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Major Article

The INTERACT study: Infection prevention and surveillance practice in the care of the Australasian cancer and transplant population

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Key Words:
Infection control
Immunocompromised

Background: Australasian cancer and transplant populations are expanding, with increased infection risk related to prolonged survivorship and broader use of novel immunosuppressants. To optimise care, standardised approaches to infection prevention and control (IPC) practices and surveillance for the high-risk immunocompromised host (ICH) are required in Australasian healthcare facilities (HCFs). We sought to evaluate current practices to inform future policy.
Methods: A cross-sectional survey was conducted among infectious disease (ID), microbiology, and IPC specialists caring for the high-risk ICH in Australasian HCFs.
Results: 140 healthcare-workers from all Australian jurisdictions and New Zealand responded, primarily employed within public (95.7%), non-specialist (77.9%) HCFs. Healthcare-associated infection (HAI) surveillance was common (75.7%) however monitoring for opportunistic infections (OIs) infrequent (22.9%). Although 51.4% reported a staff mask-wearing mandate on ICH wards, there was limited consensus on appropriate clinical setting for use, or application of other personal protective equipment (PPE). Strategies for multidrug-resistant organism (MDRO) screening were heterogeneous. Challenges to ICH-IPC including lack of infrastructure and ICH-adapted policy were identified.
Conclusions: This is the first survey of IPC/surveillance practice in the care of the Australasian cancer/transplant population, demonstrating multiple areas of variation including PPE use and approach to MDRO surveillance. Practice standardisation will help optimise clinical care and reduce preventable infection.

BACKGROUND

With improved diagnostic capacity, transplant opportunity and prolonged survivorship, Australasian cancer and transplant populations are expanding.[1,2] Infection risks are substantial, both due to underlying disease and treatment-related factors, leading to significant morbidity, mortality and health care expenditure.[3] Sepsis is one of the most common complications post cancer-therapy, occurring in 15% of Australian malignancy patients, with attributable

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mortality of up to 85% in clinically severe cases.[4,5] In the solid-organ transplant (SOT) cohort, infection is the reported cause of death in up to 20% of Australasian renal transplant recipients.[6]

Novel immune suppressants and cellular therapies have transformed cancer/transplant therapies, but use of these agents confer risk for infection.[7] Indeed, infection is the leading cause of early non-relapse mortality early post haematopoietic stem-cell transplant (HSCT), and after chimeric antigen receptor T-cell therapy (CAR-T) in hematological malignancy.[8,9] These immunocompromised patient cohorts also have additional vulnerabilities which drive increased infectious risk, including frequency of health care interactions, greater use of invasive and indwelling medical devices, requirements for surgical intervention and exposure to broad-spectrum antimicrobial agents, increasing the likelihood of colonization and complex infection with multidrug-resistant organisms (MDROs) and recurring pathogens such as *Clostridioides difficile*.[10,11]

Strategies to reduce infection risk include antimicrobial prophylaxis, antimicrobial stewardship (AMS) and vaccination, with promising developments in the potential for gut microbiome modulation, and use of adoptive pathogen-directed T cell therapy.[12,13] Within health care settings, these techniques are supplemented by traditional infection prevention and control (IPC) practice such as personal protective equipment (PPE), isolation and engineering controls.[14,15]

Regular surveillance is an additional essential element of IPC, allowing for the monitoring of communicable disease trends, risk factor identification, prioritization of intervention and coordination of outbreak response.[16,17] Countries with established surveillance and thus targeted IPC note lower avoidable infection rates, health care demands and costs.[18]

Australasia does not currently have a coordinated system of surveillance for emerging infectious disease (ID) threats nor consensus IPC guidelines for use in cancer/transplant population, nor have current-era IPC practices for this group been reviewed and reported.[19] The objective of this study was therefore to evaluate current practice in IPC and infection monitoring for adult cancer and transplant cohorts in Australasia, through a survey of clinical stakeholders. Identification of key areas of consensus and heterogeneity was considered necessary to inform future policy-development. To our knowledge, this is the first survey of its kind in the Australasian setting.

METHODS

Survey design and data collection tool

A 37-question cross-sectional electronic survey was designed in conjunction with an expert-steering group at the Australian National Centre for Infections in Cancer (NCIC) comprising immunocompromised host (ICH)-ID physicians, IPC personnel and allied-health staff with expertise in the prevention and management of infection in the cancer/transplant population. Survey content built-upon previous tools used to assess transplant IPC practices in health care settings internationally and developed to target ID, microbiology and IPC health care-workers (HCWs) practicing in Australasian health care facilities (HCFs) and providing care for cancer and or transplant patients.[14,20]

The hierarchy of controls was used to define core IPC metrics for exploration, and survey content structured as 5 domains including respondent and facility characteristics, PPE and the protective environment, MDRO screening, IPC/surveillance logistics and consumer engagement. Participants were invited to provide optional feedback on IPC/surveillance practice at the end of the survey. Respondents were requested to consider PPE use independently of MDROs, the SARS-CoV-2 pandemic or standard communicable disease policies necessitating transmission-based precautions. A study-specific Research Electronic Data Capture (REDCap) tool was created to record individual responses (Survey - Supplementary Material Table S1).

