



HEALTHCARE FACILITIES RESILIENCE TO PLASTIC WASTE

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 2. Situation of plastic waste generation, collection, and treatment in Vietnam during COVID-19
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01

IMPACTS

From Covid-19 and
Climate change





BIG CHALLENGE



Peng et.al. (2021) stated that: “We find hospital waste represents the bulk of the global discharge (73%), and most of the global discharge is from Asia (72%), which calls for better management of medical waste in developing countries.”

Personal protective equipment (PPE)



COVID-19
pandemic

+



Single use plastics (SUPs)

Mismanaged Waste



Increased C-BMW

Managed Waste



Plastic as Polluter



Plastic as Protector



The fundamental links between climate change and marine plastic pollution

Ford et al., 2021

We have collated evidence that marine plastic pollution and climate change are linked in at least three ways:



Plastic contributes to greenhouse gas emissions throughout its life cycle



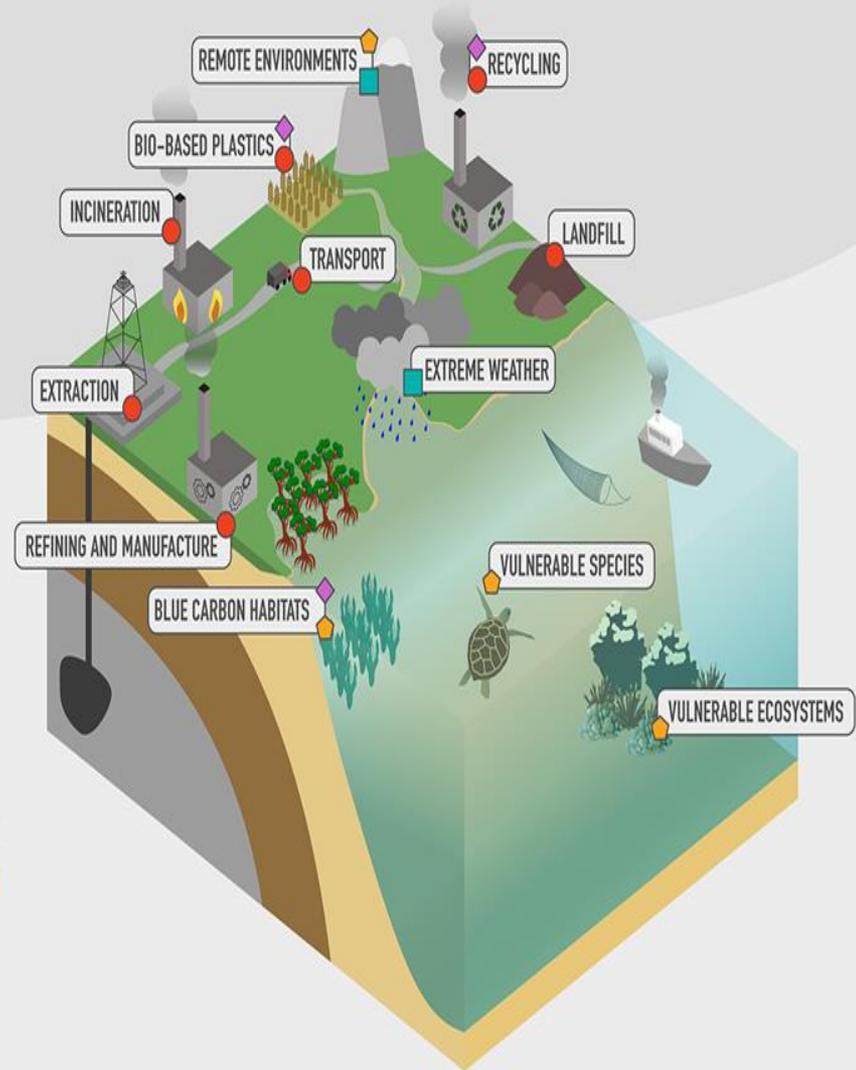
Climate change and plastic pollution co-occur throughout the environment



Climate change will exacerbate the spread of plastic pollution



There are solutions which mitigate against both climate change and plastic pollution





