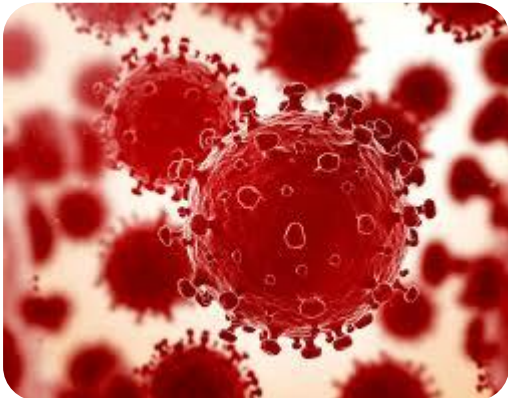


# ***BioRisk Assessment Tool***

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# TRANSMISSION PATHWAY

Entry portal

## Direct Exposure

RESP. DROPLET, CONTACT, AIRBORNE

### HEALTH EFFECTS

**Infection**  
**COVID-19**

## AGENT

**SARS CoV2**  
**SOURCES**

Human, body fluids,  
paper, waste,  
furniture

## Indirect Exposure

Equipment or objects

## ENVIRONMENT

Identify high risk areas  
Registration desks,  
Doorknobs, waiting  
areas, bathrooms, stair  
rails, elevator buttons,  
taps

## HOST

Risk occupation  
Risk factors (e.g.  
age (>60yrs),  
comorbidity,  
Exposure period

## Semi-direct Exposure

Contaminated hands

ANTICIPATE

IDENTIFY

RECORDS

IMPLEMENT

REVIEW

UPDATE

DECIDE

**Multidisciplinary**

### Co-morbidities examples:

- Hypertension
- Chronic lung disease
- Chronic liver disease
- Chronic kidney disease
- Diabetes
- Cancer

# HIERACHY OF CONTROLS: EXAMPLES

## Elimination/ Substitution

- **Impractical to eliminate**
- Exposure unknown & unavoidable
- **Job rotation** or **shift work**
- **Limit numbers of exposed** workers
- **Remote work**
- **Masks:** Public
- Facilitate **testing** PUI
- **Eliminate face to face meetings**
- One way systems (separate entrance and exit)

## Administration

- **Risk Assessment**
- **Vulnerable workers ID**
- **IPC Policies**
- **Early case ID (screening)**
- **Contact tracing** and alert
- **1.5-2m distance**
- **Staff training**
- **Sanitizers** (entry ,exit, offices, communal areas, mobile working)
- **Minimize visitors** movements
- **stay home when sick** or **have sick person at home**
- **Communicate risks** and **inform** (updates)
- **Awareness campaigns**
- **Monitor compliance**
- Introduce **authorisation process** for some activities
- Appoint compliance officers

## Engineering& Environmental

- **Wash basins and soaps**
- Surface **cleaning & disinfection**
- Adequate & effective **ventilation**
- **Signage, posters, notices**
- **Access control (intercom)**
- **Temporary Isolation rooms** for symptomatic
- **Perspex screen/barriers**
- **Rearrange workstations** and **tasks** (one person)
- Use **stairs** instead of lifts
- **Demarcations** and floor markings (shared spaces)
- Proper and **safe waste disposal**

## Behaviour

- **Induction to inform**
- **Cooperation** with employer and authorities
- **No touching** of nose, mouth, eyes
- Good **respiratory hygiene**
- Good **hand hygiene** practices
- **No physical contact**
- **Compliance** with self isolation
- **Prompt reporting** of symptoms and **travelling** and
- Encourage and seek **feedback** for improvement

## PPE

- **Masks** (compulsory)
- **Gloves** (e.g. cleaners)
- **Other (First Aiders)**

### Note:

- **Masks DO NOT** to replace social distancing
- **Visors DOES NOT** replace masks

# EXAMPLES: EXPOSURE RISK GROUPS

**VERY HIGH**



**Aerosol generating procedures**  
COVID 19 **samples**  
COVID 19 **suspects/PUI**  
COVID 19 **cases**



**Healthcare**  
**Laboratories**

**HIGH**



Porters  
Ambulance staff (EMS)  
Mortuaries  
Staff in **wards**



**Healthcare**  
**and support personnel**

**MEDIUM**



**High volume settings**  
Close **contact with 2m**  
COVID 19 **suspects**  
**Unknown status**  
Contact: **international travel**



**Retail, schools, labour**  
**centres, Waiting areas,**  
**consulting rooms,**  
**border gates, Police**

**LOW**



**No contact within 2m with**  
**known COVID case or suspect**



**Minimal occupational contact**  
**with co-workers or general**  
**public**

**EXAMPLES**

# RISK ASSESSMENT & EVALUATION

## EXAMPLE 1: SEMI QUANTITATIVE

Consequence (severe, moderate, negligible)	Frequency Hazard event occurs	Likelihood (unlikely, possible, likely)
<p><b>Risk score = Consequence x Likelihood x Frequency</b></p> <p style="text-align: center;">↓</p> <p><b>Actions taken based on the risk score</b></p>		

