ESICM Webinar Summary 19/3/20

National Coordination & Experience in Italy

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Summary by:
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NB: The approximate population of Lombardy in Northern Italy is 10 million people.
The capital of Lombardy is Milan which has a population of 1.35 million.
The population of Italy is 60.48 million.

INITIAL RESPONSE FROM 20TH FEBRUARY

- On 20th February, healthy 30yo man with atypical pneumonia tested COVID19+ in Codogno
- On 21st of February, 36 new positive patients without links to first patient
- Emergency Task Force initiated in Lombardy
- Pre-crisis total ICU Capacity in Lombardy = 720 beds (2.9% of Hospital Beds) at 85-90% Occupancy in Winter
- ICU Capacity was surge expanded on an assumed ICU admission rate of 5% 15 first-responder hub hospitals
- These hospitals had expertise in infectious disease or VV ECMO
- Non-urgent procedures were cancelled
- Other 200 ICU bed were made available in the following 10 days 920 TOTAL
- Containment measures = quarantine of several towns in initial cluster
- 2nd week, other clusters emerged, and the ICU network began to advise the government:
  - *Reinforcing public health measures of quarantine*
  - *Self-isolation*
- ICU admissions over the first 2 weeks = 556 which was 16% of all 3420 patients tested positive at this time

ON 7TH MARCH

- COVID+ Patients hospitalised in ICU = 359 (16% of 2217 hospitalised positive patients)
- Creation of 482 MORE ICU beds…. This was 60% of total pre-outbreak ICU bed capacity

ON 8TH MARCH

- Transfer of critically ill patients OUTSIDE the region 30 non-covid and 21 covid patients up to 19/3/20

Based on data to March 7, when 556 COVID-19–positive ICU patients had been admitted to hospitals over the previous 15 days, linear and exponential models were created to estimate further ICU demand… (fig.1)

- Assuming exponential growth, there would be 14,542 ICU Admission by 20th March 2020
- Assuming linear growth, there would be 869 ICU admissions by 20th March 2020

On 16/3/20 in Italy – Healthcare Workers accounted for 9.33% of COVID cases (fig10)

18/3/20 there are 1086 patients being treated in ICU – 94% ventilated

Data for 1503 patients

Age (fig 5 & 6)

Median age of treated patients = 64 (min 14, max 91) → n = 1503

Median age of dead patients = 71 (min 32, max 91) → n = 252

Median age of discharged patients = 60 (min 28, max 84) → n = 214

Median age of current patients in ICU = 62 (min 14, max 85) → n = 1037

PEEP – data of 672 patients (fig 7)

Max: 22, 75% percentile: 15, **Median: 14**, 25% percentile: 12, Min: 0

FiO_2 of Hospitalised Patients – data of 644 patients (fig 8)

Max: 100, 75% percentile: 70, **Median: 55**, 25% percentile: 45, Min: 30

PaO_2/FiO_2 in Hospitalised Patients – data of 673 patients (fig 9)

Max: 530, 75% percentile: 254 , **Median: 180**, 25% percentile: 130, Min: 37

Viewpoint

March 13, 2020

ONLINE FIRST FREE

Critical Care Utilization for the COVID-19 Outbreak in Lombardy, Italy

Early Experience and Forecast During an Emergency Response

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Author Affiliations | Article Information

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Based on data to March 7, when 556 COVID-19–positive ICU patients had been admitted to hospitals over the previous 15 days, linear and exponential models were created to estimate further ICU demand

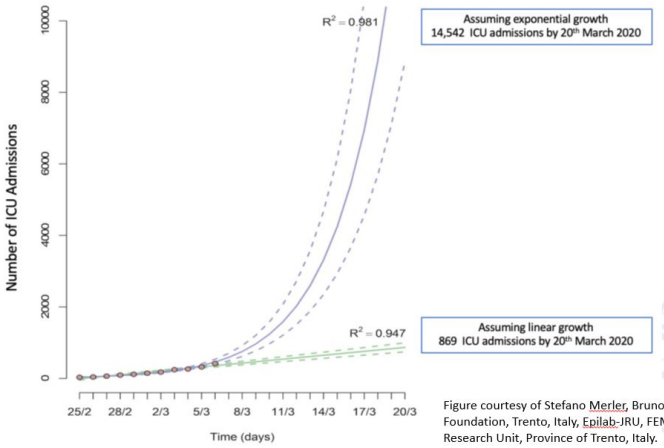


Figure courtesy of Stefano Merler, Bruno Kessler Foundation, Trento, Italy, Epilab-JRU, FEM-FBK Joint Research Unit, Province of Trento, Italy. www.esicm.org

