

Attachment 1 - Health Care
Workforce Work Group Meeting
Agenda 9-10-14

***VT Health Care Innovation Project
Health Care Workforce Work Group Meeting Agenda***

**Wednesday, September 10, 2014; 2:00-4:00pm
Vermont State Colleges, Conference Room 101, Montpelier
Call-In Number: 1-877-273-4202; Passcode 9883496**

Item #	Time Frame	Topic	Presenter	Decision Needed? (Y/N)	Relevant Attachments
1	2:00-2:05	Welcome and Introductions	Mary Val Palumbo Robin Lunge	N	<ul style="list-style-type: none"> • <u>Attachment 1: 9-10-14 Meeting Agenda</u>
2	2:05-2:10	Approval of Meeting Minutes	Mary Val Palumbo Robin Lunge	Y	<ul style="list-style-type: none"> • <u>Attachment 2: 8-20-14 Meeting Minutes</u>
3	2:10 – 2:20	Workforce Supply Data Update from VDH/OPR	Dawn Philibert Peggy Brozicevic Chris Winters	N	
4	2:20 – 2:25	Symposium Update	Amy Coonradt	N	
5	2:25 – 2:35	Strategic Plan Update	Robin Lunge	N	
6	2:35 – 3:45	Draft Demand Model Proposal – Presentation/Discussion	Mary Val Palumbo Charles MacLean	Y	<ul style="list-style-type: none"> • <u>Attachment 6a: Healthcare Workforce Demand Proposal</u> • <u>Attachment 6b: VT Hospital Healthcare Workforce Survey 2007</u> • <u>Attachment 6c: Reinier - Measuring the Nursing Workforce 2005</u>
7	3:45 – 4:00	Public Comment/Wrap Up/Next Steps	Mary Val Palumbo Robin Lunge	N	

Attachment 2 - Health Care
Workforce Work Group Meeting
Minutes 8-20-14

***VT Health Care Innovation Project
Work Force Work Group Meeting Minutes***

Date of meeting: Wednesday, August 20th 2014; 3:00 PM to 5:00 PM EXE - 4th Floor Conference Room, Pavilion Building, Montpelier, VT

Attendees:

Agenda Item	Discussion	Next Steps
Welcome and Introductions	This meeting was called to order at 3:03 by Mary Val Palumbo.	
Approval of Meeting Minutes	Charlie McLean made the following changes to the previous meeting minutes: change 'loan forgiveness' to 'loan repayment', removal of 'if next year is anticipated to be a tough recruiting year' clarifying provider types to include 'nurses, nurse faculty, dentists, primary care practitioners, OB-GYN and psychiatric professionals' and changing 'educational funding' to 'ECR funding' on page 4. Dawn Philibert moved to approve the minutes and Peter Cobb seconded. A roll call to approve meeting minutes was taken and the motion carried.	
LTC Subcommittee Update	Stuart Shurr gave an update on the LTC subcommittee progress on the Draft Report for the Workforce workgroup. The report will contain recommendations for Vermont around existing workforce training, workforce development, and workforce retainment. The Report aims to bring to light some information on the current training of direct care workers in the state, previously undocumented. The subcommittee also requests that any demand modeling done for this workgroup also includes the need for direct care workers. The Report is to be completed by September.	

Agenda Item	Discussion	Next Steps
	<p>Mary Val Palumbo asked about Community Health Workers, and if they are included in the Direct Care workforce. Brendan Hogan said he believed the DCW are a subset of the CHW concept. Discussion occurred around current roles, responsibilities and definitions of these two groups.</p> <p>There was a question about the existing work on demand modeling being presented at this meeting, and if it is encompassing enough to satisfy the LTC subcommittees request or if another subset of worker is needed. Brendan Hogan felt there could be the addition of another DCW added to the existing list.</p>	
<p>Symposium Update</p>	<p>Amy Coonradt updated the group on the work of the symposium planning committee. The symposium will take place from 8am-1pm on November 10, 2014 at the Sheraton in Burlington. The agenda will have several key speakers giving an overview of payment and delivery reform and addressing workforce needs, and then will have several panels to do a presentation piece with responders. The symposium committee has half a dozen speakers either tentative or confirmed, pending the firmed up date. The group is gearing the symposium to be a nice mix of past/present/future and on the ground/theoretical. Staff will work to set an agenda before the next planning meeting (September 10th), and will be taking suggestions for a title and distributing save the dates. The group would like to extend the invitation widely, and gear it toward policymakers, clinicians, and stakeholders involved in the SIM grant in Vermont to attend.</p> <p>It was noted that this symposium is a charge of the Administration with a report due back to the legislature.</p> <p>Paul Bengtson asked what the take aways of the symposium were to be. It was answered that the symposium aims to bring up new ideas about care delivery, care models, filling needs of healthcare consumers, ways to look at future workforce. Charlie MacLean asked what Paul Bengtson would like to learn from a conference such as this. Paul would like to have discussions around the current organizational structure and training and how that will need to change over time. Worried about the brevity of the symposium to cover this topic. Would like to see many organizations and healthcare workers brought into the conference to utilize one another and share their knowledge. Finally, how the teachers and leaders plan to change the future of healthcare dynamics and organization. Charlie MacLean suggested Paul Bengtson as a potential</p>	

