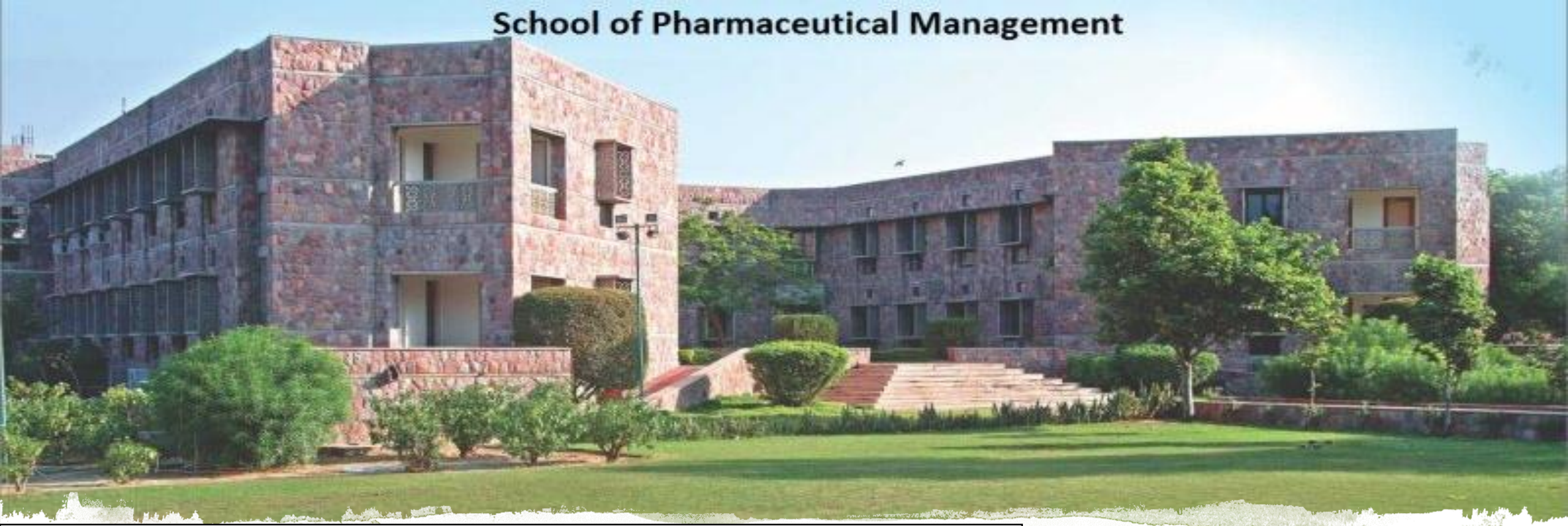




Market Assessment of Natural Surfactant (Alveofact) in Varanasi, Azamgarh, Allahabad, and Gorakhpur.

**Presented By:-
Tanjay Kumar.**

**Guided By:-
Dr. Sandeep Narula.**

Introduction

- Pulmonary surfactant is a lipid-protein complex that is synthesized and stored in type II alveolar epithelial cells as lamellar bodies.
- Once secreted into the epithelial lining fluid (ELF), a small fraction of surfactant is rapidly adsorbed in the space between the alveolar air and the surface of the ELF.
- This reduces surface forces during end-expiration and maintains variably low surface tension during the respiratory cycle.
- After birth, premature neonates born with immature lungs may develop NRDS. This is mainly because an inadequate amount of surfactant is secreted into the ELF because of the immaturity of the type II alveolar cells.

NEONATAL RESPIRATORY DISTRESS SYNDROME

- The diagnosis can be confirmed by an X-ray showing ground glass appearance (Fig. 1) and air bronchograms, although these radiological features are not pathognomic of NRDS.

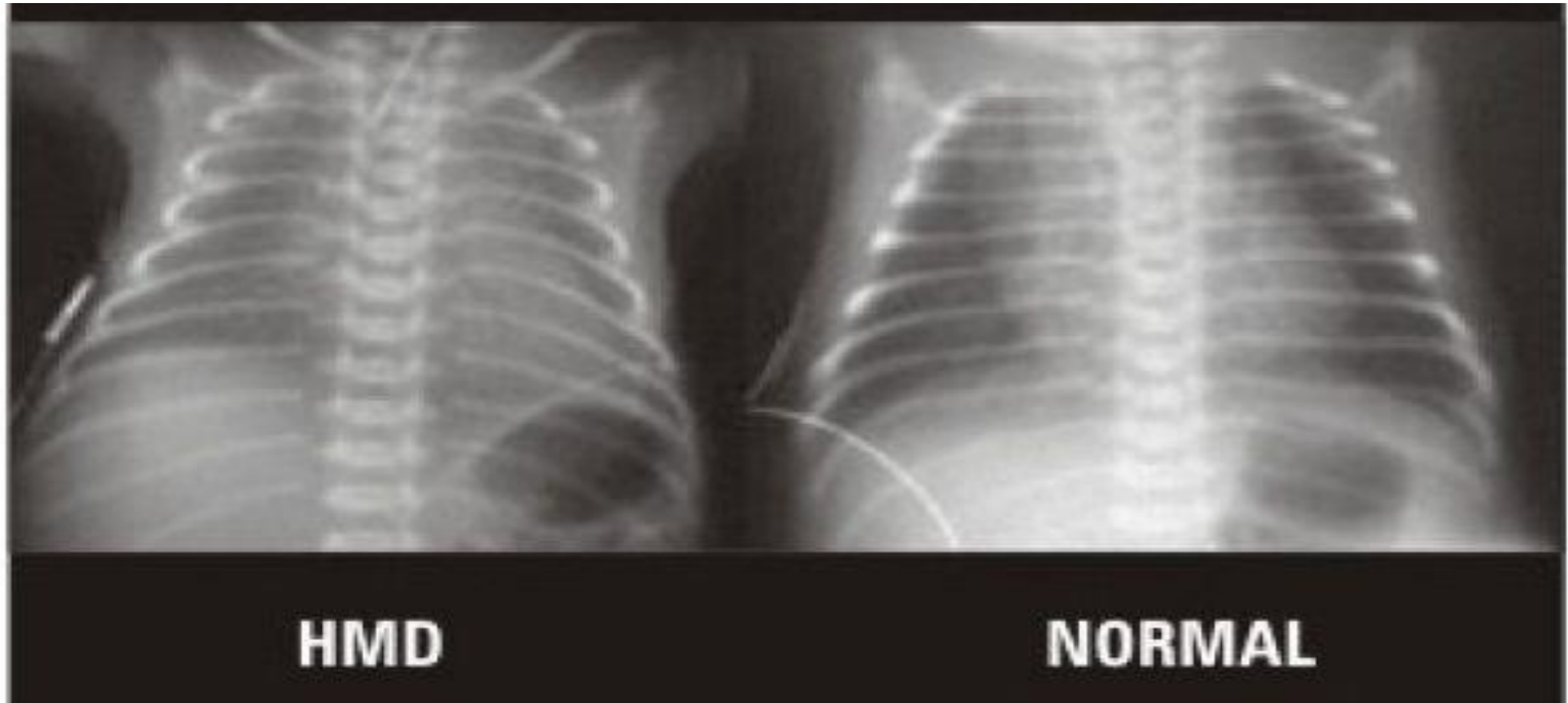


Fig. 1: Chest Radiograph of a neonate with Hyaline Membrane Diseases

Literature Review

- According to author Coen HMP Willems, Florian Urlichs, Silvia Seidenspinner, Steffen Kunzmann, Christian P Speer, Boris W Kramer state that, the porcine extracted lung surfactant (poractant alfa) enriched the phagocytosis of apoptotic neutrophils by alveolar macrophages which leads to anti-inflammatory properties.
- According to author WOLFGANG BERNHARD, JASMIN MOTTAGHIAN, ANDREAS GEBERT, GUNNAR A. RAU, HORST von der HARDT and CHRISTIAN F. POETS, the surface tension lowering properties of natural surfactants (Curosurf, Alveofact) is equivalent to native surfactant whereas the semisynthetic surfactants (Survanta, Exosurf) were unqualified to indicate surface tension lowering property as compared to native surfactant.

- According to author Mirhadi Mussavi, Keyvan Mirnia, and Khairollah Asadollahi, in the Alveofact group, the new cases of pneumothorax was impressively higher, the mean hospital-stay length, mean ventilation time and the new cases of PDA were also impressively higher in the Alveofact group.
- According to author HansProquitte, Thekla Dushe, Hannes Hammer, Mario Rudiger, Gerd Schmalisch, Roland Wauer, there is no significant difference between Alveofact and Curosurf for treating the NRDS patients.
- According to author Seeger, C. Grube*, A. Günther, R. Schmidt, the surface tension lowering properties of the natural surfactant Curosurf and Alveofact meet mainly accepted standard of satisfying surfactant function.