Fig1

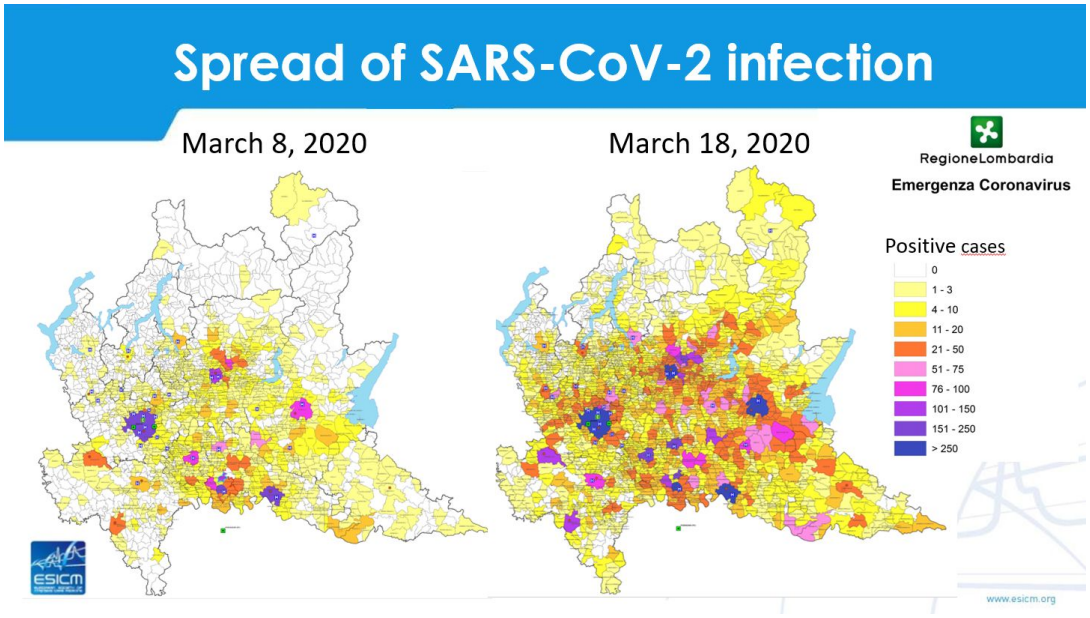


Fig2

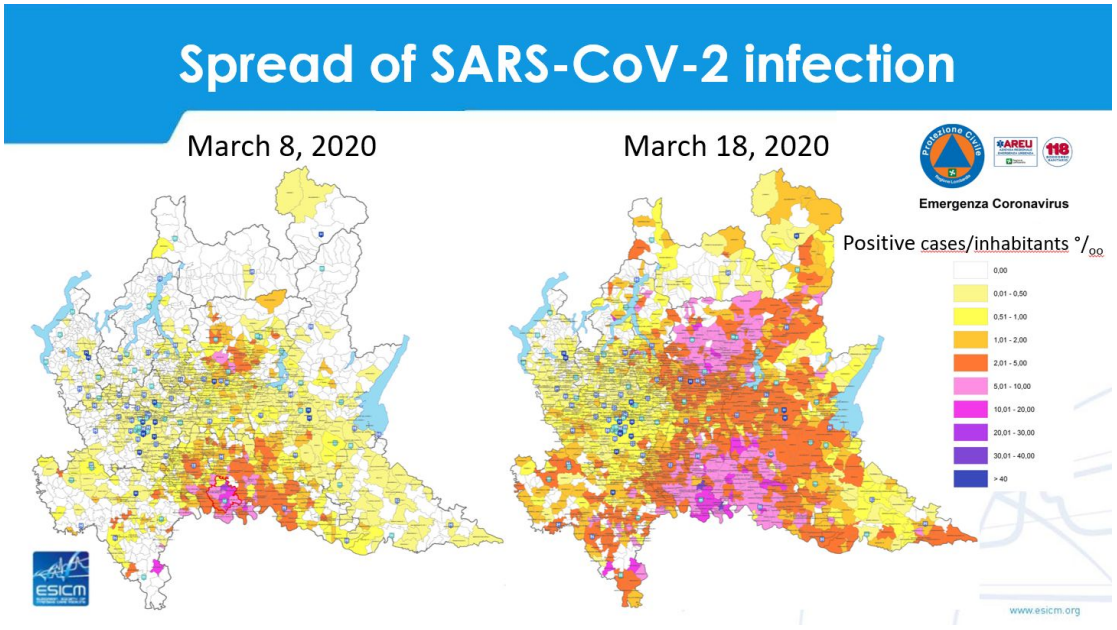


Fig3

Fig 4

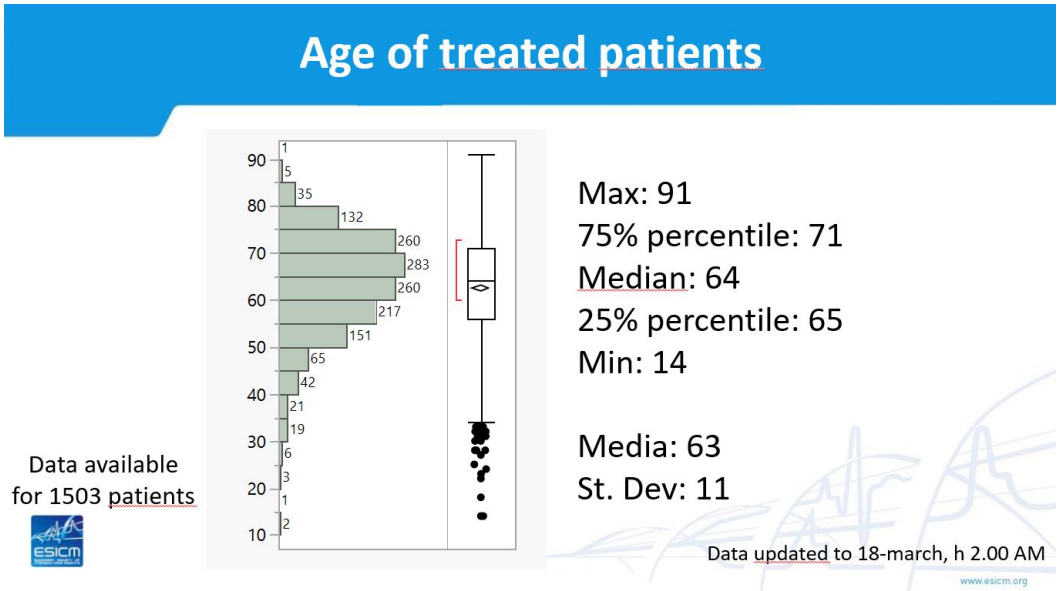


Fig 5

Age of treated patients

Data available for 1503 patients

Data updated to 18-March, h 2.00 AM

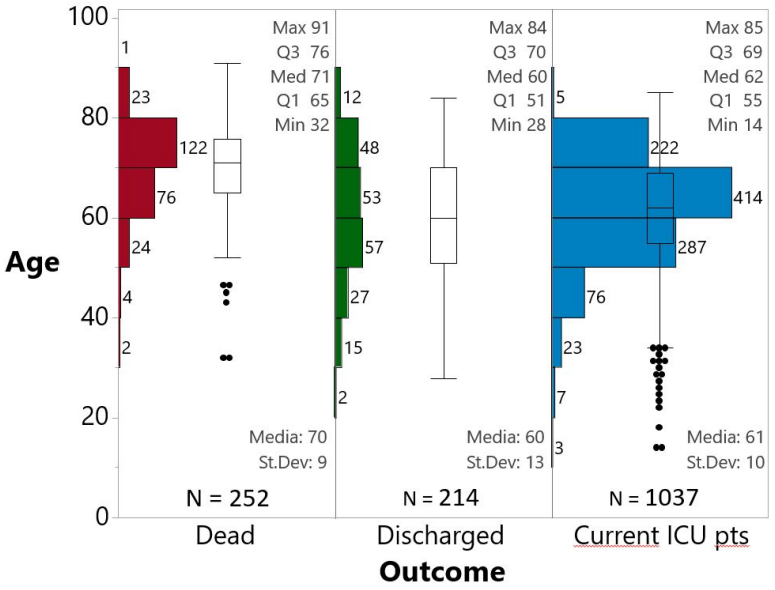
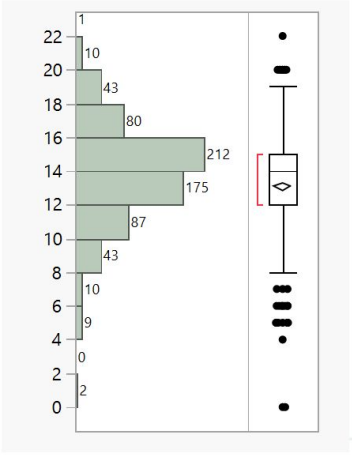


Fig 6

PEEP in hospitalized patients



Max: 22
75% percentile: 15
Median: 14
25% percentile: 12
Min: 0

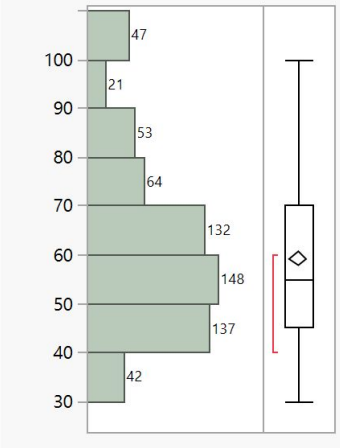
Media: 13
St. Dev: 3

Data available for 672 patients

Hospitalized patients
Data updated to 18-march, h 2.00 AM

Fig 7

FiO_2 in hospitalized patients



Max: 100
75% percentile: 70
Median: 55
25% percentile: 45
Min: 30

Media: 59
St. Dev: 18

Data available for 644 patients

Hospitalized patients
Data updated to 18-march, h 2.00 AM

Fig 8