

Summer Training at



(April 1–May 31, 2014)

Identification and Profiling of Interventional Cardiology, Interventional Radiology and Cardio-thoracic Surgery KOL's

**By
Sureet Boora**

**Under the guidance of
Dr. Anoop Khanna**

**MBA- Hospital & Health Management (MBA-HM)
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**The IIHMR University, Jaipur
2014**

**INSTITUTE OF HEALTH
MANAGEMENT RESEARCH**

1, Prabhu Dayal Marg
Sanganer Airport, JAIPUR - 302 029, INDIA
Tel. : 3924700, 2791431-32
Fax : 91-141-3924738
E-mail : iihmr@iihmr.org
URL : <http://www.iihmr.org>
Gram : HEALTHINST

CERTIFICATE

This is to certify that Dr. Sureet Boora has undergone her summer training in IMS Health, Gurgaon from 7th April, 2014 to 6th June, 2014. The candidate herself carried out all the studies related to her summer training. Her approach to the study has been scientific and analytical. This summer training is partial fulfilment of course requirement is recommended for the award of post graduate diploma in hospital management.

I wish her success in all her future endeavours.



Dr. Ashok Kaushik

Dean(Academic & Student Affairs)

IIHMR Jaipur



Dr. Anoop Khanna

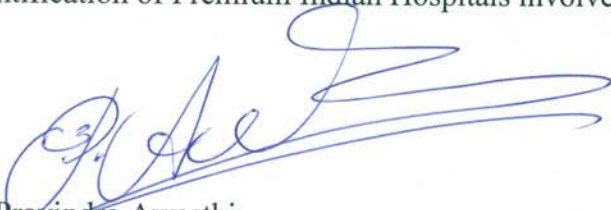
Associate Professor

IIHMR Jaipur

To Whom So Ever it May Concern

This is to certify that **Dr Sureet Boora**, a student of **IIHMR, Jaipur** has worked under our guidance and supervision. During her tenure in IMS Health from 7th April to 6th June 2014, she has worked on the following projects:

1. Identification and profiling of interventional cardiology, interventional radiology and cardiothoracic surgery KOL's
2. Identification of Premium Indian Hospitals involved in Cardiology practices.



Dr Pravindra Awasthi

Manager Analytic, IMS Health, India

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1. ACKNOWLEDGEMENT

I take this opportunity to express my gratitude to all the persons who have been instrumental in the successful completion of this project

I express my greatest regard to my mentor **Dr. Anoop Khanna**, Associate Professor, IHMR JAIPUR for helping and guiding me during my summer training.

I would like to express my deepest gratitude to my corporate guide, **Dr. Pravindra Awasthi** at IMS Health, India for his excellent guidance, patience and providing me great opportunity to work. I would like to extend my sincere thanks to my buddy **Mr. Saurabh Chaddha** (Consultant) , **Miss Ankita Baru** (Consultant and team lead) , **Mr. Manish Choudhary** (Junior Consultant) , **Miss Lalita Kalwani** (Junior Consultant) who were always available to guide me during challenging phases of my project .

2. ABBREVIATIONS

- KOL: Key Opinion Leaders
- TAVI: Trans Catheter Aortic Valve Implantation
- PCI: Percutaneous Coronary Intervention
- CIN: Contrast Induced Nephropathy
- PCSI: Pediatric Cardiac Society of India
- ICC: Interventional Cardiac Consultants
- ACVS: Advanced Cardio-Vascular Solutions
- APICON: Anesthesia, Pain and Intensive Care
- Euro PCR: European Association of Percutaneous Cardiovascular Interventions
- ESUR: European Society of Urogenital Radiology
- PLC: Product Life Cycle
- CC: Congress Committee
- CP: Congress Presentation
- JB: Journal Editorial Board
- AM: Association Membership
- PM: Pub Med
- CT: Clinical Trials
- PMR: Primary Market Research
- HCS: Home and Community Services

Promoter

GE Healthcare is a subsidiary of General Electric (GE), headquartered in Little Chalfont, Buckinghamshire, United Kingdom. It employs more than 46,000 people worldwide. GE Healthcare is the first GE business segment to be headquartered outside the United States. GE Healthcare provides transformational medical technologies and services helping to deliver patient care to people around the world. The company provides medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies and performance solutions services.¹

Project Overview

GE Healthcare wants to develop and identify the top Key Opinion Leaders (KOLs) from interventional cardiology, interventional radiology and cardiothoracic surgery working on contrast media in India (Interventional Radiologists working closely with cardiac imaging contrast media to be profiled depending upon data availability)

The product in focus is **VISIPAQUE**, so the research is limited to cardiologists/ Interventional cardiologists working on contrast media used in X Ray/CT segment.

Project Consultant

IMS Health, founded in 1954, is the world's leading Information; Services and Technology Company dedicated to making healthcare perform better.

By applying cutting-edge analytics and proprietary application suites hosted on the IMS One intelligent cloud, the company connects more than 10 pet bytes of complex healthcare data on diseases, treatments, costs and outcomes to enable our clients to run their operations more efficiently.

Drawing on information from 100,000 suppliers and on insights from more than 45+ billion healthcare transactions processed annually, IMS Health's 9,500+ professionals drive results for over 5,000 healthcare clients globally.

Customers include pharmaceutical, medical device and consumer health manufacturers and distributors, providers, payers, government agencies, policymakers, researchers and the financial community.²

Key Opinion Leaders

An Opinion Leader is an individual capable to repeatedly persuade and influence other peoples' behaviors according to her or his own preferences. Also known as INFLUENTIAL, they have the power to informally manipulate attitudes and behaviors of other individuals. The concept has been researched by Robert Merton in 1949 and lately developed by Katz and Lazarsfeld.³

Reasons For Considering KOL's

It is a general belief that doctors trust each other more than they trust pharmacists or the healthcare companies. The effect of this is seen in the growth of physician-only networks over the past decade. Doctors on these networks talk about anything from clinical matters to all kinds of topics completely unrelated to their professional lives. The reason for this is simple – the mutual respect that exists amongst healthcare professionals for the opinion of their peers. Another good reason is that experts add credibility in a time-constrained world.⁴

Visipaque

VISIPAQUE (iodixanol) Injection is a dimeric, isosmolar, nonionic, water-soluble, radiographic contrast medium. It is indicated for angiocardiology (left ventriculography and selective coronary arteriography), peripheral arteriography, visceral arteriography, and cerebral arteriography.⁵

Interventional Cardiology

Interventional cardiology is a branch of cardiology that deals specifically with the catheter based treatment of structural heart diseases. Andreas Gruentzig is considered the father of interventional cardiology after the development of angioplasty by interventional radiologist, Dr. Charles Dotter.⁶

Cardiothoracic Surgery

Cardiothoracic surgery is the field of medicine involved in surgical treatment of diseases affecting organs inside the thorax (the chest)—generally treatment of conditions of the heart (heart disease) and lungs (lung disease).⁷

