Infection Prevention and Control (IPC) in Home Health Care (HHC) - Findings From Two Large Multi-Method Studies

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Hosted by Martin Kiernan
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www.webbertraining.com **November 5, 2020**

Objectives

- Describe the HHC nurses' knowledge of, attitudes toward, and compliance with IPC.
- Identify the challenges HHC nurses face in IPC practice.
- Describe an innovative risk prediction model derived from routinely collected data that can be used to facilitate effective IPC in a home care setting.
- Describe organizational infrastructure and policies for IPC at HHC agencies.
- Describe the preparedness of U.S. HHC agencies for COVID-19 pandemic.

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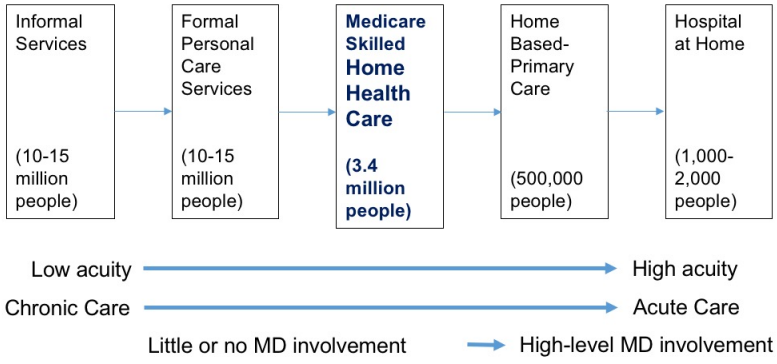
Background – Home Health Care in the U.S.



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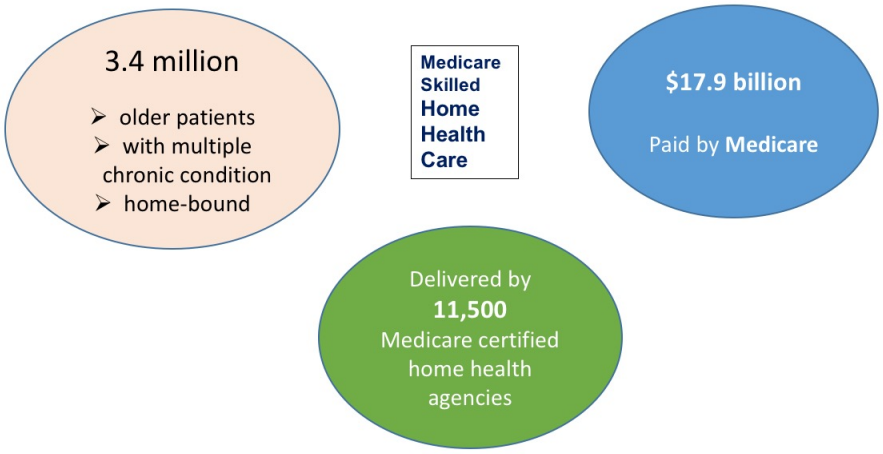
Background – Home Health Care in the U.S.



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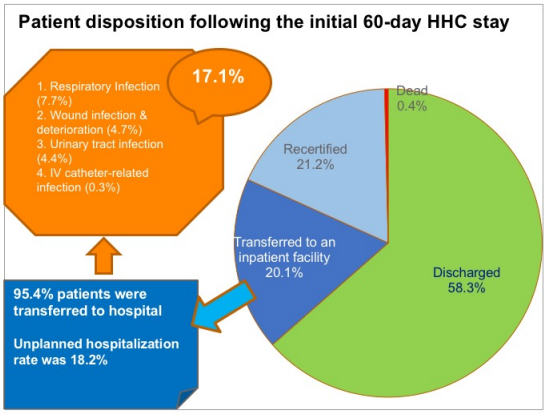
Background – Infection and Infection-Related Hospitalizations in HHC

- Infection is a leading cause of hospitalization among HHC patients



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Infection Prevention and Control in HHC and Predictive Risk Modeling

- Grant # R01HS024723
- Funded by the AHRQ
- Collaborated with Visiting Nursing Service of New York (NSNY)

Agency for Healthcare Research and Quality

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Research Objectives

- 1) Develop and test a Predictive Risk Model to identify HHC patients' risk of infection-related hospitalization/emergency care using clinical and administrative data
- 2) Describe home care nurses' levels of infection control knowledge, attitudes, and practices; and examine their inter-relationships with HHC nurses' demographic and training characteristics
- 3) Explore themes in facilitators and barriers to IPC practices from nurse interviews and assess compliance with IPC practices through nurse observations

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Study Setting

- A not-for-profit HHC agency in the serving the New York metropolitan area & surrounding counties
- Study procedures were approved by the Institutional Review Boards at Columbia University and the HHC agencies.

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Study Methods

Clinical Data

Retrospective clinical and administrative data on HHC patients (N=112,788)

2014

Survey Questionnaire

Online survey questionnaire completed by HHC nurses (N=359)

2017

Interviews & Observations

50 qualitative interviews with HHC nurses and 400 patient observations

2018

9

Modeling Results

- Shang, J., Russell, D., Dowding, D., McDonald, M.V., Murtaugh, C., Liu, J., Larson, E.L., Sridharan, S., Brickner, C. (2020) A Predictive Risk Model for Infection-Related Hospitalization among Home Healthcare Patients, *Journal of Health Quality*. 42(3):136-147.

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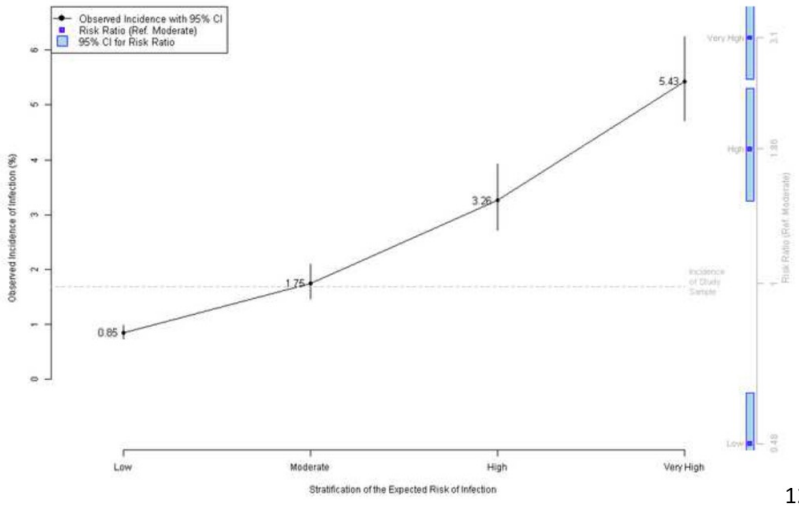
Descriptive Statistics and Comparison Between Patients With and Without Hospitalization/ Emergency Treatment for an Infection (n = 112,788, selected variables)

	Total Sample (n = 112,788)	Without Infection Outcome (n = 110,880)	With Infection Outcome (n = 1,908)	P value
Age (mean)	70.8	70.78	71.97	0.0016
Female (%)	60.9%	60.9%	56.4%	0.000
White (%)	42.5%	42.4%	48.0%	0.000
Dual Eligible (%)	7.8%	7.8%	9.2%	0.026
Living Condition				
Living Alone (%)	37.6%	37.7%	34.0%	0.001
Living With Others (%)	60.0%	60.0%	63.9%	0.000
Congregate Living (%)	2.2%	2.2%	2.0%	0.524
Inpatient Facility Stay 14 days prior to the HHC admission				
Short-Stay Acute Hospital (%)	62.5%	62.5%	65.0%	0.024
Long-Term Care Hospital/ Nursing Home/SNF/TCU	9.9%	9.9%	11.2%	0.055
Rehab/Psych/Other	6.6%	6.6%	6.4%	0.699
No Inpatient Stay	22.7%	22.7%	19.2%	0.000
Overall Status				0.000
Stable	11.9%	11.9%	8.6%	
Likely To Be Stable	74.3%	74.3%	71.8%	
Fragile	12.4%	12.3%	17.4%	
Serious	0.8%	0.8%	1.2%	
Situation Unknown	0.6%	0.6%	1.1%	

Likelihood ration = 1,108.93, df=51, p<0.0001
C-Statistics: 0.7517 (Training data)
C-Statistics: 0.7162 (Testing data)



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Survey Results

- Russell, D., Dowding, D., McDonald, M., Adams, V., Rosati, R., Larson, E., Shang, J.* (2018) Factors for Compliance with Infection Control Practices in Home Health Care: Findings from a Survey of Nurses' Knowledge and Attitudes towards Infection Control, *American Journal of Infection Control.* 46(11):1211-1217.

