



Department of Health

Three Capitol Hill
Providence, RI 02908-5097

TTY: 711
www.health.ri.gov

Healthcare Quality Reporting Program

HOSPITAL-ACQUIRED INFECTIONS SUBCOMMITTEE

8-9am, October 20, 2014
Healthcentric Advisors, 235 Promenade Street, Suite 500

1. **Welcome & today's meeting objectives (8am)**
 - Meeting chair: S. Viner-Brown
 - Program staff: R. Baier, E. Cooper
 - Voting members in attendance (7/19): N. Alexander, M. Fishman, Y. Jiang, M. Marsella, N. Vallende
 - Others in attendance: L. Martino, P. Winderman

2. **Previous meeting's action items (8:05am)**
 - **Share WHO Technical Manual with the committee (Emily) – Complete**
The manual was shared with the Subcommittee with the minutes from our last meeting.

 - **Schedule meeting between Dr. Mermel and Dr. Fine (Sam) – Complete**
Dr. Fine and Len met to discuss the HAI Subcommittee's response to the Steering Committee's direction about standardizing hand hygiene. The recommendations from this meeting will be discussed today.

 - **Research electronic hand hygiene measurement tools (Emily/Rosa/Kim) – Complete**
Kim Pelland, a Brown MPH Assistant at Healthcentric Advisors, researched electronic hand hygiene measurement tools. Her findings will be shared with today's minutes.

 - **Perform environmental scan re: hand hygiene reporting (Emily/Rosa/Kim) – Complete**
Kim also performed an environmental scan that will be shared with the minutes.

 - **Share taskforce's letter to Dr. Fine with the committee (Nicole/Rosa) – Complete**
The letter was shared as an attachment to this meeting's agenda.

3. **Hand hygiene standards (8:10am)**
 - **Review previous request and discussions**
Dr. Fine and the Steering Committee requested the Subcommittee explore methods by which to standardize hand hygiene measurement across hospitals, as a precursor to considering ways to publish comparative data on hand hygiene practices across Rhode Island.

The HAI Subcommittee previously recommended standardizing hand hygiene education, requiring facilities to develop programs for repeat hand hygiene offenders, and having HEALTH research the cost of electronic hand hygiene measurement.



- **Debrief from meeting with Dr. Fine**

Dr. Fine and Len met to discuss the HAI Subcommittee's response to the Steering Committee's direction about standardizing hand hygiene, with Sam, Rosa, and Emily in attendance. After hearing the Subcommittee's suggestions and thoughts about changing existing policies and procedures – which are already evidence-based but vary by facility – Dr. Fine suggested that HEALTH summer interns act as 'secret shoppers' to measure hand hygiene. These interns would observe hand hygiene standardized methods across the hospitals.

- **Discuss next steps**

The Subcommittee discussed Dr. Fine's suggestion, which included allowing hospitals to refute rates if they could demonstrate higher rates with their existing data.

Although having HEALTH interns observe addresses previous questions about existing programs, etc., the Subcommittee wondered if publishing a single point prevalence estimate would provide an accurate picture of hand hygiene practices. They also expressed a desire to combine 'secret shopper' data with their own data, which may be difficult if the methods differ, and wondered if HEALTH visitors would be able to go unnoticed.

Recommendations: Publicly reporting multiple data points together; performing a pilot prior to publishing data; and including a preview period before publication.

4. **Healthcare worker flu vaccination data (8:40am)**

The Subcommittee reviewed the reports created by the Immunization Program, which are new, and recommended using them in lieu of creating program-specific reports for hospitals.

Recommendation: Cease creating a program-specific report, but explore the option of posting only the applicable sections of the report, so that consumers can easily find the hospital-specific information.

5. **Update on the Antimicrobial Stewardship Task Force (8:50am)**

Nicole provided an update on the Task Force. The taskforce has met and has provided recommendations to Dr. Fine; these recommendations were included with today's agenda. The next step is to survey hospitals and nursing homes about their antimicrobial stewardship practices and related FTE allocations. Surveys should go out to both settings shortly.

6. **Action Items**

- Send out hand hygiene environmental scan and electronic measurement research (Emily)
- Share hospitals' hand hygiene tools (Emily)
- Convey hand hygiene recommendations to the Steering Committee (Rosa)

Next Meeting: December 15, 2014



Healthcare Worker Influenza Vaccination Rates in Rhode Island 2013-2014 Influenza Season

The influenza vaccination rates in this report are for healthcare workers in the follow facility types:

- Adult day care program (page 4)
- Free-standing ambulatory care surgical center (page 6)
- Free-standing emergency care facility (page 8)
- Home care provider (page 9)
- Home nursing care provider (page 11)
- Hospice provider (page 15)
- Hospital (page 17)
- Kidney treatment centers (page 19)
- Nursing facilities (page 21)
- Nursing service agency (page 28)
- Organized ambulatory care facility (page 30)
- Physician ambulatory surgery center (page 34)

Data were gathered for:

- Employee healthcare workers
- Non-employee healthcare workers - licensed independent practitioners
- Non-employee healthcare workers - adult students, trainees, and volunteers

For more information, contact:

Hanna Kim, PhD
Rhode Island Department of Health
Hanna.Kim@health.ri.gov
401-222-1961

2013-2014 HCW Influenza Vaccination Report, as of 6/18/2014

Facility Type	Total #s in Rhode Island	# Reported	% Reported
Adult Day Care Program	25	21	84%
Freestanding Amb. Surg. Center	7	7	100%
Freestanding Emerg. Care Facility	1	1	100%
Home Care Provider	16	14	88%
Home Nursing Care Provider	57	48	84%
Hospice Provider	8	6	75%
Hospital	14	14	100%
Kidney Disease Treat. Center	13	13	100%
Nursing Facility	90	90	100%
Nursing Service Agency	20	7	35%
Organized Amb. Care Facility	42	39	93%
Physician Ambulatory Surgery Center	9	8	89%
Total	302	268	89%

Healthcare Worker Influenza Vaccination Status (Number) by Facility Type, 2013-2014 Influenza Season

Facility Type	Healthcare Worker (HCW) Type															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Adult Day Care Program	320	2	48	11	381	13	0	0	3	16	61	0	7	26	94	394	2	55	40	491
Freestanding Amb. Surg. Center	182	6	11	1	200	100	0	5	3	108	1	0	0	0	1	283	6	16	4	309
Freestanding Emerg. Care Facility	35	0	16	0	51	0	0	0	0	0	0	0	0	0	0	35	0	16	0	51
Home Care Provider	686	15	238	102	1,041	0	0	0	0	0	0	0	0	0	0	686	15	238	102	1,041
Home Nursing Care Provider	3,358	67	462	249	4,136	1	0	0	0	1	179	5	7	31	222	3,538	72	469	280	4,359
Hospice Provider	481	4	43	47	575	9	0	0	0	9	256	6	24	139	425	746	10	67	186	1,009
Hospital	23,667	95	2,430	197	26,389	5,088	13	148	538	5,787	5,559	8	185	47	5,799	34,314	116	2,763	782	37,975
Kidney Disease Treat. Center	218	3	29	1	251	55	0	1	0	56	0	0	1	1	2	273	3	31	2	309
Nursing Facility	11,346	84	840	278	12,548	681	6	25	82	794	878	10	27	52	967	12,905	100	892	412	14,309
Nursing Service Agency	153	0	41	168	362	0	0	0	0	0	0	0	0	0	0	153	0	41	168	362
Organized Amb. Care Facility	1,116	7	79	42	1,244	30	0	9	141	180	77	0	4	574	655	1,223	7	92	757	2,079
Physician Ambulatory Surgery Center	139	0	5	0	144	69	0	2	0	71	0	0	0	0	0	208	0	7	0	215
Total	41,701	283	4,242	1,096	47,322	6,046	19	190	767	7,022	7,011	29	255	870	8,165	54,758	331	4,687	2,733	62,509

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated
 Med Exemp: Medical Exemption
 Ref: Refused
 Unk: Unknown Status

Healthcare Worker Influenza Vaccination Status (Percent) by Facility Type, 2013-2014 Influenza Season

Facility Type	Healthcare Worker (HCW) Type															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Adult Day Care Program	84%	1%	13%	3%	100%	81%	0%	0%	19%	100%	65%	0%	7%	28%	100%	80%	0%	11%	8%	100%
Freestanding Amb. Surg. Center	91%	3%	6%	1%	100%	93%	0%	5%	3%	100%	100%	0%	0%	0%	100%	92%	2%	5%	1%	100%
Freestanding Emerg. Care Facility	69%	0%	31%	0%	100%	---	---	---	---	---	---	---	---	---	---	69%	0%	31%	0%	100%
Home Care Provider	66%	1%	23%	10%	100%	---	---	---	---	---	---	---	---	---	---	66%	1%	23%	10%	100%
Home Nursing Care Provider	81%	2%	11%	6%	100%	100%	0%	0%	0%	100%	81%	2%	3%	14%	100%	81%	2%	11%	6%	100%
Hospice Provider	84%	1%	7%	8%	100%	100%	0%	0%	0%	100%	60%	1%	6%	33%	100%	74%	1%	7%	18%	100%
Hospital	90%	0%	9%	1%	100%	88%	0%	3%	9%	100%	96%	0%	3%	1%	100%	90%	0%	7%	2%	100%
Kidney Disease Treat. Center	87%	1%	12%	0%	100%	98%	0%	2%	0%	100%	0%	0%	50%	50%	100%	88%	1%	10%	1%	100%
Nursing Facility	90%	1%	7%	2%	100%	86%	1%	3%	10%	100%	91%	1%	3%	5%	100%	90%	1%	6%	3%	100%
Nursing Service Agency	42%	0%	11%	46%	100%	---	---	---	---	---	---	---	---	---	---	42%	0%	11%	46%	100%
Organized Amb. Care Facility	90%	1%	6%	3%	100%	17%	0%	5%	78%	100%	12%	0%	1%	88%	100%	59%	0%	4%	36%	100%
Physician Ambulatory Surgery Center	97%	0%	3%	0%	100%	97%	0%	3%	0%	100%	---	---	---	---	---	97%	0%	3%	0%	100%
Total	88%	1%	9%	2%	100%	86%	0%	3%	11%	100%	86%	0%	3%	11%	100%	87.6%	0.5%	7.5%	4.4%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Adult Day Care Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Alternative Adult Care Center	11	0	0	1	12	1	0	0	0	1	2	0	0	0	2	14	0	0	1	15
Celebrations Adult Day Services	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
Cornerstone'S Alzheimers Care Center	19	0	0	0	19	0	0	0	0	0	5	0	0	0	5	24	0	0	0	24
Cornerstone'S Apponaug Center	9	0	0	0	9	0	0	0	0	0	1	0	2	0	3	10	0	2	0	12
Cornerstones Bristol Center	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
Cornerstone'S Coventry Center	9	0	1	0	10	0	0	0	0	0	2	0	2	0	4	11	0	3	0	14
Cranston Adult Day Service	14	0	0	0	14	2	0	0	0	2	14	0	0	0	14	30	0	0	0	30
Elmwood Adult Day Health Care Center	10	0	7	2	19	0	0	0	0	0	0	0	0	0	0	10	0	7	2	19
Elmwood Adult Day Health Care Center II	10	0	5	0	15	0	0	0	0	0	0	0	0	3	3	10	0	5	3	18
Forest Farm Adult Day Services	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
Fruit Hill Day Services For Elderly	10	1	0	0	11	0	0	0	0	0	8	0	1	0	9	18	1	1	0	20
Hope Alzheimers Center	36	0	1	0	37	0	0	0	0	0	10	0	0	0	10	46	0	1	0	47
Nancy Brayton Osborn Adult Day Health Cente	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
New Horizons Adult Day Center	10	0	0	0	10	2	0	0	0	2	5	0	0	0	5	17	0	0	0	17
Pace Organization Of Rhode Island	94	0	4	8	106	0	0	0	3	3	12	0	0	23	35	106	0	4	34	144
Seven Hills Rhode Island Inc	12	0	0	0	12	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12
Svetlo Adult Day Care	2	0	5	0	7	0	0	0	0	0	0	0	0	0	0	2	0	5	0	7
To Life Center Adult Day Services	7	1	0	0	8	2	0	0	0	2	0	0	0	0	0	9	1	0	0	10
Tri-Town Comm Act Agy Dba Dora C Howard C	7	0	0	0	7	0	0	0	0	0	2	0	1	0	3	9	0	1	0	10
Victoria Court Adult Day Care	35	0	25	0	60	4	0	0	0	4	0	0	1	0	1	39	0	26	0	65
Willows Adult Day Care	5	0	0	0	5	2	0	0	0	2	0	0	0	0	0	7	0	0	0	7
TOTAL	320	2	48	11	381	13	0	0	3	16	61	0	7	26	94	394	2	55	40	491

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Adult Day Care Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Alternative Adult Care Center	92%	0%	0%	8%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	93%	0%	0%	7%	100%
Celebrations Adult Day Services	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Cornerstone'S Alzheimers Care Center	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Cornerstone'S Apponaug Center	100%	0%	0%	0%	100%	---	---	---	---	---	33%	0%	67%	0%	100%	83%	0%	17%	0%	100%
Cornerstones Bristol Center	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Cornerstone'S Coventry Center	90%	0%	10%	0%	100%	---	---	---	---	---	50%	0%	50%	0%	100%	79%	0%	21%	0%	100%
Cranston Adult Day Service	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Elmwood Adult Day Health Care Center	53%	0%	37%	11%	100%	---	---	---	---	---	---	---	---	---	---	53%	0%	37%	11%	100%
Elmwood Adult Day Health Care Center II	67%	0%	33%	0%	100%	---	---	---	---	---	0%	0%	0%	100%	100%	56%	0%	28%	17%	100%
Forest Farm Adult Day Services	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Fruit Hill Day Services For Elderly	91%	9%	0%	0%	100%	---	---	---	---	---	89%	0%	11%	0%	100%	90%	5%	5%	0%	100%
Hope Alzheimers Center	97%	0%	3%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	98%	0%	2%	0%	100%
Nancy Brayton Osborn Adult Day Health Cente	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
New Horizons Adult Day Center	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Pace Organization Of Rhode Island	89%	0%	4%	8%	100%	0%	0%	0%	100%	100%	34%	0%	0%	66%	100%	74%	0%	3%	24%	100%
Seven Hills Rhode Island Inc	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Svetlo Adult Day Care	29%	0%	71%	0%	100%	---	---	---	---	---	---	---	---	---	---	29%	0%	71%	0%	100%
To Life Center Adult Day Services	88%	13%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	90%	10%	0%	0%	100%
Tri-Town Comm Act Agy Dba Dora C Howard C	100%	0%	0%	0%	100%	---	---	---	---	---	67%	0%	33%	0%	100%	90%	0%	10%	0%	100%
Victoria Court Adult Day Care	58%	0%	42%	0%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	60%	0%	40%	0%	100%
Willows Adult Day Care	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
TOTAL	84%	1%	13%	3%	100%	81%	0%	0%	19%	100%	65%	0%	7%	28%	100%	80%	0%	11%	8%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Freestanding Ambulaory Surgical Center Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Bayside Endoscopy Center Llc	43	1	0	0	44	10	0	0	3	13	1	0	0	0	1	54	1	0	3	58
Blackstone Valley Surgicare	50	1	5	1	57	57	0	4	0	61	0	0	0	0	0	107	1	9	1	118
East Greenwich Endoscopy Center	28	2	0	0	30	11	0	0	0	11	0	0	0	0	0	39	2	0	0	41
Ocean State Endoscopy	14	0	1	0	15	4	0	0	0	4	0	0	0	0	0	18	0	1	0	19
Planned Parenthood Of Southern New England	20	0	0	0	20	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20
St James Surgery Center	17	2	5	0	24	18	0	1	0	19	0	0	0	0	0	35	2	6	0	43
Womens Medical Center Of RI	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10
TOTAL	182	6	11	1	200	100	0	5	3	108	1	0	0	0	1	283	6	16	4	309

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Freestanding Ambulatory Surgical Center Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Bayside Endoscopy Center Llc	98%	2%	0%	0%	100%	77%	0%	0%	23%	100%	100%	0%	0%	0%	100%	93%	2%	0%	5%	100%
Blackstone Valley Surgicare	88%	2%	9%	2%	100%	93%	0%	7%	0%	100%	---	---	---	---	---	91%	1%	8%	1%	100%
East Greenwich Endoscopy Center	93%	7%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	95%	5%	0%	0%	100%
Ocean State Endoscopy	93%	0%	7%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	95%	0%	5%	0%	100%
Planned Parenthood Of Southern New England	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
St James Surgery Center	71%	8%	21%	0%	100%	95%	0%	5%	0%	100%	---	---	---	---	---	81%	5%	14%	0%	100%
Womens Medical Center Of RI	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
TOTAL	91%	3%	6%	1%	100%	93%	0%	5%	3%	100%	100%	0%	0%	0%	100%	92%	2%	5%	1%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Freestanding Emergency Care Facility Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Garden City Treatment Center	35	0	16	0	51	0	0	0	0	0	0	0	0	0	0	35	0	16	0	51
TOTAL	35	0	16	0	51	0	0	0	0	0	0	0	0	0	0	35	0	16	0	51

Data Source: Immunization Program, Rhode Island Department of Health

Freestanding Emergency Care Facility Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Garden City Treatment Center	69%	0%	31%	0%	100%	---	---	---	---	---	---	---	---	---	---	69%	0%	31%	0%	100%
TOTAL	69%	0%	31%	0%	100%	---	---	---	---	---	---	---	---	---	---	69%	0%	31%	0%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Home Care Provider Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Child And Family Services Of Newport County	20	0	4	0	24	0	0	0	0	0	0	0	0	0	0	20	0	4	0	24
Cowesett Home Care Inc	34	0	11	0	45	0	0	0	0	0	0	0	0	0	0	34	0	11	0	45
Family Friends Health Care Inc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Health Care Services	81	0	7	20	108	0	0	0	0	0	0	0	0	0	0	81	0	7	20	108
Home Care Solutions	19	0	4	0	23	0	0	0	0	0	0	0	0	0	0	19	0	4	0	23
Ideal Home Care Service Inc	23	0	4	3	30	0	0	0	0	0	0	0	0	0	0	23	0	4	3	30
Life Without Limits Home Health Care	7	0	1	0	8	0	0	0	0	0	0	0	0	0	0	7	0	1	0	8
Lifetime Medical Support Services	200	6	42	28	276	0	0	0	0	0	0	0	0	0	0	200	6	42	28	276
Mas Medical Staffing Db a Mas Home Care Of P	96	0	27	0	123	0	0	0	0	0	0	0	0	0	0	96	0	27	0	123
Phenix Home Care Inc	75	4	64	0	143	0	0	0	0	0	0	0	0	0	0	75	4	64	0	143
Preferred Health Care Services	17	5	1	0	23	0	0	0	0	0	0	0	0	0	0	17	5	1	0	23
Senior Helpers	38	0	22	51	111	0	0	0	0	0	0	0	0	0	0	38	0	22	51	111
Visiting Angels (Johnston)	1	0	4	0	5	0	0	0	0	0	0	0	0	0	0	1	0	4	0	5
Visiting Angels (East Providence)	75	0	47	0	122	0	0	0	0	0	0	0	0	0	0	75	0	47	0	122
TOTAL	686	15	238	102	1,041	0	0	0	0	0	0	0	0	0	0	686	15	238	102	1,041

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated
 Med Exemp: Medical Exemption
 Ref: Refused
 Unk: Unknown Status

Home Care Provider Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Child And Family Services Of Newport County	83%	0%	17%	0%	100%	---	---	---	---	---	---	---	---	---	---	83%	0%	17%	0%	100%
Cowesett Home Care Inc	76%	0%	24%	0%	100%	---	---	---	---	---	---	---	---	---	---	76%	0%	24%	0%	100%
Family Friends Health Care Inc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Health Care Services	75%	0%	6%	19%	100%	---	---	---	---	---	---	---	---	---	---	75%	0%	6%	19%	100%
Home Care Solutions	83%	0%	17%	0%	100%	---	---	---	---	---	---	---	---	---	---	83%	0%	17%	0%	100%
Ideal Home Care Service Inc	77%	0%	13%	10%	100%	---	---	---	---	---	---	---	---	---	---	77%	0%	13%	10%	100%
Life Without Limits Home Health Care	88%	0%	13%	0%	100%	---	---	---	---	---	---	---	---	---	---	88%	0%	13%	0%	100%
Lifetime Medical Support Services	72%	2%	15%	10%	100%	---	---	---	---	---	---	---	---	---	---	72%	2%	15%	10%	100%
Mas Medical Staffing Db a Mas Home Care Of P	78%	0%	22%	0%	100%	---	---	---	---	---	---	---	---	---	---	78%	0%	22%	0%	100%
Phenix Home Care Inc	52%	3%	45%	0%	100%	---	---	---	---	---	---	---	---	---	---	52%	3%	45%	0%	100%
Preferred Health Care Services	74%	22%	4%	0%	100%	---	---	---	---	---	---	---	---	---	---	74%	22%	4%	0%	100%
Senior Helpers	34%	0%	20%	46%	100%	---	---	---	---	---	---	---	---	---	---	34%	0%	20%	46%	100%
Visiting Angels (Johnston)	20%	0%	80%	0%	100%	---	---	---	---	---	---	---	---	---	---	20%	0%	80%	0%	100%
Visiting Angels (East Providence)	61%	0%	39%	0%	100%	---	---	---	---	---	---	---	---	---	---	61%	0%	39%	0%	100%
TOTAL	66%	1%	23%	10%	100%	---	---	---	---	---	---	---	---	---	---	66%	1%	23%	10%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Home Nursing Care Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Access Healthcare Inc	78	0	14	19	111	0	0	0	0	0	0	0	0	0	0	78	0	14	19	111
All About Home Care Llc	58	2	20	12	92	0	0	0	0	0	0	0	0	0	0	58	2	20	12	92
Alternative Care Medical Services	46	0	0	0	46	0	0	0	0	0	0	0	0	0	0	46	0	0	0	46
Amedisys Home Health Care	26	1	9	0	36	0	0	0	0	0	0	0	0	0	0	26	1	9	0	36
Assisted Daily Living Inc	42	8	44	0	94	0	0	0	0	0	0	0	0	0	0	42	8	44	0	94
Bayada Home Health Care Inc	84	1	21	138	244	0	0	0	0	0	0	0	0	0	0	84	1	21	138	244
Bayside Nursing Llc	2	0	11	2	15	0	0	0	0	0	1	0	0	0	1	3	0	11	2	16
Brookdale Home Health Rhode Island	21	1	0	2	24	0	0	0	0	0	0	0	0	0	0	21	1	0	2	24
Capitol Home Care Network Inc	20	5	0	0	25	0	0	0	0	0	0	0	0	0	0	20	5	0	0	25
Care Point Partners	26	0	3	2	31	0	0	0	0	0	0	0	0	0	0	26	0	3	2	31
Cathleen Naughton Associates Inc	47	0	11	2	60	0	0	0	0	0	0	0	0	0	0	47	0	11	2	60
Chartercare Home Health Services	73	0	5	0	78	0	0	0	0	0	1	0	0	0	1	74	0	5	0	79
Comfort Home Care Services	46	1	31	0	78	0	0	0	0	0	0	0	0	0	0	46	1	31	0	78
Community Care Nurses Inc	23	14	12	8	57	0	0	0	0	0	0	0	0	0	0	23	14	12	8	57
Concord Health Services Inc	98	2	5	7	112	0	0	0	0	0	0	0	0	0	0	98	2	5	7	112
Consistent Care Corporation	20	1	3	0	24	0	0	0	0	0	0	0	0	0	0	20	1	3	0	24
Dependable Healthcare Services Llc Db	26	1	2	0	29	0	0	0	0	0	0	0	0	0	0	26	1	2	0	29
Eldercare Consultants Home Care	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
Gleason Medical Services Inc	23	0	12	0	35	0	0	0	0	0	0	0	0	0	0	23	0	12	0	35
H & T Medicals Inc	85	1	7	4	97	0	0	0	0	0	0	0	0	0	0	85	1	7	4	97
Health Care Connections Nursing Services Inc	20	1	39	0	60	0	0	0	0	0	0	0	0	0	0	20	1	39	0	60
Health Touch Inc	76	0	0	2	78	0	0	0	0	0	0	0	0	0	0	76	0	0	2	78
Healthy Babies Happy Moms Inc Db	5	0	0	0	5	0	0	0	0	0	6	0	0	0	6	11	0	0	0	11
Home Care Advantage Chc Inc	33	2	2	3	40	0	0	0	0	0	0	0	0	0	0	33	2	2	3	40