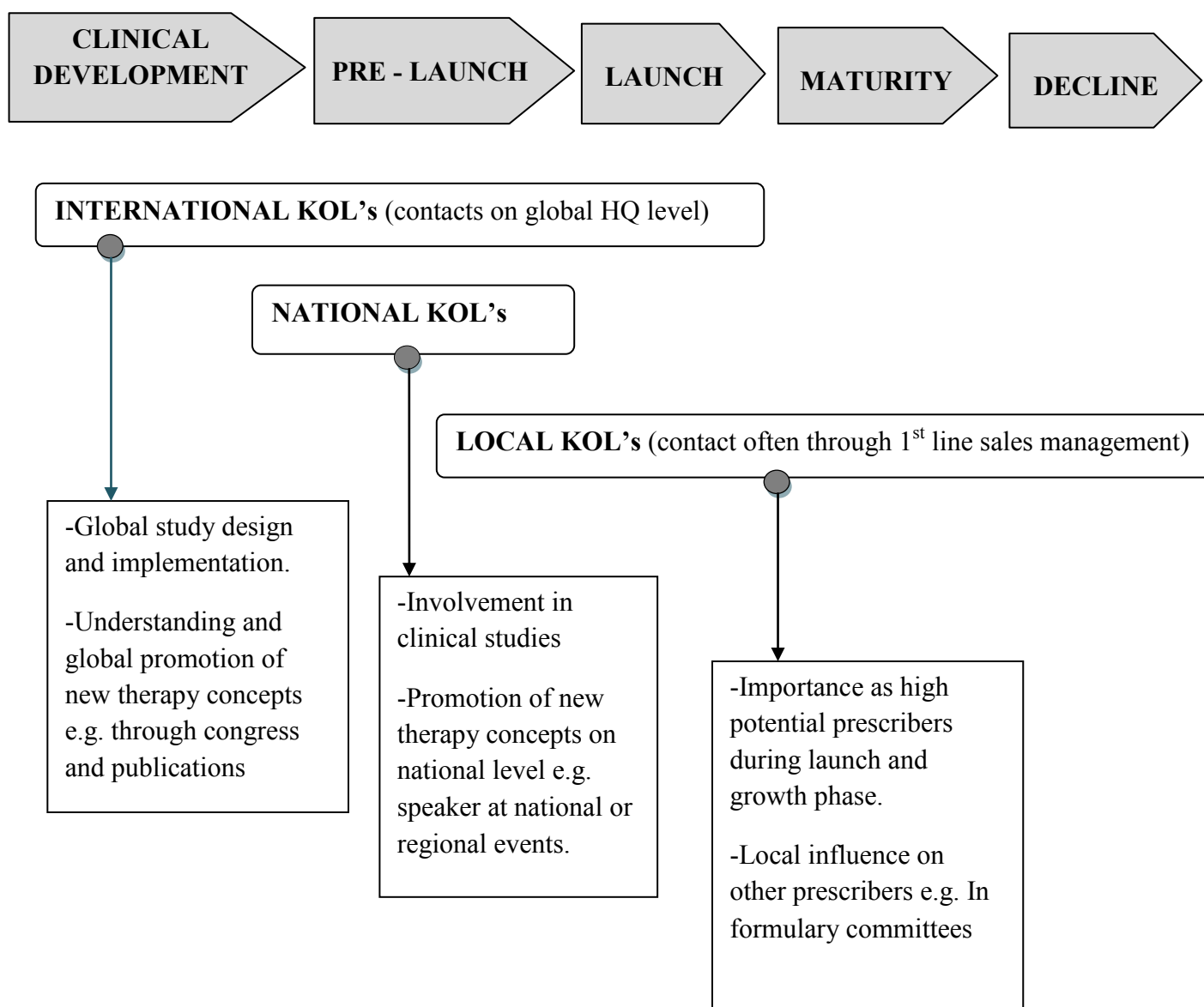
Interventional Radiology

Interventional Radiology is a medical sub-specialty of radiology which utilizes minimally invasive image-guided procedures to diagnose and treat diseases in nearly every organ system. The concept behind interventional radiology is to diagnose and treat patients using the least invasive techniques currently available in order to minimize risk to the patient and improve health outcomes.⁸

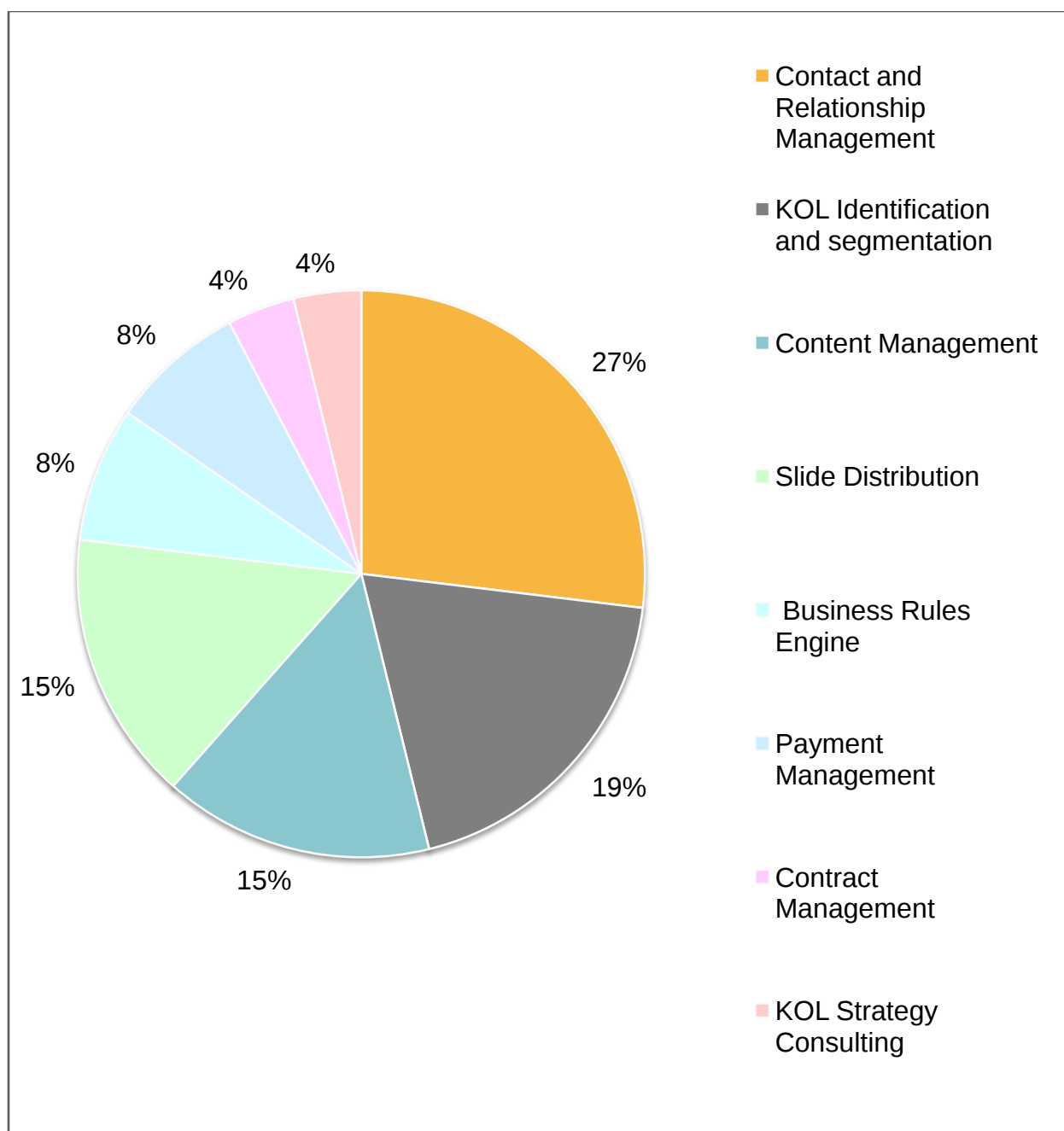
KOL and PLC

KOLs are important at all stages of the product life-cycle – but of key importance during the launch period

KOL types and their relative importance in different product life-cycle stages



Relative Importance of KOL Management Practices



Source – Forrester Research, Inc.

