A Close Look at Factors Influencing

Behavior of Outgoing-Rx Between Institutes & Pharmacies in Japan

Many factors influence the flow of Outgoing-Rx from a Rx-Generating Institution and Rx-Receiving Pharmacy.　This study takes a close look at some of these less-known factors.　The analysis is based on nearly all outgoing-Rx generated in Japan.

Research Category

Special Report

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Background, Rationale & Methodology

A large number of medical institutes exist in Japan, and they vary significantly in their nature and size. They together generate about 73 million outgoing-Rxs every month. These outgoing-Rxs are then received by about 57K Dispensing Pharmacies (DPs) nationwide and they form over half of the total Japanese pharmaceutical market by value (the remaining is the in-house purchase/prescribing by all HPs and GPs).

The flow of these outgoing Rx's between the Rx-generating institute and Rx-receiving DP behave in certain manners depending on various factors viz. – geographical area (prefecture, region, city etc.) and local preferences, distance between an institute and a pharmacy, number of pharmacies around institutes, the type of facilities available at the institutes and the DPs etc. The policies including "Family pharmacists and pharmacies" which is a part of the government's "Vision of Pharmacy for Patients" developed in 2015 seem to be an important evaluation factor. However, it is excluded intentionally from this analysis because it is hard to measure the degree of its influence.

The relationship between an outgoing-Rx generating institute and the DP which receives it, could be better understood through two important variables – Relationship Rank (priority at which an institute and DP are related) and Relationship-Ratio (distribution ratio) (actual degree of outgoing-Rx received by a DP from an institute or vice-versa in percentage (%) measure. Both these measures are explained well in Appendix section of this report.

Methodology: It depends on the Market Specialists (MS) from Japanese Pharmaceutical Wholesalers (PWSs) who regularly visit HP, GP and DP. The data accumulated through this massive and regular survey thus establishes the Relationship-Ratio and Relationship-Rank between the institutes and DP, and provides many other useful insights (*please find the details in appendix 1 and 2.*).

Important Note for the Readers: Readers are highly recommended to go through the explanation of 'Relationship Ratio' and 'Relationship Rank', along with other important specifications of the report for a smooth reading and easy understanding of the contents. These explanations are given into the appendix section of the report.

Executive Summary

Executive Summary

"The findings provide us with a number of fresh perspectives about the behavior of outgoing-Rx, and also establishes their correlation with some external factors."

A large number of medical institutes generate about 73 million outgoing-Rxs every month, which are then received by about 57K DPs nationwide. The flow of these outgoing Rx's between the Rx-generating institute and Rx-receiving DP behave in certain manners depending on various factors viz. – geographical area (prefecture, region, city etc.) and local preferences, distance between an institute and pharmacy, number of pharmacies around institutes, the type of facilities available at the institutes and the DPs etc. The policies including "Family pharmacists and pharmacies" which is a part of the government's "Vision of Pharmacy for Patients" developed in 2015 seem to be an important evaluation factor. However, it is excluded intentionally from this analysis because it is hard to measure the degree of its influence.

Relationship between an outgoing-Rx generating institute and the DP which receives it, can be defined through two important variables – Relationship Rank (priority at which an institute and DP are related) and Relationship-Ratio (actual degree of Outgoing-Rx received by a DP from an Institute or vice-versa in percentage (%) measure) *(both these measures are explained well in Appendix section of this report and advised to comprehend before reading the report)*.

Some of the Key Findings:

- Looking from the Institutes' point of view - the outgoing-Rx of nearly 60% of institutes go to only one DP while about 83% of all institutes go to up to two DPs. There are only about 2% of the institutes in Japan whose outgoing-Rxs are received by more than 10 DPs.
- The findings indicate that all Primary DPs, together receive about 42% of all outgoing-Rxs while about 2/3 of all outgoing-Rx are received by up to the 'Secondary DP'.
- Strong discrepancies in the behavior of outgoing-Rx were observed by prefectures. Over 25% of total outgoing-Rx are generated from top three prefectures i.e. Tokyo, Osaka and Kanagawa. While Tokyo alone generates about 12% of total outgoing-Rx in Japan – last 16 prefectures together

generate nearly equal number of outgoing-Rx that Tokyo generates alone.

- A significant discrepancy among prefectures for average number of outgoing-Rx per institute is also observed. Aomori tops the list with more than 60% average-Rx per institute than Tokyo and about 82% more than Nara (the least average-Rx per institute generating prefecture).

- On regional basis - Kanto alone has about 1/3rd to total HP while Kanto+Kansai together have ⩾50% of all HPs. Last 4 regions (of total 8) together generate only about 20% of Japan's total outgoing-Rxs.

- On average, the Primary DPs are located at about 237 meters distance which are on average about 460 meters lesser than their Secondary DP. At the same time, we see that on average basis, the Primary DPs receive 955 Rx per month (about 4 times more Rx compared to their Secondary DP).

- For the Primary DP, on average, the outgoing-Rx travel maximum distance in **Wakayama**, which over three times higher distance compared to the national average for Primary DP. **Wakayama** is followed by **Ishikawa** (about 2.8 times higher than the national average) and **Toyama** (about 2.5 times higher than the national average). Similarly, in **Tokyo**, outgoing-Rxs travel the shortest distance compared to the national average (one third of the national average), followed by **Miyazaki** (0.4 times shorter than the national average) and **Fukuoka** (a half of the national average).

- A correlation was found between external factors (such as number of cars, public transportation ratio and number of train stations in different prefectures) and the travel distance covered by outgoing-Rx to reach its primary, secondary and higher relationship-ranked DP in different prefectures. In general, the correlation was found positive for number of cars while negative for public transportation ratio, and number of train stations

- Primary DPs on average receive over 90% of the outgoing-Rx from the Primary Institute they are related with, while the Secondary DP receive just about 15% of the outgoing-Rx on the same parameter.

- The total number of DPs under top 10 DP chains has increased significantly in recent years to about 6K (from about 4.5K nearly four years ago) and it is about 10% of the total number of DPs. Together, these top-10 pharmacy chains generate about 11% of the total DP market

Factors Influencing Behavior of Outgoing-Rx in Japan

Outgoing-Rx vs Preferred DP

The Rxs generated from an institute (which can be a HP or GP) go to some DP (which include drugstores) nearby *. 'Relationship Ranking of DP' defines the priority level at which outgoing-Rx from an institute are related to specific DP. 'Number One' or 'Primary DP' is a DP for a specific institute which receives maximum number of outgoing-Rx from that institute, followed by 'Secondary DP' and so on. (*kindly refer to appendix for details on Relationship Rank and Relationship Ratio*).

