STRATEGIC ANALYSIS INDIA PVT. LTD

DISSERTATION PROJECT
On

IN-DEPTH ASSESSMENT OF THE FACTORS AFFECTING THE "*NON-COMPLIANCE*" DURING THE TREATMENT OF ASTHMA & CHRONIC OBSTRUCTIVE PULMONARY DISORDER (COPD)

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INTRODUCTION

SCOPE OF THE PROJECT

FACTS– ASTHMA & COPD

LITERATURE REVIEW

AIM & OBJECTIVES

RESEARCH METHODOLOGY

DEMOGRAPHIC FACTORS

FACTORS LEADING TOWARDS NON-COMPLIANCE

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

KEY FINDINGS

RECOMMENDATION AND LIMITATION

CONCLUSION

INTRODUCTION

- **Asthma**
  - Asthma is a chronic inflammatory disorder of the airways. The chronic inflammation is associated with airway hyperresponsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness and coughing, particularly at night or in early morning.
  - Asthma is a serious global health problem with an estimated 300 million affected individuals.
  - Factors that influence the risk of asthma can be divided into those that cause the development of asthma and those that trigger asthma symptoms; some do both.
- **Chronic Obstructive Pulmonary Disorder (COPD)**
  - COPD is one of the major causes of chronic morbidity and mortality worldwide. Many people suffer from this disease for years and die prematurely from its complications.
  - .Its pulmonary component is characterized by airflow limitation that is not fully reversible.
  - COPD is generally a progressive disease, especially if a patient's exposure to noxious agents continues.
- **Asthma & COPD- Differences and Similarities**
  - COPD can coexist with asthma; both are characterized by an underlying airway inflammation.
  - individuals with asthma who are exposed to noxious agents, particularly cigarette smoke may develop fixed airflow limitation and a mixture of "asthma -like" and "COPD-like" inflammation.
  - **Asthma and COPD are usually similar**: "Reversible COPD" (asthma coexists), Severe asthma, Asthma in smokers, Neutrophil asthma (asthma in smokers, non-allergic asthma), allergic asthma, acute exacerbation
  - There are differences between cause, airway inflammation and airflow limitation between asthma and COPD.

- **Non-Compliance**
  - The term noncompliance is commonly used in regard to a patient who does not take a prescribed medication or follow a prescribed course of treatment.
  - In the Oxford dictionary, compliance is defined as the practice of obeying rules or requests made by people in authority
  - In healthcare, the most commonly used definition of compliance is “patient’s behaviours
  - Other similar terms have been used instead of compliance, and the meaning is more or less identical such as Adherence.
  - Non compliance factors experienced from patients differs from that experience by physicians/doctors or, dispensing pharmacist.
    - Factors of non-compliance with respect to patient are: Cost/affordability, Awareness/knowledge. Some examples are: Receiving a prescription but not filling it, Taking an incorrect dose, Taking medication at the wrong times, Increasing or decreasing the frequency of doses, Stopping the treatment too soon, Failure to follow doctor’s instructions, “Drug holidays”, which means the patient stops the therapy for a while and then restarts the therapy Poor attitude of healthcare professional.
    - Factors of non-compliance with respect to physicians/clinicians/doctors: Dosage, Line of treatment, Cost, Availability.
    - Factors of non-compliance with respect to dispensing pharmacist: Cost, knowledge.

INTRODUCTION

SCOPE OF THE PROJECT

AIM & OBJECTIVES

RESEARCH METHODOLOGY

DEMOGRAPHIC FACTORS

FACTORS LEADING TOWARDS NON-COMPLIANCE

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

KEY FINDINGS

RECOMMENDATION AND LIMITATION

CONCLUSION

SCOPE OF THE PROJECT

- The study is concentrated towards developing the information about the doctor's behaviour and attitude towards factors affecting non-compliance during the disease management of Asthma & COPD.
- Through this study we get to know the inter-relationship between the doctor's attitude and patient response on the basis of various demographic natures of patients such as affordability, adaptability, accessibility.
- Since the study is carried out in two metro cities of India, so via this we get to know the variations in perceptions of doctors and patient of the respected cities
- Through this study we can get to know the patient pool of Asthma & COPD.
- By comparing the standard favored treatment of asthma & COPD with that of as found in the responses, we get to know the traditional management of Asthma & COPD respectively.

INTRODUCTION

SCOPE OF THE PROJECT

AIM & OBJECTIVES

RESEARCH METHODOLOGY

DEMOGRAPHIC FACTORS

FACTORS LEADING TOWARDS NON-COMPLIANCE

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

KEY FINDINGS

RECOMMENDATION AND LIMITATION

CONCLUSION

AIM AND OBJECTIVE OF THE STUDY

- **AIM OF THE STUDY**

The overall aim is to gain an in-depth knowledge about the factors affecting the non-compliance for Asthma & COPD with respect to patients, doctors, and dispensing pharmacist.

- **OBJECTIVE OF THE STUDY**

1. To get an insight of the epidemiological pattern of the area in which study is conducted.
2. To quantify the inter-relation of factors of non-compliance with Healthcare professionals and patients of Asthma & COPD.

INTRODUCTION

SCOPE OF THE PROJECT

AIM & OBJECTIVES

RESEARCH METHODOLOGY

DEMOGRAPHIC FACTORS

FACTORS LEADING TOWARDS NON-COMPLIANCE

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

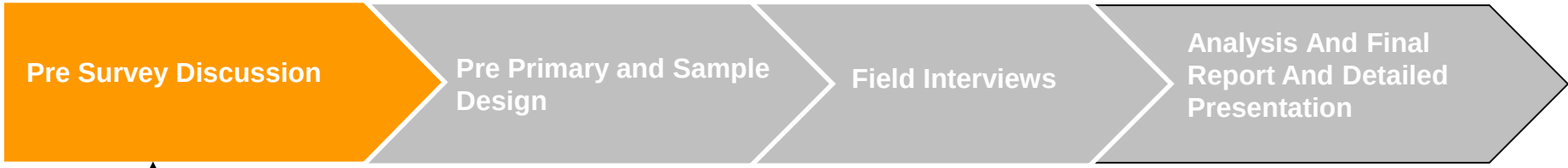
KEY FINDINGS

RECOMMENDATION AND LIMITATION

CONCLUSION

RESEARCH METHODOLOGY

The report includes the final results of the study after detailed analysis of the information drawn out during the study with recommendation to use it as for the business development meet the project objective.
The study type is descriptive with convenient sampling technique and the methodology and approach is explained further as:

