

Collection of real time data, ensuring its quality and effective usage

BS Ganesh babu

Sr.Manager – IT & Systems

laico -Aravind eye care system

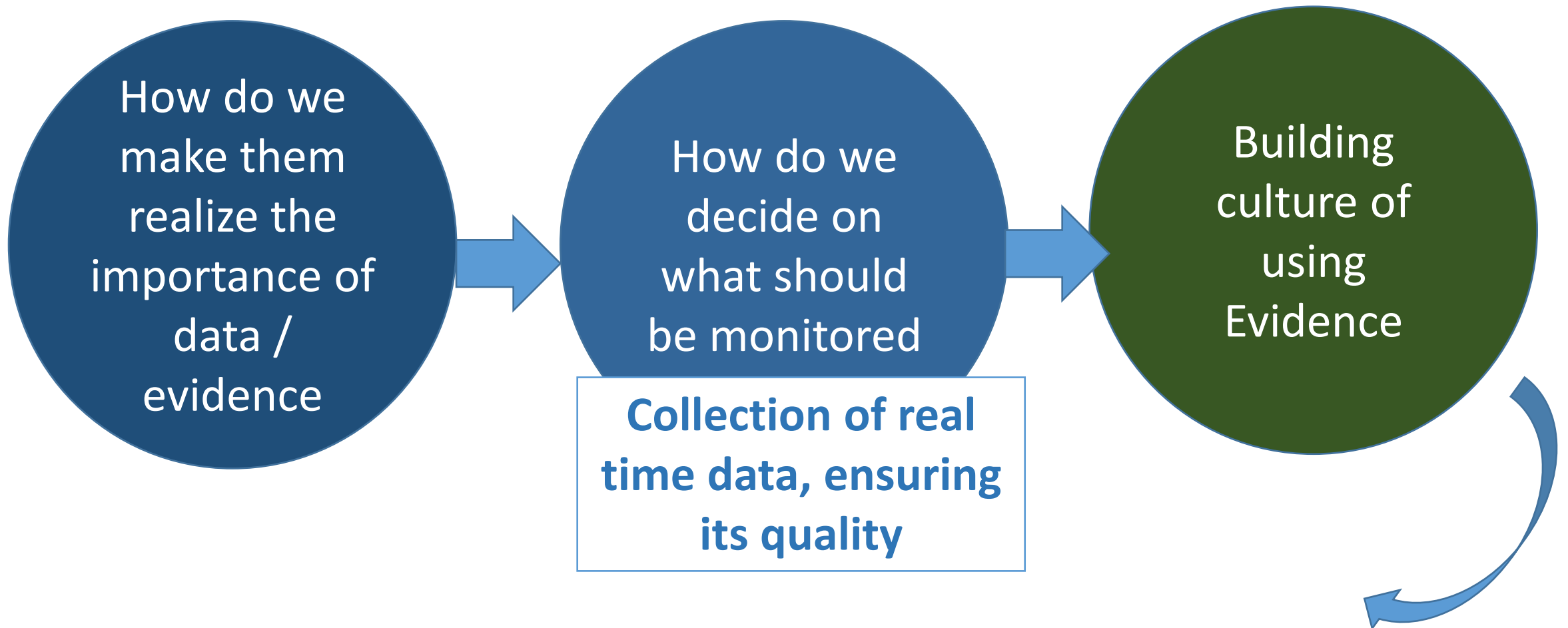
Challenges in implementing evidence based management - Mentoring

- Appreciate the importance of using evidence
- Encouraging leadership and senior management team
- How to identify what should be monitored
- Getting organized to capture necessary data
- Training to ensure data quality
- Building a culture to follow EBM

Objectives

- What do we need to do to encourage mentees for collecting necessary data and utilizing them for delivering the eye care more efficiently and effectively

Mentoring Eye Hospitals on practicing Evidence Based Management



How do we
make them
realize the
importance
of data /
evidence

How do we make a mentee hospital realize the importance of EBM?

- Demonstrate how do we use data (mentor hospital) to the Leadership and senior management team
- Ask some questions relating to performance, quality etc.
- Ask / collect various data to analyse and demonstrate how are they doing
- Confirm with the data they generate and also discuss with actual data
- Understand how do they propose changes or plan improvements



How do we
decide on
what should
be
monitored

How do we decide on what should be monitored

- Demonstrate what do we use and its purposes
- Introduce to a framework to decide on indicators
- Indicators range evolves as we use and willing to understand in detail

How do we
decide on
what should
be
monitored

EBM frame work: Focal Areas...



A blue circular logo containing the text "How do we decide on what should be monitored".

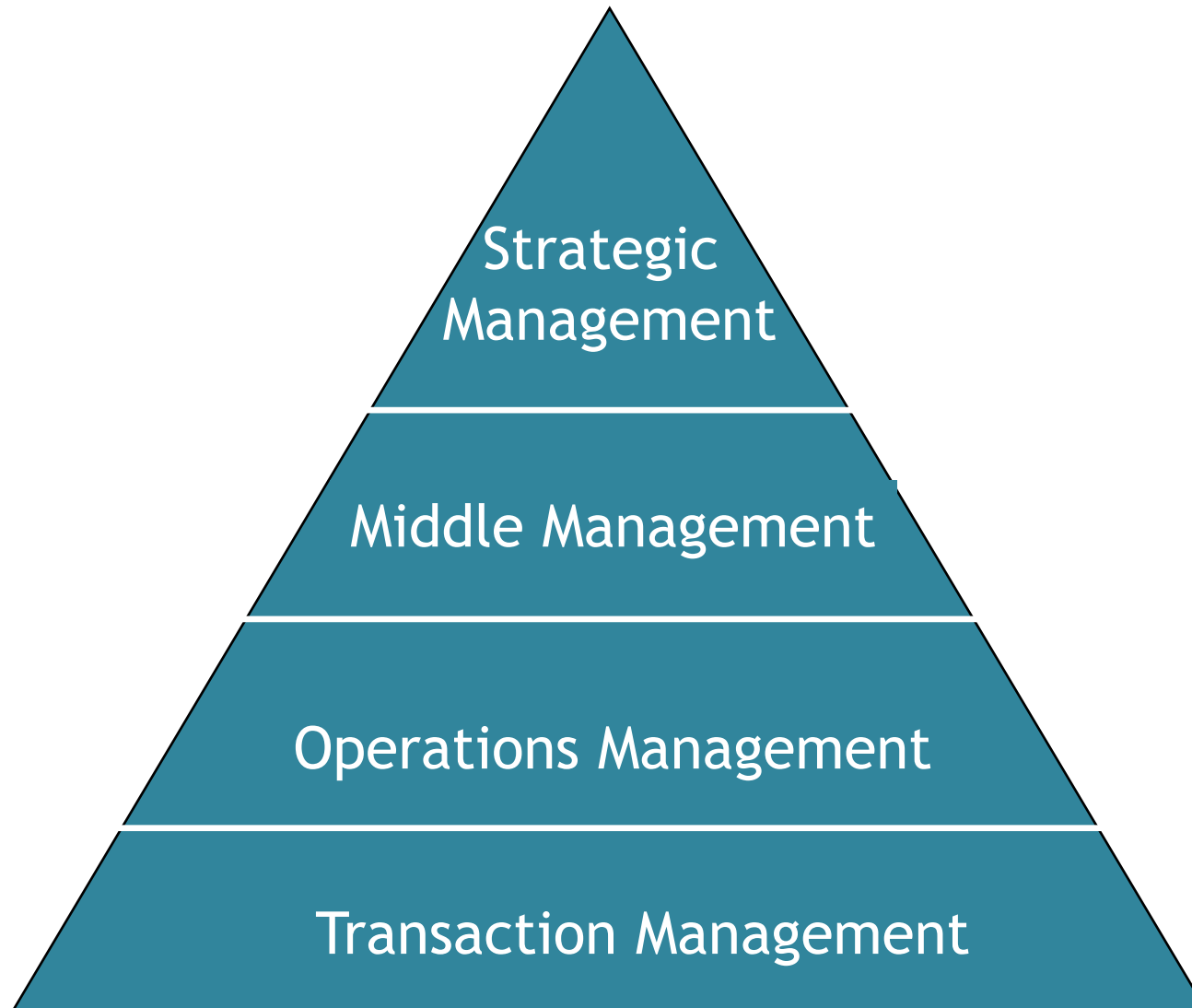
How do we
decide on
what should
be
monitored