Chart 1 shows the status of all outgoing-Rx for their relationship between Institutes and DPs. Total of 62 thousand plus institutes (includes HPs and GPs), which together generate about 73million outgoing Rx/month are included in the study.

The outgoing-Rx of nearly 60% of institutes go to only one DP while about 83% of all institutes go to up to two DPs. There are only about 2% of the institutes in Japan whose outgoing-Rx are received by more than 10 DPs. They are generally very large or specialty hospitals.

However, these findings may be delusive - we must note here that the count of Rx-generating institutes include individual GPs also. Outgoing-Rx generated from GP which are mostly honored by their respective Primary DPs.

The findings indicate that all Primary DPs, together receive about 42% of all outgoing-Rxs while about 2/3 of all outgoing-Rx are received by up to the Secondary DP.

* The policies including "Family pharmacists and pharmacies" which is a part of the government's "Vision of Pharmacy for Patients" developed in 2015 seem to be an important evaluation factor. However, it is excluded intentionally from this analysis because it is hard to measure the degree of its influence.

Chart 1.
Outgoing-Rx HP vs DP (Preferred DP Rank)
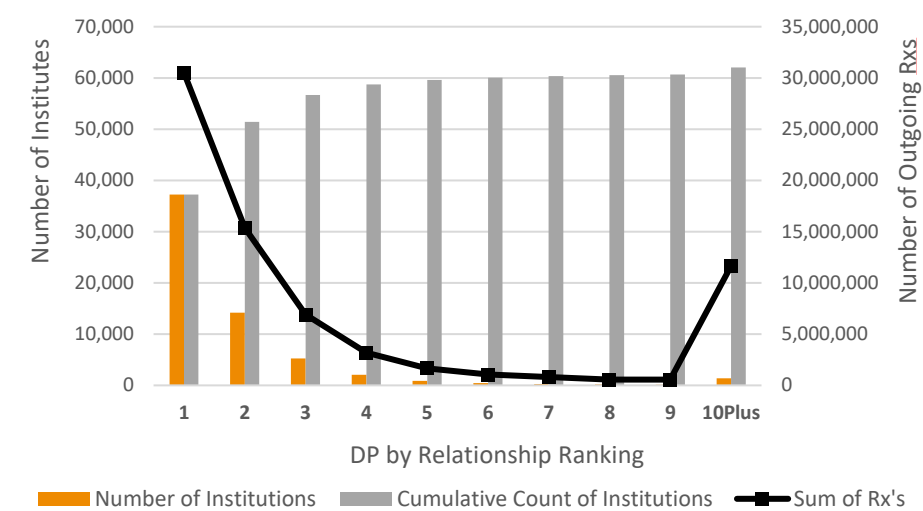
Source: Encise Research Center, Encise Inc.

Discrepancies among Prefectures

Strong discrepancies in the behavior of outgoing-Rx were observed by prefectures (Chart 2 and Table 1).

- Over 25% of total outgoing-Rx are generated from top three prefectures i.e. Tokyo, Osaka and Kanagawa. While Tokyo alone generates about 12% of total outgoing-Rx in Japan – last 16 prefectures together generate nearly equal number of outgoing-Rx that Tokyo generates alone.
- A significant discrepancy among prefectures for average number of outgoing-Rx is also observed. Aomori tops the list with more than 60% average-Rx per institute than Tokyo and about 82% more than Nara (the least average-Rx per institute generating prefecture).

Chart 2.
Discrepancy among Prefectures for Outgoing-Rx
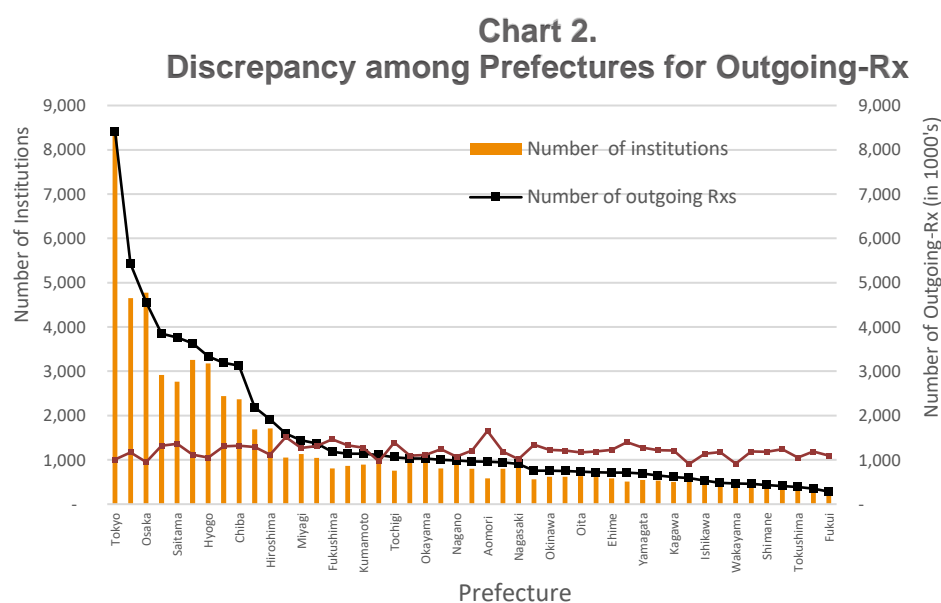
Source: Encise Research Center, Encise Inc.

Table 1.
Discrepancy among Prefectures for Outgoing-Rx
(Number of outgoing-Rx in 1000's)

Number of Institutes by Prefecture and % of total	
Top 3	**Bottom 3**
Tokyo 8,333 (13.4%)	Fukui 258 (0.4%)
Osaka 4,775 (7.7%)	Tottori 292 (0.5%)
Kanagawa 4,650 (7.5%)	Kochi 328 (0.5%)

Number of Outgoing-Rx Prefecture and % of total	
Top 3	**Bottom 3**
Tokyo 8,419 (11.6%)	Fukui 282 (0.4%)
Kanagawa 5,422 (7.5%)	Tottori 348 (0.5%)
Osaka 4,554 (6.3%)	Tokushima 384 (0.5%)

Number of average Outgoing-Rx per institute by Prefecture	
Top 3	**Bottom 3**
Aomori (1,652)	Nara (904)
Ibaraki (1,512)	Wakayama (913)
Fukushima (1,463)	Osaka (954)

Source: Encise Research Center, Encise Inc.