4. RATIONALE

The Healthcare Company could focus on:

- Setting up reference centers of cardiologists/ interventional cardiologists who use the company's brands in India
- Developing a speakers bureau - a bank of speakers who can be called on for key symposia/knowledge transfer in India
- Knowing & understanding KOLs with whom GE should be working with for future brands
- Mapping KOLs in order to collaborate, and mirror as well as educate HCS and avoid conflicts in symposia

Research Question:

- To identify and profile top 50 KOL's in interventional cardiology from India.

5. CURRENT STUDY OBJECTIVE

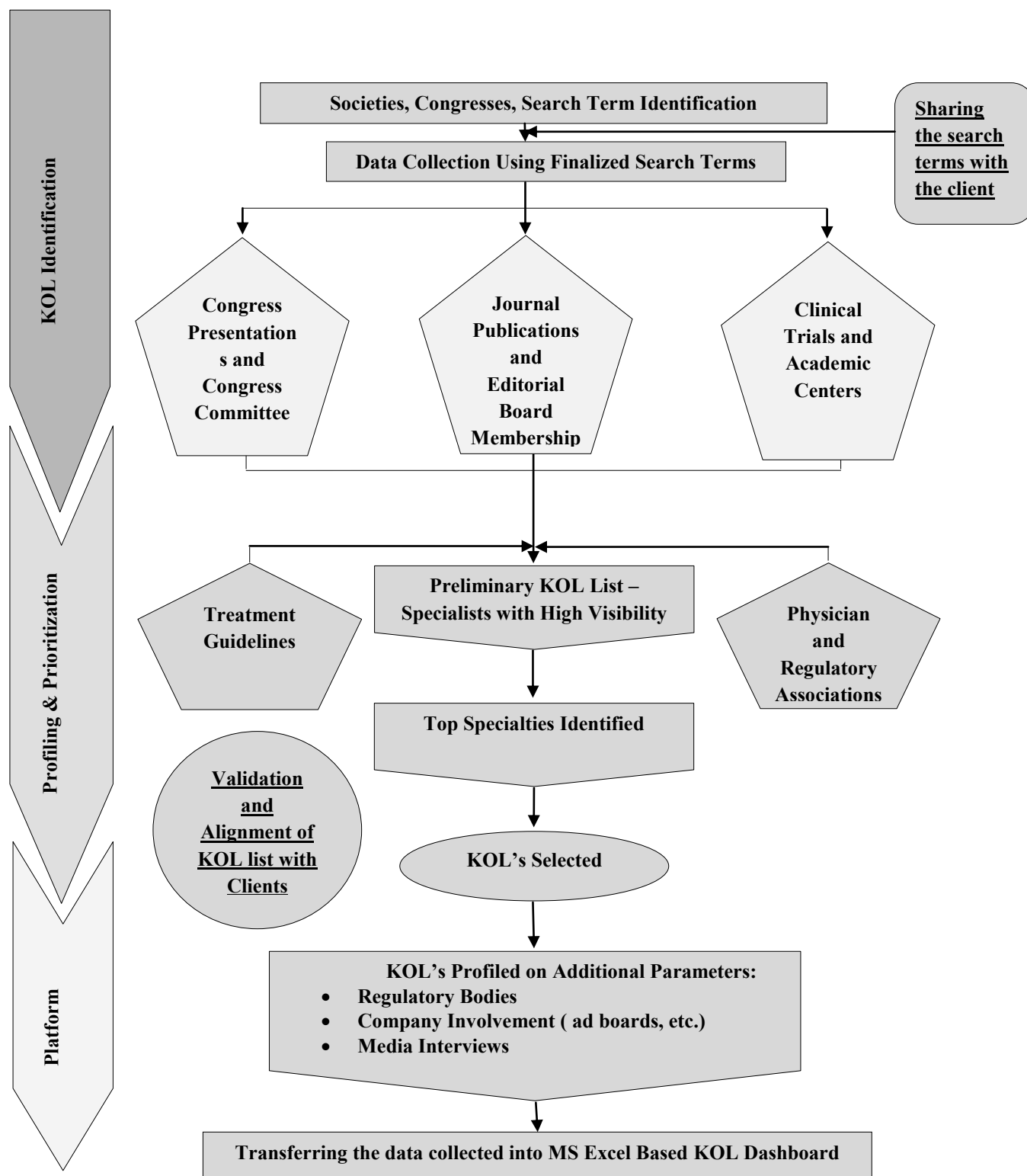
- Identification and Profiling the cardiology/ interventional cardiology Key Opinion Leaders in the area of Contrast media for India
 - Identification of the sources for data collection
 - Systematic data collection and name matching
 - Preparation of the preliminary list of KOL's
 - Validation of the preliminary list with list from PMR and Hospital list
 - Preparation of the Final List of top 100 KOL's

6. DELIVERABLE FORMAT

Neatly labeled MS Excel based tool summarizing the profiles of KOLs identified as part of the research; key profiling information captured include:

- Name
- Qualifications
- Address
- Contact Details
- Brief about the cardiologist
- Association or Foundation Memberships
- Journal Editorial Board
- Congress committee
- Congress Presentation
- Clinical Trials
- Media Interviews
- Journal Publications

7. METHODOLOGY



7.1. PROJECT FLOW

Project Flow: Initiation to Completion Phase

Initiation Phase

Completion Phase

Data Screening and Dashboard Generation

Search Term Finalization

-Conducting an in depth research on search terms to be used for KOL's research in contrast media field in India.

- Sharing search terms with Health Company for their approval on terms

Data Screening

-Collate the first Preliminary KOL list using the various sources

Validation

-PMR input will provide KOL's
-KOL's will be extracted from hospital list.
-Name match algorithm is used to match above lists with the first preliminary KOL list to give Final KOL list

Summarization

-Finalize KOL list
-Generate the dashboard profiles

Interim Report

-Draft Profile
-Review with Health Company

Final Report

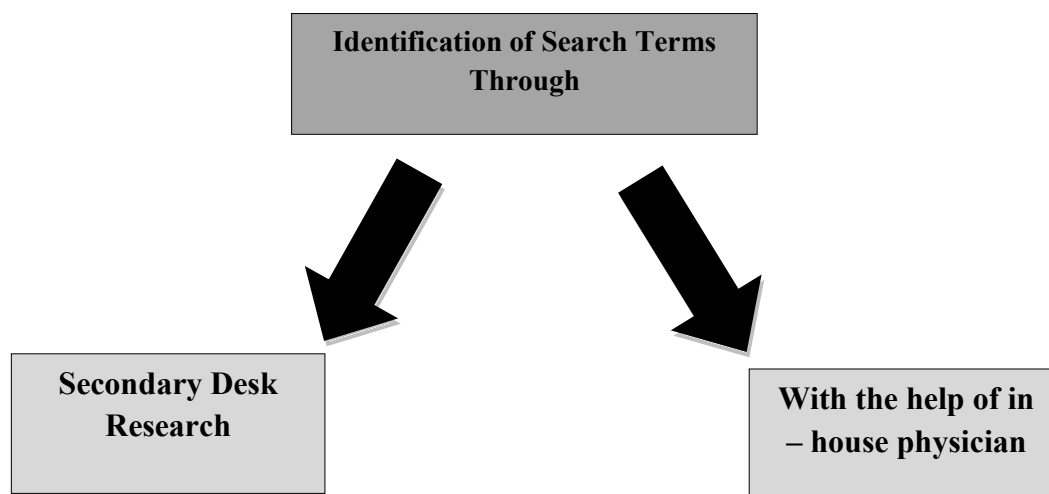
-Modify report as per changes suggested and send final report to the Health Company