- Adams, V., Song, J., Shang, J., McDonald, M.V., Dowding, D., Ojo, M., Russell, D., (Accepted) Infection Prevention and Control Practices in the Home Environment: Examining Enablers and Barriers to Adherence among Home Health Care Nurses. *American Journal of Infection Control.*

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Nurse Characteristics from Survey Questionnaire (N=359)

Characteristic	Total Sample % (n) or M (SD)
Age	50.0 (10.5)
Female	91.6% (329)
Bachelor's Degree or Higher	71.6% (257)
Years in Nursing	21.9 (11.9)
Years in HHC Nursing	13.5 (9.3)
Years at HHC Agency	11.5 (9.1)
Full-Time Staff Nurse	64.9% (233)

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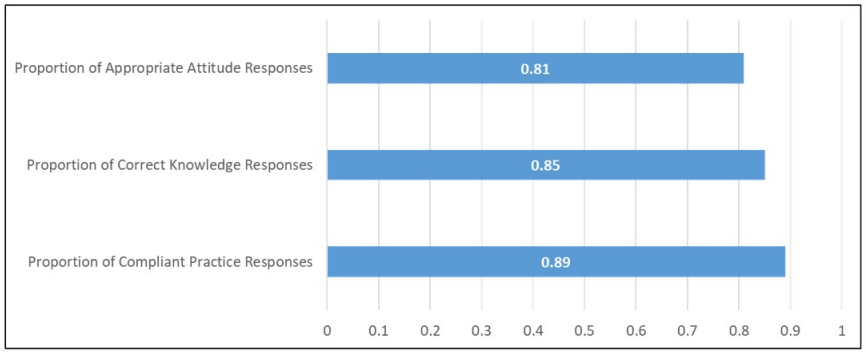
HHC Nurses' Infection Control Knowledge, Attitudes, and Practices (N=359)



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Nurse Respondents with Correct Infection Control Knowledge Selections (N=359)

Knowledge Question	Total Sample % (n)
Standard precautions do not need to be applied to persons w/o infections	98.9% (355)
Antibiotic overuse can cause development of multiple drug resis. organisms	97.8% (351)
Artificial fingernails can harbor harmful germs on hands	96.9% (348)
Jewelry worn on the hands can harbor harmful germs	95.3% (342)
Standard precautions apply only to HCW who have contact w/ bodily fluids	93.9% (337)
The nursing bag should have at least two compartments	10.3% (37)
Appropriate to use alcohol hand rub in place of soap/water before eat/drink	57.1% (205)
Masks/goggles necessary when care unlikely to cause splashing of fluids	69.6% (250)
Hand hygiene should be performed after touching the bag	70.8% (254)
Appropriate to use alcohol hand rub in place of soap/water after bathroom	77.2% (277)

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Nurse Respondents with Appropriate Infection Control Attitude Selections (N=359)

Attitudinal Question	Total Sample % (n)
When I perform hand hygiene I protect my patients from infections	98.1% (352)
Infection prevention practices help protect me from contracting infections	97.5% (350)
Patients can develop infections from contact w/ people who visit/live them	96.4% (346)
Our agency makes hand hygiene products easily accessibly to me	95.8% (344)
My home care agency emphasizes the importance of infection prevention	94.4% (339)
…	
Wearing a mask makes it hard to communicate with my patients	44.3% (159)
Our agency makes it easy for me to stay home when I am sick	60.4% (217)
Infections are a serious problem in home care	67.7% (243)
The influenza vaccine is safe	69.9% (251)
Influenza vaccination of healthcare workers protects patients from influenza	73.3% (263)

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Nurse Respondents with Infection Control Practice Compliance Selections (N=359)

Compliance Item	Total Sample % (n)
I wear gloves when I anticipate exposure to bodily fluids or blood products	100.0% (359)
I perform hand hygiene measures before and after patient care activities	99.4% (357)
I dispose of needles in a sharps container	96.4% (346)
I wash my hands or use hand rub immediately after the removal of gloves	95.5% (343)
I dispose all potentially contaminated materials into an impermeable bag	91.9% (330)
I wear a disposable face mask whenever possibility of splash or splatter	81.9% (294)
I wear a gown if soiling with blood or bodily fluids is likely	78.8% (283)
I wear goggles/eye-shield when I may be exposed bodily discharge/fluid	69.6% (250)

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Multivariate Mixed Regression Model of IPC Compliance among HHC Nurses (N=359)

Independent Variable	Compliance with IC Practices Beta (Standard Error)
Infection Control Measures	
Knowledge of Infection Control Practices	0.043 (0.967)
Attitudes towards Infection Control Practices	**0.236 (0.060)*** **

NOTE: Multivariate models are adjusted for sex, age, race/ethnicity, education, nursing and agency experience, agency position, timing of last IC training, and IC certification; surveyed agency is specified as an intercept-level random effect; ***p<0.001

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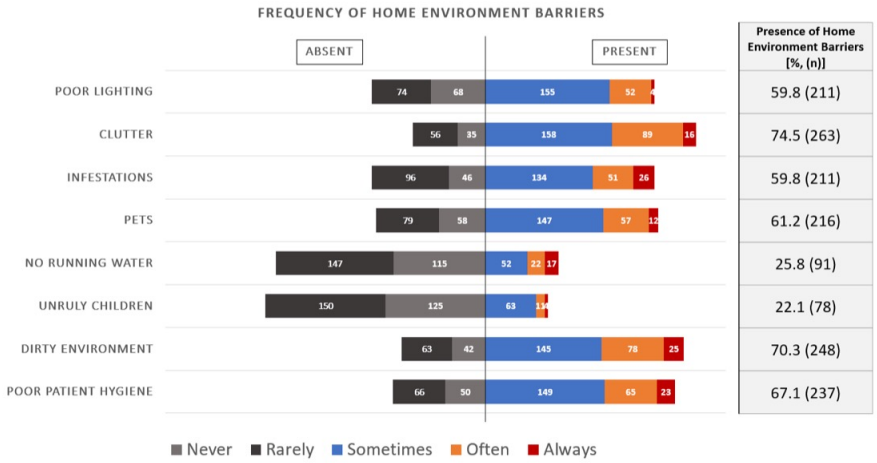
Frequency of home environment barriers reported by HHC nurses encountered in patients' homes (n = 353)



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Availability of infection control supplies during homecare visits (n = 353)

