

IMPACT OF COVID-19 IN RADIATION ONCOLOGY PRACTICE IN THE PHILIPPINES: A Situational analysis

Authors: J. Flores^{a,b,d,e,f}, M. Cruz^{a,b,c,e}, G. Banuelos^{a,c,d,e}, T. Sarmiento^{a,b,c,d,e}, F. Villegas^{a,b,c,e}, E. Tangco^{a,b,d,e}, M. Olvina^{a,b,c,d,e}, C. Aguilar^{a,b,c,d,e}, C. Pusag^{a,c,d,e}, J. Ramos^{a,c,d,e,f}, K. Enriquez^{a,b,d,e}, K. Lo^{a,b,d,e}

^aCancer Institute Sacred Heart Medical Center Angeles City Philippines, ^bCancer Center Central Luzon Doctors Hospital, Tarlac City Philippines,

^cCentral Luzon Integrated Oncology Center City of San Fernando Philippines, ^dLipa Medix Cancer Center Batangas City Philippines

^eDepartment of Radiation Oncology, The Medical City, Pasig City, Philippines, ^fDepartment of Radiotherapy, Jose R. Reyes Memorial Medical Center, Manila, Philippines

* Corresponding author:
jacksonfloresmd@gmail.com

Background and Objective

In March 11, 2020, the World Health Organization (WHO) announced the novel coronavirus 2019 (COVID-19) pandemic with the exponential increase of the number of cases across the globe. With the increasing number of local transmission, the entire region of Luzon was placed under an enhanced community quarantine (ECQ). COVID-19 imposes a challenge in any radiation facility on how to balance implementation of acceptable policies to reduce the transmission of COVID-19 while optimizing effective radiation treatment of cancer patients. It is crucial to evaluate how extensive the impact of this contagion in the operations of a radiation oncology facility of a developing country in order to plan and mitigate the risk considering there is limited resources. This study aims to present the overall operational impact and situational analysis of COVID-19 in radiation oncology facility in the Philippines.

Methods

This is a cross sectional study conducted last April 13, 2020 using survey questionnaire participated by 19 radiotherapy facilities in the Philippines.

