



**ENHANCED QUALITY IMPROVEMENT &  
PATIENT SAFETY (EQUIPS) <sup>TM</sup>**

**NHL-VS CAMPUS PROGRAM 2017**

**Dr. Juzar Ali. LSUHSC, New Orleans, LA, USA**

**Dr. Sanjay Bhatt, LAC/USC, Los Angeles, CA, USA**

## OVERVIEW

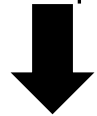
- Broad Outline & Recap to date
- Team Members / Team Work
- Departmental/Champions Updates
- Infection Control
- Peer Review
- Best Practices
- Closing



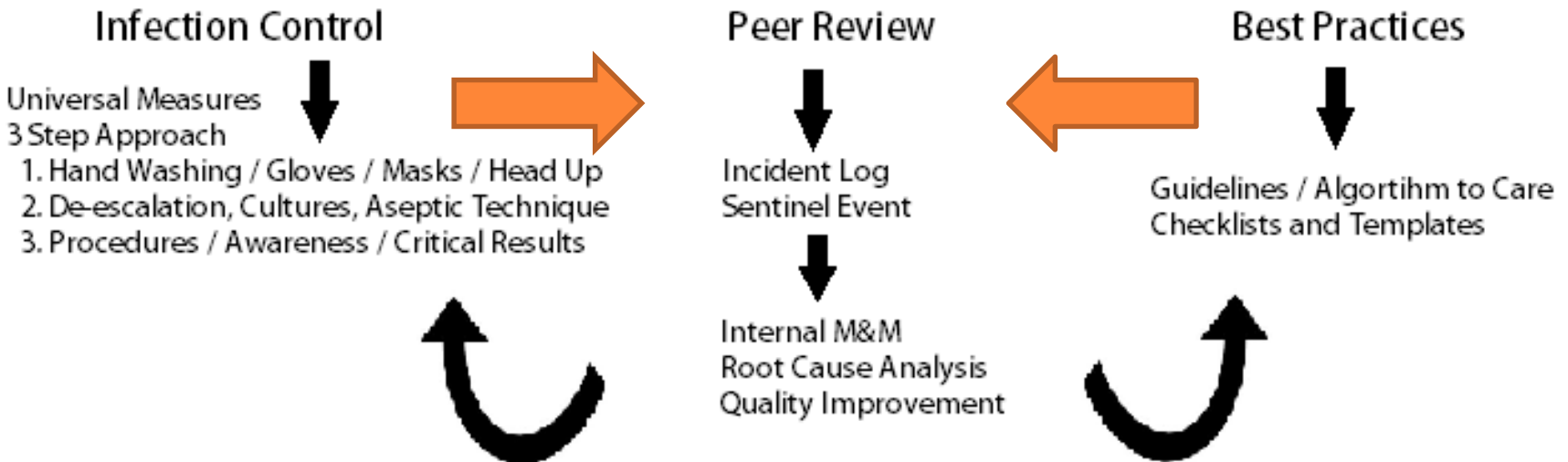
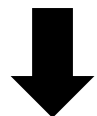


**BROAD OUTLINE**  
**TEAM MEMBERS**

# EQuIPS (Enhanced Quality Improvement and Patient Safety)



A **Team Effort** Between Doctors / Nurses / Allied Health Leadership Who Believe **High quality safe** patient-care can be provided in spite of a **high demand, challenging environment and limited resources**



Goals: Increase Awareness, Enhanced Patient Safety, Education, Process Improvement



# TEAM

- DEAN / MS / HODs  
LEADERSHIP  
QUALITY COUNCIL
- Collaboration with:
  - Nursing
  - Allied Health
  - Dept. of Microbiology
  - Infection Control
  - Department of PSM
  - Others on invitation
- CQM Faculty  
Champions
  - Medicine: Dr. Palat
  - Medicine: Dr. Suthar
  - Surgery: Dr. Kushwala
  - Surgery: Dr. Vyas
  - OBG: Dr. Jani
  - EMD: Dr. Jarwani
  - Others on invitation





**CQM CHAMPIONS  
DEPARTMENTAL INPUT  
UPDATES MARCH 2017**



FOCUS ONE

# **INFECTION CONTROL**

**Introduction**

**Antibiogram**

**Antibiogram Observations**

**3 Step Approach**



## **ANTIBIOGRAM**

**Dr. Parul Shah – Professor / Head of Microbiology**

**Dr. Tanmay Mehta – Assistant Professor**



# ANTIBIOGRAM

- Information: Specimen Culture & Sensitivity Reports
  - % of samples for a given organism which were sensitive to certain antibiotics
- Dates: 1<sup>st</sup> January 2016 - 31<sup>st</sup> December 2016



# USE OF AN ANTIBIOGRAM

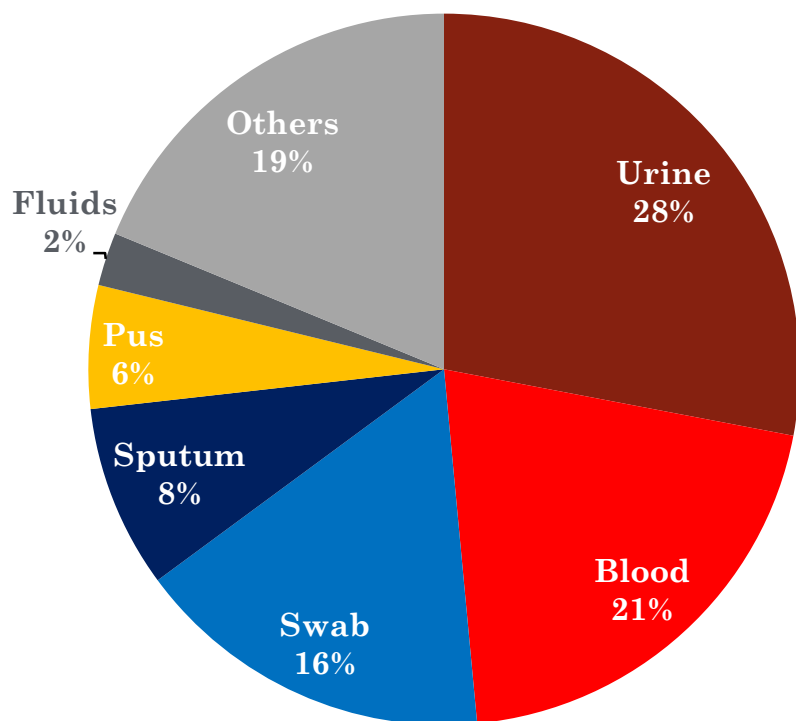
- Prepare an antibiotic policy
- To Initiate empirical treatment
- Detection of emergence of new hospital isolates
- Detection of changes in resistance patterns