Supplies item	Total Sample (n = 353) % (n)
Alcohol-based hand sanitizer	95.2 (336)
Gloves	94.5 (337)
Alcohol Swabs	91.8 (324)
Soap and water	86.7 (306)
Face masks	78.5 (277)
Drape or sterile barriers	73.7 (260)
Sharps box/container	51.6 (182)
Sterile gloves	51.0 (180)
Alcohol	39.7 (140)
Methicillin Resistant Staphylococcus Aureus (MRSA) supplies kit	26.1 (92)
Non-alcohol-based hand sanitizer	21.8 (77)
Chlorhexidine wipes	20.4 (72)

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Frequency of organizational resources used in infection control decision support (n = 353)

Resource item	Total Sample (n = 353) % (n)
Agency policies and procedures	97.7 (345)
Clinical practice guidelines	88.1 (311)
Professional consult	36.3 (128)
Textbooks	28.3 (100)
Organizational websites	27.5 (97)
Scientific journals	21.3 (75)
Electronic clinical decision support	16.4 (58)
Others (e.g., internet, personal experience, infection control leadership)	4.0 (14)

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Multivariate mixed regression model of infection control (IC) compliance among homecare nurses (n = 353)

Characteristic	Compliance with IC Practices
	B (SE)
The number of barriers in home environment	-0.104 (0.026)***
The number of available infection control supplies	0.119 (0.029)***
The number of organizational resources used in infection control decision support	0.057 (0.046)

*Note: B = beta; SE = standard error; *P < .05; ***P < .001; the surveyed agency is specified as an intercept-level random effect. Model is controlled for nurses' characteristics*

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Observations & Qualitative Interviews Results

- Dowding, D., McDonald, M.V., Shang, J. (Accepted) Implications of a US study on infection prevention and control in home care (community) settings for the UK. *British Journal of Community Nursing.*
- Dowding, D., Russell, D., McDonald, M.V., Trifilio, M., Song, J., Brickner, C., Shang, J.* (Accepted) "A Catalyst for Action": Factors to Consider for the Implementation of a Clinical Risk Prediction Model for Infection in Home Care Settings.
- *Dowding, D., Russell, D., Trifilio, M., McDonald, M.V., Shang, J.* (2020) Home Care Nurses' Identification of Patients at Risk of Infection: A Qualitative Interview Study. International Journal of Nursing Studies.*
- McDonald, M.V., Russell, D., Liu, J., Woo, K., Brickner, C., Larson, E.L., Sridharan, S., Dowding, D., Adam, V. Shang, J.* (2020) Hand Hygiene Compliance among Home Healthcare Nurses: Results from the Largest Observation Study. *Journal of the American Medical Directors Association.*

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Nurse Participant Characteristics (N = 50)

Age (mean, SD)	47.4 (10.6)
Female (N, %)	45 (90)
Race/Ethnicity (N, %)	
White, Non-Hispanic	13 (26)
Black or African American, Non-Hispanic	22 (44)
Hispanic	5 (10)
Other, Non-Hispanic	10 (20)
Highest Level of Professional Training (N, %)	
Licensed Practical Nurse (LPN)/Licensed Vocational Nurse (LVN)	4 (8)
Associate's Degree in Nursing	7 (14)
Bachelor's Degree in Nursing	33 (66)
Master's Degree in Nursing	6 (12)
Years of Experience (N, %)	
Years as a nurse (mean, SD)	19.3 (11.7)
Years at study agency (mean, SD)	10.6 (7.8)
Employment Status (N, %)	
Full-Time, salaried	44 (88)
Per Diem	6 (12)

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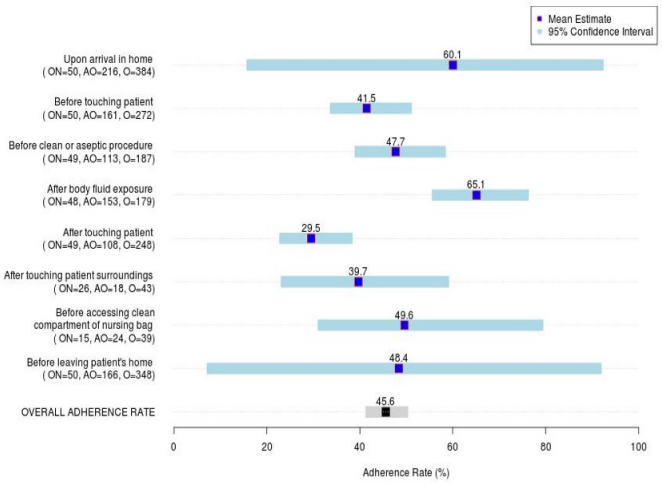
Nurse-level hand hygiene rate by opportunity



ON = The number of nurses with at least one hand hygiene opportunity present at a visit, AO = Number of hand hygiene adherent opportunities, O= Number of opportunities observed

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Drivers of hand hygiene opportunities during home care visits and nurse hand hygiene adherence

	Regression of hand hygiene opportunities (1)			Regression of hand hygiene adherence (2)		
	Incident Rate	95% Lower	95% Upper	Incident Rate	95% Lower	95% Upper
Intercept	4.88			0.392		
Education (BSN/MSN vs Associate/LPN)	N/A			1.145	0.897	1.462
Dirty Environment (vs not dirty)	1.08*	1.023	1.148	N/A		
Poor Patient Hygiene (vs not poor)	N/A			1.129	0.995	1.282
1. R-sq. (adj) = 0.269, Deviance explained = 34.5%, Scale est. = 0.3092						
*2. R-sq. (adj) = 0.613, Deviance explained = 48.0%, Scale est. = 0.3628; controls for the total number of opportunities as an offset parameter *p<0.01*						

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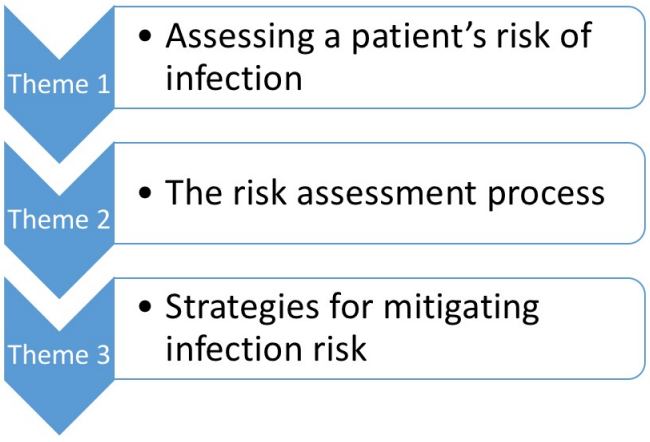
HHC nurses' identification of patients at risk of infection and their risk mitigation strategies



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HHC nurses' identification of patients at risk of infection and their risk mitigation strategies

Themes 1: Assessing a patient's risk of infection
Sources of information for assessing risk "… kind of playing detective …"
Risk Factors for Infection "… if they have any open devices, like Foley catheters …"
Patient's knowledge, understanding and behavior "… lack of knowledge … poor health hygiene… sometimes even culture, and certain beliefs about certain things …"
Environmental and Social Factors " … if their homes are dirty, that's a big factor in the contribution to infection …" "…like …having a family member doing the wound care … they're not wearing gloves…"

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HHC nurses' identification of patients at risk of infection and their risk mitigation strategies

Themes 2: The risk assessment process
Interrelation between medical diagnoses, patient conditions, environmental conditions and other factors "… a combination of everything that you are doing around assessment. It's nothing specific just for infection …"
Continuous process "… I do an assessment at each visit because conditions can change…"

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HHC nurses' identification of patients at risk of infection and their risk mitigation strategies