Agenda Item	Discussion	Next Steps
	<p>panel member.</p> <p>Dawn Philibert said the symposium should focus on ways to go about reengineering the workforce</p> <p>Mary Val Palumbo asked if there was a discussion on the CHW at the symposium planning meeting and how that can play into the future of healthcare. The Center on Aging at UVM would be a good resource to look more into this group.</p> <p>Ellen Grimes suggested a mid-level dental provider to speak at the symposium.</p> <p>Asked about the financials of supporting this conference. SIM dollars will only fund portions of the symposium, attendees will have to pay for their own food to offset some costs.</p> <p>Continuing Ed credit logistics are still being discussed by the symposium planning committee, although they are leaning against credits as of now.</p>	
Budget Update	<p>Georgia Maheras updated the group on Core Team approval of the revised project budget. Project extension of 3 months was approved, VT is now budgeting out for 4 years of project support. Core Team enjoys having a flexible budget so changes can be made as they see fit. The updated annual budget will be sent to the federal government in early October. Discussion around what funds had already been allocated occurred and what the designated funding for the Workforce workgroup can be used for. Georgia pointed the workgroup to the Core Team materials for details on the budget.</p> <p>Question about the sub-grants. Those submitted to this workgroup differ in scope of those submitted to Core Team. Mary Val clarified the work of this group around the previous grant proposals how the process to rank them occurred.</p>	
HRSA Workforce Grant Update/Discussion	<p>Dawn Philibert updated the group on the loan repayment grants in Vermont. This year, some funding might be reduced because of budget cuts. State applied to HRSA for funding, and has been granted 1 million dollars over 4 years for loan repayment to be matched by State dollars. AHEC is identifying money available to start loan repayment to providers after cutbacks. This</p>	

Agenda Item	Discussion	Next Steps
	<p>funding is for FQHC, rural health centers and/or dental shortage areas in the State.</p> <p>Question about specifics on providers who can be funded. Yes, it specifies which providers can be funded through this grant. Focus of HRSA funds seems to be on billing providers. State legislation can be amended if this workgroup sees it necessary to include more providers as more data becomes available.</p> <p>Question about who will be responsible for allocation. AHEC will be responsible, \$970k + \$500k in the first year are available. Information on this is available on the AHEC website.</p>	
<p>Demand Modeling Update: RFP/SOW presentation</p>	<p>Bryan O'Connor presented on Attachment 7, the following were comments on the presentation:</p> <ul style="list-style-type: none"> • Dawn Philibert requested the addition of substance abuse professionals • Janet Kahn suggested using the definition from the ACA to help define the scope of healthcare workers. Asked about projecting demand for workers without previous data collected on demand. Georgia spoke on the meaning of micro-simulation demand modeling and how that will help to figure out the demand for this population. • Charlie MacLean asked about ability to model different usage patterns in the population and if this micro-simulation can do a similar thing. Bryan confirmed that they are very similar • Dawn asked about the inclusion of potential changes made to VT payment structures. Yes, this model will be able to take that into account • Mary Val Palumbo asked about how this is different than HRSA's modeling. Bryan said this is very similar. Georgia said that if using HRSA's model, it would still have to be applied to Vermont. All are allowed to bid on this RFP, and could potentially go with HRSA if we decide that the work HRSA is doing is best option • UNC model? Good model but doesn't go into depth nearly enough for the purposes of this workgroup. • Georgia said the estimate for this RFP is 6 months and \$250-350K range. This time frame was confirmed by Tim Dall. • Paul Bengtson commented that VT seems like a fairly simple state to model. Bryan 	