IMPACTS OF CLIMATE CHANGE ON HCFS ABOUT DEALING WITH PLASTIC WASTE





02



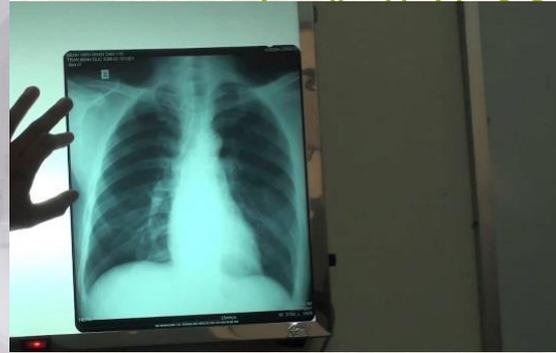
Situation of plastic waste generation, collection, and treatment in Vietnam during COVID-19

- Infectious plastic waste



Types of plastic waste in HCFs

- Hazardous plastic waste



Types of plastic waste in HCFs

- Ordinary plastic



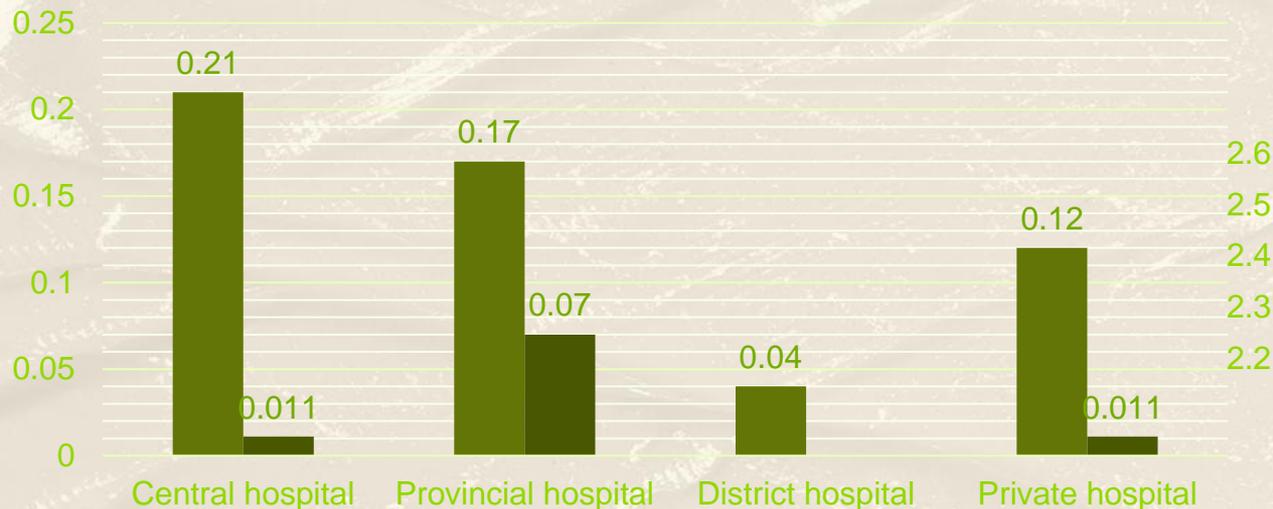
Types of plastic waste in HCFs

Average amount of plastic waste in HCFs	Central hospital (kg/day/bed)		Provincial hospital (kg/day/bed)		District hospital (kg/day/bed)		Private hospital (kg/day/bed)	
	General ones	Special ones	General ones	Special ones	General ones	Special ones	General ones	Special ones
Recycle waste	0,02	0,002	0,02	0,008	0,013	-	0,03	0,001
Ordinary waste	0,08	0,003	0,07	0,019	0,02	-	0,035	0,01
Infectious waste	0,09	0,006	0,07	0,042	0,009	-	0,056	0,00007
non-infectious hazardous waste	0,006	0,00004	0,007	0,0005	0,0009	-	0,004	0,00005
Total	0,21	0,011	0,17	0,07	0,04	-	0,12	0,011

Plastic waste generation in HCFs (in 2020)

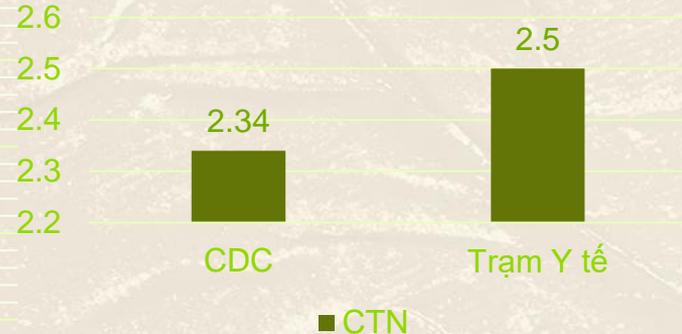
Total amount of plastic waste being discharged in hospitals (kg/day/bed)

