Critical Care Communications

A monthly newsletter of ISCCM
(Indian Society of Critical Care Medicine

» Venue

14th NATIONAL CONFERENCE
INDIAN SOCIETY OF CRITICAL CARE MEDICINE

The light of Dawn - the Best address in Bhopal

Venue Address:
NOOR-US-SABAH PALACE
(A WELCOME HERITAGE HOTEL)
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About Bhopal

Bhopal, capital of Madhya Pradesh combines scenic beauty, historicity and modern urban planning. It is situated on the site of an 11th century city, Bhojapal, founded by Raja Bhoja.

Bhopal today presents a multi-faceted profile; the old city with its teeming market places and fine old mosques and palaces still bear the aristocratic imprint of its former rulers; among them the succession of powerful Begums who ruled Bhopal from 1819 to 1926. Equally impressive is the new city with its verdant, exquisitely laid out parks and gardens, broad avenues and streamlined modern edifices.

The city of Bhojpal was founded by Raja Bhoj in the 11th century. It lies at the heart of India, at about 550 meters above mean sea level. During December, the temperature varies between 10-24°C. A cosmo- politan culture with different ethnic groups adds vibrant colors to the city. Bhopal is well connected by air to Delhi and Mumbai & by trains to all the major cities of India.

Area: 285 sq. km., Altitude : 427 metres above mean sea level.

Air: Direct flights are available between Bhopal and Delhi, Mumbai, Patna, Calcutta. Indian Air lines, Air Sahara, Jet airways and Air Deccan are fliers operating from city.

Rail: Bhopal is on Northern and North Eastern Railway route and directly connected with main cities of the country.

Road: City of Bhopal is well connected through road with major cities of the country. Frequent bus service is available from city to prominent cities of the state.

Local Transport: City buses, Auto rickshaw, Taxis etc. are available in various locations of the city.

Lakes of Bhopal

The Upper Lake came into existence on construction of an earthen dam across the River Kolans at the location of present day Kamla Park, by Raja Bhoj in the 11th century. The catchments of Upper lake is extended in 361 km^2 area, while water spread area is restricted to 31km^2.

The Lower Lake was created after construction of an earthen dam known as Pul Pukhta by Nawab Chhote Khan, the Minister of Nawab Hayath Mohammad Khan in 1794. This lake is situated in the heart of the city and almost entire catchments is occupied by human settlements. Compared to the Upper Lake, it has a small catchment area of 9.60 km^2 and submergence area of 1.29 km^2.

Sarangpani lake is a typical rain fed lake that receives water from its catchments. After the establishment of BHEL, and subsequent development of the area, this pond is being used as a setting tank for the sewage of neighboring settlements. This lake has a surface area of 0.0426 km^2 with a maximum length of 0.38 km.

Char Imli Pond is a perennial water body, which could be classified as wet bund and most appropriate for fish culture. Although pond is small but having fountain in the center of the pond attracts people to visit the place. This is very much in the heart of the city.

» In this issue

Lakes of Bhopal (contd...)

PLACES OF TOURIST INTEREST IN BHOPAL

Bharat Bhawan: This is a center for visual arts, a unique national institute in India. Designed by the renowned architect Charles Correa.

Upper and Lower lakes: The upper lake is divided from the lower by an over bridge and is 6 Sq. Km. in area. M.P. tourism provides facilities for exciting trips by sail, paddle and motorboats & water sports.

Museum of Man: This open-air exhibition is a presentation of actual-size dwellings typical of contemporary tribal cultures in different states of India.

Van Vihar: The National Park is located on a hill adjacent to the upper lake. The 5 km drive is a unique safari experience while you can spot tigers, white tigers, albino bear, crocodiles, leopards, migratory birds etc.

Birla Mandir: Situated in the Arera Hills, provides a spiritual experience & a panoramic view of the city.

Taj-ul-Masjid: Standing tall in the heart of old Bhopal, this is the largest mosque in the country.

Jain Temple: This beautiful temple is situated on the highest hilltop of Bhopal. A ropeway over the hilltop provides a thrilling ride to it, from where you can have a bird's eye view of Bhopal city.

Regional Science Centre: Houses about 300 science exhibits in "Invention" and "Fun Science" galleries along with a planetarium.

AROUND BHOPAL

Bhimbetka: This world heritage site is 46 kms from Bhopal. The rocky terrain of dense forests has over 600 shelters belonging to Neolithic age. They have vivid, panoramic detailed paintings in over 500 caves depicting the life of prehistoric cave dwellers.

Bhojpur Temple: Dating back to the period of Raja Bhoj, it is about 1000 yrs old. Just a half an hour drive from Bhopal, en route to Bhimbetka this has the biggest Shiva lingam carved out of a single stone.

Sanchi: The Mauryan emperor, Ashoka the great, originally built the famous Sanchi Stupa. Located on a picturesque hillock, 46 kms away from Bhopal, this is a masterpiece of Buddhist art, housing stupas, monasteries, temples, and pillars dating between 3rd century B.C. to the 12th century A.D.

Ujjain: 188 kms from Bhopal, the city of king Vikramaditya and Kalidas is host to the Mahakumbh mela held every 12 years. This temple town has the famous Mahakaleshwar temple, and is one of the twelve jyotirlingas that are consecrated in various Hindu shrines across India.

Panchmarhi: The verdant jewel of Madhya Pradesh, this tranquil hill resort is about 195 Kms from Bhopal. The enchanting beauty of nature is expressed in the gentle jungle brooks, cascading falls, serene greens, wild bamboo groves and dense Sal trees, and has been the locale for many a Bollywood flick.

Mandu: At an altitude of 2000 ft., the city of Joy is truly a celebration in stone; the monuments bear silent testimony to the profound love of Prince Baz Bahadur and his lovely consort Roopmati. At a distance of 285 kms from Bhopal.

Orchha: Orchha's grandeur is captured in stone, frozen in time, a rich legacy of the ages. The palaces and temples built by its Bundela rulers in the 16th Century, Orchha boasts of the exquisite Jehangir Mahal, a tiered palace crowned by graceful chhatris. In Raja Mahal and Laxminarayan Temple, vibrant murals bring the walls and ceilings alive.

Omkareshwar: Nestled in the picturesque surroundings of the Narmada Valley, situated on the confluence of the Narmada and Kaveri, here one can visit the famous temples built in the mediaeval Barhmanic style. Omkareshwar also has one of the 12 Joytirlingas enshrined at the temple of Shri Omkar Mandhata. Pilgrims throng the temple everyday. Regular boat rides in the river Narmada upstream and downstream make your visit worth while.

Gwalior: Gwalior has an indelible mark of valour etched upon its many monuments, palaces, temples and forts. The Gwalior fort stands as a giant monolith of the Rajput Dynasty. Built by Raja Mansing Tomar, this colossal structure is a testimony to the victories of the Rajput dynasty. Emperor Babur described it as the pearl amongst the fortresses of hind. The entire landscape at Gwalior seems as if giving a standing avation to the symbol of Bravery and Valour.

Madhya Pradesh offer's its visitors a grand experience of its historical past. A visit to palaces and forts of Gwalior, Orchha and Mandu allows one to imagine the history of these splendid structures. The saga of the beyond years still haunt the corridors of these monumental exhibits of Madhya Pradesh.

EDITORIAL MESSAGE

Dr. Rajesh Chawla

Dear Friends,

At the outset I would like to wish all our readers and their families and friends a very happy and fulfilling new year! I would also like to take the liberty of using this platform to express my sincere gratitude to all the members for electing me President (elect) of Indian Society of Critical Care Medicine for the period 2008-10.

