OPERATIONALIZING REMAPCAP IN PAKISTAN

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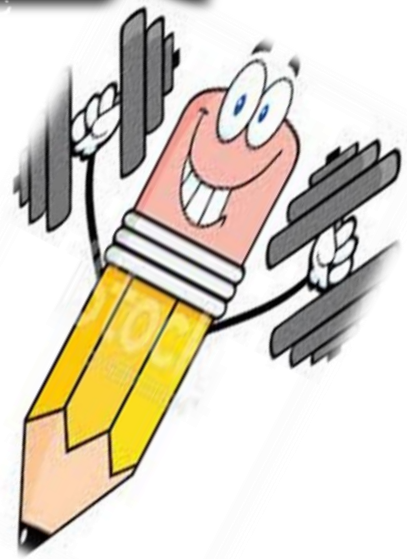
Chairperson Department of CCM, Ziauddin University, Karachi
Visiting Faculty Aga Khan University, Karachi
Honorary Physician MORU, Bangkok

Pakistan: 220 Million population (2020)

SAARC Region: 8 countries in this region comprises 3% of the world's area, 21% of the world's population and 90% burden of diseases.

Barriers to Research in South Asia



Critical Care Bed Capacity in Asian Countries and Regions

www.ccmjournal.org

May 2020 • Volume 48 • Number 5

Measurements and Main Results: Cumulatively, there were 3.6 critical care beds per 100,000 population. The median number of critical care beds per 100,000 population per country and region was significantly lower in low- and lower-middle–income economies (2.3; interquartile range, 1.4–2.7) than in upper-middle–income economies (4.6; interquartile range, 3.5–15.9) and high-income economies (12.3; interquartile range, 8.1–20.8) ($p = 0.001$), with a large variation even across countries and regions of the same World Bank income classification. This number was independently predicted by the World Bank income classification on multivariable analysis, and significantly correlated with the number of acute hospital beds per 100,000 population ($r^2 = 0.19$; $p = 0.047$), the universal health coverage service coverage index ($r^2 = 0.35$; $p = 0.003$), and the Human Development Index ($r^2 = 0.40$; $p = 0.001$) on univariable analysis.

Conclusions: Critical care bed capacity varies widely across Asia and is significantly lower in low- and lower-middle–income than in upper-middle–income and high-income countries and regions.

(*Crit Care Med* 2020; 48:654–662)

Journal of Critical Care

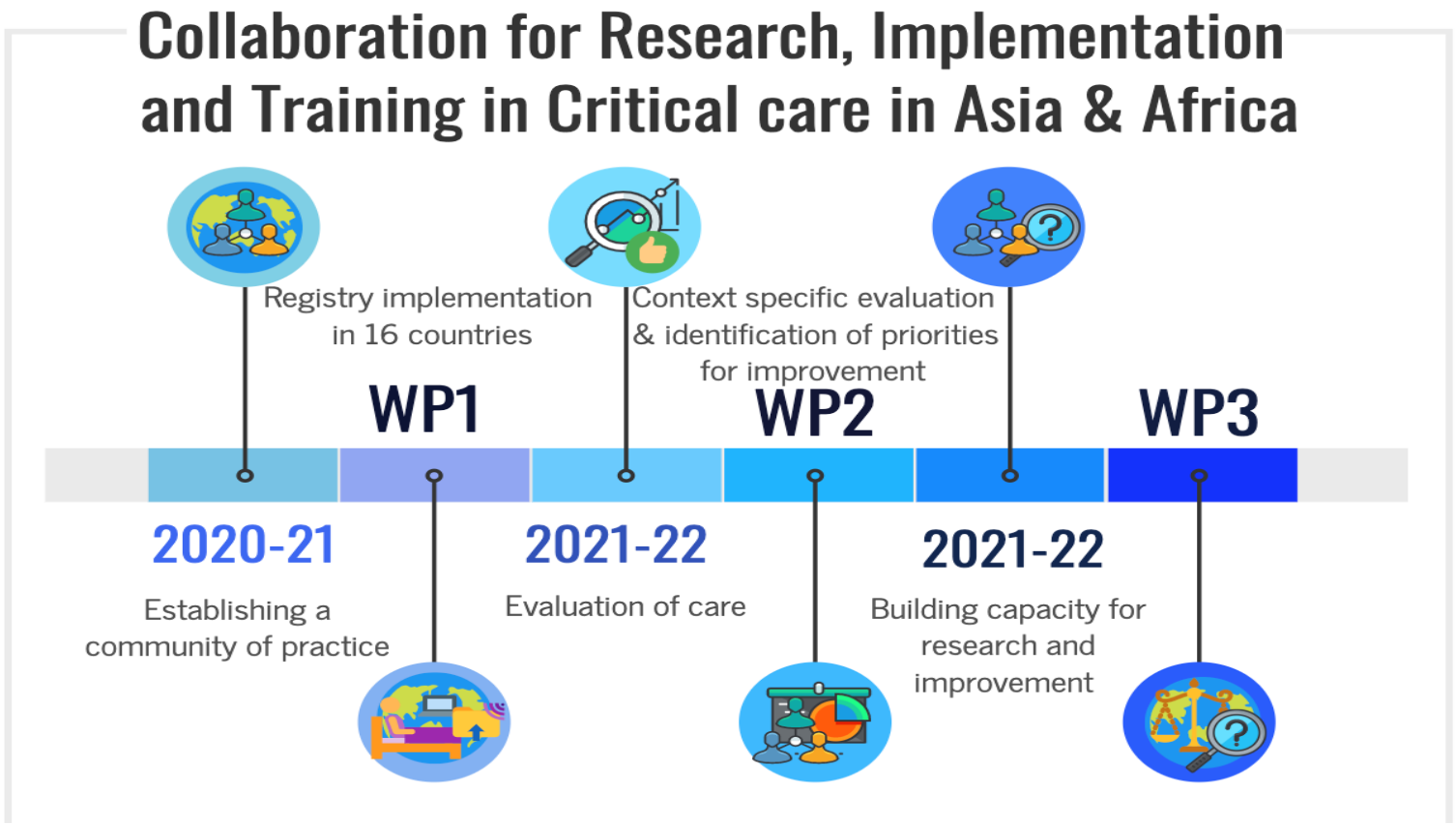
journal homepage: www.journals.elsevier.com/journal-of-critical-care

A national survey of critical care services in hospitals accredited for training in a lower-middle income country: Pakistan

Madiha Hashmi [a], Arshad Taqi [b], Muhammad I. Memon [c], Syed Muneeb Ali [c], Saleh Khaskheli [d], Muhammad Sheharyar [e], Muhammad Hayat [f], Mohiuddin Shiekh [g], Chamira Kodippily [h], Dilanthi Gama, Arjen M. Dondorp [i], Rashan Haniffa [h,i,j], Abi Beane [h,i,k,*]

A B S T R A C T

Purpose: To describe the extent and variation of critical care services in Pakistan.
Materials and methods: A cross-sectional survey was conducted in all intensive care units (ICUs) recognised for postgraduate training to determine administration, infrastructure, equipment, staffing, and training.
Results: There were 151 hospitals recognised for training, providing 2166 ICU beds and 1473 ventilators. Regional distribution of ICU beds per 100,000 population ranged from 1.0 in Sindh to none in Gilgit Baltistan (median 0.7). A senior clinician trained in critical care was available in 19 (12.1%) of units. One-to-one nurse-to-bed ratio during the day was available in 84 (53.5%) of units, dropping to 75 (47.8%) at night. Availability of 1:1 nursing also varied between provinces, ranging from 56.5% in Punjab compared to 0% in Azad Jamu Kashmir. Similarly, there was disparity in the availability of ventilators between provinces. All ICUs had basic infrastructure (electricity, running water, piped oxygen) and basic equipment (electronic monitoring and infusion pumps).
Conclusion: Pakistan, a lower middle-income country, has an established network of critical care facilities with access to basic equipment, but inequalities in its distribution. Investment in critical care training for doctors and nurses is needed.