Themes 3: Strategies for mitigating infection risk
Patient and caregiver education "… Always. We're always teaching …"
Practitioner behavior, unique challenges "… So I try to follow all these made-up rules: find a door knob, find a hook, to hang things around my neck, balance my computer on my lap…"
Care Planning is adjusted according to the patient's infection risk "… I would always try to see my 106 years old patient first … and then I would go to the MRSA patient…"

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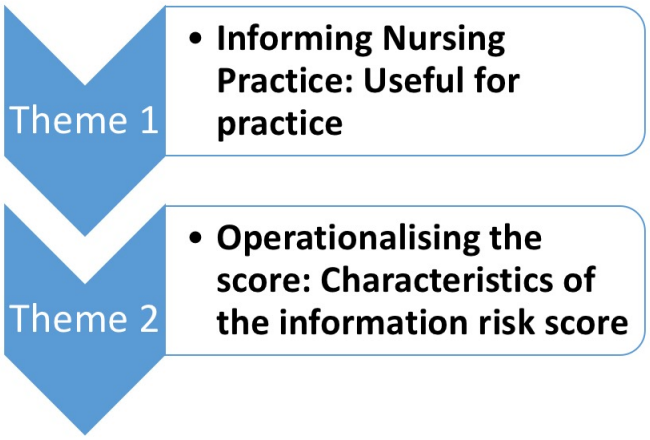
Factors for Implementing Clinical Risk Prediction Models of Infection in HHC



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Factors for Implementing Clinical Risk Prediction Models of Infection in HHC

Themes 1: Informing Nursing Practice: Useful for practice
Identify specific risk "… if you have that, you'll know exactly what to look for …"
Serve as a confirmation or a second opinion "… like a reinforcement, a reminder of looking at that …" "… something that could signal to me, … Be careful. This patient is at high risk of infection, …"
Strategies for care planning, patient education, following IPC more closely "… we will focus more on the teaching of how to prevent infection …" " … You would be more diligent. You would be more follow the protocols…"
Mechanism for continuity and communication "… It will help us. It'll give us like a guide. And not only just for the nurses, it will also help the HHAs as well, and any caregiver in the home who help them as well…"

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Factors for Implementing Clinical Risk Prediction Models of Infection in HHC

Themes 2: Operationalising the score: Characteristics of the information risk score
Types of information "… a series of questions to see if this patient is at risk for infection, … if a patient has a wound, … a catheter, if the patient is undergoing chemotherapy, … , if the patient lives in not such desirable environment or a … And each of those questions would have a number, and if the patient scores a certain number, that would put them at high risk, low risk, no risk." …"
Why a patient is at risk "… So if you're going to-- I mean, this person has a 50% risk of infection. Infection where? What type? …"
Integration into workflow "… I would feel it would be most helpful is that if it was in the admission questionnaire, and it builds at the end a score, and then once it reaches a certain score, then it would be for you to be alerted to these types of risk-- to a risk factor, and these protocols to go into place…"

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Infection Prevention in Home Health Care (InHome) Study

- Grant #: R01NR016865
- Funded by
  - NINR
  - AHHQI

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Infection Prevention in Home Health Care (InHome) Study

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Research Objectives

- 1) Describe the current infection prevention and control infrastructure and policies in HHC agencies
- 2) Compare the effectiveness of various infection prevention and control infrastructures and policies in preventing infections in HHC
- 3) Estimate survival and healthcare utilization associated with infections in HHC patients

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Study Methods

National Survey

Online/paper survey by administrators of HHC agencies (N=536)

2019

Interviews

43 qualitative interviews with personnel from 13 HHC agencies

2018

National Data

CMS claims data, OASIS, AHRF, POS, PUF

2013-2018

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Publications

- Pogorzelska-Maziarz, M., Chastain, A., Shang, J., Mangal, S., Stone, P. (Accepted) Infection Prevention and Control in Home Healthcare Prior to COVID: A Qualitative Study. *Journal of the American Medical Directors Association*
- Shang, J., Chastain, A.M., Perera, U.G.E., Quigley, D.D., Fu, C.J., Dick, A.W., Pogorzelska-Maziarz, M., Stone, P. (2020) COVID-19 Preparedness in U.S. Home Health Agencies. *Journal of the American Medical Directors Association*. 21(7) 924-927.
- Dick, A.W., Murray, M. Chastain, A.M., Madigan, E., Sorbero, M., Stone, P.W., Shang, J.* (2019) Measuring Quality in Home Healthcare. *Journal of American Geriatrics Society*. 67(9):1859-1865.
- Shang, J., Dick, A., Stone, P., Larson, E. (2018) A Research Agenda for Infection Prevention in Home Healthcare, *American Journal of Infection Control*. 46(9):1071-1073.

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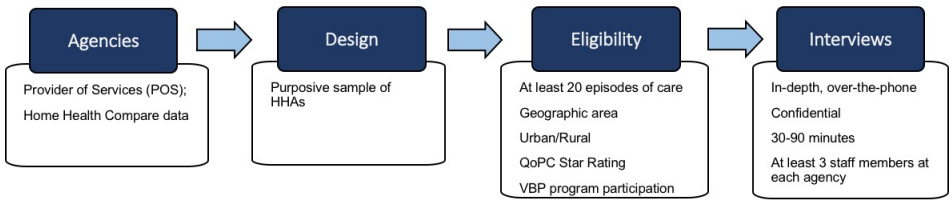
Qualitative Study: Successes and Challenges in IPC in HHC

- March to November 2018



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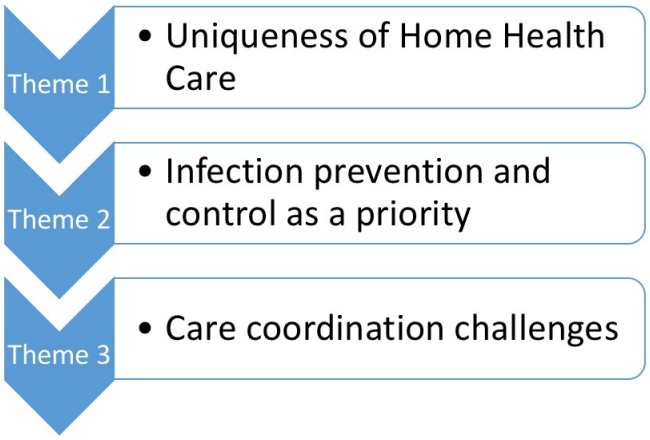
Qualitative Study: Successes and Challenges in IPC in HHC



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Successes and Challenges in IPC in HHC

Themes 1: Uniqueness of Home Health Care
Unpredictability/Home Environment "… you're going to patient's homes that sometimes aren't the cleanest. They may have paths through it, and you just gotta do the best you can …"
Challenges related to workload and travel "… I think my furthest patient's about 60 miles away. I have quite a bit of miles usually. Some days up to 300 miles…"
Staffing challenges "… "The nurses I can say, they are just so stressed up, and they just want their work to end early, so they are just shortcutting… Shortcutting every intervention, shortcutting every technique they're supposed to do… because they are time constrained. They have too many patients to see, and they wanna make sure that they covered everything…"

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Successes and Challenges in IPC in HHC

Themes 2: Infection prevention and control as a priority
Focus on Hand Hygiene, Bag Technique "… It's the single most proven way to keep infections down and it's important to teach people to correctly wash their hands…"
Protection of Patients/Self "… For me, personally, it's very important. Not just for patients but also for what I'm bringing home. I've got a nine-month-old, so for me, I've got a young child, and I just don't wanna bring anything home…"
Role in Preventing Hospitalizations "… So for us, infection control is the main thing because, at the end of the day, our main objective is to prevent our patients from deteriorating or being re-hospitalized…"