Participants and recruitment

Potential participants were engaged via email to members of relevant professional bodies including the Australasian Society for Infectious Disease (ASID, n = 1050), the Australasian College for Infection Prevention and Control (ACIPC, n = 1775), the Transplantation Society of Australia and New Zealand (TSANZ, n = 1700) and the National Centre for Infections in Cancer (NCIC, n = 536). Digital invitations were also displayed on the ASID Immunocompromised Host Special Interest Group (ICHSIG), ACIPC and NCIC Web sites. There are an estimated 600 ID physicians and 310 microbiologists across Australasia, however no formal certification process for ICH-ID physicians yet exists, so the exact number providing care for adult cancer/transplant patients is unknown.[21] The Australasian IPC workforce is also similarly undetermined. Previous work indicates a mean of 0.66 full-time equivalent IPC HCWs per 100 overnight beds in Australian acute care HCFs, with approximately 749 acute care hospitals across Australia, translating to several hundred IPC HCWs in practice, although there is limited granularity on type of patient cared for.[22] Furthermore, formal registration of Australasian IPC staff is not currently mandated, with only 101 credentialed through the ACIPC.[23] Professional society membership for HCWs may also overlap, and not all members meet survey eligibility criteria, thus, the number of individual potential participants is unable to be calculated. Given an unknown number of HCWs employed in the field, snowball sampling was additionally utilized, leveraging off specialized local ICH-ID networks to allow for broad survey dissemination. In lieu of a measurable response rate, geographic distribution was instead used to estimate study coverage.

Data analysis

Data were tabulated using Microsoft Excel and imported into STATA version 18.0 (Stata Statistical Software: Stata Corp LP). Where commentary was received from respondents, this was analyzed using interpretative descriptive methodology.[24] Responses were anonymized. Where practitioners provided care across multiple centers, they were asked to complete the survey once for their primary place of work. Where appropriate, areas of consensus were considered through majority ($\geq$ 50%) response to binary questions or using a plurality-based approach where multiple-choice options were offered.

Ethics

The project gained ethical approval in July 2024 through the Peter MacCallum Cancer Centre (PMCC) Human Research Ethics Committee (HREC/109927/PMCC). Digital participant information was supplied to all respondents and consent obtained prior to survey initiation.

RESULTS

Respondent/Health care facility demographics

The study commenced recruitment in September 2024, closing in October after 4 weeks. A total of 140 HCWs responded from all Australian jurisdictions and New Zealand. The greatest proportion of Australian respondents were from HCFs in the states of New South Wales (n = 59, 42.1%), Victoria (n = 32, 22.9% and Queensland (n = 11,