■ General hospital ■ Special hospital



Total amount of plastic waste being discharged in CDCs and commune HCFs (kg/day/bed)

■ CTN



Plastic waste generation in HCFs (in 2020)

HFCs	Unit	Average amount of plastic waste generate	Number of patient beds or number of HFC	Estimated total amount of plastic waste generated in 2020 (kg/day)
Hospital	(kg/Bed/day)	0,091	304.000 (*)	27.664
CDC	kg/Center/day	2,34	63	147,42
Commune healthcare station	kg/station/day	0,11	10.000	1.100
Total				28.911,42

Plastic waste generation in HCFs (in 2020)

Plastic waste collection (in 2020)



CLASSIFICATION

- Central HCFs: 100%
- Provincial HCFs: 76,6%
- Private HCFs: 71,2%
- District HCFs: 87,5%



COLLECTION

- Central HCFs: 100%
- Provincial HCFs: 90,0%
 - CDCs: 100%
- Private HCFs: 100%
- District HCFs: 87,5%
- Commune HCFs: 100%



STORING

- Central HCFs : 100%
- Provincial HCFs: 100%
 - CDCs: 71,4%
- Private HCFs: 100%
- District HCFs : 100%
- Commune HCFs : 85,7%

No.	Types of HCFS	Infectious plastic waste				Ordinary plastic waste	Standard plastic waste	N
		Hiring an external treatment unit	Wet/ microwave steaming	Burning	Cluster treatment	Hiring an external treatment unit	Selling to other units	
1	Central HCFs	72,7	9,1	9,1	9,1	100	100	11
2	Provincial HCFs	90,9	9,1	0	0	100	90	30
3	CDCs	100	-	-	-	100	-	7
4	Private HCFs	100	-	-	-	100	57,14	7
5	District HCFs	90,9	9,1	-	0	100	100	8
6	Commune HCFs	-	-	-	7	100		7

Plastic waste treatment (in 2020)



Types of plastic waste (kg/day)	Thanh Nhan Hospital (Hanoi)		Bac Ninh Provincial General Hospital		Bac Giang Provincial General Hospital		Hai Duong Province Hospital for Tropical Diseases	
	Treating Covid patients		Treating Covid patients		Treating Covid patients		Treating Covid patients	
	No	Yes	No	Yes	No	Yes	No	Yes
Medical waste	44,2	48,7	89,6	99,6	-	26,2	-	32,2
Infectious plastic waste	6,8	10,4 (increase 153%)	4,6	7,1 (increase 154%)	-	11,5	-	30,5
Risk of containing SARS-CoV-2 (% compared to Infectious plastic waste)	0	7,53 (72,4)	0	1,14 (16,1)	0	4,40 (38,3)	0	30,5 (100)
Hazardous non-infectious waste	0,05	0,05	0,12	0,68	-	-	-	1,68
Ordinary waste	37,35	38,22	89,58	89,58	-	14,66	-	-

Plastic waste generation during COVID wave (in 2021)



PLASTIC WASTE SITUATION DURING COVID-19 IN HCFS



TOTAL AMOUNT

The total amount of infectious waste **increase by 150%.**



TREATMENT

Hiring external treatment units.

COLLECTING AND STORING

Circular No. Meeting 58/2015/TTLT-BYT-BTNMT and Decision No. 3455/QD-BCDQG.