Discrepancies among Regions

Chart 3 shows the discrepancies among regions for the same parameters discussed for prefectures.

- Kanto alone has about 1/3rd to total institutions while Kanto+Kinki together have ≥50% of all HPs
- Last 4 regions (of total 8) together generate only about 20% of the total outgoing-Rx.

"A strong discrepancy among regions was also observed for the outgoing-Rxs."

**Chart 3.
Discrepancy among Regions for Outgoing-Rx**
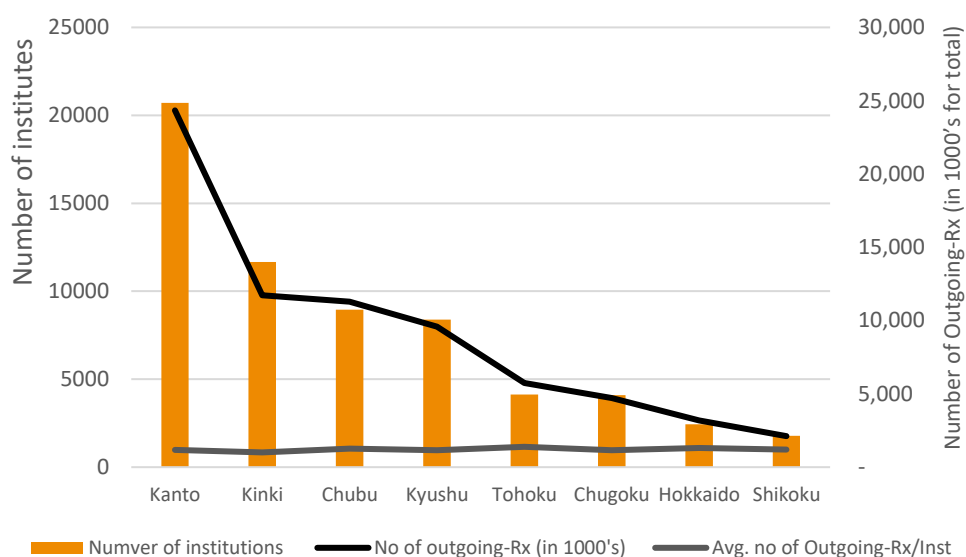
Source: Encise Research Center, Encise Inc.

The Distance Factor

Distance of a DP from the Institute is an obvious factor for receiving the Rxs. Chart 4 and Table 2 provide insight on how the distance between DP and an institute influences a number of outgoing-Rx the institute receives.

Table 2 provides more closer view on outgoing-Rx behavior with respect to distance of DP Relationship Rank from the institute. On average the Primary DPs are located at about 237 meters distance which are on average about 460 meters lesser than their Secondary DP. At the same time, we see that on average basis, the Primary DPs receive 955 Rx per month (about 4 times more Rx compared to their Secondary DP).

However, many other factors also affect the Rx flow e.g. distance from a subway station etc. which are discussed in details in coming sections.

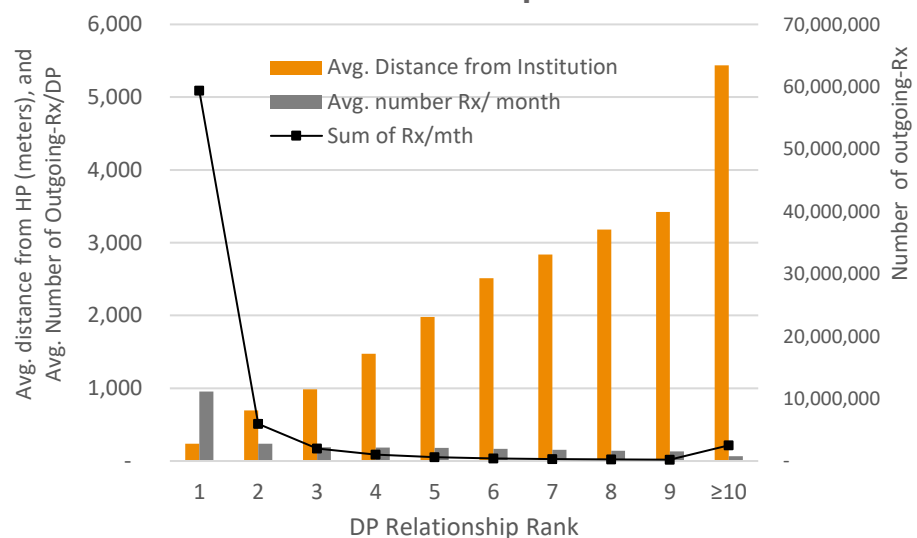*"An outgoing-Rx travels ≈240 meters on average to reach its primary DP, while the Secondary DPs on average are distanced at ≈700 meters."*

**Chart 4.
Outgoing-Rx Behavior vs. Distance to DP-Relationship Rank**

Source: Encise Research Center, Encise Inc.

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Table 2.
Outgoing-Rx Behavior vs. Distance to DP-Relationship Rank

DP Rank	Number of Institutes	Avg. Distance from Institution (m)	Avg. number of Rx/ month
1	62,165	237	955
2	24,917	696	239
3	10,739	987	188
4	5,481	1,475	183
5	3,444	1,981	180
6	2,566	2,512	167
7	2,106	2,838	152
8	1,833	3,182	140
9	1,632	3,424	131
≥10	38,315	5,437	66

Source: Encise Research Center, Encise Inc.

Distance Covered by Outgoing-Rx
And the likely factors influencing it

"A significant level of discrepancy among prefectures was observed for the outgoing-Rx travel distance against their Pharmacy-Rank."

There could be many factors influencing how the outgoing-Rxs travel from a HP/GP to a DP and determining the distance covered by outgoing-Rxs to reach different DPs by their Relationship Rank.

We take a close look in this section for the DP's Relationship Rank - how the distance with DP Rank fluctuates with prefectures and study a few likely factors which could be influencing this distance.

We then look at some of these factors by prefecture and analyze if there is some relationship between these indicators and their likely impact on flow of outgoing-Rx.