**RISK MATRIX**

PROBABILITY: High, Intermediate, Low, Negligible

SEVERITY: Negligible, Low, Medium, High

## EXAMPLE 2: QUALITATIVE

		Likelihood of exposure/release				
		Unlikely	Possible	Likely		
Consequence of exposure/release	Severe	Medium	High	Very high		
	Moderate	Low	Medium	High		
	Negligible	Very low	Low	Medium		
Laboratory activity/procedure		Initial risk (very low, low, medium, high, very high)	Is the initial risk above the tolerance level? (yes/no)	Priority (high/medium/low)		
Select the overall initial risk.		<input type="checkbox"/> Very low	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	<input type="checkbox"/> Very high
Should work proceed without additional risk control measures?		<input type="checkbox"/> Yes <input type="checkbox"/> No				

When **assigning priority**, other factors may need to be considered, for example, **urgency**, **feasibility/sustainability of risk control measures**, **delivery and installation time** and **training availability**, **technical complexity** of the workplace

### EXAMPLE: RISK ASSESSMENT TOOL

Activity	Hazard	Who is affected	Route	Health effects	Baseline controls	Residual Controls	ACTION PLAN By Who	Date	Risk rating			
									L	M	H	VH
Registration	SARS-CoV2 Droplet -visitors -surfaces -equipment -Access cards -pen and paper	Security  Registration clerks	Contact  Possible Airborne	COVID-19 Fever/chills SOB Cough Headache Sore throat Loss of smell/taste Redness of eyes Fatigue/tiredness Nausea/diarrhoea	RA Policies and SOPs Sanitizers Screening (combine tools) Social distance 1,5- 2m Compulsory Wearing of masks Adequate Ventilation Cleaning and disinfection Waste bins Awareness	Individual RA (vulnerability)  Wash basin?  Gloves ?	Facility manager  Health and safety manager	Immediate				X
Presenting evidence	Papers/files Co-workers	Judge magistrates Prosecutors Lawyers					Magistrate Chief Judge					
Recording of proceedings	Recorder	IT staff/info services personnel/media			One operator	automated system						
Meetings		Staff			Virtual meeting							
Court hearing/Trials	Public, visitors Staff, contractors	Judiciary staff Police/wardens			Avoid overcrowding Limit operating hours	Restrict numbers attending and/or time if online not possible + other measures						

## RISK ASSESSMENT: ADMINISTRATIVE

Activity	Hazard	Who is affected	Route	Health effects	Baseline controls	Residual Controls	ACTION By Who	PLAN Date	Risk rating			
									L	M	H	VH
Document control	SARS-CoV2 Droplet -co-workers -surfaces -equipment	Office workers -admin -clerks	Contact	<u>COVID19</u> URT illness Cough Headache Sore throat	RA Policies and SOPs Temp. scan Sanitizer Screening tool Training Social distance 1,5- 2m	Individual RA (vulnerability)  Wash basin?  Gloves ?	HOD  Director	Immediate		X		
Responding to calls of staff	PCs, laptops	IT staff	Possible Airborne		Compulsory Wearing masks Ventilation Cleaning and disinfection Waste disposal Screens	Avoid overcrowding offices				X		
Lunch break duty	Equipment Utensils Co-workers				Limit food sharing Limit numbers by room size.	Own utensils				X		
Training of staff	Staff				Virtual training	Limit numbers and time if online not possible + other measures						
Meetings	Staff				Online (Zoom/teams)				X			
Audits	Auditors, compliance offices				Virtual audits				X			
Travel to & from work (public)	Staff (and public)				Private car; shared with same people; open windows	Stagger work times to avoid peak travel times			X			



# HOUSE KEEPING



## Risk factors

- Infected employees/visitors/public
- Asymptomatic individuals
- Contaminated equipment
- Contaminated surface

## Controlling Exposure

- Utility (domestic rubber) gloves
- Hand wash with soap (~20sec)
- Use correct disinfectant (training)
- Policies and work instructions
- Mask & prompt isolation of symptomatic and positive workers
- Quarantine of PUI



# SECURITY CHECKS



## Risk factors

- Searching handbags
- Infected visitors and PUI
- Contact with Colleagues
- Identification card exchange