Feedback

-In final SME to provide feedback on report in case of any changes/modifications

Legend ↔ Work Flow

7.2. IDENTIFICATION OF SEARCH TERMS



List of Search Terms

Sr No.	SEARCH TERMS
1	Cardiac Catheterization
2	Interventional Radiology
3	Interventional Cardiology
4	Surgical Radiology
5	Cardiovascular And Interventional Radiology
6	Vascular And Interventional Radiology
7	Imaging Interventional Cardiology
8	Cardiac Intervention
9	Coronary Intervention
10	Coronary Stent
11	Catheterization, Heart
12	Cath Lab
13	Trans femoral Aortic Valve Implantation
14	TAVI
15	Catheter
16	Cardio angiography
17	Coronary Angioplasty
18	Venography
19	Mace And Contrast Media
20	Mace And Contrast Agent

21	Mace And Radio contrast
22	Major Adverse Cardiac Events
23	Major Adverse Cardiac Events And Contrast Media
24	Major Adverse Cardiac Events And Contrast Agent
25	Major Adverse Cardiac Events And Radio contrast
26	Coronary Plaque And Contrast Media
27	Coronary Plaque And Intervention
28	Cardiovascular Angiography
29	Coronary Angiography
30	Per cutaneous Coronary Intervention
31	PCI
32	CIN
33	Iopamidol
34	Visipaque
35	Iodixanol
36	Omnipaque
37	Iohexol
38	Accupaque
39	Imagopaque
40	Ultravist
41	Iopromid
42	Clarograf
43	Iomeprol
44	Iomeron
45	Imeron
46	Isovue
47	Iopamiro
48	Niopam
49	Gastromiro
50	Solutrast
51	Optiray
52	Hexabrix
53	Ioxaglic Acid
54	Ioxaglate
55	Xenetix
56	Iobitridol
57	Nycodenz
58	Oxilan
59	Ioxilan
60	Ioversol

7.3. PARAMETERS USED TO IDENTIFY KOL's

- Journal publications: articles published in last 5 years (through pubmed.gov)
- Congress Presentations: last 3 years (included those congresses for which the program is available on the respective websites)
- Congress organizing committee membership data.
- Clinical trials: from clinicaltrials.gov website (supplemented with publications focusing on clinical trial studies from pubmed.gov)
- Physician associations/societies: physicians holding key positions
- Treatment guidelines: from websites of physician associations/societies

7.4. PARAMETERS USED TO PROFILE KOL's

- The following information is included in the application for each of the KOLs and Rising Stars
 - Journal publications and journal editorial board memberships
 - Congress presentations and congress organizing committee memberships
 - Clinical trials
 - Treatment guidelines
 - Physician associations/societies affiliations
 - Company involvement & activities (e.g. grants)
 - Media interviews
 - Regulatory body membership

Sources for Congress

Sources for congress were identified as:

Sr. No.	SOURCE – Congress	REGION
1	International Dead Sea Symposium on Innovation in Cardiac Arrhythmias and Device Therapy	APAC
2	Asia Pacific Heart Rhythm Scientific Session	APAC
3	India Live Interventional Cardiology conference	India
4	Annual Conference of the Cardiological Society of India	India
5	Annual Conference of the Indian Society of Electrophysiology	India
6	Midterm Meet of National Interventional Council & Kerala Chapter of Cardiological Society of India	India
7	PCSI Conference	India
8	Annual Conference of ICC	India
9	National Interventional Council Meet	India
10	Indian Association of Clinical Cardiologists National Annual Clinical Cardiology Update –IACCCON	India
11	National Annual Conference of The IAE	India
12	General Body Meeting of Nuclear Cardiological Society of India	India
13	Annual National Conference of Indian College of Cardiology ICCCON	India
14	Hyderabad Live 2013	India
15	19th International Conference of Indian Association of Palliative Care	India
16	Society for Cardiac Interventions - 4th Annual Conference	India
17	Congress of Indian Association of Cardiovascular & Thoracic Surgeons	India
18	Annual National Conference on Emergency Medicine	India
19	ACVS INDIA 2013	India
20	World Congress of Cardiology Scientific Sessions	India
21	APICON-Scientific Session of Annual Conference of Association of India	India
22	The Cardiovascular and Interventional Radiological Society of Europe (CIRSE)	International/Europe
23	Euro PCR	International/Europe
24	EUROECHO	International/Europe
25	International Conference on Complications In Interventional Radiology	International/Europe

Sources for Journals

Sources for journals were identified as:

Sr. No.	SOURCE– Journals	REGION
1	Indian Journal of Radiology and Imaging	India
2	Journal of Indian College of Cardiology	India
3	The Indian Heart Journal	India
4	Journal of Clinical and Preventive Cardiology	India
5	Indian Pacing and Electrophysiology Journal	India
6	Journal of Postgraduate Medicine	India
7	Journal of Invasive Cardiology	India
8	Heart India	India
9	Indian Journal of Thoracic and Cardiovascular Surgery	India
10	Journal of the Association of Physicians of India	India
11	JACC: Cardiovascular Imaging	International
12	Investigative radiology	International
13	Circulation: Cardiovascular interventions	International
14	Techniques in Vascular and Interventional Radiology	International
15	Journal of Vascular and Interventional Radiology	International
16	Euro Intervention	International
17	CardioVascular and Interventional Radiology	International

Sources for Societies/ Associations

Sources for societies and associations were identified as:

Sr. No.	SOURCE - Society / Associations	REGION
1	Indian Society of Cardiology	India
2	The American Association of Cardiologists of Indian Origin	India
3	Cardiological Society of India	India
4	Pediatric Cardiac Society of India	India
5	Indian Society of Electrocardiology	India
6	Indian Association of Clinical Cardiologists	India
7	Indian Radiological and Imaging Association	India
8	Indian College of Radiology & Imaging	India
9	Indian Society of Vascular & Interventional Radiology	India
10	Indian Federation of Ultra Sound in Medicines & Biology	India
11	Indian Radiologist	India
12	The Indian Radiological Association	India
13	Indian Association of Radiological Technologists	India
14	American Association of Radiologists of Indian Origin	India
15	Indian Association of Cardiovascular and Thoracic Surgeons	India
16	Indian Association of Cardiac Imaging	India
17	Indian Society of Critical Care Medicine	India
18	The National Intervention Council	India
19	The Cardiovascular and Interventional Radiological Society of Europe (CIRSE)	International
20	The International Society of Radiology (ISR)	International

22	European Association of Percutaneous Cardiovascular Interventions (EAPCI)	International
23	European Association of Cardiovascular Imaging (EACVI)	
24	European Association of Percutaneous Cardiovascular Interventions (EAPCI)	International

Sources for Guidelines

Sources for the guidelines were identified as:

Sr. No.	SOURCE - Guidelines	REGION
1	Guidelines for the management of cardiovascular diseases in India	India
2	Accreditation standards for medical imaging services	India
3	Guidelines for ultrasound owners and owners of clinics, diagnostic centers', nursing homes and hospitals	India
4	Guidelines for the Prevention of Vascular Catheter Associated Infection	India
5	Guidelines for assessment of performance of various coronary stents for Manufacturers and importers of coronary stents	India
6	The WHO manual of diagnostic imaging	International
7	ESUR Guidelines on contrast media	International

