Harvest your investment on Chemist House

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01
SUMMARY

Summary

Data driven strategy opens up a new range of possibilities to deliver value on the objectives of improving ROI for the existing Chemist stores and expanding new market.

What it means to be world-class in the application of using data driven strategies to manage retail business

World-class retail business use data driven strategies to …

| Optimize supply chain operation | Apply dynamic pricing | Send personalized recommendation | Explore new opportunities |

The objective of this analysis

This project analysed all the sales record in ~90% of chemist stores in the last 10 years in Australia. The objectives were focused on identifying opportunities of opening new stores and increasing revenue from the existing stores.

Key findings

For opening new stores:

It is recommended to consider store locations, patient density, health of population in the area, income and profit of existing stores, and joining the banner.

For existing stores:

Consider to sell TOP 5 popular drugs (brand) for different chronic illness.
Consider the influence of different ethical sub category in sale.
Ensure the stock level in store for the most profitable drugs.
Include the special drugs which sell more profitable in store.

There are significant benefits from introducing data driven strategies in chemist house retail management.

02
BACKGROUND

The current status and plan for the data driven strategy project

1. Target Customer

Pharmacy owners who want to:
- Open some new stores
- Have more profit from the existing stores

2. Current Pain Point

- Current approach is not able to scale
- Does not have any data driven analysis
- Hidden opportunities to grow

3. Anomalies in Data

- This data set doesn't include the whole existing pharmacy data.
- It only has the transaction for prescription drugs, not the general drugs.
- Transactions for Northern Territory state was negligible compared to other states, so NT was excluded for some analysis.
- Most of the patient DOB is recorded as a default date, so in analysis they are considered as age "Information is not there".
- There were some drug IDs which contains negative values.
- For some transactions Prescribed week < Dispensed week.

3. Plans

- Conducting existing data including store information, customer information, drug information, sales order.
- Introducing external data including government data related to public health, location data etc…
- Analyzing and generate data driven insight to benefit business revenue.
- Availability to scale the process.

The benefit of using data driven strategies for the chemist house retail business