Research Problem

- What are the main reasons to increase the sales of Alveofact in hospital pharmacy ? So, with the help of this study we can find out the market potential of Natural surfactant in selected cities of Uttar Pradesh.

Objectives

- To find out most selling Natural surfactant brands in selected Cities, Uttar Pradesh.
- To find out most selling Natural surfactant dosage strength in selected cities, Uttar Pradesh.
- To find out the Dose per Kg required of Natural Surfactant in selected cities, Uttar Pradesh.
- To know the competitive scenario of Alveofact.
- To know the doctors' attitude towards Natural surfactant.

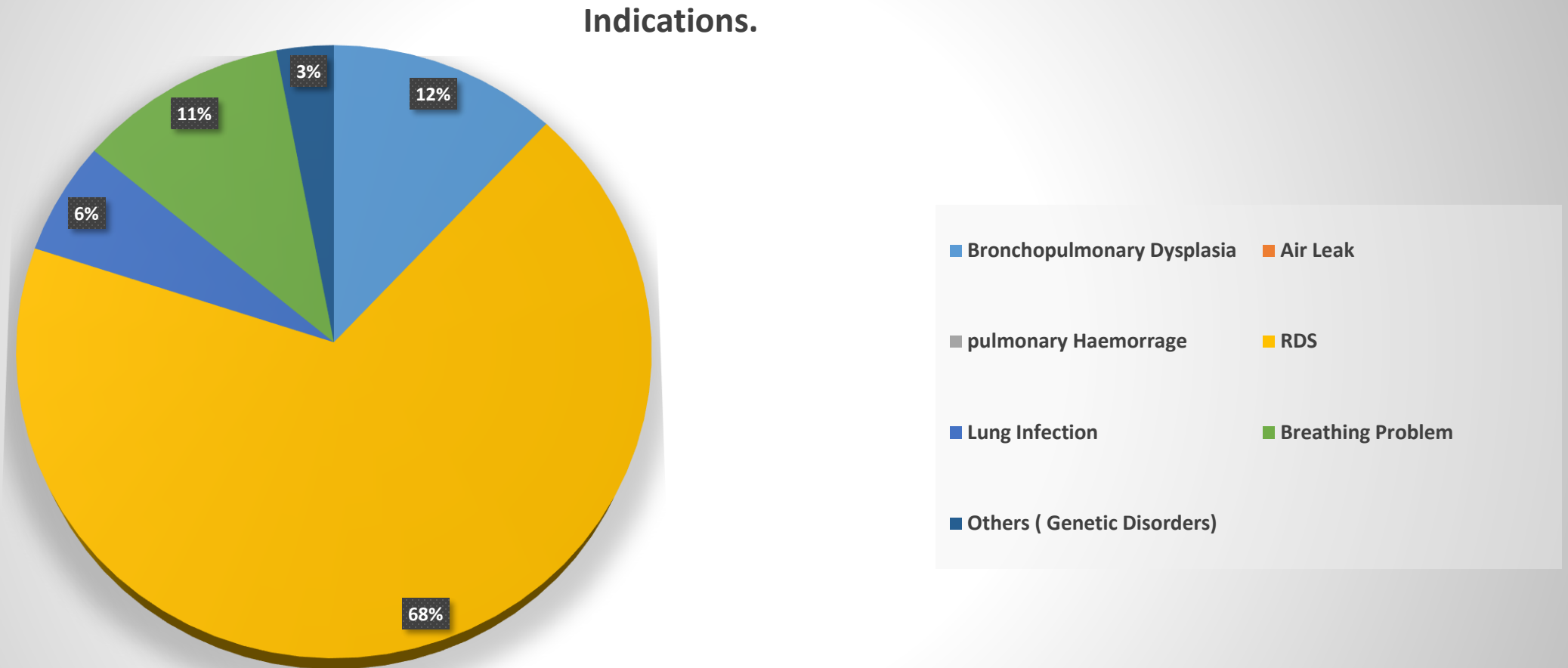
Research Methodology

- **Study Design:** - Descriptive Study
- **Sampling:** - Non-Probability (convenience Sampling).
- **Target Respondent:** - From various Govt. & Private hospitals, Neonatologists and Pediatricians.
- **Sample area:** - Varanasi, Azamgarh, Allahabad, and Gorakhpur, (Uttar Pradesh)
- **Tools Used for Data Collection:** Direct Questionnaire method
- **Type of Questionnaire:** Semi-Structured
- **Type of Questions:** closed and open ended.

Research plan

- **Data Source:** - Primary data (Through Questionnaires and meeting with respondents and Secondary data (Through Company website, various research articles and publications).
Data was triangulated using both Primary and Secondary approach.
- **Data Collection Type:** - Qualitative and Quantitative.
- **Sample size:** - No. of Doctors:100.
No of Chemists:100.
- **Duration of Study:** - 3 months.
- **Data Analysis Techniques:** - The findings and the information's collected and compiled, analyzed on Microsoft Excel

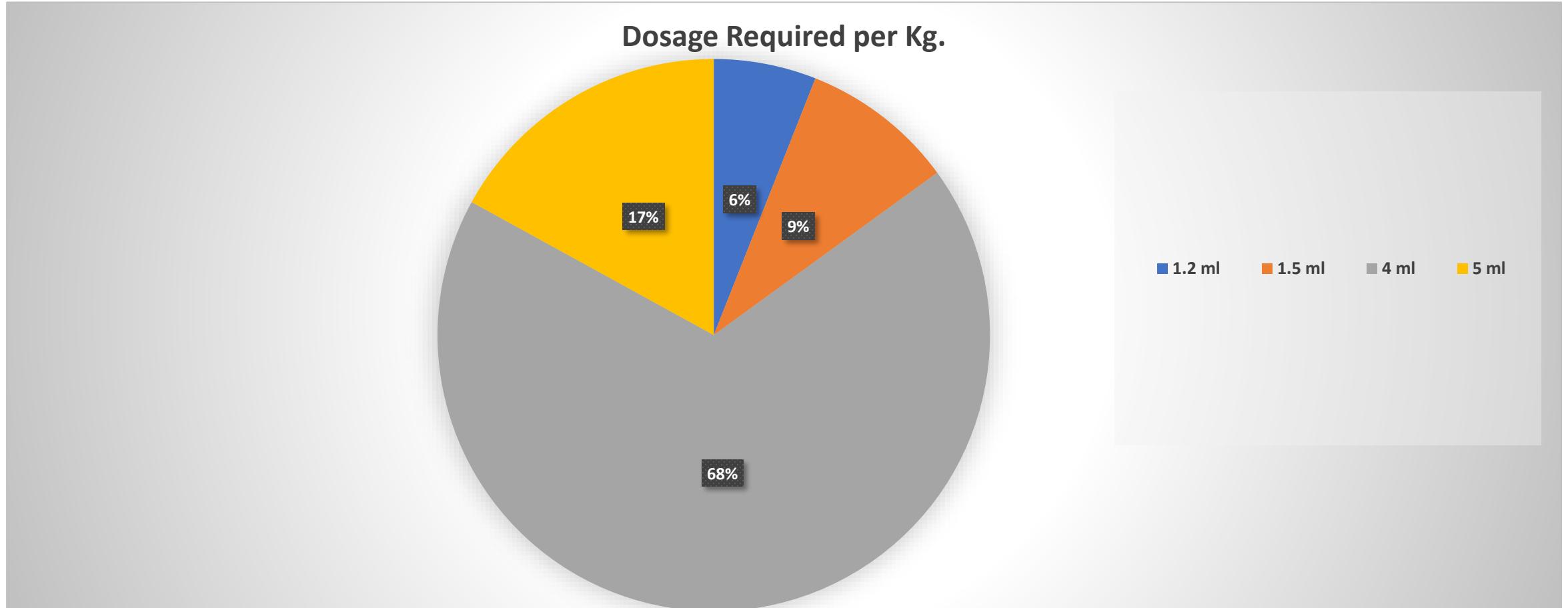
Q1. Doctor in which indication do you Preferred Natural Surfactant.?



Interpretation: -

- It was found out that 68% of the doctors prescribes natural surfactant to treat the RDS.