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Successes and Challenges in IPC in HHC

Themes 3: Care Coordination Challenges
Communication with Other Local Providers "… Basically, we follow up with a physician, make sure they saw the fax, that it has the details of what is suspected, and then making sure that there's a conversation with them if that conversation is possible – sometimes the physicians aren't as available to us as we would like- and just keeping track of any kind of conversation that we do have..."
Working Hours "… Our work day is 9:00 to 5:00. If there's something that happens after hours, there's no doctor to call. It's very difficult on that end, because we'll find ourselves in situations where our hands are tied. We can't do anything. We can't get a hold of a doctor. We can't get any new orders. What do we have to do? We have to send the patient to the hospital…"

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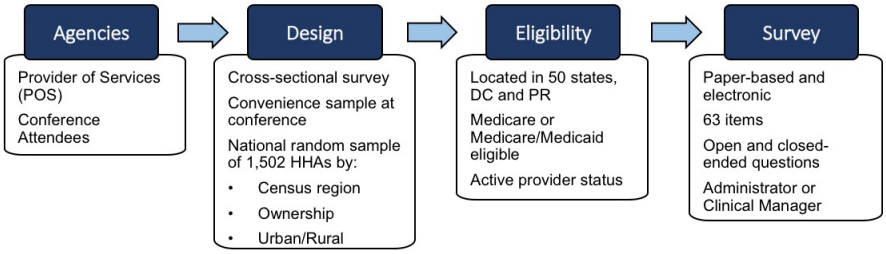
National Survey: The State of Infection Prevention and Control at Home Health Agencies in the United States Prior to COVID-19

Survey Implementation Period

- Nov 2018 to Dec 2019



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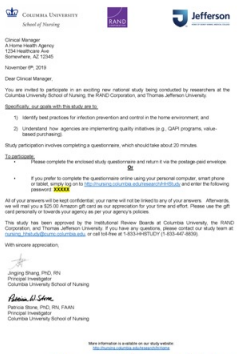
Recruitment Letter:



Columbia University School of Nursing · RAND · Jefferson

Clinical Manager
Home Health Agency
1234 Healthcare Ave
Somewhere, AZ 12345

November 8th, 2019

Dear Clinical Manager,

You are invited to participate in an exciting new national study being conducted by researchers at the Columbia University School of Nursing, the RAND Corporation, and Thomas Jefferson University.

Specifically, our goals with this study are to:

1) Identify best practices for infection prevention and control in the home environment; and
2) Understand how agencies are implementing quality initiatives (e.g., QAPI programs, value-based purchasing).

Study participation involves completing a questionnaire, which should take about 20 minutes.

To participate:

- Please complete the enclosed study questionnaire and return it via the postage-paid envelope.

Or

- If you prefer to complete the questionnaire online using your personal computer, smart phone or tablet, simply log on to http://nursing.columbia.edu/research/hhhStudy and enter the following password: XXXXX

All of your answers will be kept confidential; your name will not be linked to any of your answers. Afterwards, we will mail you a $25.00 Amazon gift card as our appreciation for your time and effort. Please use the gift card personally or towards your agency as per your agency's policies.

This study has been approved by the Institutional Review Boards at Columbia University, the RAND Corporation, and Thomas Jefferson University. If you have any questions, please contact our study team at nursing_hhstudy@cumc.columbia.edu, or call toll-free at 1-833-HHSTUDY (1-833-447-8839).

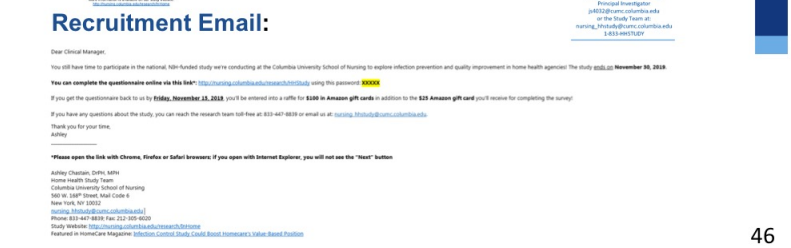
With sincere appreciation,

Jingjing Shang, PhD, RN
Principal Investigator
Columbia University School of Nursing

Patricia Stone, PhD, RN, FAAN
Principal Investigator
Columbia University School of Nursing

More information is available on our study website:
http://nursing.columbia.edu/research/hhome

Recruitment Email:



Dear Clinical Manager,

You still have time to participate in the national, NIH-funded study we're conducting at the Columbia University School of Nursing to explore infection prevention and quality improvement in home health agencies! The study ends on **November 30, 2019**.

You can complete the questionnaire online via this link*: http://nursing.columbia.edu/research/hhhStudy using this password: XXXXX

If you get the questionnaire back to us by **Friday, November 15, 2019**, you'll be entered into a raffle for **$100 in Amazon gift cards** in addition to the **$25 Amazon gift card** you'll receive for completing the survey!

If you have any questions about the study, you can reach the research team toll-free at 833-447-8839 or email us at: nursing_hhstudy@cumc.columbia.edu.

Thank you for your time,
Ashley

_____

***Please open the link with Chrome, Firefox or Safari browsers; if you open with Internet Explorer, you will not see the "Next" button**

Ashley Chastain, DrPH, MPH
Home Health Study Team
Columbia University School of Nursing
560 W. 168th Street, Mail Code 6
New York, NY 10032
nursing_hhstudy@cumc.columbia.edu
Phone: 833-447-8839; Fax: 212-305-6020
Study Website: http://nursing.columbia.edu/research/hhome
Featured in HomeCare Magazine: Infection Control Study Could Boost Homecare's Value-Based Position

Paper Survey:

Columbia University School of Nursing · RAND · Jefferson

Home Health Study

Exploring Infection Prevention & Quality Improvement

Conducted by:
Columbia University School of Nursing
RAND Corporation
Thomas Jefferson University
For more information contact:
Jingjing Shang, PhD, RN, OCN
Principal Investigator
js4012@cumc.columbia.edu
or the Study Team at:
nursing_hhstudy@cumc.columbia.edu
1-833-HHSTUDY

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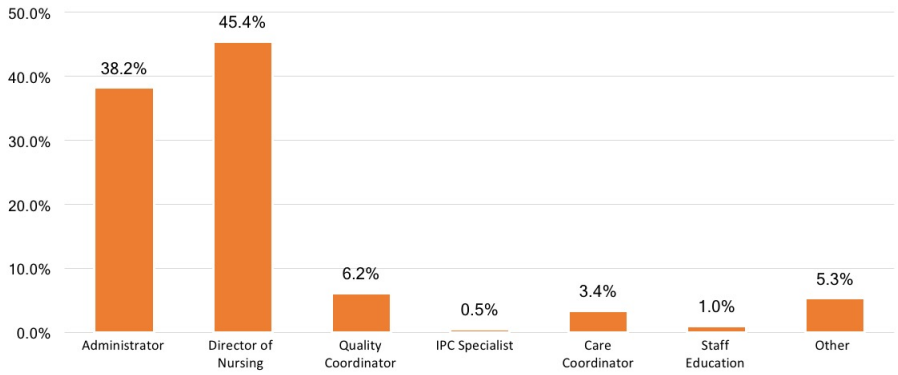
Survey Respondent Role (n =536, 36% response rate)