Table 3 lists prefecture wise trends of outgoing-Rx travel distance by Relationship Rank for DP. The table tells us that there is a huge discrepancy among prefectures for outgoing-Rx travel distance.

Table 3.
Prefecture Wise Trends of Outgoing-Rx travel Distance
by Relationship Rank of DP

Category of DP		Prefecture	Number of Rx/mth	Combined Distance (Mtrs)	Avg Dist (/RX)	Dev fm NAvg*
Primary DP	Top three	Wakayama	359,769	456,958	1.27	0.85
		Ishikawa	395,199	472,875	1.20	0.78
		Toyama	365,693	387,483	1.06	0.64
	Bottom three	Fukuoka	3,115,090	648,268	0.21	(0.21)
		Miyazaki	673,777	115,219	0.17	(0.25)
		Tokyo	6,295,187	854,622	0.14	(0.28)
	National Average		58,816,151	24,523,525	0.42	-
Secondary DP	Top three	Fukui	28,059	1,145,748	40.83	28.67
		Tochigi	66,231	2,621,524	39.58	27.41
		Miyazaki	54,155	2,115,106	39.06	26.89
	Bottom three	Osaka	719,259	3,352,749	4.66	(7.51)
		Kanagawa	938,199	2,403,318	2.56	(9.61)
		Tokyo	1,392,678	1,711,861	1.23	(10.94)
	National Average		9,086,622	110,559,581	12.17	-
DP at ≥3 Relationship Rank	Top three	Miyazaki	20,861	3,378,501	161.95	129.71
		Tochigi	23,144	2,756,893	119.12	86.87
		Ehime	35,101	3,690,933	105.15	72.91
	Bottom three	Osaka	421,905	4,785,186	11.03	(20.90)
		Kanagawa	555,694	2,724,580	4.9	(27.34)
		Tokyo	733,714	1,705,252	2.32	(29.92)
	National Average		4,796,592	154,667,272	32.25	-

Source: Medical Connector® data from Encise, Encise Research Center

Avg. Distance ≡ average distance 'per outgoing-Rx' to reach the respective DP (in meters)
Dev fm NAvg ≡ Difference in average distance 'per outgoing-Rx' for the prefecture vs. its national average distance (in meters)
*table is sorted out on this column

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Observations and Findings:

Primary DP: on average, the outgoing-Rx travel maximum distance in **Wakayama**, which over 3 times higher distance compared to the national average for Primary DP. **Wakayama** is followed by **Ishikawa** (about 2.8 times higher than the national average) and **Toyama** (about 2.5 times higher). Similarly, in **Tokyo**, outgoing-Rxs travel the shortest distance compared to the national average (one third of the national average), followed by **Miyazaki** (0.4 times higher than the national average) and **Fukuoka** (half of the national average).

Secondary DP: In general, the national average distance for outgoing-Rx going to Secondary DP is about 12 meters and it is about 30 times higher than that for Primary DP. On average, distance covered to reach Secondary DP is the highest for **Fukui** (about 40 meters or 3.3 times higher than the national average), followed by **Tochigi** and **Miyazaki** (nearly same as **Fukui**). In case of average, the shortest distance for Secondary DP – **Tokyo** remains on the top (less than 10% average distance compared to the national average), followed by **Kanagawa** and **Osaka**.

DP Relationship Rank 3 and above: the national average distance is about 32 meters/Rx. When we look at this for different prefectures, again a high discrepancy is observed. It is the highest for **Miyazaki** (5 times higher than the national average), followed by **Tochigi** (3.7 times higher than the national average) and **Ehime** (3.2 times higher than the national average). If we look at the average minimum distance covered for the DP at Relationship Rank of 3 and above, it is the lowest for **Tokyo** (about 7% of the national average), followed by **Kanagawa** (about 15% of the national average) and **Osaka** (about 35% of the national average). In case of Tokyo however, it must be considered that number of daily commuters from outside are very high for Tokyo. And thus, the number of people in Tokyo in day-time and night-time significantly varies.

For the DP at relationship Rank 3 and above, we see drastic increases in the average distance covered by outgoing-Rx. This also varies significantly by prefecture.

While the data above measure the distance that outgoing-Rxs cover the DP by their relationship rank by prefecture, directions of these findings are not very difficult to understand e.g in case of Tokyo where population density is very high and most of people use public transportation to commute – the distance covered by outgoing-Rx is the lowest irrespective to the DP rank. However,

an important aspect to note here is the magnitude of discrepancies among prefectures.

We try to look at some of the common factors which may influence the distance that the outgoing-Rx has to travel to reach its Primary, Secondary or other Relationship Ranked DPs across the nation and by prefecture. The factors we choose here are – the population density, the ratio of people using public transportation by prefecture, and the number of cars per person by prefecture. While the ratio of public transportation and a number of cars per person may look inversely related to each other's by common logic, their implication on outgoing-Rx distance may be different. While the public transportation ratio appears more meaningful for Primary and Secondary DPs, the number of cars per person is more interesting factor to look how it affects the distance that outgoing-Rx travels to the DPs which are on Relationship Rank of three and above.

External Influencing Factors
And Likely Correlation among Them

This section provides little more insight on how some external factors may influence the travel distance of outgoing-Rx by prefecture for DPs at different Relationship Rank. The external factors that we take a close look at are a number of cars (per 1000 people) by prefecture, a public transportation ratio and density of railway stations. We attempt to see if any correlation exists.

Table 4 shows the correlation factor between average distance covered by outgoing-Rx (by DP Relationship Rank) and selected external factors by prefectures. These figures tell us that a positive or negative correlation exists for most of the external factors studied (for the distance covered by outgoing-Rx, by their relationship rank).