Home Care Advantage Inc	94	2	49	12	157	0	0	0	0	0	0	0	0	0	0	94	2	49	12	157
Home Care Services Of Ri Inc	57	0	1	0	58	0	0	0	0	0	0	0	0	0	0	57	0	1	0	58
Homefront Health Care	278	1	51	0	330	0	0	0	0	0	30	5	2	27	64	308	6	53	27	394
Hope Nursing Home Care Llc	211	0	5	0	216	0	0	0	0	0	0	0	0	0	0	211	0	5	0	216
Independence Health Services Llc	30	0	0	0	30	0	0	0	0	0	1	0	0	0	1	31	0	0	0	31
Infusion Resource Llc	35	0	1	0	36	0	0	0	0	0	0	0	0	0	0	35	0	1	0	36
Interim Health Care	50	1	10	9	70	0	0	0	0	0	0	0	0	0	0	50	1	10	9	70
Jamestown Home Healthcare	20	1	3	0	24	0	0	0	0	0	0	0	0	0	0	20	1	3	0	24
Lifetime Medical Support Services	6	0	5	0	11	0	0	0	0	0	0	0	0	0	0	6	0	5	0	11
Morning Star Homecare Llc	70	1	4	0	75	0	0	0	0	0	0	0	0	0	0	70	1	4	0	75
New England Home Infusion	13	0	3	0	16	0	0	0	0	0	0	0	0	4	4	13	0	3	4	20
Newcare Llc	32	0	1	1	34	0	0	0	0	0	0	0	0	0	0	32	0	1	1	34
Ocean State Nursing Service Inc	220	0	29	7	256	0	0	0	0	0	0	0	0	0	0	220	0	29	7	256
Pinnacle Home Care Llc	57	2	2	0	61	0	0	0	0	0	0	0	0	0	0	57	2	2	0	61
South County Quality Care	59	2	2	0	63	0	0	0	0	0	0	0	0	0	0	59	2	2	0	63
Southcoast Visiting Nurse Association Inc	277	3	13	0	293	1	0	0	0	1	0	0	0	0	0	278	3	13	0	294
Specialty Home Care Services Inc	68	3	1	0	72	0	0	0	0	0	0	0	0	0	0	68	3	1	0	72
Visiting Nurse Service Of Greater RI	95	1	0	2	98	0	0	0	0	0	0	0	0	0	0	95	1	0	2	98
VNA Of Care New England	223	3	4	0	230	0	0	0	0	0	29	0	0	0	29	252	3	4	0	259
VNA Of Rhode Island	104	4	2	0	110	0	0	0	0	0	0	0	0	0	0	104	4	2	0	110
VNA Support Services	12	1	0	0	13	0	0	0	0	0	0	0	0	0	0	12	1	0	0	13
VNA Home Health Services	128	1	0	17	146	0	0	0	0	0	30	0	0	0	30	158	1	0	17	176
VNS Of Newport And Bristol Counties Inc	215	0	25	0	240	0	0	0	0	0	81	0	5	0	86	296	0	30	0	326
Walgreens Infusion Services	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	21	0	0	0	21
TOTAL	3,358	67	462	249	4,136	1	0	0	0	1	179	5	7	31	222	3,538	72	469	280	4,359

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated
Med Exemp: Medical Exemption
Ref: Refused
Unk: Unknown Status

Home Nursing Care Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Access Healthcare Inc	70%	0%	13%	17%	100%	---	---	---	---	---	---	---	---	---	---	70%	0%	13%	17%	100%
All About Home Care Llc	63%	2%	22%	13%	100%	---	---	---	---	---	---	---	---	---	---	63%	2%	22%	13%	100%
Alternative Care Medical Services	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Amedisys Home Health Care	72%	3%	25%	0%	100%	---	---	---	---	---	---	---	---	---	---	72%	3%	25%	0%	100%
Assisted Daily Living Inc	45%	9%	47%	0%	100%	---	---	---	---	---	---	---	---	---	---	45%	9%	47%	0%	100%
Bayada Home Health Care Inc	34%	0%	9%	57%	100%	---	---	---	---	---	---	---	---	---	---	34%	0%	9%	57%	100%
Bayside Nursing Llc	13%	0%	73%	13%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	19%	0%	69%	13%	100%
Brookdale Home Health Rhode Island	88%	4%	0%	8%	100%	---	---	---	---	---	---	---	---	---	---	88%	4%	0%	8%	100%
Capitol Home Care Network Inc	80%	20%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	80%	20%	0%	0%	100%
Care Point Partners	84%	0%	10%	6%	100%	---	---	---	---	---	---	---	---	---	---	84%	0%	10%	6%	100%
Cathleen Naughton Associates Inc	78%	0%	18%	3%	100%	---	---	---	---	---	---	---	---	---	---	78%	0%	18%	3%	100%
Chartercare Home Health Services	94%	0%	6%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	94%	0%	6%	0%	100%
Comfort Home Care Services	59%	1%	40%	0%	100%	---	---	---	---	---	---	---	---	---	---	59%	1%	40%	0%	100%
Community Care Nurses Inc	40%	25%	21%	14%	100%	---	---	---	---	---	---	---	---	---	---	40%	25%	21%	14%	100%
Concord Health Services Inc	88%	2%	4%	6%	100%	---	---	---	---	---	---	---	---	---	---	88%	2%	4%	6%	100%
Consistent Care Corporation	83%	4%	13%	0%	100%	---	---	---	---	---	---	---	---	---	---	83%	4%	13%	0%	100%
Dependable Healthcare Services Llc Db	90%	3%	7%	0%	100%	---	---	---	---	---	---	---	---	---	---	90%	3%	7%	0%	100%
Eldercare Consultants Home Care	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Gleason Medical Services Inc	66%	0%	34%	0%	100%	---	---	---	---	---	---	---	---	---	---	66%	0%	34%	0%	100%
H & T Medicals Inc	88%	1%	7%	4%	100%	---	---	---	---	---	---	---	---	---	---	88%	1%	7%	4%	100%
Health Care Connections Nursing Services Inc	33%	2%	65%	0%	100%	---	---	---	---	---	---	---	---	---	---	33%	2%	65%	0%	100%
Health Touch Inc	97%	0%	0%	3%	100%	---	---	---	---	---	---	---	---	---	---	97%	0%	0%	3%	100%
Healthy Babies Happy Moms Inc Db	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Home Care Advantage Chc Inc	83%	5%	5%	8%	100%	---	---	---	---	---	---	---	---	---	---	83%	5%	5%	8%	100%

Home Care Advantage Inc	60%	1%	31%	8%	100%	---	---	---	---	---	---	---	---	---	---	60%	1%	31%	8%	100%
Home Care Services Of Ri Inc	98%	0%	2%	0%	100%	---	---	---	---	---	---	---	---	---	---	98%	0%	2%	0%	100%
Homefront Health Care	84%	0%	15%	0%	100%	---	---	---	---	---	47%	8%	3%	42%	100%	78%	2%	13%	7%	100%
Hope Nursing Home Care Llc	98%	0%	2%	0%	100%	---	---	---	---	---	---	---	---	---	---	98%	0%	2%	0%	100%
Independence Health Services Llc	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Infusion Resource Llc	97%	0%	3%	0%	100%	---	---	---	---	---	---	---	---	---	---	97%	0%	3%	0%	100%
Interim Health Care	71%	1%	14%	13%	100%	---	---	---	---	---	---	---	---	---	---	71%	1%	14%	13%	100%
Jamestown Home Healthcare	83%	4%	13%	0%	100%	---	---	---	---	---	---	---	---	---	---	83%	4%	13%	0%	100%
Lifetime Medical Support Services	55%	0%	45%	0%	100%	---	---	---	---	---	---	---	---	---	---	55%	0%	45%	0%	100%
Morning Star Homecare Llc	93%	1%	5%	0%	100%	---	---	---	---	---	---	---	---	---	---	93%	1%	5%	0%	100%
New England Home Infusion	81%	0%	19%	0%	100%	---	---	---	---	---	0%	0%	0%	100%	100%	65%	0%	15%	20%	100%
Newcare Llc	94%	0%	3%	3%	100%	---	---	---	---	---	---	---	---	---	---	94%	0%	3%	3%	100%
Ocean State Nursing Service Inc	86%	0%	11%	3%	100%	---	---	---	---	---	---	---	---	---	---	86%	0%	11%	3%	100%
Pinnacle Home Care Llc	93%	3%	3%	0%	100%	---	---	---	---	---	---	---	---	---	---	93%	3%	3%	0%	100%
South County Quality Care	94%	3%	3%	0%	100%	---	---	---	---	---	---	---	---	---	---	94%	3%	3%	0%	100%
Southcoast Visiting Nurse Association Inc	95%	1%	4%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	95%	1%	4%	0%	100%
Specialty Home Care Services Inc	94%	4%	1%	0%	100%	---	---	---	---	---	---	---	---	---	---	94%	4%	1%	0%	100%
Visiting Nurse Service Of Greater RI	97%	1%	0%	2%	100%	---	---	---	---	---	---	---	---	---	---	97%	1%	0%	2%	100%
VNA Of Care New England	97%	1%	2%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	97%	1%	2%	0%	100%
VNA Of Rhode Island	95%	4%	2%	0%	100%	---	---	---	---	---	---	---	---	---	---	95%	4%	2%	0%	100%
VNA Support Services	92%	8%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	92%	8%	0%	0%	100%
VNA Home Health Services	88%	1%	0%	12%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	90%	1%	0%	10%	100%
VNS Of Newport And Bristol Counties Inc	90%	0%	10%	0%	100%	---	---	---	---	---	94%	0%	6%	0%	100%	91%	0%	9%	0%	100%
Walgreens Infusion Services	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
TOTAL	81%	2%	11%	6%	100%	100%	0%	0%	0%	100%	81%	2%	3%	14%	100%	81%	2%	11%	6%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Hospice Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Beacon Hospice A Division Of Amedisys	99	1	10	6	116	0	0	0	0	0	43	3	9	11	66	142	4	19	17	182
Gentiva Hospice	71	2	5	23	101	0	0	0	0	0	6	0	0	19	25	77	2	5	42	126
Home & Hospice Care Of RI	256	0	26	18	300	6	0	0	0	6	167	1	10	109	287	429	1	36	127	593
Hospice And Palliative Care	32	1	1	0	34	1	0	0	0	1	33	2	5	0	40	66	3	6	0	75
Vna Of Care New England	17	0	0	0	17	0	0	0	0	0	6	0	0	0	6	23	0	0	0	23
Vna Of Rhode Island	6	0	1	0	7	2	0	0	0	2	1	0	0	0	1	9	0	1	0	10
TOTAL	481	4	43	47	575	9	0	0	0	9	256	6	24	139	425	746	10	67	186	1,009

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Hospice Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Beacon Hospice A Division Of Amedisys	85%	1%	9%	5%	100%	---	---	---	---	---	65%	5%	14%	17%	100%	78%	2%	10%	9%	100%
Gentiva Hospice	70%	2%	5%	23%	100%	---	---	---	---	---	24%	0%	0%	76%	100%	61%	2%	4%	33%	100%
Home & Hospice Care Of RI	85%	0%	9%	6%	100%	100%	0%	0%	0%	100%	58%	0%	3%	38%	100%	72%	0%	6%	21%	100%
Hospice And Palliative Care	94%	3%	3%	0%	100%	100%	0%	0%	0%	100%	83%	5%	13%	0%	100%	88%	4%	8%	0%	100%
Vna Of Care New England	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Vna Of Rhode Island	86%	0%	14%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	90%	0%	10%	0%	100%
TOTAL	84%	1%	7%	8%	100%	100%	0%	0%	0%	100%	60%	1%	6%	33%	100%	74%	1%	7%	18%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Hospital Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Butler Hospital	895	3	31	0	929	323	1	12	0	336	114	0	0	0	114	1,332	4	43	0	1,379
Eleanor Slater Hospital	794	4	54	75	927	46	0	20	0	66	126	0	0	29	155	966	4	74	104	1,148
Emma Pendleton Bradley Hospital	846	6	129	0	981	7	0	0	2	9	32	0	7	0	39	885	6	136	2	1,029
Kent County Memorial Hospital	2,395	8	149	4	2,556	310	0	6	6	322	899	4	11	1	915	3,604	12	166	11	3,793
Landmark Medical Center	885	7	85	38	1,015	225	0	19	26	270	119	0	7	2	128	1,229	7	111	66	1,413
Memorial Hospital of Rhode Island	1,445	7	115	0	1,567	241	1	6	62	310	121	1	0	0	122	1,807	9	121	62	1,999
Newport Hospital	805	4	74	0	883	214	1	3	42	260	276	0	13	0	289	1,295	5	90	42	1,432
Rhode Island Hospital	7,137	16	1,050	0	8,203	1,287	1	19	215	1,522	1,573	1	43	0	1,617	9,997	18	1,112	215	11,342
Roger Williams Medical Center	843	2	91	13	949	381	0	23	5	409	137	0	15	3	155	1,361	2	129	21	1,513
South County Hospital	762	4	0	0	766	135	0	0	0	135	215	0	0	0	215	1,112	4	0	0	1,116
St Joseph Health Services of Ri	1,095	5	135	49	1,284	261	2	16	102	381	208	0	52	7	267	1,564	7	203	158	1,932
The Miriam Hospital	2,408	7	300	0	2,715	859	2	21	76	958	841	1	26	0	868	4,108	10	347	76	4,541
Westerly Hospital	589	8	63	2	662	89	0	3	2	94	154	0	11	5	170	832	8	77	9	926
Women & Infants Hospital of RI	2,768	14	154	16	2,952	710	5	0	0	715	744	1	0	0	745	4,222	20	154	16	4,412
TOTAL	23,667	95	2,430	197	26,389	5,088	13	148	538	5,787	5,559	8	185	47	5,799	34,314	116	2,763	782	37,975

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated
 Med Exemp: Medical Exemption
 Ref: Refused
 Unk: Unknown Status

Hospital Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Butler Hospital	96%	0%	3%	0%	100%	96%	0%	4%	0%	100%	100%	0%	0%	0%	100%	97%	0%	3%	0%	100%
Eleanor Slater Hospital	86%	0%	6%	8%	100%	70%	0%	30%	0%	100%	81%	0%	0%	19%	100%	84%	0%	6%	9%	100%
Emma Pendleton Bradley Hospital	86%	1%	13%	0%	100%	78%	0%	0%	22%	100%	82%	0%	18%	0%	100%	86%	1%	13%	0%	100%
Kent County Memorial Hospital	94%	0%	6%	0%	100%	96%	0%	2%	2%	100%	98%	0%	1%	0%	100%	95%	0%	4%	0%	100%
Landmark Medical Center	87%	1%	8%	4%	100%	83%	0%	7%	10%	100%	93%	0%	5%	2%	100%	87%	0%	8%	5%	100%
Memorial Hospital of Rhode Island	92%	0%	7%	0%	100%	78%	0%	2%	20%	100%	99%	1%	0%	0%	100%	90%	0%	6%	3%	100%
Newport Hospital	91%	0%	8%	0%	100%	82%	0%	1%	16%	100%	96%	0%	4%	0%	100%	90%	0%	6%	3%	100%
Rhode Island Hospital	87%	0%	13%	0%	100%	85%	0%	1%	14%	100%	97%	0%	3%	0%	100%	88%	0%	10%	2%	100%
Roger Williams Medical Center	89%	0%	10%	1%	100%	93%	0%	6%	1%	100%	88%	0%	10%	2%	100%	90%	0%	9%	1%	100%
South County Hospital	99%	1%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
St Joseph Health Services of Ri	85%	0%	11%	4%	100%	69%	1%	4%	27%	100%	78%	0%	19%	3%	100%	81%	0%	11%	8%	100%
The Miriam Hospital	89%	0%	11%	0%	100%	90%	0%	2%	8%	100%	97%	0%	3%	0%	100%	90%	0%	8%	2%	100%
Westerly Hospital	89%	1%	10%	0%	100%	95%	0%	3%	2%	100%	91%	0%	6%	3%	100%	90%	1%	8%	1%	100%
Women & Infants Hospital of RI	94%	0%	5%	1%	100%	99%	1%	0%	0%	100%	100%	0%	0%	0%	100%	96%	0%	3%	0%	100%
TOTAL	90%	0%	9%	1%	100%	88%	0%	3%	9%	100%	96%	0%	3%	1%	100%	90%	0%	7%	2%	100%

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated
 Med Exemp: Medical Exemption
 Ref: Refused
 Unk: Unknown Status

Kidney Disease Treatment Center Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Dialysis Center Of East Providence	17	0	4	0	21	7	0	0	0	7	0	0	0	0	0	24	0	4	0	28
Dialysis Center Of Johnston	14	0	5	0	19	0	0	0	0	0	0	0	0	0	0	14	0	5	0	19
Dialysis Center Of Pawtucket	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18
Dialysis Center Of Providence	17	0	0	0	17	9	0	0	0	9	0	0	0	0	0	26	0	0	0	26
Dialysis Center Of Tiverton	18	0	1	0	19	5	0	1	0	6	0	0	0	0	0	23	0	2	0	25
Dialysis Center Of Wakefield Llc	20	0	0	0	20	3	0	0	0	3	0	0	0	1	1	23	0	0	1	24
Dialysis Center Of West Warwick Llc	18	0	3	0	21	0	0	0	0	0	0	0	0	0	0	18	0	3	0	21
Dialysis Center Of Westerly Llc	6	1	5	0	12	2	0	0	0	2	0	0	0	0	0	8	1	5	0	14
Dialysis Center Of Woonsocket Llc	13	0	2	0	15	2	0	0	0	2	0	0	0	0	0	15	0	2	0	17
Fresenius Medical Care Of Pawtucket	12	0	3	0	15	6	0	0	0	6	0	0	0	0	0	18	0	3	0	21
Fresenius Medical Care Of Providence	23	1	0	0	24	0	0	0	0	0	0	0	0	0	0	23	1	0	0	24
Fresenius Medical Care Of Warwick	26	1	6	1	34	16	0	0	0	16	0	0	1	0	1	42	1	7	1	51
North Providence Renal Center	16	0	0	0	16	5	0	0	0	5	0	0	0	0	0	21	0	0	0	21
TOTAL	218	3	29	1	251	55	0	1	0	56	0	0	1	1	2	273	3	31	2	309

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated
 Med Exemp: Medical Exemption
 Ref: Refused
 Unk: Unknown Status

Kidney Disease Treatment Center Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Dialysis Center Of East Providence	81%	0%	19%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	86%	0%	14%	0%	100%
Dialysis Center Of Johnston	74%	0%	26%	0%	100%	---	---	---	---	---	---	---	---	---	---	74%	0%	26%	0%	100%
Dialysis Center Of Pawtucket	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Dialysis Center Of Providence	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
Dialysis Center Of Tiverton	95%	0%	5%	0%	100%	83%	0%	17%	0%	100%	---	---	---	---	---	92%	0%	8%	0%	100%
Dialysis Center Of Wakefield Llc	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	96%	0%	0%	4%	100%
Dialysis Center Of West Warwick Llc	86%	0%	14%	0%	100%	---	---	---	---	---	---	---	---	---	---	86%	0%	14%	0%	100%
Dialysis Center Of Westerly Llc	50%	8%	42%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	57%	7%	36%	0%	100%
Dialysis Center Of Woonsocket Llc	87%	0%	13%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	88%	0%	12%	0%	100%
Fresenius Medical Care Of Pawtucket	80%	0%	20%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	86%	0%	14%	0%	100%
Fresenius Medical Care Of Providence	96%	4%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	96%	4%	0%	0%	100%
Fresenius Medical Care Of Warwick	76%	3%	18%	3%	100%	100%	0%	0%	0%	100%	0%	0%	100%	0%	100%	82%	2%	14%	2%	100%
North Providence Renal Center	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
TOTAL	87%	1%	12%	0%	100%	98%	0%	2%	0%	100%	0%	0%	50%	50%	100%	88%	1%	10%	1%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Nursing Facility Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Alpine Nursing Home Inc	62	0	5	16	83	4	0	0	0	4	0	0	0	29	29	66	0	5	45	116
Apple Rehab Clipper	75	2	14	0	91	0	0	0	0	0	0	0	0	0	0	75	2	14	0	91
Apple Rehab Watch Hill	65	3	6	0	74	0	0	0	0	0	0	0	0	0	0	65	3	6	0	74
Avalon Nursing Home	32	0	0	0	32	5	0	0	0	5	0	0	0	0	0	37	0	0	0	37
Ballou Home For The Aged	79	0	0	0	79	4	0	0	0	4	2	0	2	0	4	85	0	2	0	87
Bannister House Inc	122	0	28	0	150	17	0	0	0	17	0	0	0	0	0	139	0	28	0	167
Bayberry Commons	104	0	7	0	111	10	0	1	0	11	2	0	0	0	2	116	0	8	0	124
Berkshire Place	189	0	10	2	201	4	0	1	3	8	0	0	0	0	0	193	0	11	5	209
Bethany Home Of Rhode Island	79	0	6	0	85	4	0	0	0	4	0	0	0	0	0	83	0	6	0	89
Brentwood Nursing Home	105	0	0	0	105	0	0	0	0	0	0	0	0	0	0	105	0	0	0	105
Briarcliffe Manor	162	0	0	0	162	7	0	0	0	7	0	0	0	0	0	169	0	0	0	169
Cedar Crest Nursing Centre Inc	237	0	0	0	237	12	0	0	6	18	76	0	0	0	76	325	0	0	6	331
Charlesgate Nursing Center	148	0	76	0	224	30	0	3	0	33	9	0	0	0	9	187	0	79	0	266
Cherry Hill Manor	123	2	98	0	223	5	0	0	0	5	0	0	0	0	0	128	2	98	0	228
Chestnut Terrace Nursing And Rehabilitation C	73	1	3	0	77	8	0	4	0	12	0	0	0	0	0	81	1	7	0	89
Cortland Place	122	0	1	0	123	9	0	1	0	10	0	0	0	0	0	131	0	2	0	133
Coventry Skilled Nursing And Rehabilitation	205	3	13	7	228	4	0	0	0	4	12	0	0	0	12	221	3	13	7	244
Cra-Mar Meadows	42	0	2	0	44	0	0	0	0	0	0	0	0	0	0	42	0	2	0	44
Crestwood Nursing & Conv Home Inc	87	0	3	0	90	14	1	1	0	16	0	0	0	0	0	101	1	4	0	106
Eastgate Nursing & Rehabilitation Center	96	1	8	7	112	11	0	3	0	14	0	0	0	0	0	107	1	11	7	126
Elmhurst Extended Care	248	0	18	11	277	6	0	0	0	6	3	0	1	0	4	257	0	19	11	287
Elmwood Health Center	82	0	3	0	85	9	0	0	0	9	7	0	0	0	7	98	0	3	0	101
Emerald Bay Retirement Living	40	1	1	0	42	3	0	0	0	3	2	0	0	0	2	45	1	1	0	47
Epoch Senior Health Care On Blackstone Boule	110	5	5	10	130	9	0	0	0	9	0	0	0	0	0	119	5	5	10	139
Evergreen House Health Center	197	0	18	22	237	2	0	0	0	2	5	0	0	0	5	204	0	18	22	244
Forest Farm Health Care Center	109	0	8	0	117	7	0	0	0	7	11	0	0	3	14	127	0	8	3	138

Friendly Home Inc The	88	0	2	0	90	0	0	0	0	0	0	0	0	0	0	88	0	2	0	90
Golden Crest Nursing Centre	203	0	9	0	212	24	0	0	2	26	9	0	0	0	9	236	0	9	2	247
Grace Barker Nursing Center	112	0	3	0	115	8	0	0	0	8	9	0	0	0	9	129	0	3	0	132
Grand Islander Center	202	2	0	0	204	4	0	0	0	4	1	0	0	0	1	207	2	0	0	209
Grandview Center	102	1	1	0	104	0	0	0	0	0	10	0	0	0	10	112	1	1	0	114
Greenville Skilled Nursing And Rehabilitation	147	0	30	7	184	6	0	1	6	13	1	0	0	0	1	154	0	31	13	198
Greenwood Center	134	4	3	10	151	0	0	0	0	0	0	0	0	0	0	134	4	3	10	151
Hallworth House	101	0	24	0	125	0	0	0	0	0	1	1	0	0	2	102	1	24	0	127
Harris Health Care Center North	42	0	0	0	42	5	0	0	3	8	1	0	0	0	1	48	0	0	3	51
Harris Health Center Llc	33	0	2	0	35	1	0	0	0	1	0	0	0	0	0	34	0	2	0	36
Hattie Ide Chaffee Home	115	0	7	0	122	9	0	1	0	10	1	0	0	0	1	125	0	8	0	133
Heatherwood Nursing & Rehabilitation Ctr	137	0	6	0	143	0	0	0	0	0	2	0	0	0	2	139	0	6	0	145
Hebert Nursing Home	167	2	25	10	204	9	0	0	5	14	0	0	0	1	1	176	2	25	16	219
Heritage Hills Nursing & Rehabilitation Center	114	0	9	0	123	0	0	0	0	0	1	0	0	0	1	115	0	9	0	124
Holiday Retirement Home Inc	192	0	17	4	213	15	0	3	6	24	0	0	0	0	0	207	0	20	10	237
Hopkins Manor Ltd	221	2	11	3	237	9	0	0	0	9	3	0	0	0	3	233	2	11	3	249
Jeanne Jugan Residence	66	3	13	13	95	29	0	0	0	29	17	0	0	0	17	112	3	13	13	141
John Clarke Retirement Center The	86	0	0	0	86	5	0	0	0	5	2	0	0	0	2	93	0	0	0	93
Kent Regency Center	201	3	7	0	211	0	0	0	0	0	71	2	0	0	73	272	5	7	0	284
Kindred Transitional Care And Rehabilitation-O	160	1	3	0	164	5	0	0	4	9	29	0	0	0	29	194	1	3	4	202
Linn Health Care Center	110	3	19	2	134	16	0	0	0	16	18	0	0	0	18	144	3	19	2	168
Mansion Nursing And Rehab Center	50	0	3	8	61	11	0	0	0	11	0	0	0	0	0	61	0	3	8	72
Morgan Health Center	85	5	10	0	100	9	0	0	0	9	16	0	0	0	16	110	5	10	0	125
Mount St Rita Health Centre	136	10	0	0	146	4	0	0	0	4	30	0	20	0	50	170	10	20	0	200
Nancy Ann Nursing Home Inc	30	0	1	0	31	2	0	0	0	2	2	0	1	0	3	34	0	2	0	36
North Bay Retirement Living	79	0	0	39	118	0	0	0	4	4	0	0	0	0	0	79	0	0	43	122
Oakland Grove Health Care Center	204	1	6	24	235	0	0	0	18	18	0	0	0	16	16	204	1	6	58	269
Orchard View Manor	216	0	15	9	240	2	0	0	0	2	0	0	0	0	0	218	0	15	9	242
Overlook Nursing And Rehabilitation Center	129	0	21	0	150	6	0	1	0	7	2	0	0	0	2	137	0	22	0	159
Park View Nursing Home	84	0	7	8	99	9	0	0	0	9	10	1	0	0	11	103	1	7	8	119
Pawtucket Skilled Nursing And Rehabilitation	93	2	51	0	146	2	0	0	0	2	0	0	0	0	0	95	2	51	0	148
Pine Grove Health Center	64	0	3	0	67	8	0	0	0	8	0	0	0	0	0	72	0	3	0	75
Rhode Island Veterans Home	248	0	23	0	271	0	0	0	0	0	12	0	0	0	12	260	0	23	0	283