Identification of Other Sources:

Sr. No.	Source – Others	Details
1	Ministry of Health & Family Welfare	Regulatory body
2	Quality Council of India	Regulatory body
3	Training Academy for Cardiovascular Interventions	Academy/Institute

8. DATA COLLECTION

1) Congress Committee

The data from the congress committees was collected as follows:

ID	Full Name	First Name	Last Name	Middle Name	Country Of KOL	Role	City Of Congress	Country of Congress	Presented at Congress	Month & Year	Committee
CC01	Albet Delphi	Albet	Delphi		India	Chairman	New Delhi	India	Asia Pacific Heart Rhythm Society	Oct 2014	APHR S
CC02	HL Sethi	H	Sethi	L	India	Patron	New Delhi	India	Asia Pacific Heart Rhythm Society	Oct 2014	APHR S
CC03	Hari Sadoo	Hari	Sadoo		India	Vice - Chairman	New Delhi	India	Asia Pacific Heart Rhythm Society	Oct 2014	APHR S
CC04	ML Mehta	M	Mehta	L	India	Chief	New Delhi	India	Asia Pacific Heart Rhythm Society	Oct 2014	APHR S

a) ID - Unique ID was generated for each doctor for each congress participation beginning with 'CC'.

b) Name - First name, middle name and last names have been mentioned separately to facilitate the Name Matching Process.

c) Country - To facilitate differentiating, so that the foreign doctors can be omitted.

d) Congress - The Names of the congress have been mentioned.

2) Congress Presentation

The data for Congress Presentation was collected as follows:

ID	Full Name	First Name	Last Name	Middle Name	Country Of KOL	Role	City Of Congress	Country of Congress	Presented at Congress	Month & Year	Main Title
CP00	Daya Babu	Daya	Babu		India	Speaker	Bangalore	India	IACC Conf.	Oct 2013	JNC 8
CP00	Harish Singh Brar	Harish	Brar	Singh	India	Speaker	Bangalore	India	IACC Conf.	Nov 2013	Pulmonary Thromboembolism
CP00	Hari Sadoo	Hari	Sadoo		India	Speaker	Bangalore	India	IACC Conf.	Dec 2013	LVAD Devices
CP00	ML Mehta	M	Mehta	L	India	Speaker	Bangalore	India	IACC Conf.	Jan 2014	Hypertensive Crisis

a) ID – Here the doctors participating in same congress were given similar ID's for their presentations beginning with 'CP'.

b) Role – The purpose of the doctor as a participant has been mentioned.

c) References – they have been mentioned for the validation of data.

3) Journal Editorial Board

The data for the membership of journal editorial board was collected as follows:

ID	Full Name	First Name	Last Name	Middle Name	Country Of KOL	Role	Journal Title	Region/ Country Of Journal	URL
JB01	Daya Babu	Daya	Babu		India	Editor in Chief	Indian Journal of Radiology & Imaging	India	http://www.iacccon.org/programe_copy.html
JB02	Harish Singh Brar	Harish	Brar	Singh	India	Associate Editor	Indian Journal of Radiology & Imaging	India	http://www.iacccon.org/programe_copy.html
JB03	Hari Sadoo	Hari	Sadoo		India	Joint Editor	Indian Journal of Radiology & Imaging	India	http://www.iacccon.org/programe_copy.html
JB04	ML Mehta	M	Mehta	L	India	Section Editor	Indian Journal of Radiology & Imaging	India	http://www.iacccon.org/programe_copy.html

- a) ID – Unique ID has been provided to each doctor beginning with ‘JB’.
- b) Role – An important role is one of the identifying parameters.
- c) Name - First name, middle name and last names have been mentioned separately to facilitate the Name Matching Process.

4) Association Membership

The data for the membership of the association was collected as follows:

ID	Full Name	First Name	Middle Name	Last Name	Country of KOL	Role	Association Name	Country of Association	Board/Committee	URL
AM001	Pradeep Gokhro	Pradeep		Gokhro	India	President	Indian Society of Cardiology	India	Governing Council	www.xyz.com
AM002	Kamla Sharda	Kamla		Sharda	India	Gen. Secretary	Indian Society of Cardiology	India	Governing Council	www.xyz.com
AM003	ML Mehta	M	L	Mehta	India	Joint Secretary	Indian Society of Cardiology	India	Governing Council	www.xyz.com

a) ID – unique ID has been provided to each doctor beginning with ‘AM’.

b) Role: An important role is one of the identifying parameters.

5) Treatment Guidelines

The data for the treatment guidelines was collected as follows:

ID	Full Name	First Name	Last Name	Middle Name	Country Of KOL	Role	Guideline Name	Guideline Brief	URL
GS01	Daya Babu	Daya	Babu		India	Editor	WHO manual of Diagnostic imaging		http://www.iacccon.org/programe_copy.html
GS02	Harish Singh Brar	Harish	Brar	Singh	India	Editor	WHO manual of Diagnostic imaging		http://www.iacccon.org/programe_copy.html
GS03	Hari Sadoo	Hari	Sadoo		India	Author	WHO manual of Diagnostic imaging		http://www.iacccon.org/programe_copy.html
GS04	ML Mehta	M	Mehta	L	India	Co Author	WHO manual of Diagnostic imaging		http://www.iacccon.org/programe_copy.html

a) ID: Unique ID for treatment guidelines to each doctor was provided beginning with ‘GS’.

b) Practice/Diagnostics guidelines – Will outline general guidelines followed by Interventional radiologists in India

6) Journal Publication

The data for Journal Publications was collected as follows:

Pub Me d ID	New ID	First Nam e	Last Nam e	SIN O	Str. Year	Str. Mont h	Str. Day	Vol	Issue	Articl e Title	Medl ine _pgn	Abstract	Affiliatio n	ISSN
273	PM01	Ashv i	Dev	1	2014	04	04	7	1	Pseud o...	64-6		Dept. of Cardiol og y	0974 -206
463	PM02	Shila	Krish	2	2014	04	04	7	1	Pseud o...	64-6		Dept. of Cardiol og y	0974 -206
382	PM03	Hari	Om	3	2014	04	04	7	1	Pseud o...	64-6		Dept. of Cardiol og y	0974 -206
937	PM04	Indi	Rao	4	2014	04	04	7	1	Pseud o...	64-6		Dept. of Cardiol og y	0974 -206

a) ID – Here, two ID's have been mentioned. One is the PubMed ID, from the article, another is the Unique ID which was provided to each doctor beginning with 'PM'.

b) Data has been extracted from Pubmed. It includes whether the doctor is the main author or the co-author since it can also be identified as identifying parameter.

c) Abstracts have also been mentioned to find the impact of the article . Impact factor is used to evaluate the journals.