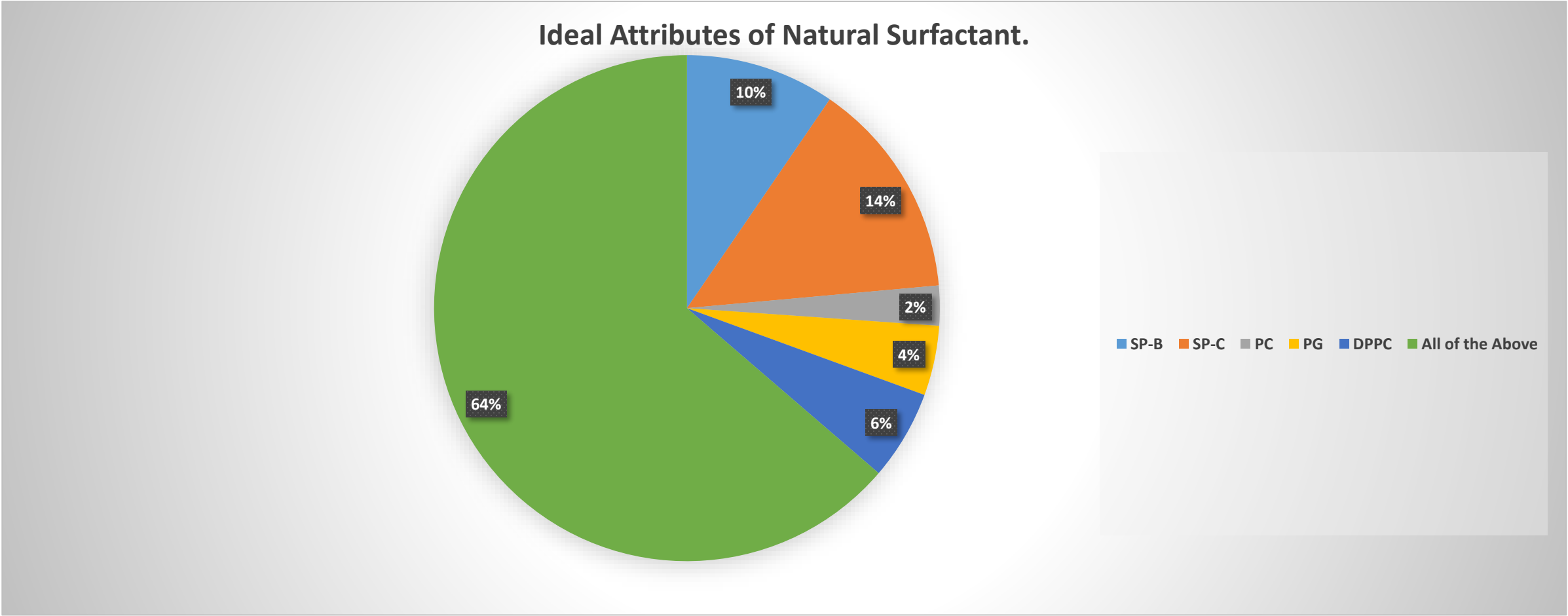
Q2. Doctor what is the preferred dosage for 1kg Baby in RDS Cases.?



Interpretations: -

- It was found out that 68% of the doctors preferred 4ml per Kg dose in the treatment of RDS cases.

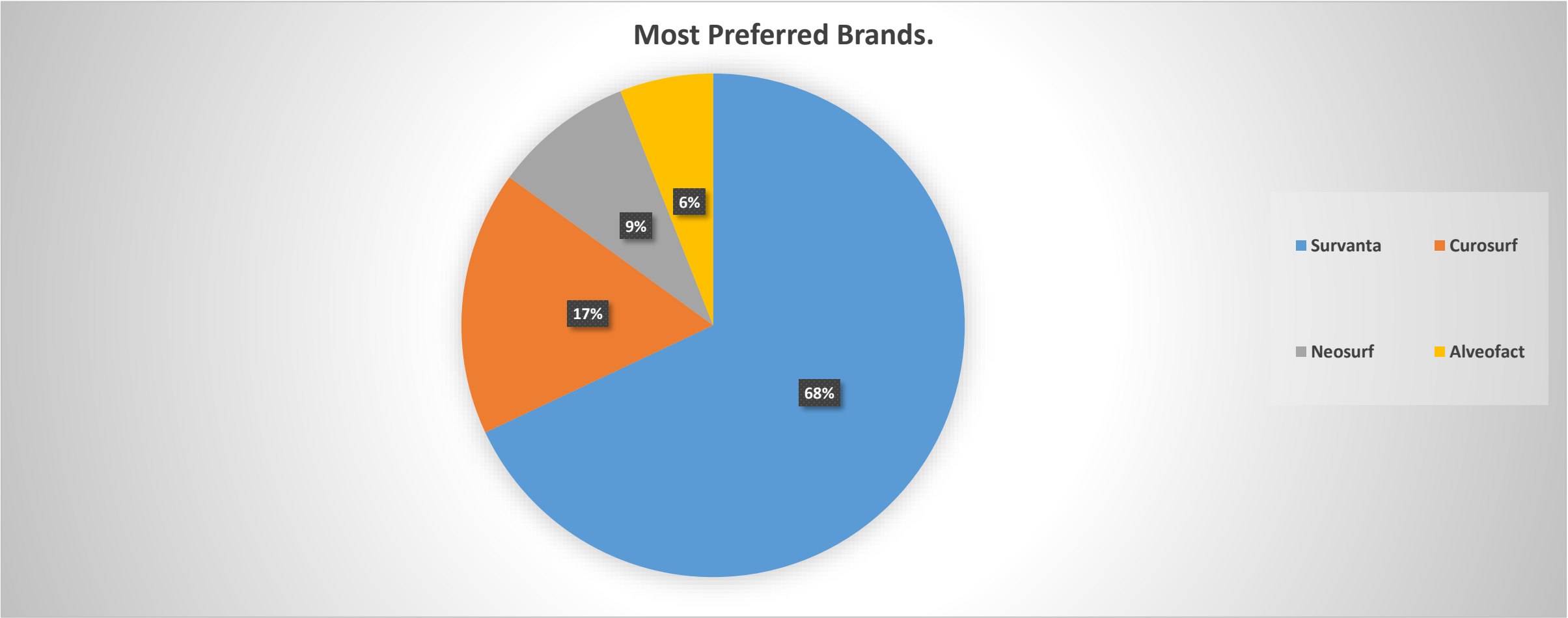
Q3. Doctor according to you, what are the attributes of ideal Natural Surfactant.?



Interpretation: -

- It was observed that 64% of the doctors preferred all the attributes of the Natural Surfactant, i.e. mentioned SP-B, SP-C, PC, PG, DPPC, and only 36% of the doctors preferred SP-B, SP-C, PC, PG, DPPC these attributes individually.

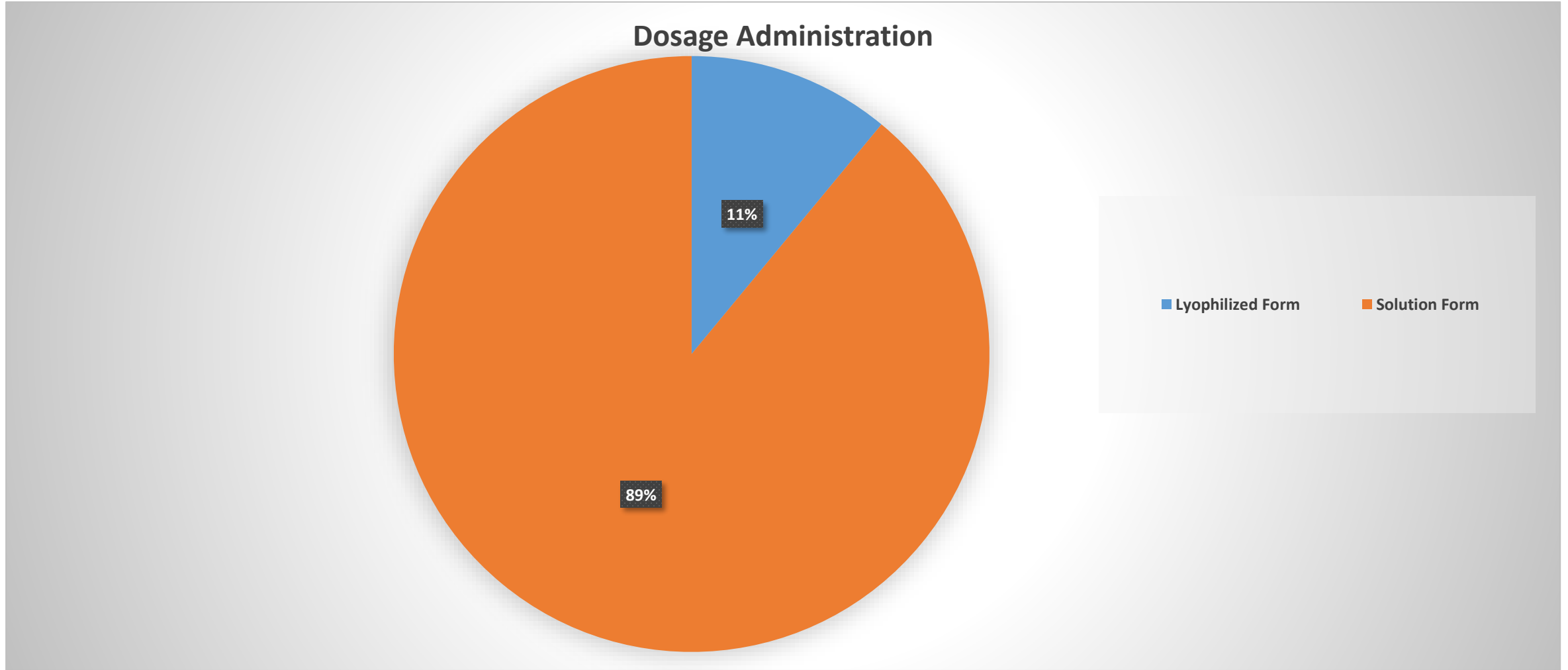
Q4. Which brands do you use the most in the treatment of RDS or breathing problem associated with other indications.?



