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White Paper

INTEGRATED DELIVERY NETWORKS

What pharmaceutical companies need to know before engaging them

RORY MARTIN, PHD, IQVIA Center of Excellence for IDN Insights

TABLE OF CONTENTS

INTRODUCTION

Health systems such as integrated delivery networks (IDNs) and provider networks (PNs) are becoming an increasingly influential player in the US healthcare system, driven in part by the push from volume to value. These systems have the potential to influence physician treatment behavior, and where such influence exists it offers manufacturers the ability to reach hundreds of affiliated providers at once rather than interacting with them one by one.

But there are thousands of IDNs and PNs in the US. Which are the right ones to target? Some like Partners Healthcare in New England are localized in one geographical area while others like Ascension are spread out across the entire country. In some geographies such as Miami, FL, less than 20% of claims volume flows through IDNs and PNs while in others such as Cleveland, OH, it's the majority, almost three quarters. These differences and the consequences they represent for interacting with these health systems are not well understood.

This paper describes four aspects of IDNs and PNs that manufacturers need to understand before engaging them:

How important are they?

- How much have IDNs and PNs penetrated US healthcare markets?
- How does this vary by therapeutic area?
- By geography?

What do they look like?

- How many are there?
- How large are they?
- How spread out geographically are they?

How much competition is there?

- How much IDN/PN diversity is there in local markets?
- How much competition do we see between them?

What kind of influence patterns do we see?

- Are they influencing treatment?
- Do individual IDNs and PNs behave the same or differently across geographies?
- Do individual IDNs and PNs exert the same amount of influence in different TAs?

The answers to these questions have important implications for how manufacturers target and engage IDNs and PNs.

WHAT ARE INTEGRATED DELIVERY NETWORKS AND PROVIDER NETWORKS?

IDNs and PNs are health systems in which providers are affiliated with a parent company. A PN consists of medical groups, facilities, and labs, and most PNs provide care for a specific disease area, e.g. oncology, immunology, etc. An IDN has similar structure to a PN but also includes one or more acute care hospitals and associated outpatient facilities, and provides a continuum of care including different disease states. Both structures are illustrated in Figure 1 below.

Examples of provider networks include Joslin Diabetes Center and Texas Oncology. Some familiar IDNs include The Mayo Clinic, The Cleveland Clinic, Partners Healthcare, Memorial Sloan Kettering Cancer Center, and Geisinger Health System. Providers and/or facilities that are not affiliated with an IDN or PN are said to be independent.

IDNs are also sometimes called organized providers, integrated health systems, and corporatized providers.

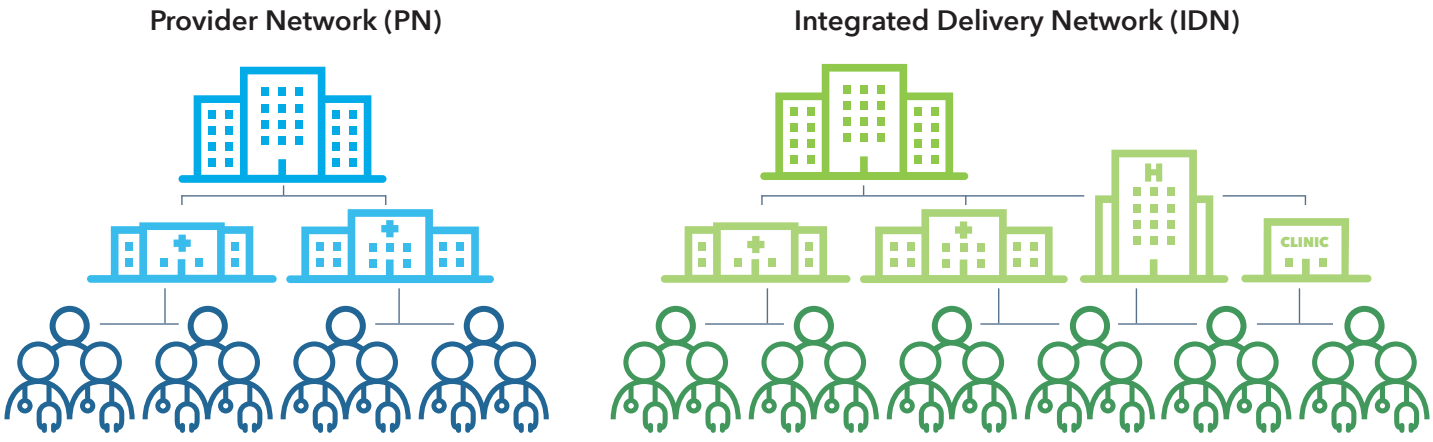
METHODOLOGY

Providers are affiliated with facilities such as medical practices or hospitals, some of which are owned by IDNs or PNs. The US healthcare system is large and complex, involving thousands of IDNs and PNs, tens of thousands of facilities, and millions of providers and the affiliations that connect them to the IDNs and PNs. We use IQVIA's OneKey/HCOS data to identify and understand these complex structures.