7) Clinical Trials

The data for Clinical Trials was collected as follows:

ID	New ID	Investigator	First Name	Last Name	Middle Name	Role	Country
NCT00428662	CT01341	Balram Bhargava	Balram	Bhargava	Bhargava	Principal Investigator	India
NCT00522405	CT01675	Shashi B Paul	Shashi	Paul	B	Principal Investigator	India
NCT00631228	CT02105	Ashok Seth	Ashok Seth	Seth	Seth	Principal Investigator	India
NCT00631228	CT02106	Tejas Patel	Tejas	Patel	Patel	Principal Investigator	India

a) ID – Here also, two ID's have been provided, one is the Clinical Trials Registry – India, and another is the unique ID which was provided to each doctor beginning with 'CT'.

b) Role: An important role is an identifying parameter.

c) Clinical trials from Clinicaltrial.gov and Clinical Trials Registry India - CTRI

9. NAME MATCHING ALGORITHM

On compiling the data from various sources, the name of the same doctor might appear in different ways,

For example: Pier M. Mannucci

P.M. Mannucci

Mannucci P.M.

Mannucci

Mannucci P. Mannuccio

Mannucci P.

It all may actually refer to Pier Mannuccio Mannu which may be mentioned differently in different sources.

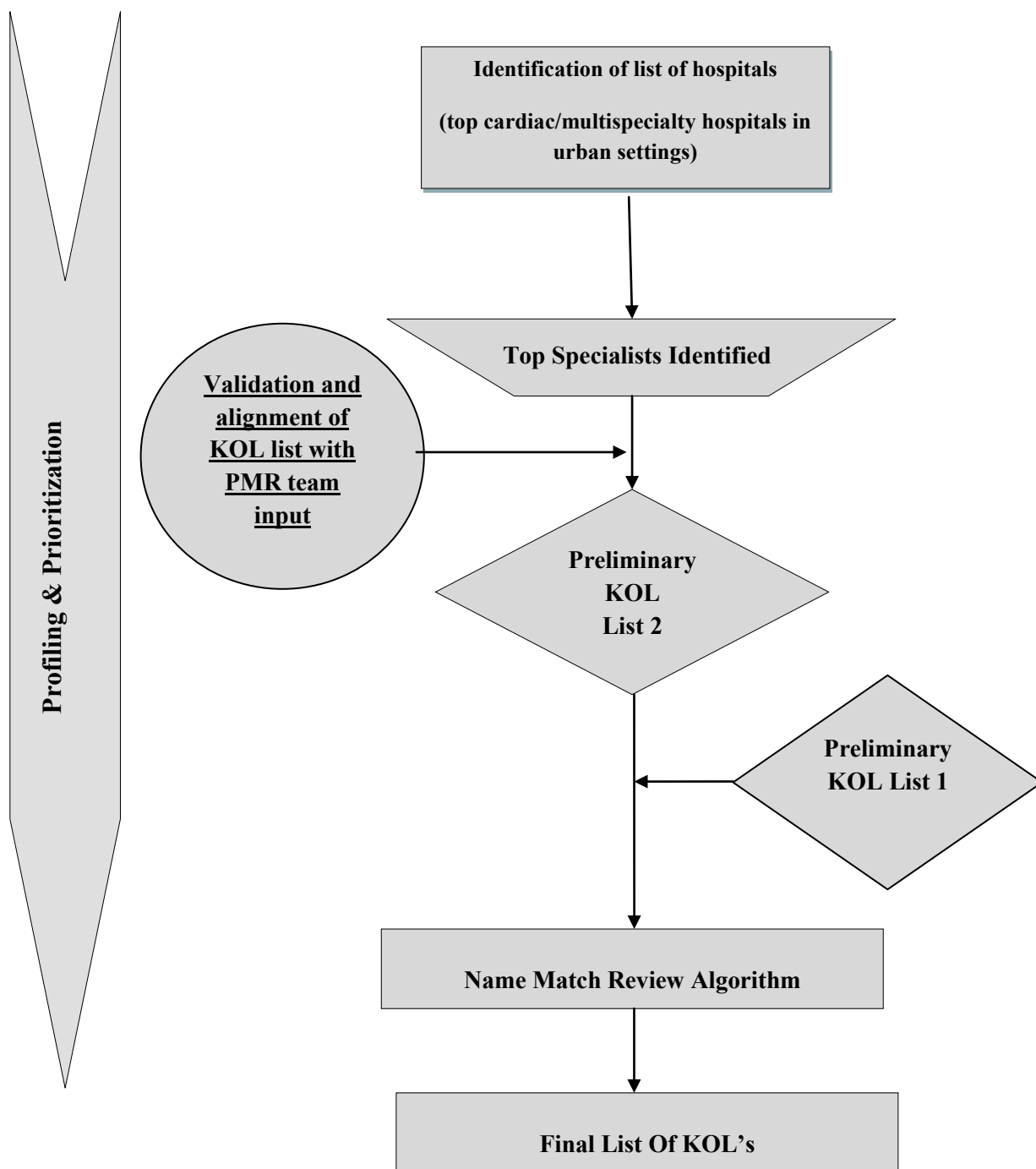
Name Matching Algorithm is a manual process where consistency in all names is maintained to eliminate discrepancies. Here the complete list of compiled doctors is manually checked for so that the same name does not appear again and might not lead to the discrepancy in the ranking of the KOL's.

Category	ID	Matched Names	Full Name	First Name	Last Name	Middle Name	Country of KOL	Comment
CP	CP1023	Pier Mannuccio Mannu	Pier M. Mannucci	Pier	Mannucci	M	India	
AM	AM1243	Pier Mannuccio Mannu	P.M. Mannucci	Pier	Mannucci	M	India	
JB	JB046	Pier Mannuccio Mannu	Mannucci P.M.	Mannucci	P	M	India	
CC	CC2132	Pier Mannuccio Mannu	Mannucci	Mannucci			India	
CC	CC2134	Pier Mannuccio Mannu	Mannucci	Mannucci			India	
PM	PM123	Pier Mannuccio Mannu	Mannucci P.Mannuccio	Mannucci	Mannuccio	P	India	
CT	CT220	Pier Mannuccio Mannu	Mannucci P.	Mannucci		P	India	

Matched Names: After the secondary desk research, confirmation of the names was done and the matched names were put together in a new column.

Bottom up Approach:

Primary Market Research team with experts in the specific therapeutic areas has an already prepared in-house list of Key Opinion Leaders. Another list is prepared from the List of Top Cardiology and Multispecialty Hospitals in Urban settings.



10. APPLICATION OF WEIGHTAGE

The following weights were assigned to normalize the data:

Activity	Weightage criteria
Congress Committee Membership	20%
Congress Presentation	20%
Physician Association Membership	15%
Clinical Trials	10%
Treatment Guidelines Authorships	5%
Journal Editorial Boards	5%
Journal Publications	5%
PMR Rank Scale	20%

11. ETHICAL CONSIDERATIONS

- ✓ An informed consent.
- ✓ The search is to be as objective as possible and not influenced at all by current knowledge.
- ✓ The Information is client's proprietary, hence the results have been blinded in the report and cannot be shared with anyone.