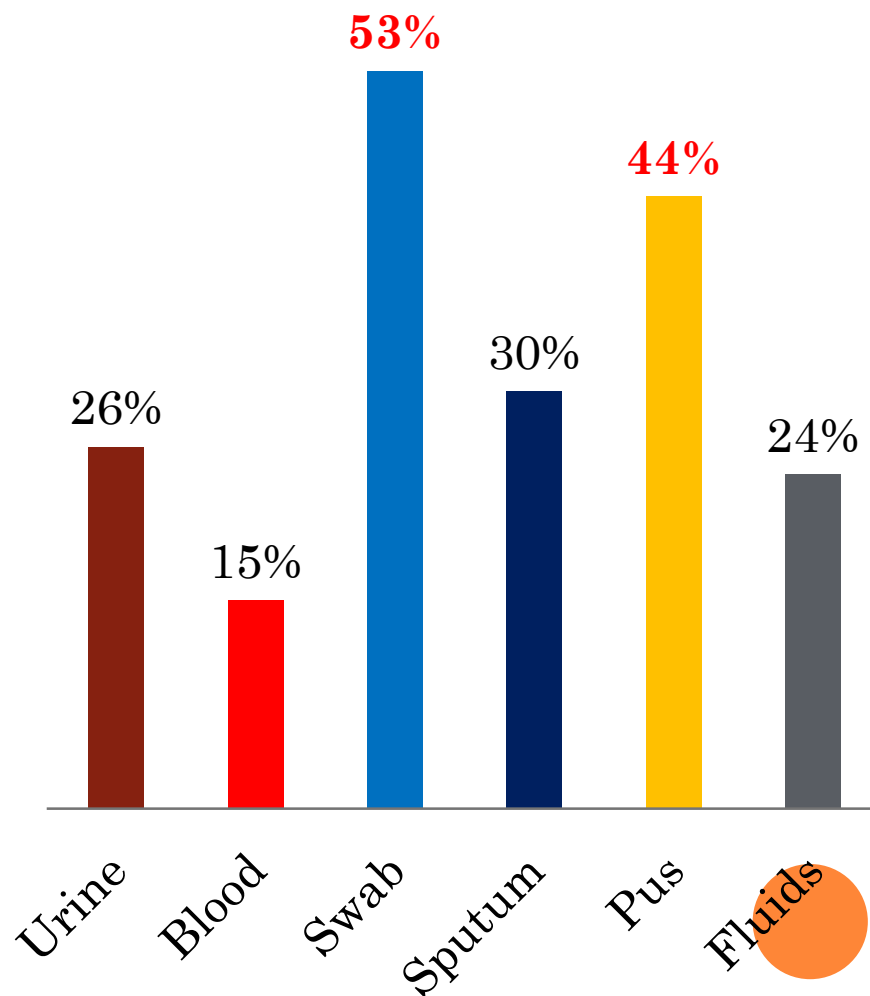
Total Samples for Culture = 21631

Total No. of Isolates obtained = 6816 (31.51%)

### Samples for Culture



### % Isolates from sample



# WHO's "DIRTY DOZEN" JUST ANNOUNCED

SEE WHO Feb 2017 released report with regional  
data

## WHO PRIORITY PATHOGENS

CRITICAL : Acinetobacter Baumannii – Carbp res  
Pseudomonas Aeruginosa – Carbp res  
Enterobacteriaceae Carbp' res ESBL

HIGH : Enterococcus , Staph MRSA, QR-  
Salmonella, Hb/Cb/NG

MEDIUM : Strep /Hemoph/Shigella



# URINE

Urine isolates - % Susceptible

Organism	% of isolates	Amikacin	Amoxicillin/Clavulanic acid	Ampicillin/Sulbactam	Azithromycin	Aztreonam	Cefepime	Cefoperazone/Sulbactam	Cefotaxime	Ceftazidime	Ceftriaxone	Cefuroxime	Chloramphenicol	Ciprofloxacin	Clindamycin	Colistin	Doxycycline	Ertapenem	Erythromycin	Gatifloxacin	Gentamicin	Imipenem	Levofloxacin	Linezolid	Meropenem	Minocycline	Nitrofurantoin	Ofloxacin	Oxacillin	Penicillin G	Piperacillin	Piperacillin/Tazobactam	Polymixin B	Teicoplanin	Tetracycline	Tobramycin	Trimethoprim/Sulfamethoxazole	Vancomycin
<b>GRAM-NEGATIVE ORGANISMS</b>																																						
<i>Escherichia coli</i>	55%	77	-	45	-	-	36	68	-	-	20	-	-	21	-	100	25	74	-	49	56	73	22	-	73	25	77	-	-	-	-	55	100	-	-	-	28	-
<i>Klebsiella pneumoniae</i>	12%	58	-	30	-	-	32	60	-	-	21	-	-	28	-	100	29	41	-	48	53	56	28	-	56	29	46	-	-	-	-	79	100	-	-	-	29	-
<i>Pseudomonas aeruginosa</i>	7%	30	-	-	-	31	32	30	-	24	-	-	-	23	-	100	-	-	-	-	33	35	25	-	35	-	-	33	-	-	25	40	99	-	-	26	-	-
<i>Klebsiella sp.</i>	4%	53	-	30	-	-	30	40	-	-	25	-	-	31	-	100	28	48	-	39	48	48	34	-	48	28	44	-	-	-	-	100	-	-	-	33	-	
<b>GRAM-POSITIVE ORGANISMS</b>																																						
<i>Staphylococcus aureus</i>	2%	-	60	-	0	-	-	-	-	-	-	-	100	55	100	-	65	-	0	-	77	-	61	100	-	65	-	50	58	0	-	-	-	-	66	45	100	



# Urine

Total = 6055 with 1581 Isolates (26.11%)			100% Sensitive
Organism	No.	%	
<b>Gram negative bacilli</b>		<b>77%</b>	<b>Colistin, Polymyxin B</b>
<b>Escherichia coli</b>	<b>870</b>	<b>55%</b>	
Klebsiella pneumoniae	189	11.55%	
Pseudomonas aeruginosa	104	6.57%	
Klebsiella sp.	61	3.85%	
<b>Gram Positive cocci</b>		<b>2%</b>	<b>Linezolid, Vancomycin, Clindamycin, Chloramphenicol</b>
Staphylococcus aureus	31	1.96%	



# BLOOD

Blood isolates - % Susceptible

	% of isolates	Amikacin	Amoxicillin/Clavulanic acid	Ampicillin/Sulbactam	Azithromycin	Aztreonam	Cefepime	Cefoperazone/Sulbactam	Cefotaxime	Ceftazidime	Ceftriaxone	Cefuroxime	Chloramphenicol	Ciprofloxacin	Clindamycin	Colistin	Doxycycline	Ertapenem	Erythromycin	Gatifloxacin	Gentamicin	Imipenem	Levofloxacin	Linezolid	Meropenem	Minocycline	Nitrofurantoin	Ofloxacin	Oxacillin	Penicillin G	Piperacillin	Piperacillin/Tazobactam	Polymixin B	Teicoplanin	Tetracycline	Tobramycin	Trimethoprim/Sulfamethoxazole	Vancomycin
<b>GRAM-POSITIVE ORGANISMS</b>																																						
Coagulase-negative staphylococci	21%	-	42	-	31	-	-	-	-	-	-	-	88	62	68	-	64	-	30	-	76	-	66	100	-	64	-	55	43	13	-	-	-	100	-	-	35	100
Staphylococcus aureus	21%	-	60	-	36	-	-	-	-	-	-	-	88	76	82	-	72	-	36	-	80	-	77	100	-	72	-	68	60	16	-	-	-	99	-	-	50	100
<b>GRAM-NEGATIVE ORGANISMS</b>																																						
Klebsiella pneumoniae	18%	40	-	19	-	-	15	32	11	-	11	10	50	22	-	100	16	51	-	39	24	37	22	-	37	16	-	50	-	-	17	50	100	-	0	-	18	-
Acinetobacter baumannii	9%	28	-	40	-	-	26	71	7	-	11	0	0	26	-	100	28	33	-	39	28	32	28	-	32	28	-	-	-	-	-	-	100	-	-	29	26	-
Escherichia coli	7%	74	-	46	-	-	42	72	0	-	26	25	71	42	-	100	15	68	-	61	58	68	42	-	68	15	-	0	-	-	0	0	100	-	0	-	39	-
Klebsiella sp.	5%	41	-	11	-	-	11	30	-	-	11	11	70	26	-	100	19	54	-	50	19	48	26	-	54	19	-	-	-	-	-	100	-	-	-	19	-	



# Blood

Blood (Total = 4439 ; no. of isolates = 675 (15.2%))			100% Sensitive antibiotics
Organism	No.	%	
<b>Gram Positive cocci</b>		41%	<b>Linezolid, Vancomycin</b>
<b>Staphylococcus, coagulase negative</b>	<b>139</b>	<b>20.5 9%</b>	
Staphylococcus aureus	137	20.59 %	
<b>Gram negative bacilli</b>		38.35 %	<b>Colistin, Polymyxin B</b>
Klebsiella pneumoniae	119	17.62 %	
Acinetobacter baumannii	58	8.59 %	
Escherichia coli	46	6.81 %	
Klebsiella sp.	36	5.33 %	