Interpretations: -

- It was found out that 68% of the doctors go with Survanta for treating the RDS patients.

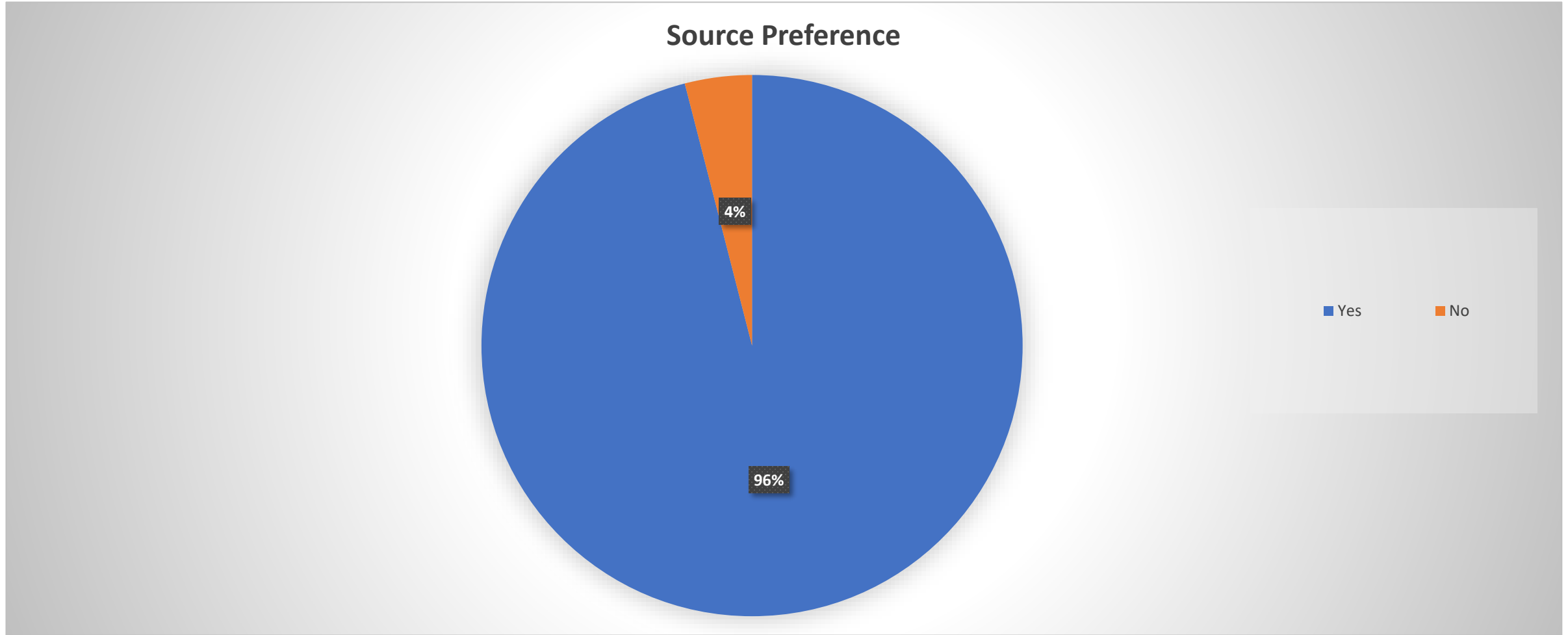
Q5. Doctors which is the most accepted form of administration by patients.?



Interpretation: -

- It was observed that 89% of the doctors go with Solution form of Natural Surfactant to administration in the RDS patients and only 11% doctors go with Lyophilized form.

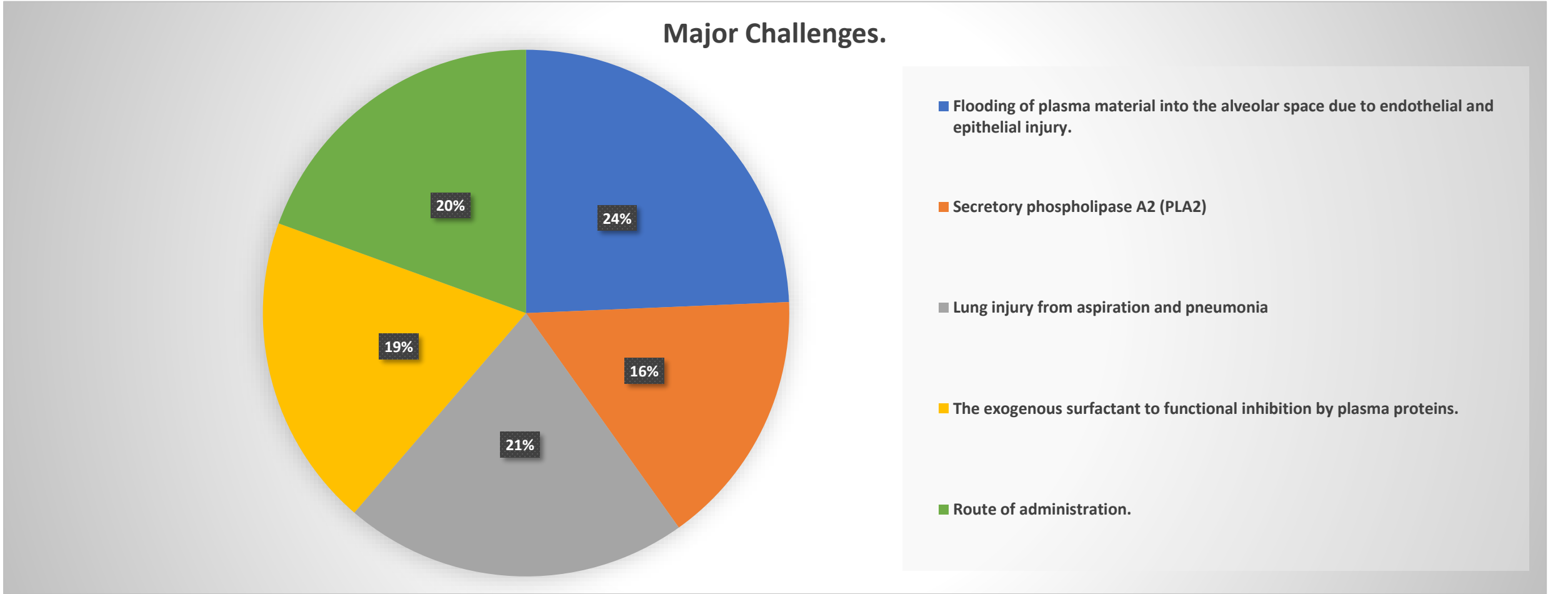
Q6. Doctors do you think Bovine based Natural Surfactant is an effective than Porcine Based.?



Interpretation: -

- It was found out that 96% of the doctors agreed with that bovine based Natural surfactant is an effective than porcine based, only 4% of the doctors agreed that porcine based natural surfactant is an than bovine based.