It gives me great pleasure in bringing out the first bulletin of this new year.

I am writing to you just before the annual conference, being held this year in Bhopal, the beautiful city of lakes. The organizing team has worked very hard to make this event a wonderful experience, rich, both in scientific content and extracurricular activities. The international faculty includes Dr, John Kellum, Dr. Annane, Dr. K. Reinhart, Dr. Lawrence Martin, to name a few. The scientific program will be very comprehensive and thought provoking, salient features of which are mentioned elsewhere in the bulletin.

Physicians who run their own establishments always face problems in buying equipment. Not only is it very difficult to decide on quality and cost-effectiveness, often the after sales services become nightmarish. Dr. N. Rungta highlights this issue in his article. In this context I request you to write to us about equipment related problems that you are facing. We will highlight them in the newsletter and hopefully it will keep the suppliers on their toes!

Surviving Sepsis Campaign has helped physicians immensly in management of severe sepsis and septic shock. Recent guidelines have been published as a special article in the January issue of Critical Care Medicine. Highlights of this article are presented in this issue. There are very few changes from the guidelines published in 2004. One of the major changes is in the grading of recommendations based on the quality of evidence available. In view of recent literature, there are few changes recommended for vasopressors use, antibiotics use, source control, use of corticosteroids and recombinant human activated protein C.

I would recommend that you also read the original article when you have the time.

As before, once again I request you to contribute to this bulletin to make it more representative and meaningful.

PRESIDENT MESSAGE

Dr. R.K. Mani

Success does not come alone; it comes in the company of all.

The ISCCM has emerged from its formative years into a modern, unified and progressive organization. Today, ISCCM is on the threshold of greater things and we have come to realize, more than ever before, the true meaning of collective effort.

The challenge is not only to sustain the momentum of success but also to take it forward to a new paradigm to its rightful place on the world stage.

We can look back with pride at our determined efforts in this direction. In the last few years, we have taken decisive steps towards shaping the ISCCM into the professional body of our dreams.

Taking Education To Global Standards

We have witnessed an explosion of knowledge-base in the field of Critical Care Medicine along with an urgent need for standardized training programs. To meet this challenge, we are continually engaged in designing and putting together training programs at all levels. We are happy to note that our postgraduate program has matured to match the standards of those conducted by the National Board of examinations. We have also insisted on, and created, a 2-year fellowship course incorporating the elements of the European CoBaTrice training program.

Spreading the wings

Over the years the ISCCM family has grown steadily with a membership of 3984.

Across the country we have 28 branches and new branches are in the offing from the Northeast. While we move speedily forward we also have been aware of the need to grow in a controlled manner.

The root and the trunk should be strong enough to support the outermost branch. Within a federal framework, the center-city branch relationship is being redefined on clear terms so that there is more harmony and understanding.

Our Publications

Our research potential must find expression in print that receives appreciation worldwide. We have for long been aware that a lot needs to be done in this direction. Our efforts have culminated in the IJCCM coming of age with improved standards of its contents. We can take pride in the fact that over the last few years we have managed to bring out issues regularly and we no longer fall short on articles. We are now read and referenced worldwide in frontline journals. We would also like to bring to your notice that the IJCCM and the newsletter shall be printed and circulated directly by the head office so that our editors can focus on their onerous jobs.

Our Conferences

Our conferences showcase our talents and irrepressible growth. These annual meetings have soared in popularity and are increasingly among the most sought after events in the academic calendar. The growing number of free papers from all over the country and the attendance that they draw are a testimony to the nascent energy for research in the field.

Ethics and guiding principles

As we are moving forward towards assuming greater responsibility and functional complexity we have made sure that we keep close to our core values. Every executive member has solemnly agreed to abide by the ethical code of conduct laid down by the ISCCM. Democratic principles and control mechanisms are alive with their integrity jealously guarded.

Revenue Generation

One of the greatest challenges for a rapidly growing organization with an ambitious national agenda is to maintain its self sufficiency. Financial support for the ever increasing size and needs of the ISCCM is becoming increasingly essential. New vistas of fund generation have been devised. There would now be more assured income from the annual meetings and through endorsements in our website and publications.

However commercial interests that devalue the commitment and mission of the institution must be carefully examined. We are aware that embracing commercial sponsorship is not without its risks. Certainly, as external funding increases, control of an institution's identity, mission and principles must be vigorously guarded.

Our Future

Critical care in India is undergoing continual evolution. There is, in our Society, a fortuitous coming together of a shared purpose, positive energy and self confidence mirroring the prevailing mood in the country.

As critical care medicine continues to advance, we will develop more and more therapeutics – some of which will be expensive to administer – that may be beneficial to some, but not all, patients. In the face of limited health care budgets and a large underprivileged population unable to afford basic healthcare, we need to refocus on their overall impact on the society; otherwise we risk reaching a point at which marginal gains to individuals threaten the welfare of the majority. This will be a Herculean challenge that we would like to accept in the near future.

Therefore the ISCCM has not only published a position statement on End of Life Care but has taken it forward to the creation of a draft bill by the Indian Law Commission. Undoubtedly, Legislation on this issue would have the potential to change fundamentally the way we practice critical care in India.

So, I believe our best is yet to come, and we shall walk together, not alone.

Delhi Critical Care Symposium

The 6th Annual Conference of Delhi and NCR Chapter, Delhi Critical care Symposium 2007 was held from 27th & 30th September at Hotel Intercontinental New Delhi, which was attented by more than 500delegates, in this conference for the first time **Board Review Course** was organized in the association with **National Board of Examinations**.

As a part of this conference six workshop were held at different hospitals of Delhi from 27th to 29th

Sl. No.	Topic	Venue
1	Mechanical Ventilation	Max Superspecialty Hospital, Saket New Delhi
2	FCCS Course	Fortis Hospitals, Noida
3	ICU Procedures	Batra Hospitals, New Delhi
4	Infections	Apollo Hospitals, New Delhi
5	Neuro intensive Care	Apollo Hospitals, New Delhi
6	Nursing Critical care	Sir Ganga Ram Hospital, New Delhi

The international faculty included
Dr. Michael S. Niederman(U.S.A)
Dr. Stuart Baker (Australia)

The national faculty included eminent teacher's members from all over India.






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13th -17th FEBRUARY, 2008 • BHOPAL (INDIA)

www.criticare2008.org

CONGRESS
15th, 16th & 17th Feb., 2008

1 Case Scenario
2 Criticare Quiz
3 Free Paper Session
4 Guidelines
5 Meet The Expert
6 Panel Discussions
7 Plenary Lectures
8 Pro-con Debates
9 Satellite Session
10 Satellite Session
11 Theme Lecture
12 Thematic Lectures
13 Tutorials
14 Yearly Review

IMPORTANT PROGRAMMES
12th to17th Feb. 2008

PROGRAMMES	DATES
Preconference Courses	12th, 13th & 14th
Preconference Cme	13th & 14th
Preconference Workshops	13th & 14th
Exhibition	13th Onward
ISCCM Examination	14th
Inauguration	14th
Oration	14th
Theme Lecture	15th
Executive Committee Meeting	15th
Evening Cultural Programme	15th & 16th
Year In Review	15th & 17th
Free Paper Session	16th
Hansraj Nayyar Award	16th
Banquet Gala Evening Dinner	16th
General Body Meeting	16th
Swearing in Ceremony	16th
Valedictory	17th

