

Who Does What?

An Analysis of the Relationship Between Physicians' Specialties and Their Procedures

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Preview

Doctors both cooperate and compete. The lines delineating different specialties are permeable and varied. We intuitively know that a doctor with the specialty “general practice” has more in common with “internal medicine” than “hand surgery”, and thus competes more closely for patients. In fact, in creating rules for safety-zones for Accountable Care Organizations the Federal Trade Commission (FTC) prescribed a method of calculating market shares by specialty. They explicitly treated family practice, general practice, geriatric medicine and internal medicine as a common “primary care specialty”. Hematology, Medical Oncology, and Hematology/Oncology were left separate. I could not find a good source that documented the overlap between specialties.

Using a method that will be detailed in the future, I used Medicare data to calculate the degree to which any two specialties share procedures with another specialty.

¹ Preliminary and incomplete. Please do not cite or circulate without permission. E-mail: DL679@cornell.edu. I am grateful to my graduate committee (Sean Nicholson, Samuel Kleiner and George Hay) for their direction and support. All errors are my own. For more information about my research and teaching, please visit my website: www.dludwinski.com

In the table below I examine the primary care specialties, as well as nurse practitioner and physician assistant. General Practice and Family Practice doctors have a very similar work profile. Geriatric Medicine seems to be a bit unique, and shares more with nurse practitioners than any other specialty.

	General Practice	Family Practice	Internal Medicine	Geriatric Medicine	Nurse Practitioner	Physician Assistant	Pediatric Medicine
General Practice		82%	66%	58%	70%	67%	74%
Family Practice	82%		70%	54%	64%	60%	74%
Internal Medicine	66%	70%		59%	59%	53%	69%
Geriatric Medicine	58%	54%	59%		74%	46%	53%
Nurse Practitioner	70%	64%	59%	74%		66%	63%
Physician Assistant	67%	60%	53%	46%	66%		66%
Pediatric Medicine	74%	74%	69%	53%	63%	66%	

We can visualize the relationship between the specialties in two-dimensional space through the use of a force-directed graph (a tool from graph theory). In the graphic below, specialties are positioned near each other if they share a lot of services. The cancer related specialties of Oncology, Hematology and Oncology/Hematology are all very close, as are primary care specialties: Internal Medicine, Family Practice, General Practice, Geriatric Medicine Nurse Practitioner and Physician Assistant. These two clusters make up the core of what resembles a star shape. The more distinctive specialties are more isolated and located on the edges (cardiac surgery, psychiatry, emergency medicine, dermatology, ophthalmology, neurosurgery). In general, this visual provides information on how providers work together and overlap.