Riverview Healthcare Community	180	0	11	0	191	8	0	0	0	8	24	0	2	0	26	212	0	13	0	225
Roberts Health Centre Inc	88	0	0	0	88	7	0	0	0	7	12	0	0	0	12	107	0	0	0	107
Saint Elizabeth Home East Greenwich	199	1	2	0	202	12	0	0	0	12	80	0	0	0	80	291	1	2	0	294
Saint Elizabeth Manor East Bay	236	5	11	0	252	14	0	1	2	17	21	0	0	0	21	271	5	12	2	290
Sakonnet Bay Retirement Living	133	2	0	0	135	0	0	0	0	0	0	0	0	0	0	133	2	0	0	135
Scalabrini Villa	132	2	8	0	142	25	0	0	9	34	0	0	0	0	0	157	2	8	9	176
Scallop Shell Nursing & Rehabilitation Center	137	0	8	2	147	12	1	1	0	14	21	0	0	0	21	170	1	9	2	182
Scandinavian Home Inc	101	0	11	0	112	7	0	0	0	7	2	0	0	0	2	110	0	11	0	121
Shady Acres Inc	53	3	1	9	66	4	0	0	0	4	0	0	0	0	0	57	3	1	9	70
Silver Creek Manor	133	0	0	0	133	8	0	0	0	8	8	0	0	0	8	149	0	0	0	149
South Bay Retirement Living	81	1	0	0	82	0	0	0	0	0	0	0	0	0	0	81	1	0	0	82
South County Nursing And Rehabilitation Ctr	90	1	4	5	100	16	1	0	0	17	1	0	0	0	1	107	2	4	5	118
South Kingstown Nursing And Rehab Ctr	119	1	1	0	121	5	0	0	0	5	1	0	0	0	1	125	1	1	0	127
St Antoine Residence	420	0	19	3	442	11	0	0	0	11	5	0	0	0	5	436	0	19	3	458
St Clare Home	66	0	7	6	79	2	0	0	0	2	1	0	0	2	3	69	0	7	8	84
Steere House Nursing And Rehabilitation Ctr	170	2	8	9	189	26	1	0	0	27	5	0	0	0	5	201	3	8	9	221
Summit Commons Rehabilitation And Health C	162	1	22	0	185	4	0	0	0	4	8	0	0	0	8	174	1	22	0	197
Sunny View Nursing Home Inc	69	0	1	0	70	9	1	0	0	10	0	0	0	0	0	78	1	1	0	80
Tavares Pediatric Center Inc	71	0	1	0	72	7	0	0	0	7	42	0	0	0	42	120	0	1	0	121
Tockwotton On The Waterfront	88	0	2	5	95	4	0	0	0	4	2	0	0	0	2	94	0	2	5	101
Trinity Health And Rehabilitation Center	206	1	22	0	229	9	0	2	11	22	3	0	0	1	4	218	1	24	12	255
Village At Waterman Lake	114	1	6	19	140	28	1	0	0	29	0	0	0	0	0	142	2	6	19	169
Village House Convalescent Home Inc	91	1	0	0	92	1	0	0	0	1	0	0	0	0	0	92	1	0	0	93
Warren Skilled Nursing And Rehabilitation	77	1	6	0	84	10	0	0	0	10	1	0	0	0	1	88	1	6	0	95
Waterview Villa Rehabilitation And Health Care	200	1	1	0	202	19	0	1	0	20	4	0	0	0	4	223	1	2	0	226
West Shore Health Center	167	1	2	0	170	4	0	0	2	6	24	5	0	0	29	195	6	2	2	205
West View Health Care Center	180	0	0	0	180	12	0	0	0	12	87	0	0	0	87	279	0	0	0	279
Westerly Health Center	121	0	5	0	126	13	0	0	1	14	109	0	0	0	109	243	0	5	1	249
Westerly Nursing Home Inc	88	0	6	0	94	10	0	0	0	10	11	0	1	0	12	109	0	7	0	116
Woodpecker Hill Health Center	51	0	1	0	52	5	0	0	0	5	0	0	0	0	0	56	0	1	0	57
Woonsocket Health Centre	179	2	10	8	199	7	0	0	0	7	29	1	0	0	30	215	3	10	8	236
TOTAL	11,346	84	840	278	12,548	681	6	25	82	794	878	10	27	52	967	12,905	100	892	412	14,309

Vacc: Vaccinated
 Med Exemp: Medical Exemption
 Ref: Refused
 Unk: Unknown Status

Nursing Facility Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Alpine Nursing Home Inc	75%	0%	6%	19%	100%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	57%	0%	4%	39%	100%
Apple Rehab Clipper	82%	2%	15%	0%	100%	---	---	---	---	---	---	---	---	---	---	82%	2%	15%	0%	100%
Apple Rehab Watch Hill	88%	4%	8%	0%	100%	---	---	---	---	---	---	---	---	---	---	88%	4%	8%	0%	100%
Avalon Nursing Home	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
Ballou Home For The Aged	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	50%	0%	50%	0%	100%	98%	0%	2%	0%	100%
Bannister House Inc	81%	0%	19%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	83%	0%	17%	0%	100%
Bayberry Commons	94%	0%	6%	0%	100%	91%	0%	9%	0%	100%	100%	0%	0%	0%	100%	94%	0%	6%	0%	100%
Berkshire Place	94%	0%	5%	1%	100%	50%	0%	13%	38%	100%	---	---	---	---	---	92%	0%	5%	2%	100%
Bethany Home Of Rhode Island	93%	0%	7%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	93%	0%	7%	0%	100%
Brentwood Nursing Home	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Briarcliffe Manor	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
Cedar Crest Nursing Centre Inc	100%	0%	0%	0%	100%	67%	0%	0%	33%	100%	100%	0%	0%	0%	100%	98%	0%	0%	2%	100%
Charlesgate Nursing Center	66%	0%	34%	0%	100%	91%	0%	9%	0%	100%	100%	0%	0%	0%	100%	70%	0%	30%	0%	100%
Cherry Hill Manor	55%	1%	44%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	56%	1%	43%	0%	100%
Chestnut Terrace Nursing And Rehabilitation C	95%	1%	4%	0%	100%	67%	0%	33%	0%	100%	---	---	---	---	---	91%	1%	8%	0%	100%
Cortland Place	99%	0%	1%	0%	100%	90%	0%	10%	0%	100%	---	---	---	---	---	98%	0%	2%	0%	100%
Coventry Skilled Nursing And Rehabilitation	90%	1%	6%	3%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	91%	1%	5%	3%	100%
Cra-Mar Meadows	95%	0%	5%	0%	100%	---	---	---	---	---	---	---	---	---	---	95%	0%	5%	0%	100%
Crestwood Nursing & Conv Home Inc	97%	0%	3%	0%	100%	88%	6%	6%	0%	100%	---	---	---	---	---	95%	1%	4%	0%	100%
Eastgate Nursing & Rehabilitation Center	86%	1%	7%	6%	100%	79%	0%	21%	0%	100%	---	---	---	---	---	85%	1%	9%	6%	100%

Elmhurst Extended Care	90%	0%	6%	4%	100%	100%	0%	0%	0%	100%	75%	0%	25%	0%	100%	90%	0%	7%	4%	100%
Elmwood Health Center	96%	0%	4%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	97%	0%	3%	0%	100%
Emerald Bay Retirement Living	95%	2%	2%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	96%	2%	2%	0%	100%
Epoch Senior Health Care On Blackstone Boul	85%	4%	4%	8%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	86%	4%	4%	7%	100%
Evergreen House Health Center	83%	0%	8%	9%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	84%	0%	7%	9%	100%
Forest Farm Health Care Center	93%	0%	7%	0%	100%	100%	0%	0%	0%	100%	79%	0%	0%	21%	100%	92%	0%	6%	2%	100%
Friendly Home Inc The	98%	0%	2%	0%	100%	---	---	---	---	---	---	---	---	---	---	98%	0%	2%	0%	100%
Golden Crest Nursing Centre	96%	0%	4%	0%	100%	92%	0%	0%	8%	100%	100%	0%	0%	0%	100%	96%	0%	4%	1%	100%
Grace Barker Nursing Center	97%	0%	3%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	98%	0%	2%	0%	100%
Grand Islander Center	99%	1%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	99%	1%	0%	0%	100%
Grandview Center	98%	1%	1%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	98%	1%	1%	0%	100%
Greenville Skilled Nursing And Rehabilitation	80%	0%	16%	4%	100%	46%	0%	8%	46%	100%	100%	0%	0%	0%	100%	78%	0%	16%	7%	100%
Greenwood Center	89%	3%	2%	7%	100%	---	---	---	---	---	---	---	---	---	---	89%	3%	2%	7%	100%
Hallworth House	81%	0%	19%	0%	100%	---	---	---	---	---	50%	50%	0%	0%	100%	80%	1%	19%	0%	100%
Harris Health Care Center North	100%	0%	0%	0%	100%	63%	0%	0%	38%	100%	100%	0%	0%	0%	100%	94%	0%	0%	6%	100%
Harris Health Center Llc	94%	0%	6%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	94%	0%	6%	0%	100%
Hattie Ide Chaffee Home	94%	0%	6%	0%	100%	90%	0%	10%	0%	100%	100%	0%	0%	0%	100%	94%	0%	6%	0%	100%
Heatherwood Nursing & Rehabilitation Ctr	96%	0%	4%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	96%	0%	4%	0%	100%
Hebert Nursing Home	82%	1%	12%	5%	100%	64%	0%	0%	36%	100%	0%	0%	0%	100%	100%	80%	1%	11%	7%	100%
Heritage Hills Nursing & Rehabilitation Center	93%	0%	7%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	93%	0%	7%	0%	100%
Holiday Retirement Home Inc	90%	0%	8%	2%	100%	63%	0%	13%	25%	100%	---	---	---	---	---	87%	0%	8%	4%	100%
Hopkins Manor Ltd	93%	1%	5%	1%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	94%	1%	4%	1%	100%
Jeanne Jugan Residence	69%	3%	14%	14%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	79%	2%	9%	9%	100%
John Clarke Retirement Center The	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Kent Regency Center	95%	1%	3%	0%	100%	---	---	---	---	---	97%	3%	0%	0%	100%	96%	2%	2%	0%	100%
Kindred Transitional Care And Rehabilitation-O	98%	1%	2%	0%	100%	56%	0%	0%	44%	100%	100%	0%	0%	0%	100%	96%	0%	1%	2%	100%
Linn Health Care Center	82%	2%	14%	1%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	86%	2%	11%	1%	100%
Mansion Nursing And Rehab Center	82%	0%	5%	13%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	85%	0%	4%	11%	100%
Morgan Health Center	85%	5%	10%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	88%	4%	8%	0%	100%
Mount St Rita Health Centre	93%	7%	0%	0%	100%	100%	0%	0%	0%	100%	60%	0%	40%	0%	100%	85%	5%	10%	0%	100%
Nancy Ann Nursing Home Inc	97%	0%	3%	0%	100%	100%	0%	0%	0%	100%	67%	0%	33%	0%	100%	94%	0%	6%	0%	100%
North Bay Retirement Living	67%	0%	0%	33%	100%	0%	0%	0%	100%	100%	---	---	---	---	---	65%	0%	0%	35%	100%
Oakland Grove Health Care Center	87%	0%	3%	10%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	76%	0%	2%	22%	100%

Orchard View Manor	90%	0%	6%	4%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	90%	0%	6%	4%	100%
Overlook Nursing And Rehabilitation Center	86%	0%	14%	0%	100%	86%	0%	14%	0%	100%	100%	0%	0%	0%	100%	86%	0%	14%	0%	100%
Park View Nursing Home	85%	0%	7%	8%	100%	100%	0%	0%	0%	100%	91%	9%	0%	0%	100%	87%	1%	6%	7%	100%
Pawtucket Skilled Nursing And Rehabilitation	64%	1%	35%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	64%	1%	34%	0%	100%
Pine Grove Health Center	96%	0%	4%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	96%	0%	4%	0%	100%
Rhode Island Veterans Home	92%	0%	8%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	92%	0%	8%	0%	100%
Riverview Healthcare Community	94%	0%	6%	0%	100%	100%	0%	0%	0%	100%	92%	0%	8%	0%	100%	94%	0%	6%	0%	100%
Roberts Health Centre Inc	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Saint Elizabeth Home East Greenwich	99%	0%	1%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	99%	0%	1%	0%	100%
Saint Elizabeth Manor East Bay	94%	2%	4%	0%	100%	82%	0%	6%	12%	100%	100%	0%	0%	0%	100%	93%	2%	4%	1%	100%
Sakonnet Bay Retirement Living	99%	1%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	99%	1%	0%	0%	100%
Scalabrini Villa	93%	1%	6%	0%	100%	74%	0%	0%	26%	100%	---	---	---	---	---	89%	1%	5%	5%	100%
Scallop Shell Nursing & Rehabilitation Center	93%	0%	5%	1%	100%	86%	7%	7%	0%	100%	100%	0%	0%	0%	100%	93%	1%	5%	1%	100%
Scandinavian Home Inc	90%	0%	10%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	91%	0%	9%	0%	100%
Shady Acres Inc	80%	5%	2%	14%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	81%	4%	1%	13%	100%
Silver Creek Manor	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
South Bay Retirement Living	99%	1%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	99%	1%	0%	0%	100%
South County Nursing And Rehabilitation Ctr	90%	1%	4%	5%	100%	94%	6%	0%	0%	100%	100%	0%	0%	0%	100%	91%	2%	3%	4%	100%
South Kingstown Nursing And Rehab Ctr	98%	1%	1%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	98%	1%	1%	0%	100%
St Antoine Residence	95%	0%	4%	1%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	95%	0%	4%	1%	100%
St Clare Home	84%	0%	9%	8%	100%	100%	0%	0%	0%	100%	33%	0%	0%	67%	100%	82%	0%	8%	10%	100%
Steere House Nursing And Rehabilitation Ctr	90%	1%	4%	5%	100%	96%	4%	0%	0%	100%	100%	0%	0%	0%	100%	91%	1%	4%	4%	100%
Summit Commons Rehabilitation And Health C	88%	1%	12%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	88%	1%	11%	0%	100%
Sunny View Nursing Home Inc	99%	0%	1%	0%	100%	90%	10%	0%	0%	100%	---	---	---	---	---	98%	1%	1%	0%	100%
Tavares Pediatric Center Inc	99%	0%	1%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	99%	0%	1%	0%	100%
Tockwotton On The Waterfront	93%	0%	2%	5%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	93%	0%	2%	5%	100%
Trinity Health And Rehabilitation Center	90%	0%	10%	0%	100%	41%	0%	9%	50%	100%	75%	0%	0%	25%	100%	85%	0%	9%	5%	100%
Village At Waterman Lake	81%	1%	4%	14%	100%	97%	3%	0%	0%	100%	---	---	---	---	---	84%	1%	4%	11%	100%
Village House Convalescent Home Inc	99%	1%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	99%	1%	0%	0%	100%
Warren Skilled Nursing And Rehabilitation	92%	1%	7%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	93%	1%	6%	0%	100%
Waterview Villa Rehabilitation And Health Care	99%	0%	0%	0%	100%	95%	0%	5%	0%	100%	100%	0%	0%	0%	100%	99%	0%	1%	0%	100%
West Shore Health Center	98%	1%	1%	0%	100%	67%	0%	0%	33%	100%	83%	17%	0%	0%	100%	95%	3%	1%	1%	100%
West View Health Care Center	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%

Westerly Health Center	96%	0%	4%	0%	100%	93%	0%	0%	7%	100%	100%	0%	0%	0%	100%	98%	0%	2%	0%	100%
Westerly Nursing Home Inc	94%	0%	6%	0%	100%	100%	0%	0%	0%	100%	92%	0%	8%	0%	100%	94%	0%	6%	0%	100%
Woodpecker Hill Health Center	98%	0%	2%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	98%	0%	2%	0%	100%
Woonsocket Health Centre	90%	1%	5%	4%	100%	100%	0%	0%	0%	100%	97%	3%	0%	0%	100%	91%	1%	4%	3%	100%
TOTAL	90%	1%	7%	2%	100%	86%	1%	3%	10%	100%	91%	1%	3%	5%	100%	90%	1%	6%	3%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Nursing Service Agency Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Cross Country Staffing	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Favorite Healthcare Staffing Inc.	12	0	3	24	39	0	0	0	0	0	0	0	0	0	0	12	0	3	24	39
Local Staff Llc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAS Medical Staffing	60	0	35	133	228	0	0	0	0	0	0	0	0	0	0	60	0	35	133	228
Newcare Llc	41	0	3	4	48	0	0	0	0	0	0	0	0	0	0	41	0	3	4	48
Randstad Healthcare	39	0	0	7	46	0	0	0	0	0	0	0	0	0	0	39	0	0	7	46
Ready Nurse Staffing Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	153	0	41	168	362	0	0	0	0	0	0	0	0	0	0	153	0	41	168	362

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Nursing Service Agency Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Cross Country Staffing	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Favorite Healthcare Staffing Inc.	31%	0%	8%	62%	100%	---	---	---	---	---	---	---	---	---	---	31%	0%	8%	62%	100%
Local Staff Llc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MAS Medical Staffing	26%	0%	15%	58%	100%	---	---	---	---	---	---	---	---	---	---	26%	0%	15%	58%	100%
Newcare Llc	85%	0%	6%	8%	100%	---	---	---	---	---	---	---	---	---	---	85%	0%	6%	8%	100%
Randstad Healthcare	85%	0%	0%	15%	100%	---	---	---	---	---	---	---	---	---	---	85%	0%	0%	15%	100%
Ready Nurse Staffing Services	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	42%	0%	11%	46%	100%	---	---	---	---	---	---	---	---	---	---	42%	0%	11%	46%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Organized Ambulatory Care Facility Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Blackstone Valley Comm Health Care Inc	15	1	0	0	16	0	0	0	0	0	0	0	0	0	0	15	1	0	0	16
Blackstone Valley Community Health Care	82	1	1	0	84	0	0	0	0	0	0	0	0	0	0	82	1	1	0	84
Blackstone Valley Community Health Care /Ce	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14
Block Island Medical Center	5	0	1	0	6	0	0	0	0	0	0	0	0	0	0	5	0	1	0	6
Capitol Hill Health Center	22	0	0	13	35	3	0	0	0	3	0	0	0	0	0	25	0	0	13	38
Central Health Center	41	0	0	0	41	0	0	0	1	1	0	0	0	0	0	41	0	0	1	42
Chafee Health Center	35	0	0	0	35	1	0	0	0	1	0	0	0	0	0	36	0	0	0	36
East Bay Family Health Care-East Providence	15	0	0	0	15	0	0	0	0	0	3	0	0	0	3	18	0	0	0	18
East Providence Urgent Care	28	0	0	0	28	0	0	0	0	0	0	0	0	0	0	28	0	0	0	28
Ebcap East Bay Family Health Care Newport	12	0	0	0	12	0	0	0	0	0	3	0	0	0	3	15	0	0	0	15
Epoch Sleep Centers Lincoln	27	0	0	0	27	0	0	0	0	0	0	0	0	0	0	27	0	0	0	27
Epoch Sleep Centers Llc	11	2	1	0	14	7	0	5	0	12	0	0	0	0	0	18	2	6	0	26
Everett C Wilcox Family Health Center	13	0	1	1	15	3	0	0	0	3	0	0	0	0	0	16	0	1	1	18
Family Health Services Cranston	43	0	2	1	46	7	0	4	0	11	0	0	0	0	0	50	0	6	1	57
Family Health Services Of Coventry	11	0	0	0	11	3	0	0	0	3	0	0	0	0	0	14	0	0	0	14
Kidney Health Center Of East Providence	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Kidney Health Center Of Woonsocket	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Linden Tree Family Health Center	18	0	0	0	18	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18
Olneyville Health Center	38	0	0	2	40	0	0	0	0	0	0	0	0	0	0	38	0	0	2	40
Primary Care Partners	8	0	2	0	10	1	0	0	0	1	0	0	0	0	0	9	0	2	0	11
Prov Comm Health Centers Inc At Crossroads	8	0	2	0	10	0	0	0	0	0	0	0	0	0	0	8	0	2	0	10
Providence Community Health Centers Dental	13	0	1	3	17	0	0	0	0	0	0	0	0	0	0	13	0	1	3	17
Providence Community Health Centers Inc	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8
Rhode Island Free Clinic Inc	11	0	3	5	19	0	0	0	140	140	0	0	0	574	574	11	0	3	719	733

Roger Williams Radiation Therapy Llc	18	0	2	0	20	0	0	0	0	0	0	0	0	0	0	18	0	2	0	20
Roger Williams Sleep Disorders Center	5	0	2	0	7	1	0	0	0	1	0	0	0	0	0	6	0	2	0	8
South County Radiation Therapy Llc	15	0	4	0	19	0	0	0	0	0	0	0	0	0	0	15	0	4	0	19
Southern New Engl Regional Cancer Center Llc	13	1	0	1	15	0	0	0	0	0	0	0	0	0	0	13	1	0	1	15
The Providence Community Health Centers At	7	0	1	1	9	0	0	0	0	0	0	0	0	0	0	7	0	1	1	9
The Providence Community Health Centers/Pra	64	0	6	15	85	0	0	0	0	0	0	0	0	0	0	64	0	6	15	85
Thundermist Health Center Dental Center	68	0	22	0	90	0	0	0	0	0	0	0	0	0	0	68	0	22	0	90
Thundermist Health Center Of South County	73	0	1	0	74	0	0	0	0	0	5	0	0	0	5	78	0	1	0	79
Thundermist Health Center Of West Warwick D	22	0	6	0	28	0	0	0	0	0	0	0	1	0	1	22	0	7	0	29
Thundermist Health Center Of Woonsocket	104	0	10	0	114	1	0	0	0	1	34	0	2	0	36	139	0	12	0	151
Thundermist Health Center-West Warwick Med	83	0	6	0	89	2	0	0	0	2	28	0	1	0	29	113	0	7	0	120
Well One Primary Medi & Dent Care: N. Kingste	22	0	0	0	22	1	0	0	0	1	2	0	0	0	2	25	0	0	0	25
Well One Primary Medi & Dent Care: Foster	12	0	1	0	13	0	0	0	0	0	0	0	0	0	0	12	0	1	0	13
Well One Primary Medi & Dent Care: Pascoag	67	1	3	0	71	0	0	0	0	0	2	0	0	0	2	69	1	3	0	73
Wood River Health Services	63	1	1	0	65	0	0	0	0	0	0	0	0	0	0	63	1	1	0	65
TOTAL	1,116	7	79	42	1,244	30	0	9	141	180	77	0	4	574	655	1,223	7	92	757	2,079

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Organized Ambulatory Care Facility Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Blackstone Valley Comm Health Care Inc	94%	6%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	94%	6%	0%	0%	100%
Blackstone Valley Community Health Care	98%	1%	1%	0%	100%	---	---	---	---	---	---	---	---	---	---	98%	1%	1%	0%	100%
Blackstone Valley Community Health Care /Ce	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Block Island Medical Center	83%	0%	17%	0%	100%	---	---	---	---	---	---	---	---	---	---	83%	0%	17%	0%	100%
Capitol Hill Health Center	63%	0%	0%	37%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	66%	0%	0%	34%	100%
Central Health Center	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	---	---	---	---	---	98%	0%	0%	2%	100%
Chafee Health Center	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
East Bay Family Health Care-East Providence	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
East Providence Urgent Care	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Ebcap East Bay Family Health Care Newport	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Epoch Sleep Centers Lincoln	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Epoch Sleep Centers Llc	79%	14%	7%	0%	100%	58%	0%	42%	0%	100%	---	---	---	---	---	69%	8%	23%	0%	100%
Everett C Wilcox Family Health Center	87%	0%	7%	7%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	89%	0%	6%	6%	100%
Family Health Services Cranston	93%	0%	4%	2%	100%	64%	0%	36%	0%	100%	---	---	---	---	---	88%	0%	11%	2%	100%
Family Health Services Of Coventry	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
Kidney Health Center Of East Providence	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Kidney Health Center Of Woonsocket	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Linden Tree Family Health Center	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Olneyville Health Center	95%	0%	0%	5%	100%	---	---	---	---	---	---	---	---	---	---	95%	0%	0%	5%	100%
Primary Care Partners	80%	0%	20%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	82%	0%	18%	0%	100%
Prov Comm Health Centers Inc At Crossroads	80%	0%	20%	0%	100%	---	---	---	---	---	---	---	---	---	---	80%	0%	20%	0%	100%
Providence Community Health Centers Dental	76%	0%	6%	18%	100%	---	---	---	---	---	---	---	---	---	---	76%	0%	6%	18%	100%
Providence Community Health Centers Inc	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
Rhode Island Free Clinic Inc	58%	0%	16%	26%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	2%	0%	0%	98%	100%