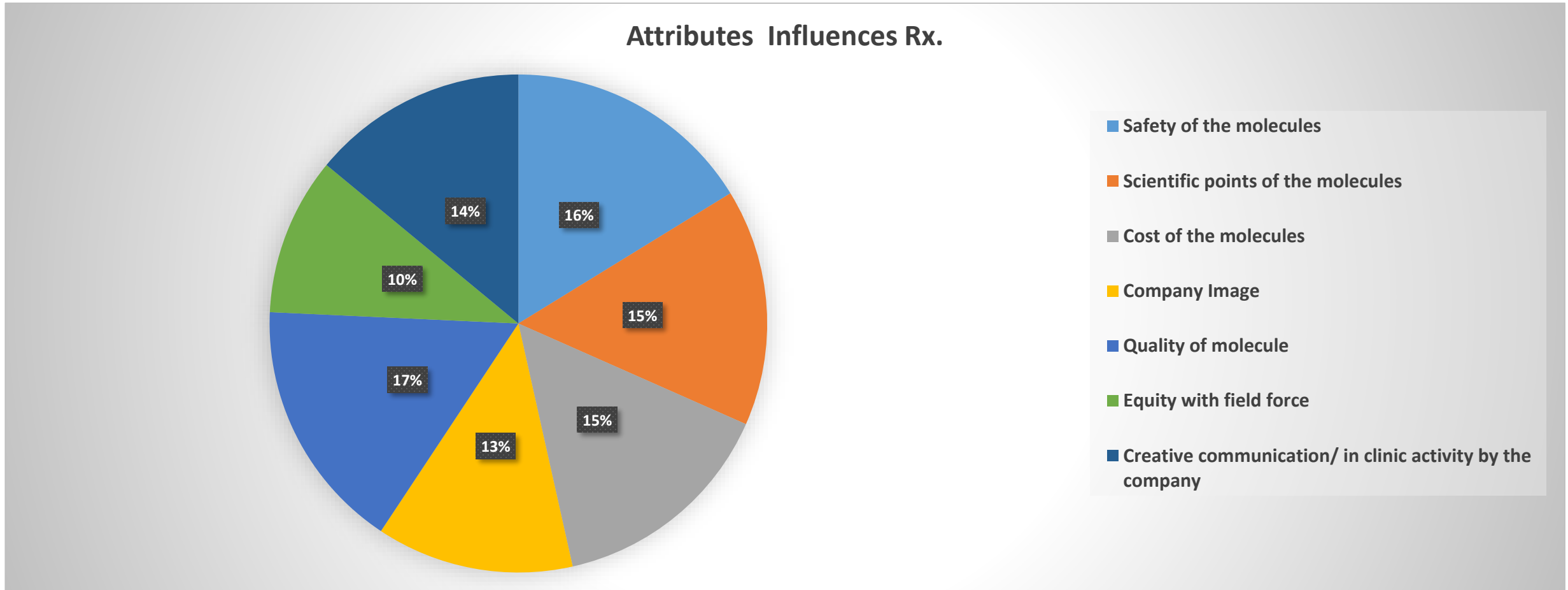
Q7. Doctors what are the challenges you faced in the treatment of RDS at patient level.?



Interpretation: -

It was observed that the major challenges faced by the doctors at the patient’s level in the treatment of RDS patient’s i.e. 24% Flooding of plasma material into the alveolar space due to endothelial and epithelial injury, 21% Lung injury from aspiration and pneumonia, and 20% Route of administration.

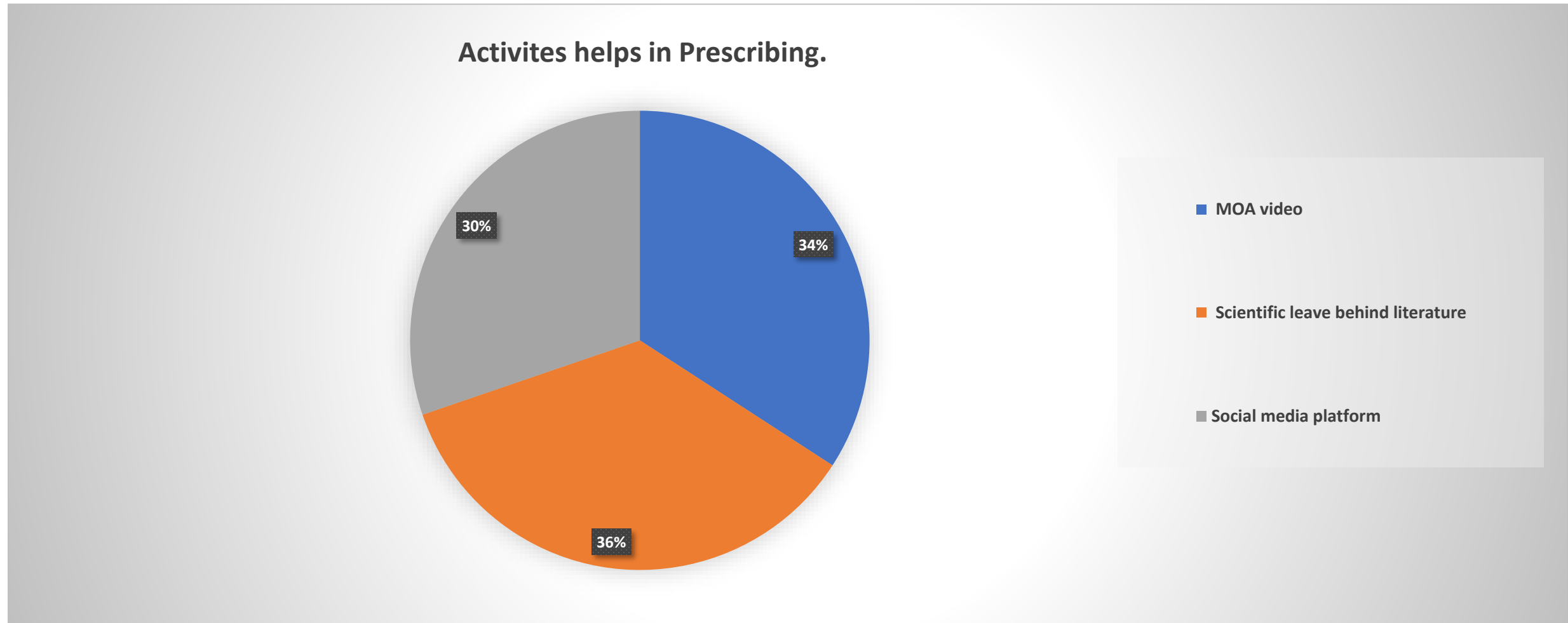
Q8. Doctor which of the following attributes influences your Rx.?



Interpretation: -

- It was found that 90% of the doctor's prescriptions influenced by the Safety of the molecules, Scientific points of the molecules, Cost of the molecules, Company Image, Quality of molecule Creative communication/ in clinic activity by the company. Only 10% of the doctor's prescriptions influenced by the Equity with field force.

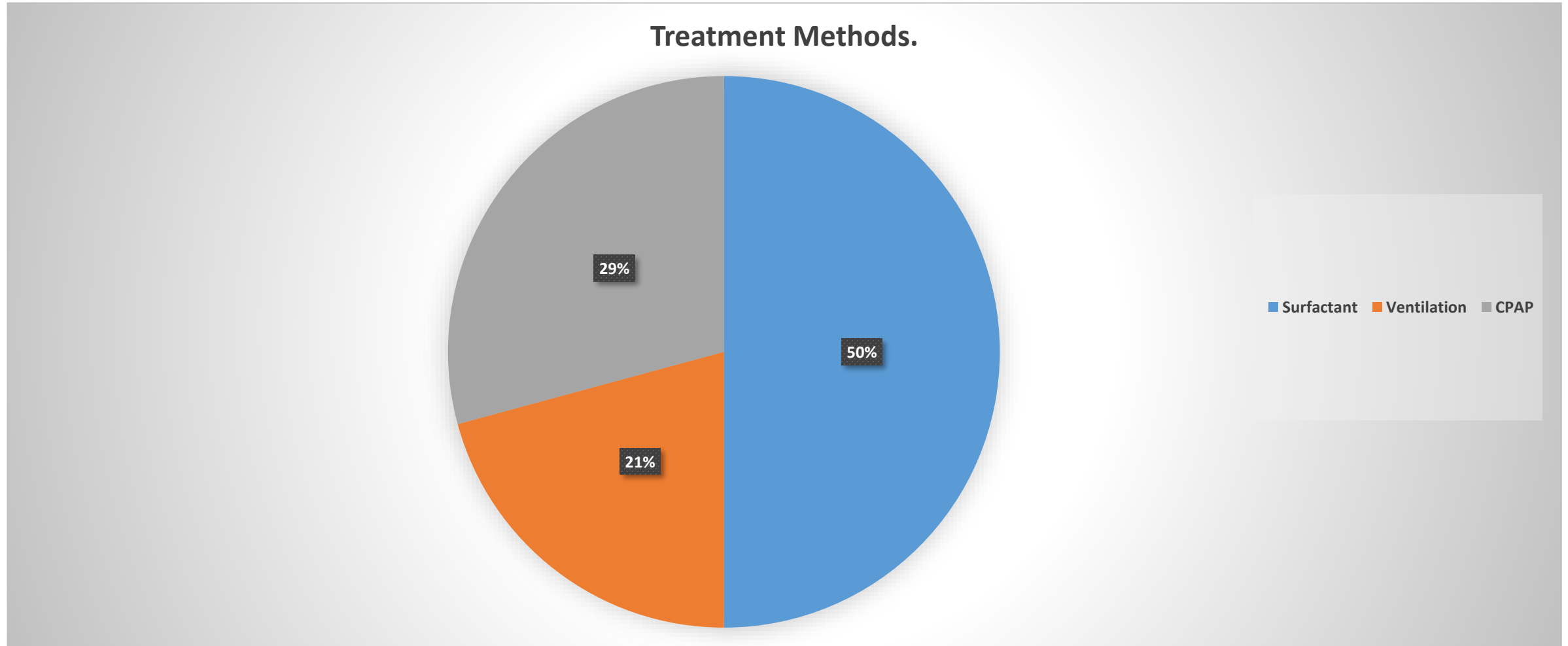
Q9. Doctor which of the following activities will help you in prescribing the Natural Surfactant.?