Have metrics

- That require special attention
- To manage changes / improvements introduced
- To manage by exception

Consider all users while planning information needs

Information Needs & Organizational Level



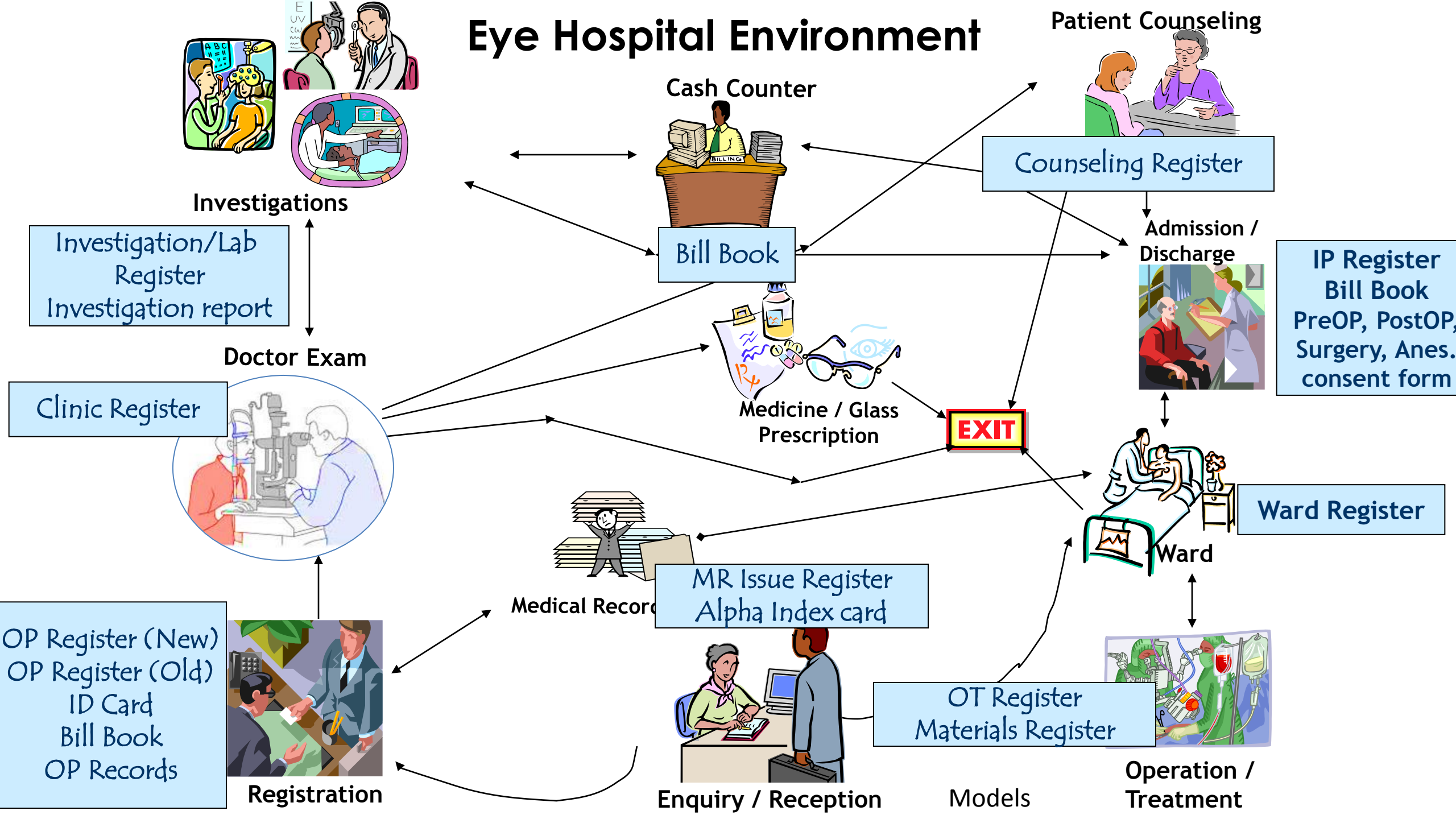
CHARACTERISTICS

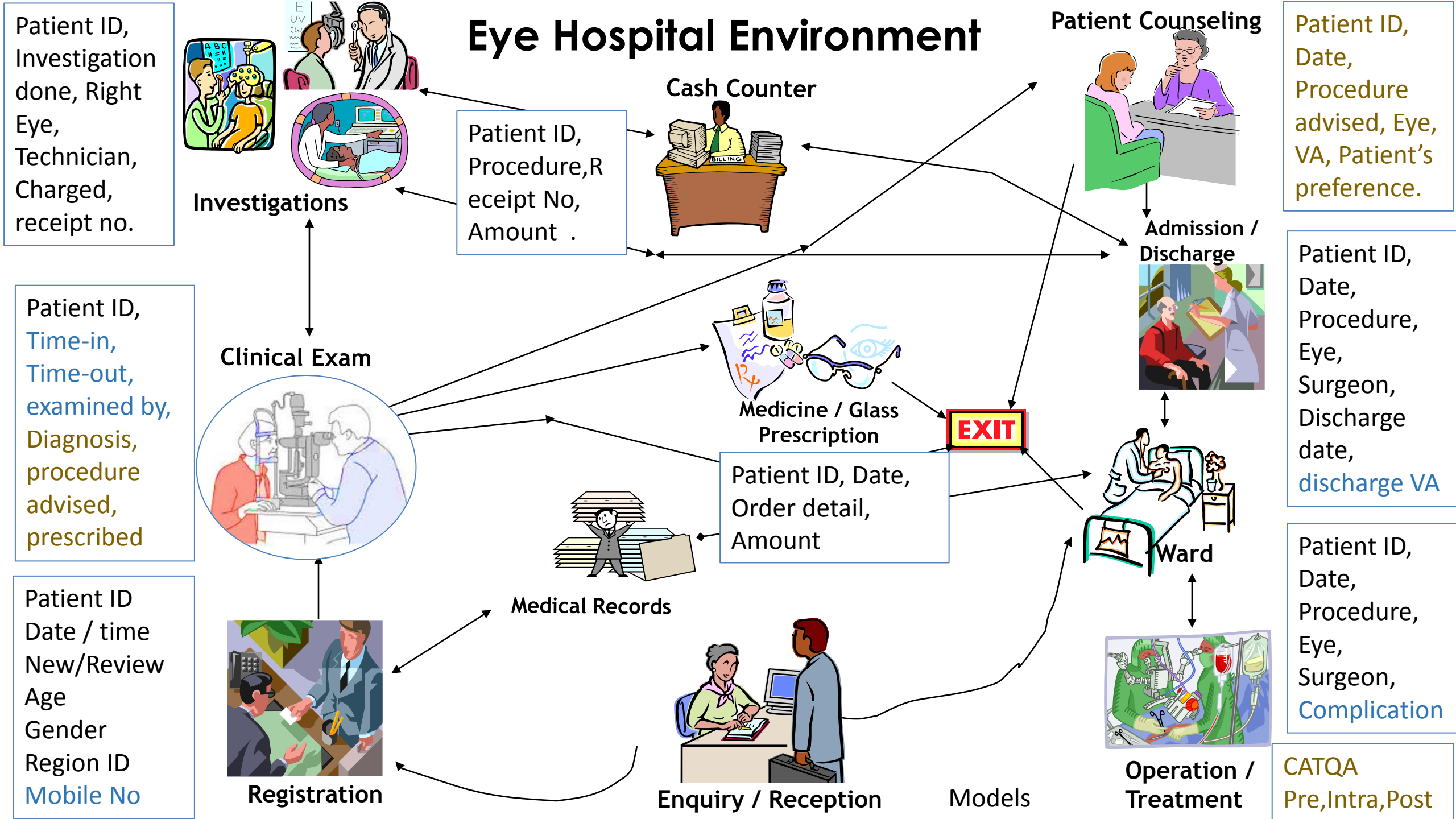
Aggregated, time delay,
less well defined,
external,
tolerate less accuracy



Detailed, current,
well defined, internal,
accurate

Patient Counseling

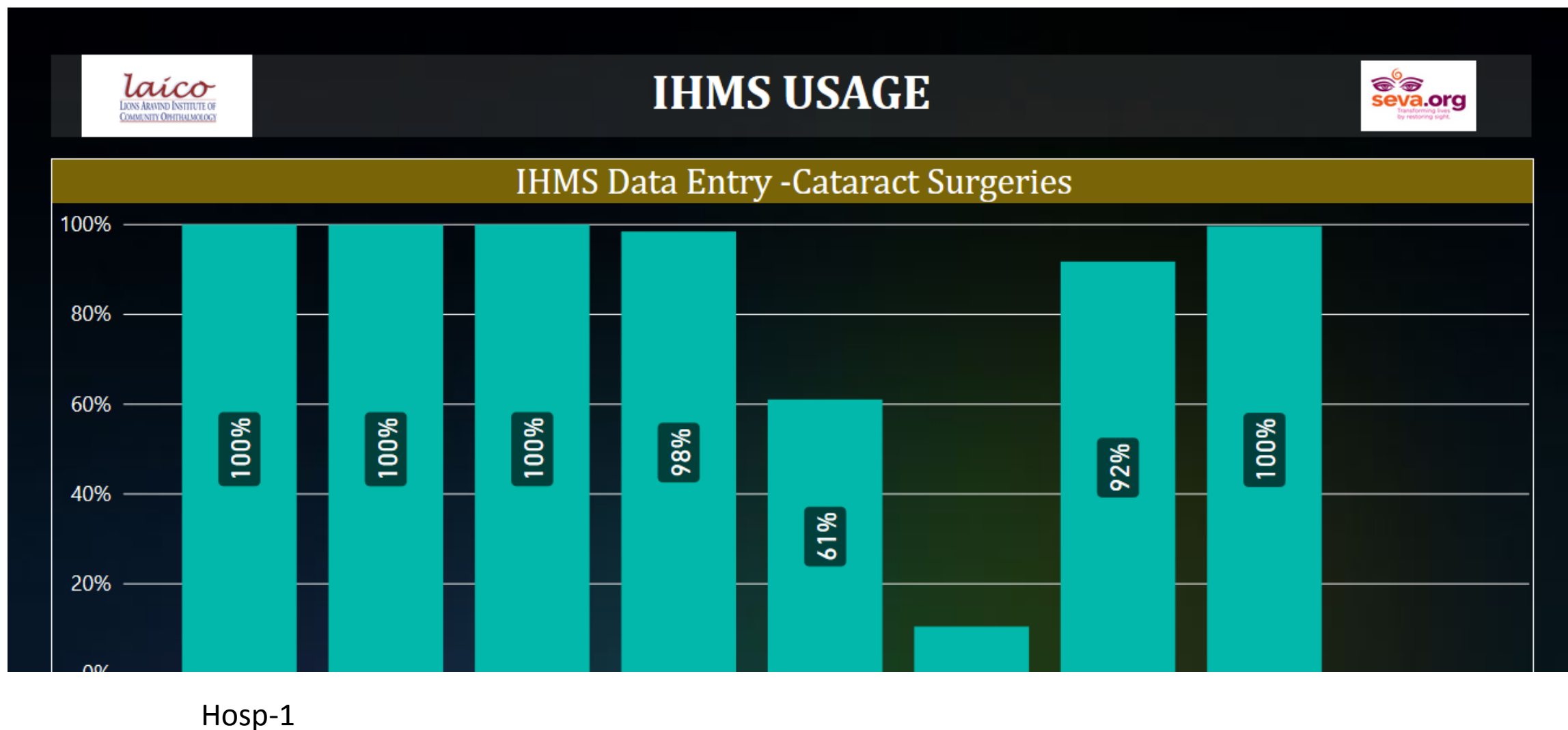




What are the key data you need to maintain?

- As part of Registration
 - Age
 - Gender
 - Region
- Before filing the medical records / clinics management system
 - Diagnosis
 - Treatment advised (surgery, glasses)
 - Follow-up vision of operated patients
- On the day of treatment, discharge and post-op visit
 - Treatment
 - Pre-op vision
 - Post-op vision
 - Complication
- Outreach – post camp report at camp level
- Income & expenses – daily accounting in Tally in appropriate heads