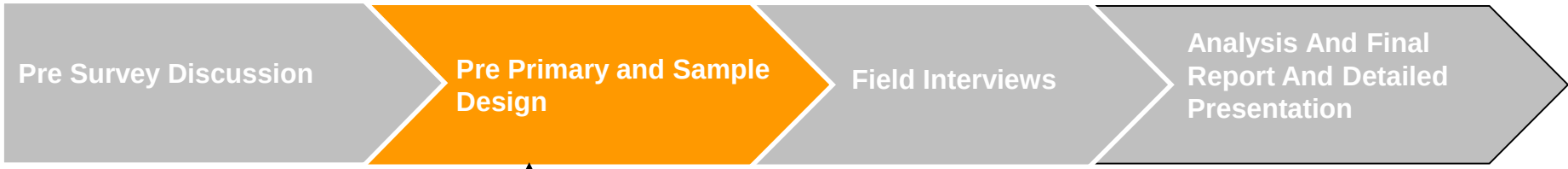


Key Activities

A pre-survey meeting to review the team's methodology and approach and obtain their perspective on issues material to the objectives of the project. Review SAI methodology and sampling program including the various centers where Asthma & COPD conditions are managed that the team will cover over the study. Team introduction and Time lines are discussed. Categories of clinicians to be interviewed in this study are determined.

Key Output

- Alignment on definitions
- Draw out an understanding of the respiratory segment based on the inputs from various literatures and articles.
- Key factor for non-compliance
- Centers treating Asthma & COPD.
- Key categories of clinicians to be targeted
- Sample size and methodology
- Alignment on timelines for final reports



Key Activities

Based on information developed during the pre-survey and secondary search, the team will design the semi-structured questionnaire to be administered among various categories of clinicians and patients and dispensing pharmacists. The semi structured questionnaire draws out quantitative information based on the structured questions and perceptions and opinions based on unstructured questions and is extremely useful in studies where a significant degree of qualitative data on the perception and experience of clinicians and patients and other respondents, is required to be gathered.

Key Output

- Finalization of interview schedules after review
- Finalize respondent categories to be interviewed based on the sample size and its distribution

Pre Survey Discussion → Pre Primary and Sample Design → **Field Interviews** → Analysis And Final Report And Detailed Presentation

Key Activities

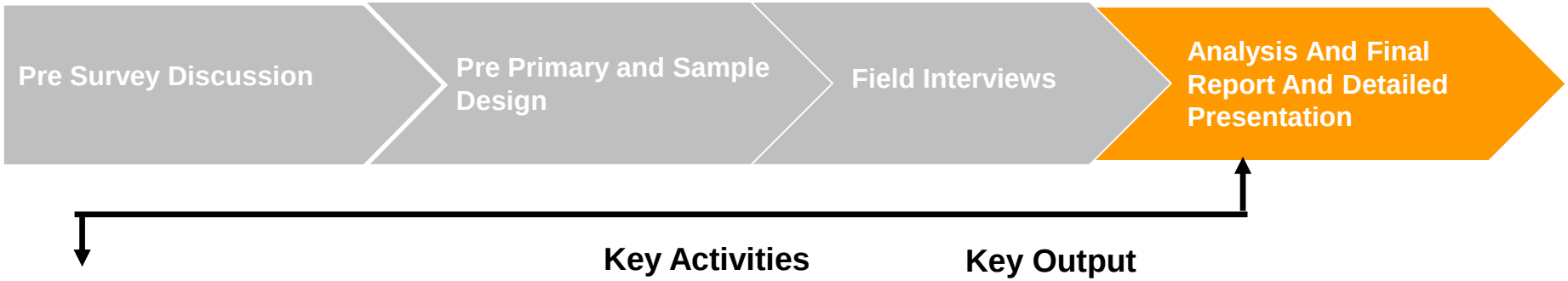
The team will then move to its primary field research program. And will conduct interviews both on-site and TAPI as below:

Category	Delhi	Mumbai
Clinicians	16	24
Pulmonologists	8	12
General Physicians	4	8
Consulting Physicians	2	6
Patients	20	24
Dispensing Pharmacists	8	8

Key Output

- Profile of the clinician, types of patients by the target condition and so on
- Existing status of patients with the target condition, treatment pathways, prescription practices, unmet needs and so on
- Within the category, key molecules they prefer
- Clearly, draw out unmet needs of the clinicians through treatment of the target condition with drugs.

*TAPI stands for telephonically assisted personal interview



Key Activities

- **After all field research has been completed, the project team will:**
  - **Cross-check all information**
  - **Analyze the information**
  - **Draw appropriate conclusions**
  - **Make recommendations to client about actions to be taken**
  - **The project team will develop a detailed written report and present all information and analysis to the client including a detailed data sheet with input from the interviews**
  - **The final document will include an executive summary highlighting all critical facts and analysis developed**

Key Output

- The presentation is designed to cover all information and analysis developed and answer all questions
- After the final presentation, the candidate will undertake any additional research needed to clarify key issues or conclusions.
- If required, the candidate will include any new information and insights in a revised report