CONFERENCE VENUE

NOOR-US-SABAH PALACE
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CONFERENCE SECRETARIAT

Dr. Pradip K. Bhattacharya
Organising Secretary, CRITICARE 2008

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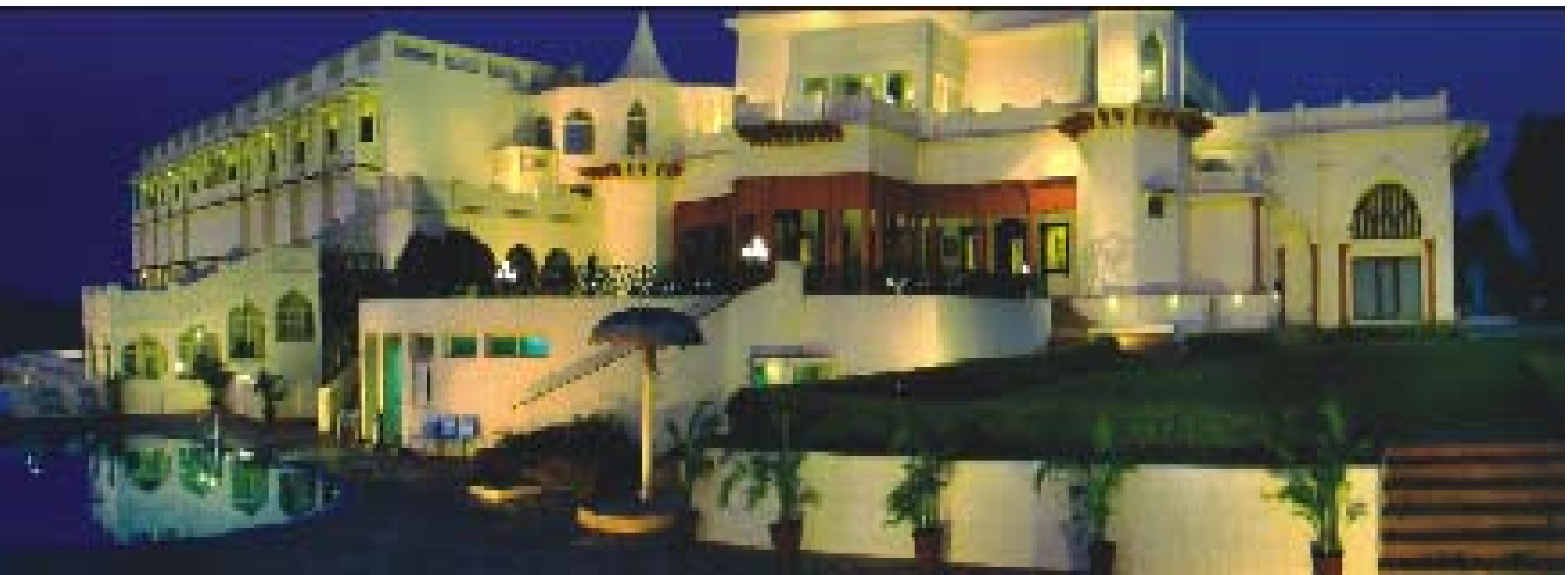

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CRITICARE - 2008
International Critical Care Congress

REGISTRATION FEES

	Upto 31st Dec. 2007	From 1st Jan. 2008 (Including Spot)
ISCCM Members	Rs. 4500/-	Rs. 7000/-
Non-Members	Rs. 5200/-	Rs. 7500/-
Nurses / Paramedics	Rs. 1000/-	Rs. 1500/-
Post Graduates	Rs. 2500/-	Rs. 3500/-
SAARC Members	US$ 225	US$ 375
Foreign Delegates	US$ 400/-	US$ 600
Accompanying Person (Each)	Rs. 2500/-	Rs. 3000/-
Meet the Expert Session	Rs. 500/- or US$ 30	Rs. 600/- or US$ 40

- Registration should be done on prescribed forms only (Xerox and website printouts acceptable).
- Registration is mandatory for all participants (irrespective of the type of participation), trade delegates and children above 10years.
- P. G. Students: Certificate from respective Head of department in mandatory.
- Compliments & accommodation: Not guaranteed for delayed & spot registration.
- Entitlements include conference kit. breakfast, lunches, dinners, tea/coffee & cultural programmes.
- All refunds will be settled after the conference.
- All registered delegates will get an ID Number, which is printed on the receipt. This ID No. must be quoted in all "future communications".
- Correspondence by e-mail will be preferred. No financial transaction through internet.

FLIGHT SCHEDULE JET AIRWAYS TO BHOPAL

From	To	Flight No.	Departure Time	Arrival Time	Days of Operation
DELHI	BHOPAL	9W731 9W737	0740 Hrs 1810 Hrs	1025 Hrs 1940 Hrs	Daily Daily
BHOPAL	DELHI	9W731 9W737	1100 Hrs 2010 Hrs	1215 Hrs 2240 Hrs	Daily Daily
MUMBAI	BHOPAL	9W3107 9W3105	0555 Hrs 1715 Hrs	0755 Hrs 1840 Hrs	Daily Daily
BHOPAL	MUMBAI	9W3108 9W3106	0825 Hrs 2035 Hrs	1030 Hrs 2205 Hrs	Daily Daily
INDORE	BHOPAL	9W731	0945 Hrs	1025 Hrs	Daily
BHOPAL	INDORE	9W737	2010 Hrs	2050 Hrs	Daily

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CRITICARE - 2008
International Critical Care Congress

PRECONFERENCE REGISTRATION DETAILS

S.N.	Event	Duration / Day	Registration Charges	Max Registration
1.	**CME**	Two Days 13th & 14th Feb. 08	Rs. 1200/- US$ 125	200
2.	**WORKSHOPS**			
a.	Echocardiography & Doppler in Intensive Care Unit	13th Feb. 08	Rs. 2000/- US$ 125	50
b.	Basic 4 Advanced Airway Management in Intensive Care Unit	13th Feb. 08	Rs. 2000/- US$ 125	50
c.	Intensive Care Nutrition	13th Feb. 08	Rs. 2000/- US$ 125	50
d.	Infection Control Workshop	13th Feb. 08	Rs. 2000/- US$ 125	50
e.	Mechanical Ventilation Basics. Current Strategies Emerging Concepts	14th Feb. 08	Rs. 2000/- US$ 125	50
f.	Haemodynamic Monitoring	14th Feb. 08	Rs. 2000/- US$ 125	50
g.	Patient Simulator Workshop	14th Feb. 08	Rs. 2000/- US$ 125	50
h.	Arterial Blood Gas Analysis	14th Feb. 08	Rs. 2000/- US$ 125	50
f.	Renal Replacement Therapy	14th Feb. 08	Rs. 2000/- US$ 125	50
3.	**COURSES:**			
a.	FCCS COURSE (Provider & Instructor) SCCM USA Certified	Two Days (13th & 14th Feb. 08)	Provider Course. Rs. 3500/- US$ 200 Instructor Course: Rs. 10000/- US$ 250	50 5
b.	International Course on Ultrasound in Intensive Care Emergency & Trauma Care	Two Days (13th & 14th Feb. 08)	Rs. 3500/- US$ 250	50
c.	ACLS COURSE (Provider) AHA USA Certified	Two & Half Days (12th, 13th & 14th Feb. 08)	Rs. 4000/- US$ 250	50
d.	BASIC PAEDIATRIC INTENSIVE CARE COURSE	Two Days (13th & 14th Feb. 08)	Rs. 2500/- US$ 200	50

Single Delegate can register for either Two Workshops (One for 13th & One for 14) or CME or One Course along with the Main Conference.