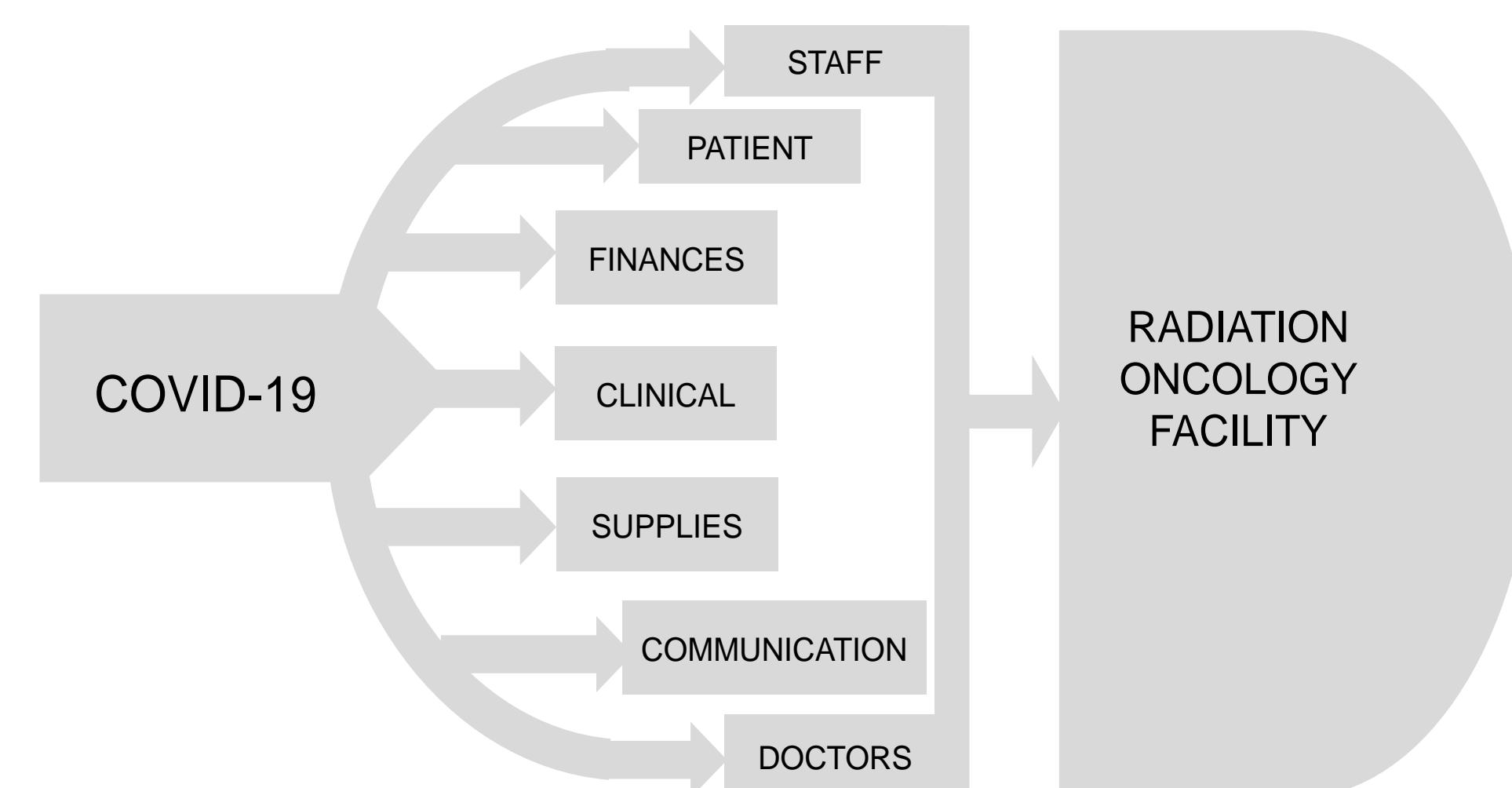


Figure 1. Conceptual framework

Results and Discussion

Based on the survey questionnaire response, All of the domains of the 19 radiotherapy facilities were affected by COVID-19. The highest impact was on manpower (doctors/professional staff) (100%), followed by clinical (referrals, treatment delays/interruptions) (95%), economic or financial (95%), patients census and triaging (89%), resources/supplies (personal protective equipment (PPE) and other equipment/maintenance(89%), and communication (check-ups/follow-ups)(58%), as the least area affected.

Table 1. Demographic Profile of Survey Respondents

	NCR	Luzon	Visayas	Mindanao	TOTAL
No. of Radiotherapy Facilities	5	9	3	2	19
No. of Radiation Oncologists	5	9	3	2	19
External beam radiotherapy machines*	7	11	3	2	23
CT simulators	5	9	3	1	18
HDR Brachytherapy machines	2	3	1	0	6

* Linear Accelerators/Cobalt teletherapy
Abbreviations: NCR national capital region, CT computed tomography, HDR high dose rate

Conclusions

The radiation oncology practice in the Philippines continues to evolve in order to ensure safe, effective and quality radiotherapy for all patients while minimizing the risk of exposure to COVID-19 for both the immunocompromised patients, hardworking professional staff and the general public. Despite the several impact of COVID-19 among radiotherapy facilities in the Philippines in all aspects (clinical, manpower, financial/economic, resources and communication), radiation oncology centers continue to address the threats of COVID-19 to their patients and staff through implementation of COVID-19 precautionary measures and policies in order to prepare and to adapt to the new normal in radiation oncology practice.

Figure 2. Impact of COVID-19 in the RT facilities.