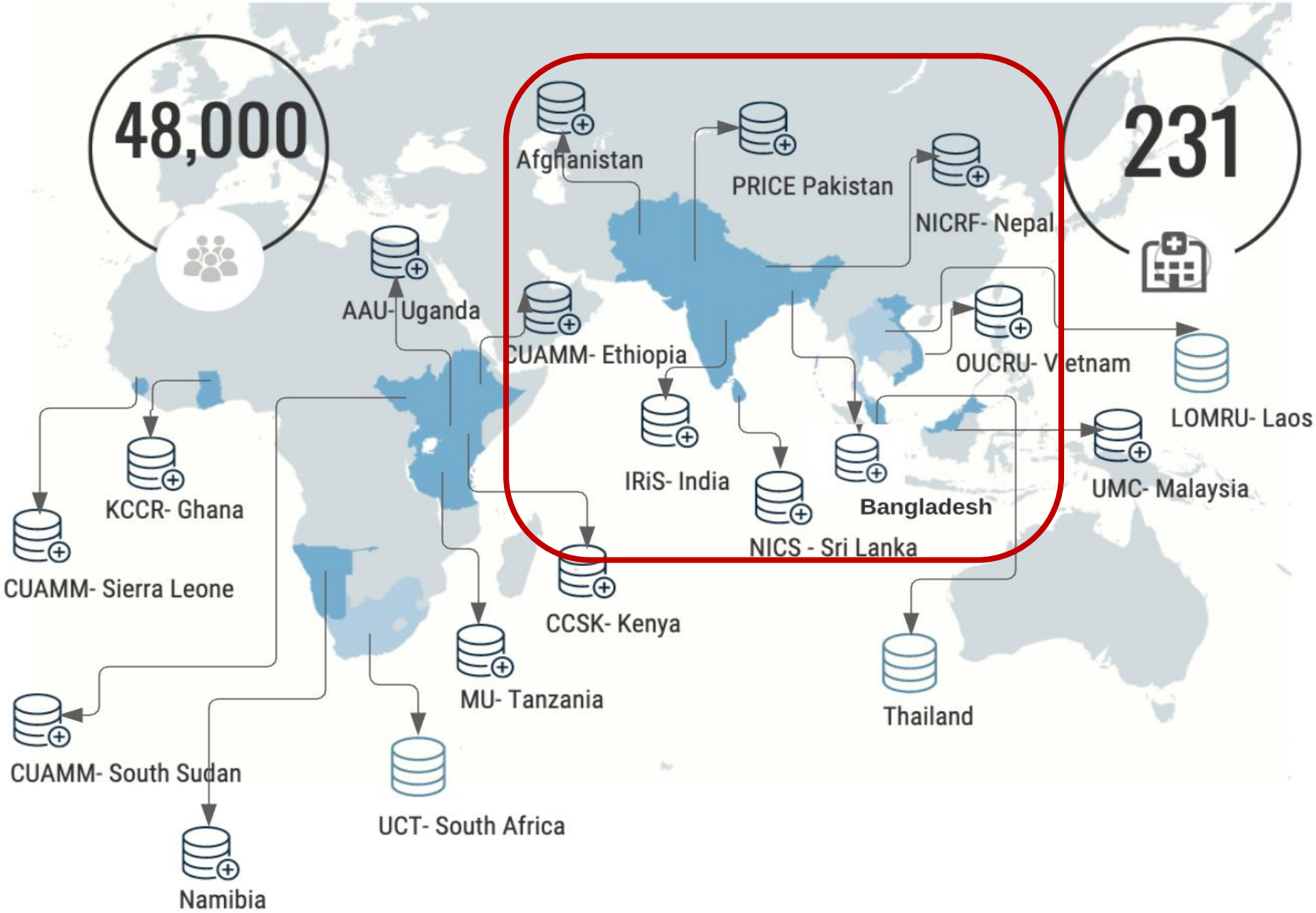
CRIT CARE ASIA *Critical Care* (2020) 24:608
https://doi.org/10.1186/s13054-020-03321-7

Critical Care

EDITORIAL Open Access

Establishing a critical care network in Asia to improve care for critically ill patients in low- and middle-income countries

CRIT CARE ASIA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Afghanistan
PRICE Pakistan
NICRF- Nepal
AAU- Uganda
CUAMM- Ethiopia
OUCRU- Vietnam
LOMRU- Laos
IRiS- India
Bangladesh
UMC- Malaysia
KCCR- Ghana
NICS - Sri Lanka
CUAMM- Sierra Leone
CCSK- Kenya
MU- Tanzania
Thailand
CUAMM- South Sudan
UCT- South Africa
Namibia

Editorial

jics

Journal of the Intensive Care Society
0(0) 1–6

DOI: 10.1177/1751143718814126
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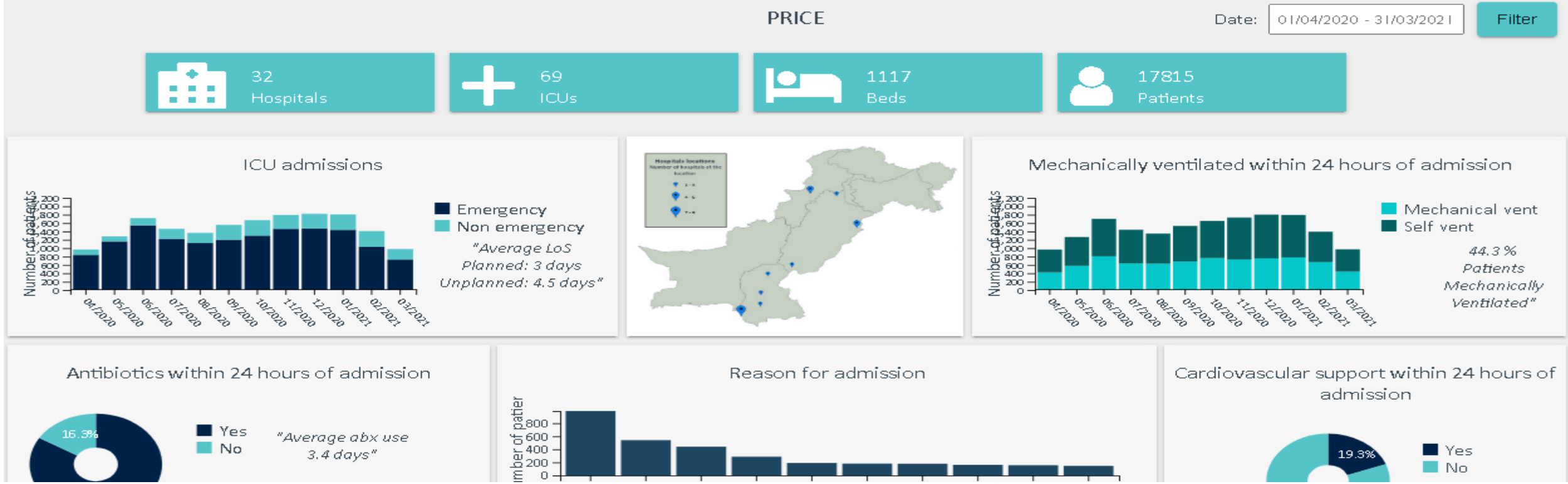
SAGE