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INTERNATIONAL FACULTY

Djillali Annane, *France*

John Kellum, *USA*

Prof. Lawrence Martin, *USA*

Abrham Mallick, *UK*

Jatindar Somal, *USA*

Dr Vineet Nayyar, *Australia*

Konrad-Reinhart, *Germany*

Ramesh Nagappan, *Australia*

Dr Vineet Nayyar, *Australia*

Saxon Ridley, *UK*

Vijay Deshpande, *Australia*

Robert Bob Kacmarek, *USA*
Andres Esteban
Randy Wax, *Canada*

Mitchell Levy, *USA*
George Karam, *USA*
Daniel Lichtensten, *USA*

Gareth L. Thomas, *UK*
Roop Kishen, *UK*
Luca Nary, *Italy*

Enrico Storti, *Italy*
Ian Seppelt, *Australia*

NATIONAL FACULTY

Ajita Mehta, *Mumbai*
Ajay Goenka, *Bhopal*
Amit Verma, *Delhi*
Anjan Datta, *Kolkata*
Anoop Hajela, *Bhopal*
Anurag Yadava, *Bhopal*
Arghya Majumdar, *Kolkata*
Arvind Bhome, *Pune*
Ashit Bhagwati, *Mumbai*
Ashith Egde, *Mumbai*
Ashok Bajpai, *Indore*
Atul Kulkarni, *Mumbai*
B. Ray, *Jamshedpur*
B.O. Bande, *Pune*
B.K.Rao, *Delhi*
C.C. Chaubal, *Bhopal*
C. K. Jani, *Mumbai*
C.S. Agarwal, *Indore*
Camilla Rodrigues, *Mumbai*
D.P. Samaddar, *Jamshedpur*
Deepak Govil, *Delhi*
Dhruv Chaudhry, *Rohtak*
Dilip Karnad, *Mumbai*
Dipankar Sarkar, *Bhopal*
Farhad Kapadia, *Mumbai*
Farokh E. Udwadia, *Mumbai*
G.C. Khilnani, *Delhi*

Gopal Batni, *Bhopal*
Gopal Pelpu, *Hyderabad*
Gopesh Modi, *Bhopal*
H.K. Pande, *Bhopal*
H.S. Trivedi, *Bhopal*
J.V. Divatia, *Mumbai*
Jagdish Chander, *Chandigarh*
Jose Chacko, *Bangalore*
K. Mohan Das, *Mumbai*
Khusrav Bajan, *Mumbai*
Lalit Mehdiratta, *Bhopal*
Lata Bhattacharya, *Bhopal*
Lokendra Dave, *Bhopal*
M. B, Agarwal, *Mumbai*
Manimala Rao, *Hyderabad*
Manish Munjal, *Jaipur*
Manoj K Goel, *Delhi*
Mathew Joseph, *Vellore*
Mohan Mathew, *Cochin*
Mradul Daga, *Delhi*
Mridul Panditrao, *Wardha*
N. Ramakrishnan, *Chennai*
N.P. Misra, *Bhopal*
Narendra Rungta, *Jaipur*
Neena Rungta, *Jaipur*
Omender Singh, *Delhi*
P.K. Mishra, *Bhopal*

P.N. Agarwal, *Bhopal*
Prabha Desikan, *Bhopal*
Pradeep Bhatia, *Jodhpur*
Pradip K. Bhattacharya, *Bhopal*
Pradip Kolekar, *Bhopal*
Pradumn Pandey, *Bhopal*
Prakash Shastri, *Delhi*
Pravin AmIn, *Mumbai*
Prithwis Bhattacharya, *Shillong*
R.C. Agarwal, *Bhopal*
R. K. Mani, *Delhi*
R.P. Kaushal, *Bhopal*
Rajan Barorkar, *Nagpur*
Rajan Ketrapal, *Bhopal*
Rajesh Bhagchandani, *Bhopal*
Rajesh Chawla, *Delhi*
Rajesh Pandey, *Delhi*
Rajnishk Jain, *Bhopal*
Ram Rajgopalan, *Chennai*
Raman Sardana, *Delhi*
Rashid M. Khan, *Aligarh*
Ravindra Sarnaik, *Nagpur*
Rohani Kelkar, *Mumbai*
S.N. Agarwal, *Bhopal*
Sajalde, *Bhopal*
Samir Sahu, *Orissa*
Sanjay Danuka, *Indore*

Santosh Padhy, *Indore*
Satish Deopujari, *Nagpur*
Sheila Nainan Myatra, *Mumbai*
Shibhu Pillai, *Bangalore*
Shirish Prayag, *Pune*
Shivakumar Iyer, *Pune*
Shruti Nagarkar, *Mumbai*
Shyam Sunder Tipparaju, *Hyderabad*
Simran Singh, *Mumbai*
Sri Ram Sampath, *Bangalore*
Subarata Maitra, *Kolkata*
Subhash Todi, *Kolkata*
Subodh Varshney, *Bhopal*
Sudhir Dubey, *Bhopal*
Suhasini Tirumala, *Hyderabad*
Sumit Ray, *Delhi*
Suresh Ramasubban, *Kolkata*
Syed Moied Ahmed, *Aligarh*
T. C. Kriplani, *Jabalpur*
T.V.S.P. Murthy, *Delhi*
V.E. Tambe, *Nagpur*
V.M. Agnihotri, *Bhopal*
Vivek P., *Hyderabad*
Wg. Cdr. R.M. Sharma, *Delhi*
Wg. Cor. Ravindra Chaturvedi, *Delhi*
Yatin Mehta, *Delhi*
Yogesh B. Jain, *Bhopal*

Scientific Programme Layout Criticare-2008, Bhopal

15TH FEBRUARY 2008

0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Atreya Hall 1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
THEME LECTURE	PLENARY LECTURES	THEMATIC	THEMATIC	YEAR IN REVIEW (ADULT CRITICAL CARE)	L	CASE SCENARIO	PANEL DISCUSSION	SATELLITE SESSION	PRO-CON DEBATE	CRITICARE QUIZ
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Agnivesha Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
MEET THE EXPERT	-	THEMATIC	THEMATIC	THEMATIC	U	CASE SCENARIO	THEMATIC	SATELLITE SESSION	PRO-CON DEBATE	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Charaka Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
MEET THE EXPERT	-	THEMATIC	THEMATIC	PANEL DISCUSSION	N	CASE SCENARIO	THEMATIC	SATELLITE SESSION	PRO-CON DEBATE	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Dhanwantari Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
	-	THEMATIC	PANEL DISCUSSION	PANEL DISCUSSION	C	GUIDE LINES	PANEL DISCUSSION	SATELLITE SESSION	PRO-CON DEBATE	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Shushruta Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
	-	THEMATIC	PANEL DISCUSSION	PRO-CON DEBATE	H	THEMATIC	TUTORIALS	SATELLITE SESSION	TUTORIALS	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	J.C.bose Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
PAEDIATRIC CRITICAL CARE SESSION						PAEDIATRIC CRITICAL CARE SESSION				

