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CENTRAL REFERRAL HOSPITAL - SMIMS

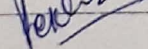
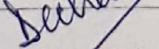
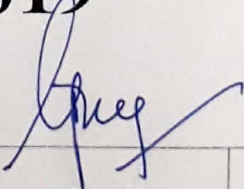
**Documented
Procedure**

TITLE: SOP for Reuse of Personal Protective Equipment (PPE) for COVID 19
DOCUMENT NO: SOP/CRH/COP/RPPE/35
REVISION NO: NIL
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PAGE NO: 1 to 11
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Standard Operating Procedure

For

Reuse of Personal Protective Equipment (PPE) for COVID 2019

 Dr. Rekha Sharma Member, HICC	 Dr. Dechen Chomu Tshering- Member Secretary, HICC	 Dr. Gautam Dey- MS Medical Superintendent, CRH	DP
Prepared By	Reviewed By	Approved By	
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Amendment sheet:

S. No.	Section no. and page no.	Reason	Signature prepared by	Signature reviewed by	Signature approved by
1.	Section 10 and page no. 14,15	*Guidelines revised by MOHFW, Govt. of India			
2.					
3.					
4.					
5.					
6.					

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*<https://www.mohfw.gov.in/pdf/AdditionalguidelinesonrationaluseofPersonalProtectiveEquipmentsettingapproachforHealthfunctionariesworkinginnonCOVIDareas.pdf> accessed on 11-05-2020

			DP
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1. ABBREVIATIONS:

- SOP: Standard Operating Procedure
- CRH: Central referral Hospital
- PPE: Personal Protective Equipment
- FFP: Filtering Facepiece Particles
- CDC: Centers for Disease Control and Prevention
- HCW: Health care workers

2. DEFINITIONS:

- **Extended use** - using for longer periods of time than normal according to standards
- **Re Use** - using the same PPE for multiple encounters with patients but removing it after each encounter and re using it.
- After cleaning or decontamination/sterilization of either reusable or disposable PPE.
- **HCWs:** is one who delivers care and services to the sick and ailing either directly as doctors and nurses or indirectly as aides, helpers, laboratory technicians, or even medical waste handlers.

3. OBJECTIVE:

- To make the rational use of PPE according to the risk of exposure category given in Annexure I
- To make reuse and/ extended use of PPE as per the need arises.

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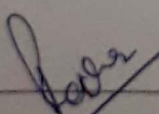
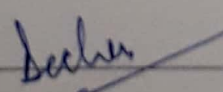
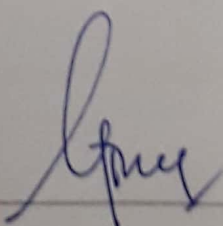
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4. EXPECTED OUTCOME :

To protect the spread of Corona virus among health care workers in CRH.

5. Scope:

The scope of the SOP covers the policies and procedures for rational use of PPE according to the risk of exposure category, policies for reuse and/ extended use of PPE by the healthcare workers.

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6. Process of reuse and/ extended use of masks

6.1 SURGICAL MASKS – triple layered/ 3-ply

	CDC	WHO
Extended use	Remove and discard if soiled, damaged, or hard to breathe through.	Use without removing for up to 6 hrs, when caring for a cohort of COVID-19 patients
Re Use	Limited Reuse – Fold inwards and store in a clean sealable paper bag or breathable container.	Not advised

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html> accessed on 12/04/2020

Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages: interim guidance. WHO

Caution:

- Increase risk of contamination of the mask with COVID-19 virus and other pathogens
- Increases the chance of the health care worker touching the mask
- Damage or reactions of face skin tissue may occur with prolonged use of medical masks
- Extended periods of time in active patient wards required for health care workers