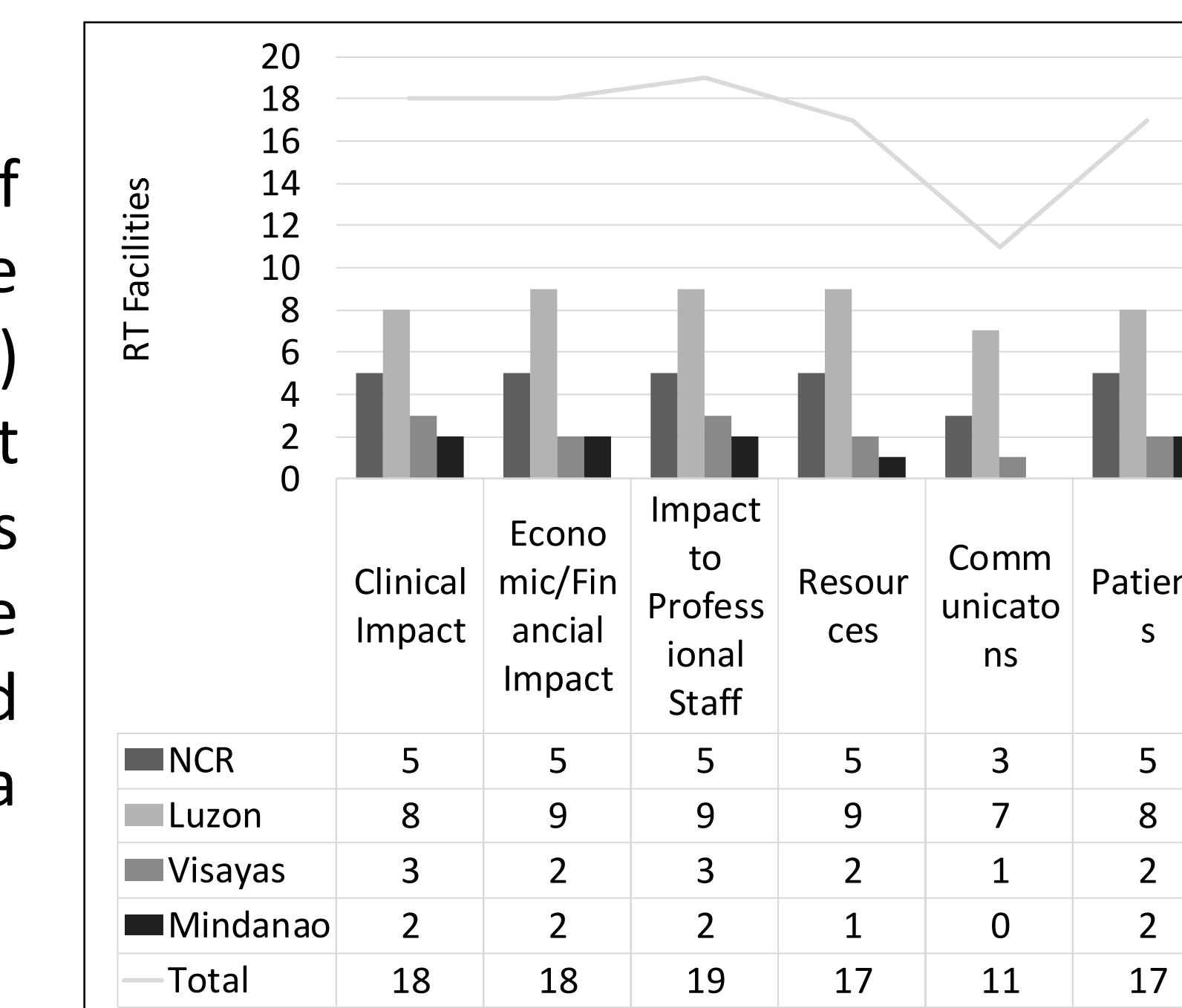


Figure 3. RT census before and during COVID-19 distributed per region in the Philippines.