Roger Williams Radiation Therapy Llc	90%	0%	10%	0%	100%	---	---	---	---	---	---	---	---	---	---	90%	0%	10%	0%	100%
Roger Williams Sleep Disorders Center	71%	0%	29%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	75%	0%	25%	0%	100%
South County Radiation Therapy Llc	79%	0%	21%	0%	100%	---	---	---	---	---	---	---	---	---	---	79%	0%	21%	0%	100%
Southern New Engl Regional Cancer Center Llc	87%	7%	0%	7%	100%	---	---	---	---	---	---	---	---	---	---	87%	7%	0%	7%	100%
The Providence Community Health Centers At	78%	0%	11%	11%	100%	---	---	---	---	---	---	---	---	---	---	78%	0%	11%	11%	100%
The Providence Community Health Centers/Pra	75%	0%	7%	18%	100%	---	---	---	---	---	---	---	---	---	---	75%	0%	7%	18%	100%
Thundermist Health Center Dental Center	76%	0%	24%	0%	100%	---	---	---	---	---	---	---	---	---	---	76%	0%	24%	0%	100%
Thundermist Health Center Of South County	99%	0%	1%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	99%	0%	1%	0%	100%
Thundermist Health Center Of West Warwick D	79%	0%	21%	0%	100%	---	---	---	---	---	0%	0%	100%	0%	100%	76%	0%	24%	0%	100%
Thundermist Health Center Of Woonsocket	91%	0%	9%	0%	100%	100%	0%	0%	0%	100%	94%	0%	6%	0%	100%	92%	0%	8%	0%	100%
Thundermist Health Center-West Warwick Med	93%	0%	7%	0%	100%	100%	0%	0%	0%	100%	97%	0%	3%	0%	100%	94%	0%	6%	0%	100%
Well One Primary Medi & Dent Care: N. Kingsto	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%
Well One Primary Medi & Dent Care: Foster	92%	0%	8%	0%	100%	---	---	---	---	---	---	---	---	---	---	92%	0%	8%	0%	100%
Well One Primary Medi & Dent Care: Pascoag	94%	1%	4%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%	95%	1%	4%	0%	100%
Wood River Health Services	97%	2%	2%	0%	100%	---	---	---	---	---	---	---	---	---	---	97%	2%	2%	0%	100%
TOTAL	90%	1%	6%	3%	100%	17%	0%	5%	78%	100%	12%	0%	1%	88%	100%	59%	0%	4%	36%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status

Phy. Amb. Surg. Healthcare Worker Influenza Vaccination Status (Numbers), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Dudley Street Operatory Llc	15	0	0	0	15	5	0	0	0	5	0	0	0	0	0	20	0	0	0	20
East Bay Endoscopy Center Llc	5	0	1	0	6	2	0	0	0	2	0	0	0	0	0	7	0	1	0	8
Orthopaedic Associates Inc	7	0	0	0	7	13	0	0	0	13	0	0	0	0	0	20	0	0	0	20
Providence Access Care	8	0	2	0	10	3	0	0	0	3	0	0	0	0	0	11	0	2	0	13
RI Vascular Inst A Div Of Ri Med Imaging Inc	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6
The Ent Center Of Rhode Island Llc	74	0	2	0	76	26	0	0	0	26	0	0	0	0	0	100	0	2	0	102
Urologic Specialists Of New England Llc	11	0	0	0	11	6	0	2	0	8	0	0	0	0	0	17	0	2	0	19
West River Endoscopy	13	0	0	0	13	14	0	0	0	14	0	0	0	0	0	27	0	0	0	27
TOTAL	139	0	5	0	144	69	0	2	0	71	0	0	0	0	0	208	0	7	0	215

Data Source: Immunization Program, Rhode Island Department of Health

Vacc: Vaccinated
 Med Exemp: Medical Exemption
 Ref: Refused
 Unk: Unknown Status

Phy. Amb. Surg. Healthcare Worker Influenza Vaccination Status (Percent), 2013-2014 Influenza Season

Facility Name	Type of Healthcare Worker (HCW)															All HCWs (Employees and Non-Employees)				
	Employee HCWs					Non-Employee HCWs: Licensed Independent Practitioners (LIP)					Non-Employee HCWs: Adult Students/Trainees/Volunteers (STV)									
	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total	Vacc	Med Exemp	Ref	Unk	Total
Dudley Street Operatory Llc	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
East Bay Endoscopy Center Llc	83%	0%	17%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	88%	0%	13%	0%	100%
Orthopaedic Associates Inc	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
Providence Access Care	80%	0%	20%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	85%	0%	15%	0%	100%
RI Vascular Inst A Div Of Ri Med Imaging Inc	100%	0%	0%	0%	100%	---	---	---	---	---	---	---	---	---	---	100%	0%	0%	0%	100%
The Ent Center Of Rhode Island Llc	97%	0%	3%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	98%	0%	2%	0%	100%
Urologic Specialists Of New England Llc	100%	0%	0%	0%	100%	75%	0%	25%	0%	100%	---	---	---	---	---	89%	0%	11%	0%	100%
West River Endoscopy	100%	0%	0%	0%	100%	100%	0%	0%	0%	100%	---	---	---	---	---	100%	0%	0%	0%	100%
TOTAL	97%	0%	3%	0%	100%	97%	0%	3%	0%	100%	---	---	---	---	---	97%	0%	3%	0%	100%

Data Source: Immunization Program, Rhode Island Department of Health

--- not applicable (no HCWs in the category)

Vacc: Vaccinated

Med Exemp: Medical Exemption

Ref: Refused

Unk: Unknown Status



Task Force for Antimicrobial Stewardship and Environmental Infection Control

Nicole Alexander-Scott, MD, MPH
Office of HIV/AIDS, Viral Hepatitis,
STD, and TB, HEALTH and
HCH/RIH/TMH (*Facilitator*)

Mark Appleman, MD
Division of Infectious Diseases,
Newport Hospital

Rosa Baier, MPH
Healthcare Quality Reporting
Program, HEALTH

Utpala Bandy, MD
Division of Infectious Disease and
Epidemiology, HEALTH

Cheston Cunha, MD
Division of Infectious Diseases,
Rhode Island Hospital

Kerry LaPlante, PharmD
University of Rhode Island College of
Pharmacy and Providence Veterans
Affairs Medical Center

John Lonks, MD
Division of Infectious Diseases, The
Miriam Hospital

Leonard Mermel, DO
Division of Infectious Diseases,
Rhode Island Hospital

Gail Patry, RN, CPEHR
Healthcentric Advisors

Aurora Pop-Vicas, MD
Division of Infectious Diseases,
Memorial Hospital of Rhode Island

Gina Rocha, MPH
Hospital Association of Rhode Island

Raymond Rusin
Division of Facilities Regulation,
HEALTH

Gail Skowron, MD
Division of Infectious Diseases,
Roger Williams Medical Center

Michael Smit, MD
Department of Pediatrics,
Hasbro Children's Hospital/Rhode
Island Hospital

Samara Viner-Brown, MS
Center for Health Data and Analysis,
HEALTH

9/2/14

Michael Fine, MD
Director of Health
Rhode Island Department of Health (HEALTH)
Three Capitol Hill
Providence, RI 02908

Dear Dr. Fine:

On behalf of the Task Force for Antimicrobial Stewardship and Environmental Infection Control, which I facilitate, I am writing to provide the task force's recommendations regarding strategies to reduce *C. difficile* in Rhode Island.

As you know, the task force formed in May 2014, at your request, in response to our state's worst-in-the-nation ranking for *C. difficile* LabID events during the 1st quarter of 2013 on Medicare's Hospital Compare public reporting website. *C. difficile* is a high public health priority—both because of the impact on patients, who suffer diarrhea due to mucosal inflammation and damage, and because it is the most common healthcare-associated infection (HAI).

The task force includes HEALTH staff from the Center for Health Data and Analysis, Division of Infectious Diseases and Epidemiology, Facilities Regulation, and the Healthcare Quality Reporting Program, as well as local experts: infectious disease physicians, pharmacists, and researchers.

Based on task force members' direction regarding the biggest opportunities to curb *C. difficile* infection rates, we are focusing our recommendations (pp. 2-3) on antimicrobial stewardship and environmental infection control.

On behalf of the task force, I request that you use these recommendations to guide your department's actions, including regulatory and policy discussions.

Thank you for your consideration.

Sincerely,

Nicole E. Alexander-Scott, MD, MPH
Consultant Medical Director
Office of HIV/AIDS, Viral Hepatitis, STDs, and TB
Division of Infectious Diseases and Epidemiology

CC: *Task Force Members*
Healthcare Quality Reporting Program

RI Task Force for Antimicrobial Stewardship and Environmental Infection Control (TASIC)
Recommendations for Hospital and Long-term Care Facilities

9/2/14

We request that HEALTH work with task force members to implement the following recommendations:

1. Assess antimicrobial stewardship and environmental cleaning practices (2 months).

We recommend that HEALTH administer the CDC's Core Elements of Hospital Antibiotic Stewardship Programs survey to acute and long-term care facilities, in order to benchmark current practices against the CDC's guidelines – supported by resources from the Infectious Disease Society of America, in conjunction with the Society for Healthcare Epidemiology of America, American Society of Health System Pharmacists, and The Joint Commission.

HEALTH should send this survey to facilities with a letter describing the rationale for improving antibiotic stewardship and should require that facilities have, at minimum, both medical and pharmacy staff complete the survey. The Task Force will work with HEALTH to draft key points for the letter and to determine the key administrators at each of the acute and long-term facilities that the letter and survey should be directed to, as outlined below.

After the survey is complete, HEALTH should provide benchmarked results back to the facilities, in coordination with input from the Task Force.

2. Document FTE allocations (2 months).

In combination with the letter to facilities about the CDC survey above, we recommend that HEALTH request information about the current FTE allocation at each institution for infection preventionists, infectious disease physicians, and pharmacists, and then communicate findings (with benchmarks) back to facilities. Along with this request, HEALTH, in coordination with the Task Force can include information about the rationale for understanding staffing patterns related to infection prevention.

After obtaining the data, HEALTH should provide benchmarked FTE allocations back to facilities, along with the additional input suggested from the Task Force.

3. Establish guidelines for resources and staffing (3-6 months).

We recommend that HEALTH use the CDC guidelines and results from #1 and #2 to establish antimicrobial stewardship and environmental cleaning guidelines tailored to acute and long-term care settings. We request that HEALTH work with task force members to identify and prioritize these recommendations.

Based on preliminary discussion, suggestions may include:

- Formation of multi-disciplinary quality improvement teams (including microbiology, medicine, infectious disease, and environmental services) charged with performing risk assessment to identify and improve priority areas related to antimicrobial stewardship and environmental cleaning. These should include medical and pharmacy champions.
- Creation of guidelines related to adequate information services support, staffing with ID-trained physicians and pharmacists, and completion of tasks such as daily antibiotic

auditing, daily discharge cleaning and cleaning of used equipment, and ongoing monitoring to control the environment.

4. Identify funding opportunities for implementation of recommended actions.

Implementing robust antimicrobial stewardship and environmental cleaning practices requires significant time and resources, which many facilities – particularly long-term care facilities – do not have. We recommend that HEALTH identify state and federal funding opportunities for implementation of multi-facility learning collaboratives and/or facilities' staffing and resources.

5. Communicate antimicrobial stewardship and environmental infection control standards (6 months).

After defining minimum standards in #3, we recommend that HEALTH work with task force members to send a letter that communicates these expectations, along with the rationale and importance. This letter should include clear guidance and time frames.

The letter should focus on our shared goal of improving patient safety and include:

- Information about the burden of *C. difficile* and multi-drug resistant organisms
- Information about the importance of reducing inappropriate antibiotic use

In summary, Dr. Fine, the RI Task Force for Antimicrobial Stewardship and Environmental Infection Control consists of a committed and diverse leadership for addressing *C. difficile* and other infection rates in Rhode Island. While the implementation of antimicrobial stewardship programs can vary across health care settings, many standard activities that should be conducted in an antimicrobial stewardship program may still need to be incorporated at acute and long-term care facilities throughout the state. Task Force members look forward to an ongoing partnership with HEALTH to inform implementation of recommendations that are crucial for acute and long-term care facility administrators to follow and for legislators to support. In particular, we strongly encourage ongoing engagement with Senator Whitehouse who has expressed a specific interest in addressing Healthcare Acquired Infections nationally including antimicrobial stewardship and infection control, in which Rhode Island can be a leader.

The letter for request #1 should be sent to the following:

Hospitals

Direct letter to:

- Chief Operating Officers (CEOs), as well as any overarching supervisors of the CEOs
- Infection Preventionists
- Quality Directors

Copy:

- Chief Medical Officers (CMOs)
- Chief Nursing Officers (CNOs)
- Hospital Association of Rhode Island
- Directors of Pharmacy

Nursing Homes

Direct letter to:

- Administrators
- Medical directors

Copy:

- Director of Nursing (DON)
- LeadingAge-Rhode Island
- Long-Term Care Ombudsman
- Rhode Island Health Care Association

Woman Patents Tool to Bring Dignity and Safety to Patients

Copyright 2014 by Informa Exhibitions, LLC.

<http://www.infectioncontroltoday.com/>

By:

Posted on: 09/14/2014

 PRINT

A Rhode Island woman has patented a tool for hospital and nursing home patients that empowers them to communicate with staff, stay safer from hospital infections, and maintain a sense of normalcy.

"No one likes being in the hospital," says Pat Mastors, co-founder of the Patient Voice Institute and a national policy advisor on patient safety, "but the Patient Pod empowers you to do things that actually help you get well...and feel listened to, connected and human." Mastors began working on the Patient Pod as a labor of love after her father's death in the hospital.

The Patient Pod is a "multi-tool" that clips on the bed rail, IV pole, walker or wheelchair. It's an easily cleaned pouch for personal items like cell phone, eyeglasses and hearing aids, to keep them within reach and safe from "accidentally getting tossed in the trash when they're left on your dinner tray," says Mastors.

The Pod includes personal hand sanitizer, notepad and pen, and incorporates a messaging system "to tell staff at a glance about a question or need, like a hearing problem or allergy," says Mastors, who points out that communication glitches are a major cause of unintended medical harm, which kills as many as 440,000 patients each year. The Patient Pod has slots in the front for a favorite photo and the name you prefer to be called. "Hospital staff are so busy, and you might be seen by a dozen different people in one day," says Mastors. "When they come in and see your photo and name, they connect with you more easily as a person."

Says Kent Hospital (Warwick, RI) CEO Sandra Coletta, who gave her mother a Patient Pod when she was hospitalized, "It's like bringing a friend to the hospital with you...familiar and comforting, in a place where nothing is yours."

The Pod's patented design allows it to attach to virtually any bed rail, and swivel to stay level when the rail goes up and down.

Mastors says in hospital pilots in five states, virtually every patient and nurse who used a Patient Pod would recommend it to family and friends. The Patient Pod website includes testimonials, and shows how hospitals can save money through better patient satisfaction, less lost personal items and other benefits.

Mastors' father died of complications from a common hospital-acquired infection called *Clostridium difficile*. "I began working on patient safety laws, but also wanted to participate in promoting good hand hygiene—the best guard against infection." In addition to hand sanitizer and wipes the Pod also contains custom covers for the TV remote, the "germiest" item in the patient's room.

"My dad's hearing aids got ruined when water spilled on them. Then I kept putting notes around his room asking people to 'speak up into his left ear.' But his room got switched maybe a dozen times over six months, and the notes got lost. My father felt increasingly isolated and depressed. I wanted to fix these things."

Mastors took a prototype of the Patient Pod to Fuzion Design of Pawtucket, RI, which helped get the Patient Pod manufactured, and then co-patented the design.

Mastors, who advises the Partnership for Patients, the National Quality Forum and others on patient and family engagement, is also author of the critically acclaimed book *Design to Survive*, on how simplicity and partnership with patients are the keys to an improved healthcare system.

The Patient Pod is available online for \$19.95, in select hospital gift shops.

Source: Pear Health LLC



NATIONAL STRATEGY FOR COMBATING ANTIBIOTIC- RESISTANT BACTERIA

***Vision:** The United States will work domestically and internationally to prevent, detect, and control illness and death related to infections caused by antibiotic-resistant bacteria by implementing measures to mitigate the emergence and spread of antibiotic resistance and ensuring the continued availability of therapeutics for the treatment of bacterial infections.*

September 2014



Table of Contents

Executive Summary	1
Introduction	4
GOAL 1: Slow the Development of Resistant Bacteria and Prevent the Spread of Resistant Infections	7
GOAL 2: Strengthen National One-Health Surveillance Efforts to Combat Resistance	11
GOAL 3: Advance Development and Use of Rapid and Innovative Diagnostic Tests for Identification and Characterization of Resistant Bacteria	15
GOAL 4: Accelerate Basic and Applied Research and Development for New Antibiotics, Other Therapeutics, and Vaccines	17
GOAL 5: Improve International Collaboration and Capacities for Antibiotic Resistance Prevention, Surveillance, Control, and Antibiotic Research and Development	20
Next Steps	24
Table 1: CDC’s Antibiotic-Resistant Threats in the United States, 2013	25
Table 2: Goals and Objectives for Combating Antibiotic-Resistant Bacteria	29
Table 3: National Targets For Combating Antibiotic-Resistant Bacteria	33



Executive Summary

The discovery of antibiotics in the early 20th century fundamentally transformed human and veterinary medicine. Antibiotics now save millions of lives each year in the United States and around the world. The rise of antibiotic-resistant bacterial strains, however, represents a serious threat to public health and the economy. The Centers for Disease Control and Prevention (CDC) estimates that annually, at least two million illnesses and 23,000 deaths are caused by antibiotic-resistant bacteria in the United States alone.¹ If the effectiveness of antibiotics (drugs that kill or inhibit the growth of bacteria) is lost, we will no longer be able to reliably and rapidly treat bacterial infections, including bacterial pneumonias, foodborne illnesses, and healthcare-associated infections. As more strains of bacteria become resistant to an ever-larger number of antibiotics, our drug choices have become increasingly limited and more expensive and, in some cases, nonexistent. In a world with few effective antibiotics, modern medical advances such as surgery, transplants, and chemotherapy may no longer be viable due to the threat of infection.

The *National Strategy for Combating Antibiotic Resistant Bacteria* identifies priorities and coordinates investments: to prevent, detect, and control outbreaks of resistant pathogens recognized by CDC as urgent or serious threats, including carbapenem-resistant *Enterobacteriaceae* (CRE), methicillin-resistant *Staphylococcus aureus* (MRSA), ceftriaxone-resistant *Neisseria gonorrhoeae*, and *Clostridium difficile*, which is naturally resistant to many drugs used to treat other infections and proliferates following administration of antibiotics (Table 1); to ensure continued availability of effective therapies for the treatment of bacterial infections; and to detect and control newly resistant bacteria that emerge in humans or animals. This *National Strategy* is the basis of a 2014 Executive Order on Combating Antibiotic Resistance, as well as a forthcoming *National Action Plan* that directs Federal agencies to accelerate our response to this growing threat to the nation's health and security. The *National Action Plan* will be informed by a report approved by the President's Council of Advisors on Science and Technology (PCAST) on July 11, 2014.

The *National Strategy* outlines five interrelated goals for action by the United States Government in collaboration with partners in healthcare, public health, veterinary medicine, agriculture, food safety, and academic, Federal, and industrial research. The goals include:

- 1. Slow the Emergence of Resistant Bacteria and Prevent the Spread of Resistant Infections.** Judicious use of antibiotics in healthcare and agricultural settings is essential to slow the emergence of resistance and extend the useful lifetime of effective antibiotics. Antibiotics are a precious resource, and preserving their usefulness will require cooperation and engagement by healthcare providers, healthcare leaders, pharmaceutical companies, veterinarians, the agricultural industry, and patients. Effective dissemination of information to the public is critical. Prevention of resistance

¹ Centers for Disease Control and Prevention. *Antibiotic Resistance Threats in the United States, 2013* (<http://www.cdc.gov/drugresistance/threat-report-2013/>)

also requires rapid detection and control of outbreaks, along with regional efforts to control transmission across community and healthcare settings.

2. Strengthen National One-Health Surveillance Efforts to Combat Resistance.

Antibiotic resistance can arise in bacterial pathogens affecting humans, animals, and the environment. Strengthening detection and control of resistance requires the adoption of a “One-Health” approach that promotes integration of public health and veterinary disease, food, and environmental surveillance. Improved detection can be achieved through appropriate data sharing, enhancement, expansion, and coordination of existing surveillance systems, and creation of a regional laboratory network that provides a standardized platform for resistance testing and advanced capacity for genetic characterization of bacteria including whole genome sequencing.

3. Advance Development and Use of Rapid and Innovative Diagnostic Tests for Identification and Characterization of Resistant Bacteria.

Today, researchers are taking advantage of new technologies to develop rapid “point-of-need” tests that can be used during a healthcare visit to distinguish between viral and bacterial infections and identify bacterial drug susceptibilities—an innovation that could significantly reduce unnecessary antibiotic use. The availability of new rapid diagnostic tests, combined with ongoing use of culture-based assays to identify new resistance mechanisms, will advance the detection and control of resistant bacteria, including the priority pathogens listed in Table 1.

4. Accelerate Basic and Applied Research and Development for New Antibiotics, Other Therapeutics, and Vaccines.

Antibiotics that lose their effectiveness for treating human disease through antibiotic resistance must be replaced with new drugs. Alternatives to antibiotics are also needed in agriculture and veterinary medicine. The advancement of drug development requires intensified efforts to boost basic scientific research, facilitate clinical trials of new antibiotics, attract greater private investment, and increase the number of antibiotic drug candidates in the drug-development pipeline. We must also promote the development of other tools to combat resistance, including new and next-generation antibiotics, vaccines, additional therapeutics, and diagnostics.

5. Improve International Collaboration and Capacities for Antibiotic Resistance Prevention, Surveillance, Control, and Antibiotic Research and Development.

Recognized by G8 Science Ministers in 2013 as “a major health security challenge of the 21st century,” antibiotic resistance is a global problem that requires global solutions. The United States will work in concert with the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE), ministries of health and agriculture, and other domestic and international stakeholders to strengthen national and international capacities to detect, monitor, analyze, report and characterize antibiotic resistance; provide resources and incentives to spur the development of therapeutics and diagnostics for use in humans and animals; and strengthen regional networks and global partnerships that help prevent and control the emergence and spread of resistance. The United States will support the development of the WHO *Global Action Plan* to address antimicrobial resistance, strengthen cooperation under the European Union-United States Trans-Atlantic Task Force on Antimicrobial Resistance, promote antibiotic resistance as an international

health priority, and mobilize resources for global activities through multilateral venues such as the Global Health Security Agenda.

Taken together, implementation of specific objectives provided under each goal (Table 2) will help reduce the incidence of the priority pathogens listed in Table 1. National targets for reducing serious and urgent threats by 2020 are provided in Table 3.



Introduction

“Every day we don’t act to better protect antibiotics will make it harder and more expensive to address drug resistance in the future. Drug resistance can undermine both our ability to fight infectious diseases and much of modern medicine. Patients undergoing chemotherapy for cancer, dialysis for renal failure, and increasingly common treatments for diseases such as arthritis depend on antibiotics so common infectious complications can be treated effectively.”

– Dr. Tom Frieden, MD, MPH, Director U.S. Centers for Disease Control and Prevention

The discovery of antibiotics in the early 20th century fundamentally transformed human and veterinary medicine. Antibiotics now save millions of lives each year in the United States and around the world. The rise of antibiotic-resistant bacterial strains, however, represents a serious threat to public health and the economy. The CDC estimates that annually at least two million illnesses and 23,000 deaths are caused by antibiotic-resistant bacteria in the United States alone.¹

As more strains of bacteria become resistant to an ever-larger number of antibiotics, our drug choices will become increasingly limited and expensive and, in some cases, nonexistent. If this trend continues unchecked, a wide range of modern medical procedures, from basic dental care to organ transplants, likely would be accompanied by a much greater risk of developing a difficult-to-treat or untreatable antibiotic infection. The safety of many modern medical procedures is dependent on the ability to treat bacterial infections that can arise as post-treatment complications.

Scope of the *National Strategy*: “Antibiotic resistance” results from mutations or acquisition of new genes in bacteria that reduce or eliminate the effectiveness of antibiotics. “Antimicrobial resistance” is a broader term that encompasses resistance to drugs to treat infections caused by many different types of pathogens, including bacteria, viruses (e.g., influenza and the human immunodeficiency virus (HIV)), parasites (e.g., the parasitic protozoan that causes malaria), and fungi (e.g., *Candida spp.*). While all of these pathogens are dangerous to human health, this *Strategy* focuses on resistance in bacteria that presents a serious or urgent threat to public health.

Guiding Principles

Our approach to combating the emergence and spread of antibiotic resistant bacteria takes into consideration goals and objectives (Table 2) including the following:

- Misuse and over-use of antibiotics in healthcare and food production continue to hasten the development of bacterial drug resistance, leading to loss of efficacy of existing antibiotics;

- Detecting and controlling antibiotic resistance requires the adoption of a “One-Health” approach to disease surveillance that recognizes that resistance can arise in humans, animals, and the environment;
- Implementation of evidence-based infection control practices can prevent the spread of resistant pathogens;
- Interventions are necessary to accelerate private sector investment in the development of therapeutics to treat bacterial infections because current private sector interest in antibiotic development is limited;
- There are opportunities to use innovations and new technologies—including whole-genome sequencing, metagenomics, and bioinformatic approaches—to develop next-generation tools to strengthen human and animal health, including:
 - Point-of-need diagnostic tests to distinguish rapidly between bacterial and viral infections as well as identify bacterial drug susceptibilities
 - New antibiotics and other therapies that provide much needed treatment options for those infected with resistant bacterial strains;
- Antibiotic resistance is a global health problem that requires international attention and collaboration, because bacteria do not recognize borders.