Table 4:
Correlation Factor for Distance Traveled by Outgoing-Rx
by DP Relationship-Ranks vs. External Factors for Prefectures

External Factors (for correlation)	Avg. Distance to Primary DP	Avg. Distance to Secondary DP	Avg. Distance to ≥3 Ranked DP
Number of Cars	0.43	0.75	0.67
Public transport Ratio	-0.27	-0.70	-0.70
Number of train stations	-0.22	-0.51	-0.53

Source: Encise Research Center, Medical Connector[®] Data and Third-Party Data

Table 4 (a)
How to interpret Correlation Coefficient (CCF) Values

+CCF Values	Positive	-CCF values	Negative
1.0	Perfect +	-1.0	Perfect -
0.8 to 0.99	Very strong+	-0.8 to -0.99	Very strong-
0.6 to 0.8	Strong +	-0.6 to -0.8	Strong -
0.4 to 0.6	Moderate +	-0.4 to -0.6	Moderate -
0.2 to 0.4	Weak +	-0.2 to -0.4	Weak -
0 to 0.2	Very weak+	0 to -0.2	Very weak -

Chart 5 to 7
Correlation between Distance Covered by Outgoing-Rx vs Number of Cars by Prefecture

Chart 5. Avg. Dsitance vs Avg. Number of Cars (Primery DP)

Chart 6. Avg. Dsitance vs Avg. Number of Cars (Secondary DP)

Chart 7. Avg. Dsitance vs Avg. Number of Cars (for DP of Relationship Rank ≥3)

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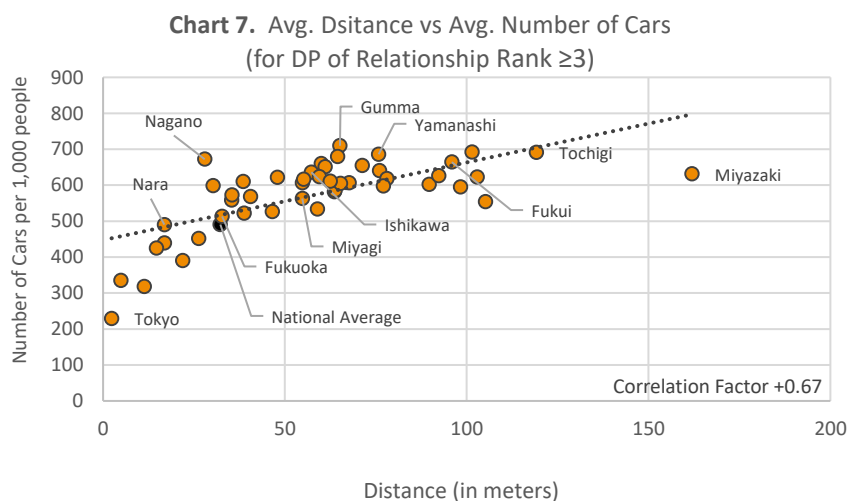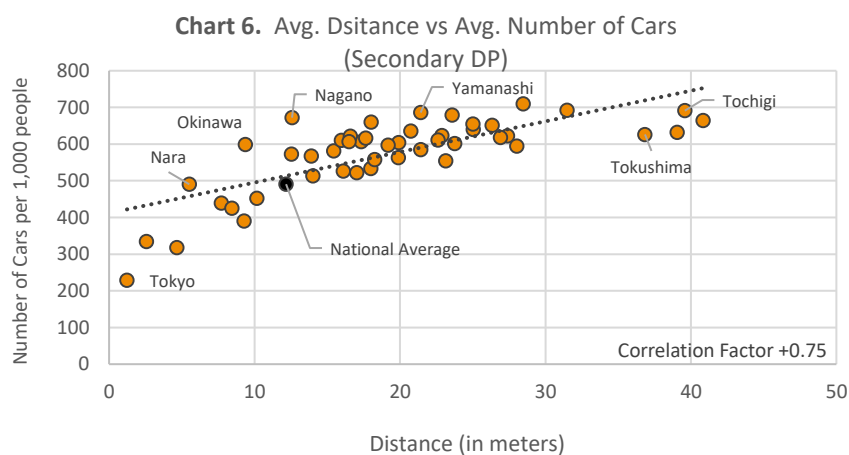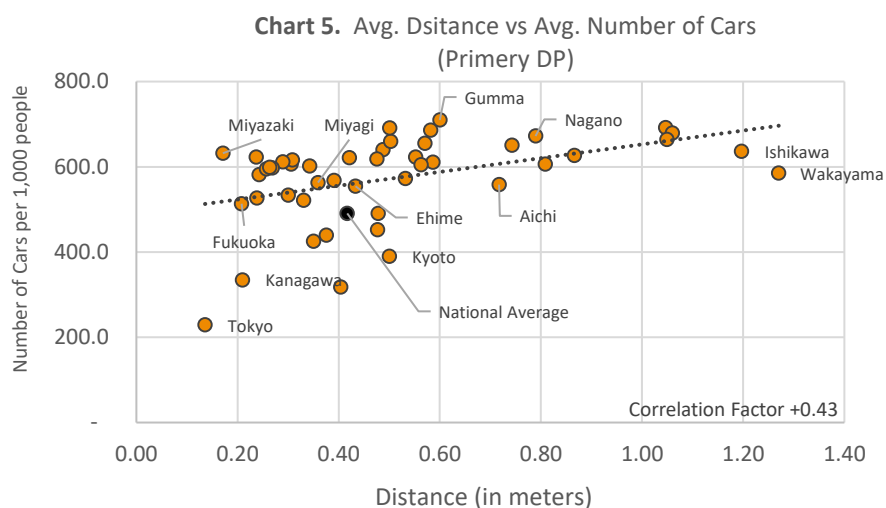
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Chart 8 to 10
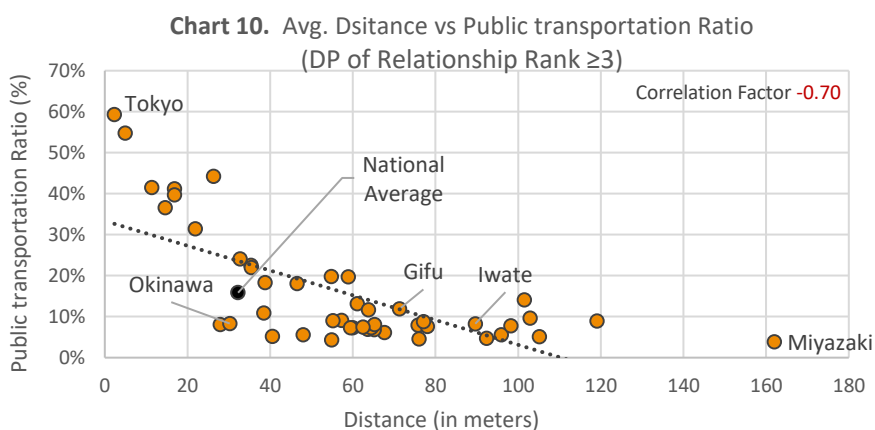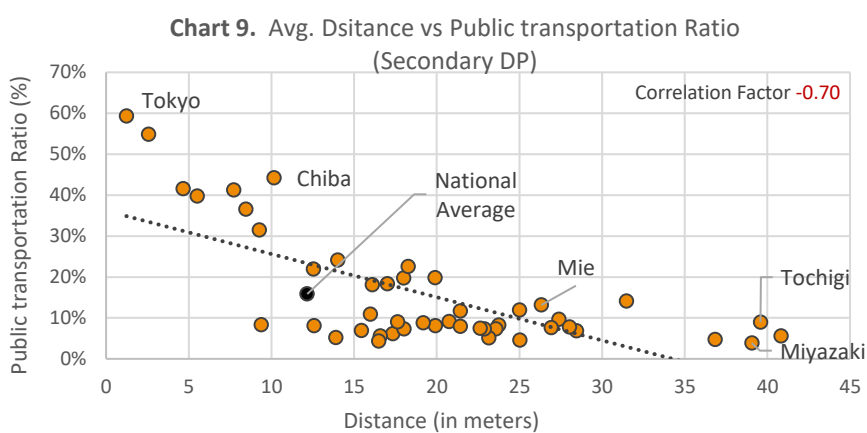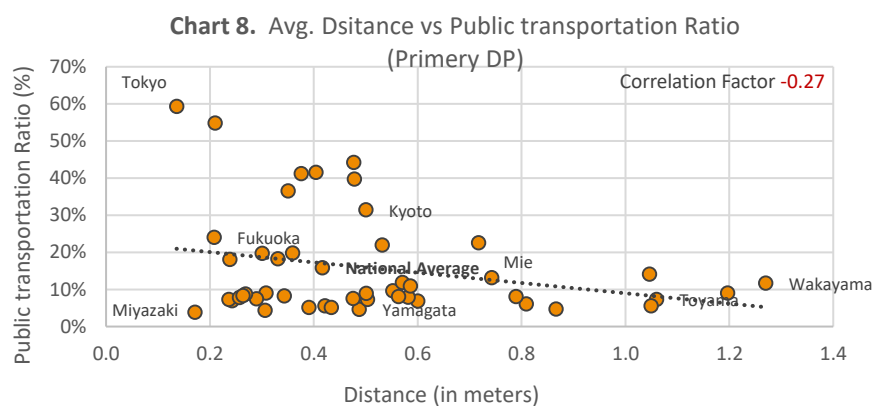## Correlation between Distance Covered by Outgoing-Rx vs Public Transportation Ratio by Prefecture