# SWAB

Swab Isolates – % Susceptible

Organism	% of isolates	Amikacin	Amoxicillin/Clavulanic acid	Ampicillin/Sulbactam	Azithromycin	Aztreonam	Cefepime	Cefoperazone/Sulbactam	Cefotaxime	Ceftazidime	Ceftriaxone	Cefuroxime	Chloramphenicol	Ciprofloxacin	Clindamycin	Colistin	Doxycycline	Ertapenem	Erythromycin	Gatifloxacin	Gentamicin	Imipenem	Levofloxacin	Linezolid	Meropenem	Minocycline	Nitrofurantoin	Ofloxacin	Oxacillin	Penicillin G	Piperacillin	Piperacillin/Tazobactam	Polymixin B	Teicoplanin	Tetracycline	Tobramycin	Trimethoprim/Sulfamethoxazole	Vancomycin
<b>GRAM-NEGATIVE ORGANISMS</b>																																						
<i>Pseudomonas aeruginosa</i>	26%	24	-	0	-	32	32	22	-	21	0	0	0	19	-	100	0	0	-	0	22	42	19	-	43	0	-	23	-	-	20	37	100	-	-	21	0	-
<i>Klebsiella pneumoniae</i>	20%	30	-	14	-	-	15	32	21	0	8	6	39	14	-	100	15	32	-	41	22	31	13	-	31	15	-	18	-	-	18	60	100	-	10	-	14	-
<i>Escherichia coli</i>	14%	64	-	24	-	-	18	48	10	-	4	3	66	6	-	100	17	66	-	38	46	56	7	-	56	17	-	67	-	-	33	64	100	-	67	-	16	-
<i>Acinetobacter baumannii</i>	10%	7	-	21	-	-	5	46	1	-	2	0	0	6	-	100	10	0	-	18	5	7	6	-	7	10	-	-	-	-	-	-	100	-	-	6	8	-
<i>Klebsiella sp</i>	5%	20	-	9	-	-	8	27	-	-	5	3	47	9	-	100	13	41	-	26	18	37	12	-	38	13	-	-	-	-	-	100	-	-	-	13	-	
<b>GRAM-POSITIVE ORGANISMS</b>																																						
<i>Staphylococcus aureus</i>	15%	-	50	-	30	-	-	-	-	-	-	-	91	60	70	-	63	-	30	-	68	-	60	100	-	64	-	42	50	4	-	-	-	99	-	-	39	100



# Swab

Swab (Total = 3543 ; No. of isolates = 1890 (53.34%))			100% Sensitive antibiotics
Organism	No.	%	
<b>Gram Negative bacilli</b>		<b>75%</b>	<b>Colistin, Polymyxin B</b>
<b>Pseudomonas aeruginosa</b>	<b>483</b>	<b>25.5%</b>	
Klebsiella pneumoniae	373	19.73%	
Escherichia coli	268	14.17%	
Acinetobacter baumannii	192	10.15%	
Klebsiella sp.	101	5.34%	
<b>Gram positive cocci</b>		<b>15.13%</b>	
Staphylococcus aureus	286	15.13%	



## Pus isolates - % Susceptible

Organism	% of isolates	Amikacin	Amoxicillin/Clavulanic acid	Ampicillin/Sulbactam	Azithromycin	Aztreonam	Cefepime	Cefoperazone/Sulbactam	Cefotaxime	Ceftazidime	Ceftriaxone	Cefuroxime	Chloramphenicol	Ciprofloxacin	Clindamycin	Colistin	Doxycycline	Ertapenem	Erythromycin	Gatifloxacin	Gentamicin	Imipenem	Levofloxacin	Linezolid	Meropenem	Minocycline	Nitrofurantoin	Ofloxacin	Oxacillin	PenicillinG	Piperacillin	Piperacillin/Tazobactam	Polymixin B	Teicoplanin	Tetracycline	Tobramycin	Trimethoprim/Sulfamethoxazole	Vancomycin
<b>GRAM-POSITIVE ORGANISMS</b>																																						
<i>Staphylococcus aureus</i>	43%	-	62	-	48	-	-	-	-	-	-	-	96	76	91	-	82	-	49	-	83	-	78	100	-	83	-	59	61	5	-	-	-	100	-	-	41	100
<b>GRAM-NEGATIVE ORGANISMS</b>																																						
<i>Escherichia coli</i>	21%	78	-	38	-	-	28	74	50	-	14	11	70	14	-	100	15	87	-	46	58	78	14	-	80	15	-	100	-	-	100	100	100	-	100	-	22	-
<i>Klebsiella pneumoniae</i>	14%	47	-	28	-	-	30	49	23	-	13	11	44	24	-	100	21	52	-	50	43	40	24	-	40	21	-	71	-	-	29	60	100	-	71	-	21	-
<i>Pseudomonas aeruginosa</i>	8%	46	-	-	-	49	54	38	-	42	-	-	-	32	-	100	-	-	-	-	30	68	32	-	68	-	-	35	-	-	31	56	98	-	-	29	-	-
<i>Klebsiella sp</i>	4%	26	-	16	-	-	11	21	-	-	11	5	37	11	-	100	5	22	-	16	21	22	16	-	22	5	-	-	-	-	-	-	100	-	-	-	21	-
<i>Acinetobacter baumannii</i>	3%	20	-	27	-	-	0	57	0	-	0	-	-	13	-	100	7	-	-	27	13	7	13	-	7	7	-	-	-	-	-	100	-	-	8	7	-	



# PUS

Pus (Total = 1211 ; Number of isolates = 534 (44.09%))			100% Sensitive antibiotics
Organism	No.	%	
<b>Gram positive cocci</b>		42.50%	<b>Linezolid, Vancomycin, Teicoplanin</b>
<b>Staphylococcus aureus ss. aureus</b>	<b>227</b>	<b>42.50%</b>	
<b>Gram negative bacilli</b>		48.00%	
Escherichia coli	111	20.78%	<b>Colistin, Polymyxin B, Piperacillin, Piperacillin-tazobactam, Tetracycline</b>
Klebsiella pneumoniae	76	14.23%	
Pseudomonas aeruginosa	41	7.67%	
Klebsiella sp.	19	3.55%	
Acinetobacter baumannii	15	2.80%	



# SPUTUM

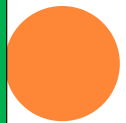
Sputum Isolates – % Susceptible

Organism	% of isolates	Amikacin	Ampicillin/Sulbactam	Aztreonam	Cefepime	Cefoperazone/Sulbactam	Cefotaxime	Ceftazidime	Ceftriaxone	Cefuroxime	Chloramphenicol	Ciprofloxacin	Colistin	Doxycycline	Ertapenem	Gatifloxacin	Gentamicin	Imipenem	Levofloxacin	Meropenem	Minocycline	Ofloxacin	Piperacillin	Piperacillin/Tazobactam	Polymixin B	Tetracycline	Tobramycin	Trimethoprim/Sulfamethoxazole
<b>GRAM-NEGATIVE ORGANISMS</b>																												
<i>Klebsiella pneumoniae</i>	22%	64	31	76	39	56	-	31	25	61	36	100	31	62	51	56	61	39	61	31	-	-	-	100	-	-	-	42
<i>Pseudomonas aeruginosa</i>	16%	75	-	76	81	81	-	68	-	-	73	100	-	-	-	72	81	73	82	-	80	71	87	100	-	-	61	-
<i>Escherichia coli</i>	11%	87	28	-	29	67	0	5	4	73	15	98	15	76	39	67	73	15	74	15	17	0	100	98	40	-	27	
<i>Acinetobacter baumannii</i>	9%	13	26	-	10	50	0	-	0	-	21	100	12	-	29	10	13	21	13	12	-	-	-	100	-	11	13	



# Sputum

Sputum (Total = 1800; no of isolates = 534(29.66%))			100% Sensitive antibiotics
Organism	No	%	
<b>Gram negative bacilli</b>		<b>56%</b>	<b>Colistin, PolymyxinB (*Piperacillin -tazobactam)</b>
<b>Klebsiella pneumoniae</b>	<b>115</b>	<b>21.5 3%</b>	
Pseudomonas aeruginosa	84	15.73 %	
Escherichia coli*	60	11.23 %	
Acinetobacter baumannii	48	8.98 %	
Klebsiella sp.	36	6.74 %	