Data Quality - completeness



Data quality – Missing data

CATQA DATA

CATQA DATA VALIDATION

Processing Details

Date

FROM
15/02/2011

TO
15/02/2011

Patient Type

☒ PAY
☐ FREE
☐ CAMP

Location

☐ OT
☐ WARD
☒ FOLLOWUP VISIT

Process

Export To excel

Quit

	A	B	C	D	E	F	
1			AEH, MADURAI - PAY SECTION				
2			CLINICAL FOLLOWUP VISIT DETAILS FROM 15/02/2011 TO 15/02/2011				
3							
4	SNO	MR_NO	PATIENT_NAME	DIS_DT	VISIT_DATE	Late_Postop_Complicati	UnAided_
5	1	P2215564	RAJMOHAN C.	30/01/2011	15/02/2011	NO COMPLICATION	6/6
6	2	P2560838	MALATHY CHANDRASE	18/01/2011	15/02/2011	NO COMPLICATION	6/9P
7	3	P2733747	PALANI K.S.	21/01/2011	15/02/2011	NO COMPLICATION	6/6
8	4	P2777219	SAVARIYAMMAL	31/01/2011	15/02/2011	NO COMPLICATION	6/6
9	5	P2893418	POYYALY G.	19/01/2011	15/02/2011	NO COMPLICATION	6/18P
10	6	P2917286	MUTHUKRISHNAN S.	18/01/2011	15/02/2011	NO COMPLICATION	6/18
11	7	P2935837	RAKKAMMAL K.	18/01/2011	15/02/2011	NO COMPLICATION	6/9
12	8	P3032287	VASUDEVAN O.	31/01/2011	15/02/2011	NO COMPLICATION	6/6
13	9	P3037030	GOVINDARAJ P.	26/01/2011	15/02/2011		
14	10	P3046961	ARUMUGAM M.	08/01/2011	15/02/2011		
15	11	P3059744	MUTHUKUMAR S.	18/01/2011	15/02/2011		
16	12	P3065765	SHAHUL HAMMED	18/01/2011	15/02/2011		
17	13	P3075657	RAMAKRISHNAN P.DR.	12/01/2011	15/02/2011		
18	14	P3083379	SRI ABINAYA A.	17/01/2011	15/02/2011		
19	15	P3091015	RAMUKANNU K.	12/01/2011	15/02/2011		
20	16	P3091790	MANICKAM A.S.	17/01/2011	15/02/2011	NO COMPLICATION	6/18
21	17	P3097667	MANI K.	13/01/2011	15/02/2011	NO COMPLICATION	6/9
22	18	P3098367	RABI AHAMED A.	14/01/2011	15/02/2011		
23	19	P3099634	VEERAMMAL R.	12/01/2011	15/02/2011		
24	20	P3100088	ANSARI M.	26/01/2011	15/02/2011		
25	21	P3100191	LAKSHMI R.	18/01/2011	15/02/2011	NO COMPLICATION	6/9
26	22	P3101263	JERINA BEGAM	18/01/2011	15/02/2011		
27	23	P3101419	PONNAMMA	13/01/2011	15/02/2011		
28	24	P3102901	KALIMUTHU SERVAI	15/01/2011	15/02/2011	NO COMPLICATION	6/12
29	25	P3104524	SHANMUGAM R.	18/01/2011	15/02/2011		
30	26	P3105141	NOORJAHAN N.	18/01/2011	15/02/2011	NO COMPLICATION	6/9
31	27	P3105493	NAGARAJAN P.S	18/01/2011	15/02/2011		
32	28	P3105535	LAKSHMI S.	14/01/2011	15/02/2011		
33	29	P3105661	RAJAM N.	17/01/2011	15/02/2011	NO COMPLICATION	6/9P

CLINICWISE

Retina
Glaucoma
Cataract/Iol
Cornea
Uvea

Not Entered For Followup Vision : 16

start
Visual Basic
SQL Query Anal...
Integrated Hos...
DQ
CATQA DATA
12:01 PM

Data quality – defining a variable

Glass acceptance

Month	Glass prescribed	Ordered	% acceptance
Month-1	320	301	94.0%
Month-2	356	358	100.1%
Month-3	337	335	100.0%

Data quality – Missing /Inconsistent data

Details	Hospital-1
Period	Apr'18-Mar'19
No. Of Patients Registered: NEW	13,510
Total patients registered	28,235
No. of patients with diagnosis Data	28,133
% OP visits with diagnosis data	77%
No. of cataract surgeries	2,420
No. of complications in the system	-
No. of cat. surgeries without IOL Power	27
No. of surgeries with PreOP vision	2,420
% cat surgeries with preop vision	100%
No. of surgeries with PostOP Vision	2,406
% cat surgeries with day-1 PH postop va	99%
Patients visited but F-Up data not entered	591
Walk-in cataract advised	2,968
Walk-in Cataract surgeries done without advise data	180

Data Quality checking – email to Leaders/CMOs

DESERET COMMUNITY VISION INSTITUTE-IJEBU-15/01/2016				
Performance	Private	Public	Camp	Total
Outpatients				
New Outpatients	5	10	0	15
Total Outpatients	13	30	0	43
Admission	0	2	0	2
Surgeries Performed	3	6	0	9
Surgeries scheduled for tomorrow	0	0	0	0
Data Quality Check				
Medical Records Not Entered	1	9	0	10
No. of Cataract Surgeries done	0	6	0	6
CATQA Outcome data not entered (Preop/Intraop)	0	0	0	0

Preferred practices

- Who and when should the data be captured
 - by the respective staff who deals with the transaction and online
- When should we check the quality of data
 - Daily - Have a daily consolidation of data and verification by respective functional heads/departments
- Be open to listen to facts from staff and patients
 - Accept the data / reports – rectify the issues
 - Find solutions with data

How to build a culture of using data on a regular basis

- Develop indicators for each strategies developing for improving performance, quality and financial sustainability
- Help to develop monthly targets for monitoring – guide them
- Encourage to have a daily meeting among key staff – discussing previous day's performance and challenges etc.
- Collect monthly report in a standard template
- Ask them to send the report after it is internally presented to the team and management and discussed in detail
- Schedule the call – make sure all key staff participate and minutes are documented by the hospital team and shared
- Raise the questions to clarify both positive and negative outcomes – to ensure they are aware

Cataract Surgeries:Target vs Actual 2019-20

Month	Walk-in Target	Actual Walk-in	Outreach Target	Actual Outreach	Total target	Total 2019/20	Total Cataract 018/19	% PHVA >=6/18 @ Discharge
July 19	160	105	30	30	190	135	134	82.22%
Aug 19	170	92	30	90	200	182	100	75.83%
Sep	130		30		160			
Oct	80		30		110			
Nov	100		50		150			
Dec	100		60		160			
Jan 20	110		70		180			
Feb	110		70		180			
March	140		110		250			
April	140		110		250			
May	130		110		240			
June	130		100		230			
Total	1500		800		2300			
Upto Aug'19	330	197 (60%)	60	120 (200%)	390	317 (81%)		

How to build a culture of using data on a regular basis

- Encourage to develop mission, goals and objectives for each department/function
- Ask them to develop indicators to measure these goals
- Develop habit of daily reporting / consolidation
- Weekly meeting for specific purpose with data presentation by individual departments
 - Department incharge/representatives
 - Patient care improvement
 - Clinical meeting - quality
- Discuss in detail, ask for clarification, further details and explanation

Three cases – 2 mentee hospitals

- Visual outcome improvement
- Cataract surgery acceptance
- Spectacle acceptance

Pinhole Visual acuity @ Discharge

VA	Nos	%	
FCF	25	11.0%	19.0%
HM	12	5.3%	
NULL	2	0.9%	
PL	2	0.9%	
3/60	1	0.4%	
4/60	1	0.4%	
6/60	16	7.0%	42.2%
6/60P	3	1.3%	
6/36	42	18.5%	
6/36P	3	1.3%	
6/24	31	13.7%	
6/24P	1	0.4%	
6/18	40	17.6%	38.8%
6/18P	6	2.6%	
6/12	15	6.6%	
6/12P	1	0.4%	
6/9	14	6.2%	
6/9P	4	1.8%	
6/6	8	3.5%	
Total	227		