Agenda Item	Discussion	Next Steps
	<p>O'Connor suggested that a big problem was the permeability of the state's borders, in terms of where people seek medical care (in VT but also in NH and NY).</p> <ul style="list-style-type: none"> • Lori Lee Schoenbeck asked about adding dollar amounts to this labor model. It was suggested that GMCB does some work on economic analysis around the state, but is outside of this scope of work • Concerns surfaced around data and how strong of a model can be created • Charlie MacLean asked who might bid on this. Rand, Urban Institute, UVM, there is interest among several groups of health economists. However, specifically healthcare workforce modeling narrows the interest a bit. • IHS Model uses BRFSS data as well as claims • Potential for evidence based treatments to be captured in this model? Bryan said this RFP is for a tool, and will be adjusted with recommendations from professionals in the state. • Stuart Shurr asked about the 'medical needs' language and if that restricts the scope. Possible to change it to 'health needs'? • Paul Bengtson asked about what recommendation needs to come out of the workgroup. Recommendations on the current SOW need to be added then approved by group. Georgia went over the exact process – DVHA would own this contract • Suggested that it be made more clear who will own this model, Georgia suggests that this is still being debated, depending on what kind of bids come through • Charlie MacLean commented this model is to drive the conversation around how to solve the State workforce problems • Conversation occurred around the RFP as a whole and what kind of contract performance measures will be put in place • Molly Backup asked about how hands-on the group will be during the development of this model. It was suggested that there will be room for advisement from this workgroup during the completion of the model • Lori Lee suggested three major edits to the SOW that were discussed by the group • Bryan O'Connor spoke about the importance of being clear and consistent in how we refer to providers and/or specific professions – details as to who that includes can be 	

Agenda Item	Discussion	Next Steps
	<p>worked out with contractor when that point is reached</p> <ul style="list-style-type: none"> • Paul Bengtson asked about the timeline for this RFP and what the acceptable timeframe is/ how the report will be used. Mary Val Palumbo sees a potential to affect policy, education, reimbursement, loan repayment, etc well beyond 2016. Georgia Maheras commented that this was an activity we included in the application to the Federal Government • Charlie MacLean asked if we want to approve this SOW today with revisions or revisit it in three weeks. Robin Lunge recommended passing it today, with potential to revise before approval by core team. • Madeleine Mongan suggested two changes to the SOW that were discussed by the workgroup but not recommended for approval • Pharmacist was added to the professional list <p>Molly Backup made a motion to approval with revisions and Charlie MacLean seconded. The motion passed.</p>	
<p>Demand Study Proposal: Nursing and Healthcare Workforce 2015</p>	<p>Mary Val Palumbo presented on the Home Health Nursing Study Proposal, the following were comments:</p> <ul style="list-style-type: none"> • Janet Kahn asked about the change to VA hospital usage by those greater than 40 miles from a hospital. This study is aimed at calculating need at a given time and will capture that change. • Madeleine Mongan asked where this proposal is going. Mary Val cited the top of page 2 for details • Madeleine Mongan asked about the intent of the proposal. To continue work already done and gather more survey information • Chose to focus on nursing because there is historical data to compare to current numbers • Charlie MacLean suggests titling this a study on demand surveying, with this first round focusing on Nurses • Molly Backup likes the idea of surveying nurses to compare to other models being developed. However, thinks there might be a benefit in expanding the list to beyond just nurses. Asks which professions this proposal will ask questions of. Mary Val Palumbo 	

Agenda Item	Discussion	Next Steps
	<p>commented all professionals located in the office being surveyed, beside physicians.</p> <ul style="list-style-type: none"> • Discussion took place around what this proposal is for and the next steps should it be approved by the work group. • Charlie MacLean suggested re-crafting this proposal to better frame a method for ongoing demand surveying instead of a single point survey. • Mary Val Palumbo withdrew the proposal, asking the group to come next month with suggestions and recommendations in order to get something out in the next couple months. • Paul Bengtson commented that a demand study being done when there are already vacancies, is too late. Survey should be done in a way that looks far enough out to make an impact. 	
<p>Discussion: Prioritizing Budget Requests to the Governor</p>	<p>Robin Lunge updated the group on recommendations to the Governor on workforce prioritization issues. Recommend that the WFWG gets a pot of money to then fund grants as they see fit. Amount not yet decided, budget cut also makes this a harder thing to ask for but feels the group needs to still make the recommendation.</p> <p>Tom Alderman commented that there is not enough detail on what we want to fund, discussion around what it is that this workgroup is trying to get funded occurred. Suggest adding a sentence from the strategic plan to help clarify this point or examples from previous proposals.</p> <p>Comment that there needs to be a dollar amount listed. Suggestion to include that the Hsiao report suggests 50 million as a reasonable number to research workforce, and this workgroup will only request one million to add context. Robin Lunge expresses concern in doing this after the budget cuts. Group decides to include a dollar amount of one million, language from strategic plan, and examples of previous proposals.</p> <p>Tom Alderman made a motion to approve this letter with amendments by Robin Lunge, Rick Barnett seconds the motion. Motion carries.</p>	
<p>Public Comment/ Next Steps/ Wrap</p>	<p>There was no public comment</p>	