1. The availability to scale.

2. Identify key insight.

3. Take action on those insights

03
MY APPROACH

The roadmap of this project

1.
Identifying key business pain point

2.
Understand source data

3.
Data Cleaning

4.
Sourcing external data

5.
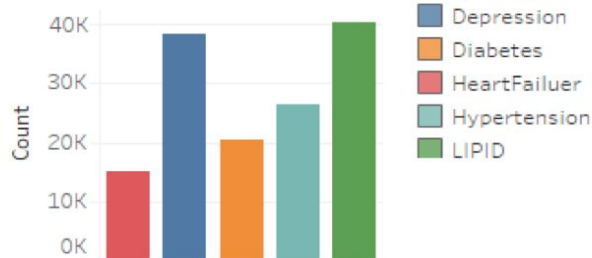Analysing data

6.
Generating report

7.
Final presentation

04
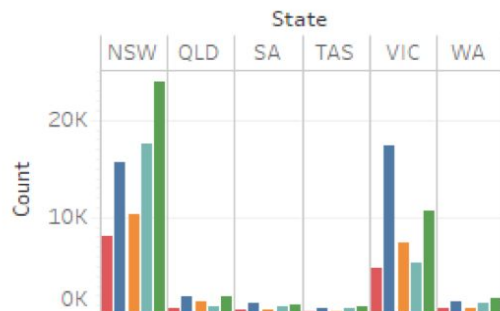# MAJOR INSIGHTS

Nostra dataset - General information

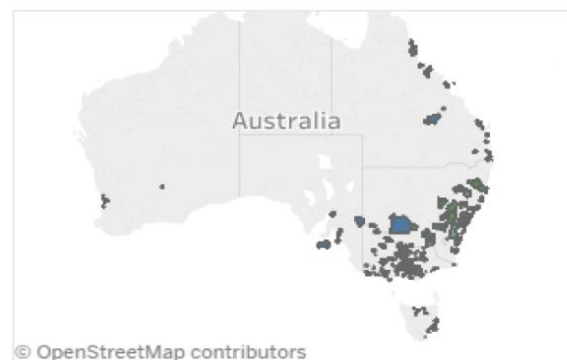# Nostra dataset - General information
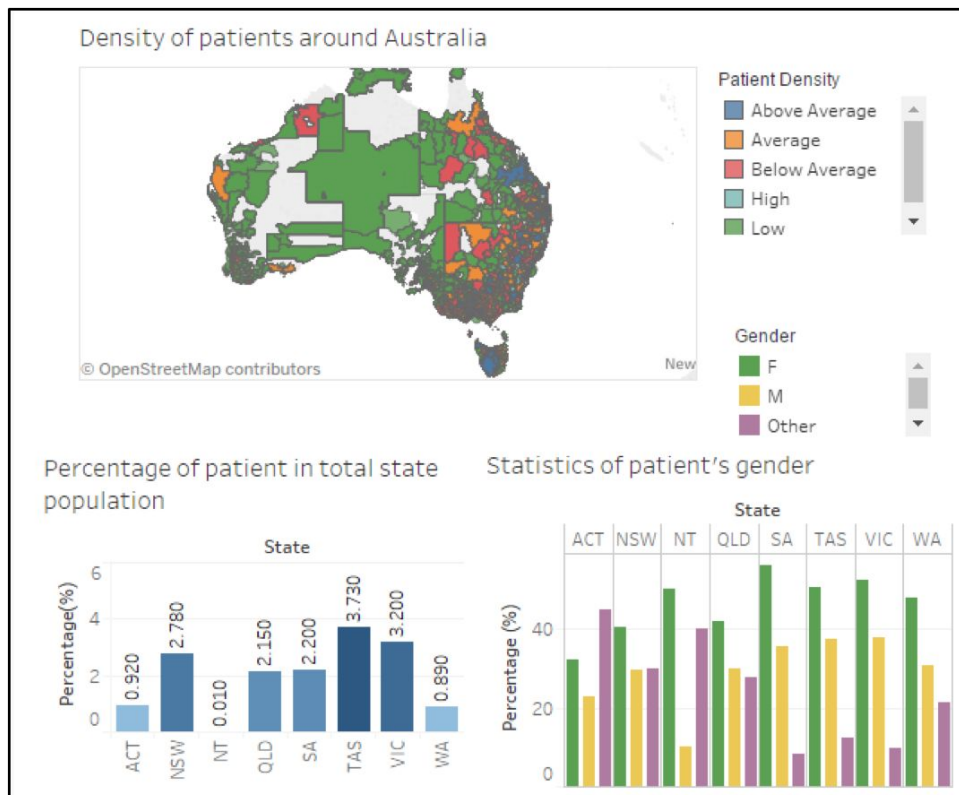
Nostra dataset - General information

Density of stores around Australia

Medical Store Density
- a store
- 2 stores
- 3-5 stores
- 6-10 stores
- 11-18 stores
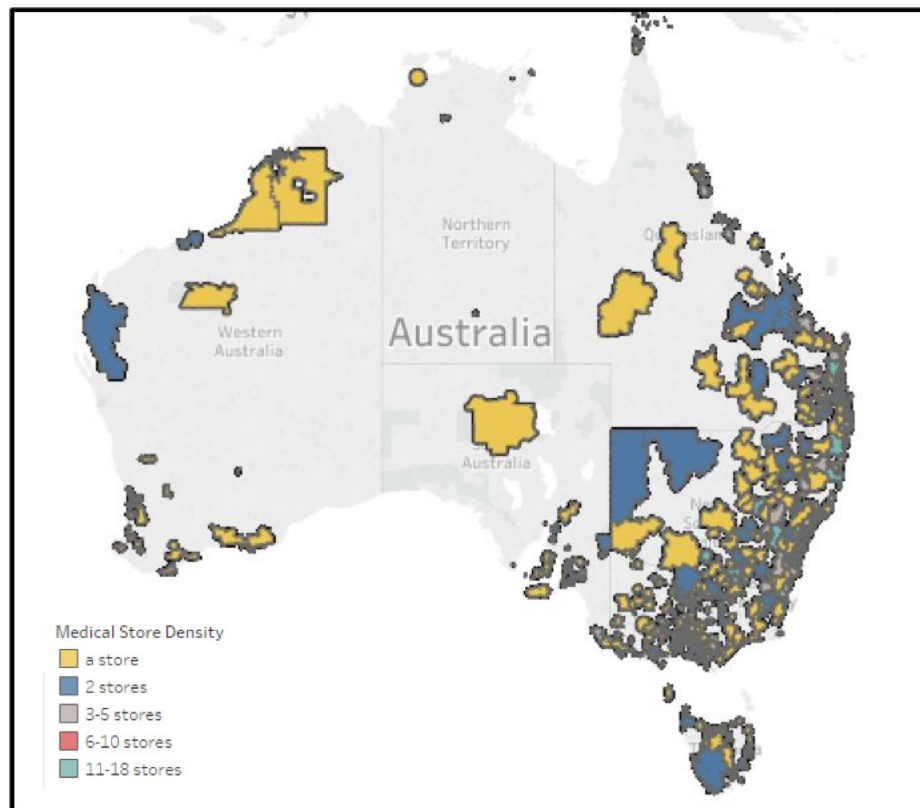
Majority patient group in suburbs

Age group of Patients
- 0-14
- 15-24
- 25-44
- 45-64
- 65+
- No
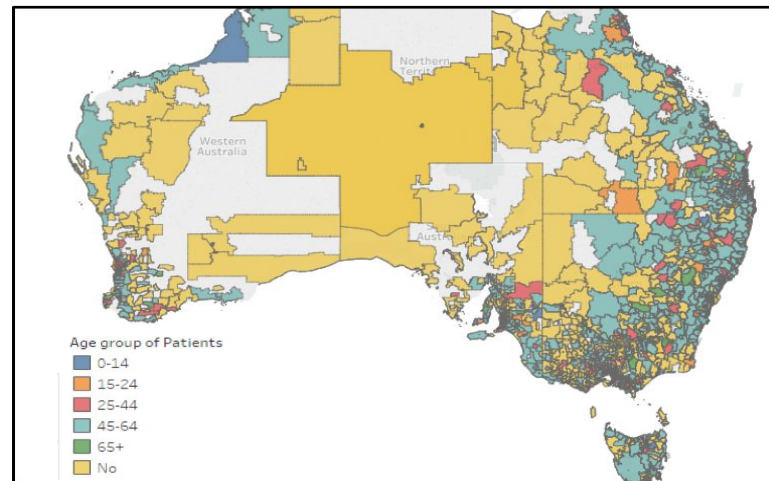
Age group of patients (from Nostradata)