Interpretation: -

- It was observed that 70% of the doctors given response to the MOA video, and Scientific leave behind literature for prescribing.
- Only 30% of the doctors given response to the Social media platform for prescribing Natural Surfactant.

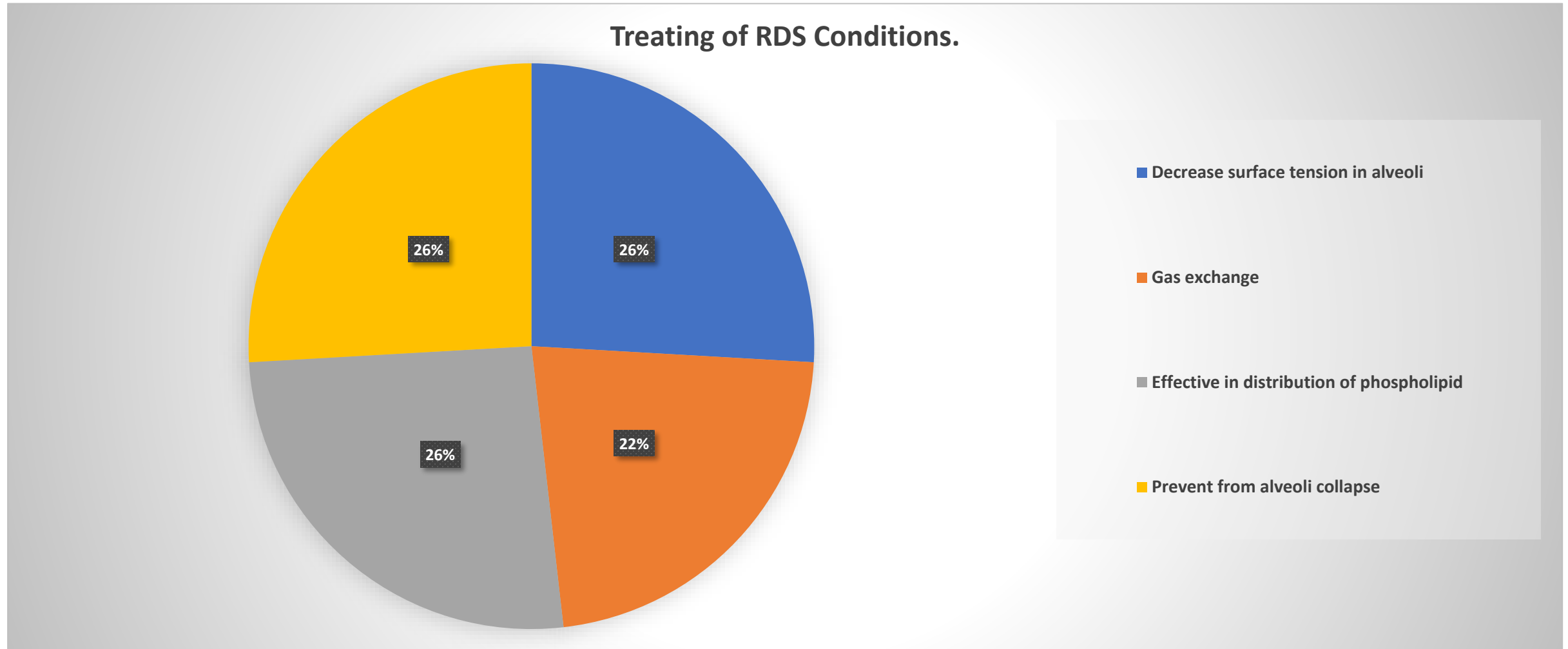
Q10. How Does you treat RDS Patients mostly.?



Interpretations: -

- It was found that 50% of the doctors used Surfactant mostly for treat the RDS patients mostly, but 29% of the doctors preferred CPAP and only 21% of the doctors preferred ventilation for treatment of RDS patients.

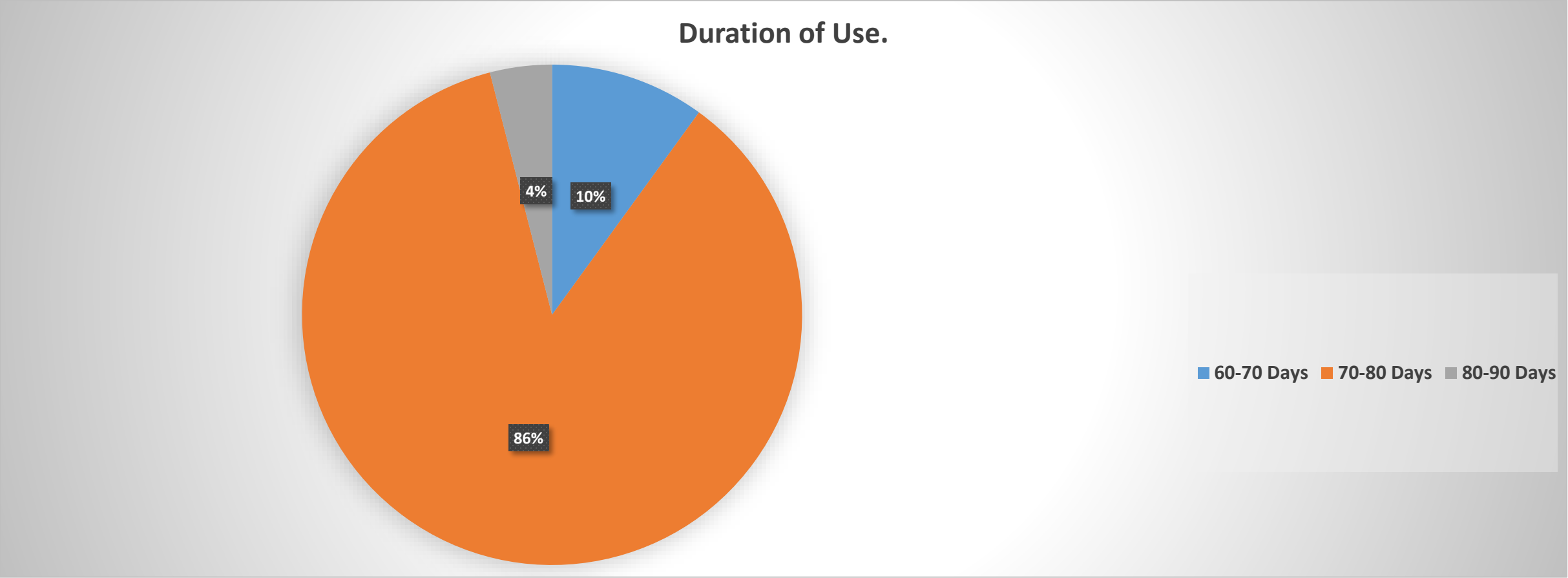
Q11. How does the use of surfactant help in treating the RDS Conditions.?



Interpretation: -

- All the 100% doctors are agreed that the used of surfactant will help in treating the RDS conditions i.e. by Decrease surface tension in the alveoli, Gas exchange, Effective in distribution with phospholipid, and prevent from alveoli collapse.