Pakistan Registry of Intensive CarE (PRICE): Expanding a lower middle-income, clinician-designed critical care registry in South Asia

M Hashmi[1,2,*], A Beane[3,4,5,6,*], A Taqi[7], MI Memon[8], P Athapattu[9], Z Khan[10], AM Dondorp[6] and R Haniffa[4,5,6]



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Critical illne

IN THIS SECTION

- Overview
- Critical illness
- Our team
- Significant achievements
- Future vision
- Studies & study sites
  - DeTACT
  - TACT-CV
  - Severe malaria
  - Siem Pang

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In ICU COVID-19 reporting
18-Mar-2020 to 18-Mar-2021

CRIT CARE ASIA

wellcome

48,756 All ICU admissions

230 Intensive care units

9,121 (18.7%) Suspected or confirmed COVID-19

2,689 (29.5%) Suspected COVID-19

6,432 (70.5%) Confirmed COVID-19

Clinical characteristics

6,061 (66.5%) Male

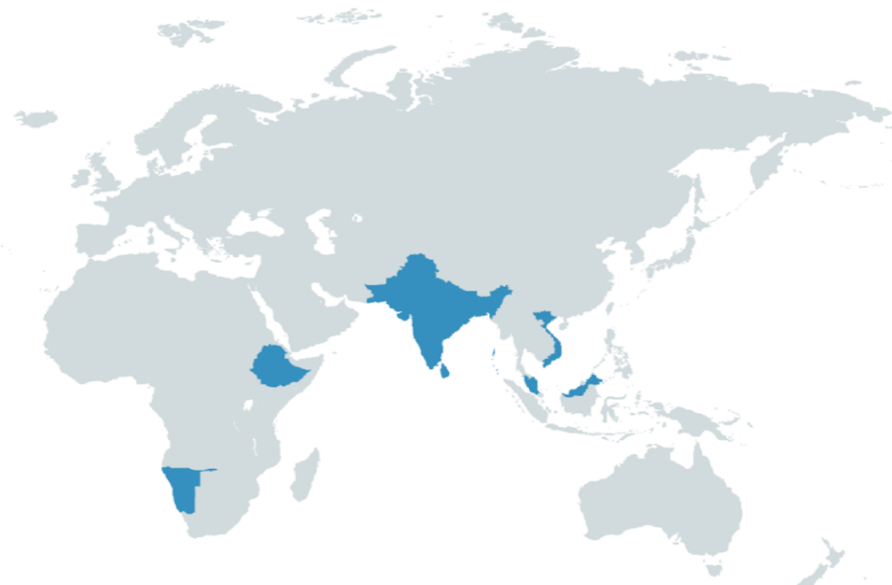
59 years Age

1,672 (18.3%) Invasive vent

1,762 (19.3%) NIV

466 (5.1%) RRT

CCA participating sites



Clinical outcomes

8,663 ICU outcome census

2,638 (30.5%) ICU Mortality

932 (58.0%) ICU mortality [MV population]

5.6 days Length of ICU stay

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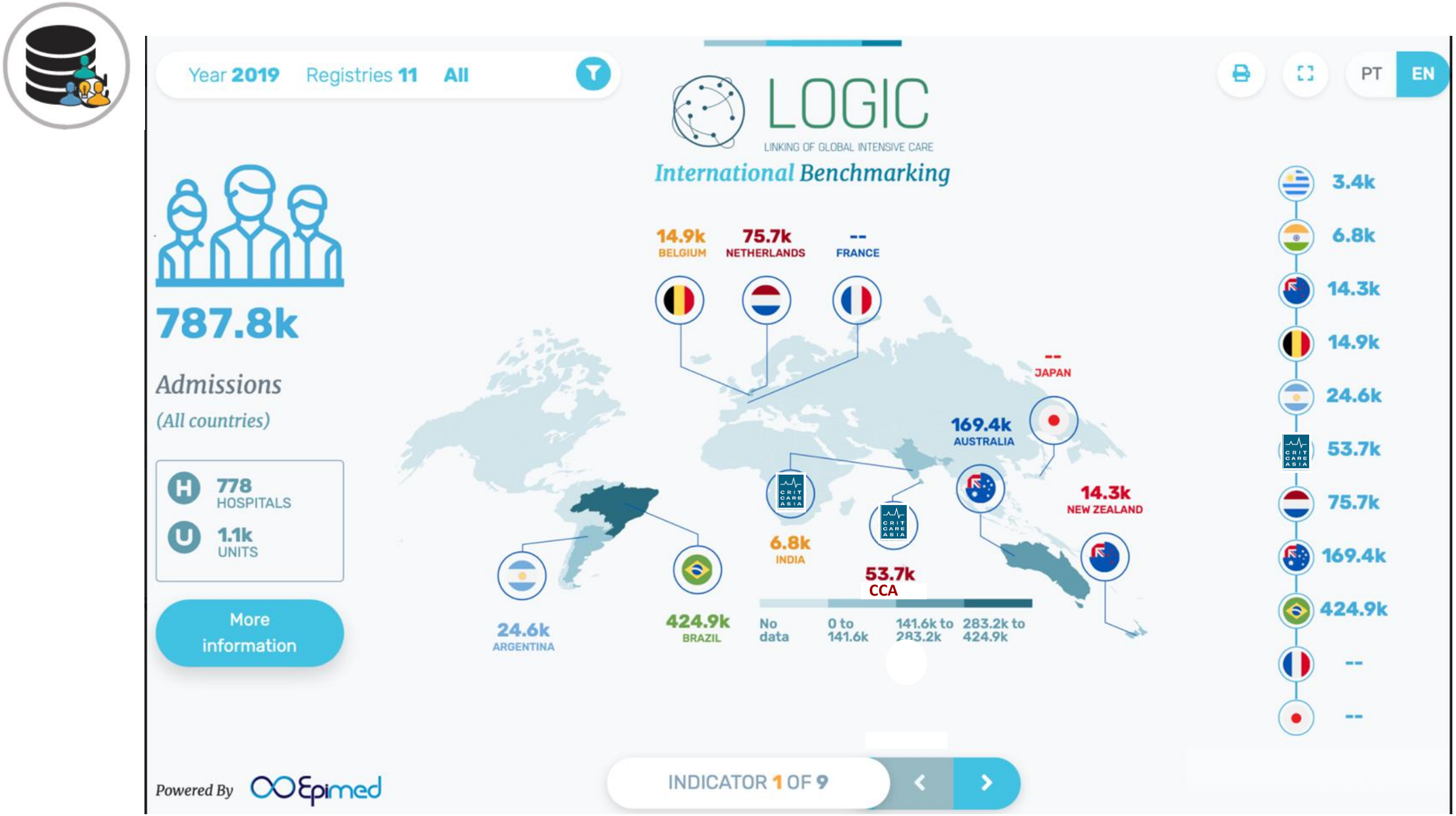
ALERRT African coaLition for Epidemic Research, Response and Training

IDDO INFECTIOUS DISEASES DATA OBSERVATORY


Year 2019
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LINKING OF GLOBAL INTENSIVE CARE
International Benchmarking
787.8k
Admissions
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HOSPITALS
1.1k
UNITS
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14.9k
BELGIUM
75.7k
NETHERLANDS
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FRANCE
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JAPAN
169.4k
AUSTRALIA
14.3k
NEW ZEALAND
6.8k
INDIA
53.7k
CCA
24.6k
ARGENTINA
424.9k
BRAZIL
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0 to 141.6k
141.6k to 283.2k
283.2k to 424.9k
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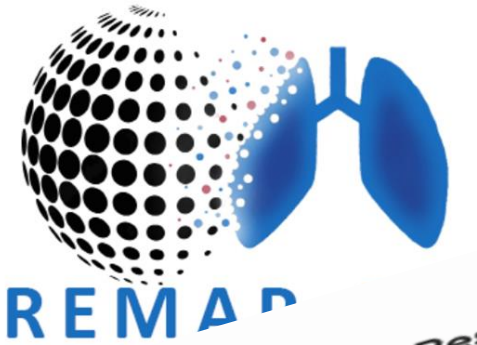
REMAP in CRIT CARE ASIA