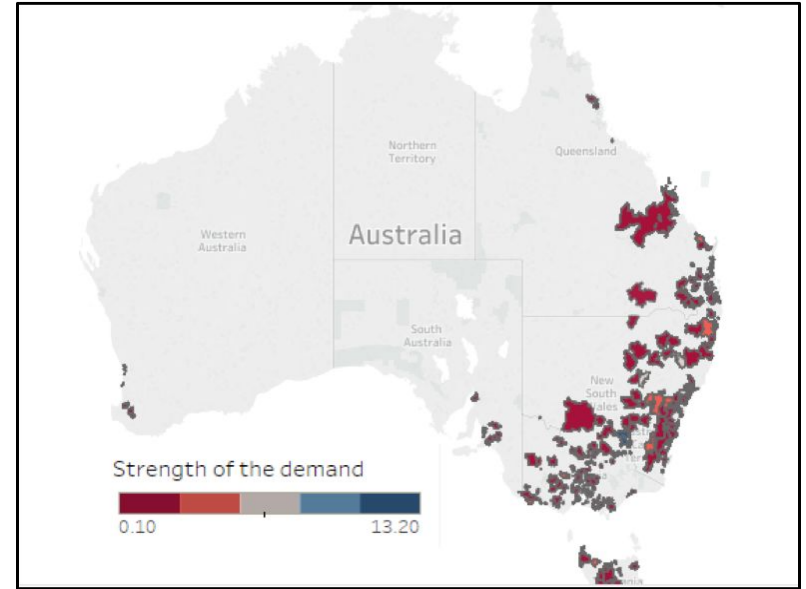| State	0 14	15 24	25 44	45 64	65
ACT	0	0	48,232	163,274	10,616
NSW	4,670,144	4,692,926	23,982,603	76,166,461	26,094,863
NT	0	424	885	4,250	1,914
QLD	3,287,676	4,574,495	37,995,199	143,787,764	61,898,959
SA	85,199	189,093	670,134	2,475,282	703,526
TAS	44,445	70,387	404,044	1,965,102	368,578
VIC	133,906	155,295	1,236,404	4,786,871	2,094,795
WA	125,018	208,498	1,858,860	5,951,743	2,137,031

Do you want to open new stores?

- Where to open a new store?
- Is the health of population an indicator?
- If income and profit decide store's future?
- Whether to join the banner?

Open new stores: Based on patient density and store locations
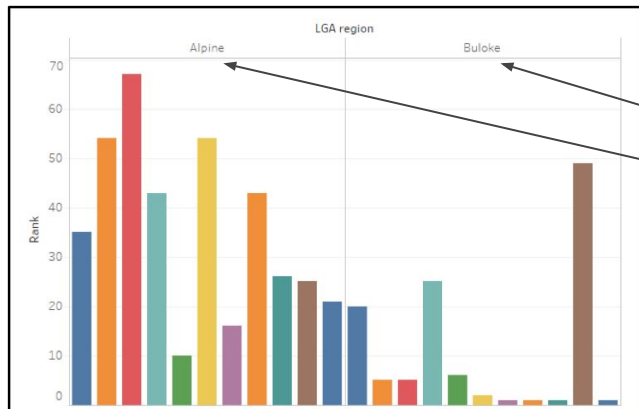
Suburb having medical stores and need more

Need a store
- Currently has no store
- Need to open new stores
- No need for more stores
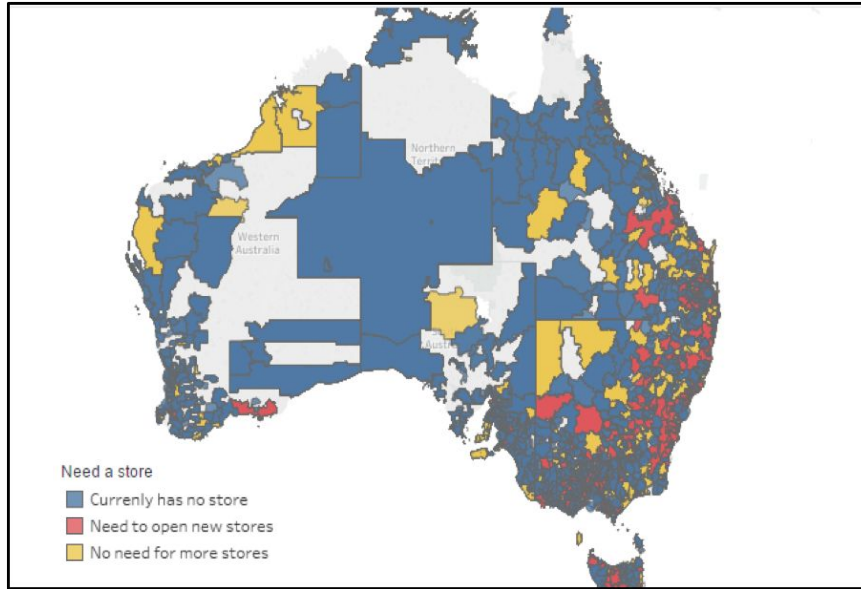
Strength of the demand for a new pharmacy