16TH FEBRUARY 2008

0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Atreya Hall 1300-1400	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
	PLENARY LECTURES	THEMATIC	THEMATIC	FREE PAPER		CASE SCENARIO	THEMATIC	SATELLITE SESSION	PRO-CON DEBATE	CRITICARE QUIZ
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Agnivesha Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
MEET THE EXPERT	-	THEMATIC	THEMATIC	FREE PAPER	L	CASE SCENARIO	THEMATIC	SATELLITE SESSION	PRO-CON DEBATE	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Charaka Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
MEET THE EXPERT	-	THEMATIC	THEMATIC	FREE PAPER	U	CASE SCENARIO	THEMATIC	SATELLITE SESSION	PRO-CON DEBATE	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Dhanwantari Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
	-	PANEL DISCUSSION	THEMATIC	FREE PAPER	N	PRO-CON DEBATE	GUIDELINES	SATELLITE SESSION	PRO-CON DEBATE	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Shushruta Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
	-	PANEL DISCUSSION	PRO-CON DEBATE	FREE PAPER	C	TUTORIALS	TUTORIALS	SATELLITE SESSION	TUTORIALS	-
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	J.C.bose Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
PAEDIATRIC CRITICAL CARE SESSION					H	PAEDIATRIC CRITICAL CARE SESSION				
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	Hargovind Khurana Hall	1400-1500	1500-1600	1600-1700	1700-1800	1800-1900
CRITICAL CARE NURSING WORKSHOP						CRITICAL CARE NURSING WORKSHOP				

17TH FEBRUARY 2008

0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	1300-1400	1400-1600 Atreya Hall	1500-1600
	PLENARY LECTURES	PANEL DISCUSSION	YEAR IN REVIEW (ADULT CRITICAL CARE)	TUTORIALS	TUTORIALS	L	VELIDICTORY
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	1300-1400	Agnivesha Hall U	
MEET THE EXPERT	-	THEMATIC	THEMATIC	TUTORIALS	THEMATIC	Charaka Hall N	
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	1300-1400	Dhanwantari Hall C	
MEET THE EXPERT	-	THEMATIC	THEMATIC	TUTORIALS	THEMATIC	Shushruta Hall H	
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300		Hargovind Khurana Hall	
	-	PANEL DISCUSSION	THEMATIC	GUIDE LINES			
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	1300-1400		
	-	PANEL DISCUSSION	PRO-CON DEBATE	TUTORIALS			
0800-0900	0900-1000	1000-1100	1100-1200	1200-1300			
CRITICAL CARE NURSING WORKSHOP							

14th Annual National Conference
Indian Society of Critical Care Medicine

13TH -17TH FEBRUARY. 2008 • BHOPAL (INDIA)

www.criticare2008.org

13th – 14th February, 2008
BASIC PEDIATRIC INTENSIVE CARE WORKSHOP

Welcome Organizer Introduction and objectives.
Acute respiratory failure and respiratory monitoring.
Shock Diagnosis and management and basic hemodynamic monitoring
Mechanical Ventilation.
Neurological support in ICU & ICP Monitoring.

Skill Stations (Hands on / Demonstration) by rotation
Group I Vascular access Arterial Line. CVP line
Group II Defibrillation, External pacing and Pericardiocentesis
Group III ICP Monitoring

Skills stations in 3 groups by rotation
Mechanical ventilation stations in 3 groups by rotation
Group I Mechanical ventilation I
Group II Mechanical ventilation II
Group II Mechanical ventilation III

Infections and antibiotics in PICU
Fluid and electrolyte therapy in PICU
General care including sedation and analgesia
Critical Care transport

Case discussions in groups by rotation
Group 1 Respiratory failure Blood gases
Group 2 Renal Failure
Group 3 Shock (Septic Shock)
Group 4 Febrile Coma

Case discussions in groups by rotation
Group 1 Respiratory failure and Ventilation: Abn. lung
Group 2 DKA
Group 3 Shock: Cardiogenic
Group 4 Status EpileptICUs

Written Evaluation
Certificates distribution

15th - 16th February, 2008
PAEDIATRIC CRITICAL CARE PROGRAMME

PRO-CON DEBATE
Albumin in shock Yes / No
Steroid in weaning from neonatal ventilation for VLBW babies

CASE SCENARIOS
Interactive Picture session

THEMATIC
Pediatric Sepsis Guidelines: Use in Indian Scenario
Steroids in PICU
Sepsis and Septic shock-Global perspective
Judicious use of ionotropes in PICU and NICU
How good is your PICU
Acute febrile encephalopathy without an apparent cause
A child in coma with suspected Poisoning/Drug abuse
Hypothermia: When. How and why?
Difficult Fluid and Electrolyte Situation in PICU - SIADH/Diabetes Insipidus
RDS and Non-Invasive ventilation : Current evidence
Permissive Hypercapnia in Neonatal Ventilation
Neonatal Sepsis: Choice of Antibiotic
A Bleeding Sick Neonate: How to keep things under control
High Frequency Oscillation and Nitric Oxide in PICU
Non-invasive ventilation in PICU
Disease specific Ventilation in PICU - ARDS / Pulmonary Hemorrhage
Lung recruitment strategies in Pediatric ventilation
Is weaning from ventilation an Art or Science?
Life threatening situations
Acute severe asthma - the difficult ones
A gasping toddler Approach and Management
A sinking child with MSOF - last resorts
Refractory status epileptICUs - Approach to diagnosis and management
Perioperative intensive care in neonatal surgical emergencies
Diaphragmatic hernia diagnosis, management and the difficult ones
Surgical Aspects of Neonatal Vomiting

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16th - 17th February, 2008

WORKSHOP ON NURSING CRITICAL CARE

ICU Nursing How different it is from general nursing
General care of ICU patient
Airway management
Resuscitation and basic life support
Haemodynamic monitoring
Basics of ventilator
Infection control and nurse
Simulation of ACLS Scenarios
Post-op care of surgical patients
Stoma care
Renal replacement therapy
Drugs in ICU
Workstations:
ABC of resuscitation
Airway management
Arrhythmia recognition
Familiarity with ventilators: Record keeping
Haemodynamic monitoring (including shock states)
Renal replacement therapy
Care of invasive devices
Nursing Protocol handover between shift
Arterial blood gases: Sample taking and interpretation.

Plenary Lecture, Meet the Expert & Pro-con Debate

15TH FEBRUARY 2008

Plenary Lecture	Djillali Annanae, John Kellum	
Meet The Expert	Rashid M. Khan, Ram Rajagopalan, Vijay M. Deshpande	
Pro-con Debate	"type" Not "dose" of Dialysis Affects The Outcome	Roop Kishen, UK John Kellum, UK
	Tight Glycemic Control Improves Outcome in Critically Ill Patients	Dijllali Annanae
	End Of Life Care Is Feasible In India	R.K. Mani, New Delhi J.V.Divatia, Mumbai
	Decompressive Craniectomy Gives Better Outcome In Traumatic Brain Injury	Shibu Pillai, Nimhans
	Open Lung Strategy Is The Best Approach For A.l.i./a.r.d.s. Patients	Mather Joseph, Vellore Vijay M. Deshpande, USA Robert M. Kamarek, USA

16TH FEBRUARY 2008

Plenary Lecture	Konrad Reinhart, Andres Esteban	
Meet The Expert	Djillali Annane, Konrad Reinhart, John Kellum	
Pro-con Debate	Early Tracheostomy should be practiced in ICU	Abhiram Mallick Rahul Pandit
	Lung Mechanics are important to set ventilators in ARDS	Pravin Amin Shirish Prayag
	De Escalation Therapy should be a routine practice In ICU	Mitchell Levy, USA George Karam
	Non Invasive Haemodynamic Monitoring should be preferred in Septic Shock	Farhad Kapadia Ram Ragopalan
	Use Of Prophylactic Antibiotic In Pancreatitis Is Useful	Subhash Todi, Kolkata B.K. Rao
	Non Invasive Ventilation Can Be Practiced For Hypoxemic Respiratory Failure	Rajesh Chawla, Delhi Sriram Sampath, Bangalore
Pro-con Debate	Protocol Based Management Should Be Practiced In Intensive Care Unit	Prakash Shastri Dhruv Chaudhury, Rohtak