Agenda Item	Discussion	Next Steps
Up	The next meeting will be: Wednesday, September 10, 2014 2:00 PM – 4:00 PM. Vermont State Colleges, Conference Room 101, Montpelier	

VHCIP Workforce Work Group Attendance Sheet 8-20-14

C	Chair
IC	Interim Chair
M	Member
MA	Member Alternate
A	Assistant
S	Staff
X	Interested Party

First Name	Last Name		Title	Organization	Workforce
David	Adams		Associate Dean	Fletcher Allen Health Care	M
Tom	Alderman	<i>J. Alderman</i>	Deputy Commissioner	Department of Education	M
Molly	Backup	<i>Molly Backup</i>	Physician Assistant	Consumer Representative	M
Ena	Backus			GMCB	X
Mat	Barewicz		Economic & Labor Market Info. Chief	Department of Labor	M
Rick	Barnett	<i>R.T. Barnett</i>	President	Vermont Psychological Association	M
Susan	Barrett		Executive Director	GMCB	X
Paul	Bengston	<i>here</i>	CEO	Northeastern Vermont Regional Hospital	X
Ethan	Berke		Associate Professor	Dartmouth Institute for Health Policy & C	M
David	Blanck		Dentist	Consumer Representative	M
Peggy	Brozicevic		Research & Statistics Section Chief	AHS - VDH	M
Amanda	Ciecior	<i>here</i>	Health Policy Analyst	AHS - DVHA	S
Denise	Clark	<i>Retaxob</i>	Pharmacist & Lawyer	Consumer Representative	M
Peter	Cobb	<i>here</i>	Executive Director	VNAs of Vermont	M
Amy	Coonradt		Health Policy Analyst	AHS - DVHA	S
Elizabeth	Cote			Area Health Education Centers Program	X
Karen	Crowley		System of Care Unit Director	AHS - Central Office - IFS	X
Kathy	Demars			Lamoille Home Health and Hospice	X
Tim	Donovan		Chancellor	Vermont State Colleges	M
Terri	Edgerton			AHS - Central Office - IFS	X
Erin	Flynn		Health Policy Analyst	AHS - DVHA	X
Lucie	Garand		Senior Government Relations Special	Downs Rachlin Martin PLLC	X
Christine	Geiler		Grant Manager & Stakeholder Coordi	GMCB	S
Ellen	Grimes	<i>phone</i>	Dental Hygiene Program Director	Vermont Technical College	M
Lory	Grimes		Director of Physician Practices	Northeastern Vermont Regional Hospital	M
Bryan	Hallett				X
Karen	Hein		Board Member	GMCB	X
Lorraine	Jenne		Director of Human Resources	HowardCenter for Mental Health	M
Janet	Kahn	<i>Genette Kahn</i>	Res. Asst Prof	UVM - COM	M
Kelly	Lange		Director of Provider Contracting	Blue Cross Blue Shield of Vermont	X
Nicole	LaPointe		Executive Director	Northeastern Vermont Area Health Educa	M

Diane	Lewis			AOA - DFR	A
Robin	Lunge	phone	Director of Health Care Reform	AOA	IC
Charlie	MacLean	BOA/BAN	Associate Dean	University of Vermont	M
Georgia	Maheras			AOA	S
Jackie	Majoros	J. Majoros	State Ombudsman	VLA/LTC Ombudsman Project	X
David	Martini			AOA - DFR	X
Mike	Maslack				X
John	Matulis				X
Marybeth	McCaffrey		Principal Health Reform Administrator	AHS - DAIL	X
Kimberly	McNeil		Payment Reform Policy Intern	AHS - DVHA	X
Angel	Means		Director, End-of-Life Division	Visiting Nurse Association of Chittenden	X
Marisa	Melamed			AOA	A
Madeleine	Mongan	M. Mongan	Deputy Executive Vice President	Vermont Medical Society	M
Brian	O'Connor	3/4		GMCB	X
Meg	O'Donnell			Fletcher Allen Health Care	A
Jill	Olson			VAHHS	X
Stephanie	Pagliuca		Director	Bi-State Primary Care	M
Mary Val	Palumbo	MVPalumbo	Associate Professor	University of Vermont	C
Annie	Paumgarten	here	Evaluation Director	GMCB	X
Dawn	Philibert	Dawn Philibert	Health Policy Advisor Director of Health Policy	AHS - VDH	M
Luann	Poirer		Administrative Services Manager I	AHS - DVHA	X
Lori Lee	Schoenbeck	Jonelle Schoenbeck	Naturopathic Physician	Consumer Representative	M
Stuart	Schurr	Stuart Schurr	Deputy Commissioner	AHS - DAIL	M
Julia	Shaw		Health Care Policy Analyst	VLA/Health Care Advocate Project	X
Nancy	Solis			Dartmouth Institute for Health Policy & C	A
Kara	Suter		Reimbursement Director	AHS - DVHA	X
Joy	Sylvester			Northwestern Medical Center	X
Beth	Tanzman	here	Assistant Director of Blueprint for He	AHS - DVHA - Blueprint	M
Tony	Treanor		Director of Human Resources	Northwestern Counseling & Support Serv	X
Deborah	Wachtel		Nurse Practitioner	Consumer Representative	M
Brigitte	Walbridge		Executive Assistant	VAHHS	X
Anya	Wallack		Chair	SIM Core Team Chair	X
Marlys	Waller			Vermont Council of Developmental and M	X
Burton	Wilcke		Associate Professor	University of Vermont	M
Bradley	Wilhelm		Senior Policy Advisor	AHS - DVHA	X
Chris	Winters		Director	AOA - OPR	M
Jennifer	Woodard	phone	Long-Term Services and Supports He	AHS - DAIL	X
Cecelia	Wu		Healthcare Project Director	AHS - DVHA	X
Dave	Yacovone		Commissioner	AHS - DCF	X

