CVIT COVID-19 Survey

Conducted September 28 to October 6, 2021

May 2021 (7th time total) and September 2021 (8th time total) trend surveys

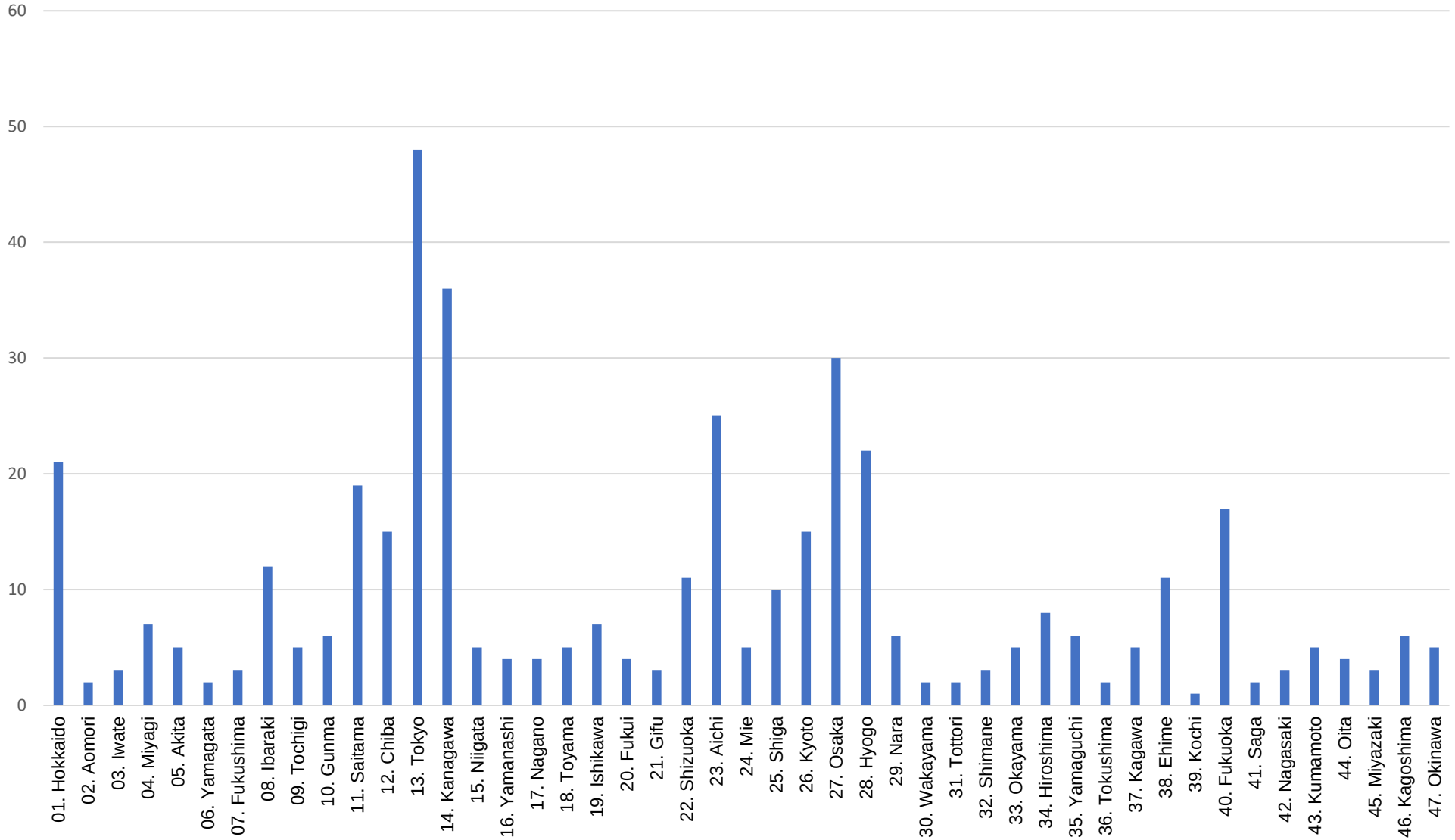
Applicable facilities: CVIT training facilities/training related facilities

No. of respondent facilities: 430

We would like to express our thanks for the cooperation of so many facilities.

