

# The Effect of the COVID-19 Pandemic on the Use of Telehealth in Cancer Care: A Multicentre Study

Cao JW<sup>1</sup>, Parsonson A<sup>2,3,4</sup>, Xiong G<sup>5,6</sup>, Yap ML<sup>1,7,8,9,10</sup>

1. School of Medicine, Western Sydney University; 2. Centre for Health Informatics, Australian Institute of Health Innovation; 3. Clinical Trials Unit, Macquarie University Hospital; 4. Department of Medical Oncology, Nepean Cancer Care and Wellness Centre; 5. South Western Sydney Local Health District; 6. Ingham Institute, Liverpool; 7. Macarthur Cancer Therapy Centre, Campbelltown Hospital; 8. Liverpool Cancer Therapy Centre, Liverpool Hospital; 9. Collaboration for Cancer Outcomes, Research and Evaluation (CCORE), Ingham Institute UNSW Sydney; 10. The George Institute for Global Health, UNSW Sydney.

## Background/Purpose

- The COVID-19 pandemic strained healthcare systems and was challenging for immunocompromised oncology patients.
- Telehealth is an alternative to the face-to-face model for oncology consultations.
- Australian Telehealth access has significantly increased from 455104 (Jan 2018-Dec 2019) to 62.2 million times (Mar 2020–Jun 2021) since the COVID-19 pandemic.
- **Aim:**
  - Quantify oncology outpatient Face-to-Face versus Telehealth consultation in SWSLHD (2019-2024).
  - Examine the impact of the COVID-19 pandemic on telehealth utilisation.
  - Explore sociodemographic factors linked to telehealth uptake.

## Methodology: Retrospective cohort study

- **Data source:** Patients were extracted from the MOSAIQ Oncology information system across cancer centres in SWSLHD, including Bankstown, Campbelltown, Liverpool, and Bowral hospitals.
- **Participant and eligible criteria:**
  - Inclusion criteria:
    - Patient aged 18+ years old
    - With confirmed malignancies
    - Seen by a radiation oncologist or received radiation therapy in SWSLHD
  - Exclusion criteria: missing SEIFA (Socio-Economic Indexes for Australia) or ARIA (Remoteness Area) postcodes.
- **Analysis**
  - **Descriptive analysis** of the number of face-to-face versus telehealth consultations (2019-2024).
  - **Univariate and multivariate logistic regression analysis** examined the impact of sociodemographic characteristics, cancer characteristics, and specialties on telehealth utilisation.
- **Ethics:** The Radiation Oncology Virtual Clinical Quality Data Registry platform has overarching approval from the SWSLHD research ethics board. Patient consent was waived as the project falls under low and negligible risk.

## Conclusion

- The COVID-19 pandemic and corresponding government restrictions increased telehealth utilisation.
- Diverse factors influenced telehealth uptake, including sociodemographic factors, cancer factors, and specialists.

## Results

- 271152 encounters fitted the eligible criteria. (Fig.1)
- Telehealth usage peaked at 26% of consultations during COVID-19 restrictions in 2021 and gradually reduced afterwards (Fig.2)
- Descriptive analysis aligned with multivariate regression result.
- Factors significantly associated with higher Telehealth utilisation in the multivariable analysis include:
  1. Appointment during the COVID-19 restriction
  2. Female gender
  3. Being partnered
  4. Born in English-proficient countries/No interpreter needed during consultation (Fig.3)
  5. Being a medical oncologist patient (Fig.4)
  6. Specific cancer types: breast, lung, prostate, lower gastrointestinal, and gynaecological cancer (Fig.5)
  7. Higher socioeconomic status (SES)
  8. Living in remote areas (ARIA)