SELECTION OF SAMPLE AND ROUTE PLAN

PARAMETERS FOR SELECTING INSTITUTIONS

ZONE-WISE	East, North, South and West
LOCATION	DELHI AND MUMBAI

PROVIDED LIST OF 16 INSTITUTIONS BASED ON ABOVE SEGMENTATION

↓

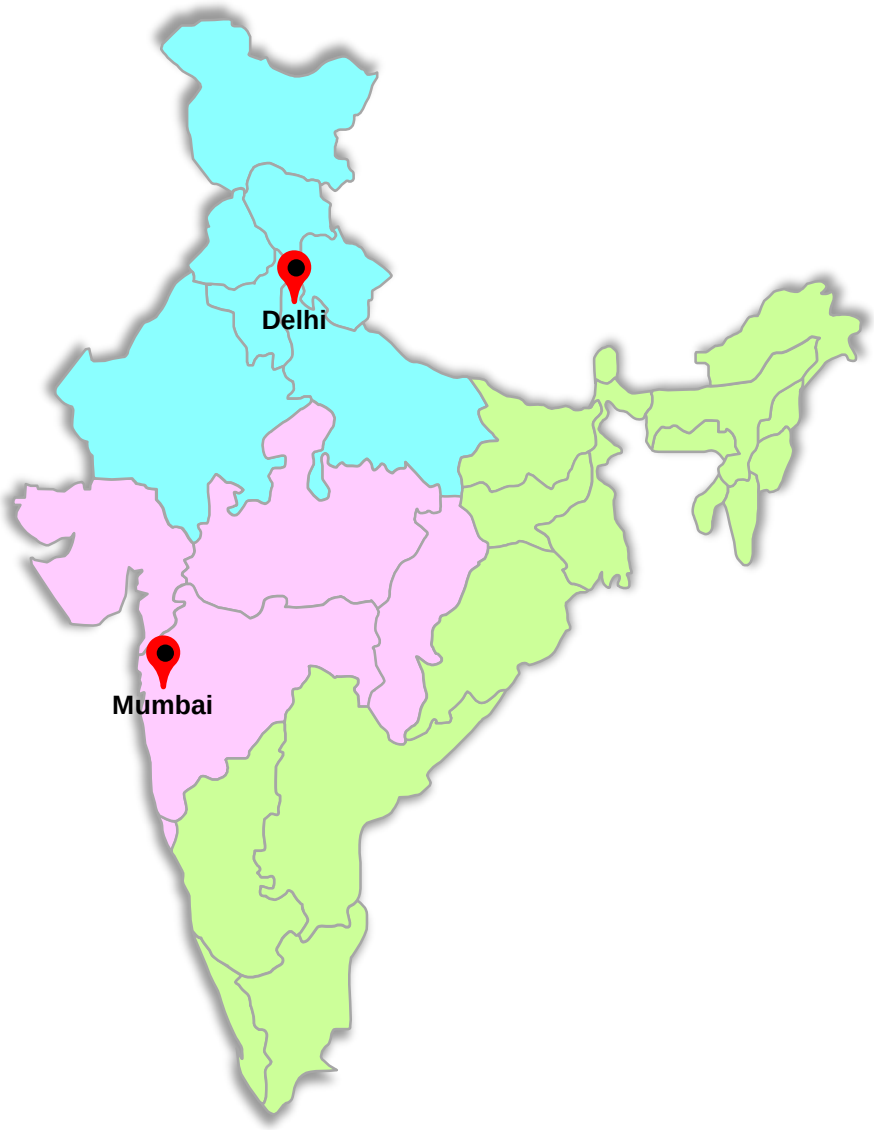
FINAL DATABASE AND QUESTIONNAIRE(DISCUSSION GUIDELINES) IS PREPARED

FIELD INTERVIEWS (ON-SITE & TAPI)

↓

COMPILATION OF RESPONSES/INFORMATION DEVELOPED AND FINAL DRAFT REPORT

TARGETED INSTITUITIONS



INSTITUITIONS TARGETED	
Max Super speciality Hospital	East-Delhi
Vinayak Hospital, Noida	East-Delhi
Dr. Baba Saheb Ambedkar Hospital.	West-Delhi
R.M.L Hospital	West-Delhi
Batra Hospital, Saket	South-Delhi
Max Hospital, Saket	South-Delhi
Fortis Hospital, Shalimar bagh	North-Delhi
Sant Parmanand Hospital	North-Delhi
Sarvodaya Hospital, Ghatkopar	East-Mumbai
Medicare Hospital	East-Mumbai
Lilawati Hospital	West-Mumbai
Kokilaben Hospital	West-Mumbai
Bombay Hospital	South-Mumbai
Jaslok Hospital	South-Mumbai
Sterling Wockhardt Hospital	North-Mumbai
Fortis Hospital	North-Mumbai

INTRODUCTION

SCOPE OF THE PROJECT

AIM & OBJECTIVES

RESEARCH METHODOLOGY

DEMOGRAPHIC FACTORS

FACTORS LEADING TOWARDS NON-COMPLIANCE

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

KEY FINDINGS

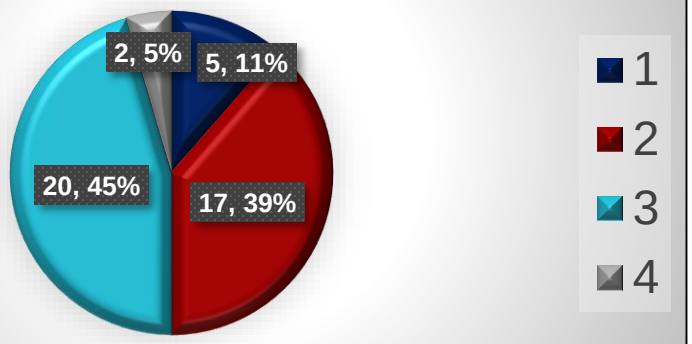
RECOMMENDATION AND LIMITATION

CONCLUSION

DEMOGRAPHIC FACTORS

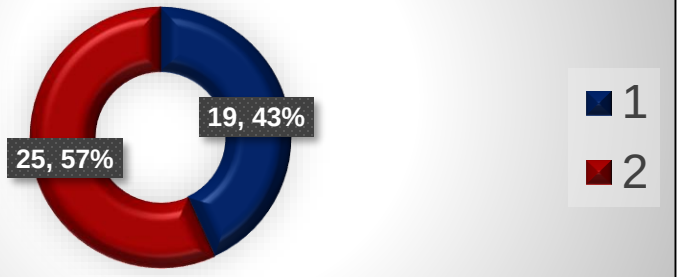
On the basis of Analysis and Assessment the demographic factors, such as Age, Qualification; frequency of visits of patient of Asthma & COPD are shown below:

Age-wise distribution



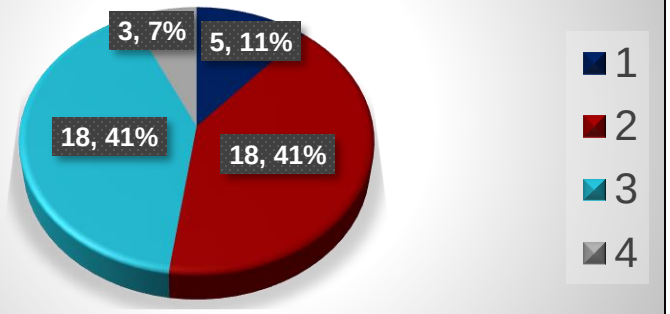
1	15 YR TO 25 YR
2	25 YR TO 45 YR
3	45 YR TO 65 YR
4	ABOVE 65 YR