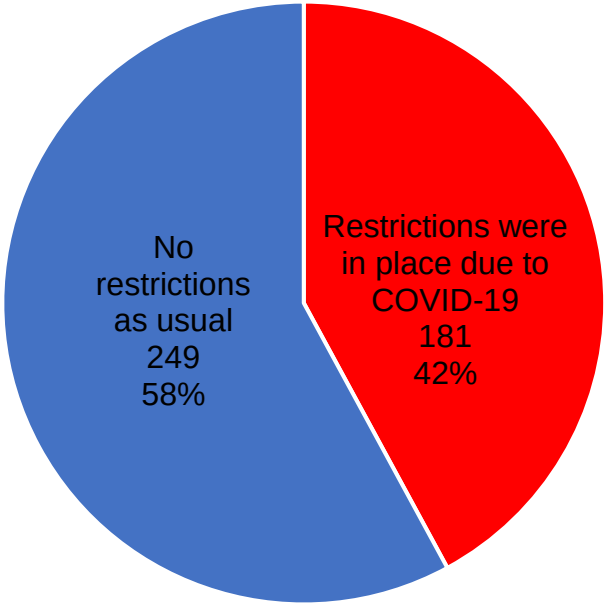
Yuji Ikari, CVIT President, Tetsuya Amano, Registry Committee Chairman,
Totals: CVIT Office and Registry Practical Subcommittee

Number of questionnaire responses by prefecture: Total 430 facilities

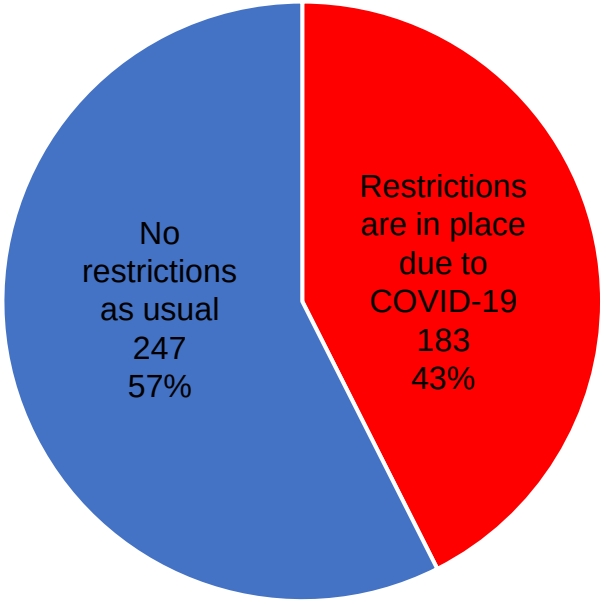


General emergency room demand

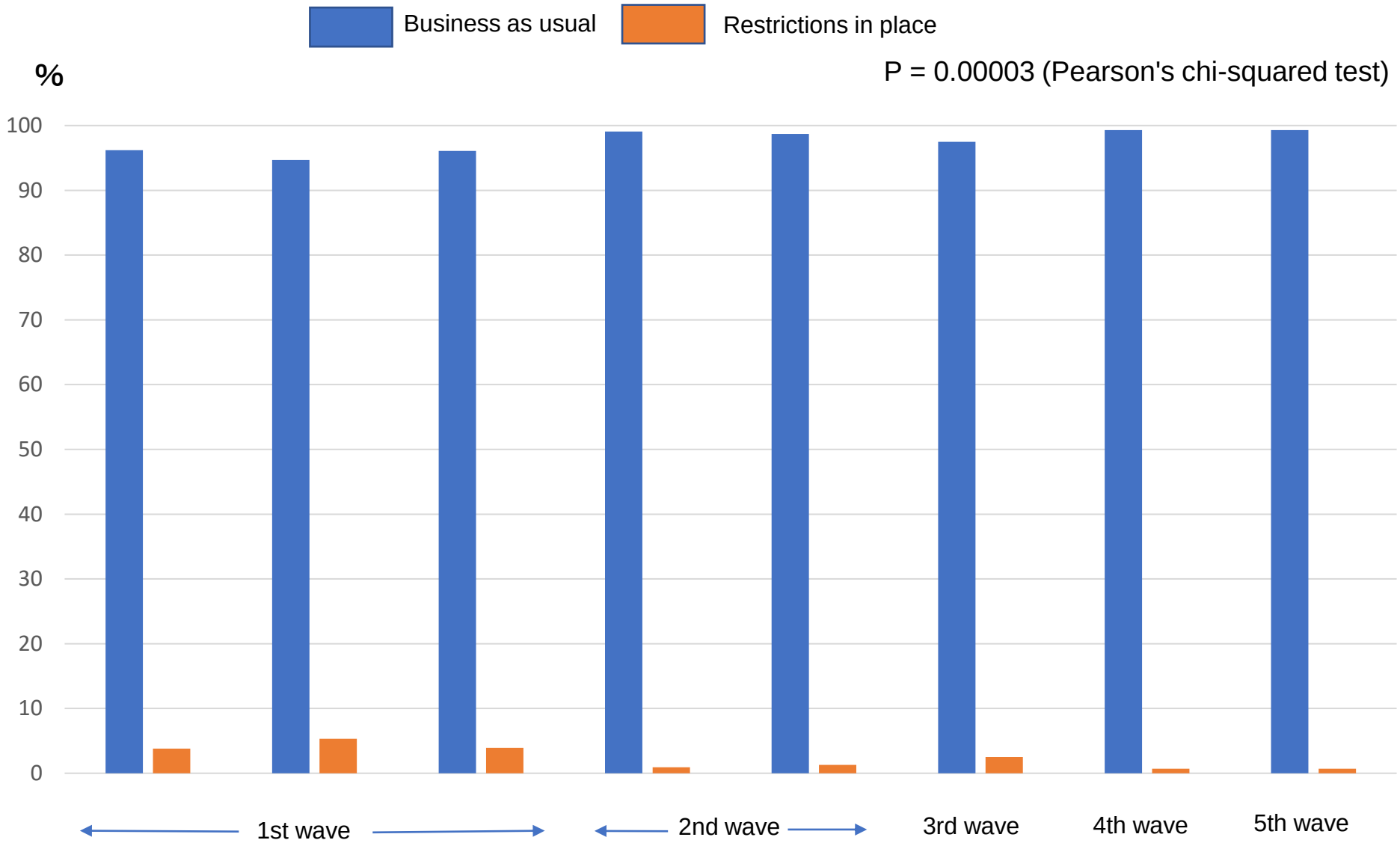
As of early May 2021 (4th wave)