Strength of the demand

0.10   13.20

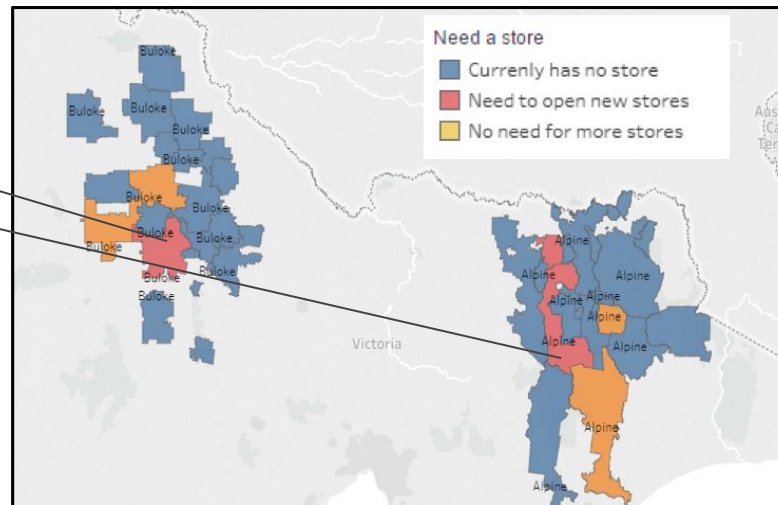*For a suburb,*
if patients/stores >average(patients/stores), it means there is demand on opening new stores.
Strength of the demand = [patients/average(patients/stores)]-stores

Open new stores: Based on health of population

Health status of Victorian LGAs

Measure Names
- People reporting type 2 diabetes (rank)
- People who delayed purchasing prescribed me…
- People reporting high blood pressure (rank)
- People reporting heart disease (rank)
- People reporting fair or poor health status (ra…
- People receiving prescriptions (rank)
- Males reporting fair or poor health status (ran…
- Males receiving prescriptions (rank)
- Cancer incidence per 1,000 females (rank)
- Females reporting fair or poor health status (r…
- Cancer incidence per 1,000 population (rank)

Victorian LGA region medical stores

The Health of Population is an indicator of the demand of drugs.

For suburbs doesn't have any store or no need for more stores are due to :
people's health status [government report, base on Local Government Area (LGA)]
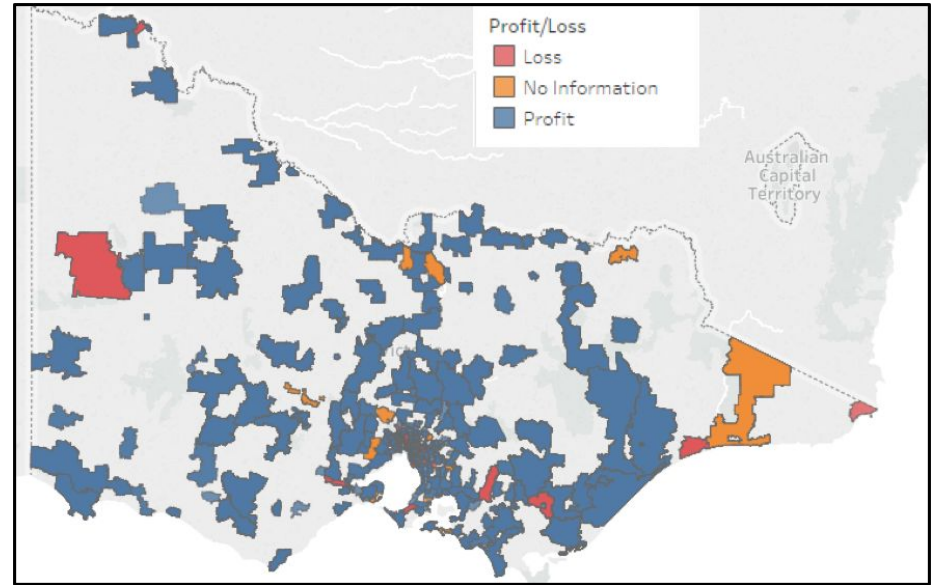*Rank higher means higher risk of diseases.*