Goals and Objectives

With these principles in mind, the *Strategy* lays out five interrelated goals that guide collaborative action by the U.S. Government in partnership with foreign governments, individuals, and organizations aiming to strengthen healthcare, public health, veterinary medicine, agriculture, food safety, and research and manufacturing. Those goals include:

1. Slow the emergence of resistant bacteria and prevent the spread of resistant infections;
2. Strengthen national One-Health surveillance efforts to combat resistance;
3. Advance development and use of rapid and innovative diagnostic tests for identification and characterization of resistant bacteria;
4. Accelerate basic and applied research and development for new antibiotics, other therapeutics, and vaccines; and
5. Improve international collaboration and capacities for antibiotic-resistance prevention, surveillance, control, and antibiotic research and development

Taken together, implementation of specific objectives provided under each goal will help reduce the incidence of the priority pathogens listed in Table 1. National targets for reducing serious and urgent threats by 2020 are provided in Table 3.

Development and implementation of the *National Strategy* also supports World Health Assembly (WHA) resolution 67.25 (Antimicrobial Resistance), which was endorsed in May 2014 and urges countries to develop and finance national plans and strategies and take urgent action at the national, regional, and local levels to combat resistance. The resolution specifically calls on WHA Member States to develop practical and feasible approaches to extend the lifespan of drugs, strengthen pharmaceutical management systems and laboratory infrastructure, develop

effective surveillance systems, and encourage the development of new diagnostics, drugs, and treatment options.

Development of the Strategy

In December 2013, the President directed the National Security Council (NSC) and the Office of Science and Technology Policy (OSTP) to assess the current and growing threat of antibiotic resistance and develop a multi-sectoral plan to combat resistant bacteria. NSC and OSTP established an interagency policy committee to review past and current Federal efforts to address antibiotic resistance. The committee—which included representatives from the Department of Health and Human Services (HHS), the Department of Agriculture (USDA), the Departments of Homeland Security (DHS), State, Defense (DOD), Veterans Affairs (VA), the U.S. Agency for International Development (USAID), and the Environmental Protection Agency (EPA)—suggested practical, evidence-based ways to enhance antibiotic stewardship, strengthen surveillance for antibiotic resistance and use, advance the development of new diagnostics, antibiotics, and novel therapies, and accelerate research and innovation. The results of the review provided the basis for this *National Strategy*.

Partnerships and Implementation

The *National Strategy for Combating Antibiotic-Resistant Bacteria* will be implemented in accordance with a forthcoming *National Action Plan*, which will detail specific steps and milestones for achieving the *Strategy's* goals and objectives along with metrics for measuring progress. The *National Action Plan* will also address recommendations made in the PCAST *Report to the President on Combating Antibiotic Resistance*.

Implementation of the *National Action Plan* will require the sustained, coordinated, and complementary efforts of individuals and groups around the world, including many who will contribute to its development. These include public and private sector partners, healthcare providers, healthcare leaders, veterinarians, agriculture industry leaders, manufacturers, policymakers, and patients. All of us who depend on antibiotics must join in a common effort to detect, stop, and prevent the emergence and spread of resistant bacteria.



GOAL 1: Slow the Development of Resistant Bacteria and Prevent the Spread of Resistant Infections

The Opportunity

Judicious use of antibiotics is essential to slow the development of resistance, prevent outbreaks of untreatable infections, and extend the useful lifetime of our most urgently needed antibiotics. At the present time, however, one-third to one-half of all antibiotics used in inpatient and outpatient settings are either unnecessary or incorrectly prescribed.² The misuse and over-use of antibiotics not only facilitates the emergence of drug-resistant bacteria, but also exposes patients to needless risk for adverse effects.

Fortunately, a growing body of evidence demonstrates that programs dedicated to improving antibiotic use, known as “antibiotic stewardship” programs, can help slow the emergence of resistance while optimizing treatment and minimizing costs. These programs help providers prescribe the right antibiotic for the right amount of time and prevent prescription of antibiotics for non-bacterial infections. It is imperative that such programs become a routine and robust component of healthcare delivery in the United States. To ensure success, improved data collection systems to monitor improvements in antibiotic usage must also be developed (see *also* Goal 2). Antibiotic stewardship is also needed in agricultural settings because bacteria associated with livestock may contribute to the development of resistance to drugs used in humans. In December 2013, the Food and Drug Administration (FDA) issued *Guidance for Industry* (GFI) #213,³ which outlines voluntary measures to limit use of medically important antibiotics in livestock.

In addition to slowing the emergence of resistance, it is also critical to prevent transmission of bacteria-causing infections that are resistant to treatment across community and healthcare settings. Outbreaks can be prevented through regional efforts to rapidly detect and control infections that are hard to treat, and also through prompt communications regarding the management and transfer of infected patients within and between healthcare facilities. These interventions, which can be implemented nationally, will be supported by enhanced surveillance activities (Goal 2) that facilitate targeting the most important threats (see Table 1).

Objectives

- 1.1 Implement public health programs and reporting policies that advance antibiotic-resistance prevention and foster antibiotic stewardship in healthcare settings and the community.**

² Centers for Disease Control and Prevention. Antibiotic Resistance Threats in the United States, 2013 (<http://www.cdc.gov/drugresistance/threat-report-2013/>); and Vital Signs: Improving Antibiotic Use Among Hospitalized Patients. MMWR March 7, 2014 / 63(09); 194-200.

³ FDA Guidance for Industry #213 may be accessed at: <http://www.fda.gov/downloads/animalveterinary/guidancecomplianceenforcement/guidanceforindustry/ucm299624.pdf>.

Implementation steps include working with healthcare facilities, community and professional organizations, state and local health departments, and other partners to:

- i. A. Strengthen antibiotic stewardship in inpatient, outpatient, and long-term care settings by expanding existing programs, developing new ones, and monitoring progress and efficacy.
B. Strengthen educational programs such as *Get Smart: Know When Antibiotics Work*,⁴ which inform physicians, agricultural workers, and members of the public about good antibiotic stewardship.
- ii. Expand collaborative efforts by groups of healthcare facilities that focus on preventing the spread of antibiotic resistant bacteria that pose a serious threat to public health (see Table 1).
- iii. Implement annual reporting of antibiotic use in inpatient and outpatient settings and identify geographic variations and/or variations at the provider and/or patient level that can help guide interventions.
- iv. Develop and pilot new interventions to address geographic, socio-cultural, policy, economic, and clinical drivers of the emergence and spread of antibiotic resistance and misuse or over-use of antibiotics.
- v. Streamline the regulatory processes for updating and approving antibiotic susceptibility testing devices, as appropriate, so that clinicians receive up-to-date interpretive criteria to guide antibacterial drug selection.

1.2 Eliminate the use of medically important⁵ antibiotics for growth promotion in animals and bring other in-feed uses of antibiotics, for treatment and disease control and prevention of disease, under veterinary oversight.

Implementation steps include working with veterinary organizations, producers, producer organizations, the animal feed industry, the veterinary pharmaceutical industry, and other partners to:

- i. Implement FDA Guidance for Industry #213 to eliminate the use of medically important antibiotics for growth promotion in animals and bring other therapeutic uses of medically important antibiotics under veterinary oversight. FDA should evaluate the adoption of the proposed changes under Guidance #213 during the three-year implementation period and take further action as appropriate.
- ii. Assess progress toward eliminating the use of medically important antibiotics for growth promotion in food-producing animals through enhanced data collection on antibiotic sales and use.
- iii. Develop and implement educational outreach efforts to ensure that veterinarians and animal producers receive information and training to support implementation of these changes.

⁴ Examples of educational programs on antibiotic stewardship include: Get Smart: Know When Antibiotics Work (www.cdc.gov/getsmart); Get Smart for Healthcare (<http://www.cdc.gov/getsmart/healthcare/index.html>); and Get Smart: Know When Antibiotics Work on the Farm (<http://www.cdc.gov/narms/get-smart.html>).

⁵ <http://www.fda.gov/downloads/AnimalVeterinary/GuidanceComplianceEnforcement/GuidanceforIndustry/UCM299624.pdf> (p. 5).

- iv. Optimize public awareness about the progress toward eliminating the use of medically important antibiotics for animal growth promotion.

1.3 Identify and implement measures to foster stewardship of antibiotics in animals.

Implementation steps include working with veterinary organizations, animal producer organizations, and other partners to:

- i. Develop, implement, and measure the effectiveness of evidence-based educational outreach to veterinarians and animal producers to advance antibiotic stewardship and judicious use of antibiotics in agricultural settings.
- ii. Foster collaborations and public-private partnerships with public health, pharmaceutical, and agricultural stakeholders to facilitate identification and implementation of interventions (e.g., good husbandry practices) to reduce the spread of antibiotic resistance.
- iii. Identify, develop, and revise key agricultural practices that allow timely and effective implementation of interventions that improve animal health and efficient production.
- iv. Develop appropriate metrics to gauge the success of stewardship efforts and guide their continued evolution and optimization.

Anticipated Outcomes

Federal agencies will meet these objectives in cooperation with the private sector and other stakeholders to meet the following benchmarks by 2020:

- All States, the District of Columbia, and Puerto Rico will have:
 - Implemented antibiotic stewardship activities in human healthcare delivery settings.
 - Established or enhanced regional efforts to reduce transmission of antibiotic-resistant pathogens and improve appropriate antibiotic use in healthcare facilities across the continuum of care (e.g., acute care, long term care, and outpatient care).
- HHS, DOD, and VA will review existing regulations and propose new regulations and other actions, as appropriate, which require hospitals and other inpatient healthcare delivery facilities to implement robust antibiotic stewardship programs that adhere to best practices, such as those defined by the CDC's Core Elements of Hospital Antibiotic Stewardship Programs.⁶
- At least 95% of eligible hospitals will report antibiotic use data to the National Healthcare Safety Network (NHSN).
- Inappropriate inpatient antibiotic use for monitored conditions/agents will be reduced by 20% from 2014 levels.
- Inappropriate outpatient antibiotic use for monitored conditions/agents will be reduced by 50% from 2010 levels.
- Eliminate the use of medically important antibiotics for growth promotion in animals.

⁶ The CDC's Core Elements of Hospital Antibiotic Stewardship Programs may be accessed at: <http://www.cdc.gov/getsmart/healthcare/implementation/core-elements.html>.

- Use of medically important antibiotics in food-producing animals will require veterinary oversight.
- Research efforts will generate validated alternatives to traditional uses of antibiotics, such as changes to health and other management practices, to reduce the need for antibiotics for prevention and treatment of animal diseases.
- The Department of Health and Human Service's Agency for Healthcare Research & Quality and CDC will expand its focus on research and evaluation to develop improved methods and approaches for combating antibiotic resistance and conducting antibiotic stewardship.

GOAL 2: Strengthen National One-Health Surveillance Efforts to Combat Resistance

The Opportunity

Collection and analysis of data on antibiotic resistance is an important component of biosurveillance, the process of “gathering, integrating, interpreting, and communicating essential information related to all-hazards threats or disease activity affecting human, animal, or plant health”⁷ to improve outbreak detection and support decision-making. By linking human, animal, and plant health, this definition recognizes the importance of the *One-Health* approach to addressing emerging infectious diseases, an approach that emphasizes that the health of humans is connected to the health of animals and their shared environment.

Improved detection of resistant bacteria can be achieved through enhancements and expansion of existing surveillance systems that monitor resistance in healthcare settings (such as the National Healthcare Safety Network [NHSN]), in agricultural settings (such as the National Antimicrobial Resistance Monitoring System [NARMS]), and across healthcare and community settings (such as the Emerging Infections Program [EIP]). Enhancements include providing incentives for healthcare-facility reporting, advancing automatic capture of electronic data from healthcare facilities and clinical laboratories, including more diverse patient and community venues as reporting sites, and expanding the sampling of bacterial specimens from agricultural settings. Taken together, improvements to NHSN, EIP, and NARMS will enhance detection of emerging threats in humans and animals, speed outbreak response, and identify populations at greatest medical risk. Moreover, experience with NHSN has shown that reporting also leads to better prevention (Goal 1), because hospitals and state and local health departments use NHSN data to guide local action to interrupt the spread of resistant infections.

To be most useful, the data reported to these systems must be accurate and complete. For that reason, laboratories that test (and report on) resistant bacteria should be linked into a regional network that promotes the use of new technologies and diagnostics (see also Goal 3). The regional network will provide a standardized testing and reporting platform for antibiotic resistance, as well as advanced capacity for genetic characterization of bacteria with rare or unknown resistance mechanisms. These laboratories will serve as a resource that helps healthcare facilities and regional prevention programs investigate outbreaks, quantify the magnitude of resistance problems, and promote accurate testing practices at clinical laboratories. The laboratories that participate in the network will also help establish a national specimen repository for resistant bacteria and a national database of their DNA sequences.

Special investments are required to strengthen surveillance for antibiotic resistance among food animals and foods-of-animal-origin. Expanded capacity for testing, reporting, and data-sharing in veterinary and food safety laboratories will ensure early warning of the emergence of resistance in zoonotic and animal pathogens and enable officials to monitor the preventive impact of the FDA *Guidance for Industry* (GFI) #213 (see Goal 1). Efforts to monitor drug

⁷ See:

http://www.whitehouse.gov/sites/default/files/National_Strategy_for_Biosurveillance_July_2012.pdf.

resistance patterns in food-producing animals, as well as collection of information on antibiotic drugs sold and distributed for use in food-producing animals, can build on or supplement NARMS, which tracks trends related to antibiotic resistance in food-producing animals, retail meats, and humans.

Objectives

2.1 Create a regional laboratory network to strengthen national capacity to detect resistant bacterial strains and create a specimen repository to facilitate development and evaluation of diagnostic tests and treatments.

Implementation steps include working with healthcare facilities, state and local health departments, clinical laboratories, and many other partners to:

- i. Create a regional laboratory network that uses standardized testing platforms to:
 - Expand the availability of reference testing services.
 - Characterize emerging resistance patterns and bacterial strains obtained from outbreaks and other sources.
 - Facilitate rapid data analysis and dissemination of information.
- ii. Link data generated by the regional laboratory network to:
 - Existing public health surveillance networks so that antimicrobial susceptibility testing (AST) data are immediately available to local, state and federal public health authorities as they detect and investigate outbreaks.
 - Veterinary diagnostic and food safety laboratory databases and/or surveillance systems, as needed.
- iii. Create a repository of resistant bacterial strains and maintain a well curated, reference database that describes the characteristics of these strains. The repository will aid:
 - Biotechnology and pharmaceutical companies that develop new antibiotics, therapeutics, and/or design next-generation tests for diagnosis and susceptibility testing.
 - Diagnostic test developers and regulatory agencies who evaluate these tests.
 - Government facilities, academic labs, and pharmaceutical companies that test antibiotics for clinical effectiveness.
 - Researchers, regulators, and others who assess the effectiveness of interventions to prevent resistance.
 - As part of these efforts, the Department of Defense will maintain a repository of resistant bacterial strains and, as appropriate, will update procedures for specimen collection, storage, and data-sharing.
- iv. Develop and maintain a national sequence database of resistant pathogens.

2.2 Expand and strengthen the national infrastructure for public health surveillance and data reporting and provide incentives for timely reporting of antibiotic resistance and antibiotic use in all healthcare settings.

Implementation steps include working with governmental and non-governmental partners to:

- i. Enhance reporting infrastructure and provide incentives for reporting (e.g., requiring reporting of antibiotic resistance data to NHSN as part of the Centers for Medicare and Medicaid [CMS] Hospital Inpatient Quality Reporting Program).
- ii. Add electronic reporting of antimicrobial use and resistance data in a standard file format to the Stage 3 Meaningful Use certification program for electronic health record systems.⁸
- iii. Expand the activities and scope of the Emerging Infections Program (EIP) to include monitoring additional urgent and serious bacterial threats (see Table 1) and evaluating populations at risk across community and healthcare settings.

2.3 Develop, expand, and maintain capacity in state and Federal veterinary and food safety laboratories to conduct standardized antibiotic susceptibility testing and characterize select zoonotic and animal pathogens.

Implementation steps include working with state and Federal veterinary and food safety laboratories and many other partners to:

- i. Expand and maintain laboratory infrastructure for the identification of select zoonotic and animal health pathogens through the implementation of new diagnostic technologies (see also Goal 3).
- ii. Accelerate and standardize antibiotic susceptibility testing and bacterial characterization for select zoonotic and animal health pathogens, coordinating with appropriate stakeholder groups.
- iii. Enhance communications and identify mechanisms for sharing and reporting antibiotic susceptibility data on select zoonotic and animal health pathogens collected by State and Federal veterinary diagnostic and food safety laboratories. These data should be stored in a centralized repository that can be linked with relevant public health databases, as appropriate, while maintaining source confidentiality.

2.4. Enhance monitoring of antibiotic-resistance patterns, as well as antibiotic sales, usage, and management practices, at multiple points in the production chain from food-animals on-farm, through processing, and retail meat.

Implementation steps include working with veterinary organizations, animal producer organizations, veterinary and food safety laboratories, and other partners to:

- i. Enhance surveillance of antibiotic resistance in animal and zoonotic pathogens and commensal organisms by strengthening the National Antimicrobial Resistance Monitoring System (NARMS) and leveraging other field- and laboratory-based surveillance systems.
- ii. Enhance collection and reporting of data regarding antibiotic drugs sold and distributed for use in food-producing animals.
- iii. Implement voluntary monitoring of antibiotic use and resistance in pre-harvest settings to provide nationally-representative data while maintaining producer confidentiality.

⁸ Information on the CMS Meaningful Use program is available at: http://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Meaningful_Use.html.

- iv. Collect quantitative data on antibiotic resistance and management practices along various points at pre-harvest, harvest, and processing, in collaboration with producers and other stakeholders and disseminate information as appropriate.

Anticipated Outcomes

In working towards these objectives with private sector and other stakeholders, Federal agencies will aim to meet the following milestones by 2020:

- Establishment of a regional laboratory network that conducts antibiotic susceptibility testing and other testing to identify outbreaks caused by antibiotic-resistant bacteria and to characterize emerging resistance patterns. The regional laboratory network will participate in international efforts to advance public health communications involving drug resistance (e.g., posting early warning alerts and reporting antibiotic resistance results and trends). See also Goal 5.3.
- Creation of a public electronic portal that will make antibiotic use and resistance data from CDC's monitoring systems publicly available, consistent with the Office Of Management and Budget's Open Data Policy (M 13-13).⁹ Optimally, the portal should provide a unified, user-friendly database that facilitates integrated analyses of trends and practices at the state and regional levels.
- Creation of incentives for hospital reporting of data on antibiotic use and resistance to the NHSN, using the NHSN Antimicrobial Use and Resistance (AUR) Module¹⁰ or equivalent update to achieve these reporting targets:
 - At least 95% of eligible hospitals report electronically captured antibiotic resistance data to NHSN.
 - 3,400 acute care hospitals using electronic health records that meet certification criteria for NHSN AUR reporting or successor standard as appropriate.
 - DOD and VA hospitals and long-term care facilities will also use electronic health records that meet certification criteria for AUR reporting or successor standard as appropriate.
- At least twenty veterinary diagnostic laboratories in the National Animal Health Laboratory Network and/or the Veterinary Laboratory Investigation and Response Network (Vet-LIRN) will routinely perform antibiotic susceptibility testing of bacterial strains for which standardized testing methods and data-sharing practices have been established.

⁹ <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2013/m-13-13.pdf>.

¹⁰ Information on the NHSN Antimicrobial Use and Resistance (AUR) Module is available at: <http://www.cdc.gov/nhsn/PDFs/pscManual/11pscAURcurrent.pdf>.

GOAL 3:

Advance Development and Use of Rapid and Innovative Diagnostic Tests for Identification and Characterization of Resistant Bacteria

The Opportunity

Improved diagnostics for detection of resistant bacteria and characterization of their resistance patterns will help physicians make optimal treatment decisions and help public health officials take action to prevent and control disease.

Presently, most diagnostic tests take 24 to 72 hours from specimen collection to results, with culture-based tests to determine antibiotic susceptibility adding additional days to weeks. Thus, treatment decisions are typically required and made before laboratory results are available. As a consequence, patients may be initially treated with antibiotics when none are needed, prescribed an inappropriate antibiotic, or treated with multiple antibiotics when a single antibiotic would have been effective.

However, the technological landscape is changing at a rapid pace. The current trend is moving towards clinical presentation or point-of-need diagnostic tests suitable for use during a healthcare visit because they require only minutes. In the future, widespread availability of point-of-need tests that rapidly distinguish between viral and bacterial infections will significantly reduce unnecessary antibiotic use. In addition, scientists will use knowledge of microbial genetics and the molecular determinants of antibiotic resistance to develop rapid, inexpensive molecular tests that identify not only an infecting pathogen, but also its antibiotic-resistance profile.

The development of rapid diagnostic tests, combined with ongoing use of culture-based tests to identify and investigate new resistance mechanisms, will greatly advance detection, control, and prevention of such threats as carbapenem-resistant Enterobacteriaceae (CRE), ceftriaxone-resistant *N. gonorrhoeae*, Methicillin-resistant *Staphylococcus aureus* (MRSA), and other multidrug-resistant organisms (MDROs) (see Table 1). These tests will help guide outbreak responses, inform efforts to slow the development of resistance (e.g., the Antibiotic Stewardship programs described in Goal 2), and will have profound domestic and global utility.

In addition to supporting research on diagnostics (see Goal 4), the United States Government can help spur development of diagnostics by providing academic and private sector researchers with representative clinical isolates as well as the technical tools to help address issues related to test development and validation, FDA review, and reimbursement.

Objectives

- 3.1 Develop and approve new diagnostics, including tests that rapidly distinguish between viral and bacterial pathogens and tests that detect antibiotic resistance that can be implemented in a wide range of settings.**

United States Government departments and agencies will work with domestic and international partners to develop rapid diagnostic tests that can:

- Identify clinical illnesses that may benefit from treatment with antibiotics.
- Detect invasive bacterial pathogens in blood, cerebrospinal fluid, synovial fluid, and urine.
- Provide information to guide decisions on treatment and control of CRE, *Neisseria gonorrhoeae*, and other multidrug-resistant organisms.

3.2 Expand the availability and use of diagnostics to improve treatment of antibiotic-resistant bacteria, enhance infection control, and facilitate outbreak detection and response in healthcare and community settings.

Anticipated Outcomes

In working toward these objectives with private sector and other stakeholders, Federal agencies will aim to meet the following benchmarks by 2020:

- Development and dissemination of licensed point-of-need diagnostic tests that distinguish between bacterial and viral infections in 20 minutes or less.
- Validation of diagnostic tests in late-stage clinical trials that determine antibiotic resistance profiles of the 18 bacteria of highest concern (Table 1) in 30 minutes or less.
- Development of well-defined reimbursement policies and incentives to encourage routine use of diagnostics in clinical settings to distinguish between bacterial and viral infections and to ascertain the antibiotic susceptibilities of bacteria.

GOAL 4:

Accelerate Basic and Applied Research and Development for New Antibiotics, Other Therapeutics, and Vaccines

The Opportunity

New therapeutics, vaccines, and diagnostics¹¹ are urgently needed to combat emerging and re-emerging antibiotic-resistant pathogens. In response, the United States Government has accelerated efforts to advance the discovery and development of novel tools to address antibiotic resistance, with special attention to treatment of multidrug-resistant Gram-negative bacteria, such as CRE and *Neisseria gonorrhoeae*, which are of particular concern because of their diverse and rapidly evolving mechanisms of resistance.

Presently, the pipeline of antibiotics in development is inadequate and commercial interest in antibiotic development remains limited. Nevertheless, a cadre of dedicated innovators, many of them supported by Federal funds, are exploring ways to develop new classes of antibiotics as well as new therapies that could potentially replace the use of antibiotics in agriculture and humans. Efforts are focused at identifying and characterizing new drug targets and developing new therapeutic approaches.

Bringing promising antibiotic candidates to market is a major goal of the [Biomedical Advanced Research and Development Authority \(BARDA\)](#), which is working collaboratively with other government agencies to advance innovative research on antibiotic resistance. Examples include hosting research forums to facilitate the creation of public/private partnerships and launching a “biopharmaceutical incubator” that allows academic institutions and start-up companies to explore creative, early-stage research ideas that could lead to development of new antibacterial drugs or therapies.

Objectives

4.1 **Conduct research to enhance understanding of environmental factors that facilitate the development of antibiotic resistance and the spread of resistance genes that are common to animals and humans.**

Implementation steps include working with academic and industry partners to:

- i. Support basic research to utilize powerful new technologies and approaches including systems biology to advance the study of antibiotic resistance and address the special problems posed by resistant Gram-negative pathogens such as CRE.
- ii. Leverage existing partnerships, such as the [Antibacterial Resistance Leadership Group \(ARLG\)](#), to reduce obstacles faced by drug companies who are developing new antibiotics. For example, ARLG or another public-private partnership might:
 - Help identify human-subjects qualified for enrollment in clinical trials of antibiotics to treat resistant bacterial infections that occur sporadically, episodically, and/or in limited populations.