# FLUID

Fluid isolates - % Susceptible

Organism	% of isolates	Amikacin	Amoxicillin/Clavulanic acid	Ampicillin/Sulbactam	Azithromycin	Aztreonam	Cefepime	Cefoperazone/Sulbactam	Cefotaxime	Ceftazidime	Ceftriaxone	Cefuroxime	Chloramphenicol	Ciprofloxacin	Clindamycin	Colistin	Doxycycline	Ertapenem	Erythromycin	Gatifloxacin	Gentamicin	Imipenem	Levofloxacin	Linezolid	Meropenem	Minocycline	Nitrofurantoin	Ofloxacin	Oxacillin	PenicillinG	Piperacillin	Piperacillin/Tazobactam	Polymixin B	Teicoplanin	Tetracycline	Tobramycin	Trimethoprim/Sulfamethoxazole	Vancomycin
<b>GRAM-NEGATIVE ORGANISMS</b>																																						
<i>Escherichia coli</i>	33%	68	-	15	-	-	13	58	0	-	5	5	65	13	-	100	13	72	-	35	58	65	13	-	65	13	-	-	-	-	-	0	100	-	-	-	25	-
<i>Klebsiella pneumoniae</i>	16%	35	-	6	-	-	15	37	0	-	0	0	35	5	-	100	6	0	-	30	15	32	5	-	30	6	-	0	-	-	0	100	100	-	0	-	25	-
<i>Acinetobacter baumannii</i>	14%	12	-	12	-	-	12	35	20	-	12	-	-	18	-	100	13	-	-	24	12	12	18	-	12	13	-	-	-	-	-	-	100	-	-	10	6	-
<i>Pseudomonas aeruginosa</i>	8%	44	-	-	-	56	56	-	-	-	-	-	-	44	-	100	-	-	-	-	56	56	44	-	56	-	-	20	-	-	33	56	100	-	-	44	-	
<b>GRAM-POSITIVE ORGANISMS</b>																																						
<i>Staphylococcus aureus</i>	15%	-	68	-	42	-	-	-	-	-	-	-	100	68	90	-	79	-	42	-	88	-	63	100	-	79	-	43	68	11	-	-	-	100	-	-	47	100



# Fluid

Fluid (Total = 523; isolates 124 (23.7%))			100% Sensitive antibiotics
Organism	Number of isolates		
<b>Gram negative bacilli</b>		<b>72%</b>	<b>Colistin, PolymyxinB (*Piperacillin-tazobactam)</b>
<b>Escherichia coli</b>	<b>41</b>	<b>33%</b>	
Klebsiella pneumoniae*	20	16.12%	
Acinetobacter baumannii	17	13.70%	
Pseudomonas aeruginosa	10	8.06%	
<b>Gram positive cocci</b>		<b>15.32%</b>	<b>Linezolid, Vancomycin, T eicoplanin, Chl oramphenicol</b>
Staphylococcus aureus ss. aureus	19	15.32%	





# GRAM POSITIVE COCCI

- **Coagulase negative staphylococci** isolates in **blood**
  - **Treat the infection, Not contamination**
- **MRSA** isolates **44%**
- Emergence of **VISA & VRSA**



# GRAM NEGATIVE BACILLI

- Resistance to **Fluoroquinolones 80%**
- **ESBL** isolates = **90%**
- **CRE** isolates = **30-70%**
- **MDR Acinetobacter baumannii & Pseudomonas aeruginosa**
- Only **100%** Sensitive drugs are **Colistin & Polymyxin B**
- Emergence of **resistance to colistin & Polymyxin B**



# OBSERVATIONS

- MRSA / TB / Swine Flu Presentations
- High Incidence of S. Epidermidis in Blood Cultures
- Limited N95 Masks
- Limited De-Escalation of Antibiotic Therapy
- Increasing Resistance Pattern
  - Will and Should be followed over several years



A decorative vertical bar on the left side of the slide, featuring a gradient from dark blue to light blue, with several thin vertical lines and a large orange circle at the top. Below the large circle are four smaller orange circles of varying sizes, arranged in a descending pattern.

**DR. SANJAY BHATT**

**Presentation and Discussion**

# INFECTION CONTROL

## ○ **STEP 1**

- Hand Washing / Gloves
- Masks
- Bed Up > 30°

## ○ **STEP 2**

- De-escalation of Antibiotics
- Draw Cultures
- Aseptic Technique

## • **STEP 3**

- Sterile Procedures
- Awareness through Identifiers / Poster
- Attention to critical labs / cultures





December 2015



June 2016



August 2016



October 2016



January 2017

# LAC + USC STORY

- HAND HYGIENE CAMPAIGN

**SISTER: 48%**

**PHYSICIAN: 11%**

**OTHER: 81% !!**

16/1 – 11/2

N = 620

**VS HOSPITAL**

**230%**

**AVERAGE**

# VS HOSPITAL CULTURES

- 2016 Data (~1000 beds total)
  - Urine Cultures
    - 6055 total
    - **17 Urine Cultures / Day**
  - Blood Cultures
    - 4439 total
    - 12 Blood Cultures / Day
    - Without NICU (1580):

○ **8 / Day**





# ASEPTIC TECHNIQUE (BLOOD CULTURE)

- 21% *S. Epidermidis*
  - Normal Human Flora (not pathogenic except in IC)



# OTHER INFECTION CONTROL MEASURES

QUARTERLY Infection Control & Microbiology  
Newsletter ..... “The Flora”



- Web Access with updates
- Regular Infection Control Meetings
  - Every 3 months at least or more if needed
- Intensify Environmental Sanitation and Biomedical Waste Management within the hospital UNIT BY UNIT
- Ensure Availability of Supplies

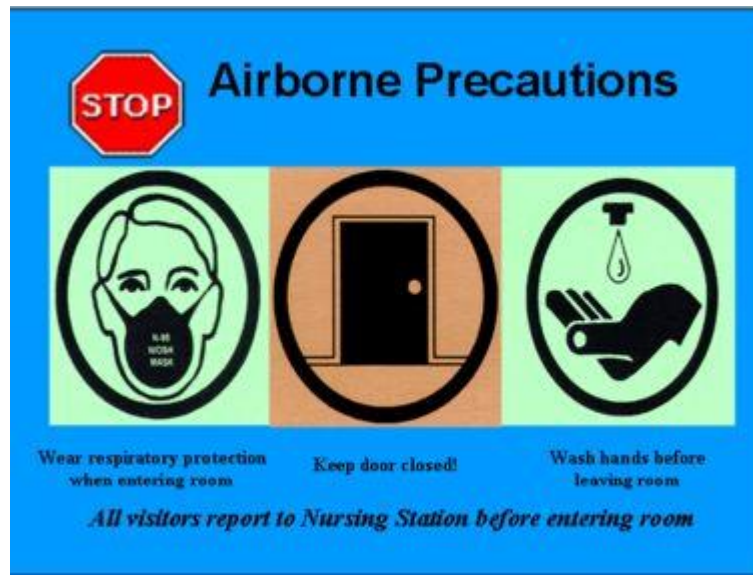


# INTEGRITY OF INFECTION CONTROL AT BEDSIDE PROCEDURES

- Ensure Sterile Precautions
  - Pre/Peri/Post Preparation
  - Checklist
  - Procedure Tray
  - Proper Documentation
  - Follow up
- Each Unit / Ward / Department is Responsible for Adherence
- Awareness through Posters/
- **STUDENT/RESIDENT TEAM RESPONSIBLE AND ACCOUNTABLE TO FACULTY**
- Recognize with Star Ratings by CQM



# AWARENESS THROUGH IDENTIFIERS / POSTERS: Examples



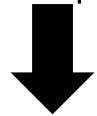
# Juzar ali Presentation and Discussion

A PIVOTAL ARM IN THE  
IMPLEMENTATION OF EQ<sub>u</sub>IPS  
PROGRAM IS.....