Open new stores: Based on revenue (income) and net profit of existing stores

## Victorian Stores Income vs Profit (2016)

AvgIncome 2016
- 4
- 200000
- 400000
- 600000
- 800000
- 1003831

AvgProfit 2016
-301278 — 903833
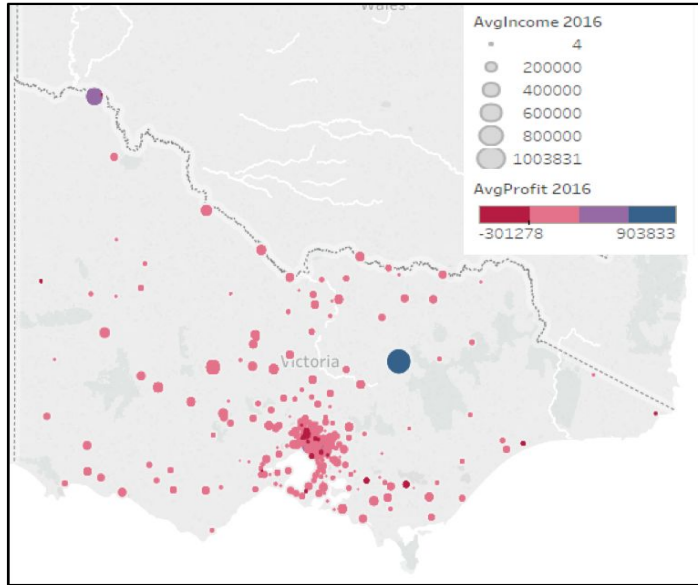
* Bigger the circle greater the average income

Victorian Stores Profit vs Loss (2016)

Profit/Loss
- Loss
- No Information
- Profit

Revenue and net profit may indicates store's future.

Open new stores: Based on the benefit of joining the banner

Income and profit of stores under banner

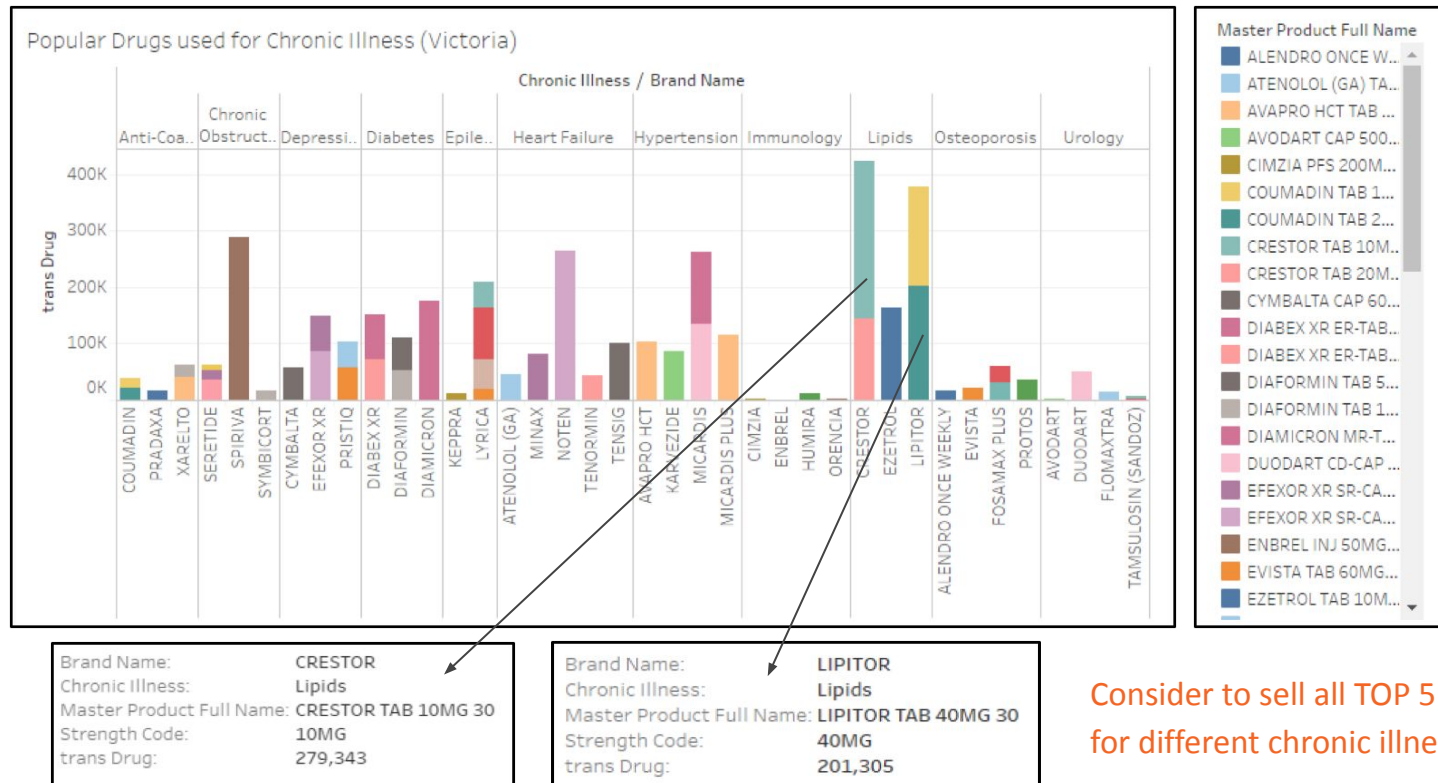Store under any banner/group
- No
- Yes
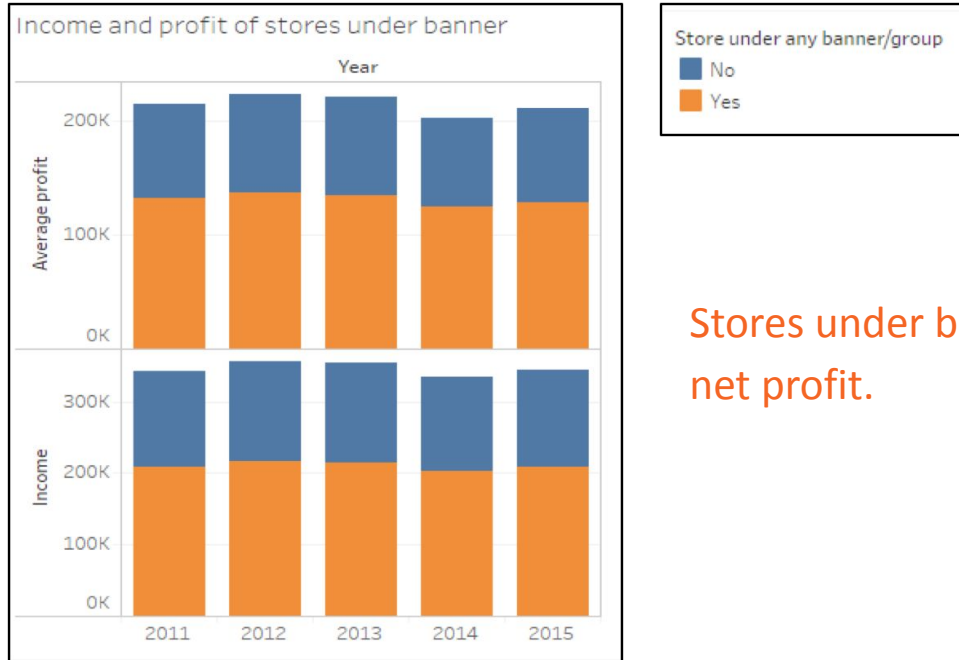
Stores under banner have both more revenue and net profit.