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OPEN LETTER

Operationalisation of the Randomized Embedded Multifactorial Adaptive Platform for COVID-19 trials in a low and lower-middle income critical care learning health system. [version 1; peer review: 3 approved]

Diptesh Aryal[1*], Abi Beane[2,3*], Arjen M. Dondorp[2,3*], Cameron Green[4*], Rashan Haniffa[2,3*], Madiha Hashmi[5*], Devachandran Jayakumar[6,7*], John C. Marshall[8*], Colin J. McArthur[9,10*], Srinivas Murthy[11*], Steven A. Webb[4,12,13*], Subhash P. Acharya[14], Pramodya G. P. Ishani[15], Issrah Jawad[15], Sushil Khanal[16], Kanchan Koirala[1], Subekshya Luitel[17], Upulee Pabasara[15], Hem Raj Paneru[18], Ashok Kumar[19], Shoaib Siddiq Patel[20], Nagarajan Ramakrishnan[7], Nawal Salahuddin[21], Mohiuddin Shaikh[20], Timo Tolppa[15], Ishara Udayanga[15], Zulfiqar Umrani[22]

The NEW ENGLAND JOURNAL of MEDICINE

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ne on Mortality and n Patients With Severe

ne REMAP-CAP COVID-19 Corticosteroid Domain Randomized Clinical Trial

The Writing Committee for the REMAP-CAP Investigators

Article Information

JAMA. 2020;324(13):1317-1329. doi:10.1001/jama.2020.17022

COVID-19 Resource Center

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SITE-LEVEL IMPLEMENTATION
ETHICAL APPROVAL

National Bioethics Committee (NBC) Pakistan

Ref: No.4-87/COVID-43/NBC/20/301 **Date: September 10, 2020**

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Vice Chairperson,

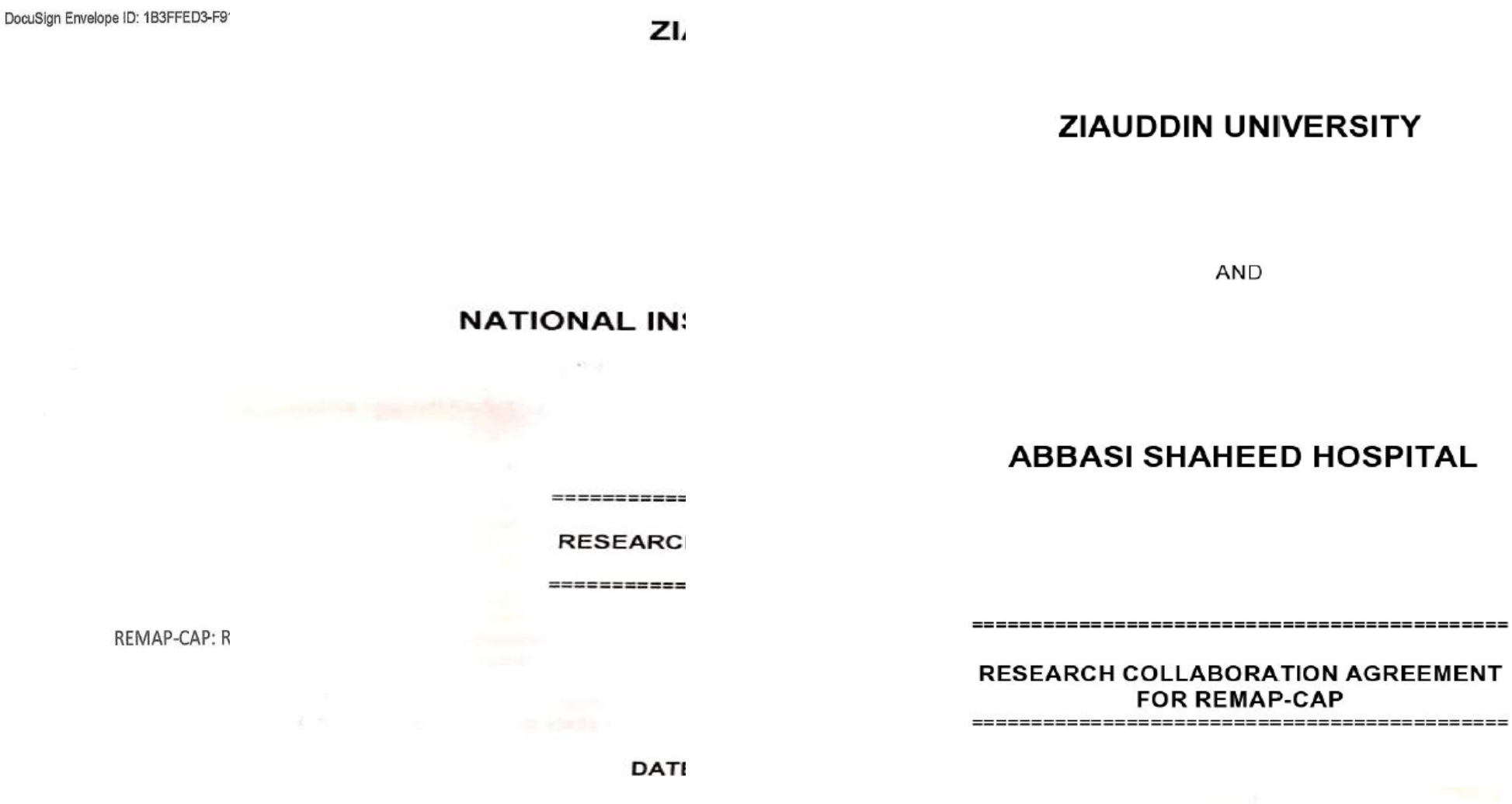
Director General, Ministry of NHSR&C, Government of Pakistan

Secretariat

Dr Madiha Hashmi
South East Asian Research & Education in Critical care Health (SEARCH),
199-E, Street No 6, Cavalry Grounds
Lahore Cantt

Subject: **Randomized, Embedded, Multifactorial Adaptive Platform trial for Community-Acquired Pneumonia including COVID 19 (REMAP CAP+Pandemic).**

