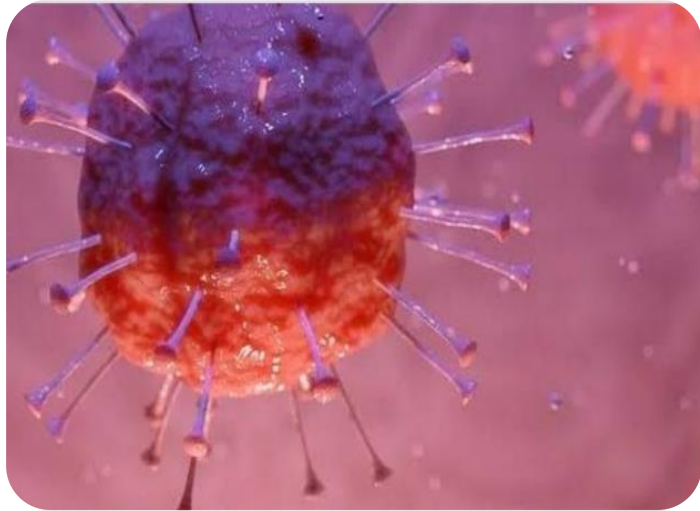


BioRisk Assessment Tool for COVID-19

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TRANSMISSION PATHWAY

Entry portal

Direct Exposure

RESP. DROPLET, CONTACT, AIRBORNE ?

HOST

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

HEALTH EFFECTS

Infection COVID-19

AGENT

- SARS CoV2 SOURCES
- Human, body fluids, waste, equipment

Indirect Exposure

Instrument or objects

Semi-direct Exposure

Contaminated hands

ENVIRONMENT

- Identify high risk areas
- Registration desks, Doorknobs, waiting areas, bathrooms,

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	Administration	Engineering & Environmental	Behaviour	PPE
<ul style="list-style-type: none"> ▪ Impractical to eliminate ▪ Exposure unknown & unavoidable ▪ Job rotation or shift work ▪ Limit numbers of exposed workers ▪ Drive through ▪ Cashless shop ▪ E-shopping ▪ Remote work ▪ Use avirulent strain ▪ Masks: Public, PUI & patients ▪ Facilitate testing PUI ▪ Eliminate face to face meetings ▪ One way systems 	<ul style="list-style-type: none"> ▪ Risk Assessment ▪ IPC Policies ▪ Triage ▪ Early case ID ▪ Vulnerable workers ID ▪ Isolation ▪ 1,5-2m distance ▪ Staff training ▪ Sanitizers for VH, H,M groups ▪ Contact tracing ▪ Minimize visitors movements ▪ stay home when sick or have sick person at home ▪ Communicate risks and inform (updates) ▪ Awareness campaigns ▪ E-learning ▪ Monitor compliance ▪ Introduce authorisation process for some activities 	<ul style="list-style-type: none"> ▪ Wash basins ▪ Surface cleaning & disinfection ▪ Sterilization ▪ Adequate & effective ventilation ▪ Signage, posters ▪ Access control ▪ Isolation rooms ▪ Perspex screen or barriers ▪ Online /mobile shop ▪ Speed pay points ▪ Proper and safe waste disposal ▪ Self loading waste bins ▪ Surface cleaning devices ▪ Rearrange workstations (distance) and tasks (one person) ▪ Use stairs instead of lifts 	<ul style="list-style-type: none"> ▪ Induction to inform ▪ Cooperation with employer and authorities ▪ No touching of nose, mouth, eyes ▪ Good respiratory hygiene ▪ Good hand hygiene practices ▪ Non-contact greetings ▪ Proper donning and doffing of PPE ▪ Compliance with self isolation ▪ Prompt reporting of travelling and symptoms ▪ Encourage and seek feedback for improvement 	<ul style="list-style-type: none"> ▪ Respirator & face shield for V/High risk ▪ Gloves for V/H risk groups ▪ Aprons ▪ Goggles ▪ Hair covers ▪ Shoe covers ▪ Labcoat ▪ Surgical gowns ▪ PAPRs <p>Note:</p> <ul style="list-style-type: none"> ▪ PPE not to replace social distancing ▪ Do Not share PPE ▪ Clean reusable PPE

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 TOOLS

- The **first step** of risk assessment is a **checklist**
- It must be done by a **competent** personnel
- **Before** work starts and when there is **change**
- **Risk evaluation:** Qualitative and quantitative
- **Expert** advice may be needed