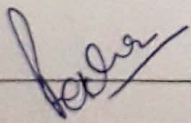
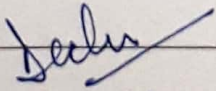
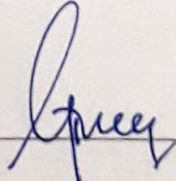
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6.2 N95/FFP2 RESPIRATORS



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	CDC	WHO
Extended Use	Can function for 8 hours of continuous or intermittent use.	Use without removing up to 6 hours.
Re Use	Limited reuse -	Re use without decontamination - not advised
Decontamination and Reuse	- Vaporous hydrogen peroxide - UV - ETO – May be harmful to the wearer	- Vapour of hydrogen peroxide - PLASMA - ETO – favorable - UV- Poor penetration

6.2a. N95/FFP2 RESPIRATOR Extended use and reuse

Reference: <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html> (accessed on 12/4/2020)

Rational use of PPE for coronavirus disease (COVID-19) and considerations during severe shortages: interim guidance. WHO

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6.2 A 5 DAY RE-USES STRATEGY (CDC)

Five N95/FFP 2 respirators will be issued to the HCWs as per the risk of exposure category given in annexure I. HCWs has to keep 5 breathable paper bags with the marked numbers in them. Mark all the five respirators also. The HCW will wear one respirator each day (shift) and store in a corresponding numbered breathable paper bag at the end of each shift/day. The order of N95 mask use should be repeated after five days gap before reusing the same N95 mask (i.e. on 6th day the first N95 mask can be repeated). This will result in each HCW requiring a minimum of five N95 mask for 25 working days. The amount of time in between uses should exceed the 72 hour, expected survival time for SARS-CoV2 (the virus that caused COVID-19).

**CRH has UV radiation chamber also so, if the need arises N95 masks can be sterilized by UV radiation chamber.

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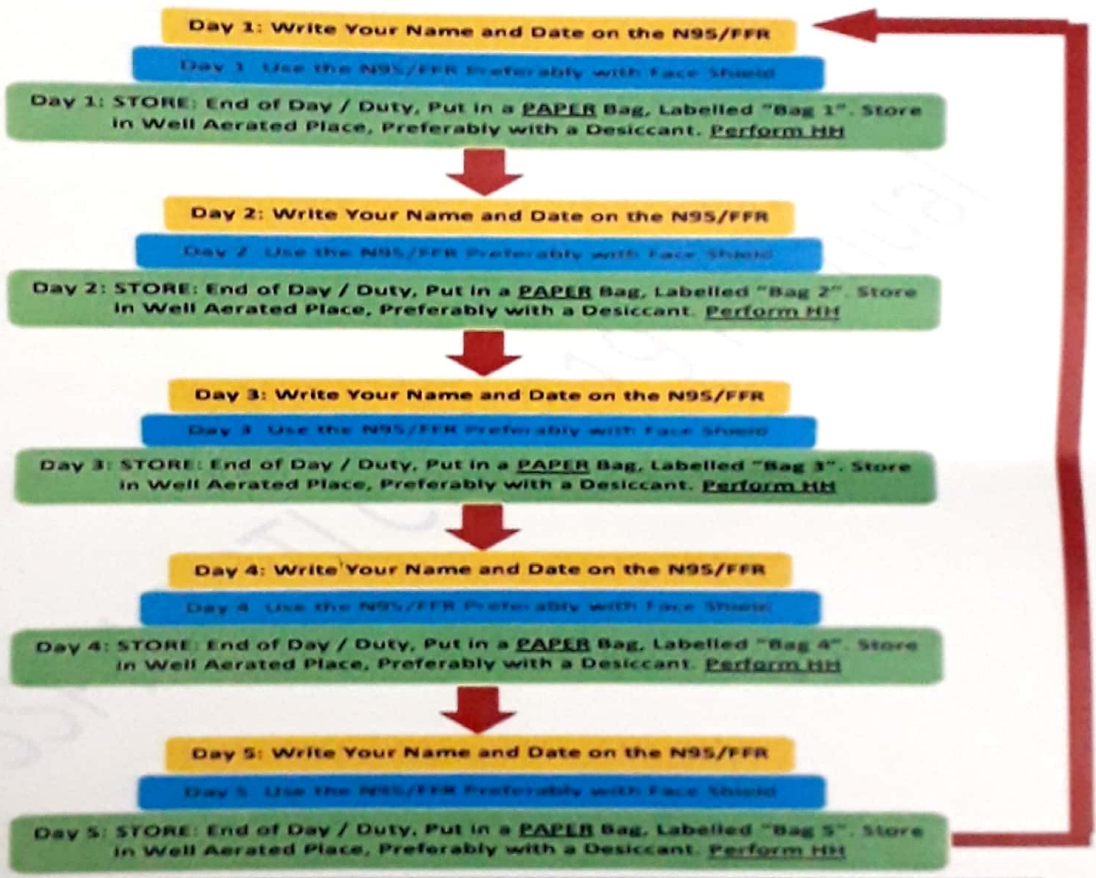
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SSPH PGTI: ILLC.
Infection Prevention & Control S.O.P. COVID-19

