolean operators. All types of studies and articles were considered.

The PubMed MeSH term search algorithm was built using the PubMed Advanced Search Builder combining MeSH terms in Boolean operators. MeSH terms identifying the population were defined as "General Practice"[Mesh] and "Primary Health Care"[Mesh], MeSH terms exploring the intervention were identified as "Triage"[Mesh] and "Referral and Consultation"[Mesh], and MeSH terms exploring the context were identified as "Artificial Intelligence"[Mesh], "Decision Support Systems, Clinical"[Mesh] and "Internet"[Mesh] (1).

Using the PubMed Search Builder, these terms were combined as follows: (("General Practice"[Mesh]) OR ("Primary Health Care"[Mesh])) AND (("Triage"[Mesh]) OR ("Referral and Consultation"[Mesh])) AND ((("Artificial Intelligence"[Mesh]) OR ("Decision Support Systems, Clinical"[Mesh]) OR ("Internet"[Mesh]))).

However, articles captured by this algorithm did not include all the relevant articles that had been found in earlier research on identifying MeSH terms. It was found that when the two most central MeSH terms ("Triage"[Mesh]) AND ("Artificial Intelligence"[Mesh]) were combined, additional articles were captured. In order to include as many relevant articles as possible, the final PubMed Boolean search algorithm combined both search strategies into:

(("General Practice"[Mesh]) OR "Primary Health Care"[Mesh])) AND (("Triage"[Mesh]) OR ("Referral and Consultation"[Mesh])) AND ((("Artificial Intelligence"[Mesh]) OR ("Decision Support Systems, Clinical"[Mesh]) OR ("Internet"[Mesh])) OR (("Triage"[Mesh]) AND ("Artificial Intelligence"[Mesh])))

The Cochrane Library was searched through a similar strategy using the same algorithm built in the Cochrane advanced search builder.

The reference lists of selected articles were systematically explored and found to contain additional relevant articles which were also considered against the inclusion/exclusion criteria.

Selection and assessment of articles

Based on the previously formulated inclusion and exclusion criteria, the search results were systematically narrowed down in three steps, each time considering whether the selected articles were to be excluded because they didn't match the inclusion criteria or because they matched the exclusion criteria. Step 1 considered articles that could be excluded based on title. Step 2 considered articles that could be excluded based on abstract. Step 3 considered articles that could be excluded based on reading the whole article (1). The detailed article selection was carried out by the first author in close communication and agreement with the second author.

The PubMed search was carried out on 2019-04-17 using the algorithm explained above:

(("General Practice"[Mesh]) OR ("Primary Health Care"[Mesh])) AND (("Triage"[Mesh]) OR ("Referral and Consultation"[Mesh])) AND ((("Artificial Intelligence"[Mesh]) OR ("Decision Support Systems, Clinical"[Mesh]) OR ("Internet"[Mesh])) OR (("Triage"[Mesh]) AND ("Artificial Intelligence"[Mesh])))

This search yielded 279 results. The first selection based on title excluded 202 articles, leaving 77 articles for further selection. The second selection based on abstract excluded 58 articles, leaving 19 articles. The third selection based on the whole article excluded nine articles, leaving ten articles for final inclusion (Figure 1).

The Cochrane Library search was carried out on 2019-04-17 using a similar algorithm:

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ID	Search Hits
#1	MeSH descriptor: [General Practice] explode all trees = 2387
#2	MeSH descriptor: [Primary Health Care] explode all trees = 6491
#3	MeSH descriptor: [Triage] explode all trees = 265
#4	MeSH descriptor: [Referral and Consultation] explode all trees = 2120
#5	MeSH descriptor: [Artificial Intelligence] explode all trees = 944
#6	MeSH descriptor: [Decision Support Systems, Clinical] explode all trees = 325
#7	MeSH descriptor: [Internet] explode all trees = 3451
#8	#1OR#2 = 8497
#9	#3OR#4 = 2352
#10	#5OR#6OR#7 = 4673
#11	#8AND#9AND#10 = 22
#12	#3AND#5 = 0

The Cochrane search yielded 22 results. The first selection based on title excluded all 22 articles, leaving none for further exploration. An additional seven relevant articles were found in reference lists and were included, to make a total of 17 selected articles (Figure 1).

The quality of the included articles was assessed systematically; the strengths, limitations and weaknesses were identified as well as the main characteristics of the articles. Relevant data were meticulously extracted from the selected articles and entered into a spreadsheet. The extracted data were considered central to the aim of this article (1). The data were then summarized, analyzed and discussed, in order to reach a valid conclusion.