¹¹ Diagnostics development is also discussed in Goal 2.

- Generate and apply common clinical test protocols to multiple test group of patients while sharing a common control group.
- 4.2 Increase research focused on understanding the nature of microbial communities, how antibiotics affect them, and how they can be harnessed to prevent disease.**
- 4.3 Intensify research and development of new therapeutics and vaccines, first-in-class drugs, and new combination therapies for treatment of bacterial infections.**
- 4.4 Develop non-traditional therapeutics and innovative strategies to minimize outbreaks caused by resistant bacteria in human and animal populations.**
- 4.5 Expand ongoing efforts to provide key data and materials to support the development of promising antibacterial drug candidates.**
- 4.6 Enhance opportunities for public-private partnerships to accelerate research on new antibiotics and other tools to combat resistant bacteria.**
- 4.7 Create a biopharmaceutical incubator—a consortium of academic, biotechnology and pharmaceutical industry partners—to promote innovation and increase the number of antibiotics in the drug-development pipeline.**

Anticipated Outcomes

In working toward these objectives with private sector and other stakeholders, Federal departments and agencies will aim to meet the following benchmarks by 2020:

- Two programs sponsored by BARDA will file FDA New Drug Applications for a new antibiotic by the end of 2018.
- Antibiotics developed by two other BARDA-sponsored programs will enter Phase III clinical development by the end of 2016.
- Antibiotics developed by DOD’s Defense Threat Reduction Agency-sponsored program will submit pre-Emergency Use Authorization package in 2015.
- USDA will develop at least three drug candidates or probiotic treatments as alternatives to antibiotics for promoting growth in animals (see also Goal 1).
- FDA, USDA, CDC, and the National Institutes of Health (NIH) will encourage private-public sector partnerships to support antibiotic research by hosting a series of Round Table talks for experts in food production, agriculture, and public health.
- By the end of 2014, FDA, USDA, DHS, and National Science Foundation (NSF) will work with the National Institute for Mathematical and Biological Synthesis to develop an analytic modeling framework for assessing the relationship between antibiotic use in livestock (measured at the population level) and the development of antibiotic resistance. The framework will include early milestones and metrics for success.
- FDA, USDA, CDC, DOD and NIH will convene a joint summit to evaluate the status of ongoing research into mechanisms of resistance and its spread among zoonotic

pathogens and commensal microbiota. The research projects may make use of whole genome sequencing, proteomics, metagenomics, structural biology, and bioinformatics.

- FDA, USDA, CDC, NIH, DOD, and EPA will conduct annual evaluations to ensure that research resources are focused on high-priority resistance issues.
- A mechanism will be in place to ensure that datasets on antibiotic resistance generated through federally funded research, including genomic and proteomic data sets, are publicly available through searchable online databases in a manner that is consistent with protecting personally identifiable information (see also Objective 2.1).
- The gut microbiome of at least one animal species raised for food will be sequenced and characterized to advance our understanding of the structure and function of gastrointestinal microbial communities. This research may help identify new growth promotants, antibacterial interventions that do not disrupt the normal gut intestinal microbiota of food animals, and may provide insight into management of the human microbiome.

GOAL 5: Improve International Collaboration and Capacities for Antibiotic Resistance Prevention, Surveillance, Control, and Antibiotic Research and Development

The Opportunity

Domestic action alone is insufficient to protect the nation's public and agriculture health and security. Resistance occurs naturally, but careless practices in drug supply and use or overuse — both in the United States and in countries around the world - are rapidly increasing the prevalence of hard-to-treat infections in both animals and humans. Antibiotic resistance represents a major economic burden on healthcare systems as resistant strains of bacteria cost more to treat and often require prolonged treatment. In the worst of cases, a strain is resistant to all of the available drugs and presents a threat to our global health security. The pipeline for new and more effective antibiotics is not well-stocked, and without action, the world may soon lose the easiest way to treat infections and keep people alive and healthy.

Effectively combating antibiotic resistance will require government, industry, academia, and the human and animal health sectors across the globe to work together. The global community is faced with limited tools to address this global threat due to a critical lack of data on the magnitude, epidemiology and economic impact of antibiotic resistance, as well as the paucity of diagnostic and therapeutic options. The actions the United States takes domestically must be complemented by coordinated international action in order to ensure that resistant strains that arise in one part of the world are rapidly detected, diagnosed, and contained at the source of emergence. The United States and international partners must work to promote innovation in drug and diagnostics development, enhance stewardship of existing antibiotics in human and agricultural settings, and strengthen systems for detecting, diagnosing, and monitoring resistance so that reporting is timely, accurate, and transparent.

International momentum for addressing the urgent threat of antibiotic resistance continues to grow at a political level. The United States has supported ongoing exchanges with the European Union through the Trans-Atlantic Taskforce on Antimicrobial Resistance (TATFAR), which was established in 2009 by President Obama and his European counterparts to improve cooperation on combating resistance. TATFAR serves as an effective model for international collaboration on antibiotic resistance both in terms of enabling robust technical exchanges as well as facilitating transparency and identifying best practices. In June 2013, G8 Science Ministers collectively agreed that resistance is a “major health security challenge of the 21st century” and affirmed the pivotal role that science plays in addressing global challenges like drug resistance. Additionally, the recent endorsement of resolution 67.25 by the World Health Assembly has triggered an international, WHO-led process to develop a Global Action Plan for Antimicrobial Resistance. The United States continues vigorously to support this process, which will provide a broad framework that will facilitate coordinated national and global investments to combat resistance. The Global Health Security Agenda (GHS), launched by the United States in partnership with nearly 30 countries in February 2014, includes preventing and detecting resistance as a key component, and the GHS will provide an important forum for

securing international financial and technical commitments to combat resistance in support of the WHO Global Action Plan.

United States Government agencies will work with ministries of health, agriculture, and food safety, WHO, Food and Animal Organization (FAO), World Organization for Animal Health (OIE), the European Union, and other partners to advance global efforts to combat antibiotic bacteria. Multilateral efforts will include: supporting the development of the WHO Global Action Plan to Address Antimicrobial Resistance; strengthening cooperation under the European Union-United States TATFAR; increasing political awareness regarding the health, economic, and security impacts of antibiotic resistance; and mobilizing broader international support to combat antibiotic resistance through venues such as the recently launched GHSA. As needed and appropriate, United States Government agencies will provide information, technical assistance, and/or capacity-building resources to underdeveloped and developing nations throughout the world.

Objectives

Surveillance: Establish capacity to detect, analyze, and report antibiotic resistance in order to make information needed for evidence-based decision making available in each country and globally.

5.1 Promote laboratory capability to identify at least three of the seven WHO priority AMR pathogens¹² using standardized, reliable detection assays.

The WHO AMR Pathogens and types of resistance of concern include:

- *Escherichia coli*: resistance to 3rd generation cephalosporins and to fluoroquinolones
- *Klebsiella pneumoniae*: resistance to 3rd generation cephalosporins and to carbapenems
- *Staphylococcus aureus*: methicillin resistance, or MRSA
- *Streptococcus pneumoniae*: resistance (non-susceptibility) to penicillin
- Non-Typhoidal *Salmonella* (NTS): resistance to fluoroquinolones
- *Shigella* species: resistance to fluoroquinolones
- *Neisseria gonorrhoeae*: reduced susceptibility to 3rd generation cephalosporins

5.2 Collaborate with WHO, OIE, and other international efforts focused on the development of harmonized, laboratory-based surveillance capacity to detect and monitor antibiotic resistance in relevant animal and foodborne pathogens.

5.3 Develop a mechanism for international communication of critical events that may signify new resistance trends with global public and animal health implications.

5.4 Promote the generation and dissemination of information needed to effectively address antibiotic resistance by:

¹² The WHO priority AMR pathogens are a subset of the pathogens identified as urgent and serious threats in Table 1.

- i. Supporting consistent international standards for determining whether bacteria are resistant to antibiotics.
- ii. Developing international collaborations to gather country-specific and regional information on drivers of antibiotic resistance, identify evidence-based interventions and adapt these strategies to new settings, and evaluate their effectiveness.
- iii. Provide technical assistance to developing nations to improve their capacity to detect and respond effectively to antibiotic resistance.

Research and Development: Incentivize development of therapeutics and diagnostics for humans and animals.

5.5 Establish and promote international collaboration and public-private partnerships to incentivize development of new therapeutics to counter antibiotic resistance including new, next-generation, and other alternatives to antibiotics; vaccines; and affordable, rapidly deployable, point-of-need diagnostics.

Prevention and Control: Strengthen systems in countries, regional networks, and global partnerships to prevent and control the emergence and spread of antibiotic resistance through evidence-based interventions, and monitor and evaluate the effectiveness of those interventions.

5.6 Support countries to develop and implement national plans to combat antibiotic resistance and strategies to enhance antimicrobial stewardship.

5.7 Partner with other nations to promote quality, safety, and efficacy of antibiotics and strengthen their pharmaceutical supply chains.

5.8 Coordinate regulatory approaches by collaborating with international organizations such as FAO and OIE to harmonize international data submission requirements and risk assessment guidelines related to the licensure and/or approval of veterinary medicinal products including antibacterial agents, vaccines, and diagnostics to the extent possible.

Anticipated Outcomes

In working toward these objectives with private sector and other stakeholders, Federal agencies will aim to meet the following benchmarks by 2020:

- Work with at least 30 partner countries to develop surveillance capacity to monitor and slow the rate of increase of antibiotic resistance, including at least one reference laboratory per country capable of identifying at least three of the seven WHO priority AMR pathogens (see page 19) using standardized, reliable detection assays, and reporting these results appropriately.
- Work with international partners to support the development and implementation of the *WHO Global Action Plan for Antimicrobial Resistance (AMR)*.
- Support the development of a secure website or portal for real-time data-sharing among international public health partners on antibiotic-resistant bacteria to facilitate early warning and notification of significant events to WHO, ECDC, and other relevant global public health organizations.

- Develop a common system with the European Union for sharing and analyzing bacterial resistance patterns for the 18 CDC priority pathogens (Table 1), which include the seven WHO priority pathogens.
- Support efforts to harmonize and integrate antibiotic-resistance surveillance data on WHO and CDC priority pathogens generated by WHO regional surveillance networks.
- In collaboration with partner nations and the WHO, FAO, and OIE, explore the establishment of a common mechanism for accelerating investment in research on the development of new and next generation antibiotics, including novel therapeutics, vaccines, and rapid, inexpensive, and rapidly deployable, point-of-care diagnostics; similarly coordinate research on the microbiomes of various species of food animals.
- Forge key partnerships aimed at reducing the use of medically important antibiotics for growth promotion in food animals and strengthening antibiotic stewardship in all human settings.
- Collaborate with other OIE member countries to establish a global database to collect harmonized quantitative data on the use of antibacterial agents in animals.
- Establish a process for international communication of critical events that may signify new resistance trends, including those with global public health implications.
- Work with WHO, FAO, and OIE to build on Codex Alimentarius¹³ and other risk-management frameworks to assess country-specific and regional drivers of antibiotic resistance and work with Ministries of Health and Agriculture to adopt interventions that have proven successful in other settings.

¹³ The Codex Alimentarius is a collection of internationally recognized standards, codes of practice, and guidelines relating to foods, food production, and food safety (<http://www.codexalimentarius.org/codex-home/en/>).

Next Steps

Over the next six months, an interagency task force co-chaired by the Secretaries of Health and Human Services, Agriculture, and Defense will develop a National Action Plan for Combating Antibiotic-Resistant Bacteria that will detail the specific steps that agencies are taking, or will take, both individually and in coordination to implement this *National Strategy*. The task force will also address recommendations made in a recent report by the President's Council of Advisors on Science and Technology on Combating Antibiotic Resistance. The National Action Plan will establish clear milestones and metrics for success. These activities will be coordinated by the White House National Security Council and Office of Science and Technology Policy. Because this initiative will require a sustained effort, the task force will regularly report to the President on progress made in implementing the National Strategy and Action Plan, and toward achieving the National Targets described in Table 3. It is expected that departments and agencies would also take steps to combat antibiotic resistance that are not explicitly included in either the National Strategy or Action Plan; these efforts will also be included in the progress report to the President. Industry and other non-governmental organizations as well as international partners will play a key role in accelerating progress in combating antibiotic resistance. This *National Strategy* will solidify an ongoing partnership among these entities that will ensure resources are leveraged effectively to address this urgent threat to public health and national security.

The *National Strategy* is intended to promote greater investment and coordination of U.S. Government resources to reduce antibiotic-resistant bacteria, but the *National Strategy* is not a budget document and does not imply approval for any specific action under Executive Order 12866 or the Paperwork Reduction Act. The *National Strategy* will inform the Federal budget and regulatory development processes within the context of the goals articulated in the President's Budget. All activities included in the *National Strategy* are subject to budgetary constraints and other approvals, including the weighing of priorities and available resources by the Administration in formulating its annual budget and by Congress in legislating appropriations.

Table 1: CDC's Antibiotic-Resistant Threats in the United States, 2013

URGENT Threat Level Pathogens

Clostridium difficile

- 250,000 infections per year requiring hospitalization or affecting hospitalized patients.
- 14,000 deaths per year.
- At least \$1 billion in excess medical costs per year.
- *C. difficile* deaths increased 400% between 2000 and 2007 because of the emergence of a strain resistant to a common antibiotic class (fluoroquinolones).
- Almost half of infections occur in people younger than 65, but more than 90% of deaths occur in people 65 and older.
- Half of *C. difficile* infections first show symptoms in hospitalized or recently hospitalized patients, and half show symptoms in nursing-home patients or in people recently cared for in doctors' offices and clinics who received antibiotics.
- The majority (71%) of pediatric *Clostridium difficile* infections, which are bacterial infections that cause severe diarrhea and are potentially life-threatening, occur among children in the general community; 73 % were found to have recently taken antibiotics prescribed in doctor's offices for other outpatient settings.¹⁴

Carbapenem-Resistant Enterobacteriaceae

- Out of approximately 140,000 healthcare-associated Enterobacteriaceae infections per year, more than 9,000 are caused by CRE (7,900 CR-*Klebsiella* spp; 1,400 CR-*E. coli*).
- Over 600 deaths per year (520 CR-*Klebsiella* spp; 90 CR-*E. coli*).
- 44 states have had at least one type of CRE confirmed by CDC testing.
- CRE are resistant to nearly all antibiotics including carbapenems – an antibiotic of last resort.

Neisseria gonorrhoeae (Notifiable to CDC)

- *Neisseria gonorrhoeae* causes gonorrhea, is the second most common reportable infection in the United States, and is developing resistance to the cephalosporin antibiotics (such as ceftriaxone), the last-line effective treatment option for this infection.
- Of the 820,000 cases per year, 30% (246,000) now demonstrate resistance to at least one antibiotic.
- If ceftriaxone-resistant *N. gonorrhoeae* becomes widespread, the public health impact during a 10-year period is estimated to be 75,000 additional cases of pelvic inflammatory

¹⁴Wendt, J.M. et al. *Clostridium difficile* Infection Among Children Across Diverse US Geographic Locations. Pediatrics. January 3, 2014.

disease, 15,000 cases of epididymitis, and 222 additional HIV infections, with an estimated direct medical cost of at least \$235 million.

SERIOUS Threat Level Pathogens

Multidrug-Resistant *Acinetobacter*

- 12,000 healthcare-associated *Acinetobacter* infections occur in the U.S. of which 7,000 are multidrug-resistant.
- ~500 deaths per year
- At least three different classes of antibiotics no longer cure resistant *Acinetobacter* infections.

Drug-Resistant *Campylobacter*

- *Campylobacter* causes ~1.3 Million infections, 13,000 hospitalizations and 120 deaths each year; 310,000 (25%) drug-resistant *Campylobacter* infections are found each year
- *Campylobacter* drug resistance increased from 13% in 1997 to 25% in 2011.
- *Campylobacter* spreads from animals to people through contaminated food, particularly raw or undercooked chicken and unpasteurized milk.
- Antibiotic use in food animals can and does result in resistant *Campylobacter* that can spread to humans.

Fluconazole-Resistant *Candida*

- Out of 46,000 *Candida* yeast infections per year, 3,400 (30%) of patients with bloodstream infections with DR-*Candida* die during their hospitalization.
- CDC estimates that each case of *Candida* infection results in 3-13 days of additional hospitalization and a total of \$6,000-\$29,000 in direct healthcare costs per patient.

Extended Spectrum β -Lactamase (ESBL)-Producing *Enterobacteriaceae*

- Extended spectrum β -lactamase (ESBL) is an enzyme that makes bacteria resistant to a wide spectrum of penicillins and cephalosporins.
- Of 140,000 *Enterobacteriaceae* infections per year, 26,000 are drug-resistant, causing 1,700 deaths.
- 26,000 healthcare-associated *Enterobacteriaceae* infections are caused by ESBL-*Enterobacteriaceae*.
- *Enterobacteriaceae* infections result in greater than \$40,000 excess hospital charges per occurrence.

Vancomycin-Resistant *Enterococcus*

- Of 66,000 *Enterococcus* infections per year, 20,000 are drug-resistant causing 1,300 deaths.
- *Enterococcus* strains resistant to vancomycin have few or no treatment options.

Multidrug-Resistant *Pseudomonas aeruginosa*

- Of 51,000 *Pseudomonas* infections per year, 6,700 are multidrug-resistant causing 440 deaths.
- 13% of severe healthcare-associated infections caused by *Pseudomonas* are multidrug-resistant, meaning nearly all or all antibiotics no longer cure these infections.

Drug-Resistant Non-Typhoidal *Salmonella* (Notifiable to CDC)

- Non-typhoidal *Salmonella* causes 1.2 million infections per year, of which 100,000 are drug-resistant resulting in 23,000 hospitalizations and 450 deaths each year.
- Non-typhoidal *Salmonella* results in more hospitalizations, longer stays, and higher treatment costs.

Drug-Resistant *Salmonella enterica serovar Typhi* (Notifiable to CDC)

- Of 21.7 M *Salmonella typhi* infections worldwide, 5,700 illnesses in the U.S. with 3,800 (67%) of infections are drug-resistant resulting in 620 hospitalizations each year.
- Before the antibiotic era or in areas where antibiotics are unavailable, 20% of *Salmonella typhi* infections result in death.

Drug-Resistant *Shigella* (Notifiable to CDC)

- *Shigella* causes ~500,000 illnesses, 5,500 hospitalizations, and 40 deaths each year in the U.S.
- Since 2006, *Shigella* resistance to traditional first-line antibiotics has become so high that physicians must now rely on alternative drugs (ciprofloxacin and azithromycin) to treat infections.

Methicillin-Resistant *Staphylococcus aureus* (MRSA)

- Over 80,000 invasive MRSA infections and 11,285 related deaths per year (in 2011).
- Severe MRSA infections most commonly occur during or soon after inpatient medical care.
- Between 2005 and 2001, overall rates of invasive MRSA dropped 31% predominantly due to appropriate medical procedures implemented in central-line maintenance.

Drug-Resistant *Streptococcus pneumoniae* (Notifiable to CDC)

- Of 4 million disease incidents and 22,000 deaths, 1.2 M are drug-resistant [to amoxicillin and azithromycin (Z-Pak)], resulting in 19,000 excess hospitalizations and 7,900 deaths.
- In 30% of *S. pneumoniae* cases, the bacteria are fully resistant to one or more antibiotics, causing complications in treatment and death.
- Pneumococcal pneumonia accounts for 72% of all direct medical costs for treatment of pneumococcal disease and in excess of \$96 million in medical costs per year.
- Pneumococcal conjugate vaccine (PCV) prevents disease, reduces antibiotic resistance by blocking the transmission of resistant *S. pneumoniae* strains, and protects against 13 strains of *S. pneumoniae*.

Drug-Resistant *Tuberculosis* (Notifiable to CDC)

- Tuberculosis (TB) is among the most common infectious diseases and cause of death worldwide.
- Of 9,588 TB cases in the U.S. in 2013, it is estimated that 1-2% of these cases were resistant to antibiotics with direct costs for treatment of MDR-TB averaging \$134,000 per case (in 2010 dollars)
- CDC funds health departments in all 50 states, 10 large cities, DC, Puerto Rico, the Virgin Islands and other territories to conduct surveillance, provide laboratory testing, perform contact investigations, diagnose cases and provide directly-observed therapy and medical management for TB cases and therapy for latent TB infection. Five TB Regional Training and Medical Consultation Centers (RTMCCs) provide training and medical consultation for these programs.

OF CONCERN Threat Level Pathogens

Vancomycin-Resistant *Staphylococcus aureus* (Notifiable to CDC)

- Few cases, thus far (13 cases in 4 States since 2002).
- *Staph aureus* strains resistant to vancomycin have very few or no treatment options.

Erythromycin-Resistant Group A *Streptococcus*

- Group A Strep (GAS) causes many illnesses, including strep throat (up to 2.6 M cases per year), toxic shock syndrome, and “flesh-eating” disease (necrotizing fasciitis, 25-35% fatal).
- Erythromycin-resistant GAS causes 1,300 illnesses and 160 deaths.
- Current concern is the increase in bacteria that show resistance to clindamycin, which has a unique role in treatment of GAS infections.

Clindamycin-Resistant Group B *Streptococcus*

- Of 27,000 GBS cases, 7,600 illnesses are drug-resistant, resulting in 440 deaths in the United States each year.

Additional information may be found in the CDC report *Antibiotic resistance threats in the United States, 2013* (<http://www.cdc.gov/drugresistance/threat-report-2013/>).

Table 2: Goals and Objectives for Combating Antibiotic-Resistant Bacteria

GOAL 1: Slow the Emergence of Resistant Bacteria and Prevent the Spread of Resistant Infections

Objectives

- 1.1 **Implement public health programs and reporting policies that advance antibiotic-resistance prevention and foster antibiotic stewardship in healthcare settings and the community.**
- 1.2 **Eliminate the use of medically important antibiotics for growth promotion in animals and bring other in-feed uses of antibiotics, for treatment and disease control and prevention of disease, under veterinary oversight.**
- 1.3 **Identify and implement measures to foster stewardship of antibiotics in animals.**

Goal 2: Strengthen National One-Health Surveillance Efforts to Combat Resistance

Objectives

- 2.1 **Create a regional laboratory network to strengthen national capacity to detect resistant bacterial strains and a specimen repository to facilitate development and evaluation of diagnostic tests and treatments.**
- 2.2 **Expand and strengthen the national infrastructure for public health surveillance and data reporting, and provide incentives for timely reporting of antibiotic resistance and antibiotic use in all healthcare settings.**
- 2.3 **Develop, expand, and maintain capacity in State and Federal veterinary and food safety laboratories to conduct standardized antibiotic susceptibility testing and characterize select zoonotic and animal pathogens.**
- 2.4 **Enhance monitoring of antibiotic-resistance patterns, as well as antibiotic sales, usage, and management practices, at multiple points in the production chain from food-animals on-farm, through processing, and retail meat.**

Goal 3: Advance Development and Use of Rapid and Innovative Diagnostic Tests for Identification and Characterization of Resistant Bacteria

Objectives

- 3.1 Develop and approve new diagnostics, including tests that rapidly distinguish between viral and bacterial pathogens and tests that detect antibiotic resistance that can be implemented easily in a wide range of settings.**
- 3.2 Expand availability and use of diagnostics to improve treatment of antibiotic-resistant infections, enhance infection control, and facilitate outbreak detection and response in healthcare and community settings.**

Goal 4: Accelerate Basic and Applied Research and Development for New Antibiotics, Other Therapeutics, and Vaccines

Objectives

- 4.1 Conduct research to enhance understanding of ecological determinants and environmental factors that facilitate the development of antibiotic resistance and the spread of resistance genes that are common to animals and humans.**
- 4.2 Increase research focused on understanding the nature of microbial communities, how antibiotics affect them, and how they can be harnessed to prevent disease.**
- 4.3 Intensify research and development of new therapeutics and vaccines, first-in-class drugs, and new combination therapies for treatment of bacterial infections.**
- 4.4 Develop non-traditional therapeutics and innovative strategies to minimize the effects of resistant bacteria in human and animal populations.**
- 4.5 Expand ongoing efforts to provide key data and materials to support the development of promising antibacterial candidates.**
- 4.6 Enhance opportunities for public-private partnerships to accelerate research on new antibiotics and other tools to combat resistant bacteria**
- 4.7 Create a biopharmaceutical incubator—a consortium of academic, biotechnology and pharmaceutical industry partners—to promote innovation and increase the number of antibiotics in the drug-development pipeline**

Goal 5: Improve International Collaboration and Capacities for Antibiotic Resistance Prevention, Surveillance, Control, and Antibiotic Research and Development

Objectives

Surveillance for Resistant Bacteria

- 5.1 **Promote laboratory capability to identify at least 3 of the 7 WHO priority AMR pathogens¹⁵ using standardized, reliable detection assays.**
- 5.2 **Collaborate with WHO, OIE, and other international efforts focused on the development of harmonized, laboratory-based surveillance capacity to detect and monitor antibiotic resistance in relevant animal and foodborne pathogens.**
- 5.3 **Develop a mechanism for international communication of critical events that may signify new resistance trends with global public and animal health implications.**
- 5.4 **Promote the generation and dissemination of information needed to address antibiotic resistance by:**
 - 5.4.1 **Promote consistent international standards for determining whether bacteria are resistant to antibiotics; and**
 - a) **Develop international collaborations to gather country-specific and regional information on drivers of antibiotic resistance, identify evidence-based interventions, adapt these strategies to new settings, and evaluate their effectiveness; and**
 - b) **Provide technical assistance as needed to underdeveloped and developing nations to improve their capacity to detect and respond effectively to antibiotic resistance.**

Research and Development

- 5.5 **Establish and promote international collaboration and public-private partnerships to incentivize development of new therapeutics to counter antibiotic resistance including new, next-generation, and other alternatives to antibiotics; vaccines; and affordable, rapidly deployable, point-of-need diagnostics.**

Prevention and Control

- 5.6 **Support countries to develop and implement national plans to combat antibiotic resistance and strategies to enhance antimicrobial stewardship.**
- 5.7 **Partner with other nations to promote quality, safety, and efficacy of antibiotics and strengthen country pharmaceutical supply chains.**

¹⁵ A list of WHO priority AMR pathogens is provided on page 18. These pathogens are a subset of the pathogens identified as Urgent and Serious Threats in Table 1.