SSPH PGTI Policy for Extended Use and Re-Use of the same mask by the same User



REPEAT SAME CYCLE ON DAYS 6, 11, 16 & 21. DISCARD ALL N95 AND FFR's on day 25. REISSUE 5 ON DAY 25 ITSELF. IF N95 GETS SOILED, GET A NEW ONE

SSPH PGTI/HICC/HIC Manual/COVID19/2020/Ver1.0 30/03/2020 HICC, SSPH PGTI, NOIDA

**** Pros and Cons**

Extended use is favored over reuse because it is expected to involve less touching of the respirator and therefore less risk of contact transmission.

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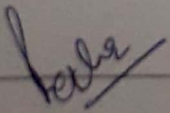
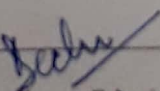
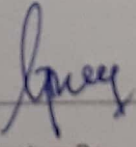


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6.2B CAUTION ON DECONTAMINATION AND REUSE

- Methods have not validated by substantial research and there are currently no standardized methods.
- Shelf-life of reprocessed respirators is unknown.
- Degradation of the filtration media or elastic strap affects the fit of a respirator to the face.
- Damage to the shape of respirators due to the reprocessing.
- Central Referral Hospital (CRH) will follow 5 day reuse Strategy (CDC) in COVID19 wards to tide over the universal shortage.

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7. GOWNS AND COVERALLS

- Extended Use
- Decontamination and Reuse

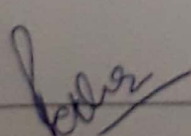
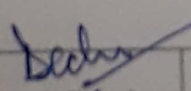
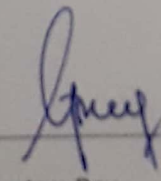
Step 1: Dip in 0.1% sodium hypochlorite in the COVID-19 ward for 30 minutes and then send the gowns and coveralls to laundry as per the biomedical waste management for COVID-19.

Step 2: Washing with warm water (60-90°C) and detergent is preferably done 'OR' Soak in hot water and soap in a large drum, using a stick to stir.

Step 3: Then soak in 0.1% chlorine for approximately 30 minutes.

Step 4: Finally, rinse with clean water and let it dry fully in the sunlight

<https://www.mohfw.gov.in/pdf/GuidelinesonrationaluseofPersonalProtectiveEquipment.pdf> (accessed on 12.4.2020)

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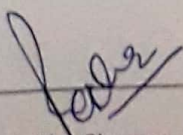
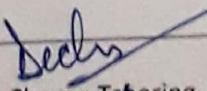
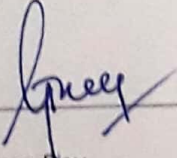
8. GOGGLES AND FACE SHIELD

- Extended Use
- Reprocess and Reuse

Clean goggles with soap/detergent and water followed by disinfection using either Sodium Hypochlorite 0.1% (followed by rinsing with clean water) or 70% alcohol wipes.