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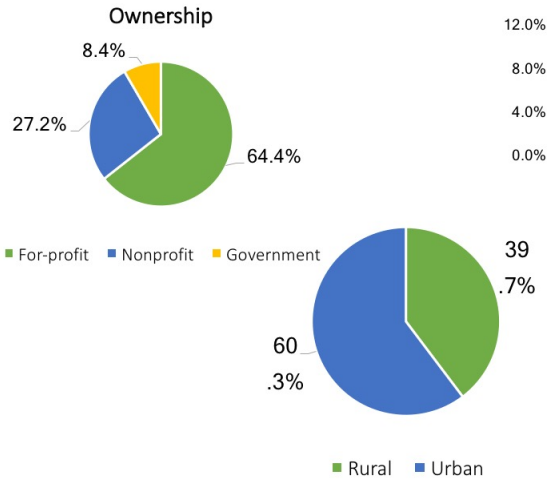
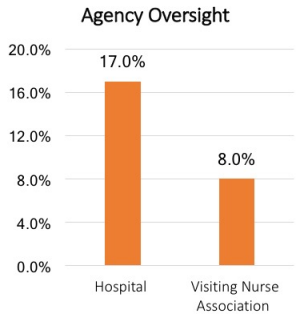
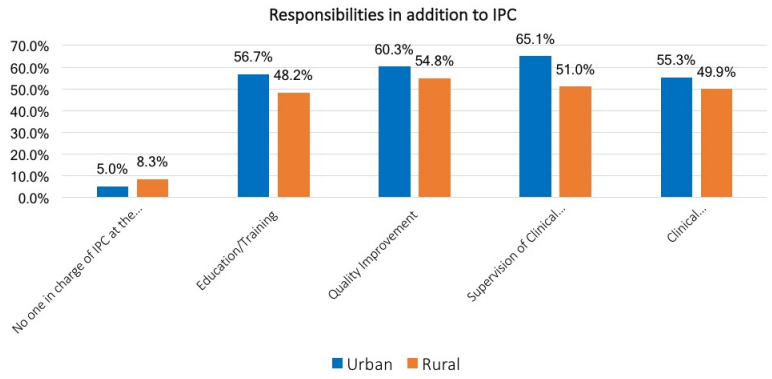
Agency Characteristics





48

IPC Staffing at U.S. HHC Agencies



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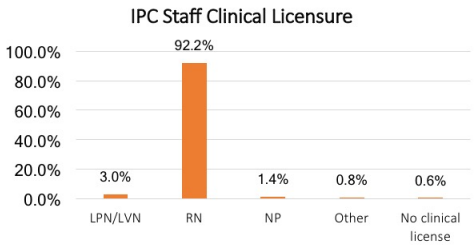
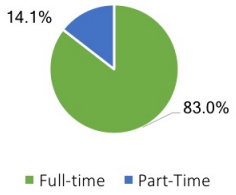
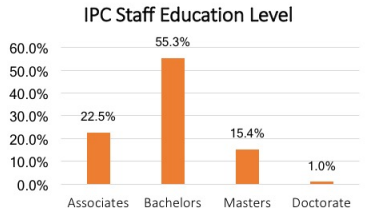
IPC Staffing at U.S. HHC Agencies







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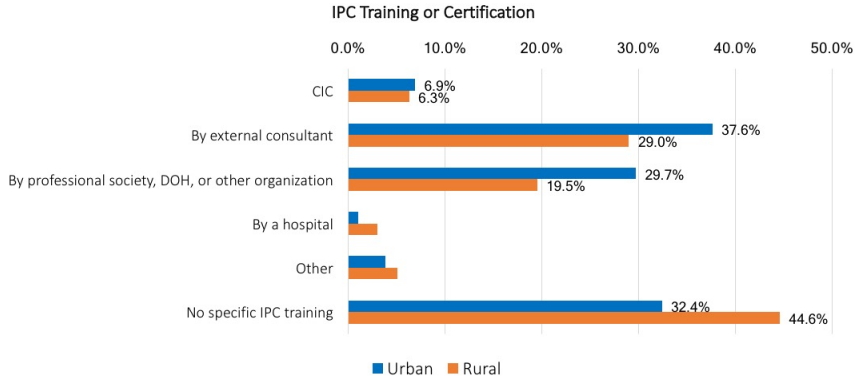
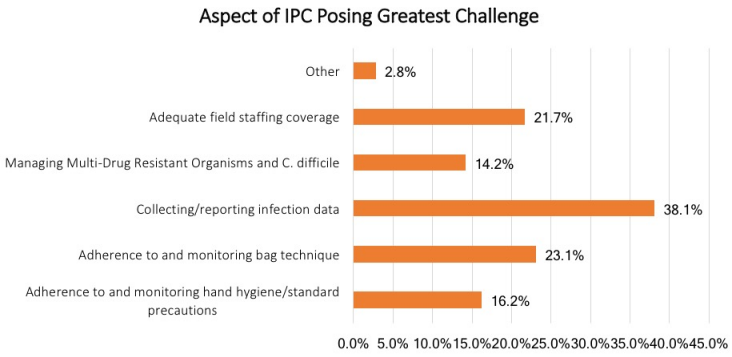
IPC Staffing at U.S. HHC Agencies



51

IPC Processes at U.S. HHC Agencies



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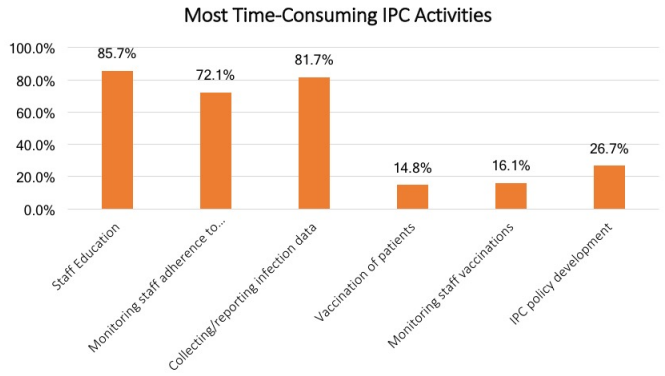
IPC Processes at U.S. HHC Agencies



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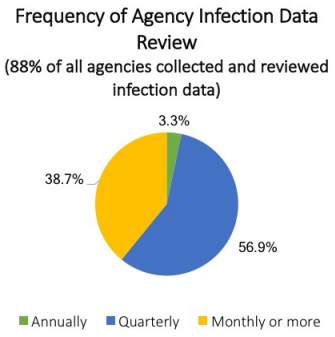
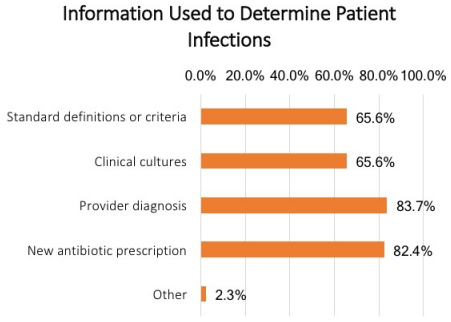
IPC Processes at U.S. HHC Agencies