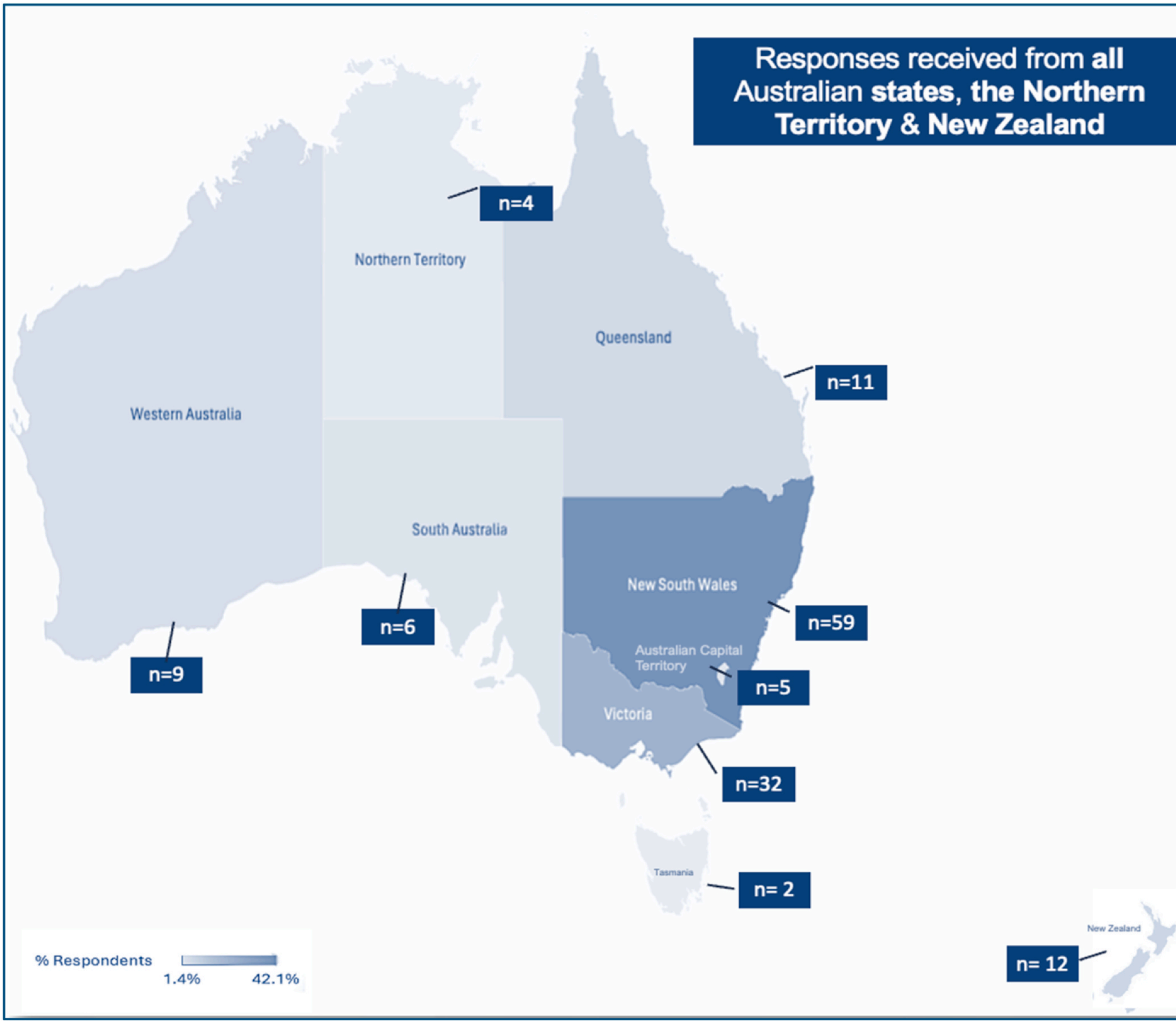

Fig. 1. Choropleth map of Australasian HCW respondents (n = 140). HCW, health care-worker.

7.9%), reflective of the geographic distribution of cancer and transplant services nationally[25,26] (Fig. 1). Ninety-four percent of participants submitted fully complete surveys. Non-responses were only observed to the final section regarding consumer engagement in IPC.

Respondents were primarily physicians (n = 85, 60.7%), working within public (n = 134, 95.7%), nonspecialist (n = 109, 77.9%) HCFs in major metropolitan areas (n = 110, 78.6%). The majority were either early-career care-providers (0-5 years clinical practice in specialty area, n = 63, 45.0%), or senior specialists (16+ years, n = 30, 21.4%). Clinical care was predominantly provided to cancer patients (n = 126, 90.0%) (Table 1).

Of all respondents, only 40.7% (n = 57) had a dedicated ICH-ID service at their HCF, mostly providing in-person (n = 55, 96.5%) and or telephone (n = 49, 86.0%) consultation, with fewer engaged in specialized outpatient clinics (n = 42, 73.7%) vaccination program (n = 18, 31.6%) or AMS rounds (n = 37, 64.9%).

IPC and surveillance activities

Although the majority of HCWs had an on-site IPC team at their HCF (n = 134, 95.7%), few followed ICH-specific IPC guidelines (n = 49, 35.0%). Where guidelines were available, these were mostly local (n = 24, 49.0%) rather than national (n = 12, 24.5%) or international (n = 3, 6.1%) recommendations, although less than half could provide a source name (n = 21, 42.9%). Where implemented, local guidelines largely referred to institutional antimicrobial prophylaxis policies targeting individual infections. At the national level, the National Health and Medical Research Council (NHMRC) Australian Guidelines for the Prevention and Control of Infection in Healthcare were employed.[27] Although not directed to the ICH, this document provides a broad range of recommendations applicable to patients in acute health care settings, including limited guidance pertaining to the care of immunocompromised individuals. International guidelines utilized were primarily Centers for Disease Control and Prevention (CDC) recommendations, specifically focused on Haematopoietic Stem Cell Transplant Recipients.[28]

Regular health care-associated infection (HAI) surveillance was reported by a substantial proportion of respondents (n = 106, 75.7%), primarily laboratory-based (n = 80, 75.7%) and or through the use of computer software (n = 38, 35.8%). Monitoring for opportunistic infections was noted by a minority (n = 32, 22.9%).