Gender-wise distribution



1	MALE
2	FEMALE

Education wise distribution



1	MATRICULATE
2	GRADUATE
3	POST GRADUATE
4	NOT QUALIFIED

INTRODUCTION

SCOPE OF THE PROJECT

AIM & OBJECTIVES

RESEARCH METHODOLOGY

DEMOGRAPHIC FACTORS

FACTORS LEADING TOWARDS NON-COMPLIANCE

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

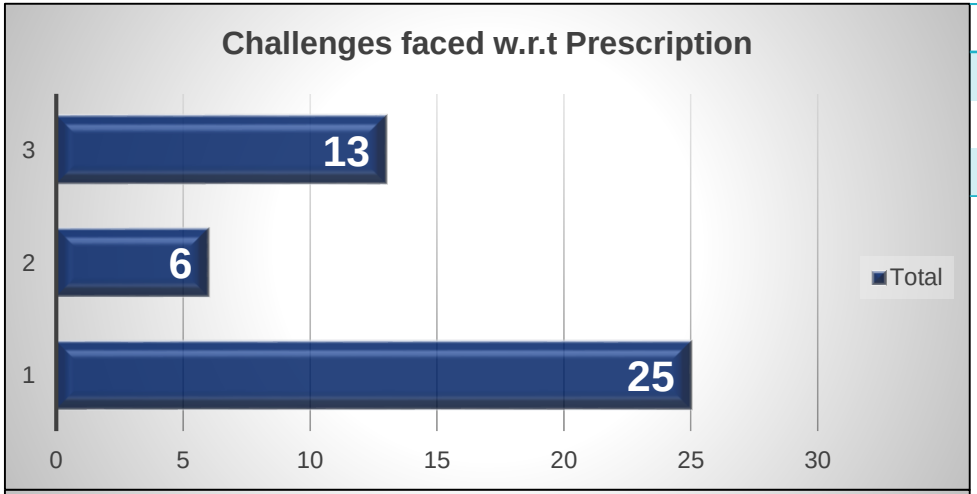
KEY FINDINGS

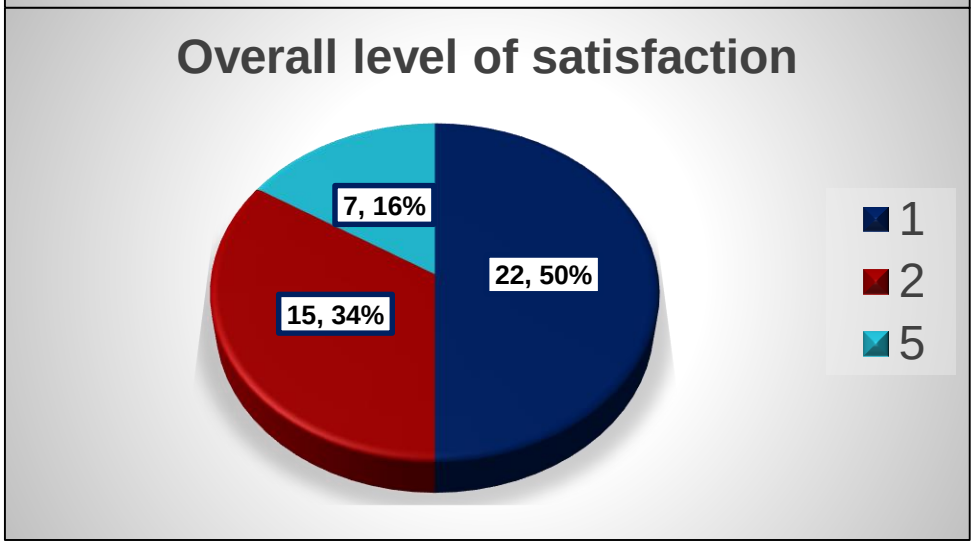
RECOMMENDATION AND LIMITATION

CONCLUSION

FACTORS LEADING TOWARDS NON-COMPLIANCE

On the basis of Analysis and Assessment the factors of Non- compliance with respect to patient are:





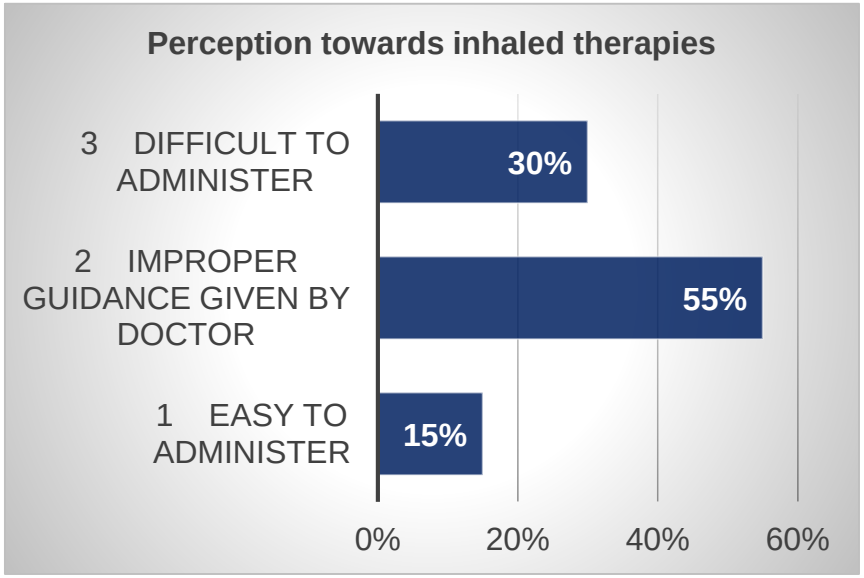
challenges faced w.r.t. Prescription (rate 1-3)	
1	Usage issue
2	Availability issue
3	Cost issue

