**MECHANICS & ECONOMICS OF A NEGATIVE PRESSURE PRIVATE PRACTICE OUTPATIENT PULMONARY FUNCTION TESTING ROOM IN THE COVID-19 ERA**

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**BACKGROUND:** COVID-19 necessitates respiratory precautions. Aerosol-generating procedures such as pulmonary function testing (PFTS) have had a hiatus. Reopening guidelines are sparse. We now describe a practical primer on creating a negative pressure room for conducting PFTS in a private practice outpatient setting. We calculated projected return on investment *vs.* cost, separate from beneficial effects of diagnosing/treating patients with modalities on hold.

**METHODS:** We installed a mobile Air Rover negative pressure machine (1500 cu ft/min exhaust, 3 UV-C lights, 12 inch HEPA), 1200w v 25 amp outlet, Lexan window with two 6 inch ventilation outlets and C clamps, aluminum foil tubes, flapper covers, added a wall-mounted Setra negative pressure monitor(24 volt transformer AC/DC, 1900 box, old work 14 cu gang box), and sealed the air conditioning ceiling vent to generate at least -2.5 Pa negative pressure. We added a UV-C bulb in the furnace and pollen filters over each air conditioner register.

We instituted protocols for infrared contactless thermometers, masks, hand-sanitizer, covid questionnaires for patients/staff. PFT staff donned/duffed N95, surgical masks, face shields, gloves, gowns, bouffant haircaps, booties, exchanging surgical masks, gloves, gowns, between patients. In an 8’x6’x8’ room, air exchange was 3 minutes. We cleaned surfaces with alcohol wipes between patients, limiting scheduling to 20 patients/day.

We calculated costs, not including labor, to reconfigure room architecture and approximated reimbursement based on ICD codes: ACT, NO, IOS, Spirometry, inhaler education, and follow-up visit 99213.

**RESULTS:** Notwithstanding the priceless medical benefit of making correct diagnoses and treating patients, we calculated a cost of $13.000 to create a negative pressure room and estimated reimbursement for clinical care over 2 weeks was the break-even point.

**CONCLUSIONS:** It is possible/practical for private-practice outpatient Chinese-American physicians to install a negative pressure room and reinstitute PFTS to diagnose and treat our patients. Start-up costs are outweighed by sorely-needed medical care.

**CONTENT CATEGORY:** Patient care, medical economics

**KEYWORDS:** *negative pressure room, pulmonary function testing, spirometry, costs. Covid, ultraviolet c, HEPA*