COVID-19
International Roundtable: Recommendations and Lessons Learned
Welcome & Opening Remarks

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Lessons From Milan, Italy

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COVID-19 is an infectious disease caused by a new coronavirus introduced to humans for the first time.
COVID-19 in Europe
150,189 cases of COVID-19
16,050 health-care workers
18,641 associated deaths

Integrated surveillance of COVID-19 in Italy

13 April 2020 UPDATE

Note: more recent data may spill outside due to the possibility that cases with date of onset within the reporting period have not yet been diagnosed.

99% of the clinical samples processed were confirmed by the National Reference Laboratory of the Istituto Superiore di Sanità.

Median age of cases: 62 years

Total number of COVID-19 cases diagnosed by the Italian Regional Reference Laboratories

By Region/Autonomous Province of diagnosis

By province of residence

Data available for 63,342 cases

The case definition considers as a confirmed case any person with laboratory confirmation of virus, irrespective of clinical signs and symptoms.

Data collected on cases that tested positive for SARS-CoV-2 infection diagnosed by all Italian Regions/Autonomous Province. Data could differ from aggregated data from the Italian Ministry of Health and the Italian Civil Protection. The term "health-care worker" is based on the occupation and not on the place of exposure. Case fatality rate.

ASN
American Society of Nephrology
Dialysis and Kidney Tx Population in Italy

- Hemodialysis: 46,000 patients (<500 in home hemodialysis)
- Peritoneal dialysis: 4,500 patients (60% in CAPD, 40% in APD)
- Kidney Tx: 26,000 patients

More than 80% of patients in HD are treated in public, non-profit hospitals
20% of patients are treated in private hospitals with SSN, National Health System
Peritoneal dialysis is done ONLY in public hospitals (SSN, National Health System)
Dialysis and kidney transplant are free of charge for patients
COVID-19 & Dialysis Survey March 2020

- Hemodialysis: **36,433** patients (Italian Registry 2018)
- Peritoneal dialysis: **4,143** patients (Italian Registry 2018)
- HD: **17,774** patients (Survey March 2020) : **48.79%**
- PD: **2,252** patients (Survey March 2020): **54.36%**
- HD-COVID-19: **521** patients (2.9%)
- PD- COVID-19: **18** patients (0.8%)
- Isolated dialysis patients **68%** of COVID-19
- ICU dialysis patients **20%** of COVID-19
- Mortality dialysis patients **27%** of COVID-19
## COVID-19 Lombardy Data

<table>
<thead>
<tr>
<th></th>
<th>HD</th>
<th>PD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Pts on HD:</strong> 3318</td>
<td><strong>Pts on PD:</strong> 713</td>
</tr>
<tr>
<td></td>
<td><strong>HD Pts COVID 19 +:</strong> 260 <strong>(8%)</strong></td>
<td><strong>PD Pts COVID 19 +:</strong> 7 <strong>(1%)</strong></td>
</tr>
<tr>
<td></td>
<td>+ Pts treated in isolated room: 206</td>
<td>+ Pts treated in isolated room: 0</td>
</tr>
<tr>
<td></td>
<td>+ Pts treated in Semi-intensive/ICU 54</td>
<td>+ Pts treated in Semi-intensive/ICU: 0</td>
</tr>
<tr>
<td></td>
<td>+ Deaths: 62 <strong>(1.8%)</strong></td>
<td>Deaths: 2 <strong>(0.2%)</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Staff COVID 19 positive:</strong> 84</td>
<td><strong>Staff COVID 19 positive:</strong> 0</td>
</tr>
</tbody>
</table>

* = 75% of total dialysis population
COVID-19 in Dialysis Patients

Remember

YOU CAN NOT AVOID INFECTION OUTSIDE DIALYSIS FACILITIES

BUT

YOU CAN AVOID INFECTIONS IN DIALYSIS FACILITIES
Three Main Goals

Action 1 Protect Patients
- Systematic use of surgical mask and use of alcoholic solution for hands and fistula arm

Action 2 Protect the team
- Nurses have to wear surgical mask and protective glasses. Wash hands with soap and water, use disposable gloves

Action 3 Protect the dialysis ward
- Keep positive patients out of the dialysis ward as much as possible. Treat positive pts in a separate area
Protect Patients