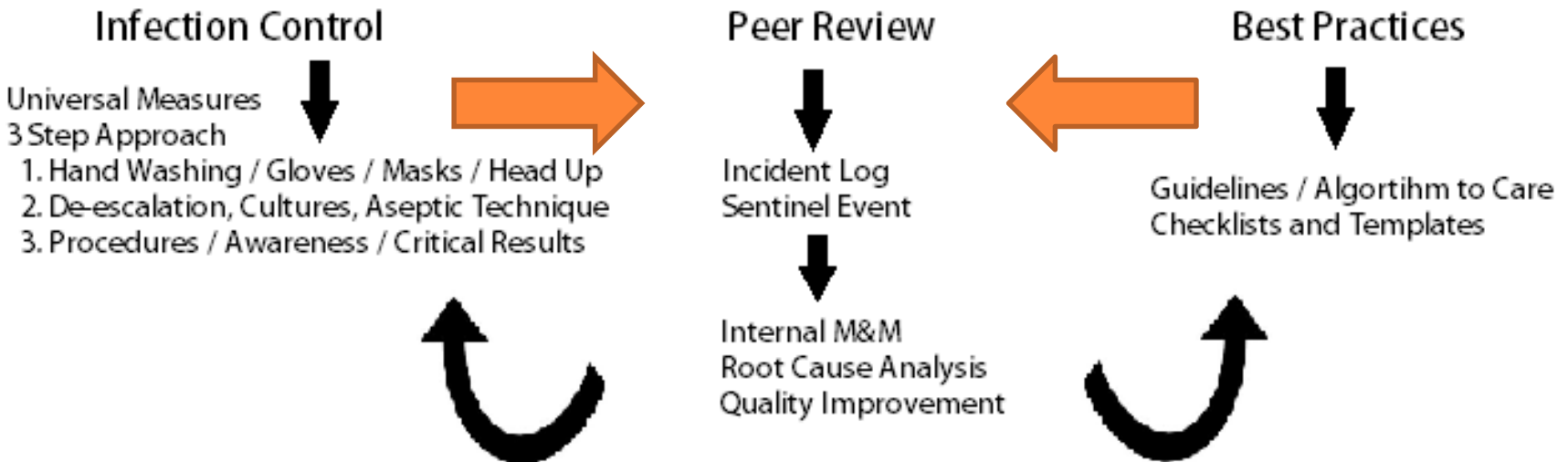
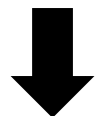


INTERNAL PEER REVIEW  
PROCESSES

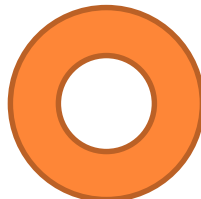
# EQuIPS (Enhanced Quality Improvement and Patient Safety)



A **Team Effort** Between Doctors / Nurses / Allied Health Leadership Who Believe **High quality safe** patient-care can be provided in spite of a **high demand, challenging environment and limited resources**



Goals: Increase Awareness, Enhanced Patient Safety, Education, Process Improvement



*IDENTIFY SENTINEL EVENT OR ANY DEVIATION IN  
PATIENT SAFETY OR QUALITY OF CARE  
IRRESPECTIVE OF LEVEL AT WHICH IT OCCURRED*

- Review and identify potential critical clinical or operational problems
- If and What went wrong detected ...
- What could have been avoided.....
- What could be corrected.....

Method : Examples each Unit can adopt

- INCIDENT NOTIFICATION through LOG/ HOT LINE
- “Missed Call” /SMS Number
- Create a ... **NHL SAFE** ... 645 7233
- Or use or develop an App like “Magpi”





# **BEST PRACTICES**

**INDWNTIFICATION OF NEED ,IMPLEMENTATION AND  
MONITORING**

**PUBLICATION OF DATA WITH ANALYSIS & RESULTS  
WEB SITE , NEWS LETTER, JOURNALS**



# FOCUS 3 OF EQUIPS

## *BEST PRACTICES FOCI TO WORK AT*

### **CHOOSE A TARGET BASED ON DATA & NEED & PRIORITY**

1. Ventilator Associated Pneumonia 2. Catheter Associated UTI or Blood stream Infections 3. Blood Reactions 4. Bed Sores 5. Documentation Deficiencies 6. Timeliness of PCI or Thrombolytic 7. Proper Discharge Processes 8. Pneumonia Follow up 9. In Patient Surgical Infection prevention 10. Vascular Ortho Injuries 11. Delayed Dx in Oncology 12. Surgical site infection 13 OR Efficiency and turnover methods process 14. Pre peri and post partum issues

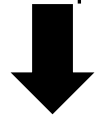
1. **PICK YOUR STARS FROM THE GALAXY**



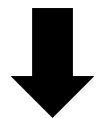
- \EACH DEPT TO DECIDE and PICK A FOCUS EVERY QUARTER
- CREATE GUIDELINES/CHECKLISTS/TEMPLATES etc.



# EQuIPS (Enhanced Quality Improvement and Patient Safety)



A **Team Effort** Between Doctors / Nurses / Allied Health Leadership Who Believe **High quality safe** patient-care can be provided in spite of a **high demand, challenging environment and limited resources**



## Infection Control

Universal Measures  
3 Step Approach

1. Hand Washing / Gloves / Masks / Head Up
2. De-escalation, Cultures, Aseptic Technique
3. Procedures / Awareness / Critical Results

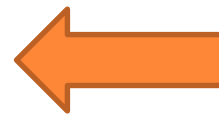
## Peer Review

Incident Log  
Sentinel Event

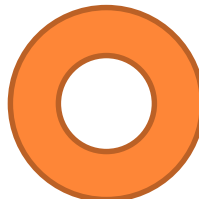
Internal M&M  
Root Cause Analysis  
Quality Improvement

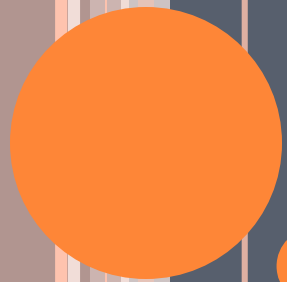
## Best Practices

Guidelines / Algorithm to Care  
Checklists and Templates



Goals: Increase Awareness, Enhanced Patient Safety, Education, Process Improvement





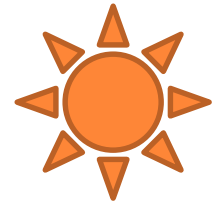
**CLOSING**



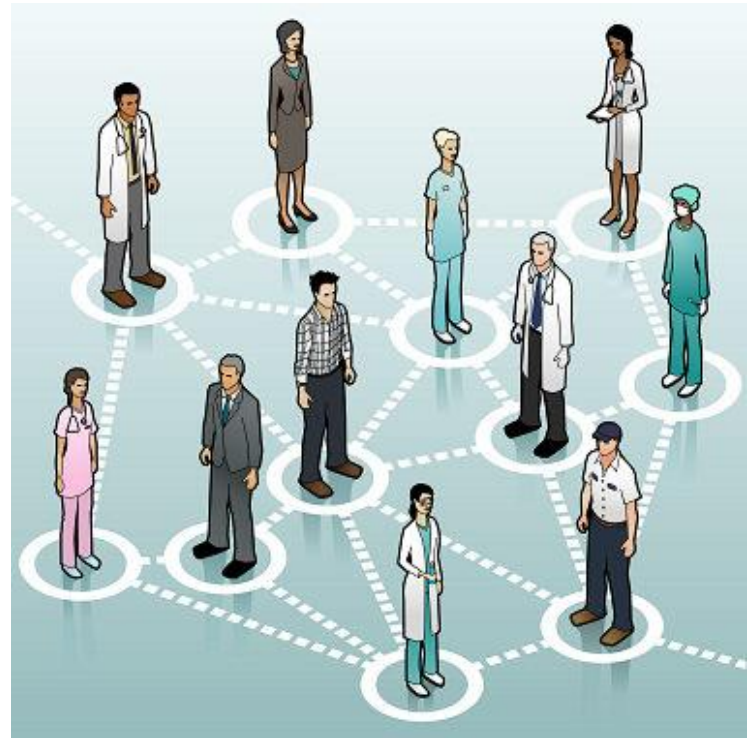
# ACTION

## WHEN WHO AND WHERE?

- **NURSING / ALLIED HEALTH TEAM**
  - INFECTION CONTROL MEASURES
  - BEDSIDE PROCEDURE CHECK LIST
- **SENIOR STUDENTS / JUNIOR DOCTORS**
  - INCIDENT LOGS / PATIENT SAFETY STEPS CHECK LIST
- **FACULTY**
  - INTERNAL PEER REVIEW AND BEST PRACTICES DEVELOPMENT IN CONCENTRIC CIRCLES WITH RIPPLE EFFECT WITH ONE STEP AT A TIME , ONE BED AT A TIME, ONE UNIT AT A TIME
- **DEPARTMENTS**
  - **DEVELOP OR RESURRECT & ENERGIZE INFECTION CONTROL COMMITTEE / SUPPORT CQM**
- **ADMINISTRATION :**
  - SUPPORT / RESOURCES / INCENTIVES/ RECOGNITION
  - PREP FOR INAUGURATION, ACCREDITATION



WHY ?