Chart 8. Avg. Dsitance vs Public transportation Ratio (Primery DP)

Correlation Factor -0.27

Public transportation Ratio (%)

Tokyo
Fukuoka
Kyoto
Mie
National Average
Miyazaki
Yamagata
Toyama
Wakayama

Distance (in meters)

Chart 9. Avg. Dsitance vs Public transportation Ratio (Secondary DP)

Correlation Factor -0.70

Public transportation Ratio (%)

Tokyo
Chiba
National Average
Mie
Tochigi
Miyazaki

Distance (in meters)

Chart 10. Avg. Dsitance vs Public transportation Ratio (DP of Relationship Rank ≥3)

Correlation Factor -0.70

Public transportation Ratio (%)

Tokyo
National Average
Okinawa
Gifu
Iwate
Miyazaki

Distance (in meters)

Chart 11 to 13

Correlation between Distance Covered by
Outgoing-Rx vs Number of Stations by Prefecture

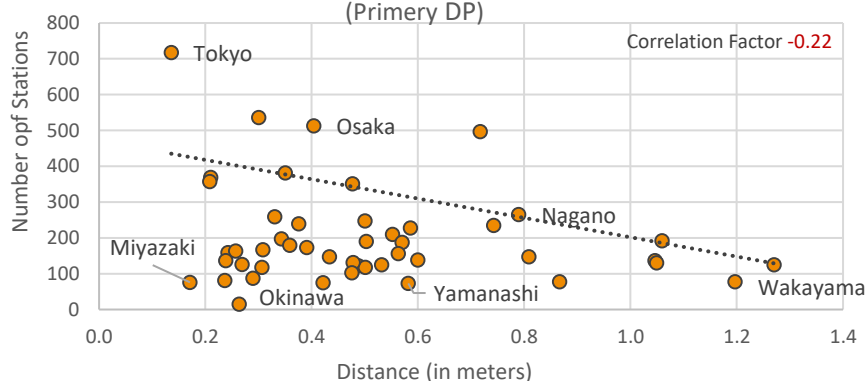**Chart 11.** Avg. Dsitance vs Number of Stations
(Primery DP)

Chart 12. Avg. Dsitance vs Number of Stations
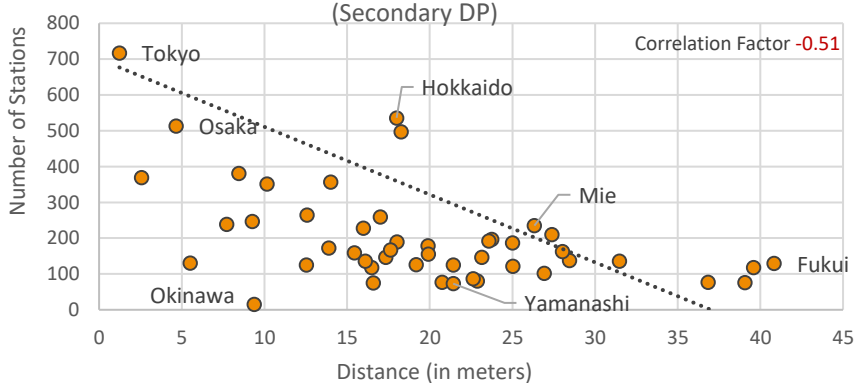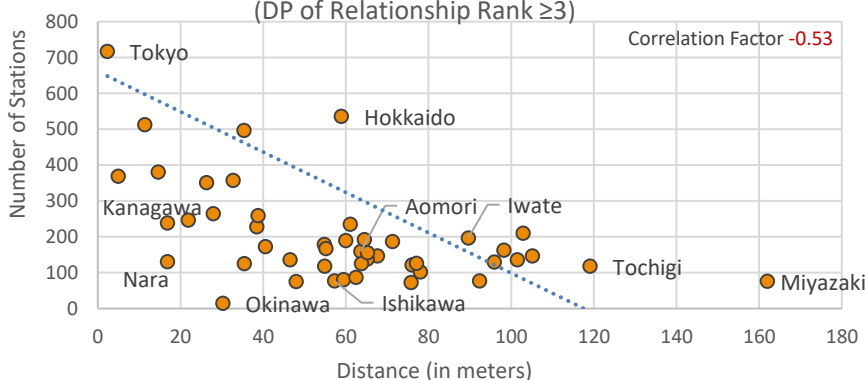(Secondary DP)

Chart 13. Avg. Dsitance vs Number of Stations
(DP of Relationship Rank ≥3)

Strength of Relationship Ratio
## And It's Significance with Relationship Rank

Relationship Ratio explains the degree of strength by which the Relationship Rank is denoted between an outgoing-Rx generating institute and DP (Appendix 1).