- 5.8 Coordinate regulatory approaches by collaborating with international organizations such as FAO and OIE to harmonize international data submission requirements and risk assessment guidelines related to the licensure and/or approval of veterinary medicinal products including antibiotics, vaccines, and diagnostics, to the extent possible.**

Table 3: National Targets for Combating Antibiotic-Resistant Bacteria

By 2020, the United States will:

For CDC Recognized Urgent Threats:

- Reduce by 50% the incidence of overall *Clostridium difficile* infection compared to estimates from 2011.
- Reduce by 60% carbapenem-resistant Enterobacteriaceae infections acquired during hospitalization compared to estimates from 2011.
- Maintain the prevalence of ceftriaxone-resistant *Neisseria gonorrhoeae* below 2% compared to estimates from 2013.

For CDC Recognized Serious Threats:

- Reduce by 35% multidrug-resistant *Pseudomonas* spp. infections acquired during hospitalization compared to estimates from 2011.
- Reduce by at least 50% overall methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections by 2020 as compared to 2011.*
- Reduce by 25% multidrug-resistant non-typhoidal *Salmonella* infections compared to estimates from 2010—2012.
- Reduce by 15% the number of multidrug-resistant TB infections.
- Reduce by at least 25% the rate of antibiotic-resistant invasive pneumococcal disease among <5 year-olds compared to estimates from 2008.
- Reduce by at least 25% the rate of antibiotic-resistant invasive pneumococcal disease among >65 year-olds compared to estimates from 2008.

* This target is consistent with the reduction goal for MRSA bloodstream infections (BSI) in the *National Action Plan to Prevent Healthcare-Associated Infections (HAI): Road Map to Elimination*, which calls for a 75% decline in MRSA BSI from the 2007-2008 baseline by 2020. Additional information is available at http://www.health.gov/hai/prevent_hai.asp#hai_plan.

Influenza Vaccination Coverage among Healthcare Workers during the 2013-14 Influenza Season in Rhode Island

HYUN (HANNA) KIM, PhD; PATRICIA RAYMOND, RN, MPH; TRICIA WASHBURN, BS; DENISE CAPPELLI, AS

Since 1984, the Centers for Disease Control and Prevention's (CDC) Advisory Committee on Immunization Practices (ACIP) has recommended annual seasonal influenza vaccination for healthcare workers (HCWs).¹ Vaccinating HCWs against influenza can reduce influenza illness, transmission of influenza to patients, and influenza-related morbidity and mortality among patients in healthcare settings.^{2,3} Despite the documented benefits and ACIP's long-standing recommendations, the overall influenza vaccination rate for HCWs has remained far below the Healthy People 2020 target of 90% nationally.⁴

In October 2012, with the input of the Rhode Island Flu Task Force, the Rhode Island Department of Health (HEALTH) amended HCW immunization regulations [R23-17-HCW] to increase influenza vaccination coverage among HCWs.⁵ The amended regulations require all HCWs in healthcare facilities either to receive influenza vaccination, or provide proof of a medical exemption or a declination statement to their healthcare facilities by December 15th of each year. Unvaccinated HCWs must wear a surgical face mask during direct, face-to-face contact with patients when influenza is declared widespread. Healthcare facilities are required to report their HCW influenza vaccination status data to HEALTH at the end of each influenza season.⁵

This article presents influenza vaccination coverage among Rhode Island HCWs and healthcare facilities' data reporting for the 2013–2014 influenza season.

METHODS

The aggregate counts of HCW influenza vaccination status data reported by healthcare facilities to HEALTH were used to estimate vaccination coverage. For the 2013-2014 influenza season, all healthcare facilities subject to the HCW regulations were required to report HCW vaccination status during April 1–May 15, 2014 through HEALTH's web-based reporting system. A healthcare facility is defined as any institutional health service provider or facility that is licensed by HEALTH, including but not limited to, hospitals, nursing homes, home care providers, home nursing care providers, kidney disease treatment centers, and hospice providers.

The elements of data reporting include the number of HCWs who: 1) were eligible for vaccination (total number of HCWs), 2) received vaccination, 3) refused influenza vaccine for medical reasons, 4) refused influenza vaccine for reasons other than medical contraindications, and 5) had

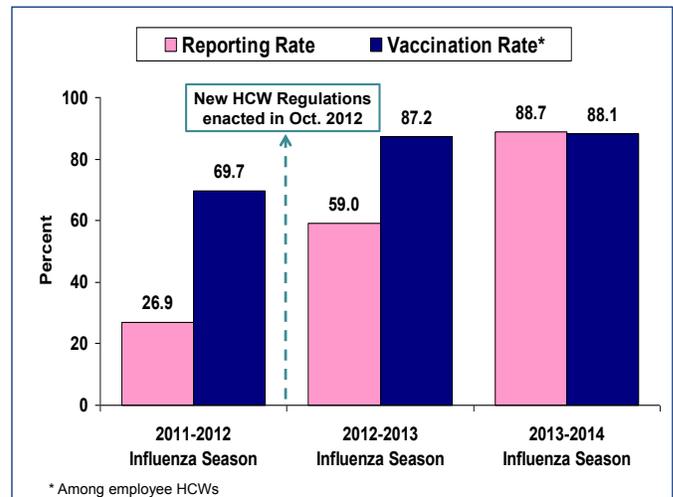
an unknown vaccination status. The number of HCWs reported in 2-5 should be mutually exclusive and the sum should be equal to the total number of HCWs. Each facility is required to report the vaccination status for the following HCW categories: employees (staff on the facility's payroll), non-employee licensed independent practitioners (LIP), and non-employee adult students/trainees/volunteers (STV). HCW includes both full-time and part-time persons who have worked at the facility for at least one working day during October 1, 2013–March 31, 2014. If a HCW works in two or more facilities, each facility should include the HCW in their counts. The total number of Rhode Island facilities subject to the HCW regulations for the 2013–2014 influenza season was 302 facilities.

RESULTS

Overall Influenza Vaccination Reporting and Coverage Rates

Of the 302 facilities subject to the HCW regulations, 268 facilities (88.7%) reported their 2013-2014 HCW influenza vaccination data to HEALTH, which was a substantial increase from 59.0% for the 2012–2013 and 26.9% for the 2011–2012 influenza season. While the proportion of influenza vaccination coverage for employee HCWs increased substantially from 69.7% in the 2011–2012 season to 87.2% in the 2012–2013 season, it increased only marginally from 87.2% in the 2012–2013 season to 88.1% in the 2013–2014 season. (Figure 1)

Figure 1. Influenza Vaccination Reporting and Coverage Rates, Rhode Island, 2011–2012, 2012–2013, and 2013–2014 Influenza Seasons



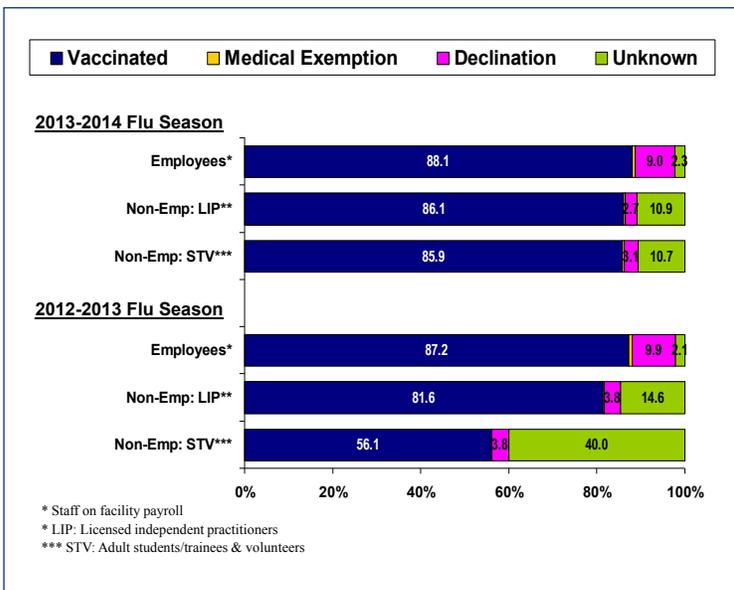
Influenza Vaccination Status by HCW Type

Figure 2 presents the influenza vaccination status by HCW type in the 2012–2013 and the 2013–2014 influenza seasons. During the 2013–2014 influenza season, the proportion of HCWs receiving influenza vaccination was slightly higher among employee HCWs than non-employee HCWs. Eighty-eight percent (88.1%) of employee HCWs were vaccinated, compared to 86.1% of non-employee LIPs, and 85.9% of non-employee STVs. The proportion of declination was also higher among employee HCWs (9.0%) than non-employee LIPs (2.7%) or non-employee STVs (3.1%). However, the proportion of unknown status was higher for non-employee HCWs (10.9% for non-employee LIPs and 10.7% for non-employee STVs) than employee HCWs (2.3%). The proportion of medical exemption was less than 1% for all three categories.

Between the 2012–2013 influenza season and the 2013–2014 influenza season, all categories of vaccination status for employee HCWs were very similar: vaccinated (87.2% in the 2012–2013 season vs. 88.1% in the 2013–2014 season), medical exemption (0.7% vs. 0.6%), declination (9.9% vs. 9.0%), and unknown status (2.1% vs. 2.3%).

Compared to the 2012–2013 influenza season, the proportion of unknown status in the 2013–2014 influenza season decreased substantially for non-employee HCWs, especially for non-employee STVs. Forty percent (40.0%) of non-employee STVs had unknown vaccination status in the 2012–2013 influenza season, compared to 10.7% in the 2013–2014 influenza season.

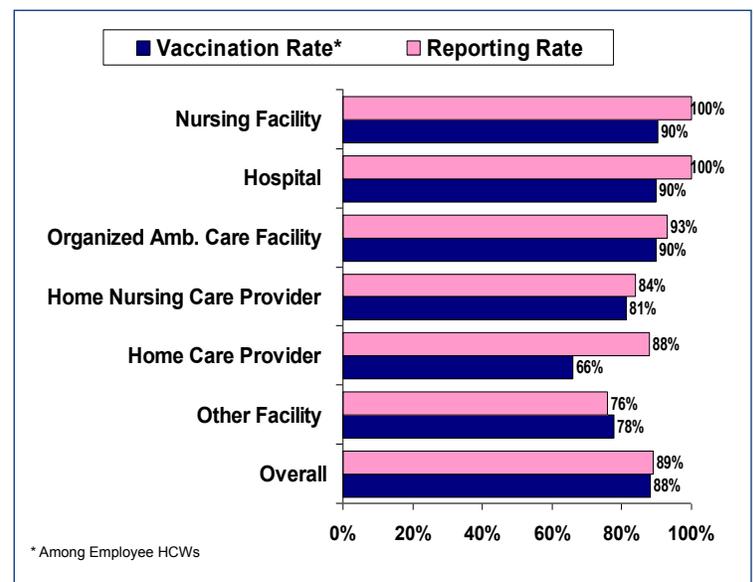
Figure 2. Influenza Vaccination Status by HCW Type, Rhode Island, 2012–2013 and 2013–2014 Influenza Seasons



Influenza Vaccination Reporting and Coverage Rates by Facility Type

Figure 3 shows that all nursing facilities and hospitals in Rhode Island reported their HCW's vaccination status to HEALTH for the 2013–2014 influenza season. Ninety-three percent (93%) of the organized ambulatory care facilities, 88% of home care providers, and 84% of home nursing care providers reported the data to HEALTH. The influenza vaccination rate among employee HCWs was highest in nursing facilities (90.4%), followed by hospitals and organized ambulatory care facilities (both 89.7%), home nursing care providers (81.2%), and home care providers (65.9%).

Figure 3. Influenza Vaccination Reporting and Coverage Rates by Facility Type, Rhode Island, 2013–2014 Influenza Season



DISCUSSION

Prior to 2012, healthcare facilities were required to offer influenza vaccine to HCWs at no cost, and to report rates of vaccination and declination to HEALTH. In October 2012, Rhode Island became the first state in the nation to mandate statewide annual influenza vaccination for HCWs beginning in the 2012–2013 influenza season. Data collected from the first season demonstrated that moving from a passive offering to a mandate was effective in increasing the influenza vaccination coverage rates among HCWs during the 2012–2013 influenza season.⁶

Data collected from the 2013–2014 showed additional improvements in reporting and vaccination coverage rates. First, overall rates of reporting from the individual healthcare facilities on their HCWs influenza vaccination status increased substantially from 59% in the 2012–2013 influenza season to 89% in the 2013–2014 influenza season. Second, although the vaccination rate for employee HCWs remained similar for the 2012–2013 and the 2013–2014 seasons (87.2% vs. 88.1% respectively), vaccination rates for non-employee

HCWs (LIPs and STVs) increased substantially, especially for STVs (56.1% vs. 85.9%). The increase in the vaccination rates among non-employee HCWs could be attributed to the decrease in the amount of unknown vaccination status in these groups, which may imply quality improvements in the data collection for non-employee HCWs in the health-care facilities. Third, the larger proportion of unknown vaccination status among non-employee HCWs compared to employee HCWs was mainly due to one free clinic with a large number of non-employee HCWs (Rhode Island Free Clinic, Inc.), where the vaccination status of all non-employee HCWs working in this facility during the 2013-2014 influenza season (140 LIPs and 574 STVs) were reported as unknown. If we exclude this one clinic, the unknown status rates for non-employee HCWs would have been much lower.

HEALTH continues to convene Rhode Island's Flu Task Force, which consists of key immunization stakeholders in the community, to identify and develop strategies to increase influenza vaccination coverage and address barriers to vaccination. Individual facility's data on HCW influenza vaccination are posted at www.health.ri.gov/publications/datareports/20132014HealthcareWorkerVaccinationRates.pdf.

References

- Centers for Diseases Control and Prevention. Prevention and control of influenza. *MMWR*. 1984;33(19):253-60, 65-6.
- Potter J, Stott DJ, Roberts MA, et al. Influenza vaccination of health care workers in long-term care hospitals reduces the mortality of elderly patients. *J Infect Dis*. 1997;175:1-6.
- Lemaitre M, Meret T, Rothan-Tondeur M, et al. Effect of influenza vaccination of nursing home staff on mortality of residents: a cluster-randomized trial. *J Am Geriatr Soc*. 2009;57:1580-1586.
- Centers for Disease Control and Prevention. Influenza Vaccination Coverage among Health-Care Personnel—United States, 2012–13 Influenza Season. *MMWR*. 2013;62(38):781–786.
- State of Rhode Island and Providence Plantations Department of Health. Rules and Regulations Pertaining to Immunization, Testing, and Health Screening for Health Care Workers [R23-17-HCW]. Amended as of October 25, 2012. Retrieved from <http://sos.ri.gov/documents/archives/regdocs/released/pdf/DOH/7083.pdf>.
- Kim H, Lindley MC, Dube D, Kalayil EJ, Paiva KA, Raymond P. Evaluation of the impact of the 2012 Rhode Island health care worker influenza vaccination regulations: implementation process and vaccination coverage. *J Public Health Manag Pract*. 2014 Aug 7 [Epub ahead of print]. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/25105280>.

Authors

Hyun (Hanna) Kim, PhD, is Senior Public Health Epidemiologist in the Center for Health Data and Analysis, Rhode Island Department of Health, and Clinical Assistant Professor in the Department of Epidemiology, School of Public Health, Brown University.

Patricia Raymond, RN, MPH, is the Team Lead for Preventive Services and Community Practices in the Division of Community, Family Health and Equity, Rhode Island Department of Health.

Tricia Washburn, BS, is the Chief of the Office of Immunization in the Division of Community, Family Health and Equity, Rhode Island Department of Health.

Denise Cappelli, AS, is the Coordinator of Adult Immunization Program in the Division of Community, Family Health and Equity, Rhode Island Department of Health.

Disclosures

The authors and/or their significant others have no financial interests to disclose.

Correspondence

Hyun (Hanna) Kim, PhD
Rhode Island Department of Health
3 Capitol Hill
Providence, RI 02908-5097
hanna.kim@health.ri.gov



Observation Form

Facility:	<input type="text"/>	Period Number*:	<input type="text"/>	Session Number*:	<input type="text"/>
Service:	<input type="text"/>	Date: (dd/mm/yy)	<input type="text"/> / <input type="text"/> / <input type="text"/>	Observer: (initials)	<input type="text"/>
Ward:	<input type="text"/>	Start/End time: (hh:mm)	<input type="text"/> : <input type="text"/> / <input type="text"/> : <input type="text"/>	Page N°:	<input type="text"/>
Department:	<input type="text"/>	Session duration: (mm)	<input type="text"/>	City**:	<input type="text"/>
Country**:	<input type="text"/>				

Prof.cat			Prof.cat			Prof.cat			Prof.cat		
Code			Code			Code			Code		
N°			N°			N°			N°		
Opp.	Indication	HH Action									
1	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	1	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	1	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	1	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves
2	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	2	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	2	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	2	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves
3	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	3	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	3	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	3	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves
4	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	4	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	4	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	4	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves
5	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	5	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	5	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	5	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves
6	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	6	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	6	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	6	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves
7	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	7	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	7	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	7	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves
8	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	8	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	8	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves	8	<input type="checkbox"/> bef-pat. <input type="checkbox"/> bef-asept. <input type="checkbox"/> aft-b.f. <input type="checkbox"/> aft-pat. <input type="checkbox"/> aft.p.surr.	<input type="checkbox"/> HR <input type="checkbox"/> HW <input type="radio"/> missed <input type="radio"/> gloves

* To be completed by the data manager.

** **Optional**, to be used if appropriate, according to the local needs and regulations.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this document. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

WHO acknowledges the Hôpitaux Universitaires de Genève (HUG), in particular the members of the Infection Control Programme, for their active participation in developing this material.

Revised August 2009



General Recommendations

(refer to the Hand Hygiene Technical Reference Manual)

1. In the context of open and direct observations, the observer introduces him/herself to the health-care worker and to the patient when appropriate, explains his/her task and proposes immediate informal feedback.
2. The health-care worker, belonging to one of the main four following professional categories (see below), is observed during the delivery of health-care activities to patients.
3. Detected and observed data should be recorded with a pencil in order to be immediately corrected if needed.
4. The top of the form (header) is completed before starting data collection (excepted end time and session duration).
5. The session should last no more than 20 minutes (± 10 minutes according to the observed activity); the end time and the session duration are to be completed at the end of the observation session.
6. The observer may observe up to three health-care workers simultaneously, if the density of hand hygiene opportunities permits.
7. Each column of the grid to record hand hygiene practices is intended to be dedicated to a specific professional category. Therefore numerous health-care workers may be sequentially included during one session in the column dedicated to their category. Alternatively each column may be dedicated to a single health-care worker only of whom the professional category should be indicated.
8. As soon as you detect an indication for hand hygiene, count an opportunity in the appropriate column and cross the square corresponding to the indication(s) you detected. Then complete all the indications that apply and the related hand hygiene actions observed or missed.
9. Each opportunity refers to one line in each column; each line is independent from one column to another.
10. Cross items in squares (several may apply for one opportunity) or circles (only a single item may apply at one moment).
11. When several indications fall in one opportunity, each one must be recorded by crossing the squares.
12. Performed or missed actions must always be registered within the context of an opportunity.
13. Glove use may be recorded only when the hand hygiene action is missed while the health-care worker is wearing gloves.

Short description of items

Facility:	to complete according to the local nomenclature	
Service:	to complete according to the local nomenclature	
Ward:	to complete according to the local nomenclature	
Department:	to complete according to the following standardized nomenclature:	
	medical, including dermatology, neurology, haematology, oncology, etc.	surgery, including neurosurgery, urology, EENT, ophthalmology, etc.
	mixed (medical & surgical), including gynaecology	obstetrics, including related surgery
	paediatrics, including related surgery	intensive care & resuscitation
	emergency unit	long term care & rehabilitation
	ambulatory care, including related surgery	other (to specify)
Period N°:	1) pre- / 2) post-intervention; and then according to the institutional counter.	
Date:	day (dd) / month (mm) / year (yy)	
Start/end time:	hour (hh) / minute (mm).	
Session duration:	difference between start and end time, resulting in minutes of observation.	
Session N°:	attributed at the moment of data entry for analysis.	
Observer:	observer's initials (the observer is responsible for the data collection and for checking their accuracy before submitting the form for analysis).	
Page N°:	to write only when more than one form is used for one session.	
Prof.cat:	according to the following classification:	
	1. nurse / midwife	1.1 nurse, 1.2 midwife, 1.3 student.
	2. auxiliary	
	3. medical doctor	3.1 in internal medicine, 3.2 surgeon, 3.3 anaesthetist / resuscitator / emergency physician, 3.4 paediatrician, 3.5 gynaecologist, 3.6 consultant, 3.7 medical student.
	4. other health-care worker	4.1 therapist (physiotherapist, occupational therapist, audiologist, speech therapist), 4.2 technician (radiologist, cardiology technician, operating room technician, laboratory technician, etc), 4.3 other (dietician, dentist, social worker and any other health-related professional involved in patient care), 4.4 student.
Number:	number of observed health-care workers belonging to the same professional category (same code) as they enter the field of observation and you detect opportunities.	
Opp(ortunity):	defined by one indication at least	
Indication:	reason(s) that motivate(s) hand hygiene action; all indications that apply at one moment must be recorded	
	bef.pat: before touching a patient	aft.b.f: after body fluid exposure risk
	bef.asept: before clean/aseptic procedure	aft.pat: after touching a patient
		aft.p.surr: after touching patient surroundings
HH action:	response to the hand hygiene indication(s); it can be either a positive action by performing handrub or handwash, or a negative action by missing handrub or handwash	
	HR: hand hygiene action by handrubbing with an alcohol-based formula HW: hand hygiene action by handwashing with soap and water	Missed: no hand hygiene action performed



Observation Form – Basic Compliance Calculation

Session N°	Facility:			Period:			Setting:			Total per session					
	Prof.cat.			Prof.cat.			Prof.cat.			Prof.cat.					
	Opp (n)	HW (n)	HR (n)	Opp (n)	HW (n)	HR (n)	Opp (n)	HW (n)	HR (n)	Opp (n)	HW (n)	HR (n)	Opp (n)	HW (n)	HR (n)
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
Total															
Calculation	Act (n) =			Act (n) =			Act (n) =			Act (n) =			Act (n) =		
Compliance	Opp (n) =			Opp (n) =			Opp (n) =			Opp (n) =			Opp (n) =		

$$\text{Compliance (\%)} = \frac{\text{Actions}}{\text{Opportunities}} \times 100$$

Instructions for use

1. Define the setting outlining the scope for analysis and report related data according to the chosen setting.
2. Check data in the observation form. Hand hygiene actions not related to an indication should not be taken into account and vice versa.
3. Report the session number and the related observation data in the same line. This attribution of session number validates the fact that data has been taken into count for compliance calculation.
4. Results per professional category and per session (vertical):
 - 4.1 Sum up recorded opportunities (opp) in the case report form per professional category: report the sum in the corresponding cell in the calculation form.
 - 4.2 Sum up the positive hand hygiene actions related to the total of opportunities above, making difference between handwash (HW) and handrub (HR): report the sum in the corresponding cell in the calculation form.
 - 4.3 Proceed in the same way for each session (data record form).
 - 4.4 Add up all sums per each professional category and put the calculation to calculate the compliance rate (given in percent)
5. The addition of results of each line permits to get the global compliance at the end of the last right column.



Observation Form – Optional Calculation Form (Indication-related compliance with hand hygiene)

Session N°	Facility:						Period:			Setting:					
	Before touching a patient			Before clean/ aseptic procedure			After body fluid exposure risk			After touching a patient			After touching patient surroundings		
	Indic (n)	HW (n)	HR (n)	Indic (n)	HW (n)	HR (n)	Indic (n)	HW (n)	HR (n)	Indic (n)	HW (n)	HR (n)	Indic (n)	HW (n)	HR (n)
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															
16															
17															
18															
19															
20															
Total															
Calculation	Act (n) =			Act (n) =			Act (n) =			Act (n) =			Act (n) =		
	Indic1 (n) =			Indic2 (n) =			Indic3 (n) =			Indic4 (n) =			Indic5 (n) =		
Ratio act / indic*															

Instructions for use

1. Define the setting outlining the scope for analysis and report related data according to the chosen setting.
2. Check data in the observation form. Hand hygiene actions not related to an indication should not be taken into account and vice versa.
3. If several indications occur within the same opportunity, each one should be considered separately as well as the related action.
4. Report the session number and the related observation data in the same line. This attribution of session number validates the fact that data has been taken into count for compliance calculation.
5. Results per indication (indic) and per session (vertical):
 - 4.1 Sum up indications per indication in the observation form: report the sum in the corresponding cell in the calculation form.
 - 4.2 Sum up positive hand hygiene actions related to the total of indications above, making the difference between handwash (HW) and handrub (HR): report the sum in the corresponding cell in the calculation form.
 - 4.3 Proceed in the same way for each session (observation form).
 - 4.4 Add up all sums per each indication and put the calculation to calculate the ratio (given in percent)

***Note:** This calculation is not exactly a compliance result, as the denominator of the calculation is an indication instead of an opportunity. Action is artificially overestimated according to each indication. However, the result gives an overall idea of health-care worker's behaviour towards each type of indication.

