

Appendix: Content Summaries of Best Papers for the Decision Support Section of the 2021 IMIA Yearbook

Wu G, Yangx AN, Louis R, Moutschen M, Li J, Li J, Yan C, Du D, Zhao S, Ding Y, Liu B, Sun W, Albarello F, D'Abramo A, Schininà V, Nicastri E, Occhipinti M, Barisione G, Barisione E, Halilaj I, Lovinfosse P, Wang X, Wu J, Lambin P

Development of a clinical decision support system for severity risk prediction and triage of COVID-19 patients at hospital admission: an international multicentre study

Eur Respir J 2020 Aug 20;56(2):2001104

In this paper the authors aimed to develop a machine learning algorithm to assess and triage patients with COVID-19. They used 725 patients to train the model, including

cohorts from hospitals in China, Italy and Belgium. The main outcome was the onset of severe or critical illness during hospitalization. Model performances were quantified using the area under the receiver operating characteristic curve (AUC) and other metrics. The model was validated yielding AUCs ranging from 0.84 to 0.93, with accuracies ranging from 74.4% to 87.5%, sensitivities ranging from 75.0% to 96.9%, and specificities ranging from 55.0% to 88.0%, most of which performed better than the pneumonia severity index. The authors concluded that the machine-learning algorithm is useful to triage the severity and critical illness among COVID-19 patients at hospital admission. The online calculators can be found at www.covid19risk.ai.

Balestrieri M, Sisti D, Rocchi M, Rucci P, Simon G, Araya R, de Girolamo G

Effectiveness of clinical decision support systems and telemedicine on outcomes of

depression: a cluster randomized trial in general practice

Fam Pract 2020 Nov 28;37(6):731-7

In this paper, the authors combined a Computerized Clinical Decision Support Systems (CCDSS) tool with a Telehealth Intervention and tested the effectiveness of this combined approach to treat depression in primary care. The design was a randomized trial involving General Practice clinics in Italy. The study compared the combined Intervention (TG – Telehealth visit + CCDSS) with the control group (CG) in which GPs provided usual treatment. 2810 patients were included. 66 patients were included in the TG group and 32 in the CG. The percentage of remitters at 6 months was significantly higher in the TG than in the CG group (24.1% versus 3.1%, $\chi^2 = 6.6$, $P = 0.01$). The combined intervention was more effective than the usual care offered by GPs to patients with depression in the study.