# SUMMARY

- Teamwork: Top Down /Bottom Up
- Leadership at all levels
- Patient Care: It is the right thing to do
- HealthCare Team : It deserves this
- Possible: It can be done
- Act as a role model
  - Follow a procedure, rules and guidelines as a DEMAND
  - To create and then COMMAND a team following
  - Don't worry about naysayers and initial non followers
  - THEY WILL FOLLOW.....BELIEVE IT
- It has been shown to be Evidence Based Practice
- Long Term Effect:
  - A few extra minutes today pays of in the long term in Safety ,Quality, Resources & Recognition



# PRIOR TO OPENING OF THE NEW HOSPITAL

- Have Processes in Place (Require starting now)
- 2017 Inauguration
  - Officials and Bureaucrats
  - Health Teamwork
    - We can showcase our work thus far
    - Main Presentation will be part of the inauguration
    - Poster Show in New Hospital during Inauguration



# RESPECTFUL PLEA

- You have the **M**anpower / **M**aterial / **M**eans / **M**onies
  - All you need is the **M**otivation
- Danger in the Status Quo
  - Please don't use the limitations of the system, environmental challenges, and the patient population you serve as a CRUTCH to maintain Status Quo
- Keep the Passion to Cynicism ratio HIGH
- Thank you





## **RESOURCES / REFERENCES**

**Also in Folder submitted to CQM Lead**

# INFECTION CONTROL

- Resource



World Health  
Organization

Patient Safety

A World Alliance for Safer Health Care

SAVE LIVES  
Clean Your Hands

## Glove Use Information Leaflet

**Outline of the evidence and considerations on medical glove use to prevent germ transmission**

Definitions

The impact of wearing gloves on adherence to hand hygiene policies has not been definitively established, since published studies have yielded contradictory results. However, the recommendation to wear gloves during an entire episode of care for a patient who requires contact precautions, without considering indications for their removal, such as an indication for hand hygiene, could actually lead to the

# GLOVES

- Worn to:
  - To reduce the risk of contamination of health-care workers hands
  - To reduce the risk of germ dissemination
    - To the environment
    - Transmission from the health-care worker to/from the patient
    - From one patient to another.
- Gloves should therefore be used during all patient-care activities that may involve exposure to blood and all other body fluid (including contact with mucous membrane and non-intact skin), during **contact precautions** and outbreak situations.



## KEY POINTS

- Glove use does **NOT** replace alcohol-based product or hand-washing
- Wear gloves when anticipated **contact** with blood or other body fluids, mucous membranes, non-intact skin or **potentially infectious** material
- Do **not** wear the **same pair** of gloves for more than one patient.
- Change gloves if **moving from a contaminated body site to another body site**
- Do **not reuse** gloves



### **STERILE GLOVES INDICATED**

*Any surgical procedure; vaginal delivery; invasive radiological procedures; performing vascular access and procedures (central lines); preparing total parental nutrition and chemotherapeutic agents.*

### **EXAMINATION GLOVES INDICATED IN CLINICAL SITUATIONS**

*Potential for touching blood, body fluids, secretions, excretions and items visibly soiled by body fluids.*

**DIRECT PATIENT EXPOSURE:** Contact with blood; contact with mucous membrane and with non-intact skin; potential presence of highly infectious and dangerous organism; epidemic or emergency situations; IV insertion and removal; drawing blood; discontinuation of venous line; pelvic and vaginal examination; suctioning non-closed systems of endotracheal tubes.

**INDIRECT PATIENT EXPOSURE:** Emptying emesis basins; handling/cleaning instruments; handling waste; cleaning up spills of body fluids.

### **GLOVES NOT INDICATED (except for CONTACT precautions)**

*No potential for exposure to blood or body fluids, or contaminated environment*

**DIRECT PATIENT EXPOSURE:** Taking blood pressure, temperature and pulse; performing SC and IM injections; bathing and dressing the patient; transporting patient; caring for eyes and ears (without secretions); any vascular line manipulation in absence of blood leakage.

**INDIRECT PATIENT EXPOSURE:** Using the telephone; writing in the patient chart; giving oral medications; distributing or collecting patient dietary trays; removing and replacing linen for patient bed; placing non-invasive ventilation equipment and oxygen cannula; moving patient furniture.

	<b>Indication</b>
<b>Gloves on</b>	<ol style="list-style-type: none"><li>1) Before a sterile procedure</li><li>2) When anticipating contact with blood or another body fluid, regardless of the existence of sterile conditions and including contact with non-intact skin and mucous membrane</li><li>3) Contact with a patient (and his/her immediate surroundings) during contact precautions.</li></ol>
<b>Gloves off</b>	<ol style="list-style-type: none"><li>1) As soon as gloves are damaged (or non-integrity suspected)</li><li>2) When contact with blood, another body fluid, non-intact skin and mucous membrane has occurred and has ended</li><li>3) When contact with a single patient and his/her surroundings, or a contaminated body site on a patient has ended</li><li>4) When there is an indication for hand hygiene.</li></ol>



# STERILIUM

- Pathogens may gain access to the caregivers' hands via **small defects in gloves** or by **hand contamination during glove removal**.
- Hand hygiene by **rubbing or washing** ensures hand decontamination



# CONTACT PRECAUTIONS      સંપર્ક સાવચેતી

- Gloves / Sterilium
- Norovirus
- Rotavirus
- Generalized rash
- Draining wounds
- Uncontrolled secretions
- Pressure ulcers
- Ostomy tubes
- Clostridium difficile
- Acidobacteria
- ESBL
- MRSA (44%)





# DROPLET PRECAUTIONS

- Standard Mask
- Travel 1 meter from the patient
  - Deposited on the host's nasal mucosa, conjunctivae or mouth
- Pertussis
- Influenza
- Diphtheria
- Neisseria Meningitidis



# AIRBORNE PRECAUTIONS

- N95 Mask
- Measles
- Severe Acute Respiratory Syndrome (SARS)
- Varicella (chickenpox)
- Swine Flu
- Mycobacterium tuberculosis



## BED UP > 30°

- Decrease the incidence of aspiration pneumonia and pressure ulcers
- *Ann Intern Med* 1992; 116:540-543
  - Bed Up decreased rates of aspiration of gastric contents four-fold
- *Lancet* 1999; 354:1851-1858
  - 34% in supine position developed VAP compared with 8% of patients in the head up group