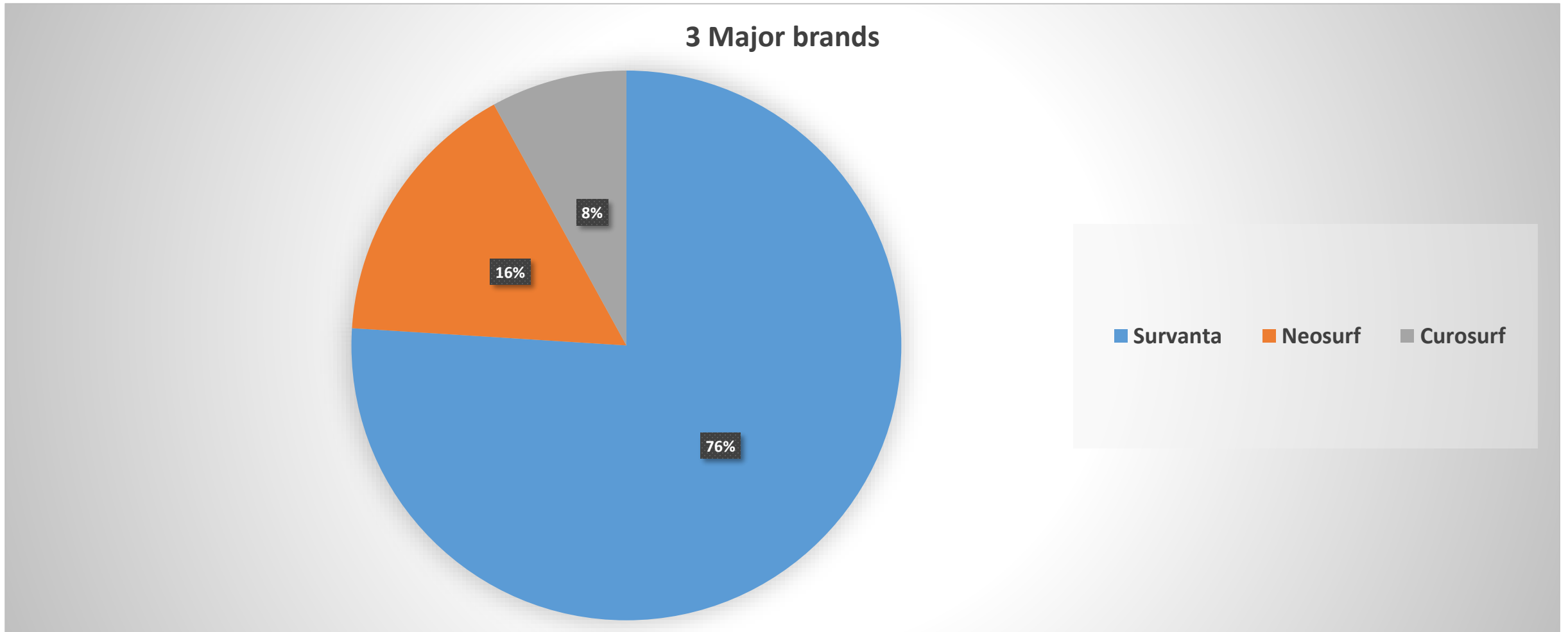
Q12. How long do you use Surfactant therapy to your RDS patients.?



Interpretations: -

- It was observed that 86% of the doctors said that 70-80 days of hospitalization is required for the treatment of RDS Patients, 10% of the doctors said that 60-70 days of hospitalization is required for the treatment of the RDS patients, and only 4% of the doctors said that 80-90 days of the hospitalization is required for the treatment of RDS patients.

Q13. Which are the 3 major brands of surfactant selling most on your counter.?

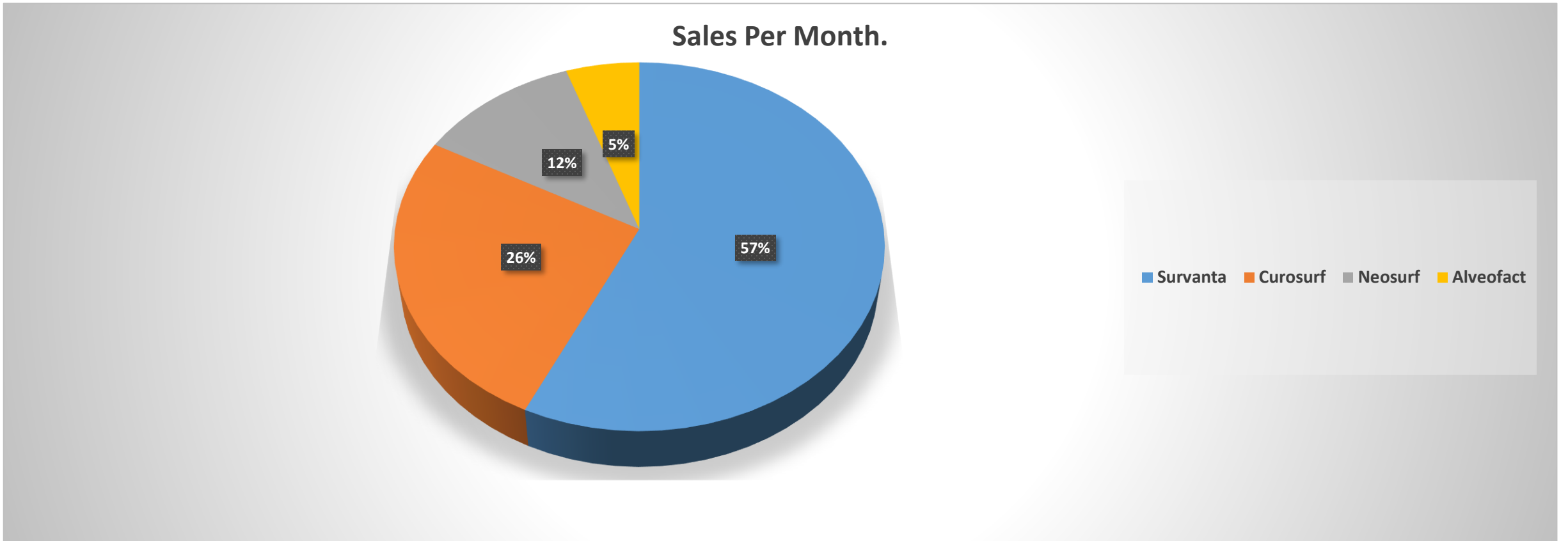


Interpretation: -

- It was found out that 76% of the retailers sell Survanta most on the counter, 16% of the retailers sell Neosurf most on their counter, and 8% of the retailers sell Curosurf most on their counter.

So as per the above data Survanta is the highly selling brand in the selected cities of Uttar Pradesh.

Q14. How much do you sell.?

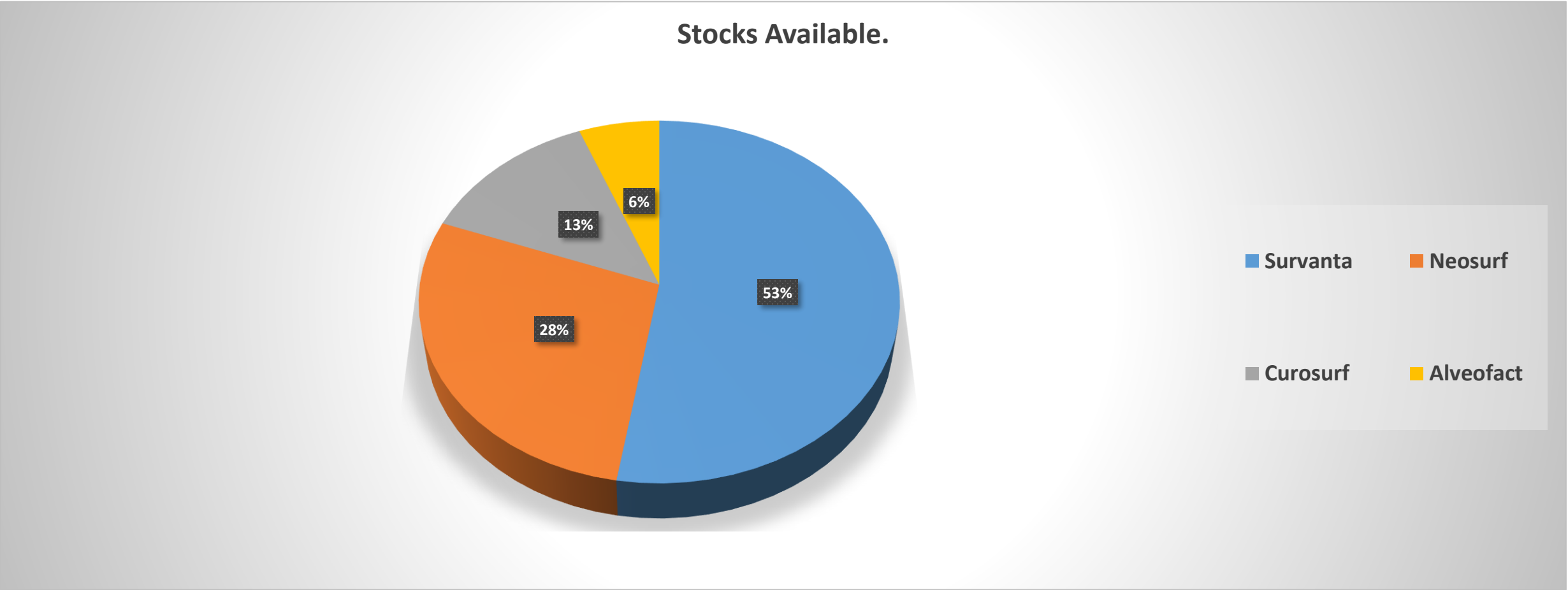


Interpretation: -

- It was observed that according to the total respondent 57% of retailers said 215 vials Survanta sold per month, 26% of retailers said 98 vials of Curosurf sold per month, 12% of retailers said 44 vials of Neosurf per month, and 5% of the retailers said 20 vials Alveofact sold per month.