12. RESULTS

The list of top 100 KOL's was identified(using bottom up approach)

Top 100 KOLs

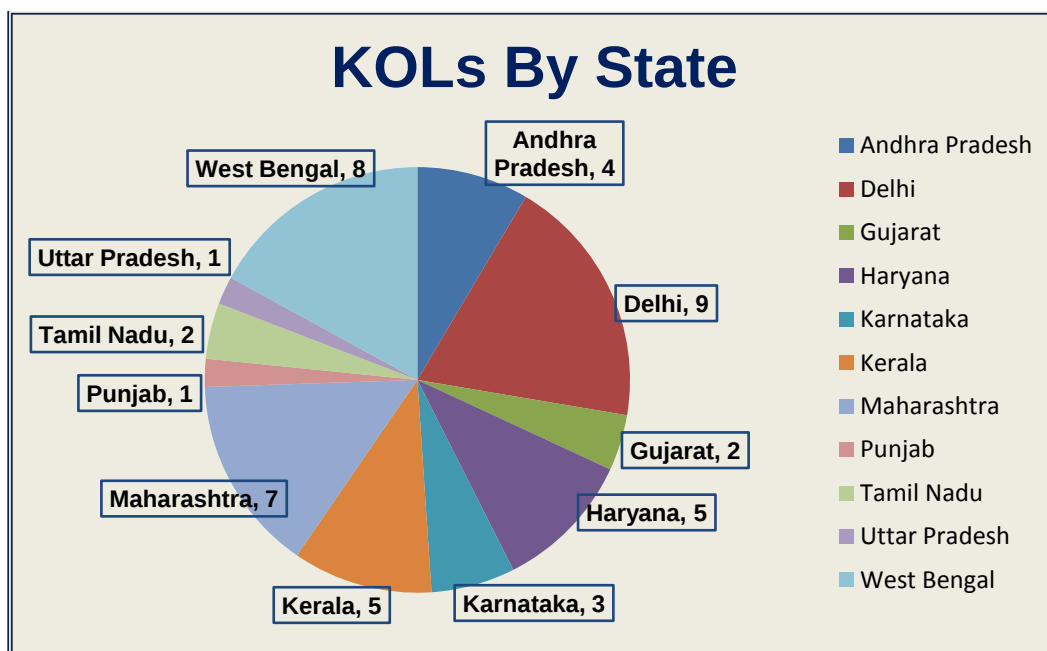
Note: User can assign % weightage in the green colored cells for each Activity (sum of assigned weightages should be 100%)

Mini Profile									Number of Hits in the Activity							PMR	Scores	
									15%	20%	20%	10%	5%	5%	5%	20%		
Sr. No.	Weighted Rank	Full Name	First Name	Last Name	Middle Name	Speciality	Hospital Name	State	Physician Association Memberships	Congress Committee Memberships	Congress Presentation	Clinical Trials	Treatment Guidelines authorships	Journal Editorial Board Membership	Journal Publication	PMR Rank Scale (1-5)	Total Hits	Weighted Score
1	1	Aryan Malhotra	Aryan	Malhotra		Interventional	Medanta-The	Haryana		7	14				4	5	25	5.40
2	2	Dijit S maan	Dijit	Maan	S	Cardiothoracic	Fortis Escorts	Delhi		9	6	7			9	5	31	5.15
3	3	Cholen Niper Manjunath	Manjunath	C	Niper	Interventional	Sri Jayadeva	Karnataka	1	11		1	1	1	24	5	39	4.75
4	4	J P S Sahoo	J	Sahoo	P S	Interventional	Sir Ganga Ram	Delhi		4	10	9				4	23	4.50
5	4	K S Sarat Chandan	Sarat	K S	Chandan	Interventional	Nizam's Institute	Andhra Pradesh	1	11	7	1		2	7	1	29	4.50
6	6	Rabindra Nath Tagore	Rabin	Tagore	Nath	Interventional	Apollo	West Bengal	1	8	9				3	3	21	4.30
7	7	Pravin Kumar Garg	Pravin	Garg	K	Interventional	Sanjay Gandhi	Uttar Pradesh	1	10	4			1	13	1	29	3.85
8	8	Ashok Seth	Ashok	Seth		Interventional	Fortis Escorts	Delhi		7	2	5			7	5	21	3.65
9	9	Mathew Samuel Kalarickal	Mathew	Kalarickal	Samuel	Interventional	Apollo Hospital	Tamil Nadu			10	3				5	13	3.60
10	10	P K Deb	P	Deb	K	Interventional	NA	West Bengal	1	8	4				2	4	15	3.45
11	11	C G Bahuleyan	C	Bahuleyan	G	Interventional	Ananthapuri	Kerala		8	4					4	12	3.20
12	12	Govindan Vijayaraghavan	Vijayaraghavan	G		Interventional	Kerala Institute of	Kerala		7	7			1		1	15	3.05
13	13	Ashwin B Mehta	Ashwin	Mehta	B	Interventional	Jaslok Hospital &	Maharashtra		6	3				2	5	11	2.90
14	14	Harshwardhan Mohan Mardikar	K	Venugopal		Interventional	Spandan Heart	Maharashtra	1	7	1				3	4	12	2.70
15	15	Narendra Nath Khanna	Harshwardhan	Mardikar	Mohan	Interventional	Indraprastha	Delhi		7	2			1		4	10	2.65
16	16	Raman Krishna Kumar	N	Khanna	N	Interventional	Amrita Institute	Kerala	2	3	8		1		1		15	2.60
17	17	Santanu Guha	Krishna	R	Kumar	Interventional	Medical College	West Bengal	1	5	6					1	12	2.55
18	17	Balbir Singh	Santanu	Guha		Interventional	Medanta-The	Haryana	2	6				1		5	9	2.55
19	19	K Venugopal	Balbir	Singh		Interventional	1. E.M.S.	Kerala	1	7	5						13	2.55
20	19	Tejas M Patel	Tejas	Patel	M	Interventional	Apex Heart	Gujarat		4		2		1	10	5	17	2.55
21	21	Vinay K Bahl	Vinay	Bahl	K	Interventional	All India	Delhi		5	3	1			4	3	13	2.50
22	21	Pratap Chandra Rath	P	Rath	C	Interventional	Apollo Hospital	Andhra Pradesh		4	1				10	5	15	2.50
23	23	Sameer Indravan Dani	Sameer	Dani		Interventional	1.Apollo	Gujarat		4	4	1			3	3	12	2.45
24	24	Prakash Chandra Mondal	Prakash	Mondal	Chandra	Interventional	Apollo	West Bengal		2	10						12	2.40
25	25	Ajit Sankardas Mullasani	Ajit	Mullasani	Sankardas	Interventional	Madras Medical	Tamil Nadu		7	3	1	1		12	1	21	2.35
26	26	Rakesh Kumar Gupta	Rakesh	Gupta		Cardiothoracic	Max Super	Delhi	1	7	3			1	3		15	2.35
27	27	Harinder K Bali	Harinder	Bali	K	Interventional	Fortis Hospital	Punjab		3	1				10	5	14	2.30
28	28	Dayasagar Rao V	Dayasagar	Rao	V	Interventional	Krishna Institute	Andhra Pradesh		8	1			1		2	10	2.25
29	29	Bijay Kumar Mahala	B	Mahala	K	Interventional	Narayana	Karnataka		9	2						11	2.20
30	29	Sunip Banerjee	Sunip	Banerjee		Interventional	Medica Institute	West Bengal		2	8					1	10	2.20