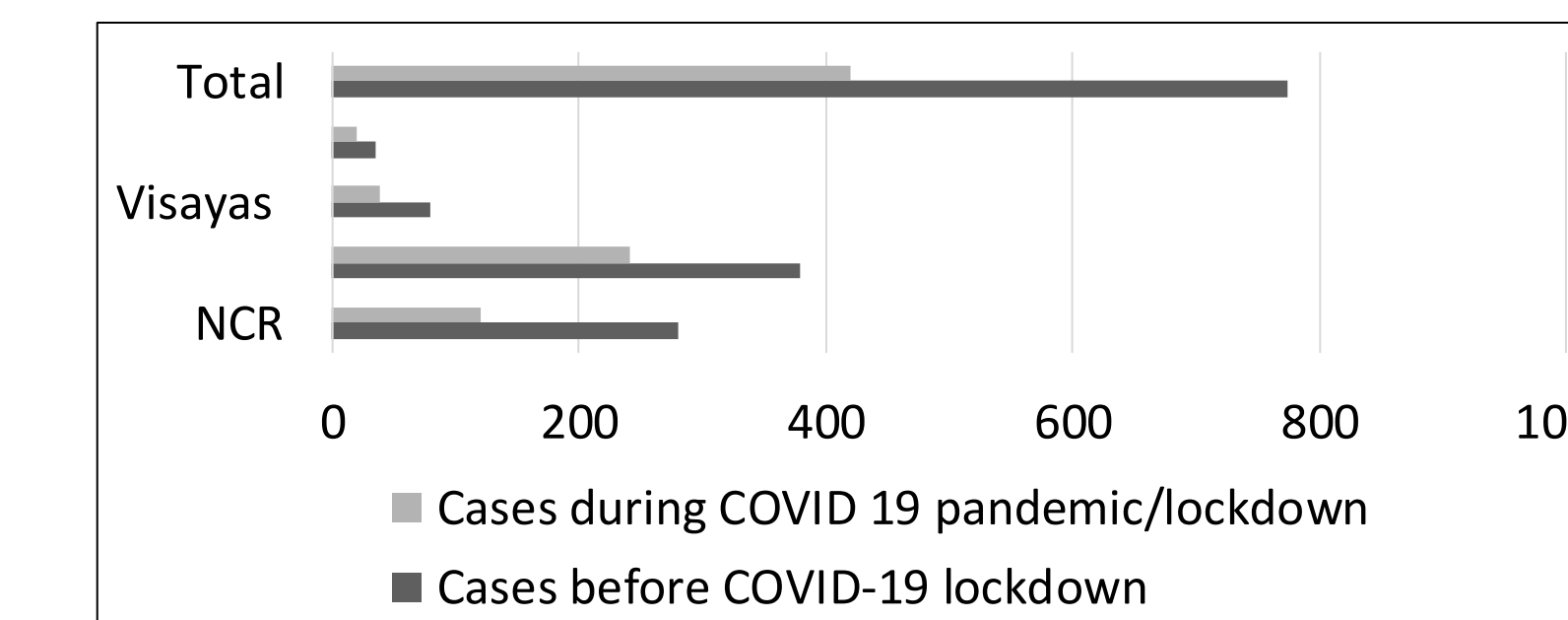


Figure 4. Impact on income of RT facilities before and during COVID-19 from different regions of the Philippines