As of early September 2021 (5th wave)



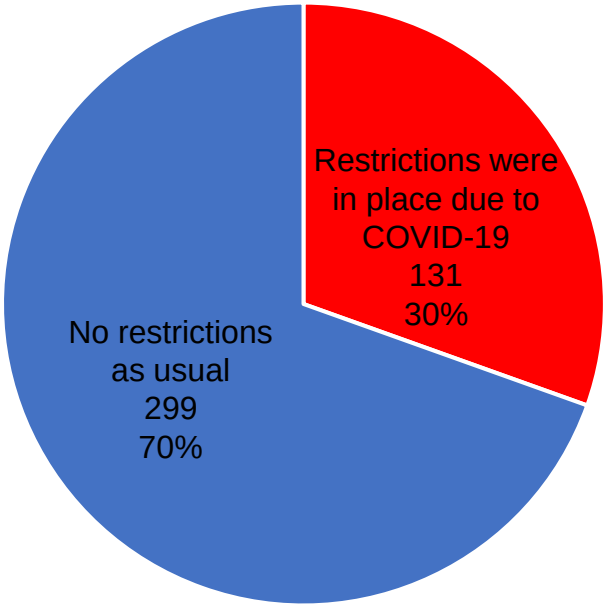
STEMI treatment



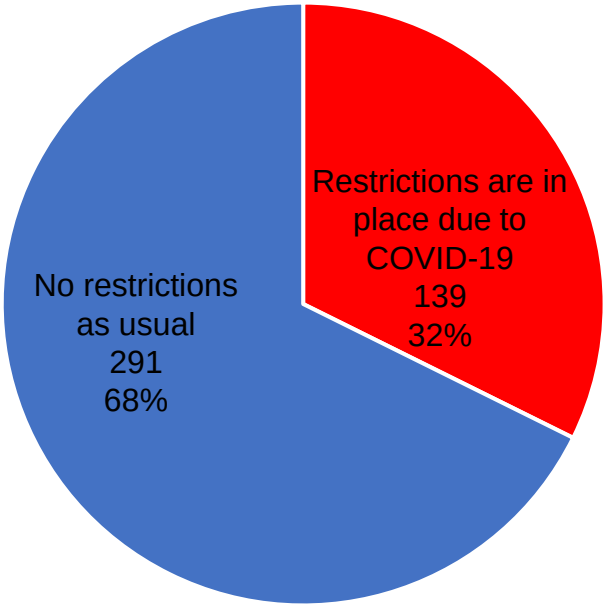
	2020 Mid April	Late April	Mid May	Mid August	Mid December	2021 Mid February	Early May	Early September
PCI for STEMI business as usual	96.2%	94.7%	96.1%	99.1%	98.7%	97.5%	99.1%	99.3%

ACS emergency room demand

As of early May 2021 (4th wave)