For the purpose of the current paper we used findings from half a dozen therapeutic areas including type 2 diabetes (T2D), hypercholesterolemia (HCL), congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), Parkinson's disease (PD), Psoriasis (PsO), and oncology (Onc) including diffuse and solid cancer types.

We divided facilities and providers of each IDN and PN into core based statistical areas (CBSAs) to estimate subnational behavior. CBSAs are cities with surrounding economic zones having a population of at least 10,000. There are about 1,000 of them in the US, and over 90% of the US population lives in one.

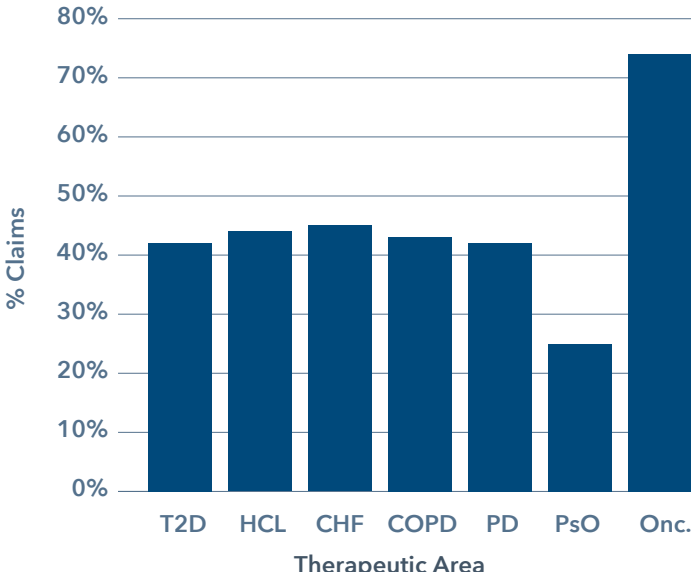
Figure 1: The structure of a PN and an IDN



HOW IMPORTANT ARE IDNS AND PNS?

Nationally, between 40% and 70% of claims flow through IDNs and PNs, as shown in Figure 2 below.

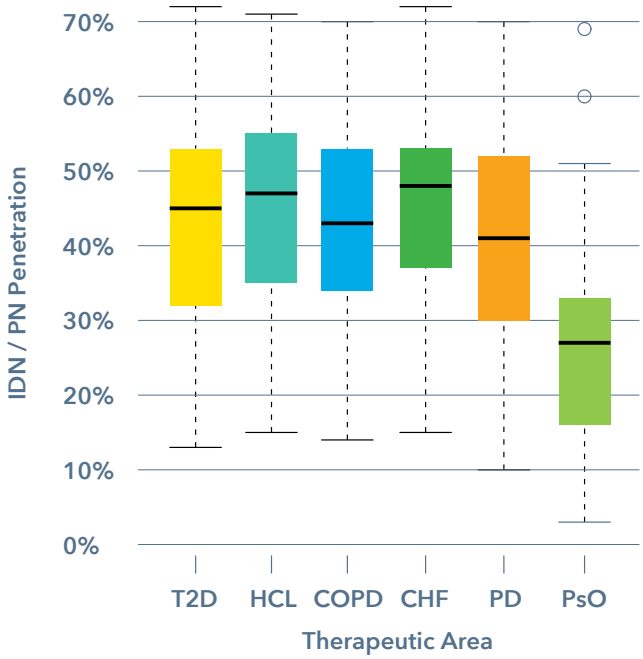
Fig. 2. Proportion of claims flowing through IDNs or PNs.



In addition, 40% to 70% of providers are affiliated with IDNs and PNs, while 30% to 70% of facilities are owned by them. However, there is significant variation subnationally. To estimate the penetration of IDNs and PNs across a set of geographies of comparable size, we studied the 65 CBSAs in the US with a population of at least 1,000,000 people. These CBSAs represent a little more than half the US population.