17TH FEBRUARY 2008

Plenary Lecture	Mitchell Levy, Daniel Lichtenstein
Meet The Expert	Shirish Prayag, Pravin Amin, Farhad Kapadia, J.V. Divatia

Election Result of the Executive Committee held in August 2007

The following executive committee members were elected for the year 2008. The results were as follows

President-Elect

Dr. Rajesh Chawla

Vice Presidents

Dr. Siddharth Shah

Dr. Narendra Rungta

General Secretary

Dr C. K. jani

Chairman, Paediatric Section

Dr. Rajiv Uttam

Treasurer

Dr Atul Kulkarni

Executive Committee Members

Dr. T. Shyam Sunder

Dr. Yatin Mehta

Dr. D. Chaudhary

Dr. R. Barorkar

Members

North Zone

Dr. Deepak Govil,
New Delhi

South Zone

Dr. A. Mohan Mathew
Kochi

Central Zone

Dr. Santosh Padhy
Indore

West Zone

Dr. Subhal Dixit
Pune

East Zone

Dr. B. Ray
Jamshedpur

Are you buying an ICU equipment – Are you sure you are making a right deal- just give it a thought

Dr. Narendra Rungta
Convener, Consumer Cell ISCCM
drnrungta@gmail.com

There is vertical increase in growth of health service sector. If India has to grow at the same pace , without break, it will have to ensure best health care at reasonable cost to all sections of population. High profile businessmen, executives, diplomats, celebrities, tourists and the Neorich will expect nothing less than the best health care.

As the structure of the society is going to be, nuclear families, the best should be available to closest of residence and mostly on day care basis. However, the recent surge in demand of Critical and Emergency care has excited the health care industry and Medical Profession all ends up. If the growth of health care industry is 10% the growth of Critical care is >15 %. Large no of fresh medical graduates are looking with great interest at careers as Intensivist. This is evident by the rapidly increasing membership of ISCCM and large presence in conferences and Education/training programme related to Critical care The no of Critical care beds are going to be doubles in next 3 years. In a vast country like India, it can not be imagined if we sit on estimating the demands of district and block level towns in terms of ICUs.

Needless to say, when ICUS will grow, it will with it lead to growth in demand of Ventilators, Para monitoring systems, Infusion and syringe pumps, ICU beds, Defibrillators, Renal Replacement systems, ICP monitors, CO monitors bedside Ultrasound and Echo systems and host of other ICU related equipments. Their growth is almost several folds year over year. The industry, as it appears, though quite excited, is not absolutely ready to take up the responsibility in a responsible manner. When we became consultants (about 20 yr back), it was told to us beware of buying medical equipment from suppliers and manufactures who fly by night. And preference was for reputed firms or MNCs. However, with passage of time and growth, now same may not hold true. So called reputed suppliers and MNCs by virtue of their monopoly don't hesitate to overcharge, offer poor terms and conditions for after sales service and they are not hesitant to take the legal battle head-on because of their inherent legal and financial strength.

Modus operandi of these suppliers seems to be changing fast. It is being increasingly observed that that in many instances the equipment is sold more on the art of communication, past reputation, salesmanship. Sometimes by managing the main intermediary agency or person entrusted with decision making about the equipment purchase. Outdated, dysfunctional equipment are dumped. This in many instances fails in acheving equipment installation qualitatively, functionally and performance wise. The procedure, agreements, contracts; payments are also made which are not in the best interests of hospitals and pts.

Not that industry is unaware of this growing problem. I was appalled by reaction of an industry representative saying – Dr it hardly matters if we loose few ICUs or even towns, the demand is so much that we are unable to meet the demand at our 100% working next 5 to 10 yrs , after all we have our full time legal department who are meant to fight such cases as and when or if they at all come.

This is partly due to poor training of medical professionals in finance, they are poor (if I dare say so) in reading and understanding the microprints of terms and conditions. It will not be out of place to mention that Drs easily tend to believe the marketing teams of these equipment sellers because they make the doctors feel on "top of world". (BIG EQUIPMENT PURCHASE SYNDROME) Doctors are easily carried away and make fast but bad decisions about buying equipment which other wise are needed, quite cost intensive and life saving. They are pushed into making fast decisions and giving advance payments on pretext of impending price rise, duty rise etc. The problem arises when the equipment fails to perform to the expectation in terms of quality and life.

The companies, some how or the other are just interested in passing the time of warranty by being goody only to become hostile the next day of expiry of the warranty period and start demanding hefty some of money for after sales and servicing. They are not hesitant in finding faults with the handling of the equipment by the resident doctors and nurses of the ICU. They hardly spend any time in training of the staff at the time of installation of the equipment. In some cases it has been noticed that these companies have told the hospital management and ICU in charges – "your ICU has untrained nurses and technicians "The equipment has suffered because of mishandling of the equipment by such untrained staff. Their failure to train the technician and nurses is never brought to the fore.

The worst victims of these problems are the public sector hospitals , the small and medium sized hospitals at district and small town level promoted and run by busy doctors themselves, In the Ist instance, some machines are never unpacked even during the period of warranty. (Poor taxpayer's money and poor sick pts both suffer) In the second instance, the busy doctors become the victim of the syndrome already described earlier.

Earlier it was assumed that big reputed suppliers, manufactures and MNCs were responsible and sensitive about their reputation and avoid putting doctors to stress and monitory losses. This is no longer true. The best known houses are now known to be capable of inflicting financial losses to hospitals, doctors and to the public by supplying bad equipment, not maintaining it well during the warranty period, stall the functioning of equipment by not supplying spares. Some times its simple and frank blackmailing because in place like ICU if Ventilator is not working, then the entire onus of pts life falls on the hospital and treating team is frustrated.

The frequent and high turn over in the top brass and in technical teams of these supplier companies have only compounded the problem. The new incumbent in the company easily shrug's of his shoulders at the pretext that how he would know what promises his predecessor had made. Not infrequently It is heard that our company fired the previous guy just because he was making false promises to buyers, therefore, brought bad name to the company. So please excuse the new team. A new contract at new payment is offered in a very sweet manner.

This is only an iceberg of the problem, we have innumerable complains from doctors working in ICU of smaller hospitals at district and towns who have been suffering from this problems for some time now. They continue to suffer because of following reasons :

1. They had not read the terms clearly
2. They did not check the machine meticulously at the time of installation
3. They were not competent and best guys to negotiate the deal
4. They do not have the organization to fight this menace and are best left to the magnanimity of these companies in most circumstances
5. They do not usually take to legal recourse because of shortage of time and little expectation of a speedy judicial remedy.
6. Some times they feel the cost of fighting the system will be much higher than buying new equipment itself.

I have only presented a summary of some thoughts about the problems. A lot can be written on this subject. There is urgent need of some serious research into this problem before it becomes ugly. Many of us may not be introduced to this menace, because top Intensivists are mostly working in best Corporate or trust hospitals, where this problem is being handled by full time managers, legal professionals and finance experts who are able to handle these issues.