SITE-LEVEL IMPLEMENTATION
RESEARCH COLLABORATION AGREEMENTS



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FOR REMAP-CAP

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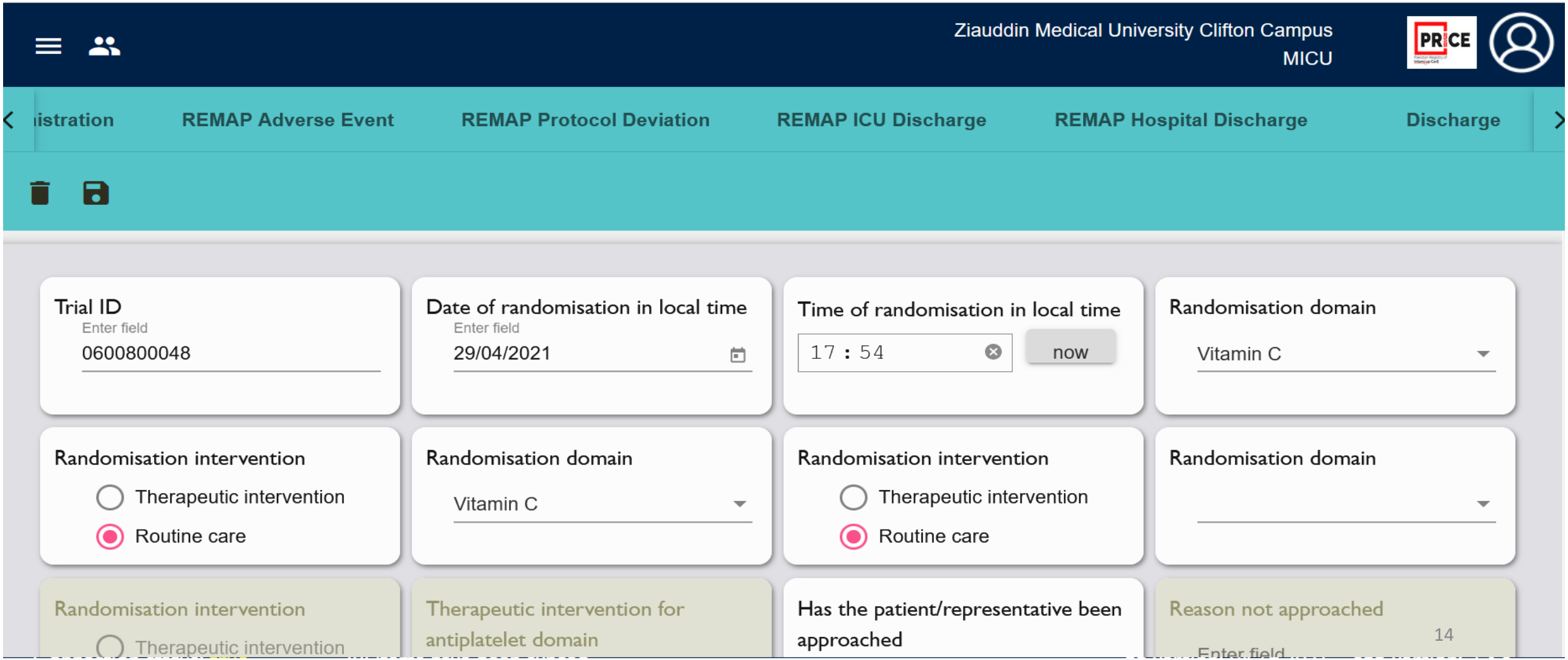

SITE-LEVEL IMPLEMENTATION
INFORMED CONSENT

REMAP-CAP
PAKISTAN

RANDOMISED, EMBEDDED, MULTIFACTORIAL, ADAPTIVE, PLATFORM TRIAL
FOR COMMUNITY-ACQUIRED PNEUMONIA (REMAP-CAP)

مریضوں اور والدین کے لئے معلومات

تعارف

جب مریض نمونیا میں مبتلا ہوتے ہیں تو، ان کا مدافعتی نظام متاثر ہوتا ہے جس کی وجہ سے شدید پیچیدگیاں ہوسکتی ہیں۔ فی الحال، علاج معالجہ بیکٹیریا کش ادویات تک محدود ہے۔ تحقیق سے پتہ چلتا ہے کہ وٹامن سی، آسانی سے دستیاب دوائی، مدافعتی نظام کو تقویت بخش کر بلکہ طور پر زندگی بچا سکتی ہے۔

دعوت نامہ اور تحقیق کا مقصد

ہم نمونیا کے مریضوں میں وٹامن سی کا اثر دیکھنے پر ایک تحقیق کر رہے ہیں۔ اس تحقیق کا نام ہے

Randomised, Embedded, Multifactorial, Adaptive, Platform Trial for Community-Acquired Pneumonia (REMAP-CAP) – Vitamin C

یہ ایک بین الاقوامی تحقیق کا حصہ ہے۔ آپ کے رشتہ دار کو اس تحقیق میں حصہ لینے کے لئے مدعو کیا گیا ہے۔ ہماری تحقیق میں ہم یہ دیکھنا چاہتے ہیں کہ آیا مریضوں کو عام علاج کے علاوہ وٹامن سی دینے سے نمونیا کو بہتر بنانے میں مدد ملتی ہے۔

کیا میرے رشتہ دار کو اس تحقیق میں حصہ لینا ہے؟

آپ کے رشتہ دار کو اس تحقیق میں حصہ لینے کی اجازت دینے کا فیصلہ مکمل طور پر رضاکارانہ ہے۔ دی گئی معلومات کے ساتھ، براہ کرم فارم اور عنایت کو سمجھیں اور اپنے طبی خاندان سے بات کرنے کے بعد فیصلہ کریں۔ اگر آپ قبول کرنے کے بعد اپنا خیال بدل لیتے ہیں تو، آپ بغیر کسی وجہ بتائے کسی بھی وقت اپنی رضامندی واپس لے سکتے ہیں۔ آپ کے رشتہ دار کی شرکت یا اس تحقیق کو مسترد کرنے سے مریض کے علاج پر کوئی اثر نہیں پڑے گا، اور آپ کو بتایا دیا گیا ہے کہ اس میں حصہ لینے سے انکار کرنے پر کوئی جرمانہ یا نقصان نہیں ہوگا۔

اس تحقیق میں میرے رشتہ دار کو کیا کرنا پڑے گا؟

آپ کے رشتہ دار کو تحقیق کے لئے کچھ کرنے کی ضرورت نہیں ہے۔ آپ کی اجازت سے، ان کی شناخت کو خفیہ رکھتے ہوئے ان کی طبی معلومات ICU ڈیٹابیس میں درج کی جائیں گی۔ طبی علاج کے دو مختلف گروپوں میں سے ایک میں ڈالا جائے گا۔

- معمول کے مطابق دیکھ بھال
- معمول کے مطابق دیکھ بھال + وٹامن سی

رینڈمائزیشن ویب سائٹ کے ذریعے کیا جائے گا (https://remapcap.spinnakersoftware.com/) محفوظ پاس ورڈ سے محفوظ

مریض ہسپتال کے آئی سی یو میں رہتے ہوئے خون کے معیاری ٹیسٹ کروائے جائیں گے۔ باقی علاج ان کی طبی حالت پر منحصر ہوگا اور اس تحقیق کا حصہ بننے سے ان کے علاج پر کوئی اثر نہیں پڑے گا۔ اس تحقیق میں حصہ لینے کے لئے کسی اضافی یا خصوصی تحقیق کی ضرورت نہیں ہے۔ ہسپتال میں قیام اور آئی سی یو کی مدت سے متعلق ڈیٹا اکٹھا کیا جائے گا۔ اور چھ ماہ کے بعد، مریض سے فون پر رابطہ کیا جائے گا اور اس وقت کچھ آسان سوالات کے جوابات دینے پڑسکتے ہیں۔

اس تحقیق میں حصہ لینے کے ممکنہ خطرات کیا ہیں؟

دیگر تحقیق میں وٹامن سی کے دیرپے مضر اثرات کی اطلاع نہیں ملی ہے۔ مریضوں کو کم بلڈ شوگر اور گردے کی پتھری کا خطرہ ہو سکتا ہے۔ جینیاتی مادے میں مبتلا کچھ مریضوں کو G6PD کہا جاتا ہے، اور وٹامن سی لینے کے بعد خون بہہ سکتا ہے، اور جب دوا بند کر دی جاتی ہے تو یہ حل ہو جاتا ہے۔ ہر وقت آئی سی یو میں مریضوں کی نگرانی کی جاتی ہے، اور اگر آپ کا مریض اثر دینے والی چیزوں کی کوئی علامت ظاہر کرتا ہے تو، وٹامن سی کو فوری طور پر روک دیا جائے گا۔

شرکت لازمی ہے؟

نہیں، جیسا کہ پہلے بتایا گیا ہے۔ اس تحقیق میں حصہ لینا مکمل طور پر رضاکارانہ ہے۔ اگر آپ کو کوئی شبہات یا سوالات ہیں تو، براہ کرم پوچھنے میں جھجھک نہ کریں۔

REMAP-CAP
PAKISTAN

RANDOMISED, EMBEDDED, MULTIFACTORIAL, ADAPTIVE, PLATFORM TRIAL
FOR COMMUNITY-ACQUIRED PNEUMONIA (REMAP-CAP)

PATIENT INFORMATION LEAFLET - VITAMIN C

INTRODUCTION:
When patients develop pneumonia, their immune system is affected which leads to severe complications. Currently, treatment options are limited to antimicrobials and supportive care. Research suggests that vitamin C, a readily available medication, is potentially lifesaving by strengthening the immune response.