JAMES	WESTRICH			DVHA	S

minutes w/ amendments

1^o Dawn

2^o Peter

VHCIP Workforce Work Group Member Roll Call

C	Chair
IC	Interim Chair
M	Member

First Name	Last Name		Title	Organization	Workforce
David	Adams	X	Associate Dean	Fletcher Allen Health Care	M
Tom	Alderman	✓	Deputy Commissioner	Department of Education	M
Molly	Backup	✓	Physician Assistant	Consumer Representative	M
Mat	Barewicz	X	Economic & Labor Market Info. Chief	Department of Labor	M
Rick	Barnett	✓	President	Vermont Psychological Association	M
Ethan	Berke	X	Associate Professor	Dartmouth Institute for Health Policy & C	M
David	Blanck	X	Dentist	Consumer Representative	M
Peggy	Brozicevic	X	Research & Statistics Section Chief	AHS - VDH	M
Denise	Clark	X	Pharmacist & Lawyer	Consumer Representative	M
Peter	Cobb	✓	Executive Director	VNAs of Vermont	M
Tim	Donovan	X	Chancellor	Vermont State Colleges	M
Ellen	Grimes	X	Dental Hygiene Program Director	Vermont Technical College	M
Lory	Grimes	X	Director of Physician Practices	Northeastern Vermont Regional Hospital	M
Lorraine	Jenne	X	Director of Human Resources	HowardCenter for Mental Health	M
Janet	Kahn	✓			M
Nicole	LaPointe	X	Executive Director	Northeastern Vermont Area Health Educa	M
Robin	Lunge	✓	Director of Health Care Reform	AOA	IC
Charlie	MacLean	✓	Associate Dean	University of Vermont	M
Madeleine	Mongan	✓	Deputy Executive Vice President	Vermont Medical Society	M
Stephanie	Pagliuca	X	Director	Bi-State Primary Care	M
Mary Val	Palumbo	✓	Associate Professor	University of Vermont	C
Dawn	Philibert	✓	Director of Health Policy	AHS - VDH	M
Lori Lee	Schoenbeck	✓	Naturopath	Consumer Representative	M
Stuart	Schurr	✓	Deputy Commissioner	AHS - DAIL	M
Beth	Tanzman	X	Assistant Director of Blueprint for He	AHS - DVHA - Blueprint	M
Deborah	Wachtel	X	Nurse Practitioner	Consumer Representative	M
Burton	Wilcke	X	Associate Professor	University of Vermont	M
Chris	Winters	X	Director	AOA - OPR	M

phone ✓
~~phone~~ w/draw from group

absain

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Motion: Letter amend as discussed 10 Tom
20 Rick