1	Satisfied
2	Not satisfied
5	Can't Say

Source: Primary

FACTORS LEADING TOWARDS NON-COMPLIANCE

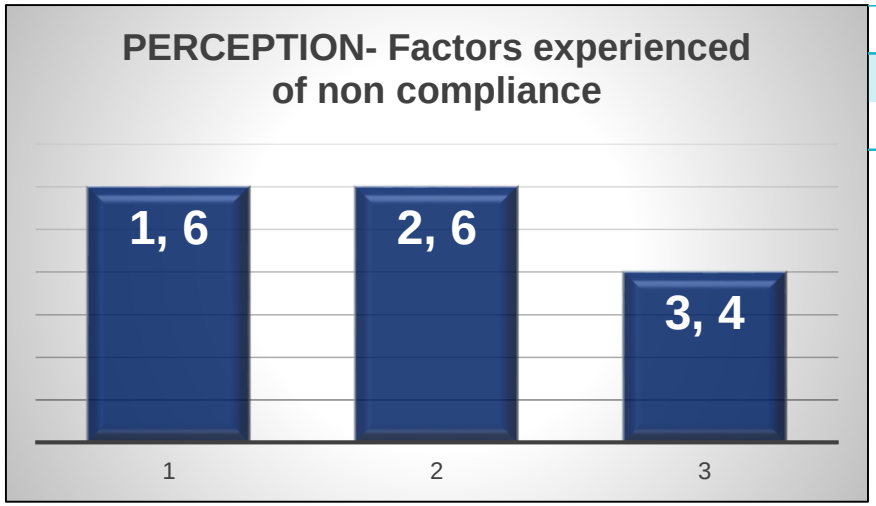
On the basis of Analysis and Assessment the factors of Non- compliance with respect to patient are:



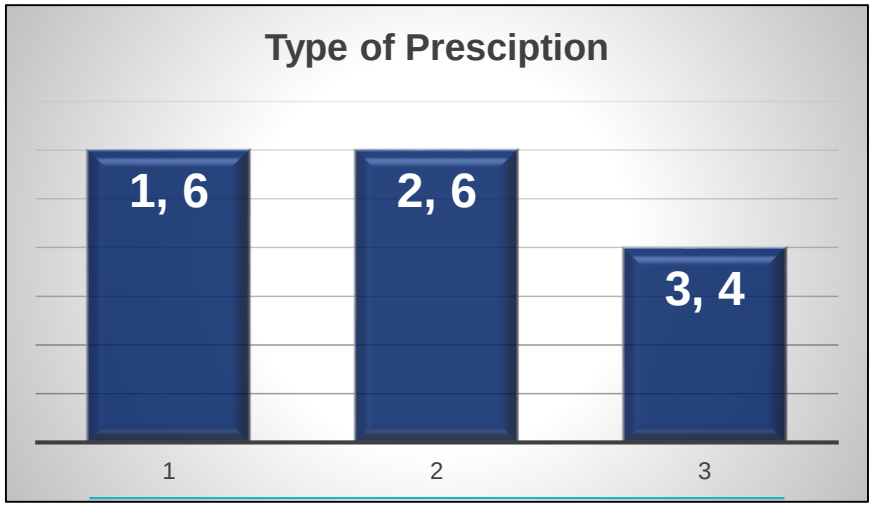
Perception towards inhaled therapies	
1	Easy to administer
2	Difficult to administer
3	Improper guidance given by doctor

FACTORS LEADING TOWARDS NON-COMPLIANCE

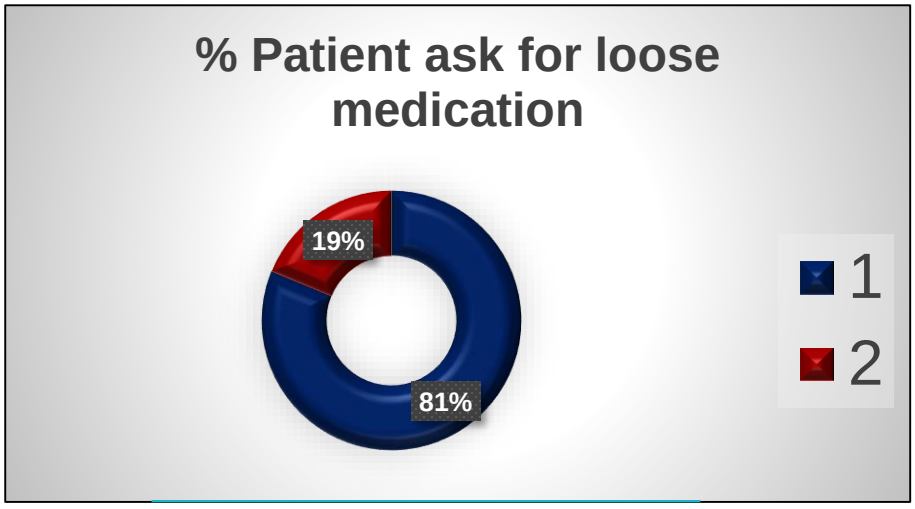
On the basis of Analysis and Assessment the factors of Non- compliance with respect to dispensing pharmacist are:



1	COST
2	ADAPTABILITY
3	USAGE ISSUE (COMPATIBILITY)



1	FULL PRESCRIPTION
2	LOOSE PRESCRIPTION



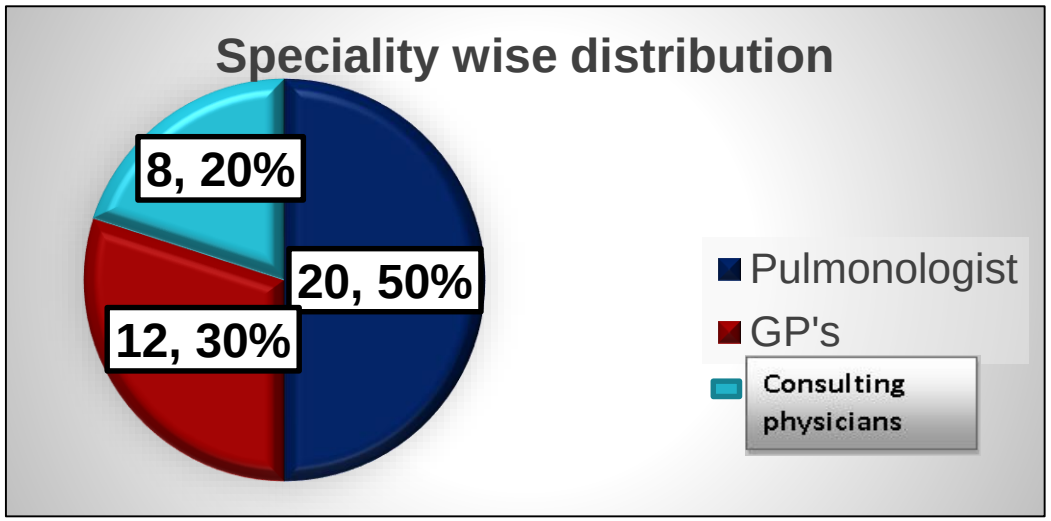
1	YES
2	NO

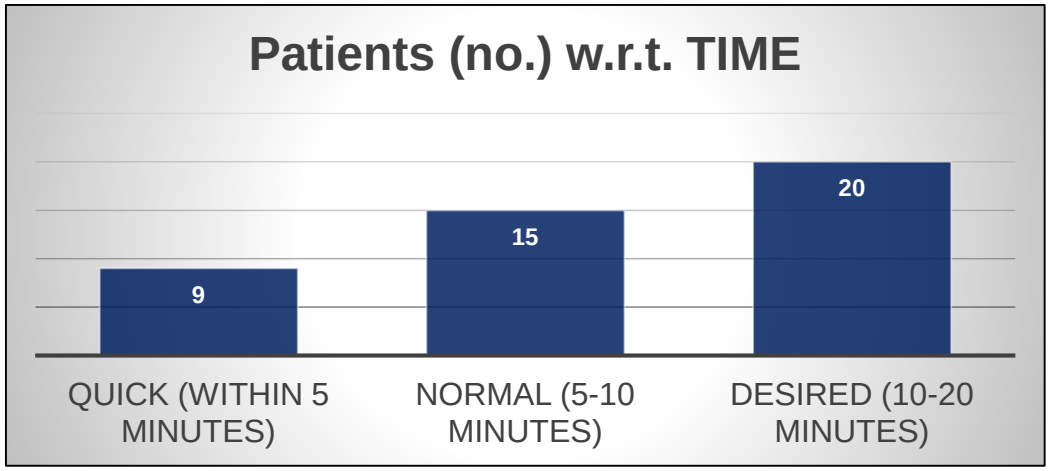
Source: Primary

INTRODUCTION
SCOPE OF THE PROJECT
AIM & OBJECTIVES
RESEARCH METHODOLOGY
DEMOGRAPHIC FACTORS
FACTORS LEADING TOWARDS NON-COMPLIANCE
INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS
KEY FINDINGS
RECOMMENDATION AND LIMITATION
CONCLUSION

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

On the basis of Analysis and Assessment the factors of Non- compliance with respect to Pulmonologist/General physicians/Consulting physician are:



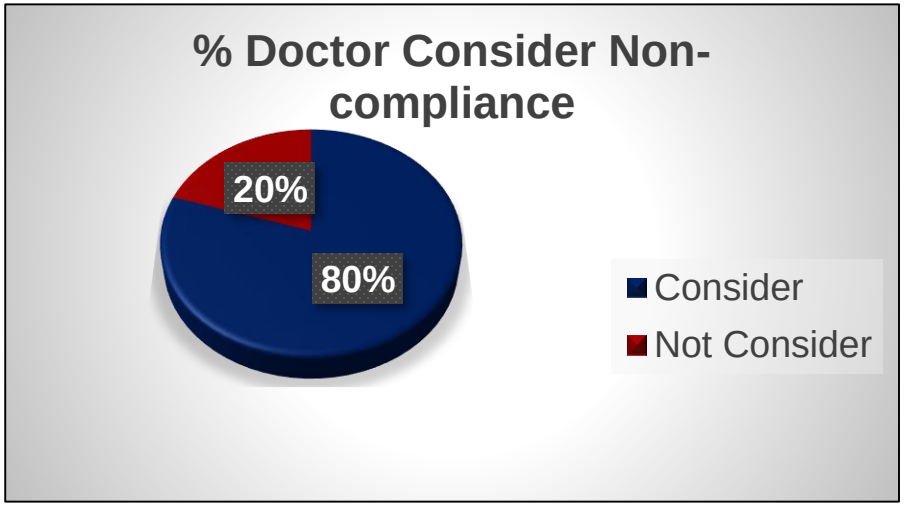


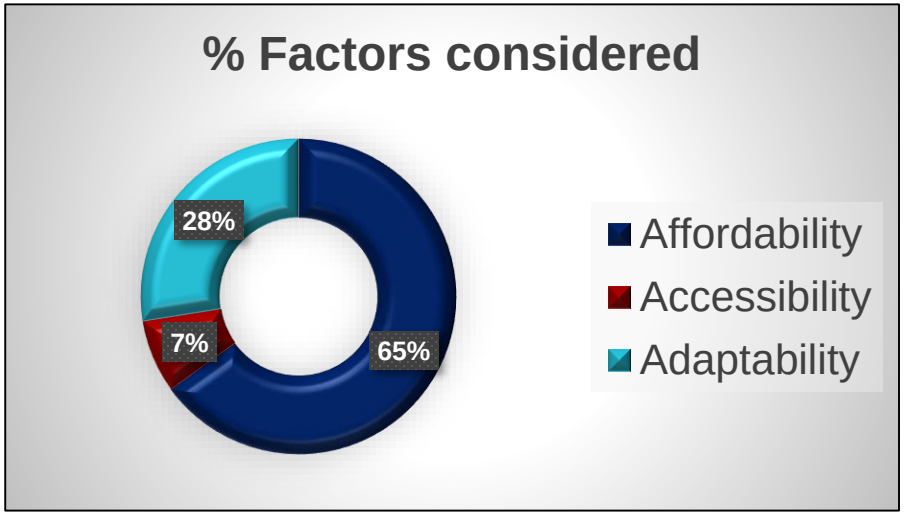
Source: Primary

Key Output

- The specialty wise data gives the general way of understanding about the break up made in the sample size
- The no. of Reponses regarding the time given by a doctor to the patient during the visit is analyzed.