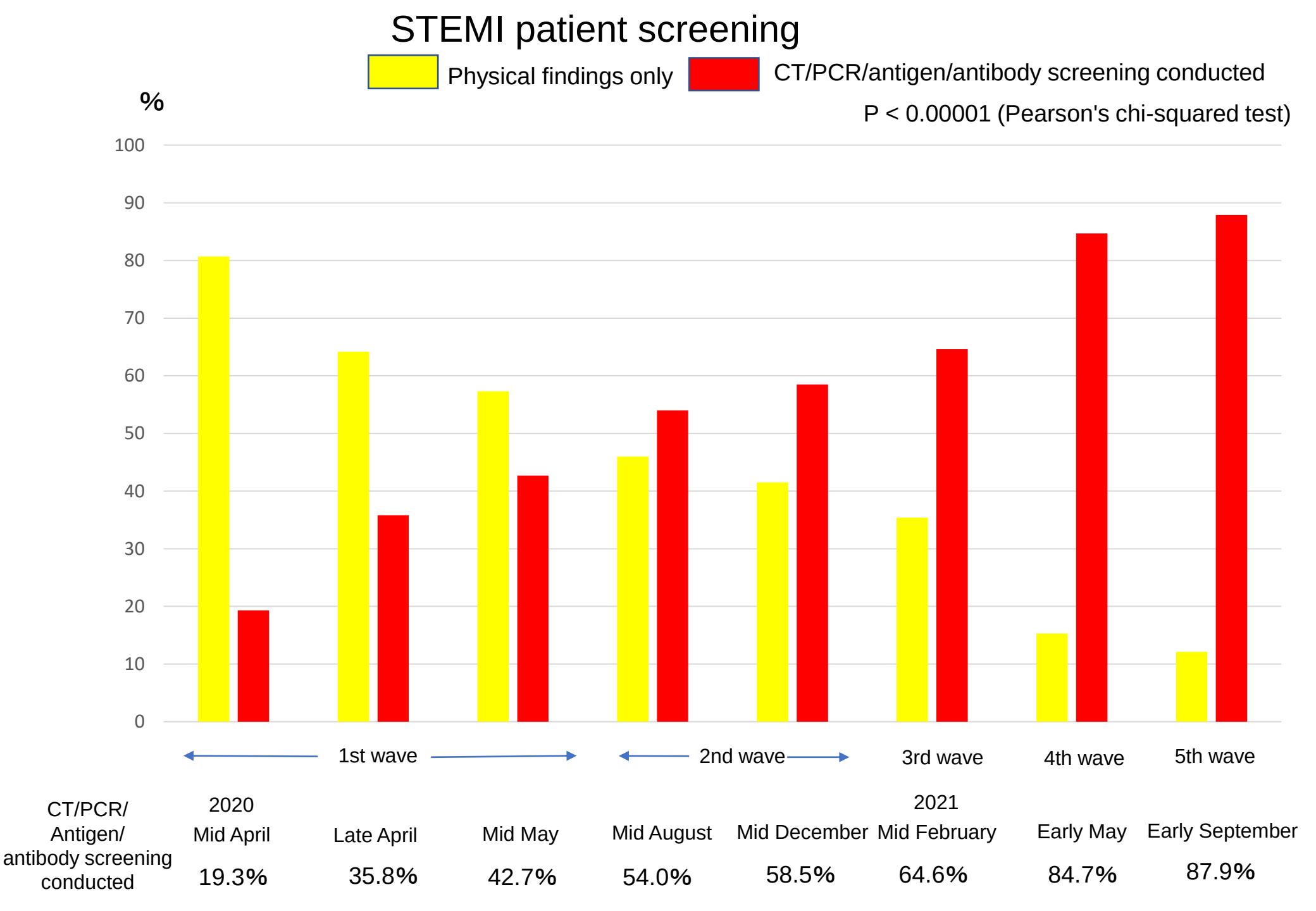


As of early September 2021 (5th wave)