VHCIP Workforce Work Group Member Roll Call

C	Chair
IC	Interim Chair
M	Member

First Name	Last Name		Title	Organization	Workforce
David	Adams	X	Associate Dean	Fletcher Allen Health Care	M
Tom	Alderman	✓	Deputy Commissioner	Department of Education	M
Molly	Backup	✓	Physician Assistant	Consumer Representative	M
Mat	Barewicz	X	Economic & Labor Market Info. Chief	Department of Labor	M
Rick	Barnett	✓	President	Vermont Psychological Association	M
Ethan	Berke	X	Associate Professor	Dartmouth Institute for Health Policy & C	M
David	Blanck	X	Dentist	Consumer Representative	M
Peggy	Brozicevic	✓	Research & Statistics Section Chief	AH5 - VDH	M
Denise	Clark	X	Pharmacist & Lawyer	Consumer Representative	M
Peter	Cobb	X	Executive Director	VNAs of Vermont	M
Tim	Donovan	X	Chancellor	Vermont State Colleges	M
Ellen	Grimes	✓	Dental Hygiene Program Director	Vermont Technical College	M
Lory	Grimes	X	Director of Physician Practices	Northeastern Vermont Regional Hospital	M
Lorraine	Jenne	X	Director of Human Resources	HowardCenter for Mental Health	M
Janet	Kahn	✓			M
Nicole	LaPointe	X	Executive Director	Northeastern Vermont Area Health Educa	M
Robin	Lunge	✓	Director of Health Care Reform	AOA	IC
Charlie	MacLean	✓	Associate Dean	University of Vermont	M
Madeleine	Mongan	✓	Deputy Executive Vice President	Vermont Medical Society	M
Stephanie	Pagliuca	X	Director	Bi-State Primary Care	M
Mary Val	Palumbo	✓	Associate Professor	University of Vermont	C
Dawn	Philibert	X	Director of Health Policy	AHS - VDH	M
Lori Lee	Schoenbeck	✓	Naturopath	Consumer Representative	M
Stuart	Schurr	✓	Deputy Commissioner	AHS - DAIL	M
Beth	Tanzman	✓	Assistant Director of Blueprint for He	AHS - DVHA - Blueprint	M
Deborah	Wachtel	X	Nurse Practitioner	Consumer Representative	M
Burton	Wilcke	X	Associate Professor	University of Vermont	M
Chris	Winters	X	Director	AOA - OPR	M

Demand made!

1^o ~~Charlene~~ Molly

2^o Charlie

VHCIP Workforce Work Group Member Roll Call

C	Chair
IC	Interim Chair
M	Member

First Name	Last Name		Title	Organization	Workforce
David	Adams X		Associate Dean	Fletcher Allen Health Care	M
Tom	Alderman ✓	✓	Deputy Commissioner	Department of Education	M
Molly	Backup ✓	✓	Physican Assistant	Consumer Representative	M
Mat	Barewicz X		Economic & Labor Market Info. Chief	Department of Labor	M
Rick	Barnett ✓	✓	President	Vermont Psychological Association	M
Ethan	Berke X		Associate Professor	Dartmouth Institute for Health Policy & C	M
David	Blanck X		Dentist	Consumer Representative	M
Peggy	Brozicevic X		Research & Statistics Section Chief	AHS - VDH	M
Denise	Clark X		Pharmacist & Lawyer	Consumer Representative	M
Peter	Cobb X		Executive Director	VNAs of Vermont	M
Tim	Donovan X		Chancellor	Vermont State Colleges	M
Ellen	Grimes ✓	✓	Dental Hygiene Program Director	Vermont Technical College	M
Lory	Grimes		Director of Physician Practices	Northeastern Vermont Regional Hospital	M
Lorraine	Jenne X		Director of Human Resources	HowardCenter for Mental Health	M
Janet	Kahn ✓	✓			M
Nicole	LaPointe X		Executive Director	Northeastern Vermont Area Health Educa	M
Robin	Lunge ✓	✓	Director of Health Care Reform	AOA	IC
Charlie	MacLean ✓	✓	Associate Dean	University of Vermont	M
Madeleine	Mongan ✓	✓	Deputy Executive Vice President	Vermont Medical Society	M
Stephanie	Pagliuca X		Director	Bi-State Primary Care	M
Mary Val	Palumbo ✓	✓	Associate Professor	University of Vermont	C
Dawn	Philibert ✓	✓	Director of Health Policy	AHS - VDH	M
Lori Lee	Schoenbeck ✓	✓	Naturopath	Consumer Representative	M
Stuart	Schurr ✓	✓	Deputy Commissioner	AHS - DAIL	M
Beth	Tanzman ✓	✓	Assistant Director of Blueprint for He	AHS - DVHA - Blueprint	M
Deborah	Wachtel X		Nurse Practitioner	Consumer Representative	M
Burton	Wilcke X		Associate Professor	University of Vermont	M
Chris	Winters X		Director	AOA - OPR	M

Attachment 6a - Healthcare Workforce Demand Proposal

Evaluation of Health care Workforce Demand in Vermont

A **DRAFT** proposal submitted by the *Vermont Health Care Workforce Advisory Group*

Updated 9/5/2014

This proposal is written in response to a request from the *Vermont Health Care Innovation Project* to collect information and perform analyses pertinent to the supply and demand of various professionals and staff that comprise the health care workforce.