Table 1
Characteristics of survey respondents affiliated health care services (*n* = 140)

HCF demographics (variable)	No. respondents (n = 140)	%
ICH care context at HCF		
Specialist cancer/transplant hospital	31	22.1%
Cancer/transplant ward, general hospital	78	55.7%
General ward, general hospital	31	22.1%
HCF on-site ICU, Y =	126	90.0%
No. ICH pts hospitalised at HCF/day	(n = 140)	
0-10	25	17.9%
11-50	48	34.3%
51-100	29	20.7%
101+	10	7.1%
HCF provides care for SOT pts, Y=	97	69.3%
HCF performs SOT, Y=	74	52.9%
SOT type(s) performed at HCF	(n = 74)	
Heart/lung	21	28.4%
Kidney	63	85.1%
Liver	19	25.7%
Intestinal	4	5.4%
Other (Liver-kidney/pancreas-kidney/unspecified)	41	55.4%
	(n = 140)	
HCF provides care for HSCT pts, Y=	94	67.1%
HCF performs HSCT, Y =	88	62.9%
HSCT type(s) performed at HCF	(n = 88)	
Autologous	80	90.9%
Allogeneic	60	68.2%
	(n = 140)	
HCF provides care for malignancy pts, (Y) =	126	90.0%
Malignancy type managed at HCF	(n = 126)	
Oncological	122	96.8%
Haematological	116	92.1%

HCF, health care facility; *HSCT*, haematopoietic stem-cell transplant; *ICH*, immunocompromised host; *ICU*, intensive care unit; *SOT*, solid-organ transplant.

Infection prevention within the protective environment

Just over half of respondents (n = 72, 51.4%) indicated the presence of a mandatory staff mask-wearing policy inside the protective environment for the high-risk ICH at their HCF. Where worn, these were preferentially surgical masks (n = 54, 75.0%), rather than N95 respirators (n = 18, 25.0%), with notable variability in clinical context for mandatory use. In the transplant setting, few HCWs were required to routinely wear masks, and application was largely irrespective of timing post-transplant (as a surrogate for infectious risk) regardless of whether care was provided to SOT or HSCT (allogeneic/autologous) recipients (Table 2).

Approximately one third of respondents reported a routine mask-wearing policy for visitors to the protective environment (n = 48, 34.3%) and visitor health screening on entry reported by 15.0% (n = 21), mostly relying on self-identification if unwell (n = 13, 61.9%) rather than specific screening methods.

A small proportion (n = 21, 15.0%) indicated a mandatory mask-wearing policy for patients outside of the protective environment. Where implemented, patients were primarily requested to wear surgical masks (n = 14, 66.7%) versus N95s, with limited uniformity in reported policy for mask application – whether throughout the hospital (n = 5, 35.7%), during HCF construction/renovation work (n =

Table 2
Respondents indicating a mandatory staff mask-wearing policy within the protective environment (PE) and type of mask worn

User + PPE type (Inside PE)	Routine usage policy, Y= (n = 140) (n, %)		Mask type worn, (n, %)		Transplant - PPE implementation/ Timing	SOT pts, Y = (n,%)*		Allogeneic HSCT pts, Y = (n, %)*		Autologous HSCT pts, Y = (n, %)*	
HCW - Mask wearing	72	51.4%	SURGICAL		Total (routine use)	15	27.8%	18	33.3%	17	31.5%
			54	75.0%	Regardless of T/P date	13	86.7%	12	66.7%	11	64.7%
					Defined time post T/P	2	13.3%	6	33.3%	6	35.3%
			N95		Total (routine use)	3	16.7%	6	33.3%	4	22.2%
			18	25.0%	Regardless of T/P date	2	66.7%	5	83.3%	3	75.0%
					Defined time post T/P	1	33.3%	1	16.7%	1	25.0%

NOTE. If mask-wearing was routinely implemented in the transplant setting; total, routine use.
HCW, health care worker; *HSCT*, haematopoietic stem-cell transplant; *PPE*, personal protective equipment; *SOT*, solid-organ transplant; *T/P*, transplant.
*Indicates the % mask-wearers per mask type and reported timing for mask use post-transplant across various transplant subcohorts.