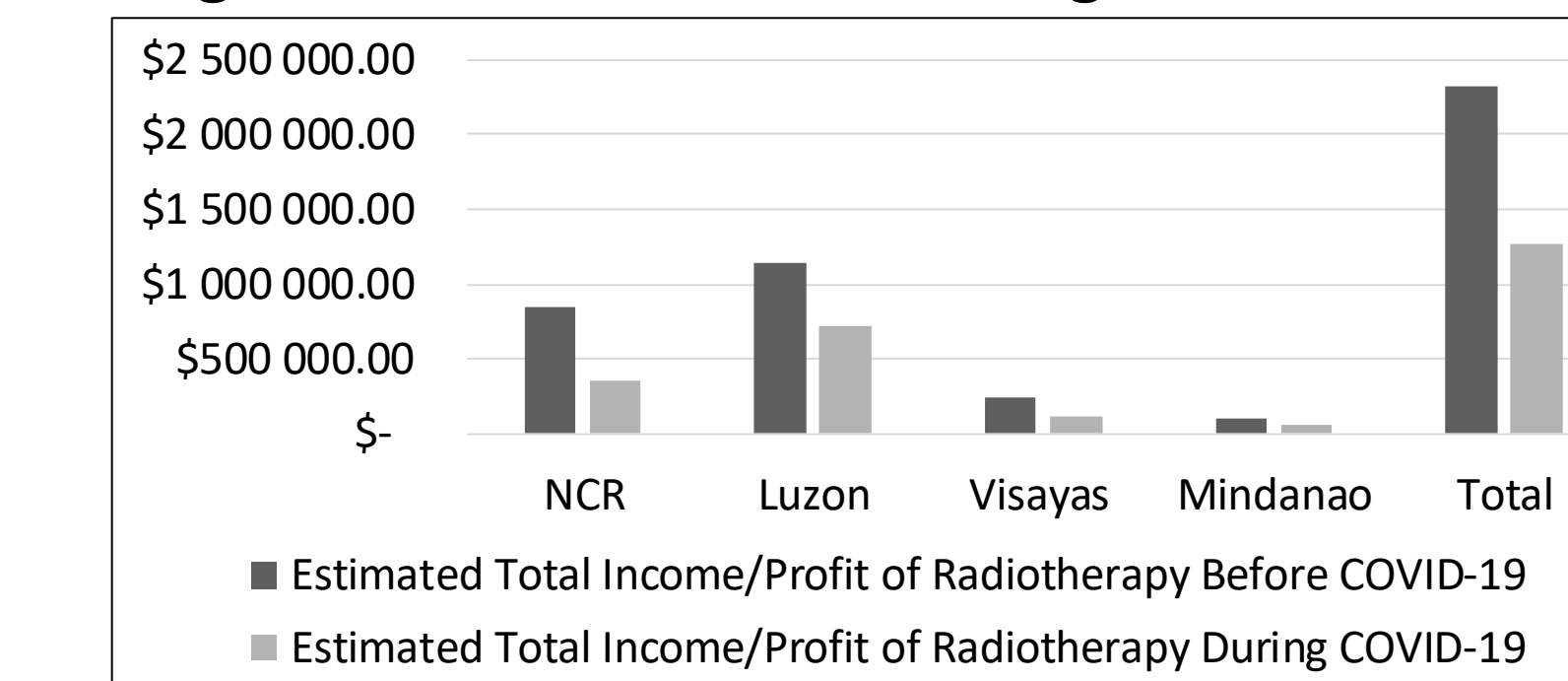


Figure 5. Profile of cases treated as priority for RT during the COVID-19.