Chart 14 shows that Primary DPs on average receive over 90% of the outgoing-Rx (from the Primary Institute [the institute from where it receives maximum outgoing-Rxs] they are related with), while the Secondary DPs receive just about 15% of the outgoing-Rx on the same parameter.

We must note here that a large proportion of outgoing-Rx are generated from GP, which are mostly honored by their respective Primary DPs. This results into very high avg. relationship ratio for the Primary DP.

Chart 14.
Strength of Relationship Ratio vs. Relationship Rank
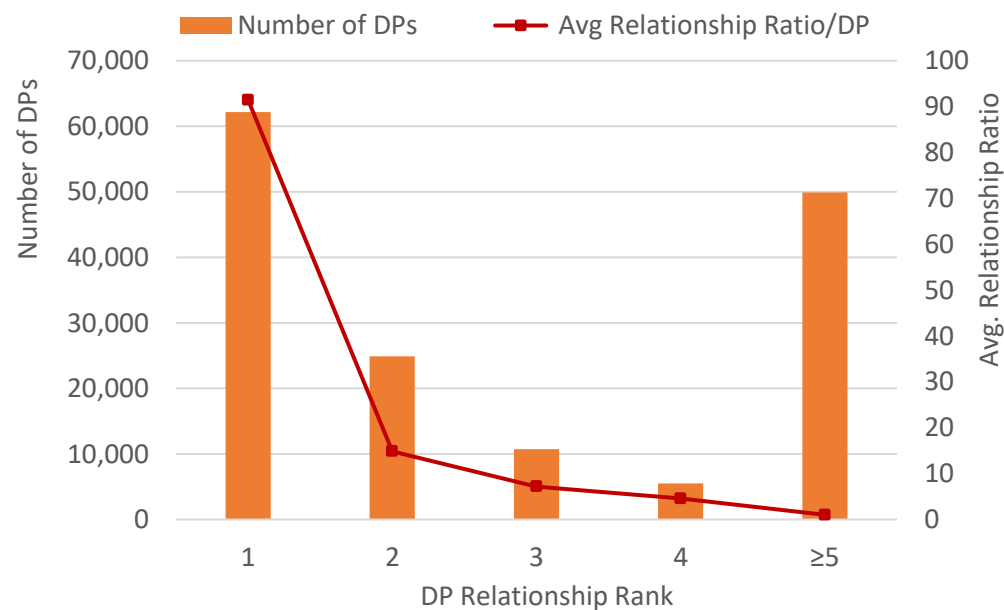
Source: Encise Research Center, Encise Inc.

Dynamics of Pharmacy Chains
And their implications for outgoing-Rx behavior

The proposition of DPs belonging to pharmacy chains including drugstores has been low in Japan (compared to other major developed markets) but is growing in recent times. Shrinking profit margins (due to pricing pressure and reforms to curb margins) and ability to negotiate on purchasing price from pharmaceutical wholesalers, bring pharmacy chains into better position than individual DPs. Due to the same reasons, the number of DPs belonging to larger chains is growing.

The total number of DPs under the top 10 DP chains (by their drugs purchase amount) has increased significantly in recent years to about 6K (from about 4.5K nearly four years ago) and it is about 10% of the total number of DPs. Together, these top-10 pharmacy chains generate about 11% of the total purchasing amount of the DP market (Chart 15 and Table 5).

Chart 15.
Number of RXs by Pharmacy Chain

Source: Encise Research Center, Encise Inc.

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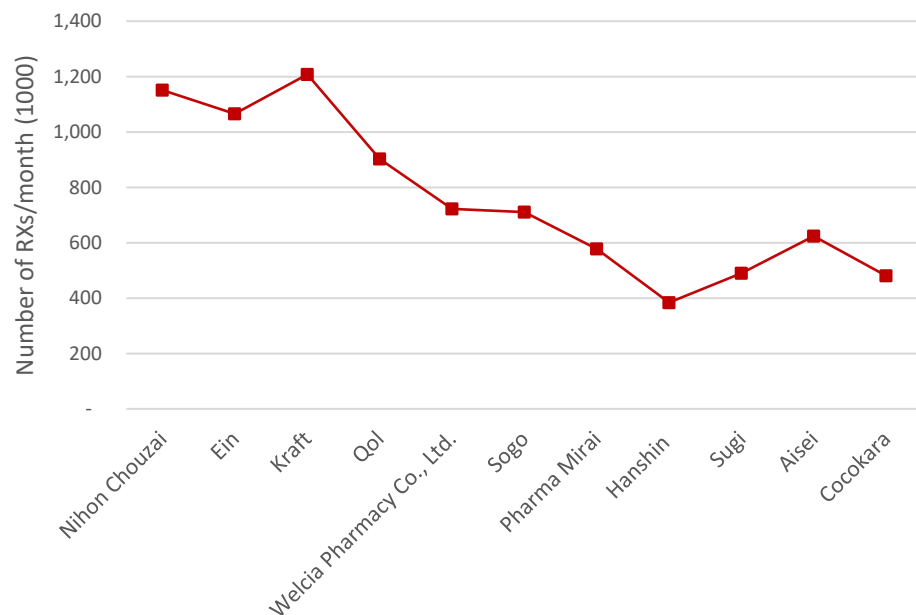
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Some of the Pharmacy Chains tend to have 'membership' kind of schemes for their customers, which keeps their records and provides certain benefits. This brings certain level of 'loyalty' to the customers. Growing strength of pharmacy chains means that it will also have some impact of outgoing-Rx behavior.

