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The Human Phenotypic Disease Network CESAR HIDALGO, Center for Complex Network Research, Dept of Physics, Univeristy of Notre Dame, NICHOLAS BLUMM, Center for Network Science, Dept of Computer Science, Northeastern University, ALBERT-LASZLO BARABASI, Center for Network Science, Dept of Physics, Biology and Computer Science, Northeastern Univeristy, NICHOLAS CHRISTAKIS, Dept of Health Care Policy, Harvard Medical School — We study the evolution of patient illness using a network summarizing the disease associations extracted from 32 million Medicare claims recorded from 13 million elders using the ICD9-CM format. We find that the evolution of patients' illness is accurately described by a process in which once a patient develops a particular disease, subsequent disease are seen to occur among diseases lying close by in the network. In addition, we find that patients affected with diseases with high network connectivity are more likely to die during a follow-up period of eight years.

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