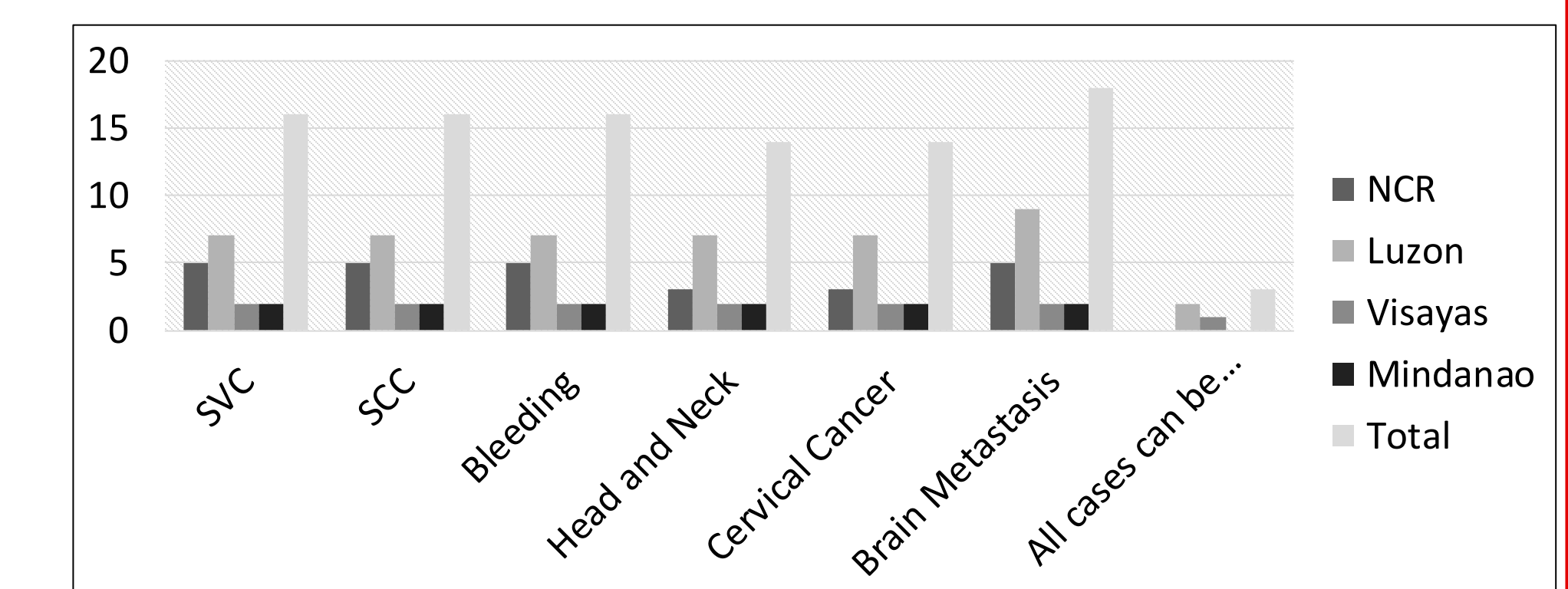


Figure 6. Impact on Brachytherapy during the COVID-19 in the Philippines

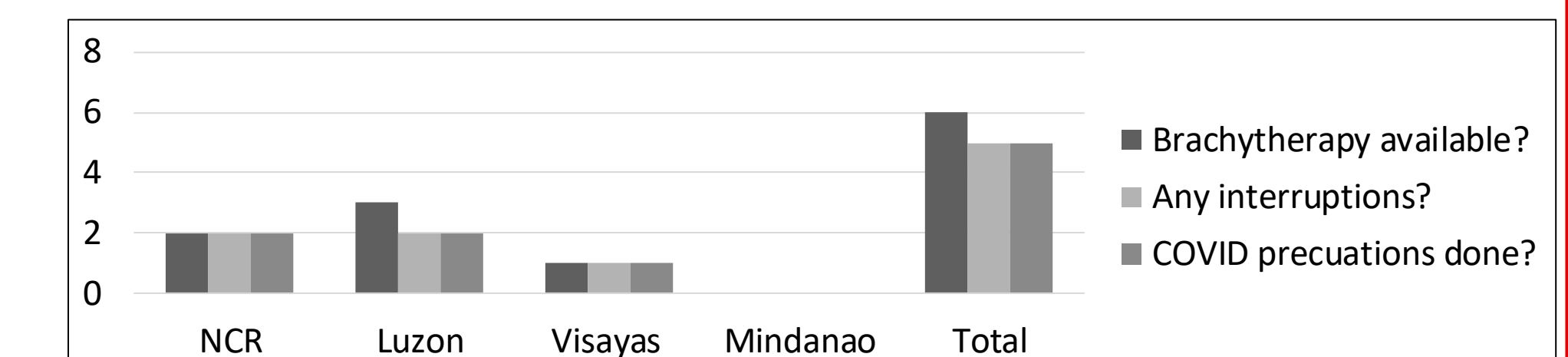


Figure 7. Status of Personal Protective Equipment (PPEs) from different facilities per region.