A. Background

An adequate workforce of appropriately trained/skilled professionals is essential to care for the population.

i. Supply Analysis

- a) Internal supply (available in organizations)
- b) Current workforce demographics
- c) Workforce trends – graduations, retirements, etc.
- d) External supply (in state/out of state)

ii. Demand Analysis

- a) Critical occupations and competencies required to meet projected needs
- b) Anticipated changes of programs and services with health care reform
- c) Separation/turnover rates
- d) Vacancy rates

iii. Gap Analysis

- a) Compare supply with demand analysis to determine future shortages and excess in the number of employees needed, types of occupations, and competencies

B. Drivers of health care workforce supply and demand

- Health system factors (scientific advancements & innovation; access to care; marketing; pricing transparency; other)
- Population factors (aging; consumer preferences & beliefs; other)

- Workforce pipeline factors (student interests & opportunities; retraining opportunities; training costs; aging of the workforce; other)

i. Supply

- a) There are currently reports completed annually, biannually, or on an ad-hoc basis assessing the supply of certain healthcare professions in Vermont. Historically, these reports have focused on MDs/DOs, PAs, APRNs, RNs, LPNs, and DMDs/DDS. These reports are completed by the Vermont Department of Health, the Vermont AHEC Program, Office of Nursing Workforce, and others.
- b) There is currently new work underway, endorsed by the *Vermont Healthcare Workforce Advisory Group*, and funded by VHCIP, to expand the assessment of the supply of healthcare workers, based on Vermont state licensing, certification, and registration data.
- c) This work builds on the approach and methods used in Vermont to assess the supply of physicians, dentists, nurses, and should be generalizable to all licensed, certified, or registered healthcare workers.
- d) There is potential to further assess the supply of healthcare workers based on claims data in Vermont's multi-payer claims dataset (VHCURES).

ii. Demand

- a) Determining the demand for healthcare workers is more challenging because of the lack of successful examples, lack of agreed-upon benchmarks, and variation in demand based on how any health system is organized. Furthermore, measuring today's demand for healthcare workers may not reflect future needs, depending on restructuring of the delivery system (including financing) and work environment.
- b) That being said, determining current and future demand can be helpful for intermediate and long-term planning, including by those in the education, training, and re-training arenas.
- c) Demand surveys: A demand survey regarding nurses in hospitals, home health agencies, nursing homes and a sample of primary care offices was completed in 2003, 2005, 2007 and 2009. Other healthcare occupations were included in 2005 and 2007. The Vermont Health Workforce Assessment Survey was described in the attached article published in 2005. This survey was helpful for identification of areas of critical need for education and recruitment and retention initiatives including loan repayment.
- d) Micro-simulation modeling: Construction of a micro-simulation health needs model for the state of Vermont is underway. The model should be able to assess and forecast the health requirements of Vermont residents on an individual scale to aid the state in the understanding of workforce requirements under an ideal, universal, healthcare delivery system.

C. Description of need

- An approach to the assessment of demand for healthcare workers that can be generalized to various professions.
- This will further the VHCIP's goals by providing a real time measure of the current healthcare workforce demand (post-recession) and in the midst of health care reform implementation. This will inform educational planning, and allocation of resources and incentives for areas of shortage.

D. Scope of Work: *(Please explain the required contract services: brief scope of work, deliverables, timeline, and measurable results.)*

- Workforce data analyst position (1 FTE):
 - Develop a survey of healthcare workforce demand that would:
 - Be suitable for repeated administration (for example annually)
 - Target a variety of healthcare professions (nursing may be a good example because of pre-existing data from the 2005 survey)
 - Seek the input of the various stakeholders in the development of the survey (e.g. what do employers think is important; what method of survey works best for them, other)
 - Coordinate with VDH, AHEC, OPR, Blueprint, Department of Labor, UVM, and other stakeholders to link supply and demand information
- Deliverables:
 - Demand survey of healthcare workers suitable for comparison with previous results
- Timeline: *
- Measureable results: *

E. Benefits derived: *Please describe how the contracted services will inform, enable, and assist the WG's mission, and ultimately benefit the WG's recommendations to the Core Team and the overall realization of the goals of the VHCIP.*

This work will complement the healthcare workforce supply analysis that is currently underway under the auspices of the *Vermont Healthcare Workforce Advisory Group*, the Department of Health, and the Office of Professional Regulation. Results from these analyses will help inform employers, schools, training and re-training stakeholders and will also provide helpful inputs for the supply/demand model that has been proposed to the VHCIP Steering Committee.

This work is responsive to:

- The recommendations of the Healthcare Workforce Strategic Plan (January 13, 2013), specifically **Recommendation #1:**
Under the auspices of the Agency of Administration, the Secretary of

Administration shall convene and staff from within the Agency a permanent health care workforce working group (Workgroup) to monitor workforce trends, develop strategic objectives and activities, direct and pursue funding for health care workforce development activities, and advise and report to the Secretary on its efforts.