9. References

- <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html> accessed on 12/04/2020
- Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during severe shortages: interim guidance. 6th April 2020. WHO
- All India Institute of Medical Sciences New Delhi Guidelines for Re-Use of Personal Protective Equipment. HICC, A.I.I.M.S., New Delhi; Version 1.0: 7th April 2020

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RATIONAL USE OF PERSONAL PROTECTIVE EQUIPMENT (PPE)

Level	Risk of Exposure category	PPE	Rationale
A	High Risk	N95, impermeable gown, double gloves, eye protection, impermeable shoe cover, head cover	Indicated when there is a lot of aerosol, including aerosol-generating procedures (AGPs)
B	Moderate Risk - high exposure	N 95, Standard PPE (gown, gloves, eye protection, shoe cover, head cover)	Indicated when there is high risk of droplet transmission
C	Moderate Risk - low exposure	3-ply mask, Standard PPE (gown, gloves, eye protection, shoe cover, head cover)	Indicated when there is some risk of droplet or fomite transmission
D	Low Risk	3-ply mask, latex examination gloves	Indicated when there is low risk or indirect risk of droplet transmission
E	Variable Risk	N-95/3-ply, Latex examination gloves, goggles as per the risk category arises	Indicated as per the risk arises

COVID SETUP		Activity	Level	Risk of exposure	Mask	Gloves*	Gown/ Coverall	Goggles/ Face shield	Head cover	Shoe cover
ISOLATION ROOM OR WARD/ COVID CCU		ISOLATION ZONE	A	HIGH	N95	✓	✓	✓	✓	✓
EVALUATION WARD		EVALUATION WARD TEAM	B	Moderate Risk with high exposure	N95	✓	✓	✓	✓	✓
OT TEAM		COVID OT TEAM - IF OPERATING	A	HIGH	N95	✓	✓	✓	✓	✓
		NON COVID OT TEAM	C	Moderate Risk low exposure	3-ply [®]	✓	✓	✓	✓	✓
		OUTSIDE OPERATING ROOM	D	LOW	3-PLY	✓	—	—	—	—
		NOT IN OPERATING TEAM	D	LOW	3-PLY	✓	—	—	—	—
COVID SCREEN AREA/ TRIAGE/ EMERGENCY		TRIAGE TEAM FOR PATIENT SCREENING AND HOUSEKEEPING	B	Moderate Risk high exposure	N95	✓	✓	✓	✓	✓
COVID LAB		SPECIMEN COLLECTION	A	HIGH	N95	✓	✓	✓	✓	✓
		SPECIMEN PROCESSING (VIROLOGY LAB)	A	HIGH	N95	✓	✓	✓	✓	✓
		SPECIMEN TRANSPORT	C	Moderate Risk low exposure	3-PLY	✓	✓	✓	✓	✓
		OTHER STAFF, NOT INVOLVED IN SPECIMEN PROCESSING	D	LOW RISK	3-PLY	✓	—	—	—	—
RADIOLOGY, BLOOD BANK, etc.		STAFF INVOLVED IN PERFORMING TEST FOR COVID PATIENT	A	HIGH	N95	✓	✓	✓	✓	✓
		FILM TRANSPORT	C	Moderate Risk low exposure	3-PLY	✓	✓	✓	✓	✓
		OTHER STAFF, NON COVID AREAS /UNITS	D	LOW	3-PLY	✓	—	—	—	—
AMBULANCE		SARI PATIENT, OR ON VENTILATOR - MANAGING OR TRANSFERING	A	HIGH	N95	✓	✓	✓	✓	✓
		STABLE PATIENT, NOT ON VENTILATOR - MANAGING OR TRANSFERING	D	LOW RISK	3-PLY	✓	—	—	—	—
		DRIVER, NOT INVOLVED IN PATIENT TRANSFER	D	LOW	3-PLY	—	—	—	—	—
DEAD BODY MANAGEMENT		PACKAGING	A	HIGH	N95	✓	✓	✓	✓	✓
		TRANSPORT	D	LOW RISK	3-PLY	✓	—	—	—	—
		AUTOPSY PERFORMANCE	A	HIGH	N95	✓	✓	✓	✓	✓
QUARANTINE FACILITY		PERSON BEING QUARANTINED, IF SYMPTOMATIC	D	LOW	3-PLY	✓	—	—	—	—
		HCW, WHEN EXAMINING SYMPTOMATIC PATIENT (TRIAGE)	B	Moderate Risk high exposure	N95	✓	✓	✓	✓	✓