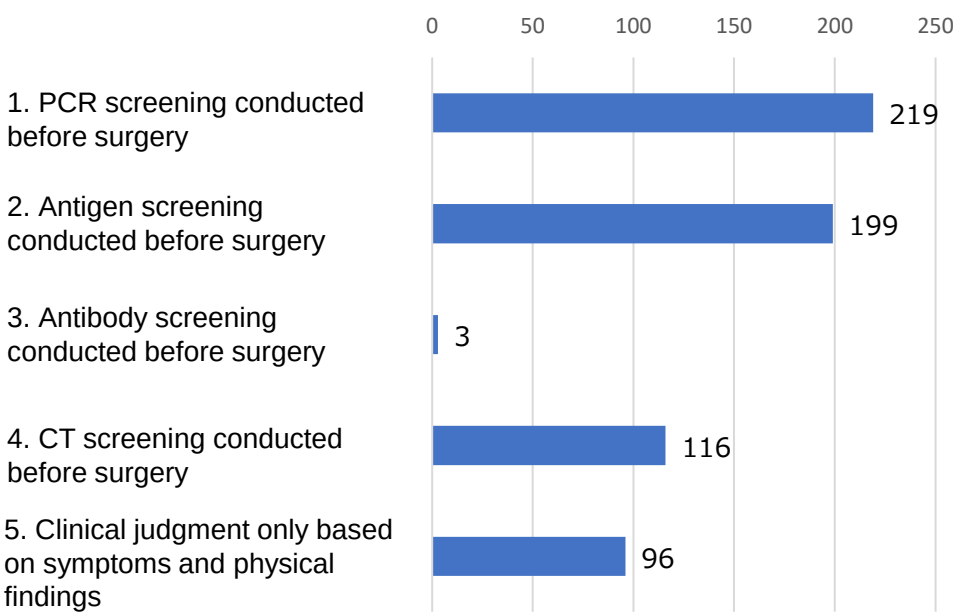
Emergency framework/STEMI handling

- **During the third wave, medical restrictions of one kind or another were placed on about 40% of facilities providing emergency medical services, however, this number was about 30% during the fourth and fifth waves.**
- **On the other hand, even during the fourth and fifth waves, primary PCI was performed for STEMI patients in 99% of respondent facilities. This is considered an extremely high number.**

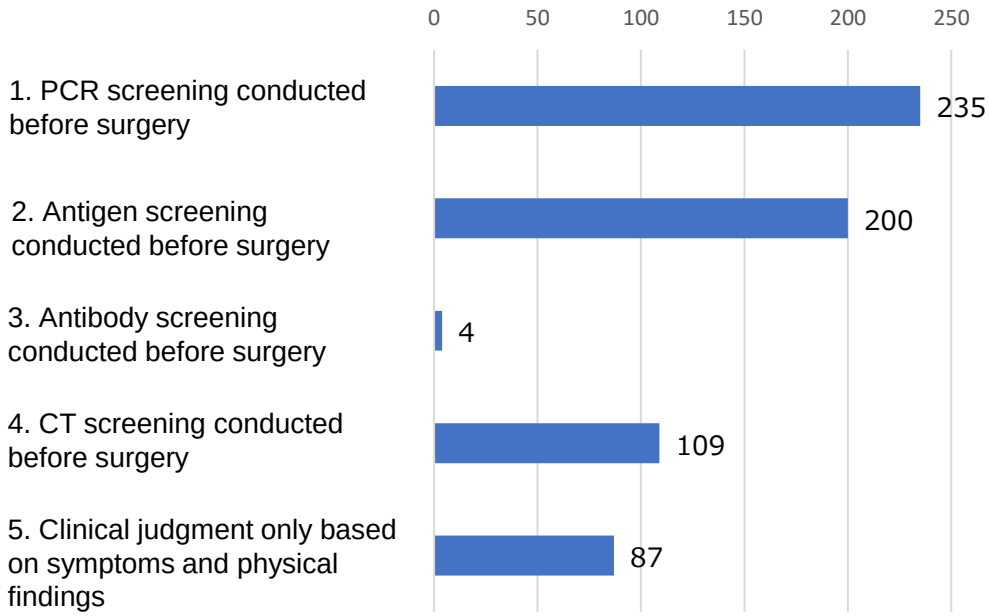

STEMI patient screening
Physical findings only
CT/PCR/antigen/antibody screening conducted
%
P < 0.00001 (Pearson's chi-squared test)
100
90
80
70
60
50
40
30
20
10
0
1st wave
2nd wave
3rd wave
4th wave
5th wave
CT/PCR/ Antigen/ antibody screening conducted
2020
Mid April
Late April
Mid May
Mid August
Mid December
2021
Mid February
Early May
Early September
19.3%
35.8%
42.7%
54.0%
58.5%
64.6%
84.7%
87.9%

COVID-19 screening for STEMI cases (Multiple responses permitted)

As of early May 2021 (4th wave)



As of early September 2021 (5th wave)

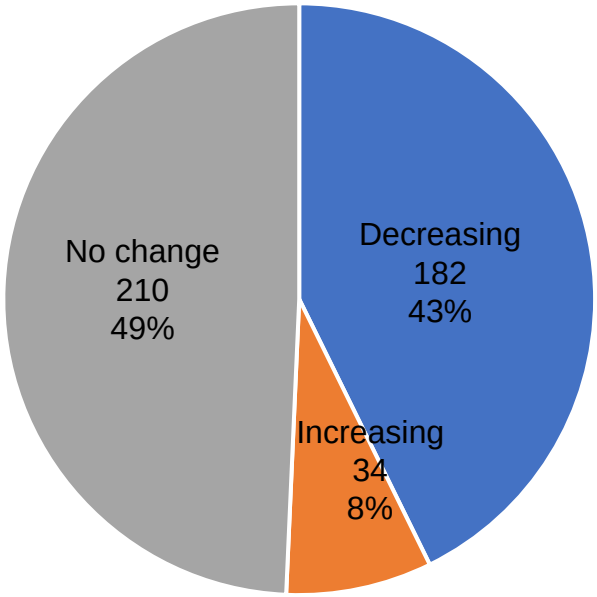


- **Although PCR testing was conducted at 35.1% of facilities during mid-December 2020 and 48.1% in mid-February 2021, there was an upward trend thereafter. PCR testing was conducted at 50.9% of facilities in early May 2021 and 54.7% of facilities in early September 2021.**
- **On the other hand, CT testing was at 35.9% in mid-February 2021, gradually dropping thereafter.**

Is there an impression of increasing ACS patients when comparing the same period for the previous year? Or is the number decreasing? (Comparison between second, third, and fifth waves)

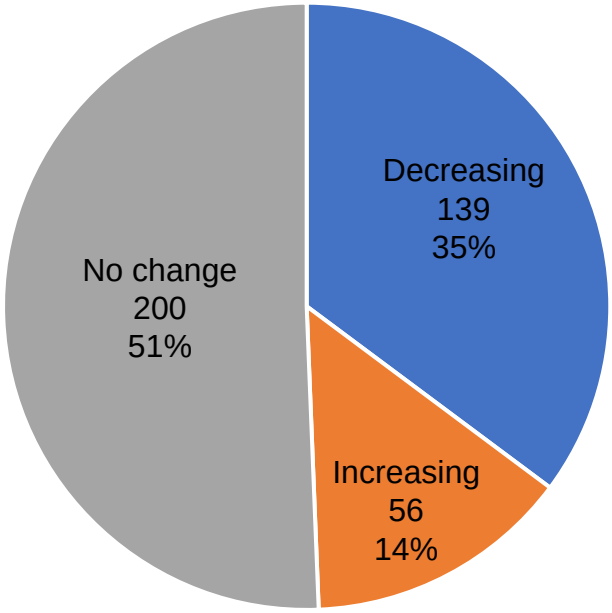
As of mid-August 2020 (2nd wave)

No. of respondents: 426 facilities



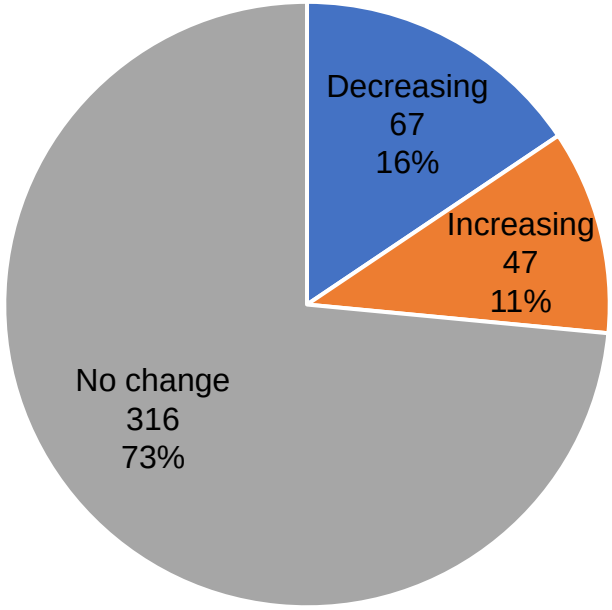
As of mid-February 2021 (3rd wave)

No. of respondents: 395 facilities



As of early September 2021 (5th wave)

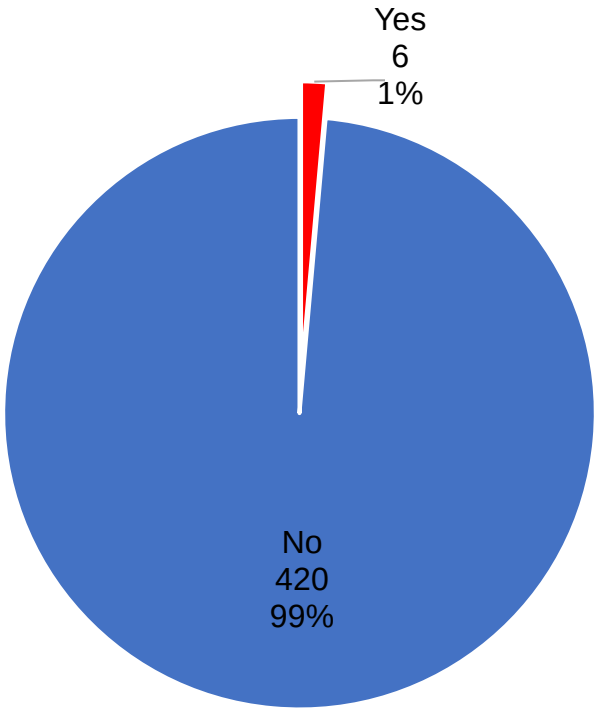
No. of respondents: 430 facilities



Catheter treatment among patients with a confirmed COVID-19 diagnosis

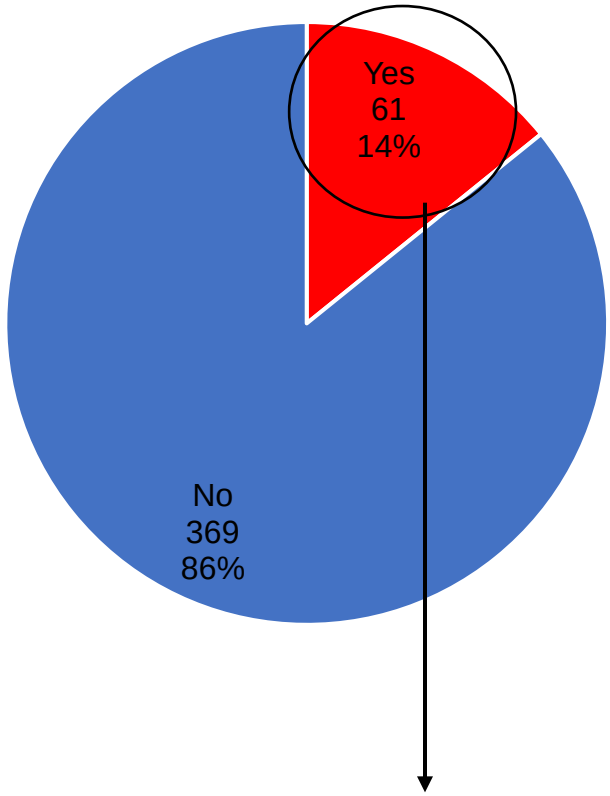
As of early August 2020 (5th wave)

No. of respondents: 426 facilities



As of early September 2021 (5th wave)

No. of respondents: 430 facilities



- **Compared with early August 2020 when the same question was asked, the number of facilities providing catheter treatment for confirmed COVID-19 cases increased in September 2021.**

Detailed comments on next page

Comments from hospitals that conducted cardiac catheterization for COVID-19 positive patients (1)

- **STEMI patients who could not be diagnosed upon admission were discovered to have positive PCR results in the PCI post-op room.**
- **There were some cases with no fever or noticeable symptoms even among COVID-19 positive patients.**
- **Emergency cases are treated in negative pressure rooms.**
- **A significant amount of time is lost searching for postoperative management rooms and private rooms in addition to catheterization and PCI.**
- **After catheterization of COVID-19 positive cases, cleaning of the catheterization room takes time, which limits the number of cases.**
- **All emergency cases are handled using full PPE.**
- **A number of simulations were conducted in anticipation of COVID-19 positive emergency cases.**

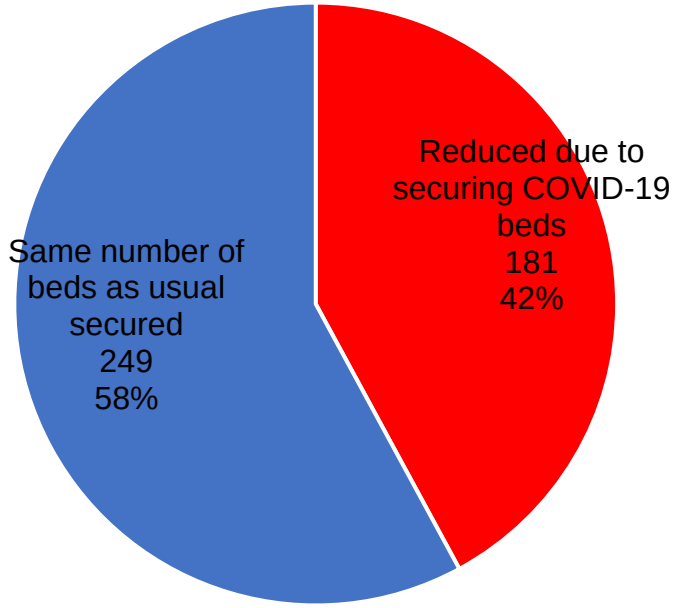
Comments from hospitals that conducted cardiac catheterization for COVID-19 positive patients (2)

- **Problems arose when touching other items in the room (storage cases containing medicine and catheters, etc.) with hands that came into contact with patients even when using full PPE.**

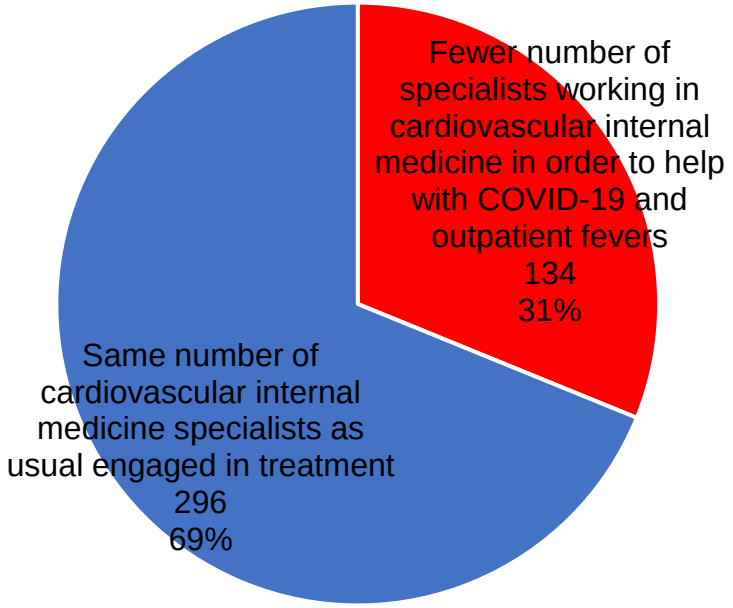
- **When a patient hospitalized with COVID-19 at another hospital developed AMI, the hospital could not find another facility that could perform a PCI, and requested that we handle it the next day despite the distance because they could not find another facility. It takes considerable time to receive an examination after contact. I was shocked that there were so few facilities left that could treat AMI cases with COVID-19.**

- **Assisted circulation therapy such as ECMO and IMPELLA were conducted for cases of fulminant-type myocarditis that developed during hospitalization for COVID-19 pneumonia. Many staff were anxious over catheterization while wearing PPE, securing rooms after surgery, rehabilitation, etc. Additionally, because a large number of staff needed to handle sudden changes, protection against infection was likely inadequate in some cases. (From multiple facilities)**

Cardiovascular internal medicine bed utilization as of early September 2021 (5th wave)



Cardiovascular internal medicine specialists secured as of early September 2021 (5th wave)



Q: Most troublesome COVID-19 related issues at your facility (1)

- Wards designated for severe COVID-19 cases by prefectural government request.
- Securing spaces for suspected patients including those with fever is difficult.
- Restrictions on the use of the emergency room result in cases of refusing emergency treatment.

  > Restrictions on cardiovascular beds and treatment.
  Postponement of scheduled cases
  Longer door to balloon time in STEMI cases.
  Fewer patients means decreased hospital income, resulting in lower annual pay.

- Struggled to diagnose acute myocardial infarctions and acute myocarditis after the second vaccination.

- COVID-19 cases may slip into the CCU in cases of severe heart failure (COVID-19 cases are not to be admitted to CCU).

Q: Most troublesome COVID-19 related issues at your facility (2)

- I think that the ECPR threshold value for out-of-hospital cardiac arrest cases has risen. (It could be that there are increasing cases where lives cannot be saved.)

- In addition to usual cardiovascular treatment, cardiovascular specialists must also treat COVID-19 patients and administer vaccinations.

- If staff family members are diagnosed with COVID-19, staff become close contact individuals and must take time off work for a certain period, making it difficult to adjust workloads in many cases. Treatment restrictions due to clusters in the hospital are also a problem.

- Emergency admissions are treated as suspected COVID-19 cases, all being handled using full PPE, making everything a hassle. N95 masks must be worn until the PCR test results are returned (depends on the facility).

- Staff breakthrough infections, infections among patients in the hospital, feeling of exhaustion.

Acknowledgments

We would like to express our sincere thanks to the many facilities who took time out of their busy schedules to fill in the questionnaire.

The results will be shared not only with the CVIT administrative board and related committees, but various government agencies and insurance committees in order to spur constructive debate in the medical system, especially in the emergency treatment of cardiovascular diseases.

The Ministry of Health, Labour and Welfare‘s report released in late September, 2021 and other reports show a downward trend in COVID-19 infections in each region, however, there are concerns over a sixth wave. Understanding the current situation in Japan is absolutely vital, and questionnaires are a part of this, so we would like to ask for your continued cooperation.

Many physicians have pointed out the delay in the time from onset of ACS cases until examination, or from examination to administration of PCI. The answers to the CQs, such as door to balloon time during the COVID-19 pandemic and PCI prognoses, will be announced on the J-PCI registry in the future.