Ensuring Data Quality

Postop VA Analysis (1 wk. or 1 month)

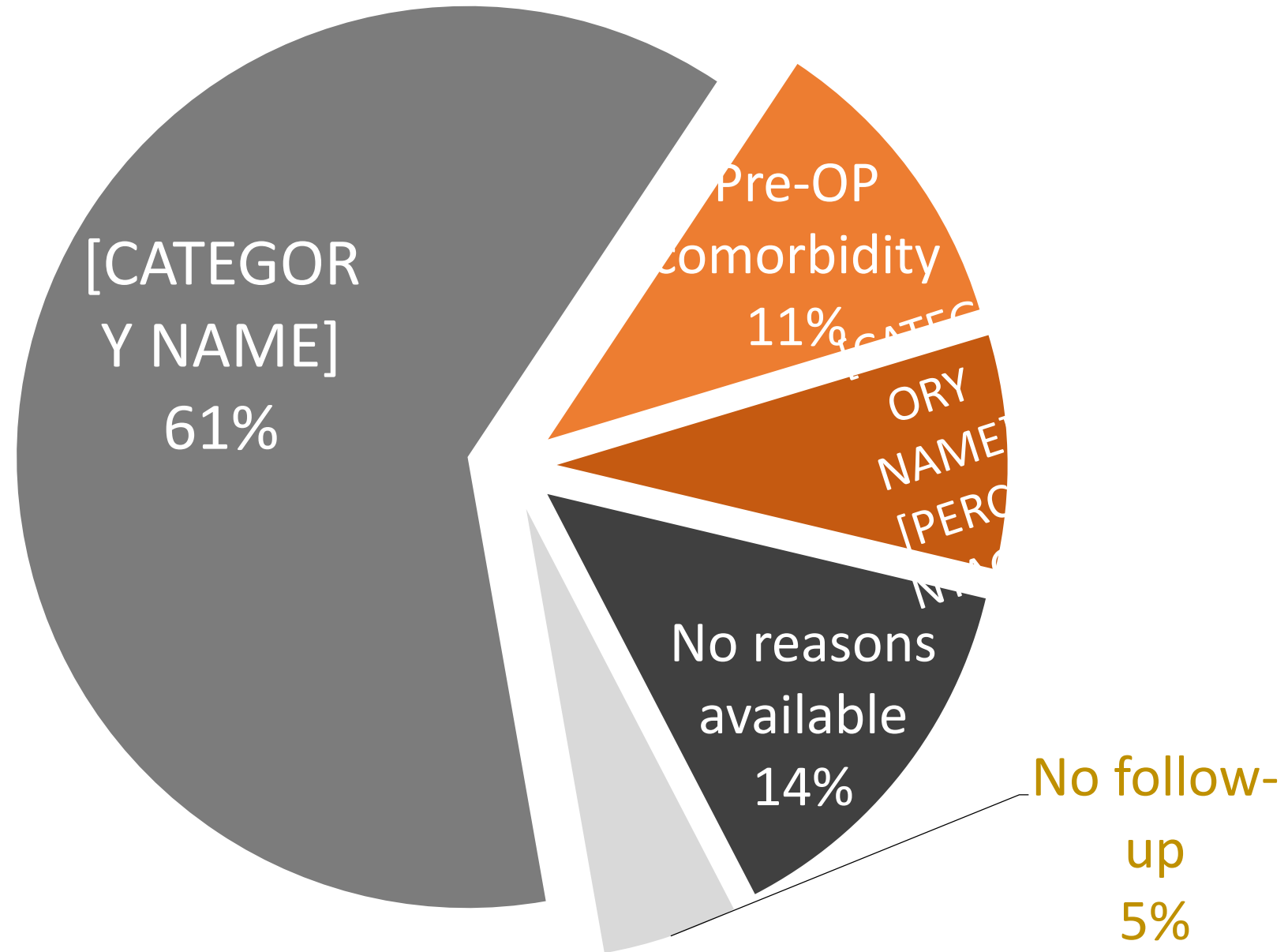
Outreach – Oct'15

Public Direct – Oct – Nov'15

Visual acuity	Data entered in IHMS	
	Nos	%
<6/18	94	41%
>=6/18	121	53%
No followup	11	5%
Total	227	

(17 wrong entries corrected and 10 recent follow-up data updated)

Post-op (7 to 30 days) pinnhole VA



Reasons for Postop VA < 6/18

Reasons for <6/18	Nos	%	% total patients
No Reasons available in MR	31	42%	14%
Post OP complication	4	5%	2%
Intra OP (PC Rent / ZD)	11	15%	5%
Intra & Postop	3	4%	1%
PreOp - co morb (Glau. DR)	22	30%	10%
Preop and Postop	1	1%	0.3%
Pre&Intraop	1	1%	0.3%
All	1	1%	0.3%
Total	74	100%	33%

Actions planned

- Data should be entered accurately and carefully
 - This is possible only when data is used & discussed
- Almost 15% of the patients operated had poor VA but without any reason
 - Preoperative investigations should be strictly followed and capture complication etc. without missing
- When VA is $<6/18$ – the reason should be recorded and entered in IHMS
- Poor outcome patients medical records should be reviewed by chief surgeons
- Have a weekly meeting to discuss the reasons for patients with poor outcome