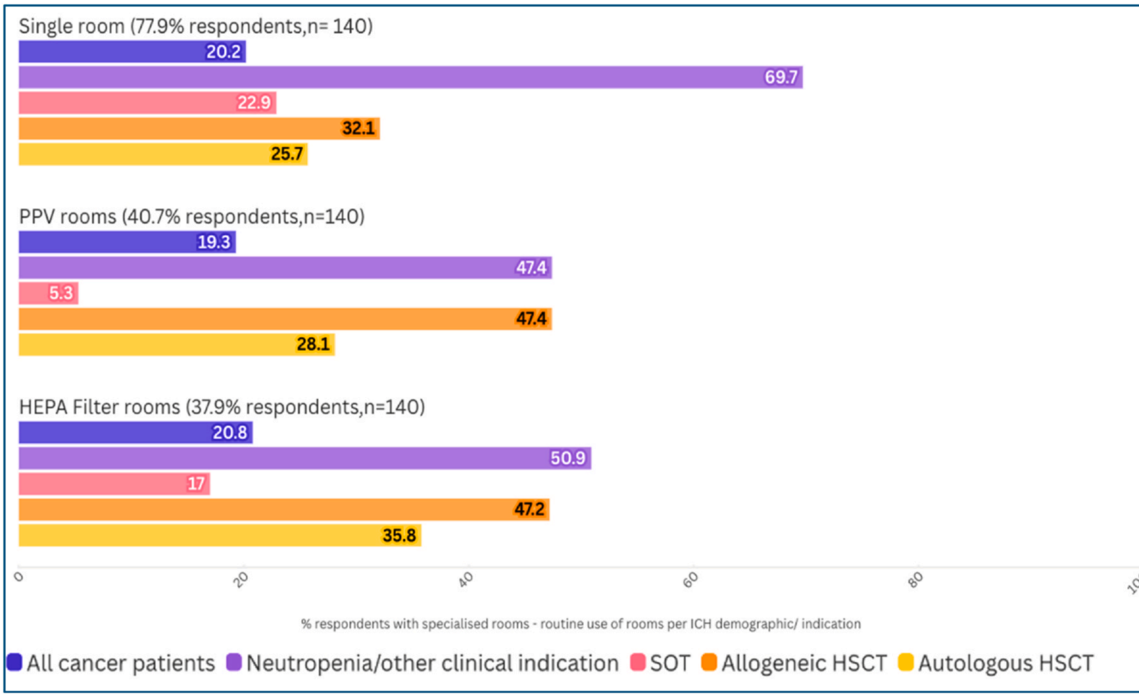

Fig. 2. Physical environment used for clinical care of ICH populations (*n* = 140). HEPA, high-efficiency particulate air; HSCT, haematopoietic stem-cell transplant; ICH, immunocompromised host; PPV, positive pressure ventilation; SOT, solid-organ transplant.

6, 42.9%) and or if neutropenic (absolute neutrophil count (ANC) < 0.5 × 10^9/L) or otherwise clinically indicated (n = 7, 50.0%).

Mandatory staff gown and glove use in this setting was noted by 19.3% (n = 27), also primarily employed whilst providing care to neutropenic patients or if otherwise clinically indicated (n = 19, 70.4%).

Protective environment

Most respondents stated their HCF had single rooms (n = 109, 77.9%) where cancer/transplant patients were cared for, however positive-pressure ventilation (n = 57, 40.7%) and or high-efficiency particulate air (HEPA) filter capacity (n = 53, 37.9%) appeared limited. Where specialized rooms were routinely available, the greatest proportion of respondents indicated these would be first allocated to the care of the allogeneic HSCT or neutropenic/other clinical indication ICH subpopulations (Fig. 2).

Approximately one third reported use of individualized small medical equipment (such as patient-specific stethoscopes) in the protective environment (n = 46, 32.9%). A smaller proportion indicated the presence of plants (n = 19, 13.6%) and carpets (n = 7, 5%) in clinical areas.

Augmented IPC monitoring strategy such as air sampling for molds was reported by a minority (n = 27, 19.3%), primarily in outbreak investigation (n = 15, 55.6%) compared to surveillance during construction/renovation (n = 11, 40.7%), unit recommissioning (n = 6, 22.2%) or periodic review (n = 7, 25.9%).

MDRO screening

Most respondents reported no routine screening strategy at their HCF for the high-risk ICH for MDROs listed in the survey; methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant *Enterococci* (VRE) or multidrug-resistant gram-negative bacteria (MDR-GNB). Where employed, timing of screening and use of serial sampling methodology was heterogeneous (Fig. 3).

Respondents within HCFs implementing routine screening for MDROs reported differing indications, ranging from universal “weekly” or “quarterly” screening for all high-risk ICH patients to benchmark prevalence and guide empiric antimicrobial choice, to specific and targeted screening of particular patient subgroups, such as overseas or inter-facility transfers, or the neutropenic population.

Timing of screening for the emerging MDRO pathogen *Candida auris* was also evaluated, with the majority stating for those at risk, this would be most likely first performed on admission to the ICH unit (n = 39, 27.9%) compared to the emergency department (n = 37, 26.4%). Twenty-five respondents indicated no formal *C auris* screening policy to be in place at their HCF (n = 25, 17.9%).

Consumer engagement

Participants were also requested to evaluate mechanisms to counsel cancer/transplant inpatients in IPC. A total of 132 responses were received for this section. Most practitioners regularly provided advice on line-site monitoring (n = 105, 79.5%), vaccinations (n = 72, 54.5%), and other strategies for safe-living post discharge (n = 79, 59.8%). However, fewer provided counsel on animal contact (n = 50, 37.9%), marijuana cessation (n = 25, 18.9%) or dietary advice (n = 40, 30.3%).