So as per above data Survanta is the highly selling Natural Surfactant per month in the selected cities of Uttar Pradesh.

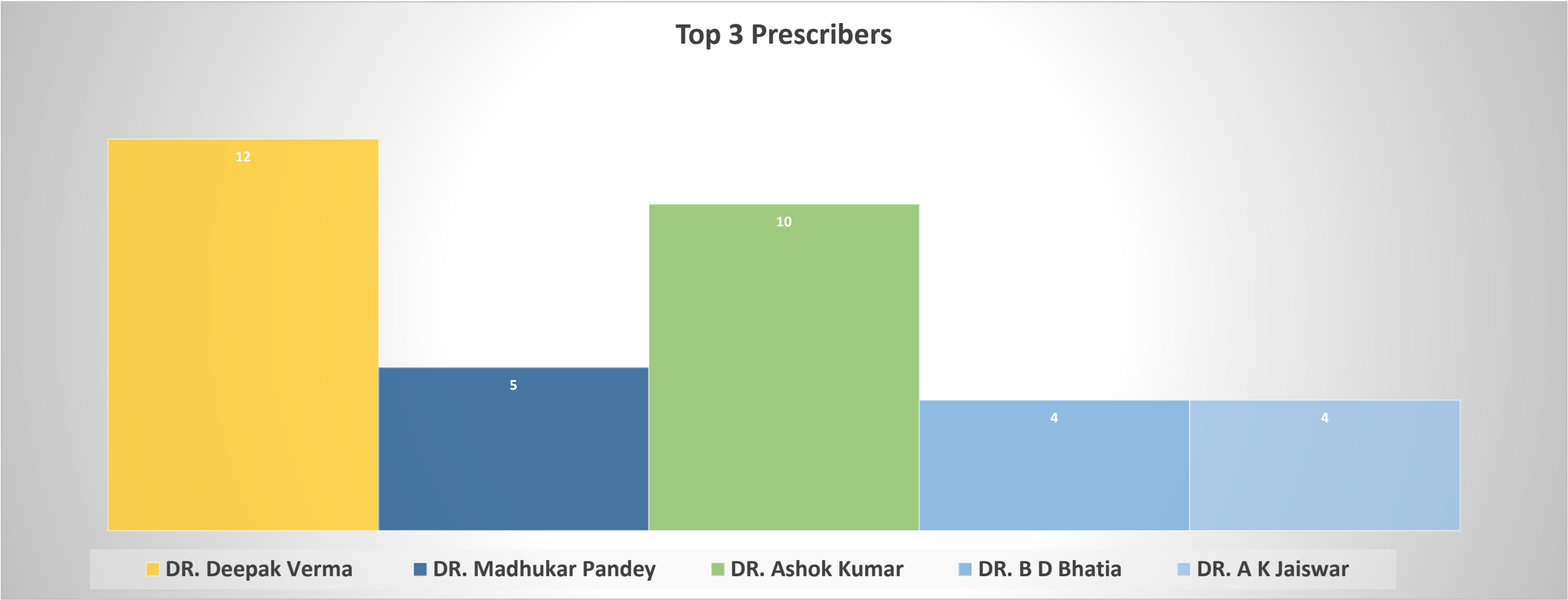
Q15. How much stocks do you have now.?



Interpretation: -

- It was found that 53% of the retailers have 71 vials stock of Survanta, 28% of the retailers have 38 vials stock of Neosurf, 13% of the retailers have 18 vials stock of Curosurf, and 6% of retailers have 8 vials stock of Alveofact. So as per above data Survanta is highly available stocks of Natural Surfactant in the selected cities of Uttar Pradesh.

Q16. Who are the top 3 prescribers of Natural Surfactant brands and how much doctors prescribes.?



Interpretations: -

- Dr. Deepak Verma, Dr. Ashok Kumar, Dr. Madhukar Pandey.
- It was observed that the top three potential prescribers of Natural Surfactant are

SL/ No.	Parameter	Alveofact	Survanta	Curosurf	Neosurf
1.	Source	Bovine Lungs/ Lavage	Bovine Lungs/ Minced	Porcine Lungs/ Minced	Bovine Lungs/ Lavage
2.	Dose per Kg	50mg	100mg	200mg	135mg
3.	Volume per Kg	1.2ml	4ml	1.5ml	5ml
4.	Available SKUs	1.2ml	4ml & 8ml	1.5ml & 3ml	3ml & 5ml
5.	Active phospholipid concentration per ml	45mg	25mg	80mg	27mg
6.	Warming required	Not required up to 30 °C	Yes	Yes	Yes
7.	Vial Wastage	Nil	Yes	Yes	Yes
8.	Storage Temperature	Up to 30 °C keep in fridge considering Indian temperature conditions	2-8 °C Ampoule	2-8 °C Ampoule	2-8 °C Ampoule
9.	Phospholipid %	90% Phospholipid	84% Phospholipid	99% Phospholipid	40% DPPC
10.	Viscosity	8 times less Viscous	High	High	8 times less Viscous
11	SP-B & SP- C Concentration	SP-B: 5.2 ±0.6 SP-C: 12.9±1.7	SP-B: 1.3 ±0.2 SP-C: 16.9±3.7	SP-B: 3.2 ±0.5 SP-C:10.1±1.5	Not defined
12.	Stability	36 months	15 months	15 months	36 months
13.	Infants requiring one dose only	78.10%	51%	73%	Not Available
14.	Cost for initial Treatment	3515 Rs.	13178 Rs.	12280 Rs.	8897 Rs.

Conclusions

- It was found out that most selling Natural surfactant brands in selected Cities Uttar Pradesh i.e. 76% Survanta.
- It was observed that most selling Natural surfactant dosage strength in selected cities of Uttar Pradesh i.e. 4ml Survanta.
- It was found out that Dose per Kg required of Natural Surfactant in selected cities, Uttar Pradesh i.e. 45mg Alveofact, 100mg Survanta, 200mg Curosurf, and 135mg Neosurf.
- The overall finding of the study helped us to understand the prescription behavior and the reason behind the compliance they are facing while prescribing Natural Surfactant.
- The cost and dose are the two main factors that influence the prescription of Natural Surfactant.
- The Target consumer: Marketing efforts are more likely to be successful if they are aimed at consumers, rather than at the public at large.

- Almost all the Neonatologist & Pediatricians preferred Natural surfactant for the treatment of NRDS. Natural surfactant has shown to have a better prognosis than synthetic surfactants.
- The intraventricular haemorrhage, pneumothorax and rate of bronchopulmonary dysplasia were equal among patients treated with Alveofact, Curosurf, Neosurf and Survanta. The doctors preferred brand for the treatment of neonatal respiratory distress Syndrome in preterm baby is Survanta because of high margin on Survanta in hospital pharmacy and as well as well-established Natural surfactant brand for the treatment of NRDS patients.
- There is another reason of doctors to preferred Survanta is pre-filled suspension vial. Survanta is available in suspension form and no need to make suspension as in Alveofact is available in lyophilized form and before injecting in to the baby we have make it into Solution form.
- Alveofact as compared to Survanta, Neosurf and Curosurf showed significantly fewer days for mechanical ventilation as well as fewer days on supplemental oxygen therapy and eventually it reduces the hospitalizations days of the patients.

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Recommendations

- Identify the Key Opinion Leader and served with more frequently with excellent customer service.
- Introduce the Cross Promotional strategy (either with own Product or competitors Product)
- Introduce the Subjective Positioning Strategy.
- By preparing the promotional strategies helps in Improving the sales of the product.
- Regular visit along with time to time activity influence the doctor to prescribe the brand.
- Marketing Managers identifies target consumers and discovers their desires in order to design an effective marketing mix.
- Determining Consumer Desires: Effective marketing strategy requires a knowledge of consumer desires; the benefits that consumers seek.

- Medical Representatives should be trained well by the organisations regarding the use of iPads/Tablets and pharmaceutical organisations should have a dedicated tech support team to resolve issues in call reporting or any other software or hardware issues faced by the sales force in day to day activities.
- There is need of Conducting conferences, CMEs, & RTMs with the help of this activities Neonatologist KOL and Pediatricians in that conference, we can address the other doctors regarding the Natural surfactant compositions, attributes of ideal Natural surfactant, dosage form and regarding surfactant compositions in treatment of NRDS.
- Reminder Cards, Stickers and Gifts like Diaries, pen, or calendar can be given to doctors and hospital pharmacist for prolong relationship with the company and as well as for brand recognitions.

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THANK YOU..