	EYE HOSPITAL								
	last updated Date :24-09-2019, Last Updated Version: 16.02								
	Missing Forms Entry Patients Mrno List For All Section								
	FromDate : 01/08/2019 To Date : 27/09/2019								
SIN	MrNo	Patient Name	IP No	Surgery Date	ICD Description	Eye	PREOP	SURGERY	POSTOP
1	C3007	TERESIA WANJIKUMUREITHI MURUGI		01/08/2019	SICS	LE	01/08/2019	01/08/2019	02/08/2019
2	C4941	PAUL NGURI NGANGA	FIP1102	01/08/2019	SICS	LE	01/08/2019	01/08/2019	02/08/2019
3	C4942	NANCY WATAE NJENGA	FIP1102	01/08/2019	SICS	RE	01/08/2019	01/08/2019	02/08/2019
4	C4943	ALICE WAMBUI NJUGUNA		01/08/2019	SICS	LE	01/08/2019	01/08/2019	
5	C4944	TERESIA WANJIRU GITHINJI	FIP1102	01/08/2019	SICS	RE	01/08/2019	01/08/2019	02/08/2019
6	C4945	STEPHEN GACHOKA KIBE	FIP1102	01/08/2019	SICS	RE	01/08/2019	01/08/2019	02/08/2019
7	C4947	LUCY WANJIRU NGEKE	FIP1523	01/08/2019	SICS	RE	01/08/2019	01/08/2019	02/08/2019
8	C4948	MIKE GITUATI NJORA	FIP1527	01/08/2019	SICS WITH TRAB	LE	01/08/2019	01/08/2019	02/08/2019
9	C4950	MWAURA WANGUI KABURI		01/08/2019	SICS	LE	01/08/2019	01/08/2019	02/08/2019
10	C4951	DAVIS NDICHU MWANIKI	FIP1102	01/08/2019	SICS	LE	01/08/2019	01/08/2019	02/08/2019
11	C4952	CECILIA WANJIRU GITUA		01/08/2019	SICS	LE	01/08/2019	01/08/2019	02/08/2019
12	C4954	RUTH WANGECHI GIKONYO		01/08/2019	SICS	LE	01/08/2019	01/08/2019	02/08/2019
13	C4955	GEORGE NJENGA KIMANI	FIP1102	01/08/2019	SICS	LE	01/08/2019	01/08/2019	02/08/2019
14	L16320	MARIAM AHMED ALJAB	FIP1102	01/08/2019	PHACO+IOL(AUROLAB)	RE	01/08/2019	01/08/2019	02/08/2019
15	L24466	ADDEY ALI ADAN	FIP1526	01/08/2019	PHACO	LE	01/08/2019	01/08/2019	02/08/2019
16	L24576	SUSAN WANGARI MBUGUA	FIP1528	01/08/2019	PHACO+IOL(AUROLAB)	RE	01/08/2019	01/08/2019	06/08/2019
17	L24656	ANGELA D N MOCHACHE	FIP1524	01/08/2019	PHACO	LE	01/08/2019	01/08/2019	02/08/2019
18	L25044	FADUMO SHEIK ABDI	FIP1523	01/08/2019	PHACO	LE	01/08/2019	01/08/2019	02/08/2019
19	L25132	JACKSON NGINYE	FIP1525	01/08/2019	PHACO	LE	01/08/2019	01/08/2019	05/08/2019
20	C2429	JOYCE MUTIO MWAURA		05/08/2019	PHACO+IOL(AUROLAB)	LE	05/08/2019	05/08/2019	06/08/2019
21	C4616	ESTHER WANGUI GACHIHI	FIP1535	05/08/2019	SICS	LE	05/08/2019	05/08/2019	06/08/2019
22	C4978	ROBERT MAINA MUTHOGA	FIP1533	05/08/2019	SICS	RE	05/08/2019	05/08/2019	06/08/2019
23	C4979	HANNAH WANGUI NJAU	FIP1532	05/08/2019	SICS	LE	05/08/2019	05/08/2019	06/08/2019
24	C4980	PETER NJENGA WAIRAGI	FIP1533	05/08/2019	SICS	LE	05/08/2019	05/08/2019	06/08/2019
25	C4981	JULIUS GAKUO MBUGUA	FIP1535	05/08/2019	SICS	RE	05/08/2019	05/08/2019	06/08/2019



BCVA(pinhole) with Associated conditions

	No of surgeries	Percentage(%)
VA \geq 6/18	187	86%
VA $<$ 6/18-6/60	17	8%
VA $<$ 6/60	13	6%
Total	217	100%

UCVA with Associated conditions		
	No of surgeries	Percentage(%)
VA \geq 6/18	178	82%
VA $<$ 6/18-6/60	25	12%
VA $<$ 6/60	14	6%
Total	217	100%

FW: Fwd: Post op Visual Outcome for Dec 2017 - Message (HTML)

FILE MESSAGE

Fri 19/01/2018 10:44 AM
Ganesh (SR.Manager-Systems & IT)
FW: Fwd: Post op Visual Outcome for Dec 2017

To David Friedman

Message IMG_20171108_082354.jpg (250 KB)

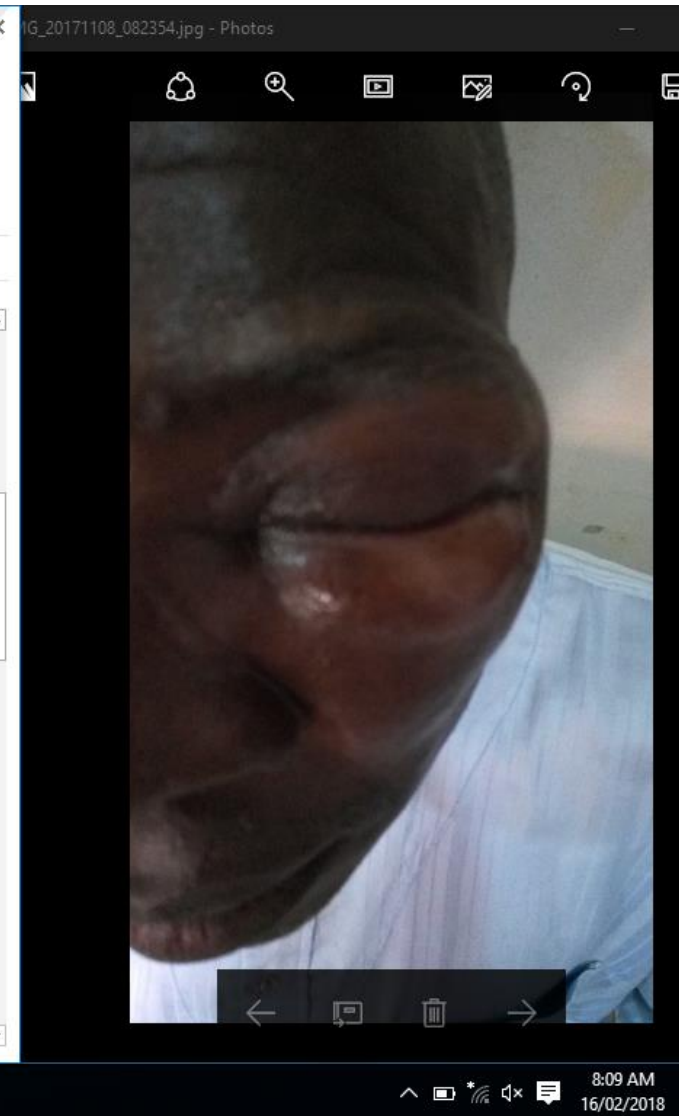
Dear Dr David, thanks for the mail.

The VA dropped mainly because some of our patients reacted to the brand of xylocaine we used. But they are OK after 2 weeks. We have since stopped using the injection. See attached.

Also there are two new Ophthalmologists that joined us now. Though they have done some wet Labs before starting surgeries.

Yes I did all the cases with coexisting pathology but one of my senior colleagues came to assist during this period.