INVITATION AND PURPOSE OF STUDY:
We are conducting a study to assess the effect of Vitamin C in patients with pneumonia. The name of this study is 'Randomised, Embedded, Multifactorial, Adaptive, Platform Trial for Community-Acquired Pneumonia (REMAP-CAP) – Vitamin C domain. This is part of an international study. Your relative is invited to participate in this international study to find out if giving patients Vitamin C in addition to their normal treatment helps improve outcomes in pneumonia.

DOES MY RELATIVE HAVE TO TAKE PART IN THIS STUDY?
Your decision to allow your relative to participate in this study is purely voluntary. With the information given, please weigh the benefits and risks and make a decision after discussing with the rest of your family. If you change your mind after accepting, you can withdraw your consent at any time without giving a reason. Your decision to let your relative participate or not will not affect the standard of treatment they receive.

WHAT WILL MY RELATIVE HAVE TO DO IN THIS STUDY? WHAT IS BEING STUDIED?
They don't need to do anything for the study. With your permission, their de-identified information will be collected for the intensive care database and for study purposes. Your relative will be allocated to receive one of these two treatment groups:
- Standard usual care
- Standard usual care + Vitamin C

Response Adapted Randomisation will be done through a password-protected, secure randomisation website called Spinnaker (https://remapcap.spinnakersoftware.com/Login/). Patients will undergo routine blood tests while in the ICU and hospital. Participation in this study generally does not require any additional or special investigations. The rest of the treatment depends on their clinical condition and will not be affected by them being part of this study.

The length of their stay in the ICU/hospital and survival data will be collected. Depending upon the outcome, they might receive a phone call after 6 months as a follow-up. They might have to answer a few simple questions at that time.

WHAT ARE THE RISKS OF TAKING PART IN THIS STUDY?
Other studies that have used Vitamin C have not reported any side effects. There is a theoretical risk that patients may develop low blood sugar recordings and a small risk of renal stone formation. Some patients with a rare genetic disorder called G6PD can develop bleeding after taking Vitamin C. This issue gets resolved when the medication is stopped. Patients in the ICU are monitored closely at all times and if your relative shows any signs of these complications the Vitamin C will be stopped immediately.

IS PARTICIPATION COMPULSORY?
No. Taking part in this study is purely voluntary. If you have any doubts or questions please do not hesitate to ask.

HOW WILL THE INFORMATION COLLECTED IN THE STUDY BE USED?
The de-identified information collected will be kept confidential. Patient's identity will never be revealed. The information collected will be stored in a coded form which will not include name, address or other identifiable information. It will be shared with the international database for analysis. The results of this study without individual patient identifiable information may be published in medical journals or presented in academic meetings.

If you require more information before giving your consent, you may contact the study investigators on 03009292799, South East Asian Research & Education in Criticalcare Health.

A 4-day course of Vit C will be provided free of cost to the patient if they fall in the intervention group.

OUR RESEARCH PARTNERS

MONASH University · MORU Tropical Health Network · CRIT CARE ASIA · SEARCH SOUTH EAST ASIAN RESEARCH IN CRITICALCARE HEALTH · PRICE · ZIAUDDIN UNIVERSITY · NICVD