# BED UP > 30°

## ○ Indications:

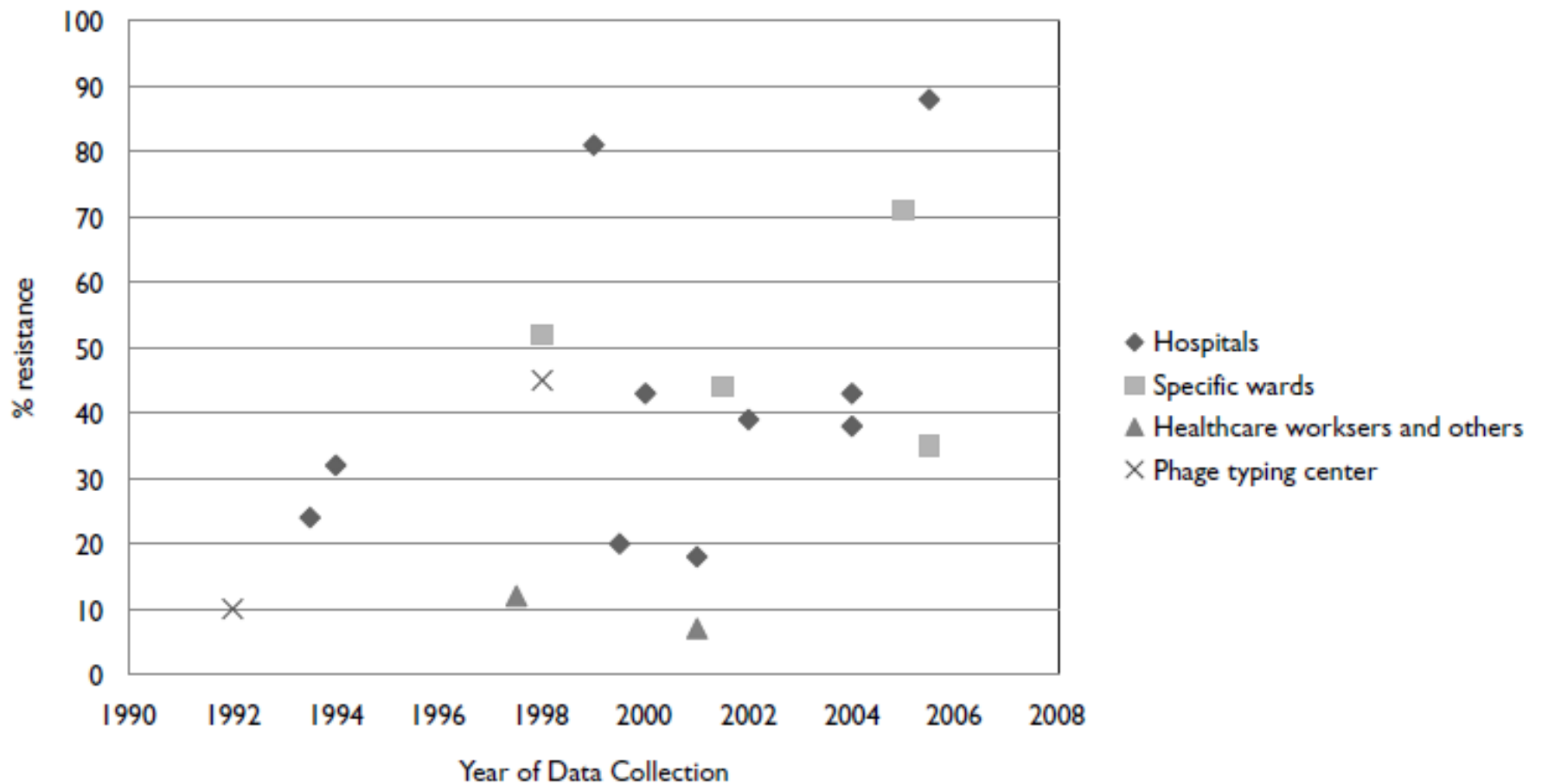
- Altered Sensorium / Overdose
- Nausea / Vomiting
- Intubated / Peri-Intubation

## ○ Contraindications

- Neurosurgical Approaches
- Ischemic Stroke (First 24 hours if tolerated)



## MRSA Resistance Rates from Studies in India Vary but Appear to Increase Over Time



# WHO'S "DIRTY DOZEN"

SEE WHO Feb 2017 released report with regional data

## WHO PRIORITY PATHOGENS

**CRITICAL** : Acinetobacter Baumannii – Carbp res  
Pseudomonas Aeruginosa – Carbp res  
Enterobacteriaceae Carbp' res ESBL

**HIGH** : Enterococcus , Staph MRSA, QR-Salmonella, Hb/Cb/NG

**MEDIUM** : Strep /Hemoph/Shigella



## CRIT CARE CLIN. 2011 JAN;27(1):149-62

### ○ Antibiotic de-escalation

- Mechanism whereby the provision of effective initial antibiotic treatment is achieved while **avoiding unnecessary antibiotic** use that would promote the development of **resistance**
- Based on **microbiology results** around the **day 3 therapy point**
- The **empiric antibiotics** that were started are stopped or reduced in number and/or **narrowed in spectrum**
- **Clinically effective and appropriate**



# DE-ESCALATION OF ANTIBIOTICS (43%)

Crit Care Med. 2012 May;40(5):1404-9. doi: 10.1097/CCM.0b013e3182416ecf.

## **Antibiotic strategies in severe nosocomial sepsis: why do we not de-escalate more often?**

Heenen S<sup>1</sup>, Jacobs F, Vincent JL.

### **⊕ Author information**

#### **Abstract**

**OBJECTIVES:** To assess the use of antibiotic de-escalation in patients with hospital-acquired severe sepsis in an academic setting.

**DESIGN:** We reviewed all episodes of severe sepsis treated over a 1-yr period in the department of intensive care. Antimicrobial therapy was considered as appropriate when the antimicrobial had in vitro activity against the causative microorganisms. According to the therapeutic strategy in the 5 days after the start of antimicrobial therapy, we classified patients into four groups: de-escalation (interruption of an antimicrobial agent or change of antibiotic to one with a narrower spectrum); no change in antibiotherapy; escalation (addition of a new antimicrobial agent or change in antibiotic to one with a broader spectrum); and mixed changes.

**SETTING:** A 35-bed medico-surgical intensive care department in which antibiotic strategies are reviewed by infectious disease specialists three times per week.

**PATIENTS:** One hundred sixty-nine patients with 216 episodes of severe sepsis attributable to a hospital-acquired infection who required broad-spectrum  $\beta$ -lactam antibiotics alone or in association with other anti-infectious agents.

**MEASUREMENTS AND MAIN RESULTS:** The major sources of infection were the lungs (44%) and abdomen (38%). Microbiological data were available in 167 of the 216 episodes (77%). Initial antimicrobial therapy was inappropriate in 27 episodes (16% of culture-positive episodes). De-escalation was applied in 93 episodes (43%), escalation was applied in 22 episodes (10%), mixed changes were applied in 24 (11%) episodes, and there was no change in empirical antibiotic therapy in 77 (36%) episodes. In these 77 episodes, the reasons given for maintaining the initial antimicrobial therapy included the sensitivity pattern of the causative organisms and previous antibiotic therapy. The number of episodes when the chance to de-escalate may have been missed was small (4 episodes [5%]).