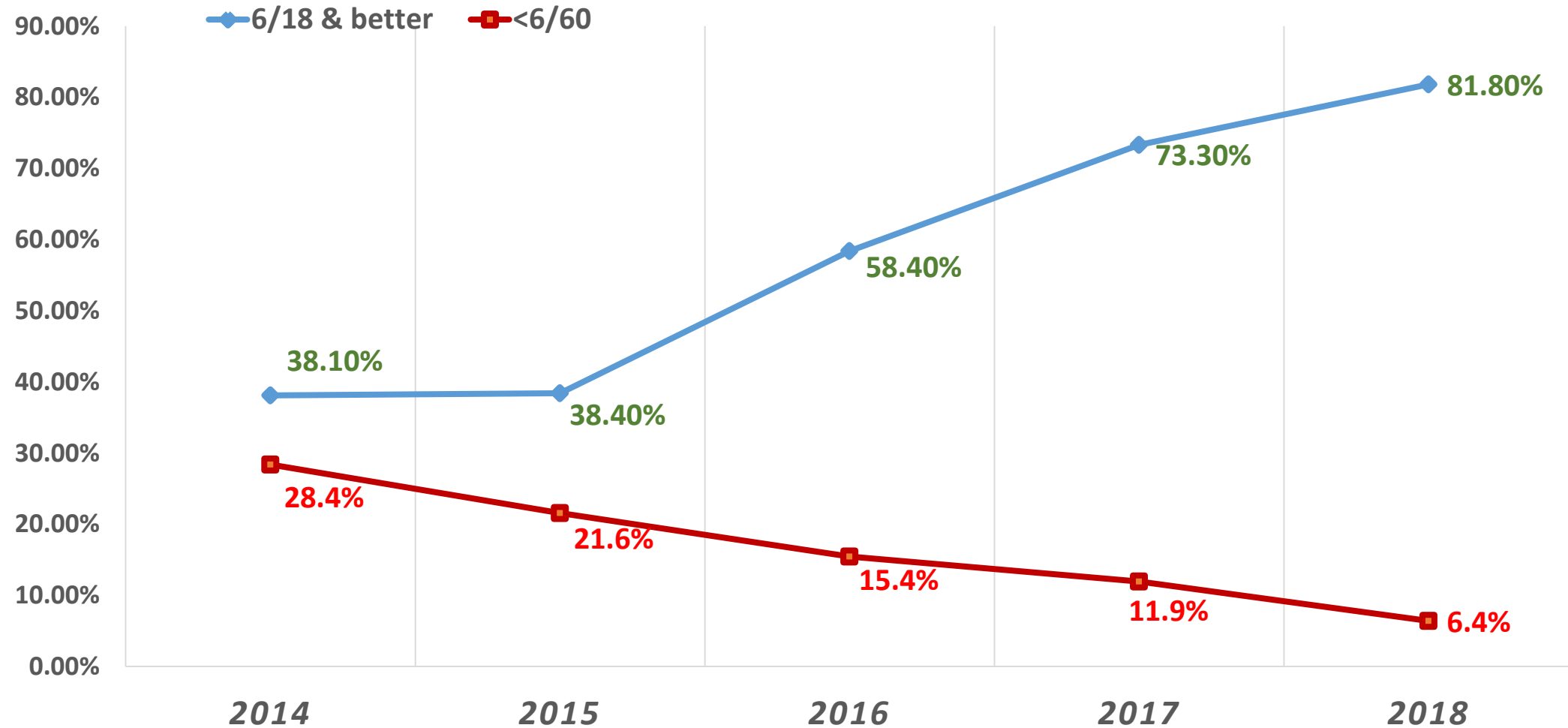
For those 26, I think they are the ones the VA didn't improve one day post op.



Changes introduced

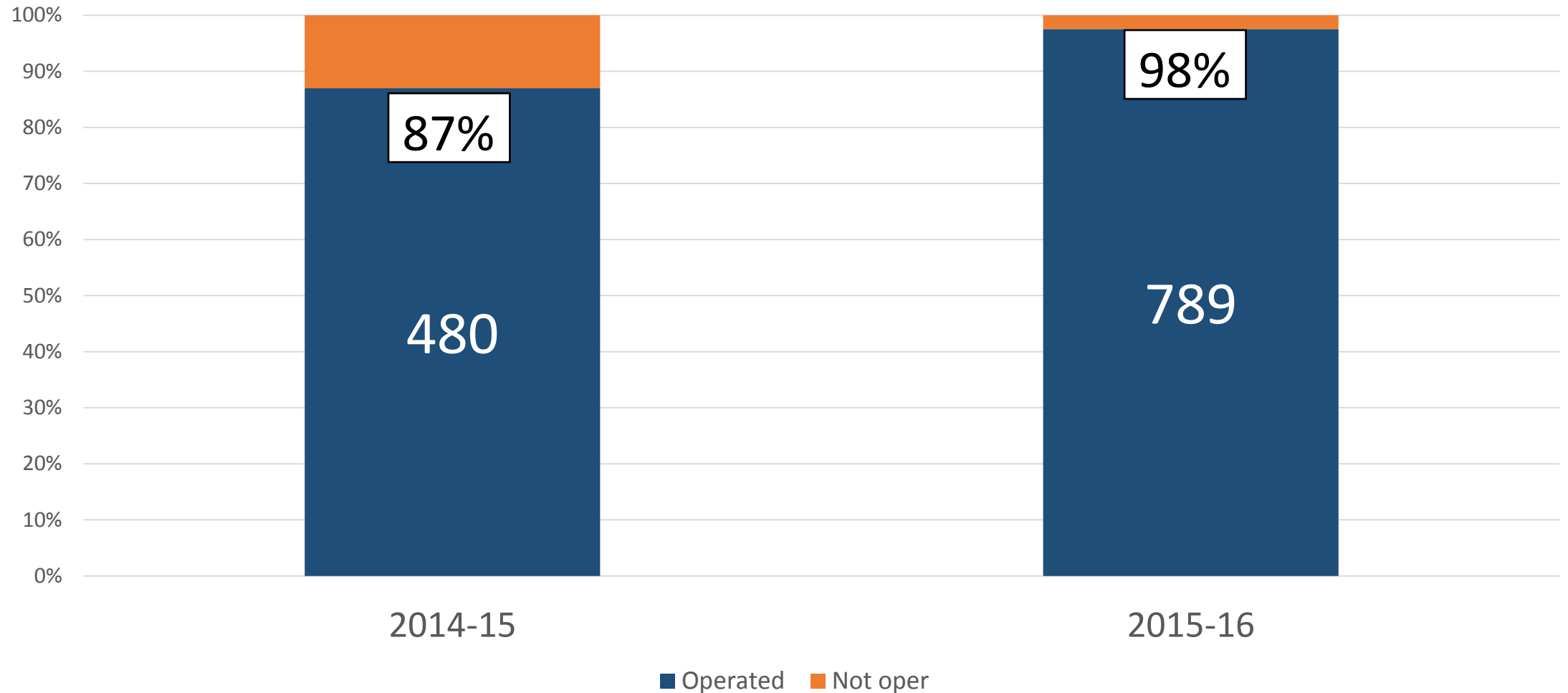
- Replaced the charts
- Corrected the distance – 10 feet
- Refractionists were asked to measure till the last letter the patient could read
- Wait for some time after removing the bandage for taking VA
- Ensure the trainees practice wetlab – standardized the protocol
- Maintained the training % - $< 10\%$
- Restrict number of surgeries when visual outcome is not good
- Daily review of patients with poor outcome

Performance: Visual outcomes (2014 – 2018)