Qualitative themes

Several potential barriers to implementing standardized IPC and surveillance practice were identified by respondents, including variability in HCF resourcing (structural, personnel and laboratory), a lack of policy ownership amongst cancer/transplant/ID and IPC services, and limited mechanisms for the audit of practice where recommendations might exist. However, respondents also indicated that guidelines to reduce inter-clinician and facility variation in practice would assist in optimizing clinical care and advocated for the greater involvement of consumers in future policy design.

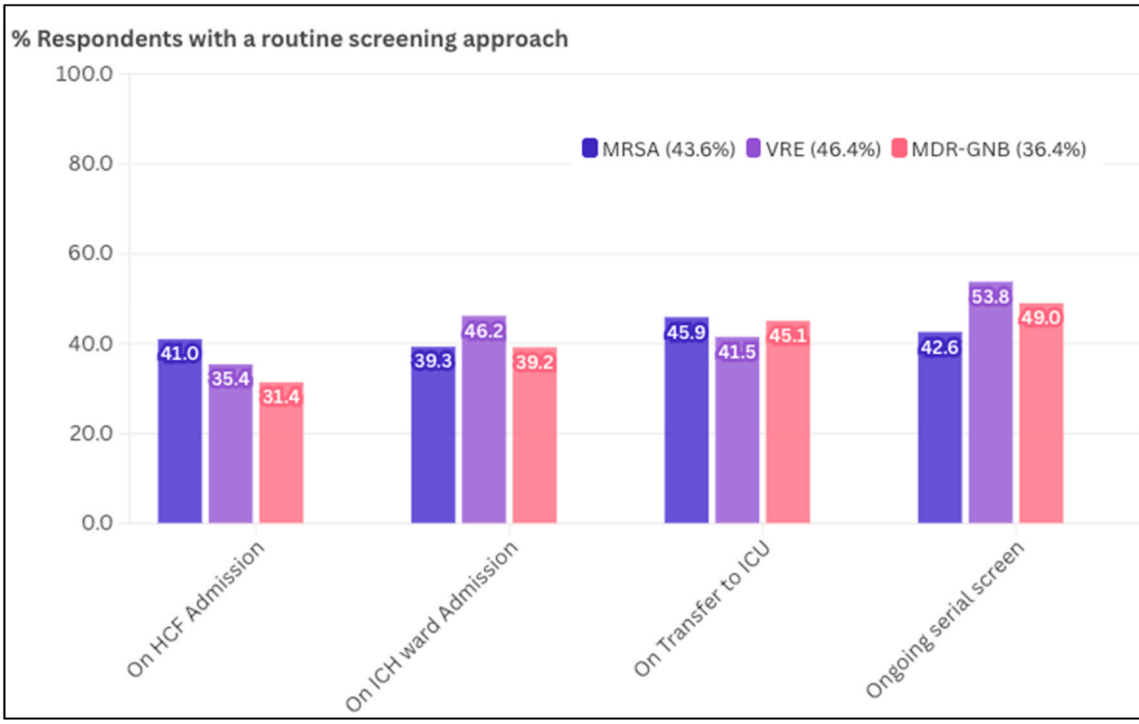

Fig. 3. Approaches used for multidrug-resistant organism (MDRO) screening (*n* = 140). HCF, health care facility; ICU, intensive care unit; MDR-GNB, multidrug-resistant gram-negative bacteria; MRSA, methicillin-resistant *Staphylococcus aureus*; VRE, vancomycin-resistant *Enterococci.*

DISCUSSION

This survey demonstrates multiple important areas of heterogeneity in IPC and surveillance policies and practices for the high-risk ICH across Australasia, as well as marked differences in resourcing between individual HCFs. This includes notable variation in ICH-ID service provision. In Australasia, formal recognition of ICH-ID as a distinct subspecialty is still emerging, although awareness of the cancer and transplant population as a vulnerable cohort for whom specialized models of care may be required is increasing.[16] International centers with dedicated transplant-ID care-teams report reduced infectious complications and improved overall patient survival.[29]

IPC and surveillance activities

Although HAI surveillance was noted by most respondents at their HCF, it is unclear to what extent this occurs as no national framework for broader HAI surveillance or data-sharing exists.[30] Outside of Australasia, organizations such as the Swiss Transplant Cohort Study (STCS) and the US-based TRANSNET consortium demonstrate the benefit of comprehensive infection monitoring in national cancer/transplant populations including early detection of new locally relevant infectious risks and refinement of preventative strategy.[31,32]