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS



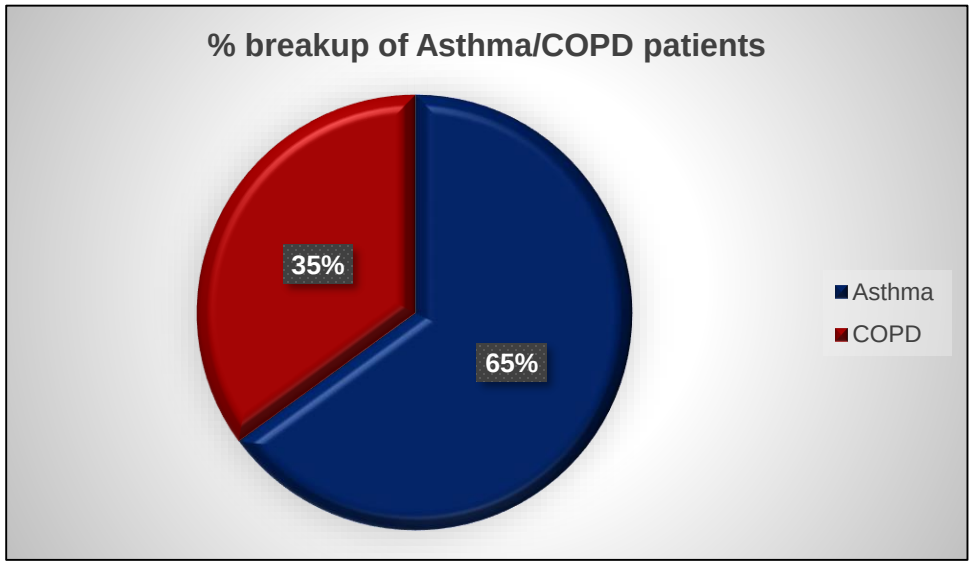


Key Output

- The data based on patient as well as doctor's responses collectively gives the clear idea that in present, almost 80% of doctors consider compliance as an attribute while prescribing medication in which foremost consider the patient affordability followed by adaptability and accessibility.

Source: Primary

OVERALL PATIENT FLOW



No. of patients visiting the doctors per day vis Specialty are shown in table below:

1	Pulmonologist	20
2	GP's	12
3	Consulting physicians	8

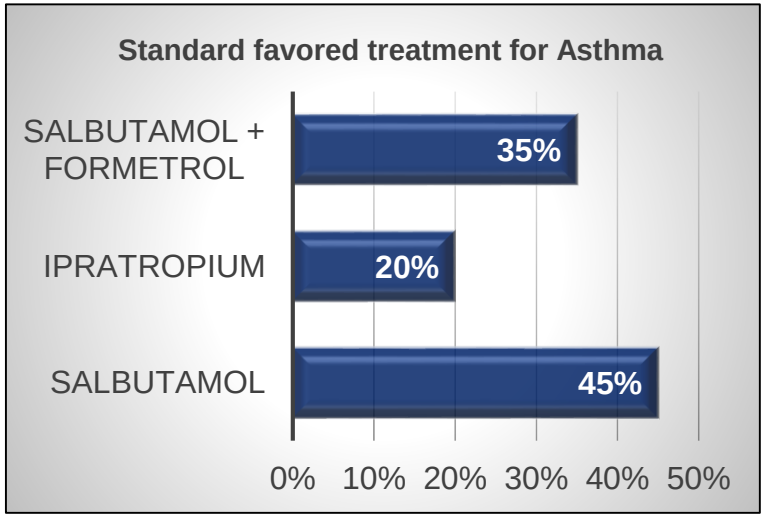
Key Output

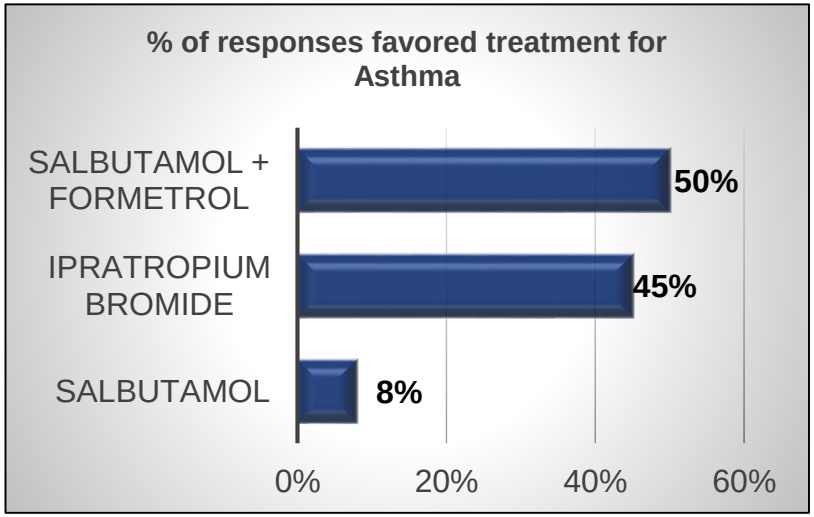
- In a day, on an average 13 patients of Asthma & COPD visits the pulmonologists/GPs/CPs, out of which approximately 86% of them are of Asthma and the rest accounts for COPD.