- SARS-CoV-2 can affect dialysis patients.
- The clinical picture may be non-specific, due to uremia related immune-suppression.
- Prompt diagnosis is a protection for the whole dialysis ward (staff and other patients)
Our Suggestions - 1

All the patients need to be informed about symptoms: low fever, general malaise, cold or flu-like symptoms (at least in the early stage of the disease can be subtle)

- **Prepare** a letter with all the phone numbers necessary for contact and give it every week to patients;
- **Inform** the patient to call in dialysis before leaving home if one of the symptoms is present;
- **Define** what patients with symptoms have to do;
- **Use** during transport and dialysis session a surgical mask;
- **Suggest** individual transport. In case of collective transport space between one patient and another must be guaranteed.
Our Suggestions - 2

Implement **triate protocol** before entering dialysis room:

- **Body temperature** (scanner or tympanic temperature);
- **Questionnaire** with two questions:
  - Flu-like symptoms (diarrhea, cough, nausea, headache)
  - Contact with suspected COVID-19 patient

If one answer is YES, or \( t > 37 \, ^\circ C \) (98.6 \(^\circ F\)) patient is **NOT** admitted to dialysis room with other pts
Our Suggestions - 3

In case of suspected COVID-19, if possible, **postpone** the dialysis treatment and perform **nasopharynx swabs**.

**Separate room** for dialysis for suspected COVID-19 pt(s) or treat patient(s) in the last shift of the day.

If separate room is not available, treat the pt(s) at a corner or end of row station. At least **6-feet from nearest pt** in all direction is mandatory.

A **selected and well-trained group of HCW** should be assigned to treat suspected pt(s)
Our Suggestions - 4

Pt(s) with confirmed COVID-19 infection should be admitted to an airborne infection isolation room.

Do not dialyze in outpatient dialysis facility unless an airborne infection isolation room is available.

Pt(s) at home need to check °t and O2 saturation in the morning and evening.

Transport from home to hospital and vice versa requires a dedicated vehicle. Caregivers need to wear full protection.
Our Suggestions - 5

In our Divisions, there are 5 dedicated rooms (15 beds) for COVID-19 positive dialysis pts.

At March 30: 20 HD pts COVID 19 positive, out of 350 dialysis pts
3 nurses out of 120 (dialysis, peritoneal dialysis, ward)

Pts admitted to ward in order to avoid transport, contact with family members, etc.

Five rooms equipped with portable osmosis and dialysis monitor

Only HCWs assigned to COVID-19 positive enter the isolation room

Utilization of the intercom system for communication (HCWs during dialysis session, pt and ward staff, etc).
Logistics

dressing room for staff (clean area)
Logistics
115 colleagues died during COVID 19 pandemic (data at April 13)
Dialysis and COVID-19: UK Response

KATE STEVENS, MD
Consultant Nephrologist
The Glasgow Renal and Transplant Unit
Glasgow, Scotland, UK
Dialysis and COVID-19: UK Response

- Dr Kate Stevens, Dr Jamie Traynor, Dr Pete Thomson, Prof Paddy Mark
- Consultant Nephrologists, Glasgow Renal and Transplant Unit, Scotland, UK
COVID-19 Timeline

21/12/19 Pneumonia of unknown cause identified in China

20/01/20 1st case outside Mainland China

30/01/20 WHO declares global health emergency

28/02/20 1st case in UK passed on within UK & 1st UK death

20/03/20 UK lockdown

02/04/20 Statement re PPE for Dialysis

12/04/20 UK 5th country to surpass 10,000 deaths
Confirmed coronavirus (Covid-19) cases

New report shows higher death toll
Death registrations compared with figure reported at the time

Most deaths in London
Number of coronavirus deaths by NHS region

Source: UK's national public health agencies, updated: 14 Apr 14:30 BST

Note: Isles of Scilly cases combined with Cornwall. Orkney has fewer than five cases - exact number not disclosed.

Source: UK's national public health agencies, updated: 14 Apr 14:30 BST
Deaths over time in selected countries
Cumulative deaths, days since 10th death in each country

UK
Faster increase, doubling every two days
Slower increase, doubling every three days
Lockdown begins

Italy

Spain
Faster increase
Slower increase

France

Germany
Faster increase
Slower increase

US

Log scale. Note: No nationwide lockdown in US.
From early April, France has included data from care homes.

Source: Johns Hopkins University, updated: 14 Apr 18:20 BST
<table>
<thead>
<tr>
<th></th>
<th>Total tests</th>
<th>Total people tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Total tests</td>
<td>382,650</td>
<td>302,599</td>
</tr>
<tr>
<td>*Daily tests</td>
<td>14,982</td>
<td>11,879</td>
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93,873 positive tests
Testing

- Phased testing
  - No major diagnostics manufacturing industry
  - International demand for testing materials

- Accuracy and reliability of the test
  - No specially trained ‘testers’ (Lessons from SARS 2003)
  - False negatives plus uncertainty leading to multiple tests

- Target: 100,000 tests/day by the end of April
  - Previous target: 25,000 tests/day by mid April

- UK dispensation to have dialysis patients tested promptly
Dialysis in the UK

**RRT Modality, UK**

- ICHD: 35817
- PD: 3504
- HHD: 2977
- Tx: 1300

**RRT Modality, Scotland**

- ICHD: 1910
- PD: 46
- HHD: 189
- Tx: 2977
## The UK Renal Association, weekly COVID-19 surveillance report (up to 8th April 2020)

<table>
<thead>
<tr>
<th>Region/Country</th>
<th>N RRT Patients Alive End of 2018</th>
<th>Number of Cumulative Positive Tests</th>
<th>Number of Cumulative Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>CKD</td>
<td>HHD</td>
</tr>
<tr>
<td>East of England</td>
<td>4,553</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Kent, Surrey &amp; Sussex</td>
<td>2,169</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>London</td>
<td>14,394</td>
<td>55</td>
<td>4</td>
</tr>
<tr>
<td>Midlands East</td>
<td>4,253</td>
<td>52</td>
<td>1</td>
</tr>
<tr>
<td>Midlands West</td>
<td>6,485</td>
<td>119</td>
<td>5</td>
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<tr>
<td>North East</td>
<td>2,930</td>
<td>16</td>
<td>0</td>
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<tr>
<td>North West</td>
<td>6,458</td>
<td>31</td>
<td>2</td>
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<tr>
<td>South East</td>
<td>4,514</td>
<td>54</td>
<td>3</td>
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<tr>
<td>South West</td>
<td>4,808</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Yorkshire &amp; Humber</td>
<td>5,637</td>
<td>30</td>
<td>0</td>
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<tr>
<td>ENGLAND</td>
<td>56,201</td>
<td>385</td>
<td>15</td>
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<tr>
<td>SCOTLAND</td>
<td>5,245</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>WALES</td>
<td>3,252</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
COVID Cases in Glasgow
14/4/20

Population n=610,000
Patients on RRT n=1873
1st case 21/3/20
Mortality 22.2%*

*2 withdrawal, 1 bacterial pneumonia
Reflections

- Reactive ‘v’ proactive response
- New disease, happened quickly
- HD Unit is a readily transmissible environment...quicker off the mark
- Earlier implementation of change: FRSM, transport, alcohol gel and patient flow, fire doors, lifts – eg ‘matchsticks’ for buttons
- Written info to patients
- Patients reassured (not worried) by temperature checks and masks
- Professional distancing
- Consideration for ICU – HD not different. RA statement to support
- Alterations to the way we practice and the public perceive medicine
  - more realistic about expected outcomes, DNACPR, conservative care
Lessons From Germany

CHRISTOPH WANNER, MD
Professor of Medicine
Division of Nephrology
University Hospital
Würzburg, Germany
Germany:
Population 82 Mio
Dialysis 80,000
HD centers 850
HD-COVID-19 ?<1%
COVID-19 death 3,000
The Early Learnings in Germany

The 1\textsuperscript{st} cohort, the 2\textsuperscript{nd} cohort

- The Munich cohort (one infected 250 and all were traced)
- The carnival escapers, returning from skiing in northern Italy and Austria

Prevention measures

- 350-500k testings per week (reagents were ordered early)
- Mass gathering avoided and social distancing installed
- Hotspots quarantained

The result

- Mean age of the early cohorts: 48 years
- Mean age of the first 2600 who died: 82 years
Kidney Related Topics Currently Discussed in Germany (1)

Proteinuria, nephrotic syndrome, ATIII deficiency, frequent thromboembolism
- Do early UACR for prevention (anticoagulation)

AKI is frequent
- 7/10 ICU patients (ventilated “septic”) require RRT
- *Explanation:* referrals, an enrichment of severe cases in some of the 97 independent Nephrology Hospital Departments
Kidney Related Topics Currently Discussed in Germany (2)

Avoid contamination of dialysis centers
• Do “social distancing” in dialysis centers
• Do not “overlap” HD shifts, provide sufficient time between shifts
• Reduce the duration of a dialysis session (i.e. from 4h to 3.5h)?
• Contamination source: i.e. retirement homes
• Question: Where to run CKD outpatient clinics in upcoming 18 months

Prevent triaging of dialysis patients
• Establish interdisciplinary criteria for upcoming hotspots
Where to go from here?

~ 2,800 ICU beds currently used for COVID-19 from 28,000 available
(upscaling to 40,000 ongoing)

Return to “normal” live by
• Stepwise opening the country
• Following three rules/initiatives
  1. Wash hands and wear masks in public
  2. Focus testing to persons at risk
     (virus and antibodies)
  3. Corona-DataDonation-App (pilot trial)
     and role out to Quarantaine-App
Thank you!
Preliminary Lessons Learned

ALAN KLIGER, MD
Clinical Professor of Medicine
Yale School of Medicine
Preliminary

LESSONS LEARNED

Alan S. Kliger MD
Clinical Professor, Yale Medical School
Co-Chair ASN COVID-19 Response Team
• There is a significant chance that an epidemic of a substantially more infectious disease will occur sometime in the next 20 years.

• It's instructive to compare our preparations for epidemics with our preparations for another sort of global threat — war. The North Atlantic Treaty Organization (NATO) has a mobile unit that is ready to deploy quickly.

• Few, if any, such measures are in place for response to an epidemic.
• We need to invest in better disease-surveillance and laboratory-testing capacity, for normal situations and for epidemics. Routine surveillance systems should be designed in such a way that they can detect early signs of an outbreak beyond their sentinel sites and be quickly scaled up during epidemics.

• They should be linked with national public health laboratories to enable robust monitoring and response. And the data derived from such testing need to be made public immediately.
Have we Finally Learned

The next epidemic is inevitable. We need tools and systems to detect early outbreaks before they spread. We need better tracking systems to identify and follow contacts. We need systems in place ready to activate – to develop and deploy tests for the vector. We need to contain the threat before it spreads. We need mitigation strategies ready to deploy.
COVID-19: We watched a growing epidemic and then reacted to the threat

• A reactive approach fails.
• A well-designed proactive approach includes:
  • Early case identification
  • Contact mapping and isolation
  • Swift implementation of protocols to contain infection and reduce population exposure
  • Mitigation strategies
A new Discipline: Early Recognition

- Worldwide effort to record and report symptom clusters, changes in hospitalization, morbidity and mortality rates
- 21st century epidemiologic registry
- Analytic tools can be used to develop new algorithms to assess changes in population health.
- Frameworks for international trials of vaccines and medications should be prepared and ready to dispatch.
Mitigation Strategies

• Social Distancing
• Testing for the vector widely available, deployed first to hotspots, then to everywhere else
• Serologic testing to detect immune responsiveness, immunity, recovery from infection in asymptomatic people
Equipment and Personnel Shortages: Predictable

• World-wide preparedness for this will require new flexible algorithms, coordinating and sharing resources

• The 20th century model of independent, sometimes competing healthcare systems using just-in-time ordering to minimize inefficient shelving of supplies breaks down in epidemics

• Need 21st century updating to allow international stockpiling of critical equipment with flexible plans to anticipate needs and quickly move them as needed.

• Algorithms for personnel management: prevention, management of diseased personnel, back to work guidance and monitoring
Research to Define What We Need Next Time

• Multi-national research group to examine all aspects of the organism and host response, including
  • The source reservoir
  • Genetics of the vector
  • Host response
  • Vaccination
  • and more...

• Regional puzzles need investigation – for example why in New York is there a higher mortality among black and brown people infected with SARS Co-V2?
Questions

DARLENE RODGERS, BSN, RN, CNN, CPHQ

Nurse Consultant

American Society of Nephrology (ASN)
Closing Remarks

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