FINANCE

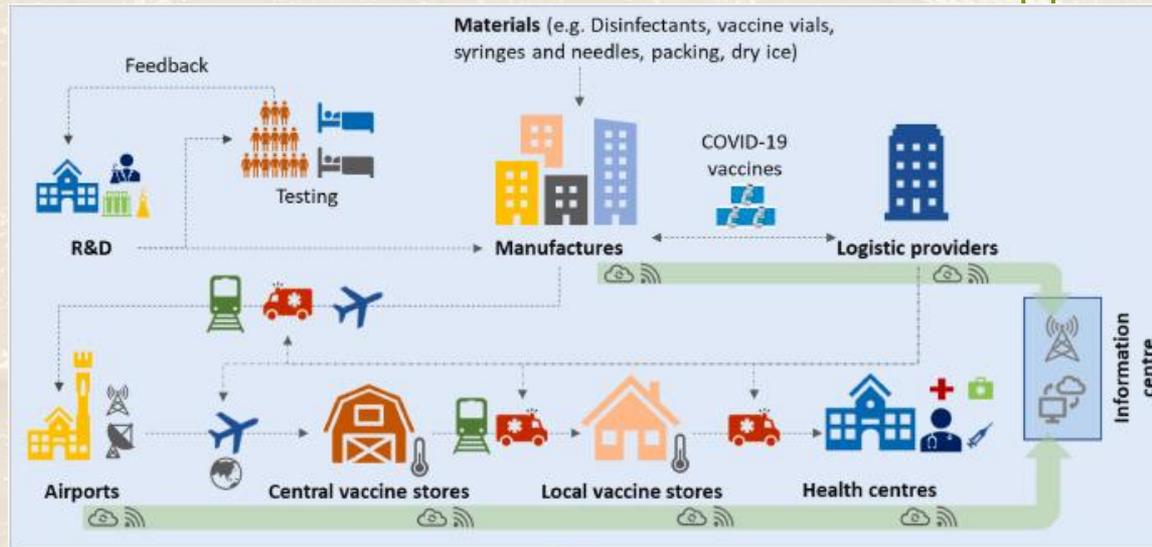
During Covid-19, the total amount of money paying for treating medical waste increase 2-20 times.



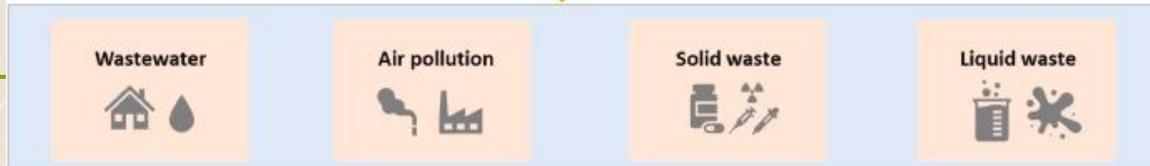


The number of plastic waste being discharged due to vaccination (up to 2022)

- Up to 08/03/2022, **there are 198.3 million doses of vaccine** was injected for Vietnamese. Vietnam becomes one of 6 countries getting the highest percentage vaccinated. (Vietnam MOH, 2022).
- Each dose of vaccine being injected will discharge **at least 01 syringe and 01 gloves** into the environment.
- Throughout the process of vaccination, from sources to end of consumption, a huge amount of solid waste (especially plastic ones) will be discharged into the environment without being treated.



Source: Klemes et. al. (2021)





POLICY AND IMPLEMENTAION ABOUT DEALING WITH PLASTIC WASTE ON HCFS



POLICY AND IMPLEMENTAION

ABOUT DEALING WITH PLASTIC WASTE ON HCFS

INITIATIVE:

- Replace plastic bags containing films and clothes with paper bags
 - Replace plastic medicine bags with paper bags distributed to each patient.
 - Promote communication through banners, on the website of the unit.
 - Select materials capable of sterilization and sterilization so that they can be reused many times.
 - Replace single-use plastic cups/cups with paper cups/cups (public areas) glass cups in meetings and receptions. Replace the rice tray from styrofoam box to stainless steel.
 - Use antibacterial cloth as a mask, operating table cloth, and tool tray.
 - Reuse plastic waste as decorations/plants; Equip reusable water bottles for staff, patients and family members;
 - Replace blood foam containers with reusable plastic ones; Replace the mica cover of the file with the paper cardboard;
-

POLICY AND IMPLEMENTATION ABOUT DEALING WITH PLASTIC WASTE ON HCFS

INITIATIVE



Replace plastic bags with cloth bags



Use paper to wrap traditional medicine



Reuse plastic waste as decorations



03

URGENT

Recommendations and Actions





Lessons learn and recommendations

- Plastic waste reduction should be important priorities in relevant policies, which will be a legal platform for sectoral actions, i.e the national strategy & action plan for climate change adaptation, national strategy for environment protection.
- COVID-19 waste management, including in HFCs, should be intergrated in any national and provincial COVID-19 response strategy and/or plan.
- Strengthen the treatment capacity of plastic waste in particular and infectious medical waste in general for hospitals and external companies
- Medical plastic waste segregation has not done properly within HFCs in Vietnam due to the lack of detailed instructions It is necessary to develop the detailed instruction on medical plastic segregation for HFCs to apply
- Minimum/No generation of plastic waste approach should be applied in HFCs, especially hospitals at all levels
- Financial and technical supports for HFCs to improve and head to change treatment/usage of medical equipment more friendly with the environment.



THANK YOU

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