As shown in Figure 3 below the median IDN and PN share of total claims per CBSA was between 30% and 50% (depending on the TA), and varied from a low of around 10% to a high of over 70%. Said another way, in some geographies IDNs and PNs are relatively unimportant while in others they represent most of the healthcare market.

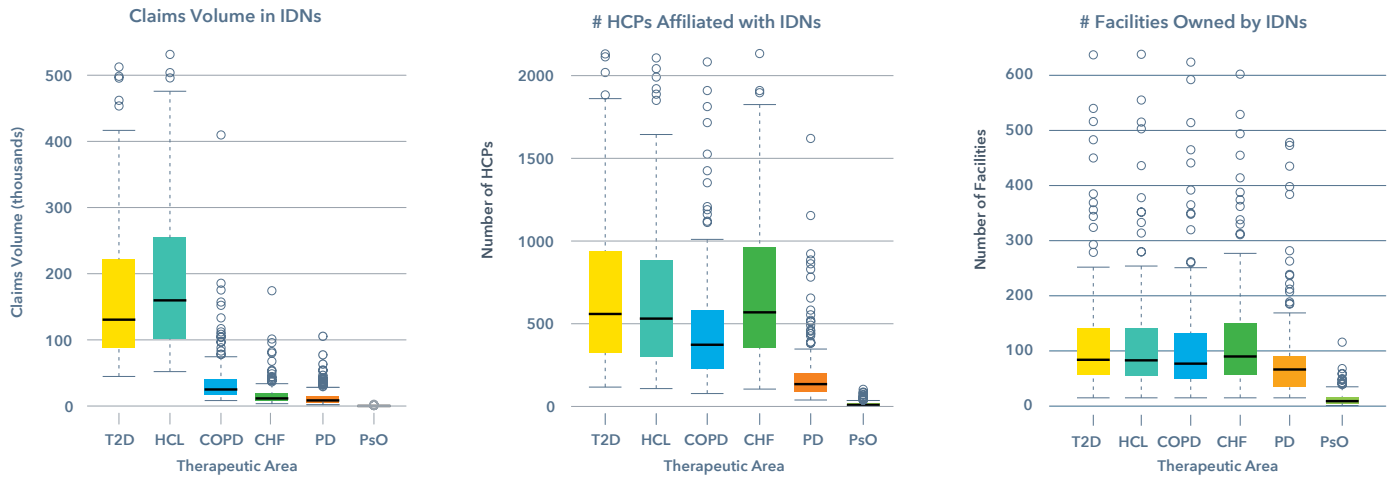
Fig. 3. Penetration by IDNs and PNs within the 65 largest CBSAs as measured by proportion of claims volume. The black, horizontal line in each colored box is the median, while the colored box is the interquartile range. Individual circles show outliers.



WHAT DO THEY LOOK LIKE?

There are roughly 1,000 IDNs in the US and up to several thousand provider networks, depending on the therapeutic area. In order to compare the size of IDNs across different therapeutic areas, we studied the 200 IDNs that had the highest average rank of claims volume (PNs were not included because their business tends to be TA-specific). Findings are illustrated in Figure 4 on the next page.

Fig 4. Comparison of IDN size by therapeutic area: top 200 IDNs.

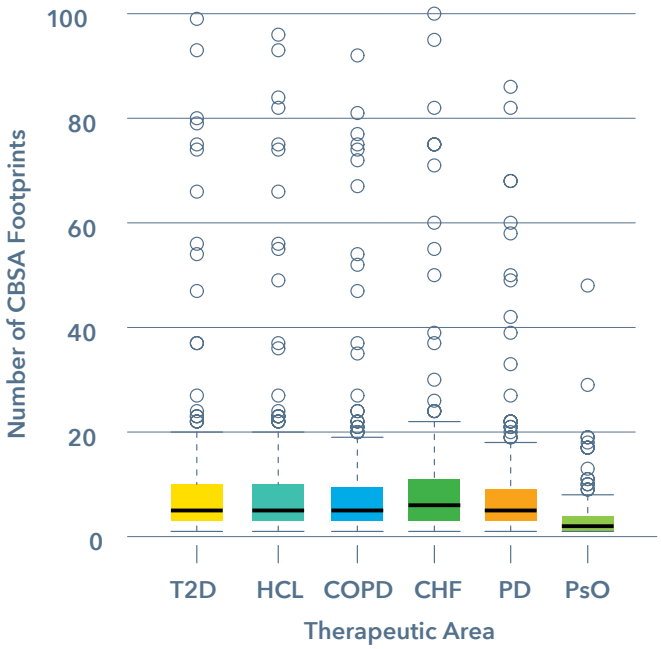


The 200 largest IDNs own an average of at least 80 facilities, have over 500 affiliated providers, and generate tens of thousands or more of claims annually.