SITE-LEVEL IMPLEMENTATION
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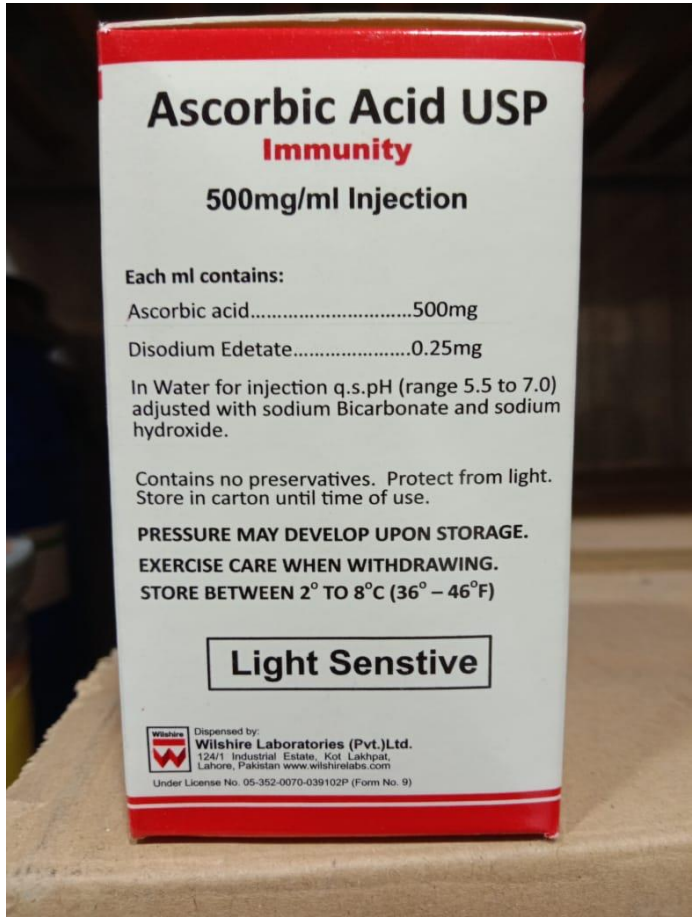
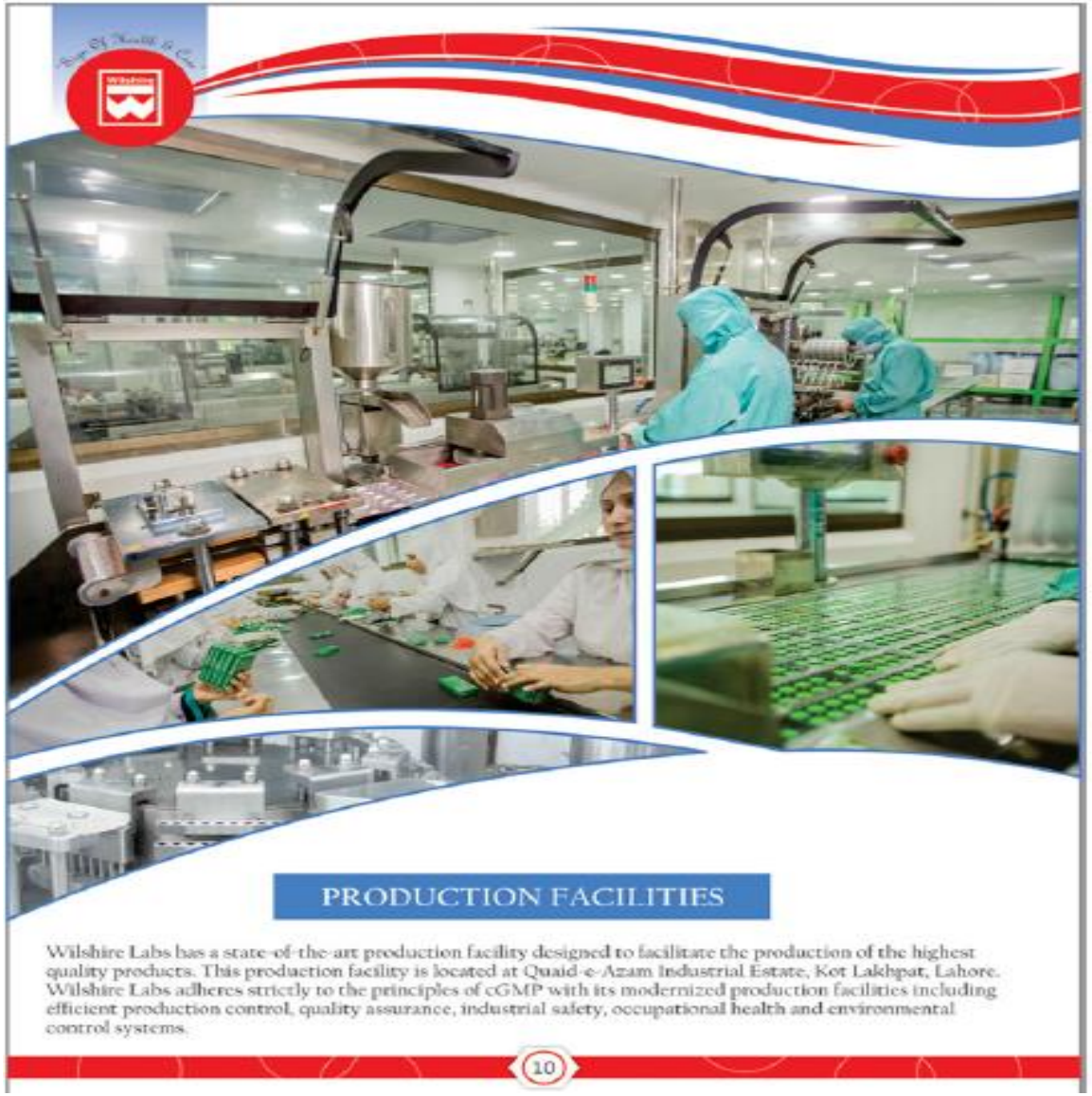
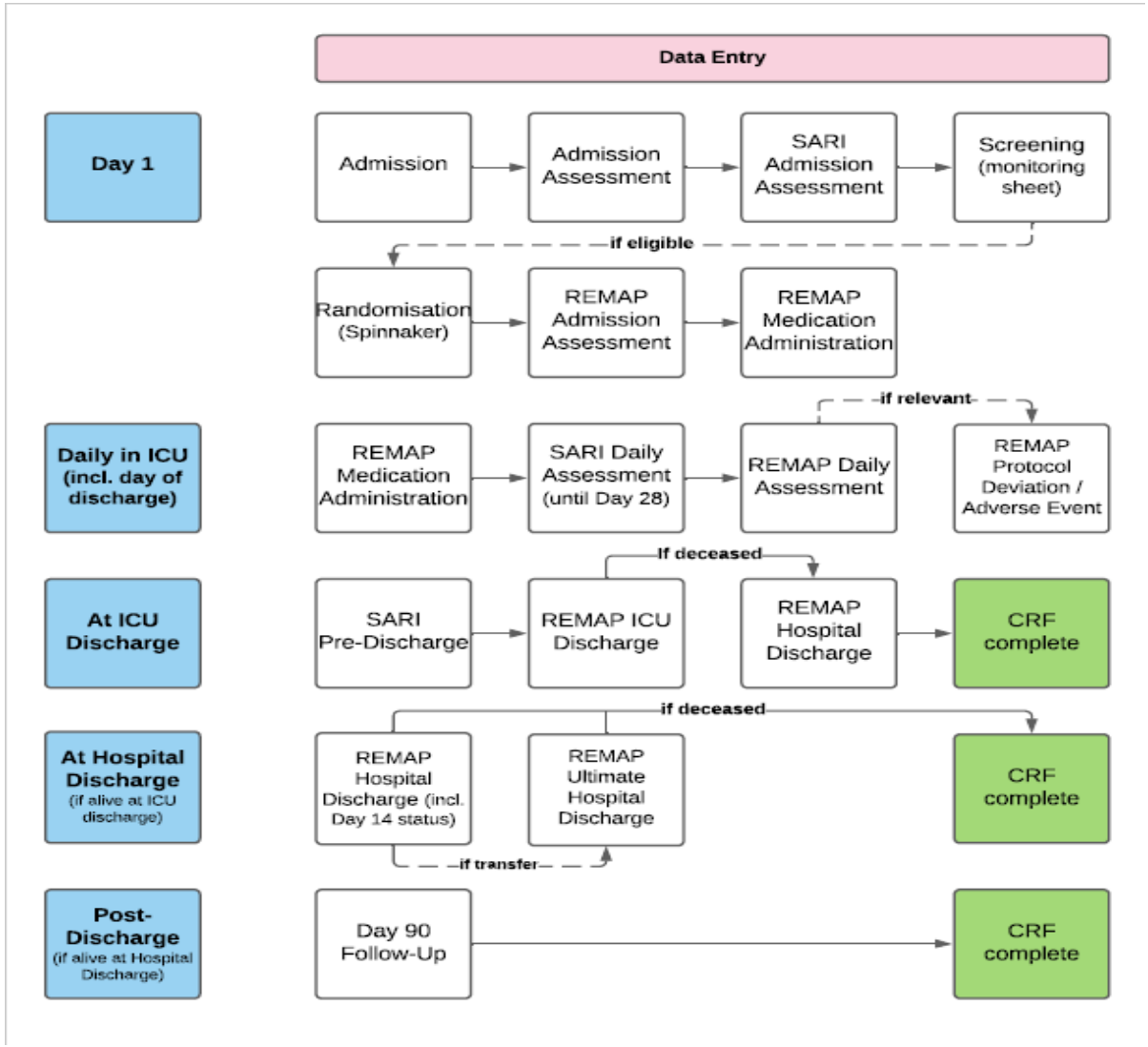
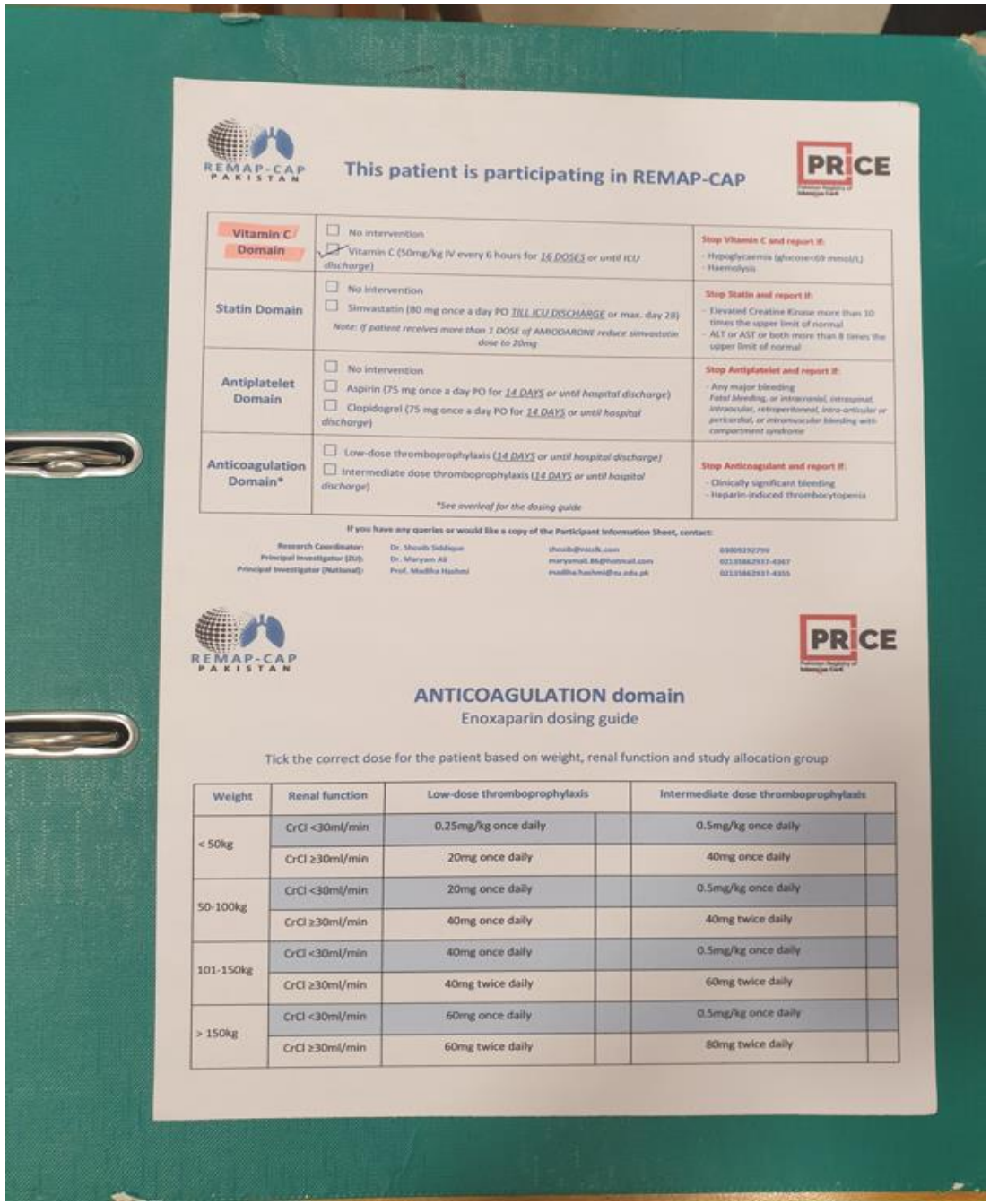




