

# Computer modeling and simulation of the patient-visit network within a Chilean public health service Modelamiento y simulación computacional de la red de consultas médicas de un servicio público de salud chileno

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**Objective.** To create a computerized model and simulation of the patient visit/referrals process for a health care services organization within Chile's public health care system. **Methods.** The study was performed with a "system dynamics" focus. Data were collected from the health care service centers, and a referrals model was created. Specialty areas to be modeled were chosen based on the length of their waiting times. Equations were defined for calculating care visits, referrals, and waiting times. Databases were designed and populated with centers' data. The model was programmed and validated through comparisons with actual data. Scenarios were simulated that would reduce patient waiting time by increasing staff hours or improving diagnostic resolution at the primary care and specialty centers, or both. **Results.** The modeling included 22 centers, 1 451 referral flows, and 12 medical specialty areas, in addition to general medicine. A total of 686 869 registered office visits, referrals