Guide to Hand Hygiene Opportunities in Hemodialysis

Hand hygiene opportunity category	Specific examples
1. Prior to touching a patient	<ul style="list-style-type: none"> • Prior to entering station to provide care to patient • Prior to contact with vascular access site • Prior to adjusting or removing cannulation needles
2. Prior to aseptic procedures	<ul style="list-style-type: none"> • Prior to cannulation or accessing catheter • Prior to performing catheter site care • Prior to parenteral medication preparation • Prior to administering IV medications or infusions
3. After body fluid exposure risk	<ul style="list-style-type: none"> • After exposure to any blood or body fluids • After contact with other contaminated fluids (e.g., spent dialysate) • After handling used dialyzers, blood tubing, or prime buckets • After performing wound care or dressing changes
4. After touching a patient	<ul style="list-style-type: none"> • When leaving station after performing patient care • After removing gloves
5. After touching patient surroundings	<ul style="list-style-type: none"> • After touching dialysis machine • After touching other items within dialysis station • After using chairside computers for charting • When leaving station • After removing gloves

Please make note of the following during this session.			
	Yes	No	Comments
There is a sufficient supply of alcohol-based hand sanitizer			
There is a sufficient supply of soap at handwashing stations			
There is a sufficient supply of paper towels at handwashing stations			
There is visible and easy access to hand washing sinks or hand sanitizer			



Making dialysis safer for patients

CS228827G

National Center for Emerging and Zoonotic Infectious Diseases
Division of Healthcare Quality Promotion





HAND HYGIENE SCAN

10/8/14

General Results:

- A number of states and organizations have ongoing hand hygiene initiatives, although lack standardization
- State of Maine collects hand hygiene data from all hospitals 2x per year
- No required standard hand hygiene reporting methods were found across states
- Ontario, Canada, and the Government of South Australia *require* public reporting of hand hygiene measures

Table 1: Statewide Hand Hygiene Initiatives & Campaigns

Title	State/Organization	Details	Resources & Additional Information
Central Ohio Hand Hygiene Initiative: Reducing Infections, Improving Patient Care	Ohio	<ul style="list-style-type: none"> - In August 2010, the Central Ohio Hospital Council (COHC) and 20 central Ohio hospitals partnered to conduct an observational study of hand hygiene behaviours - Make use of student nurses to measure and collect data related to hand hygiene practices - Improved hand-hygiene compliance by 197% in first year or program 	Central Ohio Hospital Quality Collaborative Report
High Five for a Healthy New Hampshire	New Hampshire	<ul style="list-style-type: none"> - Engages hospitals and other facilities in hand hygiene awareness - Provides resources including assessment and educational tools - All 26 acute care hospitals in NH are participating 	High Five for a Healthy NH website Statewide assessment report NH Health Care Quality Assurance Commission
Indiana's Plan for Preventing HAI's	Indiana	<ul style="list-style-type: none"> - 2010 HAI plan notes incorporation of the World Health Organization (WHO) Hand Hygiene Initiative 	Indiana State HAI Plan WHO Hand Hygiene Information
"Just Clean Your Hands"	Government of Ontario, Canada	<ul style="list-style-type: none"> - Public Hospitals Act (PHA) regulatory amendment (effective July 28, 2008), requires hospitals to publicly report annual hand hygiene compliance 	Public Health Ontario "Just Clean Your Hands" website

Title	State/Organization	Details	Resources & Additional Information
Maine Hand Hygiene Initiatives	Maine	<ul style="list-style-type: none"> - In 2010, Maine hospitals committed to submitting hand hygiene data to the Northeast Health Care Quality Foundation (NHCQF) - Hand hygiene data is collected by external observers 2x year in every hospital - Hand hygiene observation data for all hospitals is analyzed and reported to hospital management 	Maine State Plan 2014 Maine HAI Report Observation instructions *Compliance report not found
Maryland Hospital Hand Hygiene Collaborative	Maryland	<ul style="list-style-type: none"> - Collaborative led by the Maryland Patient Safety Center - Goal of achieving above 90% hand hygiene compliance rate among Maryland acute care hospitals - Voluntary participation of 44 Maryland acute care hospitals 	Maryland State HAI Plan addressing hand hygiene Hand Hygiene Collaborative Standard Training
Save Lives: Clean Your Hands	South Carolina Hospital Association (SCHA)	<ul style="list-style-type: none"> - Statewide hand hygiene initiative in all public and private member hospitals - Partnership with the WHO global hand hygiene initiative 	South Carolina HAI Prevention Plan
South Australia Clean Hands Initiative	Government of South Australia	<ul style="list-style-type: none"> - Uses a standard audit tool originally developed by WHO, to audit healthcare workers hand hygiene practices three times per year - Hospitals with >25 beds participate (23 total) - Report overall compliance, compliance by job type, and hospital level data 	SA Hand Hygiene Compliance Annual Report

Additional Sources for Table 1:

<http://www.cdc.gov/hai/stateplans/required-to-report-hai-NHSN.html>

Table 2. Hand hygiene measurement and reporting methods

Method	Measurement Definition	Reporting Details	Resources
Direct Observation	<p><i>Hand hygiene episode:</i> anytime a provider uses alcohol gel or washes their hands with soap and water upon entry or exit from a patient environment</p> <ul style="list-style-type: none"> - When an observer sees a provider “EXIT” (or “ENTER”) a patient’s environment, s/he enters that on the data collection form as a hand hygiene observation (does not note how well hands are washed) - “Unsure/ blocked views” are excluded from all HH compliance calculations 	<p>% Compliance = Number of HH episodes/ Total # of observations multiplied by 100</p> <p>Reports are viewable by member hospitals only</p>	<p>Used by: Maryland Patient Safety Collaborative: Voluntary participation of 44 acute care hospitals</p>
	<p><i>Hand washing episode:</i> hand washing both before entering the patient’s room and upon exit of the room for a minimum of 15 seconds with soap and water or alcohol-based solutions</p> <ul style="list-style-type: none"> - Recorded by trained student nurses - Data is entered electronically in real time onto an iPad application 	<p>Data is aggregated and compliance rates are comparable among all participating hospitals.</p> <p>The iPad application also allows individual hospital units or floors to receive feedback on staff compliance.</p>	<p>Used by: 20 Central Ohio hospitals</p>

Method	Measurement Definition	Reporting Details	Resources
	<ul style="list-style-type: none"> - <i>Hand hygiene before initial contact with patient/patient environment</i> = (# of times hand hygiene performed before initial patient/patient environment contact / # observed hand hygiene indications before initial patient/patient environment contact) x 100 - <i>Hand hygiene after contact with patient/patient environment</i> = (# of times hand hygiene performed after patient/patient environment contact / # observed hand hygiene indications after patient/patient environment contact) x 100 - For detailed observational methods refer to the audit tool 	Hospitals post compliance rates annually on their websites for the two defined measures	<p><i>Used by:</i> All hospitals in Ontario, Canada</p> <p>Hand hygiene auditing and observation tools</p> <p>Ontario implementation guide</p>
	<ul style="list-style-type: none"> - <i>Hand Hygiene:</i> either hand washing with soap and water or the application of an alcohol-based hand rub - Opportunities or “moments” for Hand Hygiene: <ul style="list-style-type: none"> • Moment 1 = Before touching the patient • Moment 2 = Before a procedure • Moment 3 = After a procedure or body fluid exposure (or risk) • Moment 4 = After touching the patient • Moment 5 = After touching a patient’s surroundings 	Data is submitted 3x per year and published in SA’s Hand Hygiene Compliance annual report	<p><i>Used by:</i> 23 participating South Australia hospitals</p> <p>WHO Hand Hygiene Guidelines</p>
Measuring Product Use	<p>Measuring the amount of liquid soap, alcohol-based hand rub, and paper towels that health care workers use and the frequency with which they use products, to indirectly estimate staff hand hygiene</p> <ul style="list-style-type: none"> - Less expensive than observing health care workers directly - Does not require much training and can be done at any time and place - Less likely than direct observation method to influence health care workers to change their hand hygiene behavior 	NA	Joint Commission Guide: Chapter 4
Survey Methods	<p>Surveys can measure a range of hand hygiene components that observation and product measurement alone cannot measure, including the following:</p> <ul style="list-style-type: none"> - Staff knowledge, attitudes, and beliefs/perceptions of their own behavior - Patient and family satisfaction with staff hand hygiene - Health care workers’ satisfaction with hand hygiene products - Structural issues, such as the availability/accessibility of products 	Results/Reports may be inaccurate or unreliable, as health care workers tend to overestimate self-reported adherence to hand hygiene guidelines	Joint Commission Guide: Chapter 5

Additional sources for table 2: http://www.versustech.com/pdf/hand_hygiene_best_practices.pdf



HAND HYGIENE TECHNOLOGY SCAN

10/08/14

Common Features:

- Majority of available technology utilizes badges, ID's, or wristbands worn by staff that communicate with sensors on soap and gel dispensers to measure and electronically report hand hygiene compliance, at both the hospital and/or individual level
- Many have capabilities to alert providers of missed hand washing opportunities
- Cost information is hard to access unless providing details or moving forward with demonstrations of the product

Table 3: Available Hand Hygiene Technology

Product Name	Vendor	Description & Features	Cost* & Current Users	Data Source & Additional Information
Advantages™ Hand Hygiene Safety & RTLS Technology	Versus	- Badges worn by caregivers automatically record each time touchless soap/sanitizer dispensers are activated or hand hygiene opportunities are missed	NA	Versus website Safe Haven Dispenser brochure
AeroScout® Hand Hygiene Compliance Monitoring Solution	Stanley Healthcare	- When soap or gel is used from a dispenser, an embedded AeroScout sensor in the dispenser is activated - Sensor triggers a tag worn by the caregiver, sending a message over the hospital's Wi-Fi network identifying the caregiver, the activation of the dispenser, and the time and location of the event	NA	Solution brochure
AgileTrac Hand Hygiene	GE Healthcare	- Staff interactions with soap/gel dispenser are automatically captured and recorded using Real-time Location System (RTLS) technology attached to badges and dispensers	NA	Solution brochure Solution website South Carolina Hospital Case Study
BIOVIGIL	Biovigil Systems	- Utilizes clip-on staff ID and sensors on dispensers to "Remind, Record, Reassure, Report" on hand hygiene practices	NA	Solution website

Product Name	Vendor	Description & Features	Cost* & Current Users	Data Source & Additional Information
The DebMed GMS (Group Monitoring System)	DebMed	<ul style="list-style-type: none"> - Utilized electronics in the DebMed (or any commercial) soap and alcohol-based sanitizer dispensers to capture hand cleaning activity (according to WHO's Five Moments) on a group basis - Does not require employees to wear a badge - Draws on an evidence-based algorithm to derive a compliance rate, which determines how many times workers should have cleaned their hands, based on patient census and degree of patient care 	Cites being less expensive compared to competitors because of low impact intervention	Solution website
Hand Hygiene Compliance Solution	Hill-Rom	<ul style="list-style-type: none"> - Uses locating technology to track hand hygiene events and record each visit to hand hygiene stations - Data can be viewed at the individual, unit, or hospital level - Hospital staff can be alerted to missed hand hygiene opportunities, when entering and exiting the patient room, through audio tone emitted by tags worn - No change to protocol, only requires adding extra badge and can leverage existing soap/gel dispensers 	NA	Solution website News article
Hand Washing & Hand Hygiene Compliance Monitoring	Centrack	<ul style="list-style-type: none"> - Battery powered Hand Washing Monitors can be mounted to any dispenser, canister, or pump to track their usage - The system uses a specific caregiver's badge ID to capture entry to and exit from patient care areas along with hand hygiene events, based upon hospital determined compliance rules - Monitor sends data to the network and records each caregiver's compliance performance 	NA	Solution website
Hyginex Generation 3 Wristbands	Hyginex	<ul style="list-style-type: none"> - Hyginex wristbands capture data on an individual level for all hand hygiene events, including duration of event - Provides vibration alerts to remind staff to clean their hands before and after patient contact, as well as for the appropriate time - Uses Bluetooth sensors for patient rooms and soap/gel dispensers 	NA	Hyginex website
Hygreen	Hygreen	<ul style="list-style-type: none"> - Sensors near sinks/gel dispensers detect staff hand hygiene events - Sensors near patient beds sense if clinician has washed his/her hands and alerts if not - Data is sent to wireless database 	"\$50,000 to implement" cited in NY Times article	How it works Sample reporting

Product Name	Vendor	Description & Features	Cost* & Current Users	Data Source & Additional Information
nGage™ system	Provantix	<ul style="list-style-type: none"> - Staff wear tags used to monitor compliance from soap/gel dispensers - Data is transferred to a central server for review by hospital management - Encourages compliance through positive reinforcement - Clinicians receive messaging through a communication display located above dispensers 	27 Alabama hospitals	nGage website Alabama initiative w/Provantix

*Vendors need detailed information for pricing

Additional Sources for table 3

http://www.kchealthcare.com/media/119286/h01472_1301_hh_comp_monit_f-hhcompssheet.pdf

http://www.versustech.com/pdf/hand_hygiene_best_practices.pdf

Hand Hygiene Observation and Contributing Factor Form	Date of observations:	Collected by:	Role (circle one): Observer Coach	Unit:
--	-----------------------	---------------	-----------------------------------	-------

Instructions: 1. Use a separate row for each entry or exit.
 2. When there is a defect (wash in/out=no), check any applicable observed contributing factor.
 3. The "observed by asking" section is for JIT coaches only.
 4. Emergency situations are EXCLUDED from the data collection process.

Observation Number		Possible Contributing Factors to Washing										Observable										Non Observable	Comments							
1	2	3								4		5		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	23
Check box if observed during rounds in 24-hour (military) time		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
1		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
2		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
3		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
4		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
5		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
6		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
7		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
8		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
9		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																
10		RN	NA	MD	RT	PT	Diet	Lab	HSK	Other	EN	EX	Yes	No																

- Contributing Factors**
- | | |
|--|--|
| <ul style="list-style-type: none"> 6. Dispenser location is not in path of person or is obstructed or hidden 7. Dispenser is empty 8. Dispenser is broken 9. Equipment shared or disposal area (use of equipment shared between patients i.e. vital sign machine, portable x-ray, etc) 10. Hands full: supplies or equipment (e.g., food trays, lab supplies) 11. Hands full meds 12. Gloves (e.g., improper use of or not washing before or after putting gloves on or off) 13. Person entering or exiting followed someone who did not wash 14. Frequent entry and exit of patient area | <ul style="list-style-type: none"> 15. Admissions or discharge process 16. Isolation area (gown + gloves when required) 17. Lack of immediate feedback to person for hand hygiene compliance 18. Distractions/forgets/lack of knowledge/chose not to wash 19. Perception that if nothing is touched in the patient care area hand hygiene is not necessary 20. Perception of skin irritation or dislike of alcohol-based hand rub 21. Other |
|--|--|

Recommendations for observing

- Use this form to collect observations of hand hygiene compliance of health care personnel (HCP):
 - Upon ENTRY to patient care area, and
 - Upon EXIT from patient care area
- Data collection should be performed by hand hygiene data collectors (unbiased observers). This is the best way to accurately assess hand hygiene compliance and minimize the risk of influencing or changing the behavior of those being observed.
- Observe HCP in their normal working environment.
- If someone notices that you are observing them, stop and continue at a later time.
- If your view is blocked and you cannot confirm that HCP performed hand hygiene, do not record the observation.
- Observation time should be scheduled and not recorded simply after you happen to see them. This helps avoid biasing the results. (If you record an observation only when you see someone forget to perform hand hygiene, then the data will be negatively biased.)
- Observe a representative sample of all HCP:
 - All roles
 - All shifts
 - All days of the week
- Each observer should record a minimum of 10 observations per week.

Note: Organizations can enter newly identified root causes under the “Comments” section of the observation form. However, be aware that other root causes identified will not have custom solutions.

Special circumstances

The following circumstances should not “count” as non-compliance (also called defects) during observation.

- When HCP enter the patient room to respond to a patient emergency, such as a code or potential fall.
- When HCP carry something into a room and perform hand hygiene immediately after putting items down.
- When HCP exit the room within 30 seconds of performing hand hygiene and do not touch anything.
- When a physical or occupational therapist touches the patient while helping them ambulate at room entry or exit.

Definitions

Hand hygiene: Cleansing the hands with an alcohol-based foam or gel or soap. Under certain circumstances, health care personnel may use gloves, but they still must perform hand hygiene prior to and after removal of the gloves.

Health care personnel (HCP): All paid and unpaid (i.e., volunteer) persons working in health care settings who have the potential to come in contact with a patient or their environment.

Just-in-time (JIT) coach (one or two per area): After the initial (baseline) hand hygiene compliance data collection phase, JIT coaches actively intervene when hand hygiene non-compliance is observed in order to understand contributing factors to non-compliance as well as coach health care workers on proper compliance. Data collected by JIT coaches are not used for the compliance chart; they are used to identify root causes and both observable and non-observable contributing factors. While JIT coaches collect data for a relatively short time, generally two or three weeks (or until no new information is being obtained), JIT coaching should be used throughout the project as an intervention and as part of the plan to sustain success.

Patient care area: A private room, semi-private room, or in a multiple-bed or multiple-room setting, it can be a “curtain line” or a “floor line” or any place where washing would be expected, including all patient care areas in the unit, even if they are in the hallway, restroom, special treatment room, etc.

HH data collectors (two or three per area): An unbiased observer for hand hygiene compliance who collects data throughout the project. These observers also monitor for key factors that contribute to failures in hand hygiene compliance. Ideally, these observers will not have a direct relationship with the unit or the staff (for instance, it might be difficult for a unit staff person to document non-compliance on a co-worker they consider a friend). HH data collectors should not approach health care workers to discuss hand hygiene compliance unless there is an immediate threat to the patient. Data collected by the HH data collector are used for the compliance chart as well as contributing factors data that is used to identify root causes and solutions. Data should be collected throughout the project and, on a smaller scale, as part of the plan to sustain success.

RWMC - Hand Hygiene Observation Tool

Observer _____

Observation Date _____

Unit/Dept	Discipline	Employee Name (optional)	Entry	Exit	Notes
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<input type="checkbox"/> MD <input type="checkbox"/> Student <input type="checkbox"/> Nurse <input type="checkbox"/> Respiratory <input type="checkbox"/> C.N.A <input type="checkbox"/> Physical Therapy <input type="checkbox"/> Serv. Assoc <input type="checkbox"/> Dietary <input type="checkbox"/> Phlebotomy <input type="checkbox"/> Other		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Please submit completed forms to Infection Control Dept: Fax: 456-2012 each Friday.
 For any questions: Contact Nina O'Flaherty: 456-2092. **Thank you.**

RWMC - Hand Hygiene Observation Tool

Observer _____

Observation Date _____

..

Please submit completed forms to Infection Control Dept: Fax: 456-2012 each Friday.
For any questions: Contact Nina O'Flaherty: 456-2092. **Thank you.**

NOTE: HAND HYGIENE IS TO BE PERFORMED BEFORE AND AFTER EACH PATIENT CONTACT AND AFTER REMOVING GLOVES

Correctly Performed Hand Hygiene

Hand Washing: Wet hands under continuously running water

- ❖ Dispensed liquid soap is applied to wet hands
- ❖ Hands are rubbed to create lather and friction
- ❖ Lather is rubbed over all hand surfaces for 15 to 20 seconds including the thumbs, between the fingers, under fingernails, fingertips and wrist areas
- ❖ Hands are rinsed thoroughly under running water
- ❖ Hands are thoroughly dried using paper towels
- ❖ Taps are turned off with paper towel
- ❖ Provon hospital-approved moisturizer may be applied to prevent skin from becoming dry and sore

Hand Cleaning with Waterless Sanitizer:

- ❖ Hands must be visibly clean
- ❖ Healthcare worker must not have been in contact with *Clostridium difficile*/spore-forming enteric pathogen
- ❖ One dispensed amount of alcohol-based hand sanitizer is rubbed onto the hands sufficiently to ensure that all surfaces are covered
- ❖ Hands are rubbed until the alcohol has evaporated (approximately 15-20 seconds)

Correctly Performed PPE

- ❖ With Standard Precautions, PPE is determined by the anticipated type of clinical interaction with the patient
- ❖ With Airborne Precautions, an N-95 fit-tested mask must be worn in addition to gowns and gloves
- ❖ With Contact Precautions, gowns, gloves and a surgical mask must be worn if the patient has a multi-drug resistant organism in their sputum (or the patient is actively coughing as with Standard Precautions)
- ❖ With Droplet Precautions, a surgical mask, gowns and gloves are worn
- ❖ PPE is to be donned at the door before entering the patient's room and removed just prior to exiting the patient's room
- ❖ PPE must fit appropriately; If too small, two gowns may be worn #1 ties in front & #2 ties in back.
- ❖ Gown's opening is in the back and is secured at the neck and waist

Hand Hygiene Monitoring Tool Instructions

The purpose of this hand hygiene audit tool is to determine health care worker (HCW) compliance with hand hygiene practice. Hand hygiene refers to cleaning your hands by using an alcohol-based hand rub (Purell), or by washing hands with soap (antimicrobial or plain) and water.

The audit will be performed by each hospital's designee. The hospital designee records the occasions (opportunities) where a staff member should have carried out hand hygiene. Examples of hand hygiene opportunities include but are not limited to:

- Before touching a patient
- After touching the patient, environment, or objects involved in the patients' care

A total of 10 observations/shift/unit should be performed each month. Submit completed forms to the Infection Control Department as soon as completed or by the last day of the month.

1. Write the name of the Unit/Department on the form, record the month and year, and write your name on the line indicated.
2. Refer to the key on the tool for health care worker type and other abbreviations used on the monitoring form.
3. For each opportunity, the observer records the following:
 - **Date** – Include month, day, and year
 - **Shift** – Day (7-3), Evening (3-11), or Night (11-7)
 - **Health Care Worker (HCW) type** – Use the number that corresponds with the title of the person you are observing.
 - **Hand Hygiene Before touching the patient:**
 - If a HCW cleans her/his hands with an alcohol hand rub or with soap/water Before touching a patient, place an **X** in the box labeled **Yes HH**
 - If a HCW did not clean their hands Before touching the patient, place an **X** in the box labeled **No**
 - If a HCW enters a patient's room, but does not touch the patient, then hand hygiene was not necessary, so put an **X** in the box labeled **N/A**
 - **Hand Hygiene AFTER touching the patient, environment, or objects:**
 - If a HCW cleans her/his hands After touching the patient, environmental surfaces or other objects in the room, put an **X** in the box labeled **YES HH**
 - If a HCW did not clean their hands after touching the patient, environmental surfaces or other objects in the room, put an **X** in the box labeled **No**
 - If a HCW enters the patient's room, but does not touch anything, mark the box **N/A**
 - **Contact Precautions** – If the patient is in *Contact Precautions*, place an **X** in the box labeled **Y (observe glove and gown use)**; otherwise put an **X** in the box labeled **N**
 - **gloves Worn:**
 1. If a HCW puts on gloves when entering a patient's room on *Contact Precautions*, place an **X** in the box labeled **Y**
 2. If a HCW does not put on gloves when entering a patient's room on *Contact Precautions*, place an **X** in the box labeled **N**
 - **Gown Worn:**
 1. If a HCW puts on a gown when entering a patient's room on *Contact Precautions*, place an **X** in the box labeled **Y**
 2. If a HCW does not put a gown on when entering a patient's room on *Contact Precautions*, place an **X** in the box labeled **N**
 - **Both sections:** Glove and gown must be observed if patient is on *Contact Precautions*
 - **MD Name** – In order to provide feedback to physicians, please document the name of the physician, House Officer, Medical Student PA/NP or Hospitalist who did not clean their hands either before or after patient care or after touching patient's environment. Please print and write legibly. If you do not know the person, print "unknown" in the box.
4. **Please check data for blanks and accuracy. Submit to Infection Control via fax 3-4732 or interoffice mail. THANK YOU!**

Hand Hygiene Monitoring Tool

Patient Care Unit/Dept.: _____ Month/Year: _____

Name of Monitor: _____ (Please Write Legibly)

Healthcare Worker (HCW) Type:

- 1A = Physician 2 =Respiratory Thera 4 = Case Mg/Social W 10 = Dietician
- 1B = House Officer 3A = RN 5 = Pastoral Care 11 = Tray Passer
- 1C = Medical Student 3B = LPN 6 = Rehab/Therap 12 = IV Team
- 1D = PA/NP 3C = CNA 7 = Environmental Svcs 13 = Phlebotomist
- 1E = Hospitalist 3D = CNI 8 = Patient Transporter 14 = Other
- 3E= Student RN 9 = Radiology Tech.

**HH = Hand Hygiene
(Hand Rub or Hand Wash)**
Y = Yes
N = No

Obs #	Date	Shift	HCW Type (See Key)	Hand Hygiene BEFORE Touching Patient			Hand Hygiene AFTER Touching Patient, Environment, or Objects			Patient on Contact Precautions (If Yes, must check if gloves/gown worn)		Gloves Worn		Gown Worn		Name of each Individual Observed Print Legibly
				Yes HH	No	N/A	Yes HH	No	N/A	Y	N	Y	N	Y	N	
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																