Preparing for **COVID-19**, **RSV DISEASE** and **INFLUENZA** concomitant outbreaks

ESWI 2021
WEBINAR SERIES

# CONCLUSIONS AND RECOMMENDATIONS

**As the COVID-19 pandemic continues to dominate the global political, economic, and healthcare agenda, the question ESWI continues to address is: How can countries cope with more than one major respiratory virus spreading, particularly in the context of non- pharmaceutical interventions being loosened? Citizens demanding freedom to get back to life as usual, governments having to walk the fine line of imposing risk-based restrictions, and meanwhile SARS-CoV-2 continues to mutate and spread. These challenges are among many that have come to define the "COVID-Era".**

Questions that arise are:

- What is the possible effect of co-circulation of influenza viruses, SARS-CoV-2, and RSV?
- Who belong to high risk groups, and how can we protect and treat them?
- Who should we vaccinate and against what?
- What arguments and research exist for co-vaccination?
- What are the forecasts on vaccine development?
- How can the use of anti-virals and antibodies during different stages of the respective infections prevent severe cases?

Each of these questions was addressed in the ESWI 2021 Webinar Series that took place this autumn. In total, five webinars were organised

**VACCINATION IN A COVID-19 ERA**

**CHILDHOOD INFLUENZA VACCINATION AND TREATMENT IN A COVID-19 ERA**

**COVID-19 TREATMENT AND MEDICATION**

**RSV DISEASE IN A COVID-19 ERA**

**FLU AND COVID-19 BOOSTER VACCINATIONS: WHERE DO WE GO?**

The following is a summary of the main conclusions and recommendations from each of the four webinars.

# VACCINATION IN A COVID-19 ERA

## CONCLUSIONS

Nobody knows how long this COVID-19 Era will last. What is sure, however, is that vaccination has become a daily topic of conversation and concern. The importance of continuing mass vaccination campaigns across the globe remains the single-most powerful arm we have fighting the COVID-19 pandemic. In addition to COVID, we must prepare for the co-circulation of influenza and COVID, and influenza might be severe. Healthcare systems should be prepared with antivirals for influenza and COVID, along with other treatments. In addition, regular/routine childhood vaccination against other pathogens should not be forgotten. The need of risk group vaccination needs to be communicated more forcefully and preferably by healthcare professionals.

With vaccine hesitancy being a big obstacle, it is important to reiterate that all currently WHO approved vaccines have shown proof of efficacy and safety (via intense mutual regulatory and industry collaboration). The benefits and risk evaluation by age and sex support the use of currently licensed vaccines.

The issue of equitable distribution is difficult and multi-faceted, and political, economic, social, and ethical angles need to be taken into account. COVAX's mission is to equitably distribute vaccines globally, and in conclusion, no one is safe unless everyone is safe.

www.who.int/initiatives/act-accelerator/covax

## RECOMMENDATIONS

1. Risk groups should be vaccinated against influenza and COVID
2. Women planning pregnancy should vaccinate against influenza and COVID prior to pregnancy if possible
3. Children should continue to get their routine vaccinations
4. Equitable access to vaccines is a key element to ending the pandemic and must be a global priority.

# CHILDHOOD INFLUENZA VACCINATION AND TREATMENT IN A COVID-19 ERA

## CONCLUSIONS

Nobody knows how long this COVID-19 Era will last. The 2020/21 influenza season was characterised less by influenza, and more by disruption of children's education, and disturbance to routine immunisation schedules due to COVID-19. There was limited circulation of influenza viruses because of the non-medical intervention strategies (physical distancing, masks, etc). The UK experience of vaccinating children for influenza has proven to significantly reduce the overall number of emergency interventions, and hospital admissions. Increased efforts are required to educate parents and school leaders as the statistics show that vaccinating children not only reduces the burden of influenza in children but also adults and older adults of any age.

Likewise, vaccinating children and adolescents against COVID-19 is useful and has a positive risk-benefit ratio, protecting them and the community at large from the infection. This is particularly important with new variants of concern, such as Delta which is more infectious and spreads easily in children.

## RECOMMENDATIONS

1. Change the communication to emphasise that *vaccinating children protects them and the whole community*
2. Vaccinate children at school: the best rates are achieved when children are vaccinated at school
3. Extend the coverage of immunisation programmes as these programmes are only as effective as the level of coverage achieved.
4. Encourage innovative mobile and analogue tools/apps along with user-centred activities eliminate barriers to immunisation.
5. Intensify scientific collaboration with professional and patient organisations to increase vaccine coverage

# COVID-19 TREATMENT AND MEDICATION

## CONCLUSIONS

Treatment of COVID-19 is based on three known techniques:

- Antiviral drugs that -especially at an early stage- reduce virus replication;
- Coronavirus neutralising antibody treatments that -especially at an early stage- reduce virus replication;
- Anti-inflammatory or immune-modulatory drugs that calm the immune response (dexamethasone, tociluzumab).

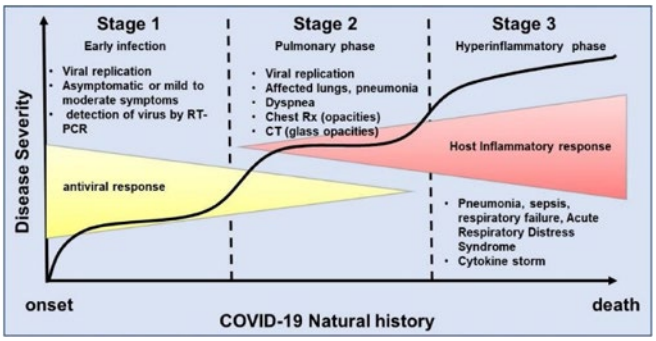
Severe COVID-19 can lead to C-ARDS complicated by immune(micro)thrombosis.

Acute cases of COVID require individualised care as there are limited evidence-based treatment options. Studies on cost-effectiveness of treatment options show that therapeutics that reduce the length of stay in the ICU are seen as broadly cost effective.

Dexamethasone is very cost-effective given the relatively low cost and strong mortality reduction in ICU patients. Tocilizumab also is most likely cost-saving (both financially and economically).

## RECOMMENDATIONS

1. For outpatients, monoclonal antibodies should be given early to be effective
2. For inpatients, remdesivir is the only approved antiviral and also needs to be given early;
3. More oral or IV + oral antiviral options should be developed
4. Immunomodulatory drugs should be cornerstone in treatment of severe COVID-19, in addition to corticosteroids
5. Timing of interventions is key according to pathophysiological stages observed




Siddiqi *et al.* ***J Heart Lung Transplant***. 2020: doi:10.1016/j.healun.2020.03.012

# RSV IN A COVID-19 ERA

## CONCLUSIONS

The uncharacteristic outbreak of RSV during summertime in the Southern hemisphere has brought renewed attention to the risks of RSV disease in the context of the ongoing COVID-19 pandemic. RSV remains the leading cause of hospitalisation in infants. Most hospitalisations occur in otherwise healthy children born at term and cause substantial outpatient burden.

RSV associated disease shares many characteristics with that of seasonal coronaviruses, including that it is normally first encountered in early childhood, has a mucosal route of transmission and may lead to enhanced disease if encountered later in life. RSV is largely overlooked as a risk to older adults; however research shows that it may be as severe as Influenza. Furthermore, diagnosing RSV infection in older adults is not common routine and its incidence is largely under-reported.

Multiple novel approaches are being explored to target RSV infections. The development of RSV vaccines and new immune prophylaxis are showing promising advances.

## RECOMMENDATIONS

1. Older adults, especially those with co-morbidities, would benefit from an effective RSV vaccine as soon as available.
2. The nirsevimab breakthrough as a single-dose human monoclonal antibody may bring significant reduction in hospitalisation of healthy infants
(phase 3 trial Sanofi-AZ)
3. Further breakthroughs in the field of RSV vaccine development are anticipated.

# FLU AND COVID-19 BOOSTER VACCINATIONS: WHERE DO WE GO?

## CONCLUSIONS

The non-pharmaceutical interventions put in place to control the transmission of COVID-19 have also worked against influenza, and therefore we have seen little or no influenza in the last two years. Indeed, viral transmission chains for influenza have been very much interrupted by physical/social barriers. As a result, experience in Australia from the last two seasons in the southern hemisphere showed that vaccine uptake for Influenza was lower in 2021 than in 2020. This may put naïve and vulnerable groups at risk for influenza in Australia in the coming season. The limited vaccine uptake in 2021 may also spill over into 2022.

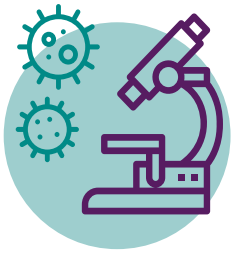
Recent research shows there are no safety concerns identified with the dual administration of influenza and COVID-19 vaccines, nor any significant impact on the immunogenicity of booster doses of influenza and COVID-19 vaccine.

## RECOMMENDATIONS

1. Maintaining influenza surveillance and increase influenza vaccination uptake and coverage is key
2. COVID vaccine and booster programmes should not impact influenza vaccine rollout and co-vaccination options should be further explored
3. Need to consider broader points for implementation

# CRUCIAL ELEMENTS FOR PANDEMIC PREPAREDNESS TO BE ESTABLISHED IN PEACETIME

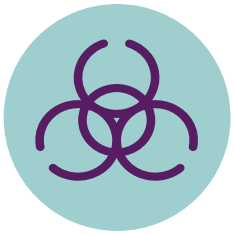
Early warning systems



Pathogen discovery and characterisation platforms

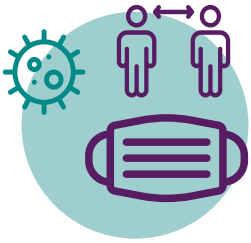
Diagnostic platforms

Mathematical models



Animal models in BSL3 facilities

Clinical trial platforms



Non-pharmaceutical intervention and treatment strategies

Pharmaceutical intervention strategies

Antiviral, vaccine and BRM platforms

Global cooperation

Communication

Education