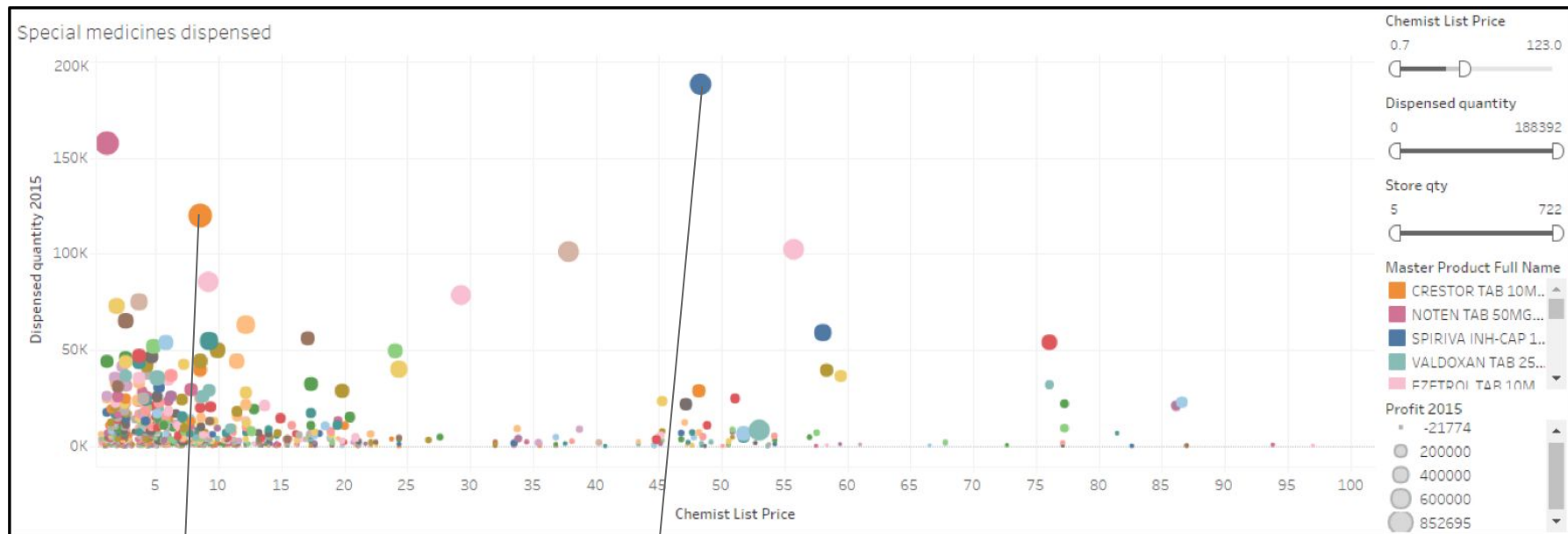# How to maximum profit from the existing stores?

- What drugs (brand) are popular in stores?
- What are the most profitable popular drugs irrespective of their price?
- Are there any differences in sales on different ethical sub category?
- What are the special drugs which sell more but not available in most stores?
- What are the special drugs which are profitable not available in most stores?