I have following preliminary suggestions to my friends in ICUs

1. Don't make hasty decisions in making costly equipment purchase
2. Involve, in writing, the legal and financial experts in arriving at final decision. this small additional cost is worth it
3. Always ask for previous user list. And confidentially enquire from some users about the equipment performance, the company's behavior after sales
4. Make all correspondence in writing (if its email – preserve all such mails in both hard and soft copies)
5. It is better those terms of after sales service, spares and cost are decided at the time of purchase
6. If a member of the selling team is known to you, take it for that it is going to be his advantage and not to your advantage
7. Don't make advances to freeze a possible cheap deal. You are not buying an equipment because its cheap, you are buying an equipment you really need
8. Always insist on proper training of your staff and doctors, You may actually give the names of the staff to the company who you want to be trained and make payments only after you are sure, they are trained.
9. Many equipments require temperature control. Take proper certificate from the supplier that he has inspected the room where the equipment will be kept.
10. Always inform the company in writing of problems after installation when there is breakdown, verbal complaint does not have any legal status or record.
11. If the company fails to discharge their duties despite repeated reminders in writing don't hesitate to serve them a legal notice.
12. No company, high or low is immune from taking you for a ride. The current or past reputation of the supplying company should not deter you from making your deal foolproof from your side.

These are only few tips to my friends in Icu. This is most relevant to Icu because failure of one life saving equipment may be life killer and the out come has bearing on the credibility of IC team who earns a bad name for no fault of theirs.

Comments and suggestions are most welcome from honorable members of the society about this issue. ISCCM has formed a consumer division to protect the interest of Intensivist and their patients thereby. Any contribution from anyone in this regard will be welcome. I am thankful to the editor for inviting me to write on this issue.

Severe Sepsis Campaign: International Guidelines for Management of Severe Sepsis and Septic Shock: 2008

R. Phillip Dellinger, MD; **Mitchell M. Levy**, MD; **Jean M. Carlet**, MD; et al.

Crit Care Med 2008 Vol. 36, 296:327

A. Definitions

1. Sepsis is defined as infection plus systemic manifestations of infection.
2. Severe sepsis is defined as sepsis plus sepsis-induced organ dysfunction or tissue hypoperfusion.
3. Sepsis-induced hypotension is defined as a systolic blood pressure (SBP) <90 mm Hg or mean arterial pressure <70 mm Hg or a SBP decrease >40 mm Hg or<2 SD below normal for age in the absence of other causes of hypotension.
4. Septic shock is defined as sepsis-induced hypotension persisting despite adequate fluid resuscitation.
5. Sepsis-induced tissue hypoperfusion is defined as either septic shock, an elevated lactate, or oliguria

B. Determination of the quality of evidence

a. The GRADE system classifies recommendations as strong (grade 1) or weak (grade 2

b. Underlying methodology

A. RCT

B. Downgraded RCT or upgraded observational studies

C. Well-done observational studies

D. Case series or expert opinion

c. Factors that may decrease the strength of evidence

1. Poor quality of planning and implementation of available RCTs, suggesting high likelihood of bias
2. Inconsistency of results (including problems with subgroup analyses)
3. Indirectness of evidence (differing population, intervention, control, outcomes, comparison)
4. Imprecision of results
5. High likelihood of reporting bias

d. Main factors that may increase the strength of evidence

1. Large magnitude of effect (direct evidence, RR >2 with no plausible confounders)
2. Very large magnitude of effect with RR >5 and no threats to validity (by two levels)
3. Dose-response gradient

e. Factors determining strong vs. weak recommendation

What Should Be Considered	Recommended Process
Quality of evidence	The lower the quality of evidence, the less likely a strong recommendation
Relative importance of the outcomes	If values and preferences vary widely, a strong recommendation becomes less likely
Baseline risks of outcomes magnitude of relative risk, including benefits, harms, and burden	The higher the risk, the greater the magnitude of benefit larger relative risk reductions or larger increases in relative risk of harm make a strong recommendation more or less likely, respectively
Absolute magnitude of the effect	The larger the absolute benefits and harms, the greater or lesser ikelihood, respectively, of a strong recommendation
Precision of the estimates of the effect	The greater the precision, the more likely a strong recommendation
Costs	The higher the cost of treatment, the less likely a strong recommendation

Guidelines

I. Initial resuscitation and infection issues

Strength of recommendation and quality of evidence have been assessed using the GRADE criteria, presented in parentheses after each guideline

- Indicates a strong recommendation, or "**we recommend**"
- Indicates a weak recommendation, or **"we suggest"**

a. Initial resuscitation (first 6 hrs)

- Begin resuscitation immediately in patients with hypotension or elevated serum lactate >4 mmol/L; do not delay pending ICU admission (1C)
- **Resuscitation goals (1C)**

  CVP 8–12 mm Hg[a]

  Mean arterial pressure > 65 mm Hg

  Urine output >0.5 mL.kg^{-1}. hr^{-1}

  Central venous (superior vena cava) oxygen saturation >70% or mixed venous >65%
- **If venous oxygen saturation target is not achieved (2C)**

  Consider further fluid

  Transfuse packed red blood cells if required to hematocrit of >30% and/or

  Start dobutamine infusion, maximum 20 ug.kg^{-1}.min^{-1}

b. Diagnosis

- Obtain appropriate cultures before starting antibiotics provided this does not significantly delay antimicrobial administration (1C)

  Obtain two or more BCs

  One or more BCs should be percutaneous

  One BC from each vascular access device in place >48 hrs

  Culture other sites as clinically indicated
- Perform imaging studies promptly to confirm and sample any source of infection, if safe to do so (1C)

c. Antibiotic therapy

- Begin intravenous antibiotics as early as possible and always within the first hour of recognizing severe sepsis (1D) and septic shock (1B)
- Broad-spectrum: one or more agents active against likely bacterial/fungal pathogens and with good penetration into presumed source (1B)
- Reassess antimicrobial regimen daily to optimize efficacy, prevent resistance, avoid toxicity, and minimize costs (1C)
  - Consider combination therapy in *Pseudomonas* infections (2D)
  - Consider combination empiric therapy in neutropenic patients (2D)
  - Combination therapy <3–5 days and de-escalation following susceptibilities (2D)
  - Duration of therapy typically limited to 7–10 days; longer if response is slow or there are undrainable foci of infection or immunologic deficiencies (1D)
  - Stop antimicrobial therapy if cause is found to be noninfectious (1D)

d. Source identification and control

- A specific anatomic site of infection should be established as rapidly as possible (1C) and within first 6 hrs of presentation (1D)
- Formally evaluate patient for a focus of infection amenable to source control measures (e.g. abscess drainage, tissue debridement) (1C)
- Implement source control measures as soon as possible following successful initial resuscitation (1C) (exception: infected pancreatic necrosis, where surgical intervention is best delayed) (2B)
- Choose source control measure with maximum efficacy and minimal physiologic upset (1D)
- Remove intravascular access devices if potentially infected (1C)

II. Hemodynamic support and adjunctive therapy

Strength of recommendation and quality of evidence have been assessed using the GRADE criteria, presented in parentheses after each guideline.