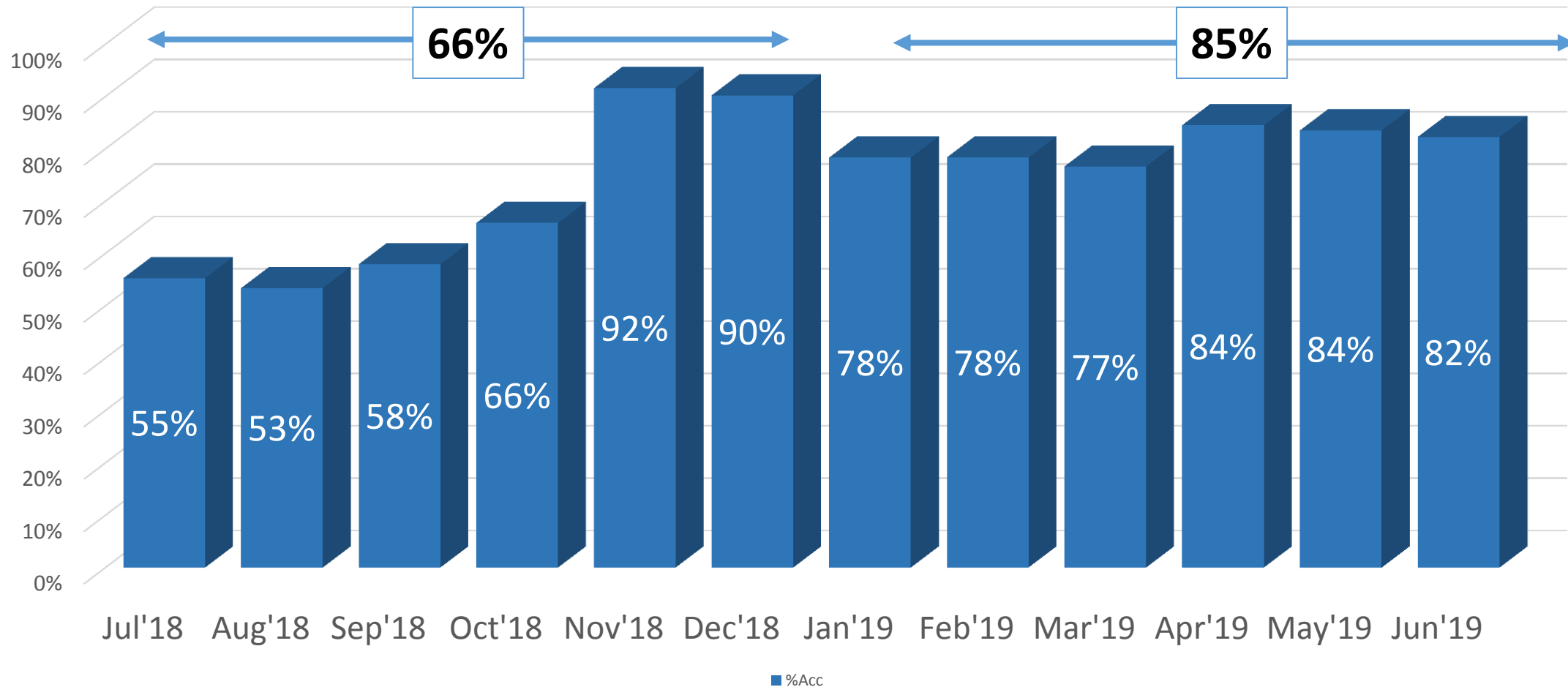


Case-2

Cataract Surgery acceptance



% Cataract Surgery Acceptance



Month	Walk-in Target	Actual Walk-in	Outreach Target	Actual Outreach	Total target	Total 2018/19	Total Cataract 017/18	%good outcome>=6/18
Jul-18	120	98	30	-	150	98	67	
Aug	120	95	30	5	150	100	49	
Sep	80	84	30	1	110	85	41	
Oct	50	52	30	10	80	62	54	82.25%
Nov	50	98	50	16	100	114	49	83.33%
Dec	100	83	60	35	160	118	60	78.81%
Jan-19	100	47	70	33	170	80	44	66.25%
Feb	100	77	70	72	170	149	83	84.56%
March	120	82	110	86	230	168	90	83.33%
April	120	107	110	56	230	163	59	88.95%
May	120	76	110	37	230	113	94	85.84%
June	120	116	100	29	220	145	87	86.89%
Total	1,200	1015	800	380	2,000	1,395	777	
		85%		48%				



Thu 05/09/2019 3:46 PM
Reiyukai Eye Hospital, Banepa
Re: Monthly performance reports of August 2019

To: Ganesh (SR.Manager-Systems & IT)

You replied to this message on 24/09/2019 9:42 AM.

On Sep 5, 2019, at 9:30 AM, Ganesh (SR.Manager-Systems & IT) <ganesh@aravind.org> wrote:

Dear Dr Pragya,

I am glad to know that you have already reviewed and not satisfied with the outcome and also see the plan of action. I am sure that this process will definitely help you for continuous improvement.

As you clearly indicated, the poor outcome need not be related to surgery but others preop exam, postop vision check etc. All these should be attended to. You can have a meeting with the team who went for surgery camp and highlight the issues and poor outcome cases. Since the 75% include both base hospital and surgery camp, I think that if you just check surgery camp patients good outcome alone, then it would be <70% or so.

Thanks,Ganesh.

From: Reiyukai Eye Hospital, Banepa [mailto:remeh.bnp@gmail.com]
Sent: Wednesday, 4 September, 2019 8:54 PM
To: Ganesh (SR.Manager-Systems & IT) <ganesh@aravind.org>
Subject: Re: Monthly performance reports of August 2019

Dear Ganesh Sir and all!

Thank you very much for the feedback. Yes this is the highest number of surgeries we have done in one month so far. Regarding outcome we have not so good vision on surgical camp patients. That affects the total visual outcome on monthly basis as well. This is because of poor case selection prior surgery, and inappropriate vision taking method on 1st postoperative day. None of the experinced personnel went on for eye examining beforehand surgery. We found the loophole this time and on next surgical camp won't do the same mistake again. We are very much cautious about quality of surgery. The outcomes disheartened us too regardless of quantity of surgery.

Once again thank YOU and whole SEWA team for guiding us. We need your guidance on forthcoming days too.

Regards

Changes introduced

- Introduced counselling
- Make sure all the patients advised are routed to counsellor
- Regular tracking of patients advised
- Monthly phone call

Case-3

Spectacle acceptance

Section	NO OF REFRACTION	No of ordered lenses	Acceptance rate
Private	15	9	60%
Public	69	33	42.83%
Camp (presbyopic glasses)	765	662	86.54%
Total	849	704	82.92%

Refractive Errors

Section	New patients					Review patients				
	Regist.	Refrac tion	Spec. Adv	Spec. Order ed	% Spec accep.	Regist.	Refrac tion	Spec. Adv	Spec. Order ed	% Spec accep.
Private	82	22	9	3	33%	136	38	16	11	69%
Public	413	98	38	14	37%	770	165	60	28	47%
Camp	1,230	487	487	317	65%					
Total	1,725	607	534	334	63%	906	203	76	39	51%

Spectacle acceptance

Period	OP	Refraction	GP	Ordered	Spec Acceptance
2018-19	17,552		1,328	749	56%
			% OP - glass ordered	4%	
Jul'19	1,541	243	75	33	44%
	% Refraction	16%	30%	2%	
Aug'19	1,401	323	123	86	70%
		23%	38%	6%	

THANK YOU