To increase profit: By including top products in each category

Popular Drugs used for Chronic Illness (Victoria)

Brand Name:	CRESTOR
Chronic Illness:	Lipids
Master Product Full Name:	CRESTOR TAB 10MG 30
Strength Code:	10MG
trans Drug:	279,343

Brand Name:	LIPITOR
Chronic Illness:	Lipids
Master Product Full Name:	LIPITOR TAB 40MG 30
Strength Code:	40MG
trans Drug:	201,305

Consider to sell all TOP 5 popular drugs (brand) for different chronic illness.

To increase profit: By the stock availability of the most profitable drugs irrespective of their price
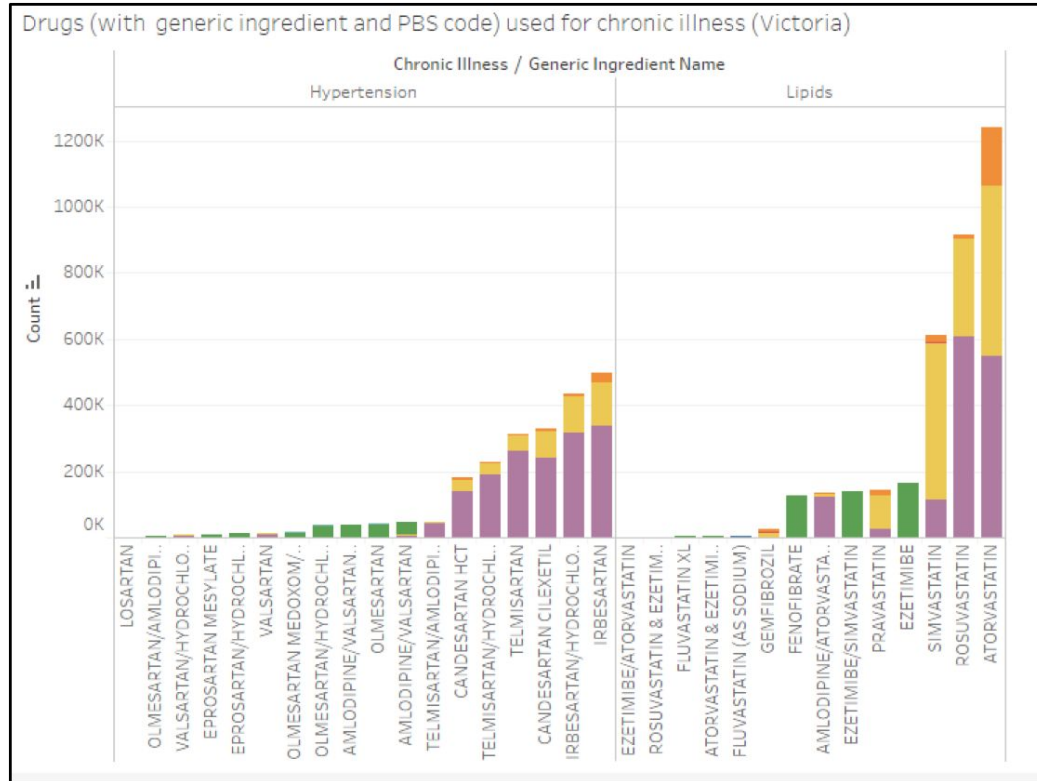

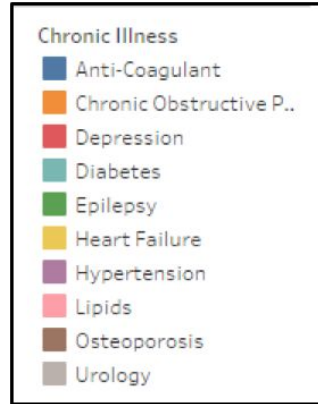Here are 2 examples of particular drugs which should be available in store.

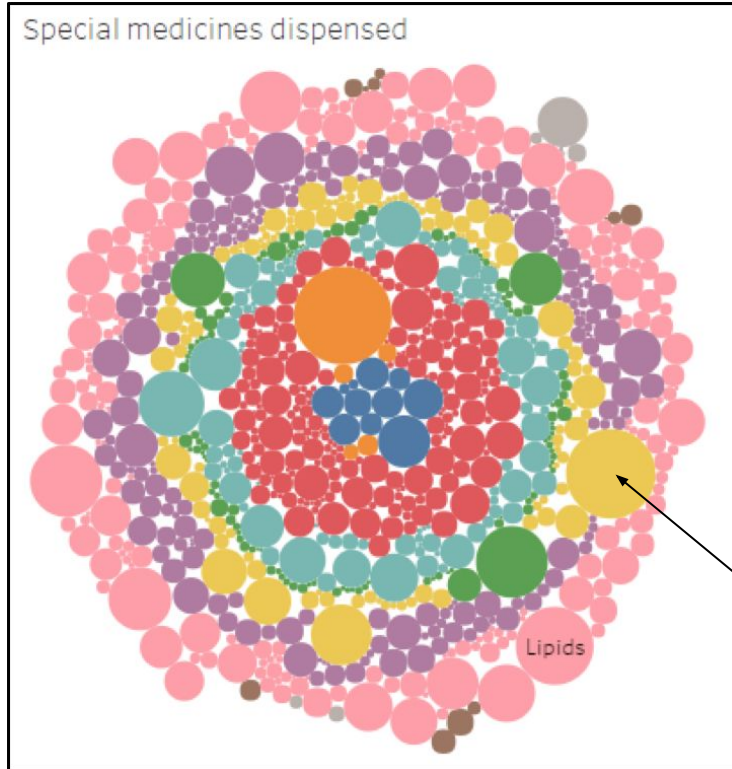# To increase profit: By prioritize the stock availability based on the market preference on different ethical sub category