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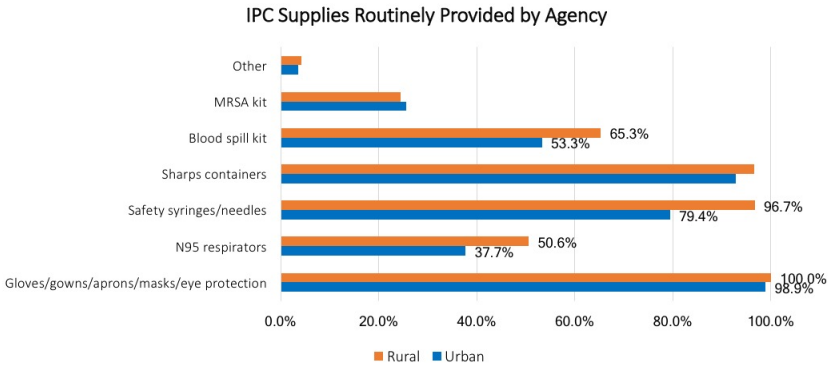
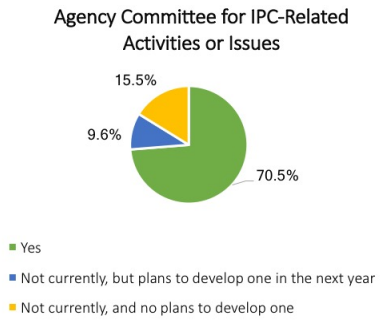
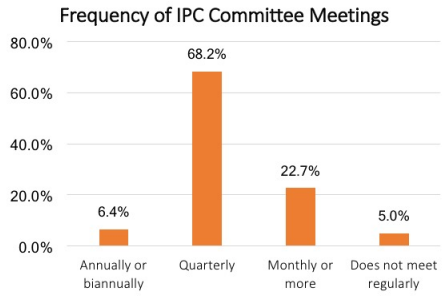
IPC Resources at U.S. HHC Agencies



55

IPC Infrastructure & Policies at U.S. HHC Agencies





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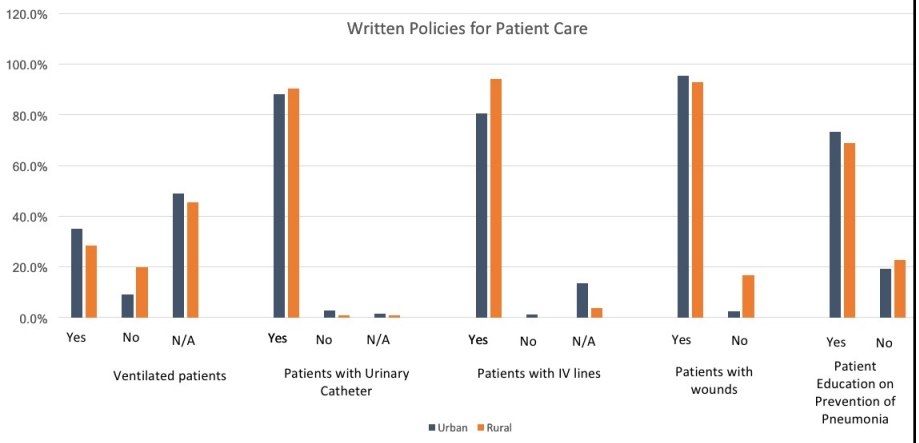
IPC Policies for Patient Care at U.S. HHC Agencies



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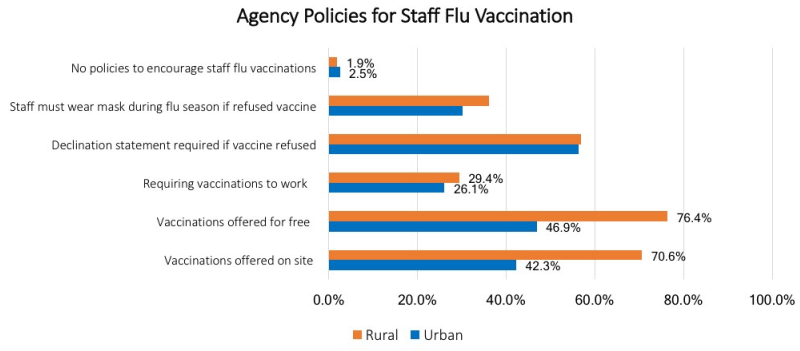
Staff Vaccination Policies at U.S. HHC Agencies



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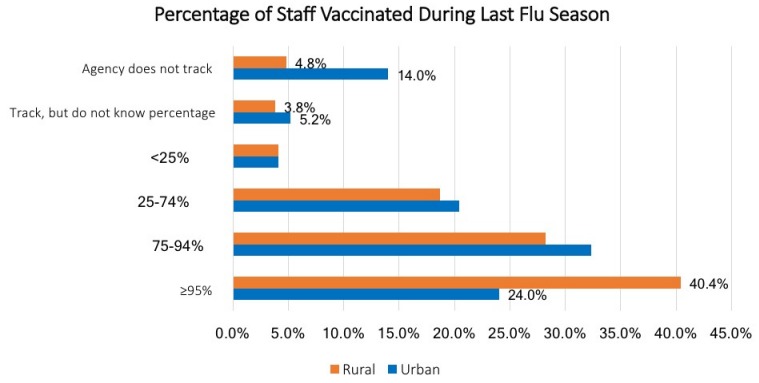
Staff Vaccination Policies at U.S. HHC Agencies



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Short Survey: COVID-19 Preparedness in U.S. Home Healthcare Agencies

Survey Implementation Period

- April 10 to April 17, 2020

Agencies
Random sample of 978 HHAs from our 2019 survey poll (n = 1,502)

Design
Cross-sectional survey
Convenience

Eligibility
Located in 50 states, DC and PR
Medicare or Medicare/Medicaid eligible
Active provider status

Survey
Electronic
22 items
2 open and closed-ended questions
Administrator or Clinical Manager

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JAMDA
journal homepage: www.jamda.com

Original Study - Brief Report

COVID-19 Preparedness in US Home Health Care Agencies

Jingjing Shang PhD, RN [a,*], Ashley M. Chastain DrPH, MPH [a], Uduwanage Gayani E. Perera PhD, MS [a], Denise D. Quigley PhD [b], Caroline J. Fu MPH [a], Andrew W. Dick PhD [c], Monika Pogorzelska-Maziarz PhD, MPH [d], Patricia W. Stone PhD, RN [a]

[a] Center for Health Policy, Columbia University School of Nursing, New York, NY
[b] The RAND Corporation, Santa Monica, CA
[c] The RAND Corporation, Boston, MA
[d] Thomas Jefferson University, College of Nursing, Philadelphia, PA

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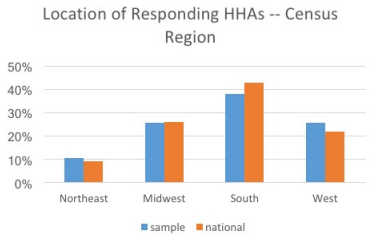
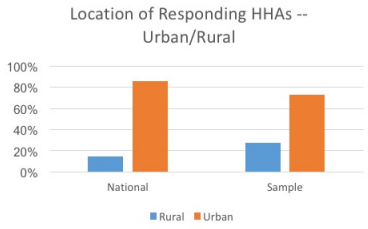
Short Survey: COVID-19 Preparedness in U.S. Home Healthcare Agencies

- 121 HHAs responded (12% response rate)





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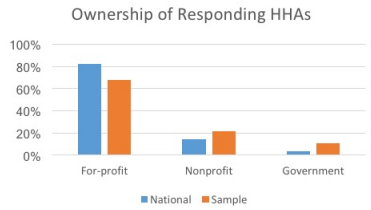
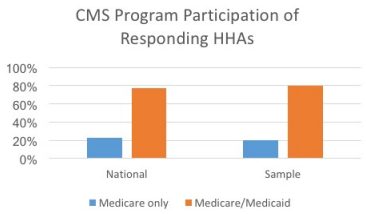
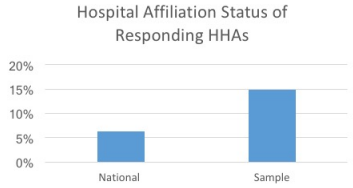
Short Survey: COVID-19 Preparedness in U.S. Home Healthcare Agencies