## Controlling Exposure

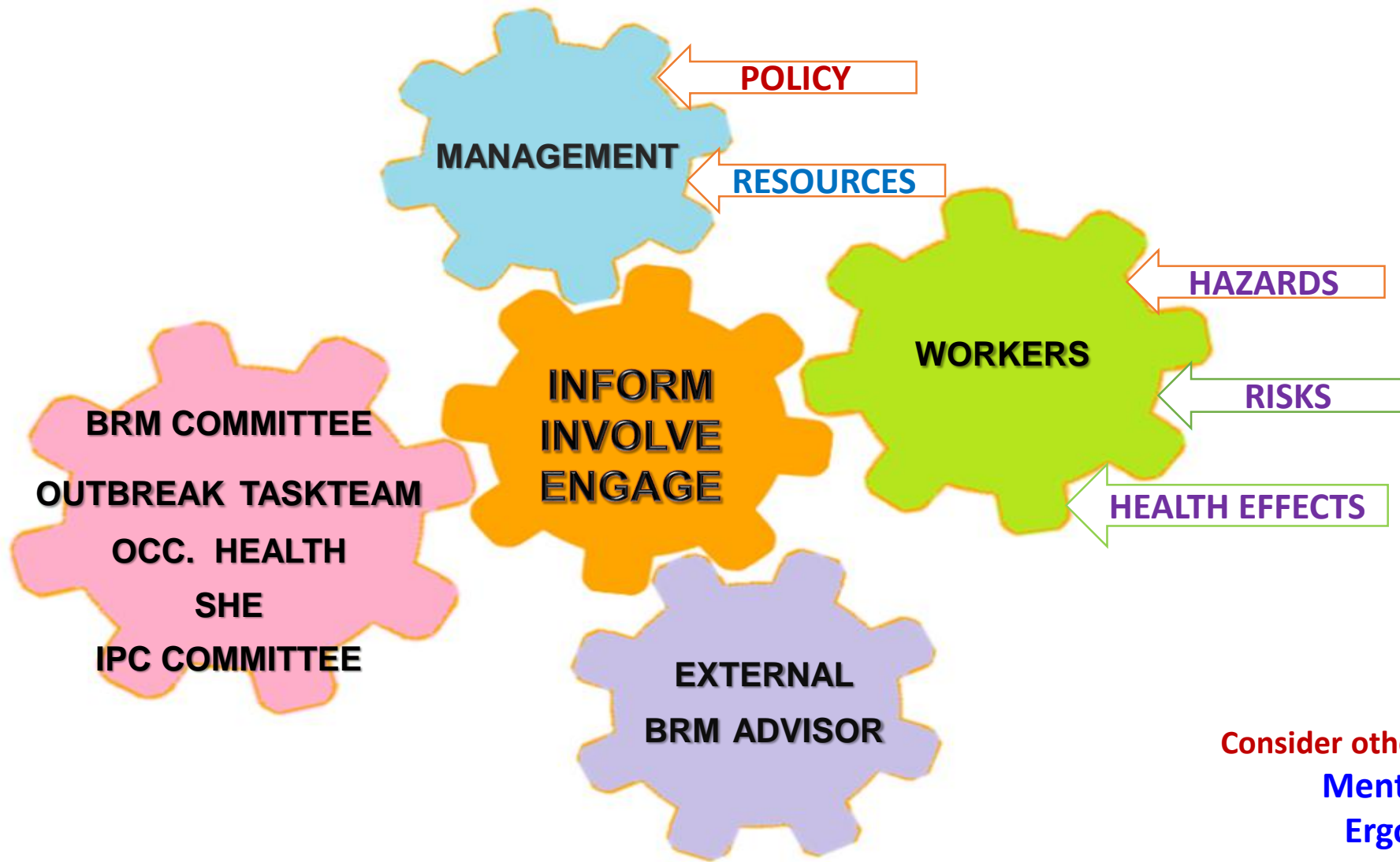
- Screening questionnaire/temp. checks
- Compulsory Mask wearing
- Hand sanitizing (before and after)
- Policy /SOP/Posters/signage
- High touch surface disinfection
- Shifts (staff rotation – **same group**)
- Awareness: hazards, risks, controls, sops, symptoms, reporting, self isolation
- View ID without touching
- **NO contact** bag checks or “hands off” searches



## COMMON ERRORS OF HRA

- RA is seen as **once-off** process
- Regarded as a **paper** or **tick-box** exercise
- **Workers** are **not involved** – encourage **reporting**
- RA is **not documented** sometimes or is **outdated**
- HBA risks are **not** assessed fully: limited **knowledge** and **lack of competency and experience**
- **Preventive hierarchy** not taken into account

# RISK COMMUNICATION



**Consider other COVID-19 risks:**  
**Mental Health**  
**Ergonomics**  
**Business Continuity**

# CONCLUSION

- **PREPARE, PLAN, RESPOND AND ENFORCE**
- **Anticipate** and **identify** exposure **risks** for workers, **record** and **review**
- Conduct **individual** risk assessment (worker's **vulnerability**)
- **IPC policy** for **workers** and **public** (screening, isolation, quarantine, social distance)
- Implement **practical mitigation strategies** where NECESSARY
- Follow **hierarchy of controls**
- Be **vigilant** and **informed**
- **Update** the risk assessment with **changes**
- **Communicate** risks and **inform** workers and the public visitors
- **Inform coworkers** of possible exposure , while ensuring **confidentiality**

THANK YOU



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