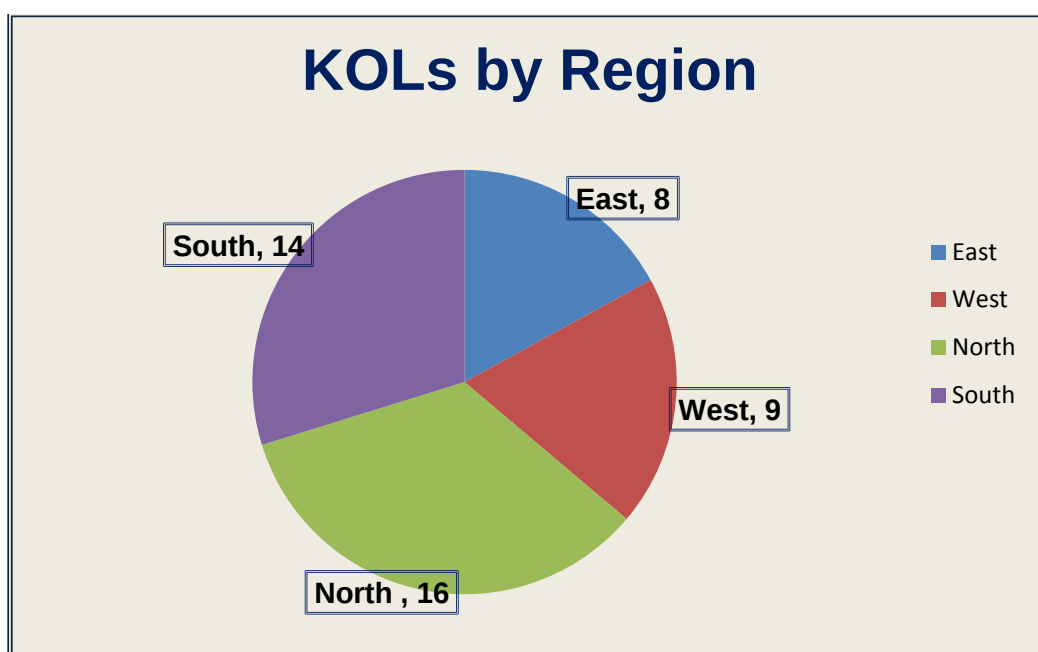
List of KOL's without PMR Weightage(without using bottom up approach)

Top 100 KOLs without PMR input														
Home														
Note: User can assign % weightage in the green colored cells for each Activity (sum of assigned weightages should be 100%)														
Mini Profile							Number of Hits in the Activity							Scores
Sr. No.	Weighted Rank	Full Name	First Name	Last Name	Middle Name	Speciality	15%	20%	20%	15%	10%	10%	10%	
							Physician Association Memberships	Congress Committee Memberships	Congress Presentation	Clinical Trials	Treatment Guidelines authorships	Journal Editorial Board Membership	Journal Publication	Total Hits
1	1	Cholenahally Nanjappa Man	Manjunath	C	N	1	11		1	1	1	24	39	5.1
2	2	Upendra Kaul	Upendra	Kaul			9	6	7			9	31	4.95
3	3	K S Sarat Chandra	Sarat	K.S	Chandra	1	11	7	1		2	7	29	4.8
4	4	Praveen Chandra	Praveen	Chandra			7	14				4	25	4.6
5	5	Pravin Kumar Goel	Pravin	Goel	K	1	10	4			1	13	29	4.35
6	6	Rabindra Nath Chakraborty	Rabin	Chakraborty		1	8	9				3	21	3.85
7	7	Ashok Seth	Ashok	Seth			7	2	5			7	21	3.25
8	8	Vijayaraghavan G	Vijayaraghavan	G			7	7			1		15	2.9
9	9	Ajit Sankardas Mullasari	Ajit	Mullasari	Sankardas		7		1	1		12	21	2.85
10	10	P K Deb	P	Deb	K	1	8	4				2	15	2.75
11	11	R Krishna Kumar	Krishna	R	Kumar	2	3	8		1		1	15	2.7
12	12	Mathew Samuel Kalanickal	Mathew	Kalanickal	Samuel		10	3					7	2.6
13	13	Rakesh Kumar Gupta	Rakesh	Gupta		1	7	3			1	3	15	2.55
14	14	K Venugopal	K	Venugopal		1	7	5					13	2.55
15	15	Satish Chandra Govind	Satish	Govind	C		11					3	14	2.5
16	16	C G Bahuleyan	C	Bahuleyan	G		8	4					12	2.4
17	17	Prakas Chandra Mondal	P	Mondal	C		2	10					12	2.4
18	18	Santanu Guha	Santanu	Guha		1	5	6					12	2.35
19	19	B K Mahala	B	Mahala	K		9	2					11	2.2
20	19	Srinivas Chikkaswamy Budi Srinivas	B		C		5	1				10	16	2.2
21	19	Tejas M Patel	Tejas	Patel	M		4		2		1	10	17	2.2
22	22	Vinay K Bahl	V	Bahl	K		5	3	1			4	13	2.15
23	23	Rajendra Kumar Jain	R	Jain	K		7	3				1	11	2.1

KOL's by State:



KOL's by Region:



PROFILE



DR. Aryan Malhotra, M.B.B.S, M.D (Gen.Medicine), D.M (Cardiology)

Specialty: Interventional Cardiology

Address: No: 281, 80 feet Road, Padmanabhanagar, Bangalore - 560070

Tel. Ph: +91-80-22977422

Fax: +91-080-26534477

E-mail: dramalhotra@gmail.com

Brief:

Dr. Aryan Malhotra is the professor & Head of Cardiology, Director, Sri Jayadeva Institute of Cardiovascular Sciences & Research. He has innovated a new technique of performing Balloon Mitral Valvuloplasty in difficult cases; this is being called Manjunath's technique published in American Journal cathet and has a experience of 32 years in medical profession.

His primary area of interest are Balloon Mitral Valvuloplasties, Catheterization and Cardiovascular Interventions and Angioplasties.

Association/Foundation Memberships

- The American Association of Cardiologists of Indian Origin
- Cardiological Society of India Journal Editorial Board

Journal Editorial Board

- Permanent Invitee: Executive Committee, Journal of Indian College of Cardiology

Congress Committee

- Course Co Director, Annual Conference of Interventional Cardiology, 2014
- National Advisor, Annual Conference of Interventional Cardiology, 2013

Media Interviews

- Appeal/request to general public to donate liberally for the upliftment of poor needy heart patients , 2011
- Cardiac care for the underprivileged, 2013

Journal Publications

- Successful retrieval of fractured catheter tip during coronary angiogram
- Successful management of Ellis type III left anterior descending artery perforation following percutaneous coronary intervention by a covered stent: Successfully resolved the dramatic complication

13. CONCLUSION

The project of identification of the KOL's has been done on the basis of Secondary Desk research and our team has been able to identify the names on the basis of the weightage provided for each source.

The final list of the top 100 KOL's along with the Profiles of top 50 KOL's has been acknowledged by the Healthcare company.

14. REFERENCES

- 1- http://www3.gehealthcare.com/en/About_Us
- 2- <http://www.imshealth.com/portal/site/imshealth/menuitem.051a1939316f851e170417041ad8c22a/?vgnextoid=7311e590cb4dc310VgnVCM100000a48d2ca2RCRD&vgnextfmt=default>
- 3- [Opinion Leader: Summary and Forum](#)
- 4- <http://engagementstrategy.com/articles/engaging-key-opinion-leaders-a-strategic-approach/>
- 5- http://www3.gehealthcare.com/en/Products/Categories/Contrast_Media/Visipaque#tabs/tabAB412019934D4E1D81478BE160966801
- 6- Lakhan SE, Kaplan A, Laird C, Leiter Y (2009). ["The interventionalism of medicine: interventional radiology, cardiology, and neuroradiology"](#). *International Archives of Medicine* **2** (27): 27. doi:[10.1186/1755-7682-2-27](https://doi.org/10.1186/1755-7682-2-27). PMC [2745361](#). PMID [19740425](#)
- 7- http://en.wikipedia.org/wiki/Cardiothoracic_surgery#cite_note-1
- 8- : http://en.wikipedia.org/wiki/Interventional_radiology