Table 5.
Segregation of DPs by Size of Group

Pharmacy Chains by count of member DPs	Count of chains (groups)	Total number of DP in Chain (group)	Number of Rx received /month (% to total)	Purchasing Amount (% to total)
Independent DPs (only one)	12060	12060	18.8%	17.6%
≥1 to 5	5564	15086	27.5%	25.3%
≥6 to 10	765	5675	10.7%	9.9%
≥11 to 50	452	8842	16.7%	17.0%
≥51 to 100	47	3384	6.1%	6.8%
101 +	31	15648	20.3%	23.5%

Source: Encise Research Center, Encise Inc.

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Relationship Rank is a number which denotes the degree of preference at which a DP receives the outgoing-Rx generated by an institution (HP or GP). Thus, the DP which receives maximum outgoing-Rx from an institute has Rank 1 for that institute and can be called as 'Primary DP'.

Figure
The Basis of 'Relationship-Ratio' and 'Relationship Rank'
(Illustrative example)
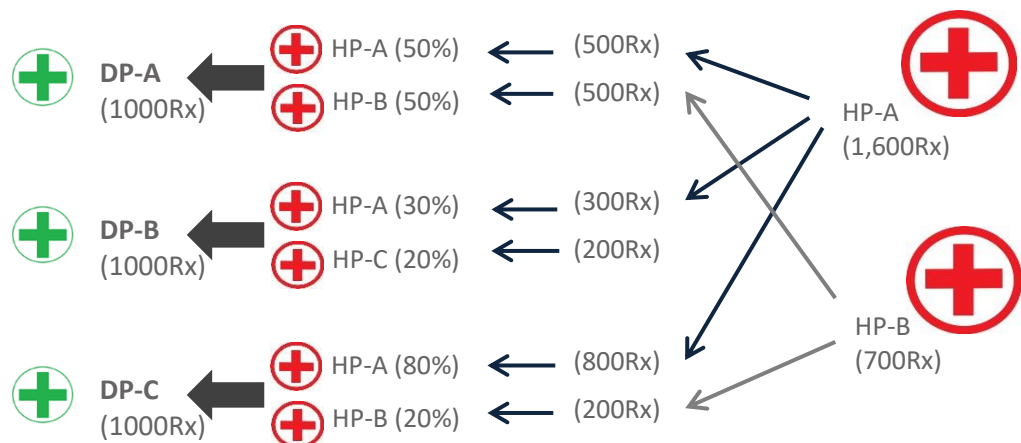
Source: Encise Inc.

In the figure above, assuming Hospital A generates 1,600 outgoing Rx per month and all of them go to one of the three pharmacies (DP-A, DP-B, and DP-C). DP-A receives 500 Rx from HP-A (which is 50% of the total Rx it receives), DP-B receives 300 Rx from HP-A (which is 30% of the total Rx it receives), and DP-C receives 800 Rx from HP-A (which is 80% of the total Rx it receives).

From the above example the 'Relationship Ratio' for DP-A, DP-B, and DP-C to HP-A is 50%, 30% and 80% respectively.

The Relationship Ratio and Relationship Rank thus will vary for a HP to DP and for same DP to HP and this is explained in next two figures.

'Relationship-Ratio' and 'Relationship-Rank' Between a HP and DP:

Table 6 shows that Hospital 11022XX is found to generate about 16,500 outgoing-Rx/ month. It is also traced that these Rxs are received by 49 pharmacies. Further, DP-A receives maximum about 26.1% of these Rxs, while DP-B receives about 13.5% of the total Rxs and so on. It is also noteworthy here that DP-A is located little higher distance than DP-B.

In the above example – the Relationship Ratio between HP and DP-A is 26.1%, while the Relationship Rank is 1. – about 97.7% of the Relationship-Ratios were established for a total of 49 DPs, which means that only the remaining 2.3% of the outgoing-Rx were not traced.

Table 6.
'Relationship-Ratio' and 'Relationship-Rank' Between HP and DP

HP CD	DP CD	Number of outgoingRx/mth	Relation Ratio (%)	Relationship Rank	Distance (meters)
11022XX	DP-A	4,308	26.1	1	171
11022XX	DP-B	2,230	13.5	2	145
11022XX	DP-C	1,754	10.6	3	176
11022XX	DP-D	1,499	9	4	165
11022XX	All Other Identified DPs	6,689	38.5	n/a	n/a
11022XX	Non-Identified DPs	n/a	2.7	n/a	n/a
Total		16,480			

Source: Medical Connector® by Encise

'Relationship-Ratio' and 'Relationship-Rank' Between a DP and HP:

Continuing for the GP-A from the previous example. It receives outgoing-Rx from three different Institutions.   It receives maximum Rx from HP 110220X (which is the same HP illustrated in the previous example), followed by two other HPs (Table 7) in the ratio of 94.9%, 2.9% and 2% respectively. The Relationship Rank for this DP for theses HPs thus is Rank 1, 2, and 3 therefore.

Table 7.
'Relationship-Ratio' and 'Relationship-Rank' Between DP and HP

DP Code	Medical Institution code	Number of outgoingRx/ mth	Relationship Rank	Relation ratio %	Distance (meters)
DP-A	110220X	4308	1	94.9	171
DP-A	110571X	136	2	2.9	86
DP-A	110578X	91	3	2	86
Total				99.8	

Source: Medical Connector® by Encise

Medical Connector® is a unique product from Encise which provides several vital information about nearly all Rx-generating Institutes in Japan and establishes their relationship individually with DPs.

Process of Data Collection: It depends on the MS from PWSs who regularly visit HP, GP and DP with. They together reach every single institute (whether HP or GP) or DP multiple times a day (estimated about 1.6 times per day for institutes and 2.3 times per day for DP). There are about 17000 MS active in field from all PWSs.

Medical Connector® collects various vital field data through the MSs of these PWSs. These MSs do a regular survey at each HP, GP and DP regarding outgoing-Rx. The data accumulated through this massive and nearly complete survey thus establishes the Relationship-Ratio and Relationship-Rank between the institutes and DP, and provides many other useful insights.

Appendix 3
Abbreviations & Terms Used

Table 8
Abbreviations and Terms Used in this Report

Abbreviations / Terms	Meaning
Institute	HP and GP
HP	Hospital
GP	General Practitioner
DP	Dispensing Pharmacy (or Pharmacy)
Rx/ Rxs	Prescription/s
PWS	Pharma Wholesaler
MS	Marketing Specialist
Avg.	Average
Vs.	Versus

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