Activity	Hazard	Who is affected	Route	Health effects	Baseline controls	Residual Controls	ACTION By Who	PLAN Date	Risk rating			
									L	M	H	VH
Teaching learners	SARS-CoV2 Droplet -co-workers -surfaces -equipment -learners	Educators Lecturers	Contact	COVID19 URT illness Cough Headache Sore throat	RA Policies and SOPs Temp. scan Sanitizer Screening tool Training Social distance 2m Wearing masks Ventilation Cleaning <i>and</i> disinfection Waste disposal Virtual meetings Outdoor classes	Individual RA (vulnerability) Wash basin? Gloves ? Avoid mixing classes	Principal OH	Immediate		X		
Marking of tests and assignments	-books											
Lunch breaking	Equipment Utensils Co-workers				Limit food sharing	Own utensils						
Receiving school fees	SARS-CoV2 Droplet -cash -cards -receipts -invoices	Finance officer Finance clerk	Contact	COVID19 Pneumonia SOB Fever Diarrhea	As above Screens Appointments Rearrange for face to face payments	online	Principal/ H&S offices	29/07/20	X			

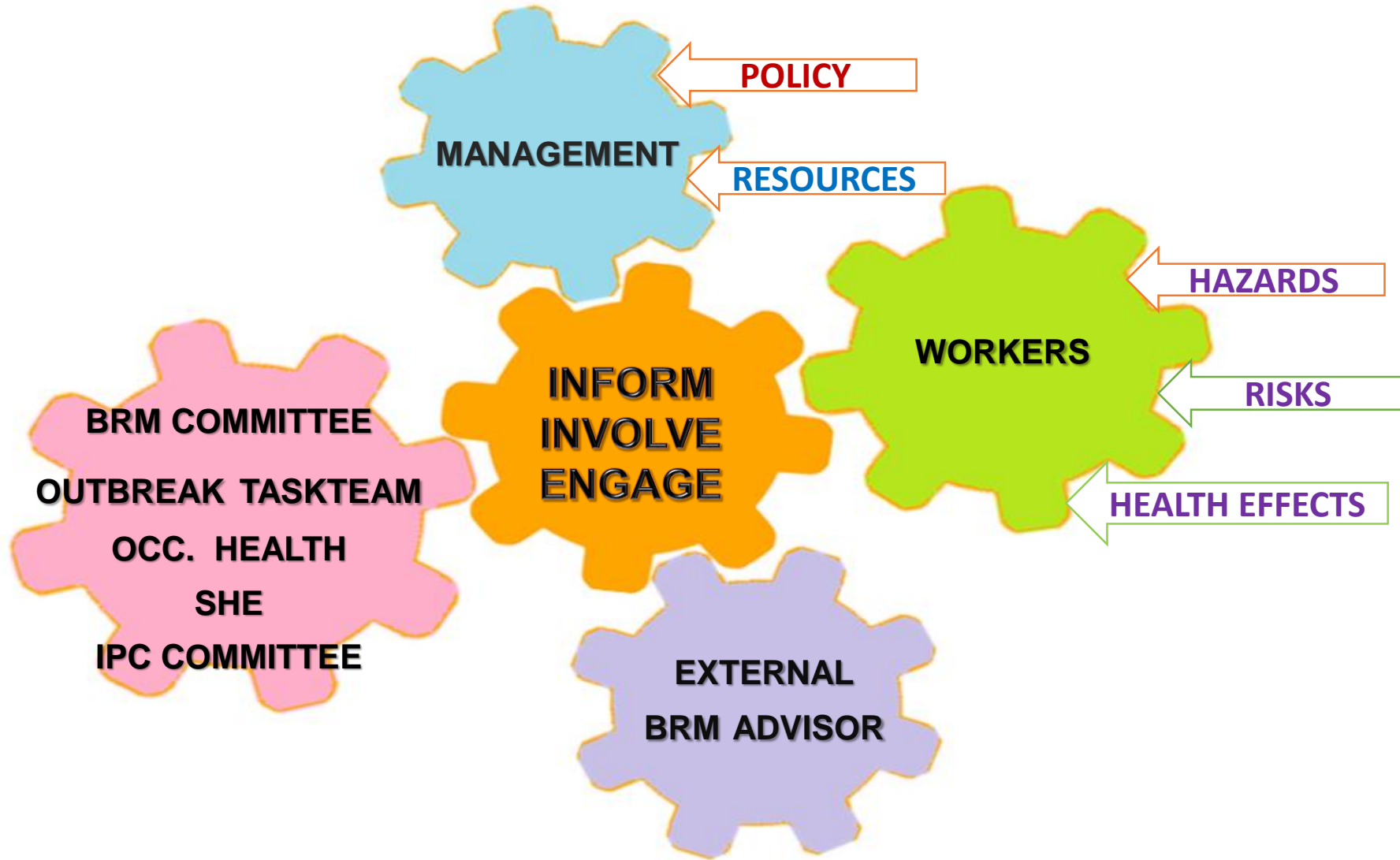
Activity	Hazard	Who is affected	Route	Health effects	Baseline controls	Residual Controls	ACTION By Who	PLAN Date	Risk rating			
									L	M	H	VH
Construction by job task and activity	SARS-CoV2 Droplet -workers -equipment -material -surfaces -Papers -pens	Project manager Site manager Foreman Stores man Construction workers Clerks Finance manager	Contact	<u>COVID19</u> Fever Cough SOB URT illness Headache	Training SOP, policy Handwashing Sanitizer use Disinfection 2m distance Ventilation PPE Showers Screening Stagger lunch	RA Reduce workers Same shift teams	CEO Managers Supervisor	15/07			X	
Transporting workers to site	SARS-CoV2 Droplet -Co-workers	Drivers Construction Workers	Contact	<u>COVID19</u> Fever Cough SOB URT illness Headache	Policy Screening Sanitizer Disinfection Avoid crowding Open windows Masks	Training Hand wash?	Manager, H&S, OH	Immediate		X		