Source: Primary

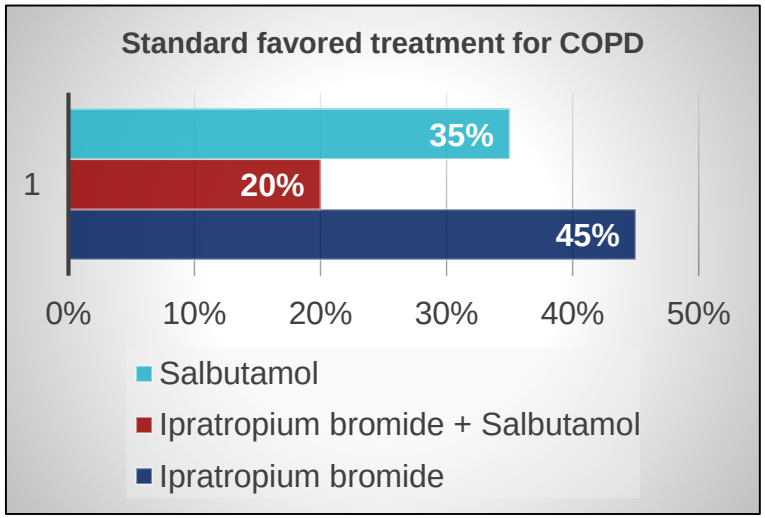
PRESCRIPTION WISE ANALYSIS

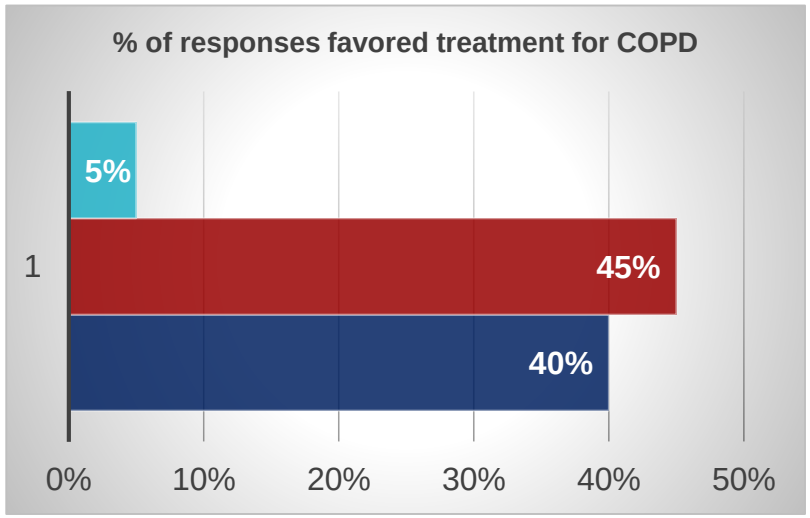
STPs* followed by the Pulmonologist/GPs/CPs for the treatment of Asthma & COPD





On the basis of clinicians responses





Source: Primary and secondary

INTRODUCTION

SCOPE OF THE PROJECT

AIM & OBJECTIVES

RESEARCH METHODOLOGY

DEMOGRAPHIC FACTORS

FACTORS LEADING TOWARDS NON-COMPLIANCE

INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS

KEY FINDINGS

RECOMMENDATION AND LIMITATION

CONCLUSION

KEY FINDINGS

With respect to Patient's Response

- Out of 44 respondents, 20 belongs to age group of 45yrs-60yrs this indicates that the patient is visting from a long time and knows well about the doctor.
- In this patient pool, females are more prevalent than male patients
- Awareness of non-compliance is more amongst Graduate and Post graduate respondents as compare to Matriculate and Non-qualified
- Out of 16 target institutions, on the basis of non-compliance issues, around 50% response is satisfactory
- During treatment of Asthma & COPD, respondent visits twice in a month

With respect to Doctor's Response

- Out of 32 physicians targeted, 80% took the affordability(as found) factors of non-compliance into consideration while writing down the prescription.
- The factors that took into consideration are Affordability, Accessibility, Awareness, and Adaptability.
- Pulmonologist and GPs experiences increase in patient pool of Asthma & COPD patients with respect to the total no. of visits in a day.
- On an average >14 patients of Asthma/COPD examine in a day by Pulmonologists, whereas the patient pool towards other specialties are comparatively less.
- On the basis of prescription analysis Salbutamol + formetrol for Asthma & Ipratropium + Salbutamol for COPD has been prescribed by maximum of the doctors.

KEY FINDINGS

With respect to Pharmacist's Response

- Cost and adaptability to inhaled medication are the driving factor of non-compliance.
- Mostly 90% of the patients visiting the pharmacy ask to dispense loose medication because of the improper awareness, cost issue etc.
- There is no significant difference have seen in type of dispensing. But from this study, it has been cleared that the hospital pharmacies are not dispensing the loose medication, hence follows as written in the prescription.

INTRODUCTION
SCOPE OF THE PROJECT
AIM & OBJECTIVES
RESEARCH METHODOLOGY
DEMOGRAPHIC FACTORS
FACTORS LEADING TOWARDS NON-COMPLIANCE
INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS
KEY FINDINGS
RECOMMENDATION AND LIMITATION
CONCLUSION

RECOMMENDATIONS

- This report can be recommended to be used in the business development unit of SAI for approaching the client dealing in the respiratory segment.
- The database build for targeted pulmonologists, general physicians, and consulting physician can be used in further related studies.

LIMITATIONS

- The study conducted is restricted to only Delhi and Mumbai, and also the category of institutions covered are only private institutions.
- The patients targeted are existing patients, very few i.e. 20% of the sample size includes the patients who are visiting the doctor first time.

INTRODUCTION
SCOPE OF THE PROJECT
AIM & OBJECTIVES
RESEARCH METHODOLOGY
DEMOGRAPHIC FACTORS
FACTORS LEADING TOWARDS NON-COMPLIANCE
INTER-RELATIONSHIP BETWEEN PATIENT—FACTORS—DOCTORS
KEY FINDINGS
RECOMMENDATION AND LIMITATION
CONCLUSION

CONCLUSION

- The demographics factors such age, gender, region, income, education are therefore analyzed during the study.
- The prevalent pool of Asthma & COPD patients in the region of Delhi & Mumbai includes the maximum patients are females of age 45-65 years with income ranging in between 5-10 lakh p.a.
- The awareness among patients regarding non-compliance is identified through their response.
- The overall satisfaction level among patients is positive.
- Inter-relationship between patients and doctors gives the insight regarding the non-compliance factors such as affordability, adaptability toward inhaled medication and accessibility of cheaper derivatives.
- The prescription-wise analysis gives the clear idea about the medications favored for Asthma & COPD respectively with comparison to the standard.

REFERENCE

- "Adherence to inhaled therapies, health outcomes and costs in patients with asthma and COPD - Respiratory Medicine by Mika J. Makela.
- Suruki R et al. BMC Pulmonary Medicine. 2017;17(74):1-1, Zein J et al., PLOS One. 2016;11(6): e0157301., Altawalbeh S et al., Value in Health. 2016;19(5):537-543.
- https://doi.org/10.1016/j.rmed.2013.04.005.
- "The Cost of Non-compliance: Asthma & COPD", by Decision Resource Group, a healthcare consulting firm.
- "Compliance in asthma, by G C Cochrane.
- Fugate, et al.: Medication adherence in COPD and asthma patients.
- Jing Jin, Grant Edward Sklar, Vernon Min Sen Oh, and Shu Chuen Li, "Factors affecting therapeutic compliance: A review from the patient's perspective". (2008)
- Przemysław Kardas et al., "Adherence to treatment in asthma and COPD patients in their doctors' assessment."

THANK YOU