Where implemented, most respondents indicated favor for electronic surveillance methodology, reflecting a broader shift toward digital over manual data handling. However, it is uncertain whether any of these systems have been modified to the specific needs of the high-risk ICH, for whom adaptation to enhance case-finding has been recommended.[16]

Personal protective equipment

With respect to current practice, the majority of respondents indicated a mandatory mask-wearing policy for staff in the protective environment, with small numbers reporting visitor-masking. Mask-wearing surged globally during the beginning of the SARs-CoV-2 pandemic, but maintenance has been challenging as evidence around disease transmission and risk in the broader community has evolved.[33] Regardless, respiratory viral infections (RVI) pose a significant health burden for the cancer/transplant population.[33] In lieu of high-quality evidence, existing international SOT and HSCT guidelines (pre-pandemic) primarily recommend mask-wearing for those with RVIs in close contact with the high-risk ICH. However, several small-center studies have demonstrated the potential value of universal year-round surgical masking for HCW and visitors to prevent the unanticipated nosocomial transmission of RVIs, or at a minimum, during periods of greatest immunosuppression immediately post-transplantation.[28,33-37]

Within the Australian setting, although no longer nationally mandated, in response to community SARs-CoV-2 transmission risks, as informed by epidemiology, hospitalization numbers and or in the care of high-risk ICH patients, mask-wearing restrictions for clinically-facing HCWs may still be implemented locally, with recommendations regarding the use of N95 respirators or surgical masks at the discretion of individual HCFs, IPC services and jurisdictional guidelines.[38,39] These restrictions may extend to visitors.[40] Although this survey did not investigate HCW reasoning regarding mask choice within the protective environment, our findings also align with other international surveys similarly identifying the use of either surgical masks or N95s by staff during periods of concern for RVI transmission whilst caring for the high-risk ICH.[41] Daily active screening of those entering the protective environment for RVIs (alongside other contagious diseases) has also been suggested, although our results suggest visitor health assessments to be performed rarely.[28,37]

A mask-wearing mandate for patients outside of the protective environment was noted by a limited number of respondents, and where worn, preference for surgical masks. CDC guidance advocates mask-wearing for all HSCT patients prior to engraftment.[28] Use of N95s has also been proposed for severely immunosuppressed transplant patients outside of the protective environment, noting the inefficacy of surgical masks for reducing transmission of mold spores.[28,36] However there is currently no comprehensive data on the level of training, fit-testing or tolerance of N95 respirators among non-HCWs within the Australian HCF environment. Robust IPC plans are also recommended during periods of heightened risk, such as during construction/renovation work.[28,36,37,42]

Although several respondents indicated a mandatory gown/glove policy within their HCF, primarily in the setting of neutropenia, there is little evidence to support the use of routine additional protective precautions within the protective environment.[14,37] Yet, some bodies have suggested isolation gowns could be of benefit in the care of extremely vulnerable risk-groups such as the allogeneic HSCT cohort pre-engraftment or those with severe graft versus host (GvHD) disease.[15] Nonetheless, most guidance focuses on alternative preventative measures such as optimizing hand hygiene alongside close monitoring of indwelling devices and skin integrity to mitigate potential routes of infection[28,36,37] (Supplementary Table S2 – use of PPE indicated by this survey, evaluated against existing guidance).

Room allocation in the protective environment

Most bodies recommend the allocation of single, positive-pressure ventilation and HEPA-filtered rooms to the HSCT cohort due to perceived degree of immunosuppression.[28] Where specialized IPC rooms were prioritized to the HSCT cohort within our survey, the majority of respondents indicated that these were designated to allogeneic HSCT recipients. This aligns with guidance advising those at highest risk of invasive mold infection be prioritized during periods of room shortage.[37]

Survey respondents also indicated specialized rooms were preferentially allocated to those who were neutropenic compared to other ICH risk groups, although decision-making regarding degree and depth of immunosuppression beyond ANC $< 0.5 \times 10^9$/L was not further investigated. However, although current guidelines suggest that patients with cancer should be placed in single-rooms, limited recommendation is made for those with neutropenia, nor for routine use of HEPA filtration (other than in the setting of leukemia).[15,42] CDC environmental infection control guidelines state protective IPC rooms may be considered in SOT if heavily immunosuppressed.[43] It has also been suggested, given recent advances in alternative infection prevention methods such as antifungal prophylaxis, a review of environmental control policy in relation to the ICH may be of benefit to help inform the prioritization and need for specialized IPC rooms.[42]

The physical environment

Plants and carpets were reportedly present in clinical areas in some HCFs. Most experts recommend plants including dried or fresh flowers be prohibited from the protective environment, particularly during conditioning therapy or directly following HSCT to minimize infectious risks including *Aspergillus* spp in soil and gram-negative bacteria associated with water exposure (primarily *Pseudomonas* spp).[28,37] Similar mitigation strategies apply to the SOT and cancer cohort.[36,42] Carpeting has additionally been associated with *Aspergillus* spp outbreaks and vacuuming with aerosolization of mold spores.[37]