There's tremendous variation of the geographical spread of IDNs. Some are localized in only one geography while others are very spread out, as illustrated in Figure 5 at right.

For example, NYC Health & Hospitals Corporation generates approximately 400,000 type 2 diabetes scripts a year, and does business in one CBSA. In comparison, Tenet Healthcare Corporation also generates about 400,000 type 2 diabetes scripts a year, but that business is spread across the country over 79 CBSAs.

Fig 5. Number of CBSA footprints for the 200 largest IDNs.

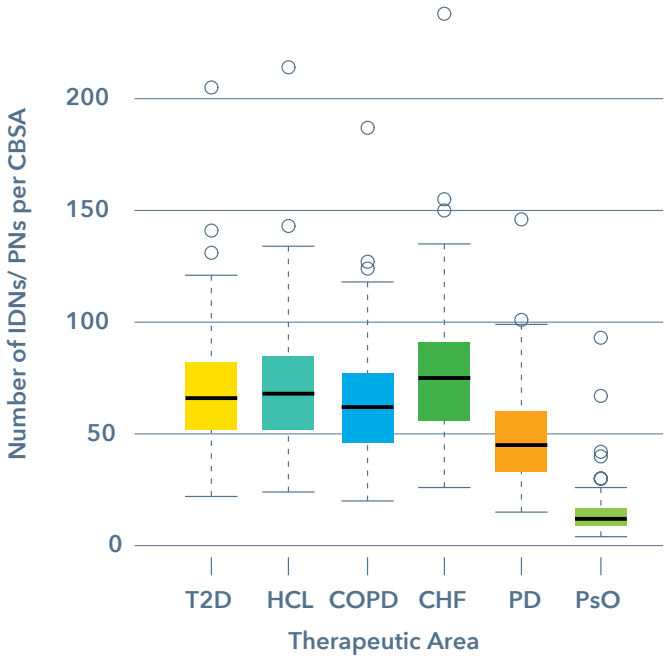


HOW MUCH DIVERSITY AND COMPETITION IS THERE?

Although there are thousands of IDNs and PNs in the US healthcare system, they're not equally active across different geographies. A natural question is how many do business in a typical geographical market.

To understand the diversity of IDNs and PNs within a given geography, we focused on the 65 CBSAs with a population of at least 1,000,000. As shown in Figure 6 below, there are on average approximately 60 IDNs and PNs within each of these CBSAs, but there's a lot of variation, with some having only a few dozen while the largest, New York City, has over 200.

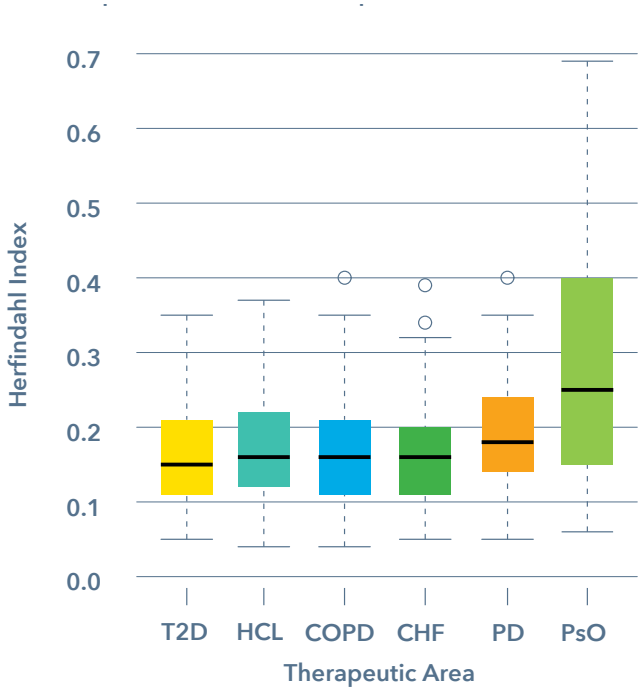
Fig. 6. IDN/PN diversity in the 65 largest CBSAs.



Since IDN and PN size varies so much, simply knowing the raw number of IDNs doing business in a geography doesn't capture how much competition there truly is. To understand IDN/PN competition we use a metric called the Herfindahl Index, which analyzes the distribution of market share within a group of competitors. Originally proposed by Orris Herfindahl to study the behavior of the US steel industry, this index varies between zero and one, with zero indicating healthcare markets in which there's lots of competition, with no single IDN or PN having significant market share, while a value of one describes a market in which all business is consolidated in a single health system.