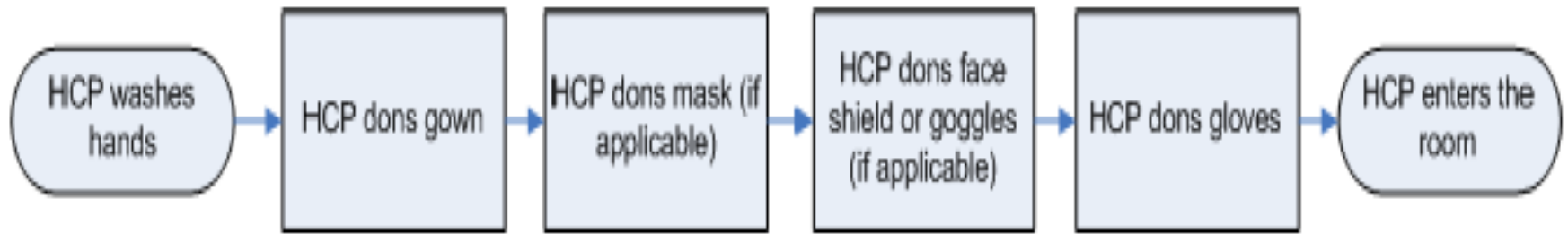


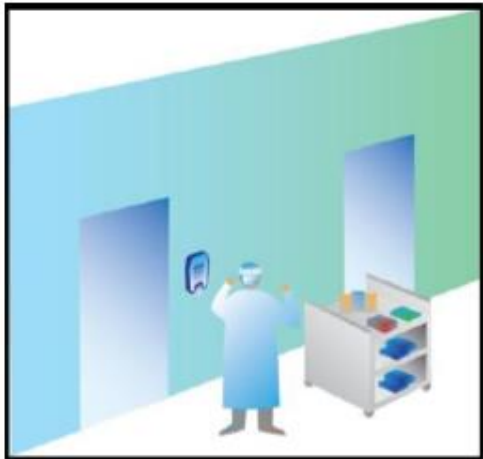
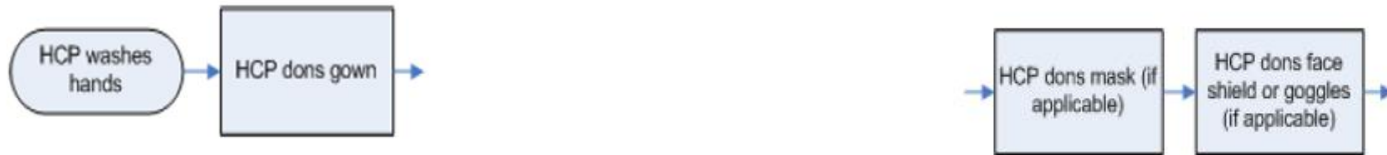
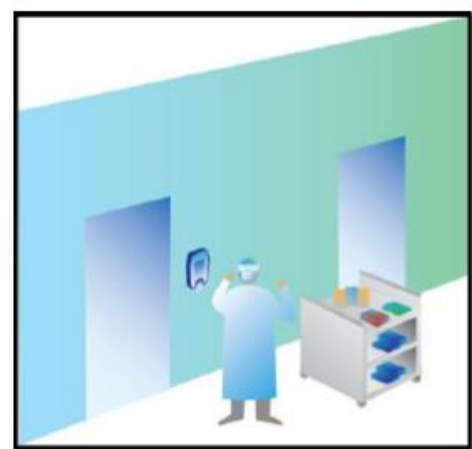
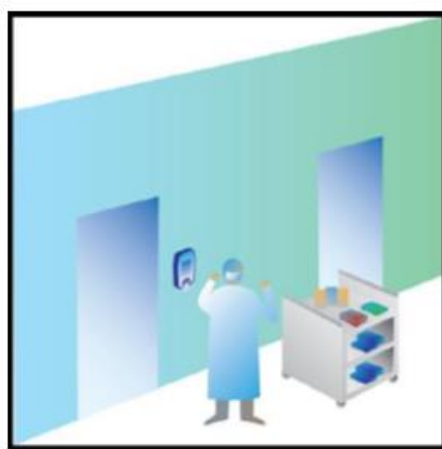
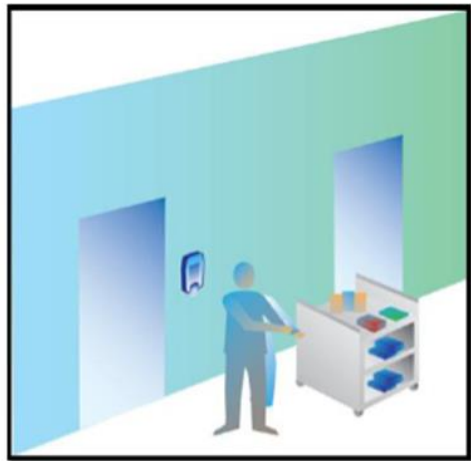
# DRAW CULTURES

- Indications for Blood Cultures
- Balance between wasteful and useful
  - Based on Pre-Test Probability (Cellulitis 2%+ to Shock 69%+)
  - **Suspicion** of bacteremia or fungemia
    - Especially Important: Sepsis, meningitis, osteomyelitis, arthritis, endocarditis, peritonitis, pneumonia, and fever of unknown origin

Does this adult patient with suspected bacteremia require blood cultures? AU Coburn B, Morris AM, Tomlinson G, Detsky AS SO JAMA. 2012 Aug;308(5):502-11.

# PROCEDURES AND PPE





संक्रमण नियंत्रण  
INFECTIION CONTROL  
येप नियंत्रण पगलां

बिस्तर  
स्वच्छता  
BEDSIDE  
HYGIENE

से संपर्क करें  
एहतियात  
CONTACT  
PRECAUTION  
संपर्क द्वारा येप अटकाववा

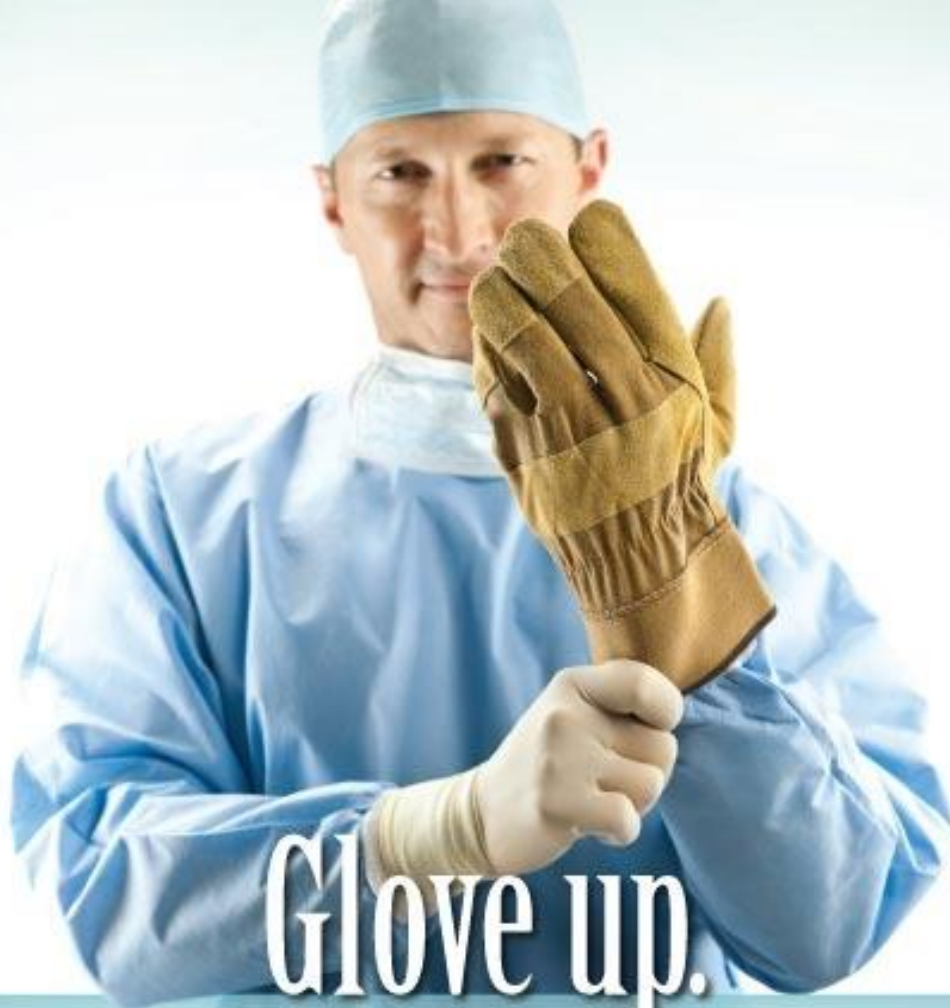
छोटी बूंद  
एहतियात  
DROPLET  
PRECAUTION

हवाई  
एहतियात  
AIRBORNE  
PRECAUTION

अलगाव  
एहतियात  
ISOLATION

जुदाई  
एहतियात  
SEPARATION





# Glove up.

## We're starting a major operation.

Mercy Health Partners has broken ground on one of its most important operations: A new state-of-the-art hospital designed to serve Cincinnati's west side.

*The new facility* will offer comprehensive care in nearly every specialty from cardiac and women's services to oncology and orthopedics. And, like other Mercy hospitals, it will deliver advanced medicine within a few miles of where patients and their families live.

This new hospital **complements** our growing network of primary care and specialty physician groups, sister hospitals, urgent care facilities, diagnostic centers and senior communities that provide a system of care for our entire community.

The Sisters of Mercy and The Franciscan Sisters of the Poor defined our mission in 1858, and for the past 152 years we have been dedicated to **their vision**. Today, we know they are proud.

[e-mercy.com](http://e-mercy.com)

Take me to my Mercy.





[www.cdc.gov/HandHygiene](http://www.cdc.gov/HandHygiene)











# RECOMMENDATIONS

- Blood culture
  - In duplicate
  - Before starting antibiotic
- Urine
  - Midstream Early Morning urine sample
  - Mention in the form if catheterized sample is sent
- Sputum
  - Preferable Early morning sample
  - If report does not correlate clinically repeat sample
- Fluid
  - Leak proof sterile container



# Recommendations (cont..)

- **Avoid or minimize delay in transportation**
- **Shift to Automation**
  - For culture & sensitivity
- **Critical reports** on personal contact
- **Descalation** of antibiotics
  - After getting Culture and sensitivity report