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		Location	
	Total	Rural	Urban
		N (%)	
Emergency Preparedness			
Components in Current Preparedness Plan			
Infectious disease outbreaks	92(76.0)	25(75.8)	67(76.1)
Specific COVID-19 plan	73(60.3)	16(48.5)	57(64.8)
Other IPC components	25(20.7)	4(12.1)	21(23.9)
Has Staff Member Responsible for Outbreak/Disaster Preparedness*	100(84.0)	27(84.4)	73(83.9)
Outbreak Simulations Conducted in Past 2 Years	62(52.1)	16(50.0)	46(52.9)
Agency Capacity			
Ability to Test Patients for COVID-19	15(12.4)	7(21.2)	8(9.1)
Access to Lab for Surveillance/Detection	67(55.4)	21(63.6)	46(52.3)
Surge Capacity			
Agency could admit COVID-19 patients requiring a lower level of care	84(69.4)	26(78.8)	58(65.9)
Agency could admit non-COVID-19 hospital patients requiring a lower level of care	82(67.8)	22(66.7)	60(68.2)
Cares for Patients in Residential Care Settings			
Nursing homes	32 (26.4)	8(24.2)	24(27.3)
Assisted living facilities	96 (79.3)	25(75.7)	71(80.7)

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		Location	
	Total	Rural	Urban
		N (%)	
Changes Due to COVID-19 Pandemic			
Has COVID-19 Patients			
Suspected	66(54.5)	17(51.5)	49(55.7)
Confirmed	33(27.3)	6(18.2)	27(30.7)
Recovered	23(19.0)	2(6.1)	21(23.9)
Patient Census			
Increased	10(8.3)	2(6.1)	8(9.1)
Decreased	84(69.4)	20(60.6)	64(72.7)
No change	24(19.8)	10(30.3)	14(15.9)
Telehealth Usage			
Increased	70(57.8)	19(57.6)	51(57.9)
No change	27(22.3)	9(27.3)	18(20.4)
No telehealth usage at agency	21(17.4)	5(15.2)	16(18.2)
New Procedures/Protocols			
Aerosol-generating procedure policies	36(29.7)	9(27.3)	27(30.7)
Barriers when in patient homes	62(51.2)	16(48.5)	46(52.3)
PPE donning and doffing in patient homes	98(81.0)	28(84.8)	70(79.5)
Not applicable	10(8.3)	2(6.1)	8(9.1)
COVID-19 Staff Training and Education Provided^	114(97.4)	32(100.0)	82(96.5)

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		Location	
	Total	Rural	Urban
		N (%)	
Challenges Due to COVID-19 Pandemic			
Supplies Currently Without			
N95 respirators	75(62.0)	17(51.5)	58(65.9)
Masks (surgical)	54(44.6)	15(45.4)	39(44.3)
Gloves	25(20.7)	5(15.1)	20(22.7)
Eye protection	55(45.4)	11(33.3)	44(50.0)
Gowns	67(55.4)	16(48.5)	51(57.9)
Cleaning supplies/disinfectants	62(51.2)	15(45.4)	47(53.4)
Hand soap or alcohol-based hand sanitizer	59(48.8)	14(42.4)	45(51.1)
Supplies Anticipated to be Without in Next 2 Weeks			
N95 respirators	48(39.7)	13(39.4)	35(39.8)
Masks (surgical)	52(43.0)	15(45.4)	37(42.1)
Gloves	25(20.7)	6(18.2)	19(21.6)
Eye protection	38(31.4)	7(21.2)	31(35.2)
Gowns	56(46.3)	14(42.4)	42(47.7)
Cleaning supplies/disinfectants	49(40.5)	14(42.4)	35(39.8)
Hand soap or alcohol-based hand sanitizer	50(41.3)	14(42.4)	36(40.9)
Currently Experiencing Staffing Shortages*	38(31.9)	6(18.7)	32(36.8)
Primary Reason for Staffing Shortage†			
Staff at risk, or with family members at risk for COVID-19	12(31.6)	1(16.7)	11(34.4)
Staff infected with/quarantined from COVID-19 exposure	8(21.0)	0 (0.0)	8(25.0)
Child care issue due to school closings	9(23.7)	0 (0.0)	9(28.1)
Other	9(23.7)	5(83.3)	4(12.5)
Anticipated Staffing Shortages during Current Pandemic‡	19(23.7)	4(15.4)	15(27.8)

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	Total	Rural	Urban
	N (%)		
Mitigating Strategies for COVID-19 Pandemic Challenges			
Addressing Staffing Shortages			
Remaining staff volunteering to work extended hours	23(19.0)	2(6.1)	21(23.9)
Remaining staff mandated to work extended hours	7(5.8)	2(6.1)	5(5.7)
Contracted temporary staff	13(10.7)	1(3.0)	12(13.6)
Non-clinical staff filling different roles	16(13.2)	3(9.1)	13(14.8)
Accessing Supplemental PPE			
State or local resources	77(63.6)	25(75.8)	52(59.1)
Private/community donations	63(52.1)	24(72.7)	39(44.3)
Do-it-yourself efforts	73(60.3)	25(75.8)	48(54.5)
Not applicable	2(1.6)	2(6.1)	0(0.0)
Current PPE Usage Strategy			
Use expired PPE supplies	17(14.0)	8(24.2)	9(10.2)
Extended use	67(55.4)	23(69.7)	44(50.0)
Limited reuse	74(61.2)	19(57.6)	55(62.5)
Rationing	83(68.6)	25(75.8)	58(65.9)
Not currently having to use a strategy	13(10.7)	3(9.1)	10(11.4)

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Discussion

- Infection prevention and control is currently suboptimal.
- HHC clinicians face special challenges in IPC
- There is limited capacity to respond to infectious disease outbreaks

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Acknowledgments

COLUMBIA UNIVERSITY
School of Nursing | Center for Health Policy

Patricia Stone
Dawn Dowding
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Elaine Larson
Ashley Chastain
Gayani Perera
Recruitment Team

RAND CORPORATION

Andrew Dick

Jefferson
Philadelphia University + Thomas Jefferson University

Monika Pogorzelska-Maziarz

VISITING NURSE SERVICE OF NEW YORK
VNSNY

Margaret McDonald
Carlin Brickner
David Russel
Christopher Murtaugh
Data Collection Team

Thank you to our Study Participants!!

HHC clinicians

Our Advisory Board:
Mary McGoldrick
Andrea Devoti
Maureen Dailey
Irena Kenneley

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Questions

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www.webbertraining.com/schedulep1.php

November 12, 2020	INFLUENZA DIAGNOSIS, TRANSMISSION AND CONTROL IN AN EVERYDAY HOSPITAL SETTING Speaker: **Dr Julian W Tang**, University of Leicester, UK
November 19, 2020	EMERGING FUNGAL INFECTIONS AND INFECTION PREVENTION AND CONTROL Speaker: **Prof. Andreas Voss**, Radboud University, The Netherlands
December 3, 2020	EFFECTIVELY MONITORING HAND HYGIENE: DIRECT OBSERVATION ONLY OR COMBINED WITH AUTOMATED MONITORING Speaker: **Dr. John Boyce**, J.M. Boyce Consulting, LLC ***Broadcast sponsored by GOJO Canada*** GOJO
December 10, 2020	MAKING BEHAVIOUR CHANGE INTERVENTIONS EFFECTIVE BY APPLYING BEHAVIOUR CHANGE THEORY Speaker: **Prof. Colin Furness**, University of Toronto


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