Drugs (with generic ingredient and PBS code) used for chronic illness (Victoria)

People prefers either non PBS (Pharmaceutical Benefits Scheme) generic drugs or PBS substitutable drugs.

Exception for Anti-coagulant and COPD where PBS branded is more preferable.

To increase profit: By including the special drugs which sell more but not available in most stores


Special medicines dispensed

Chronic Illness
- Anti-Coagulant
- Chronic Obstructive P..
- Depression
- Diabetes
- Epilepsy
- Heart Failure
- Hypertension
- Lipids
- Osteoporosis
- Urology

Increase these particular drugs stock in store would benefit from avoiding missing sales.

Chronic Illness:	Heart Failure
Master Product Full Name:	NOTEN TAB 50MG 30 BLISTER
Chemist List Price:	1.1
Dispensed qty 2015:	157,678

* Bigger the circle greater the dispensed quantity

To increase profit: By including the special drugs which sell more but not available in most stores

Special medicines dispensed and profit made
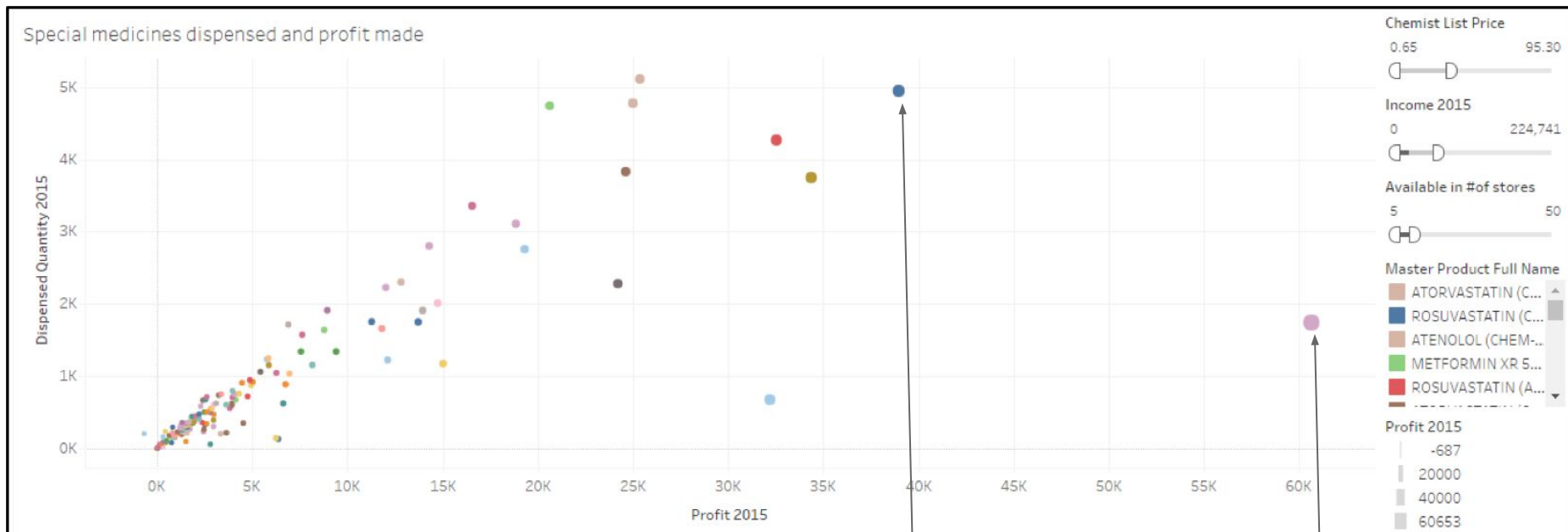
Consider to to prioritize the stock availability of these popular drugs as shown.

Chronic Illness:	Lipids
Income 2015:	41728
Master Product Full Name:	ROSUVASTATIN (CHEM-MART) TAB 10MG 30
Patient qty:	353
Profit 2015:	38964
Store qty:	27
Chemist List Price:	8.54
Dispensed qty 2015:	4,946

Chronic Illness:	Heart Failure
Income 2015:	61905
Master Product Full Name:	CORBETON TAB 40MG 100
Patient qty:	30
Profit 2015:	60653
Store qty:	32
Chemist List Price:	35.44
Dispensed qty 2015:	1,741

05
NEXT STEPS

Next steps

1.
Follow up with further requirement

2.
Implement the solution in production

3.
Test the performance of the service

4.
Provide login

5.
Training

6.
Soft launch and monitoring performance

7.
Final delivery

Thank you