SITE-LEVEL IMPLEMENTATION
ENGAGEMENT

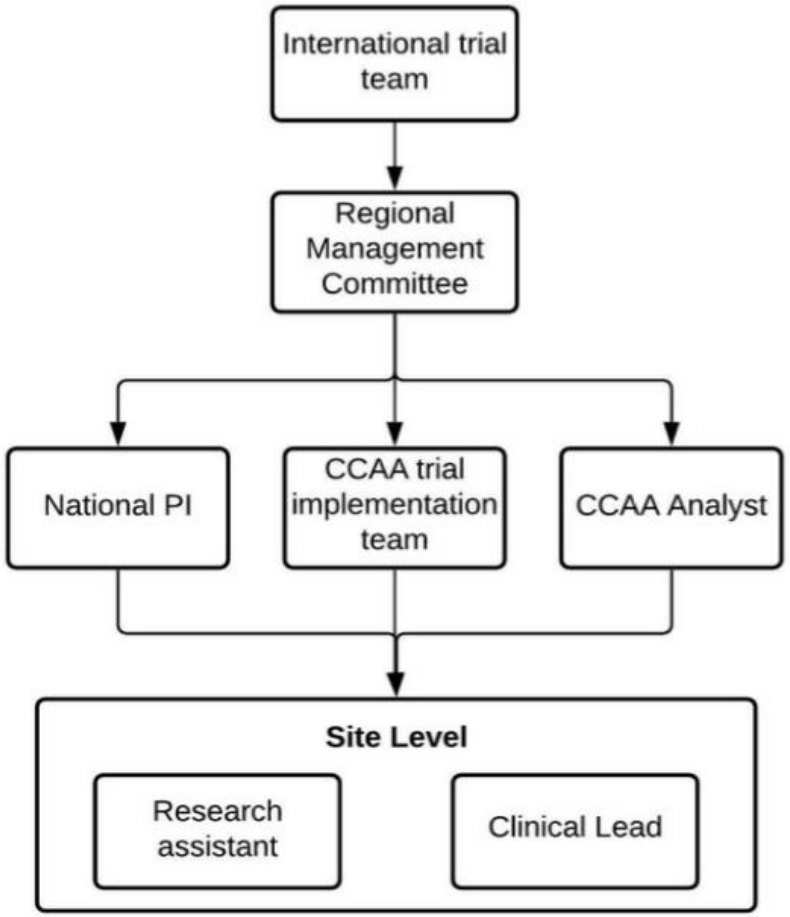
SITE-LEVEL IMPLEMENTATION *TRAINING*





SITE-LEVEL IMPLEMENTATION *MONITORING*

Figure 1. REMAP CCAA Organogram



CRIT CARE ASIA

CRIT CARE AFRICA

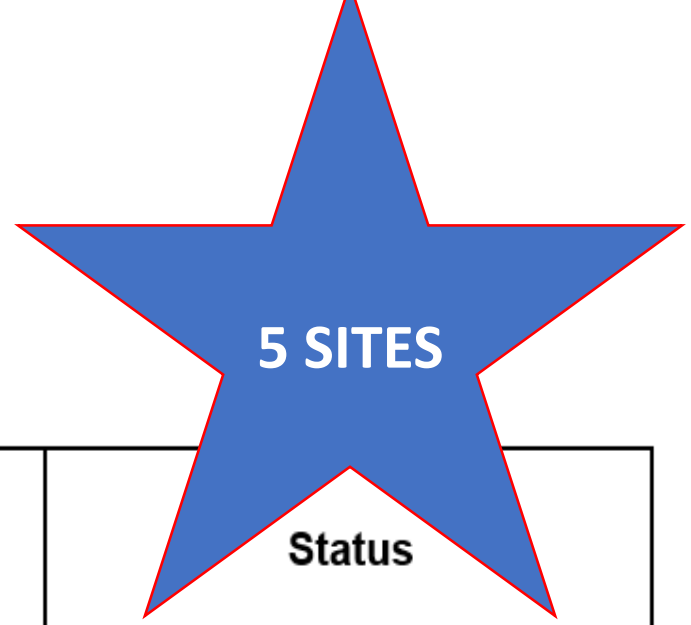
Clinical Monitoring Plan

Version 2.0. DRAFT 28/09/2021

Study Title: Randomized, Embedded, Multifactorial Adaptive Platform trial for Community-Acquired Pneumonia including COVID 19 (REMAP CAP+Pandemic)

Study Acronym: REMAP-CAP

SITE-LEVEL IMPLEMENTATION



Recruitment/Number of participants in the study

Intervention Domain	Total recruited to date	Total withdrawn to date	Status
Vitamin C	323	03	Recruitment ongoing.
Statin	13	0	Recruitment ongoing.
Ivermectin	114	01	Recruitment ongoing.
Anticoagulation	0	0	Recruitment has not started
Totals	450	04	***co-enrollment included**

8TH October 2021

SITE-LEVEL IMPLEMENTATION
EXPERIENCE GAINED

- Investing in Research infrastructure where the burden of disease is-***CCAA & WELLCOME TRUST***
- Research Collaborations- ***ISARIC & REMAPCAP***
- Local Engagement
- Ministries of Health, National Health Systems, WHO