- 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**
- **Preventive hierarchy** not taken into account

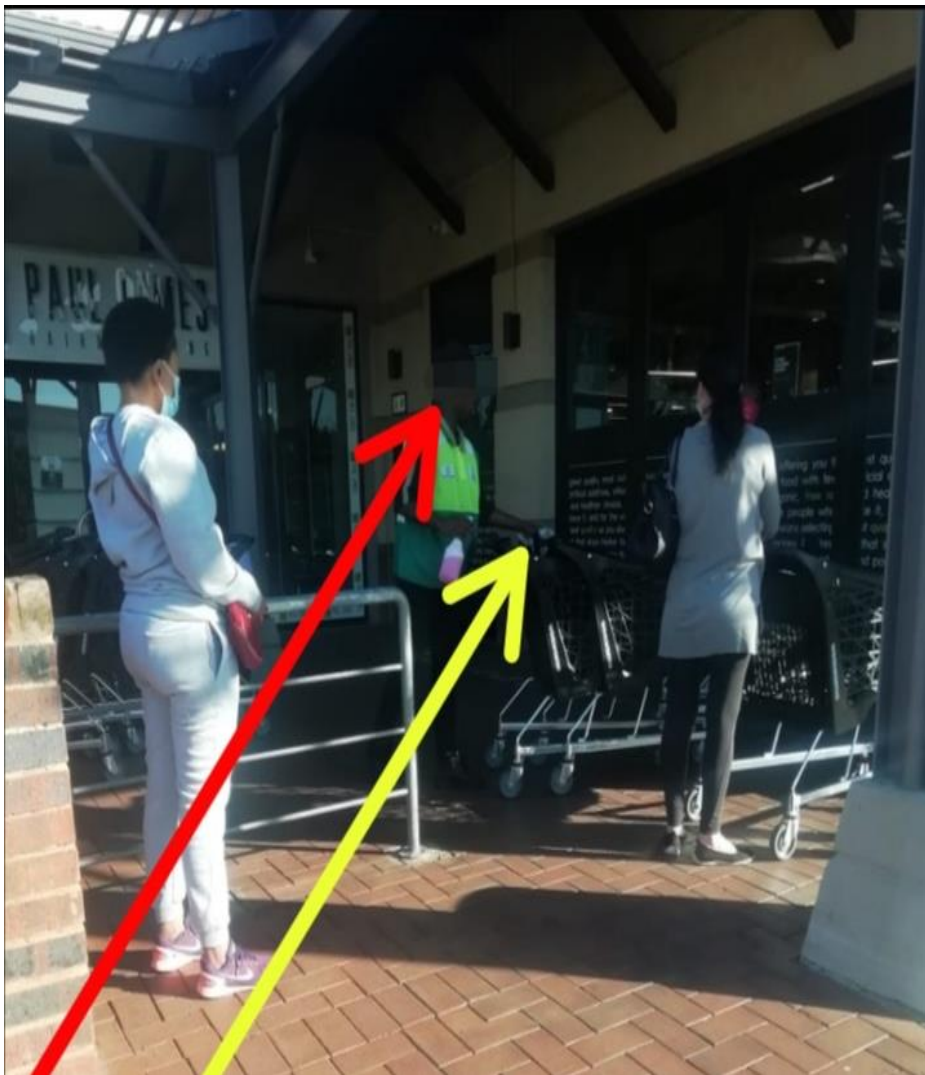
RISK ASSESSMENT CONSIDERATIONS

- Microorganisms are **everywhere** and **invisible**
- Hazardous Biological Agents **CANNOT** be **eliminated**
- **Minimize risk** at each point of **chain of infection**
(**Source** ↔ **Host** ↔ **Environment**)
- Checklist **NOT standard**, adaptable **by sector**
- **High risk** groups (e.g. Immunocompromised)

RISK COMMUNICATION



EDUCATE AND MONITOR



CONCLUSION

- **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

THANK YOU

PREPARE, PLAN, RESPOND

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