In the 65 largest CBSAs in the US, most TAs show considerable competition on average, with somewhat less competition in specialty markets than in retail ones, as shown in Figure 7 below.

Fig. 7. IDN/PN competition in the 65 largest CBSAs as measured by the Herfindahl Index. The lowest values of the index represent the most competition.



We can illustrate how the amount of competition varies between geographies by looking at two CBSAs—Fort Lauderdale-Pompano Beach, FL, and San Jose-Sunnyvale-Santa Clara, CA—that each have a population

of 2,000,000 people and have similar numbers of IDNs and PNs doing business in them. While Fort Lauderdale shows high competition across the board, the majority of business in San Jose is concentrated in the hands of a few IDNs and PNs, and the amount of competition is low to medium (Figure 8 below).

Fig. 8. Amount of competition between IDNs/PNs in two CBSAs of similar size.

CBSA	T2D	HCL	COPD	HF	PD	PSO
FORT LAUDERDALE - POMPANO BEACH, FL	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
SAN JOSE - SUNNYVALE - SANTA CLARA, CA	MED	LOW	MED	MED	LOW	LOW

High Medium Low

WHAT KIND OF INFLUENCE PATTERNS DO WE SEE?

This final question is arguably the most important: what kind of influence are IDNs and PNs having on the treatment behavior of their affiliated providers? We call this impact "IDN control", and we measured it by comparing the writing behavior of providers affiliated with a health system with independent providers in the same geography, matching on confounding factors such as market volume, provider specialty, and payer mix.

The patterns of influence we see are complex, as illustrated in Figure 9 below with half a dozen IDNs in the New York City region. The figure shows the amount

Fig. 9. Treatment influence of seven New York City IDNs.

IDN NAME	T2D	HCL	COPD	CHF	PD	PSO
NYU LANGONE MEDICAL CENTER	LOW	LOW	LOW	MED	LOW	LOW
HACKENSACK UNIVERSITY MEDICAL CENTER	HIGH	MED	LOW	MED	MED	MED
BARNABAS HEALTH	MED	HIGH	MED	MED	MED	NA
MONTEFIORE MEDICAL CENTER	MED	HIGH	MED	MED	LOW	MED
NEW YORK PRESBYTERIAN HEALTHCARE	LOW	MED	LOW	MED	LOW	MED
NEW YORK CITY HEALTH & HOSPITALS	LOW	HIGH	MED	LOW	LOW	NA
MOUNT SINAI HEALTH SYSTEM	MED	HIGH	LOW	MED	LOW	LOW

High Medium Low

of control displayed by a single IDN can be different for each therapeutic area, and IDNs that show high control for one therapeutic area may be low control for another.

To explore this behavior further we conducted an experiment to measure how consistent each IDN's influence was across these six therapeutic areas. Using data for the top 200 IDNs, we randomly permuted influence values within each TA across IDNs and compared the amount of consistency of influence we saw in reality to the randomized data. Our findings showed that individual IDNs do display some consistency of influence across TAs, but it's relatively weak.

Also, a single IDN can influence its affiliated providers to different degrees in different geographies, being high influence in one and low influence in another. It's important to be aware of this behavior in order to choose the right engagement strategy.

CONCLUSION

These findings have important implications for the account teams that call on these health systems. First, teams should be aware of where IDNs and PNs are most active and focus efforts there. Second, teams need to be aware of differences in the geographical spread of accounts in order to manage travel time and budgets. Third, treatment influence exerted by IDNs and PNs is complex and nuanced, and accounts that are influencing affiliated HCPs in one TA may be doing something completely different in another. The failure to understand this behavior risks time and effort being wasted on health systems that aren't influencing the HCPs affiliated with them, or on inappropriate tactics such as patient adherence programs for classes of drugs a health system is controlling in an unfavorable way.

ABOUT THE AUTHOR

RORY MARTIN, PHD
IQVIA Center of Excellence
for IDN Insights

Rory has 20 years of experience in life sciences, initially in statistical genomics and computational biology and then supporting commercial teams to accelerate the growth of their brands. His current role is leading the IQVIA IDN Center of Excellence. He has been an invited speaker at the FDA's Center for Drug Evaluation and Research (CDER).

CONTACT US

iqvia.com/contactus

LOCATION

One IMS Drive

Plymouth Meeting, PA 19462

USA

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