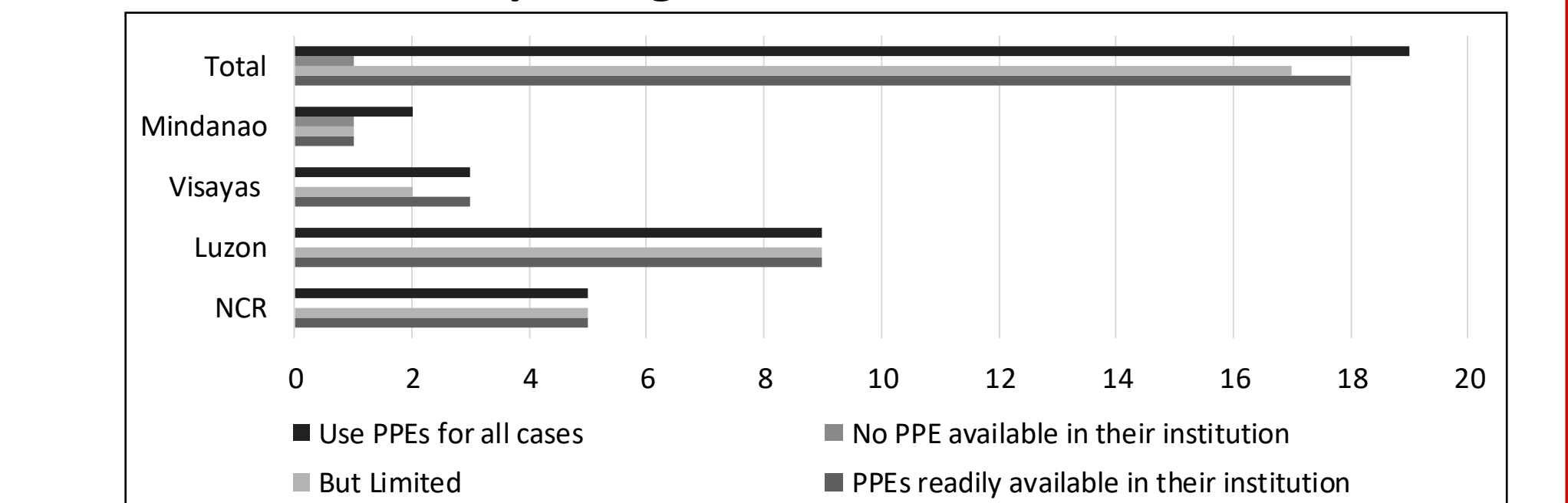
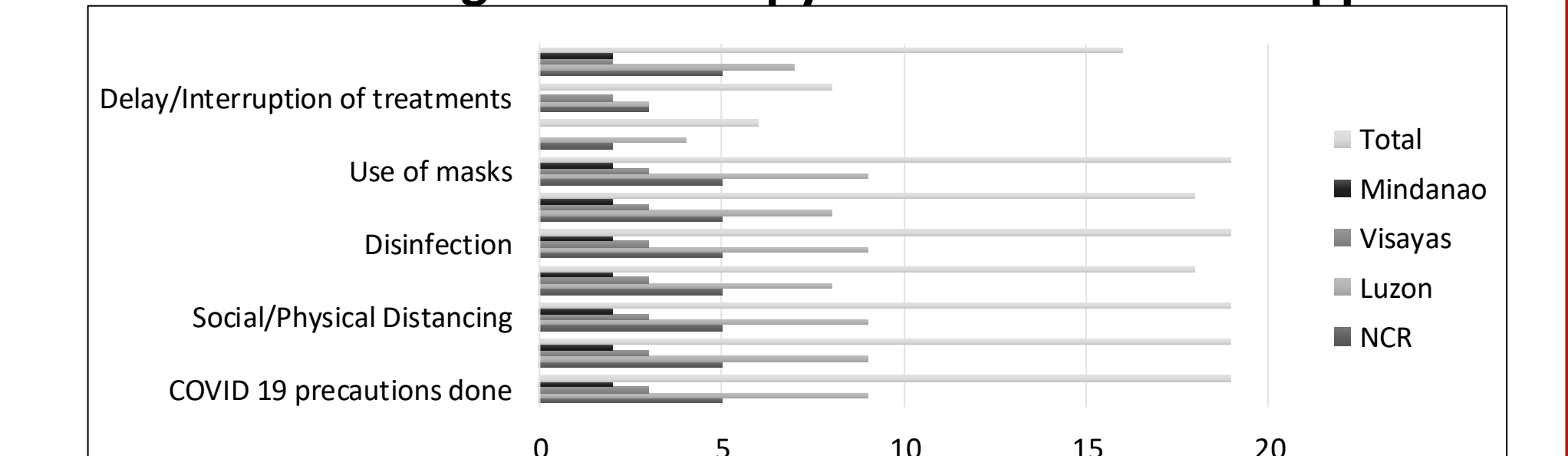


Figure 8. Creation of COVID-19 Precautionary Measures and Policies among Radiotherapy Facilities in the Philippines



References

- [1] Cruz, M, et. al., Adapting to the contemporary normal in cancer management and workflow during. COVID-19 situation in the Philippines: Multi-cancer center collaborative approach. *Radiother Oncol*. 2020 Jun 13.
- [2] Philippine Radiation Oncology Society (PROS) COVID-19 General Recommendations. Official communication. Accessed March 16, 2020.