
MEDICAL SHIELD STAFFING

A team from the Engineering Complex Systems Institute (ISCI in Spanish) has developed **Medical Shield Staffing**, a technology which enables the optimization of health staff work shifts, reducing the probability of contagion by Covid-19.

DESCRIPTION

Covid-19 is an infectious disease caused by coronavirus SARS-CoV-2, which has generated more than 23 million cases worldwide and more than 800 thousand deaths, having no vaccine and/or specific medication for its treatment, yet. Between 5% and 12% of patients develop a clinical picture, requiring treatment with mechanical ventilators at Intensive Care Units. It is estimated that 6% of those infected by Covid-19, corresponds to health staff, which reduces significantly the effective patient care capacity, including critical patients, adding strong stress over health systems. Therefore, developing technologies able to reduce contagion among health teams becomes crucial.

SOLUTION

Medical Shield Staffing is a system which manages health staff time availability, in order to work in different shift settings. This information feeds a dynamic optimization model, which uses stochastic dynamic simulation tools and mathematical programming. The system provides a shift scheme proposal, through a user-friendly interface, which minimizes contagion probability. The principle used by the model is concentrating work shifts on the virus incubation period, assigning medical staff free days to cover up contagion period, in case of infection.

TECHNOLOGY

Medical Shield Staffing is in TRL4 state of development. The dynamic optimization

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model has been calibrated based on a detailed recent analysis of international literature on infectious disease and epidemiology about Covid-19. Currently, a three-month pilot schedule is being carried out in a Chilean health center in order to obtain a consolidated and scalable system which provides shift scheme proposals for health staff that minimize contagion probability by Covid-19.

MARKET

Market size: USD 333.8 million (2019).
CAGR: 12,4%.
Segment: Global Employee Scheduling Market.
Expected Market Size: USD 533.6 million (2025).

BUSINESS MODEL

ECSI (ISCI, in Spanish) is in the process of starting a technology-based company which will commercialize **Medical Shield Staffing** directly to public and private health centers in Chile. Besides, this technology could be adapted by other sectors where shift work is performed, as retail, security and industrial areas.

ADVANTAGES

- Shift optimization system, adaptable to each health center particular needs, and to other sectors working with shift systems.
- Technology integration with human resource management systems at health premises, which allows to adjust health official shifts by administrative staff.

TEAM



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