- Governor Shumlin's charge to the Health Care Workforce Work Group, created in Governor's Executive Order #07-13.:
 1. *Monitor health workforce trends and needs;*
 2. *Advise the Secretary of Administration and relevant state agencies on the development of short and long term workforce supply, demand, and performance measures in order to provide the information needed for strategic workforce development and investment;*
 3. *Research and recommend to the Governor and the Secretary public and private opportunities for funding health workforce initiatives;*
 4. *Serve as the workforce advisory group for the Vermont Health Care Innovation Project (a.k.a. State Innovation Model grant); and*
 5. *Report at least annually to the Governor and the Secretary on progress in developing a health workforce and provide workforce recommendations to ensure health care reform success.*

References

Reinier, K., et al. (2005). "Measuring the nursing workforce: clarifying the definitions." Med Care Res Rev **62**(6): 741-755.

Numerous articles have addressed the causes and implications of the current nursing shortage. Little has been published, however, about how to measure the nursing workforce. This article presents (1) a review of definitions for common workforce indicators such as vacancy and turnover rates and the relationship between these indicators and the need for nurses, (2) a review of the calculation of vacancy and turnover rates in several statewide and national surveys, and (3) the results from the development and pilot test of a health care workforce survey for use in Vermont. The review indicates that in practice, no standard method is used despite attempts to standardize the calculation of vacancy and turnover rates. The Vermont pilot study results demonstrate that a richer profile of the health workforce can be obtained by using both standard workforce measures and more subjective questions to assess a statewide need for nurses.

Attachment 6b - VT Hospital Healthcare Workforce Survey 2007

Vermont Health Workforce Survey

Hospital Health Employees

Project funded by:
HRSA Nurse Education, Practice and Retention: Career Ladder
Grant# D65HP05247
and
The Vermont Agency of Human Services
"Center for Nursing" Grant

Information provided on this survey will be kept confidential

If you have questions about the survey,
please contact Mary Val Palumbo DNP, APRN, Director,
Office of Nursing Workforce Research, Planning, and Development
at (802) 656-0023, or at mary.palumbo@uvm.edu

STAFFING

START HERE: FTEs (Full-Time Equivalents) can be computed 2 ways:

1. You can add total FTEs. For example, if there are 5 full-time Staff RNs (1.0 FTE each), 3 half-time Staff RNs (0.5 FTE each), and one quarter-time Staff RN (0.25 FTE), the total FTEs for Staff RNs = 5.0 + 1.5 + 0.25 = 6.75.
2. Or, you can divide the total FTEs for that job type by the number of hours in a standard work week. For example, if you employ 270 Staff RN FTEs, and an FTE at your institution is 40 hours, Staff RNs = 6.75 FTEs (270 ÷ 40).

If your hospital does not employ anyone in a specific position (e.g. Med Tech), write '0' in the first column (#FTEs currently employed) and leave the remaining columns blank for that position. *Please do not leave any blanks in the first column.*

Please fill in the following information **as of February 15, 2007** except when directed otherwise. This form relates to **hospital personnel only**. Do not include staff working in long term care, home health, or outpatient provider offices.

Position	# FTEs currently employed ¹ Write '0' if you employ no one in this position <i>Do not include travelers</i>	# FTE vacancies currently being recruited <i>Do not include travelers</i>	# Actual full-time workers employed <i>Head count</i>	# Actual part-time workers employed ² <i>Head count</i>	# Per diem ³ workers employed <i>Head count</i>	# Agency / traveling FTEs employed <i>"0" if none</i>	# Contracted FTEs employed <i>"0" if none</i>	# Workers leaving ⁵ your organization between 2/15/06 – 2/15/07 <i>Head count</i>	In your opinion, is actual need greater than, equal to, or less than budgeted FTEs for this position?
Clinical Laboratory									
Medical Technologist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Medical Lab Tech									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Radiology Staff									
Radiologic Technologist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Radiation Therapist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Nuclear Medicine Tech									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Ultra-sound Tech / Sonographer									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Therapeutic Services									
Occupational Therapist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Certified Occupational Therapist Assistant									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less

1. Total FTEs currently employed, including both full-time and part-time employees.
2. Part-time is any position less than 1 FTE.
3. Per diem: on call or not regularly scheduled, no benefits included.
4. Number of people (head count). Include voluntary and involuntary terminations or separations. Do not count per diem workers, contract/temporary labor, or travelers in the termination or separation numbers. Do not include within-organization transfers.

Position	# FTEs currently employed ¹ Write '0' if you employ no one in this position <i>Do not include travelers</i>	# FTE vacancies currently being recruited <i>Do not include travelers</i>	# