THE CHURCH AND COVID-19

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- Molecular Biology, Acadia University, Medecine McGill University, Otolaryngology - head and neck surgery McGill University, Endoscopique ear surgery British Columbia University
- Certificate in management Harvard Business School and Global Clinical Research Scholar Harvard Medical School
PLAN

- Why this presentation?
- Scientific, medical and epidemiological data
- Recommendations and solutions
- Questions
WHY?
LEADERSHIP

- Protect life
  - Beginning
  - End
  - During the whole life
- UNIQUE leadership during this pandemic
- Civil regulations vary but the virus is the same everywhere!
- Up to us to lead according to our values
CRITERIA

- Civil authorities
  - Economy
  - Access to healthcare
  - Societal values

- Church
  - Protect life
  - Protect those most vulnerable
  - Christian values - sharing, cooperation
CHALLENGES FOR THE CHURCH

- Number of individuals
- Individuals
  - age
  - co-morbidities
- ministry
- group confinement
SO FAR

- Over 80 priests have died from COVID 19 in Italy alone
  - many were already confined
- 1 bishop deceased, a few others positives ou in quarantine
- 1 Canadian Seminary with COVID 19
- Religious communities, not serving the sick
  - 4 Italy
    - 1 France, longterm care house for religious women
- Explosions of cases in jails everywhere
This is not about elitism, protectionism

We have to share these recommendations with everyone

Our presence, our behavior, our decisions will have a major impact on all members of the Church and the world

We have to protect those who have been given to us and ourselves

Missionary role
SCIENCE
Coronavirus:
- a family of viruses
  - 4 common subtypes - catch in winter
  - 3 rare subtypes - killers
    - SARS-COV2 causes the disease COVID-19
  - Not a biochemical weapon
  - Few genetic variations
BIOLOGY AND TESTING

- RNA Virus
- Tests by amplifications (PCR)
- **10-15% false negatives**
  - testing is not 100% precise
  - hence we only test people
    - at risk
    - clinical signs
- A negative test today does not preclude one from contracting the virus tomorrow!
TRANSMISSION

- Virus is found in secretions
  - nasal, saliva
  - stool
  - *not in urine*
- Contamination
  - eyes, nose, mouth
  - Wounds on the hands, skin
VIRAL PERSISTANCE - TRUE OR FALSE

- Full survival length - No
- clinically inexact
- Half-lives - better approximation
- stainless steel 5 h 28 min
- plastic 6 h 19 min
- cardboard 3 h 30 min
- copper 46 min
**CLINICAL SIGNS**

- **Incubation**
  - symptoms begin 3 to 10 days after exposure
  - average 6 days

- **Major symptoms:**
  - Dry cough
  - Fever
  - Breathing difficulty
  - Gastro-intestinal problems
  - Loss of smell - often in less acute patients
COVID-19

- Disease causes by the virus
  - 80% few or no symptoms
  - 20% need health care
  - 2.4% -5% mortality worldwide (10% in Italy, 0.9% South Korea)
- Those who need respiratory support
  - Up to 62% mortality
  - Intensive care with ventilator
  - Up to 81% mortality
# Age and Mortality - China

<table>
<thead>
<tr>
<th>Age</th>
<th>décès-cas</th>
<th>CFR %</th>
<th>CI 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 9 ans</td>
<td>0-416</td>
<td>0.00</td>
<td>0.03-1.02</td>
</tr>
<tr>
<td>10-19</td>
<td>1-549</td>
<td>0.18</td>
<td></td>
</tr>
<tr>
<td>20-49</td>
<td>63-19790</td>
<td>0.32</td>
<td>0.25-0.41</td>
</tr>
<tr>
<td>50-59</td>
<td>130-10 008</td>
<td>1.3</td>
<td>1.1-1.5</td>
</tr>
<tr>
<td>60-69</td>
<td>309-8583</td>
<td>3.6</td>
<td>3.2-4.0</td>
</tr>
<tr>
<td>70-79</td>
<td>312-3918</td>
<td>8.0</td>
<td>7.2-8.9</td>
</tr>
<tr>
<td>&gt; 80</td>
<td>208-1408</td>
<td>14.8</td>
<td>13.0-16.7</td>
</tr>
</tbody>
</table>
MEDICAL RISK FACTORS FOR COVID 19 MORTALITY

- CFR 10.5% Cardiovascular disease
- CFR 7.3% Diabetes
- CFR 6.0% Hypertension
- CFR 6.3% Chronic pulmonary disease - includes asthma and allergic asthma
- CFR 5.6% Cancer
- Chronic renal disease
- CFR 0.9% No active disease
MORTAL RISK FACTORS IN ITALY

- On 355 deceased patients
  - 49% hypertension
  - 36% diabetes
  - 33% cardiac condition
TREATMENTS

- Vital support: oxygen, ventilator, etc
- Chloroquine - Plaquenil
  - in vitro data only, in vivo studies ongoing
  - no clinical benefit shown at this time
- Blood serum transfusion from patients who have recovered
  - used during the Spanish flu pandemic of 1918
  - several studies ongoing worldwide
  - in the short term our best bet for a quick solution
TRANSMISSION RISKS

- Viral concentration: method, timing of infection, severity of infection

- Transmission by asymptomatic individual, COVID?
  - unknown % risk

- Transmission by person who is COVID +
  - 1% to 5%

- After clinical resolution, the virus is still detectable and being shed
  - for 8 to 37 days - average 20 days

- uncertain if it is still transmissible or not
SECOND INFECTION?

- Viral particles are still detected in some individuals who seem cured
- Uncertain to know if they have a second infection
- Uncertain if the clinical symptoms could recur
- We need to continue to observe these patients
HOW TO PROTECT YOURSELF

- Do NOT touch your face!!!
- Wash your hands
- Wash food items, store items
  - A bit of soap and water, rub, rinse
  - Wait 4 hours before putting dry goods away
- Clean surfaces, especially common areas
  - door knobs, light switches, sink taps
  - dining tables, church benches, etc
HOW TO PROTECT MYSELF – OTHERS

- Do not act as if you are afraid to catch it
- Act as if you were **positive**!
  - Active individuals
    - Distancing and strict separation from others who are ‘fixed'
  - Inactive individuals ‘fixed’ - alone or group
    - Strict confinement of **all**
- **Close to half of the planet is under confinement!**
# COVID Status Worldwide - Canada

<table>
<thead>
<tr>
<th>Region</th>
<th>Total Cases</th>
<th>Deaths</th>
<th>Remissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>718,685</td>
<td>33,881</td>
<td>149,076</td>
</tr>
<tr>
<td>Canada</td>
<td>6,280</td>
<td>64</td>
<td>466</td>
</tr>
</tbody>
</table>

[https://coronavirus.jhu.edu/map.html](https://coronavirus.jhu.edu/map.html)
## Covid-19 - Évolution du cas à partir du 70-80e cas

### Données diverses en date du jour

<table>
<thead>
<tr>
<th>État/Province</th>
<th>Québec</th>
<th>Ontario</th>
<th>BC</th>
<th>USA</th>
<th>Japon</th>
<th>Italie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cas positifs</td>
<td>2940</td>
<td>1326</td>
<td>884</td>
<td>122157</td>
<td>2441</td>
<td>97669</td>
</tr>
<tr>
<td>% pop.</td>
<td>0.03%</td>
<td>0.01%</td>
<td>0.02%</td>
<td>0.04%</td>
<td>0.00%</td>
<td>0.16%</td>
</tr>
<tr>
<td>Décès</td>
<td>22</td>
<td>21</td>
<td>17</td>
<td>2056</td>
<td>65</td>
<td>10779</td>
</tr>
<tr>
<td>Décès/cas+</td>
<td>0.77%</td>
<td>1.58%</td>
<td>1.92%</td>
<td>1.88%</td>
<td>2.66%</td>
<td>11.03%</td>
</tr>
<tr>
<td>Soins intensifs</td>
<td>72</td>
<td>63</td>
<td>56</td>
<td>3856</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalisations</td>
<td>102</td>
<td>73</td>
<td>17046</td>
<td>1387</td>
<td>30532</td>
<td></td>
</tr>
<tr>
<td>%Hospit vs cas+</td>
<td>7%</td>
<td>8%</td>
<td>14%</td>
<td>57%</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td># tests</td>
<td>52204</td>
<td>41956</td>
<td>36643</td>
<td>766761</td>
<td>270056</td>
<td>4390000</td>
</tr>
<tr>
<td>% pop. tests</td>
<td>0.62%</td>
<td>0.31%</td>
<td>0.79%</td>
<td>0.23%</td>
<td>0.02%</td>
<td>0.71%</td>
</tr>
<tr>
<td>Tests en attente</td>
<td>8313</td>
<td>7203</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>% tests positifs</td>
<td>5.4%</td>
<td>3.2%</td>
<td>2.4%</td>
<td>15.9%</td>
<td>86.9%</td>
<td>22.7%</td>
</tr>
</tbody>
</table>

### Jours depuis 70-80e cas

- **Québec (6.5 M hab)**
- **Colombie Britannique (5.5 M)**
- **Japon (128 M)**
- **Italie (60 M)**
- **USA (333 M)**
- **Ontario (14.7 M)**

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**STATUS QUÉBEC - ONTARIO MARCH 29TH**
TRANSMISSION MODES

- Surfaces
  - https://www.facebook.com/Corporatebytes/videos/198646281440723/?t=63

- Air
  - sneeze: 35 m/sec - 10 meters
  - cough - 3 to 5 meters
  - suspension in air
  - transmission through ventilation, surfaces
  - infection of 1 to 2 individuals - silent
  - 15 to 20 individuals in 7 to 10 days
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EPIDEMIOLOGICAL PREDICTIONS

- Population Canada: 37.59 millions
- Currently 6 280 cases
- Effect of the intervention
STATUS IN HOSPITALS

- All patients treated like COVID + until proven otherwise
- Huge weight on the system
- Manage resources as if all patients were COVID +
  - whatever the health condition, prioritise beds, ventilators, etc
- Priority algorithms in place
## PRIORITY OF CARE

### Table 2. Ethical Values to Guide Rationing of Absolutely Scarce Health Care Resources in a Covid-19 Pandemic.

<table>
<thead>
<tr>
<th>Ethical Values and Guiding Principles</th>
<th>Application to COVID-19 Pandemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximize benefits</td>
<td></td>
</tr>
<tr>
<td>Save the most lives</td>
<td>Receives the highest priority</td>
</tr>
<tr>
<td>Save the most life-years — maximize prognosis</td>
<td>Receives the highest priority</td>
</tr>
<tr>
<td>Treat people equally</td>
<td></td>
</tr>
<tr>
<td>First-come, first-served</td>
<td>Should not be used</td>
</tr>
<tr>
<td>Random selection</td>
<td>Used for selecting among patients with similar prognosis</td>
</tr>
<tr>
<td>Promote and reward instrumental value (benefit to others)</td>
<td></td>
</tr>
<tr>
<td>Retrospective — priority to those who have made relevant contributions</td>
<td>Gives priority to research participants and health care workers when other factors such as maximizing benefits are equal</td>
</tr>
<tr>
<td>Prospective — priority to those who are likely to make relevant contributions</td>
<td>Gives priority to health care workers</td>
</tr>
<tr>
<td>Give priority to the worst off</td>
<td></td>
</tr>
<tr>
<td>Sickest first</td>
<td>Used when it aligns with maximizing benefits</td>
</tr>
<tr>
<td>Youngest first</td>
<td>Used when it aligns with maximizing benefits such as preventing spread of the virus</td>
</tr>
</tbody>
</table>
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QUARANTINE

- Objective: reduce mortality rate and improve access to healthcare
- Depends on every single individual’s compliance
- Does not make the virus disappear...

![Graph showing the progression of coronavirus cases with phases: Do nothing, Mitigation, The Hammer, and The Dance.](image-url)
QUARANTINE : HOW LONG?

- Debate
- Depends on compliance, economy, research
- Most agree 6 to 12 weeks
- We need more than just a plan
  - short term
  - medium term
  - long term
PROPOSITIONS
RISK FACTORS – CHURCH

- Age, co-morbidity, health status
- Risk of transmission increases *exponentially* with:
  - number of individuals under the same roof
  - number of individuals leaving and re-entering
  - total number of individuals entering: community members, employees, visitors, etc
CARE LEVELS

- Each member of the community, irrespective of health status should determine their level of care
  - No CPR
  - Treatment of morbid conditions only
  - Full care

- DO NOT reduce the level of care without valid reason!
- The pandemic must not change the care level!
CATEGORIES OF MEMBERS

- Identify ‘fixed’ and ‘active’ individuals
  - fixed
    - never leave the facility or sector within facility - CONFINEMENT
    - are never in contact with people from the outside
    - form a unit - a house
    - can interact between themselves without social distancing
  - active
    - are in contact with the outside - shopping, meetings, employees
    - must do social DISTANCING at all times
    - must remain separate ‘quarantined’ from the ‘fixed’ group
    - are dangerous for the ‘fixed’ group
INDIVIDUALS

- Maximize the number of ‘fixed’ individual
- Minimize the number of ‘active’ individuals
- Make sure the two **DO NOT** come in contact with one another!
  - otherwise there is NO POINT in confinement!
- au moins prendre toutes les mesures possibles pour réduire au maximum les contacts
RISK CATEGORIES

- Small group: up to 10 or so
  - easy and efficient prevention
- Large groups: 10+
  - danger increases exponentially with the # of individuals
  - reduce risk by group fragmentation into smaller units
  - isolation of smaller units
  - complete closure of common areas
  - absolutely no contact with employees unless for medical reason
DANGEROUS PLACES IN THE HOUSE

- Places to close completely for larger houses (10+)
  - Cafeteria
  - Common chapel
  - Shared spaces
    - living room
    - television room
    - parlours
  - Shared bathrooms - reserve for personnel?
GATHERINGS : STOP!

- Close all churches, chapels, etc
- Discontinue all gatherings, even small ones
  - Encore to all members even authorities
- Hot spots in Montreal linked directly to faith-related gatherings
- We do not want to be the source of transmission
  - moral reasons
  - financial reasons : tickets, law suits
MINISTRY : STOP!

- Always start from the position: I am infected!
- Isolation
  - Minimize personal exposure
  - Minimize other people’s exposure
- Shortage of medical protective gear
- Discontinue
  - all ministry requiring to leave your home
  - receiving people home
- Transform the ministry
SOCIAL DISTANCING

- 2 meters

- Pertinent for:
  - society
  - large groups (10+)
  - inevitable situations - ‘calculated dangers’ nursing homes employees
  - groups with several groups of people giving services: medical, kitchen, maintenance

- Wash hands, surfaces
MEDICAL STAFF

- In and Out with protocols
  - Restricted entrance location - separate - and restrict access to space, floor, unit
  - Personal hygiene at entrance and departure
  - Cleaning surfaces at entrance and departure
- Regularity in the personnel
  - same floor, same patients, restrict access
- **DO NOT WORK AT MULTIPLE CARE CENTERS!**
  - minimize footprint - treatment space
NON MEDICAL STAFF

- In and Out with protocols at specific entrance points
- A minimal number of individual get in contact with them
- Minimize all contacts
- Do not let them get into common spaces
- Establish a protocol for cleaning tools, spaces, etc
- Separate wash rooms
- Require disinfection prior to leaving
ACTIVE MEMBERS – SOLITARY ISOLATION

- For ‘active’ individuals who are obliged to continue to go out or have outside contact or contact with employees, etc
  - must be vigilant and wash their hands, change, protect others
  - act as if their are COVID +!
  - maintain a quarantine separate from the group
  - social distancing not enough
- If all members of your group have been in completely closed quarantine for more than 14 days - no employees or outside contact - no need for distanciation!
ACTIVE MEMBERS : CONTROL OF ENTRANCES - EXITS

- Minimize entrances - exits
  - Criteria:
    - medical, food, obligation
- Keep a register of entrances - exits with names and names of contacts if possible - will greatly help in case of contamination
- Reduce risks:
  - isolation
  - private bathroom
  - private dining area
CONTINGENCY PLAN : ADMINISTRATION

- Objective: if an administrator gets sick, remplacement is prepared
- Administrators should **not** get in contact with one another
- Ensure that the hierarchy of responsibilities is clear
- Ensure that people know where to get the information
- **DO NOT** enter in direct contact with nurses, medical staff, employees, unless you are the beneficiary of their care!
CONTINGENCY PLAN : WHERE TO PLACE THE SICK?

- Many houses are already full
- Where should you place your ‘new’ patients?
  - COVID +
  - COVID -
- How to protect your house? The other members?
- How to re-integrate the group?
INCREASED RISK : CARE CENTRES

- The larger the house, the higher the risks
- The more employees, the higher the risks
- Every single day, the health care system is more saturated, with less capacity
- COVID + in a house with 100 members
  - 20% hospitalized = 20 members
  - In itself your house risks saturating the local hospital
  - That means no care for other patients irrespective of COVID status
  - Prevention is the only way to prevent a disaster
**CONTINGENCY PLAN : CARE CENTER**

- Objective: protect patients and all members
- Fragment areas into smaller units
  - fragment the center into subunits, isolate each one and keep them separate: separate personnel, etc
  - restrict to a strict minimum entrances-exits of each wing - personnel, patients, members
- by creating isolated care units, you reduce the risk of massive infection and ease intervention
CONTINGENCY PLAN : CARE CENTRES

- Ideal group:
  - always the same personnel, minimal number
  - personnel serves only one group
  - patients by risk category
  - number of patients?
  - eat in their room
  - distribution of meals by medical personnel: not kitchen!
CONTINGENCY : HOSPITAL CARE

- Do not hesitate to send a patient to hospital if needed
- Consider
  - the patient will be considered COVID + until proven otherwise
  - care is more complex to deliver
  - access to visitors will be restricted - impossible
  - return could be rapid and sudden - be ready
CONTINGENCY PLAN: RETURN FROM HOSPITAL

- Objective: avoid contamination the group by external return
  - The hospital cannot guarantee COVID status!
  - Predetermined space, separate, private
  - Designated and restricted personnel
  - Private bathroom, private meals
  - Observe a 14 day quarantine before entering the group observer une quarantaine de 14 jours avant de réintégrer le groupe ? ceci n’est pas une garantie!
  - ? 30 days ? research is unclear
CONTINGENCY PLAN : COVID +

- Objectives:
  - protect the community
  - avoid transmission
- Absolute isolation between the person and the group
- Quarantine:
  - positive person
  - any person who got in contact with her
- Closure to all other members
  - Unit closure? easier if already segmented
CONTINGENCY PLAN : COVID +

- Pre-determined space, room, private bathroom
- No external contact
- Remove quarantine accord to public health
  - do not forget that the virus continues to shed for an average of 20 days after symptom resolution
- Desinfection of the space after the quarantine
  - ideally for the person herself
  - otherwise, professionnal
IN EXTREMIS MINISTRY

- Minimal: avoid using scarce resources
- Dedicated individuals only
  - isolated from the group
  - conscious of the risks
  - knows about prevention measures
- Preserve the clergy: common ecclesial need
REFERENCES

- Health Canada

- WHO

- CDC
REFERENCES

- Université Oxford - Medical evidence
  - https://www.cebm.net/covid-19/

- Université Johns Hopkins - Internal data
  - https://coronavirus.jhu.edu/map.html

- Université Harvard - Medical resources

- London School of Hygiene and Tropical Diseases
  - https://www.lshtm.ac.uk/research/research-action/covid-19
QUESTIONS ?