Although the majority of respondents suggested individualized medical equipment was not provided for cancer/transplant patients within their HCF, use has been associated with a reduction in some infections, such as *C. difficile*, and preferred in the context of colonization with MDROs.[36] Implementation however is likely affected by cost, and close attention to the disinfection and sterilization of shared equipment an alternative.[37]

Air sampling for molds was performed by few, primarily in the context of outbreak investigation. This is concordant with literature stating that although no standardized procedure for environmental air sampling exists, it may be used to evaluate health care-associated outbreaks as part of a broader IPC response.[44] Transplant guidelines also suggest sampling could be considered during construction/renovation to monitor air quality, although a role for routine periodic surveillance is not yet defined.[36,37]

MDRO screening

It is understood that the ICH is at greater risk of colonization and infection with MDROs.[45] Active surveillance and decolonization have also shown efficacy in reducing MDRO infections such as MRSA post liver SOT.[36] However, guidance on type and timing of MDRO screening in the cancer/transplant population varies, with most recommending reliance on individualized or unit-based risk assessment and local epidemiology.[15,27] The predictive value of MDRO colonization on the risk of subsequent MDRO BSI also varies between organisms and patient populations, leading to disparate advice on the value of pre-emptive surveillance to guide empiric antimicrobial choice in the clinically deteriorating patient.[46] Accordingly, approach to MDRO screening from survey respondents was heterogeneous, with the majority reporting no routine strategy for the detection of colonization with MRSA, VRE nor MDR-GNB in the high-risk ICH.

Notably, several respondents also indicated a lack of formal policy for *C auris* screening, which appeared to primarily take place on entry to the protective environment, rather than at first point of contact for those at risk. This may also reflect resourcing constraints. Further research to establish the role of active surveillance for MDROs in the high-risk ICH is warranted (Supplementary Table S3 – MDRO screening strategy indicated by this survey, evaluated against existing guidance).

Consumer engagement

Several groups have made recommendations for empowerment of the ICH in IPC including on discharge.[28,47] Although infectious risks from pet ownership and animal contact are well understood, such as transmission of zoonosis, patient counseling on exposure was performed by limited numbers of our survey respondents.[47] Similarly, few provided advice on marijuana cessation although the inhalation of *Aspergillus* spp spores has been described.[42]

Advice on dietary modification was also provided infrequently, with official guidance varied, ranging from low microbial diet in HSCT, to concerns regarding the impact of specialized diets on quality of life.[15,37] Notably, there is limited robust evidence to support dietary restriction beyond adherence to standard food safety practices.[15,28,37]

Overall, these survey results underscore the need for effective, standardized infection prevention and surveillance policy for the cancer/transplant population, where national recommendations may be limited and existing international guidelines outdated to the evolving needs of the high-risk ICH.[27,28,37]

Limitations

Study limitations include that fact that this survey was conducted amongst ID/IPC and microbiology HCWs, rather than transplant and oncology/hematology practitioners, assuming these staff to be less likely to be leading local IPC practice and policy. Nonetheless, broader inclusion may have provided further insights. Given the survey was anonymous, we did not mandate the capture of individual provider or HCF names and therefore cannot verify responses with local procedure. Multiple HCWs from the same institution were also permitted to respond, which may have led to an overrepresentation of perspectives from certain institutions. We were additionally unable to calculate a survey response rate as the number of ICH-ID or IPC specialists in Australasia is unknown. However, responses were gained from all states and internal territories in Australia, and New Zealand, likely representing a wide range of HCFs. Respondents were also able to answer certain policy-related questions regarding the protective environment and PPE use for the cancer/transplant population as a whole, even if they did not directly provide care to these cohorts at their HCF, which may have introduced a potential for inference of local practice. Several "not sure" responses were captured, suggesting some respondents were either not familiar with specific IPC/surveillance practices, or relevant guidance may not exist. However, this could also indicate a need for strengthening of education and consensus recommendations in ICH-IPC.

CONCLUSIONS

In summary, our study results reveal both substantial variation in IPC and surveillance practices for the high-risk ICH across Australasia and illustrates several important areas warranting further evaluation and formal guidance (ie, policy and/or guidelines) including PPE use, the allocation of specialized of IPC rooms, utility of active MDRO surveillance and role for augmented IPC measures such as environmental air sampling in the cancer/transplant population.

Evidence-based consensus underpinning new policy will help optimize care of the ICH and reduce preventable infectious disease.

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APPENDIX A. SUPPLEMENTARY DATA

Supplementary data related to this article can be found at doi:10.1016/j.ajic.2025.07.008.

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