NON COVID SETUP		Level	Risk of exposure	Mask	Gloves*	Gown/ Coverall	Goggles/ Face shield	Head cover	Shoe cover
LALINERY	SUPPORT STAFF	D	LOW	3-PLY	/	---	---	---	---
	LINEN TRANSPORT FOR COVID PATIENTS	B	Moderate Risk high exposure	N95	/	/	/	/	/
	LINEN CLEANING AND DISINFECTION	A	HIGH	N95	/	/	/	/	/
	CALENDERING AND FOLDING, ISSUING	D	LOW RISK	3-PLY	/	---	---	---	---
OTHER SUPPORTIVE SERVICES INCL. KITCHEN	ADMINISTRATIVE FINANCIAL ENGINEERING AND DIETARY SERVICES, ETC	D	LOW RISK	3-PLY	/	---	---	---	---
ROUTINE LABORATORY	SAMPLE COLLECTION AND TRANSPORTATION AND TESTING OF ROUT	D	LOW RISK	3-PLY	/	---	---	---	---
	RESPIRATORY SAMPLES	E	VARIABLE RISK	N95	/	---	---	---	---
NON COVID SETUP		Level	Risk of exposure	Mask	Gloves*	Gown/ Coverall	Goggles/ Face shield	Head cover	Shoe cover
ICU	PERFORMING AEROSOL GENERATING PROCEDURES	A	HIGH	N95	/	/	/	/	/
	DIRECT CONTACT WITH RESPIRATORY PATIENTS, BED MAKING	B	Moderate Risk high exposure	N95	/	/	/	/	/
WARD	INVOLVED IN PATIENT CARE ACTIVITY DIRECTLY OR INDIRECTLY	D	LOW RISK	3-PLY	/	---	---	---	---
OPD (OTHERS)	INVOLVED IN PATIENT CARE ACTIVITY DIRECTLY OR INDIRECTLY	D	LOW RISK	3-PLY	/	---	---	---	---
OPD (ENT, DENTAL, OPHTHAL)	INVOLVED IN PATIENT CARE ACTIVITY DIRECTLY OR INDIRECTLY	B	Moderate Risk high exposure	N95	/	/	/ **	/	/
Help desk/Registration counter	PROVIDE INFORMATION TO PATIENTS	D	LOW RISK	3-PLY	/	---	---	---	---
PRE-ANAESTHETIC CHECK-UP	PRE-ANAESTHETIC CHECK-UP	E	VARIABLE RISK	N95	/	---	/ ***	---	---
PHARMACY COUNTER	DISTRIBUTION OF DRUGS	D	LOW RISK	3-PLY	/	---	---	---	---
SANITARY STAFF	CLEANING FREQUENTLY TOUCHED SURFACES/FLOOR	D	LOW RISK	3-PLY	/	---	---	---	---
LABOUR ROOM	INTRA-PARTUM CARE	E	VARIABLE RISK	3-PLY****	/	/	/	---	---

* N95 mask if the person being operated is from containment zone

** faceshield, when a splash of body fluid is expected

*** goggles when close examination of oral cavity/dentures is to be done

**** N95 mask if the pregnant women is from containment area