Figure 1: Data Cleaning

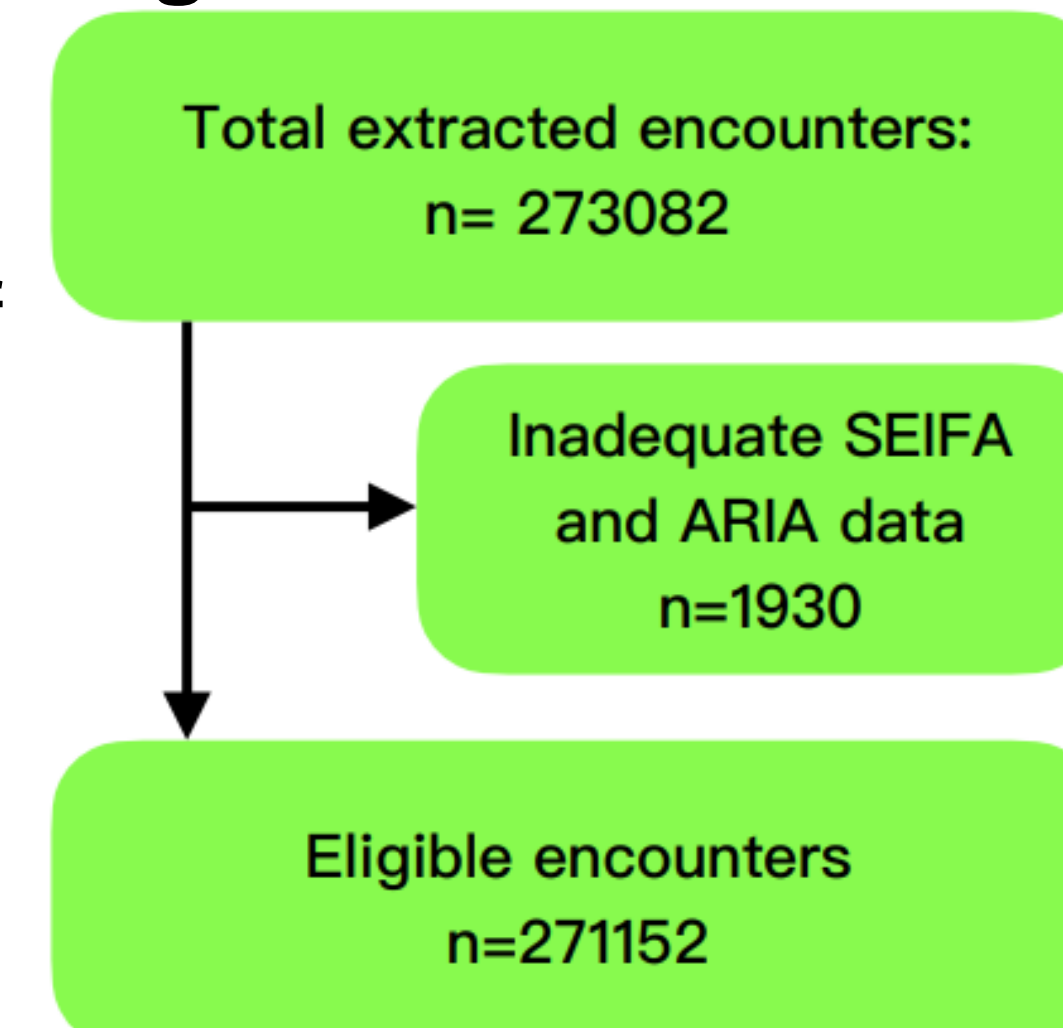


Figure 2: Telehealth vs Face-to-Face Consultation and Annual growth rate (Annual growth rate in 2020 was 5558.42%)

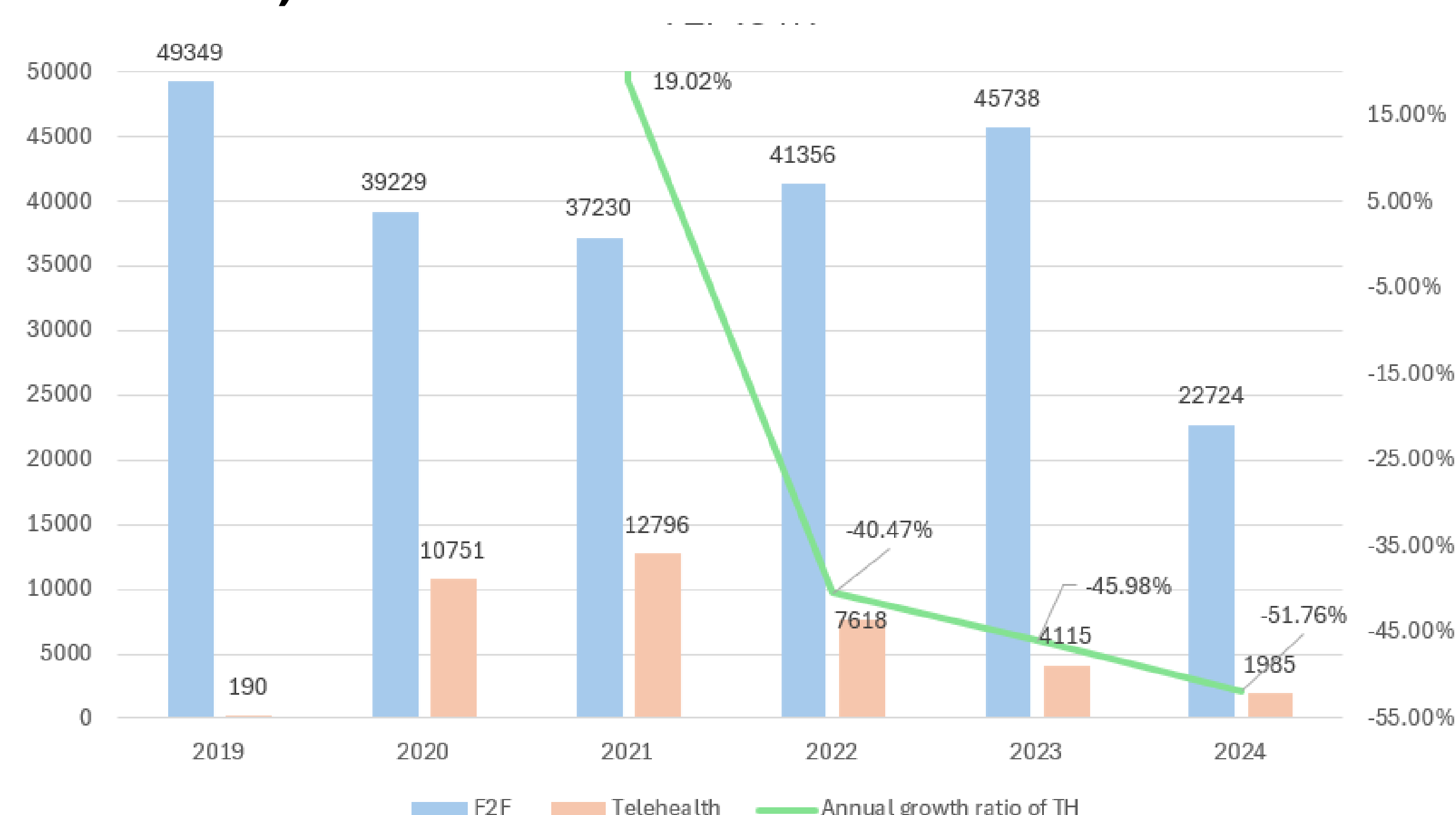


Figure 3: Interpreter Utilisation in Telehealth

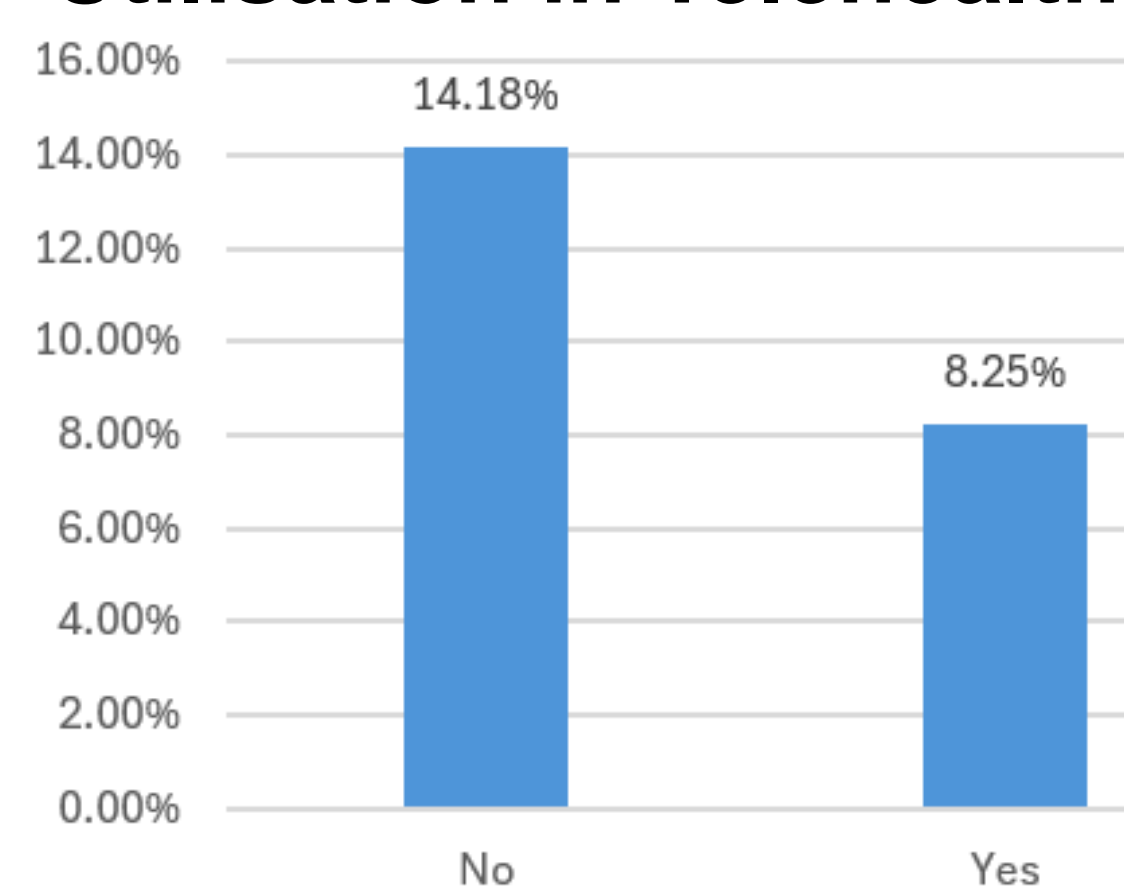


Figure 4: Specialty in Telehealth Utilisation

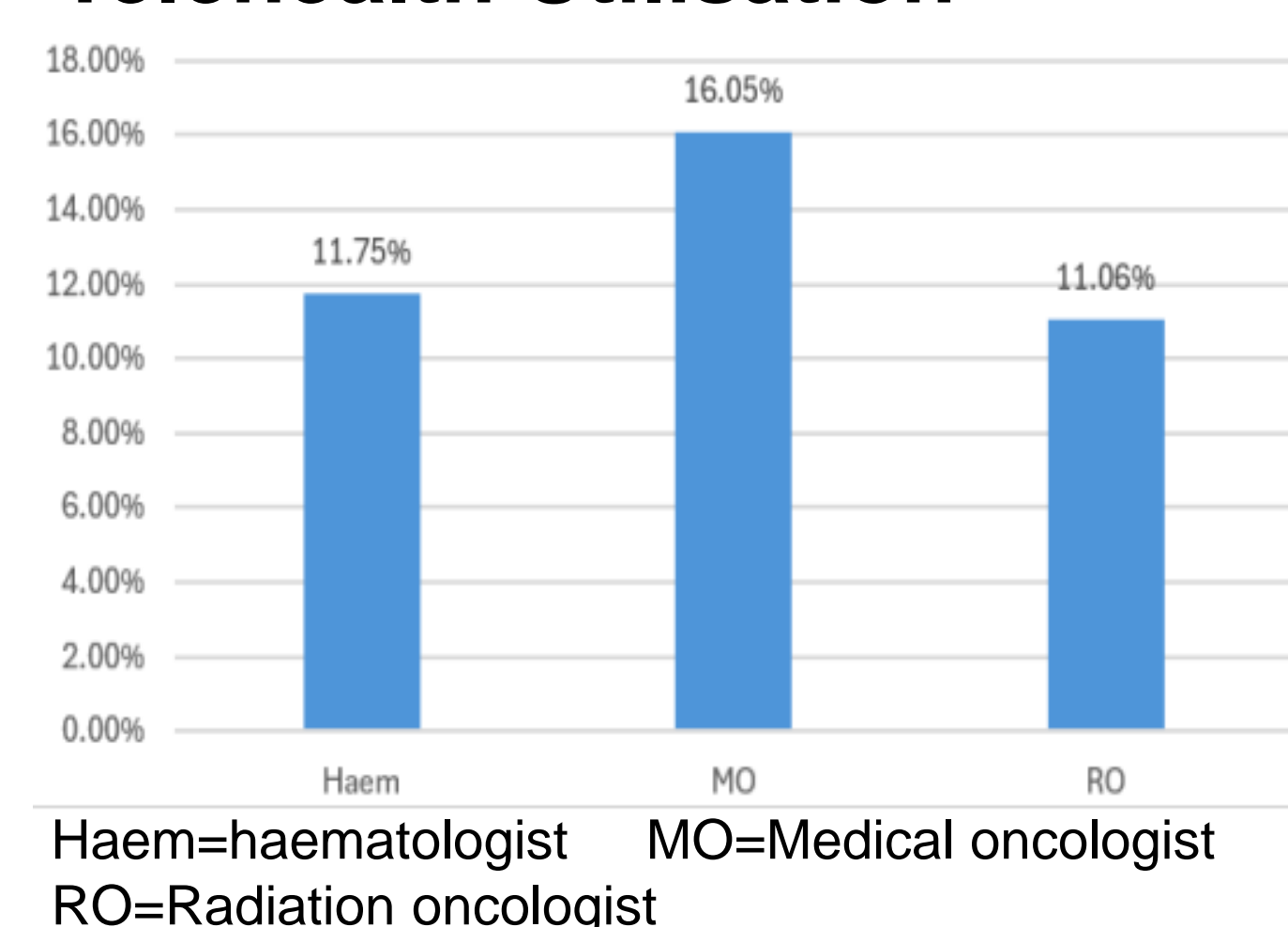


Figure 5: Cancer Type in Telehealth Utilisation

