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among the priorities to address which could be supported by One Health strategies.

A OHCF has been developed with a multidisciplinary effort to facilitate detection of threats at the human-animal-environment interface, assess risks for pandemic, support evaluation of possible impacts and provide input for prevention. The OHCF aims at guiding the relevant national sectors towards harmonised and context driven OH strategies in prevention and preparedness and identifies priority actions for Governance, Data collection and analysis and Capacity building, both at national and international level.

Conclusion: At present, stand-alone national One Health plans are often developed, while the effort, in order to benefit from One Health approaches, should be to appropriately integrate One Health strategies into relevant national and international plans.

It is therefore necessary to develop adequate frameworks and identify procedures that allow this integration and effective implementation of comprehensive prevention and preparedness strategies.

The adoption of the proposed OHCF would facilitate the development of intersectoral data sharing and analysis platforms and support decision-making based on early signals which contemplate possible uncertainties.

The OHCF will facilitate operationalisation of OH in prevention and preparedness and will guide assessment of the multiple potential risk factors involved before they became a threat.

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Topic 24: Outbreak Control and Response Logistic Challenges

PS24.01 (1036)

SARS-CoV-2, Lung Protective Ventilation, Low Middle Income Countries, and Pediatric Intensivists as Cross Disciplinary Knowledge Translation and Implementation Science Specialists

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Purpose: We hypothesized that despite the low incidence of severe SARS-CoV-2 infections in children in Guyana, due to their specific skillset in lung protective ventilation, our Pediatric Intensivists were uniquely positioned to address significant training and readiness gaps in our colleagues attending a surging critically ill Adult COVID-19 patient population.

Methods & Materials: In Guyana, there are few clinicians trained in Critical-Care Medicine (CCM). The high incidence of ventilator dependence in seriously ill SARS-CoV2 patients, combined with a dearth of CCM practitioners competent in complex mechanical ventilation management left Guyana ill prepared to manage these patients. This knowledge deficit was further exacerbated in that many clinicians at our National Infectious Diseases Hospital were co-opted into CCM roles from other specialties with little to no CCM training. We have a very small core of Pediatric Surgical Critical Care Medicine staff that was formally trained in PCCM outside of Guyana. This core was instrumental in establishing a unique and formal Pediatric Critical-Care Medicine Micro-Modular Fellowship (PCCM-MMF) program that allowed the creation of Guyana's

only Pediatric ICU. A significant number of that core are also involved in Guyana's National COVID Task Force. Given that all graduates of our PCCM-MMF program are extensively trained in Lung Protective Ventilation, it was very appropriate to utilize them to augment Adult critical care capacity. Thirty physicians with primarily adult practices and little to no previous knowledge of ventilator management were enrolled in a multi-modal triphasic mechanical ventilation short course facilitated by PCCM staff.

Results: We were able to rapidly enable two cohorts of 15 Adult clinicians to competently address critical knowledge deficits and staffing shortfalls. We improved morbidity and mortality amongst our mechanically ventilated adult COVID-19 patients, as well as relieved significant multifactorial caregiver strain.

Conclusion: Our successful utilization of PCCM staff as Mechanical Ventilation didactic and clinical educators for an Adult patient population carries implications for cross disciplinary Knowledge Translation and Implementation Science in a wide variety of practice milieus. We are actively pursuing research opportunities to further experiment with other skill sets incorporated in our PCCM Micro-Modular Fellowship and welcome potential collaborators.

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Topic 25: Outbreak Modeling and Forecasting

OP25.01 (570)

Prediction of hospital-onset COVID-19 using networks of patient contact: an observational study

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Purpose: Predicting healthcare-acquired infections (HAIs) has the potential to revolutionise the prevention and control of transmissible infections. Existing prediction models for HAIs, however, fail to capture fully the contact-driven nature of infectious diseases. Here, we investigate the epidemiological predictivity of patient contact patterns through a forecasting model for hospital-onset COVID-19 infection (HOCl).

Methods & Materials: Our cohort comprises all patient admissions at a large London NHS Trust between 1/04/2020 and 1/04/2021. For patients, we consider (i) their hospital pathway, (ii) patient contacts, and (iii) date of COVID-19 infection. We consider rolling 14-day windows and forecast patient infection over the subsequent 7 days. Over each window, we construct a patient contact network and compute network features that capture contact centrality. We then combine network features, hospital environmental variables and patient clinical data to predict subsequent infections.

Results: A total of 51,157 patient admissions/episodes were observed during the study. Across all models, we find that contact-network features showed the highest performance (0.91 AUC-ROC). A reduced model with the six most predictive variables was almost as predictive and contained five features from patient contact (including direct contact with and network proximity to infectious cases) and only one environmental variable (length of stay).

Conclusion: Our results reveal that the number of direct contacts and network proximity to infectious patient(s) are highly predictive of HOCl. Such contact-based risk factors are easily ex-