- Indicates a strong recommendation, or **"we recommend**"
- Indicates a weak recommendation, or **"we suggest"**

a. Fluid therapy

- Fluid-resuscitate using crystalloids or colloids (1B)
- Target a CVP of >8 mm Hg (>12 mm Hg if mechanically ventilated) (1C)
- Use a fluid challenge technique while associated with a hemodynamic improvement (1D)

- Give fluid challenges of 1000 mL of crystalloids or 300–500 mL of colloids over 30 mins. More rapid and larger volumes may be required in sepsis-induced tissue hypoperfusion (1D)
- Rate of fluid administration should be reduced if cardiac filling pressures increase without concurrent hemodynamic improvement (1D)

b. Vasopressors

- Maintain MAP >65 mm Hg (1C)
- Norepinephrine and dopamine centrally administered are the initial vasopressors of choice (1C)
- Epinephrine, phenylephrine, or vasopressin should not be administered as the initial vasopressor in septic shock (2C). Vasopressin 0.03 units/min may be subsequently added to norepinephrine with anticipation of an effect equivalent to norepinephrine alone
- Use epinephrine as the first alternative agent in septic shock when blood pressure is poorly responsive to norepinephrine or dopamine (2B).
- Do not use low-dose dopamine for renal protection (1A)
- In patients requiring vasopressors, insert an arterial catheter as soon as practical (1D)

c. Inotropic therapy

- Use dobutamine in patients with myocardial dysfunction as supported by elevated cardiac filling pressures and low cardiac output (1C)
- Do not increase cardiac index to predetermined supranormal levels (1B)

d. Steroids

- Consider intravenous hydrocortisone for adult septic shock when hypotension responds poorly to adequate fluid resuscitation and vasopressors (2C)
- ACTH stimulation test is not recommended to identify the subset of adults with septic shock who should receive hydrocortisone (2B)
- Hydrocortisone is preferred to dexamethasone (2B)
- Fludrocortisone (50 ug orally once a day) may be included if an alternative to hydrocortisone is being used that lacks significant mineralocorticoid activity. Fludrocortisone if optional if hydrocortisone is used (2C)
- Steroid therapy may be weaned once vasopressors are no longer required (2D)
- Hydrocortisone dose should be < 300 mg/day (1A)
- Do not use corticosteroids to treat sepsis in the absence of shock unless the patient's endocrine or corticosteroid history warrants it (1D)

e. Recombinant human activated protein C

- Consider rhAPC in adult patients with sepsis-induced organ dysfunction with clinical assessment of high risk of death (typically APACHE II >25 or multiple organ failure) if there are no contraindications (2B, 2C for postoperative patients).
- Adult patients with severe sepsis and low risk of death (typically, APACHE II <20 or one organ failure) should not receive rhAPC (1A)

III. Other supportive therapy of severe sepsis

Strength of recommendation and quality of evidence have been assessed using the GRADE criteria, presented in parentheses after each guideline

- Indicates a strong recommendation, or "we recommend"
- Indicates a weak recommendation, or "we suggest"

a. Blood product administration

- Give red blood cells when hemoglobin decreases to <7.0 g/dL (<70 g/L) to target a hemoglobin of 7.0–9.0 g/dL in adults (1B). A higher hemoglobin level may be required in special circumstances (e.g., myocardial ischaemia, severe hypoxemia, acute hemorrhage, cyanotic heart disease, or lactic acidosis)
- Do not use erythropoietin to treat sepsis-related anemia. Erythropoietin may be used for other accepted reasons (1B)
- Do not use fresh frozen plasma to correct laboratory clotting abnormalities unless there is bleeding or planned invasive procedures (2D)
- Do not use antithrombin therapy (1B)
- Administer platelets when (2D)
- Counts are <5000/mm^3 (5 _ 10^9/L) regardless of bleeding
- Counts are 5000–30,000/mm^3 (5–30 _ 10^9/L) and there is significant bleeding risk
- Higher platelet counts (>50,000/mm^3 [50 _ 10^9/L]) are required for surgery or invasive procedures

b. Mechanical ventilation of sepsis-induced ALI/ARDS

- Target a tidal volume of 6 mL/kg (predicted) body weight in patients with ALI/ARDS (1B)
- Target an initial upper limit plateau pressure <30 cm H_2O. Consider chest wall compliance when assessing plateau pressure (1C)
- Allow $PaCO_2$ to increase above normal, if needed, to minimize plateau pressures and tidal volumes (1C)
- Set PEEP to avoid extensive lung collapse at end-expiration (1C)
- Consider using the prone position for ARDS patients requiring potentially injurious levels of FIO_2 or plateau pressure, provided they are not put at risk from positional changes (2C)
- Maintain mechanically ventilated patients in a semirecumbent position (head of the bed raised to 45°) unless contraindicated (1B), between 30° and 45° (2C)
- Noninvasive ventilation may be considered in the minority of ALI/ARDS patients with mild to moderate hypoxemic respiratory failure. The patients need to be hemodynamically stable, comfortable, easily arousable, able to protect/clear their airway, and expected to recover rapidly (2B)
- Use a weaning protocol and an SBT regularly to evaluate the potential for discontinuing mechanical ventilation (1A)
- SBT options include a low level of pressure support with continuous positive airway pressure 5 cm H2O or a T piece
- Before the SBT, patients should be arousable be hemodynamically stable without vasopressors have no new potentially serious conditions have low ventilatory and end-expiratory pressure requirement require FIO2 levels that can be safely delivered with a face mask or nasal cannula
- Do not use a pulmonary artery catheter for the routine monitoring of patients with ALI/ARDS (1A)
- Use a conservative fluid strategy for patients with established ALI who do not have evidence of tissue hypoperfusion (1C)

c. Sedation, analgesia, and neuromuscular blockade in sepsis

- Use sedation protocols with a sedation goal for critically ill mechanically ventilated patients (1B)
- Use either intermittent bolus sedation or continuous infusion sedation to predetermined end points (sedation scales), with daily interruption/lightening to produce awakening. Re-titrate if necessary (1B)
- Avoid neuromuscular blockers where possible. Monitor depth of block with train-of-four when using continuous infusions (1B)

d. Glucose control

- Use intravenous insulin to control hyperglycemia in patients with severe sepsis following stabilization in the ICU (1B)
- Aim to keep blood glucose <150 mg/dL (8.3 mmol/L) using a validated protocol for insulin dose adjustment (2C)
- Provide a glucose calorie source and monitor blood glucose values every 1–2 hrs (4 hrs when stable) in patients receiving intravenous insulin (1C)
- Interpret with caution low glucose levels obtained with point of care testing, as these techniques may overestimate arterial blood or plasma glucose values (1B)

e. Renal replacement

- Intermittent hemodialysis and CVVH are considered equivalent (2B)
- CVVH offers easier management in hemodynamically unstable patients (2D)

f. Bicarbonate therapy

- Do not use bicarbonate therapy for the purpose of improving hemodynamics or reducing vasopressor requirements when treating hypoperfusioninduced lactic acidemia with pH >7.15 (1B)

g. Deep vein thrombosis prophylaxis

- Use either low-dose UFH or LMWH, unless contraindicated (1A)
- Use a mechanical prophylactic device, such as compression stockings or an intermittent compression device, when heparin is contraindicated (1A)
- Use a combination of pharmacologic and mechanical therapy for patients who are at very high risk for deep vein thrombosis (2C)
- In patients at very high risk, LMWH should be used rather than UFH (2C)

h. Stress ulcer prophylaxis

- Provide stress ulcer prophylaxis using H2 blocker (1A) or proton pump inhibitor (1B). Benefits of prevention of upper gastrointestinal bleed must be weighed against the potential for development of ventilator-acquired pneumonia

i. Consideration for limitation of support

- Discuss advance care planning with patients and families. Describe likely outcomes and set realistic expectations (1D)

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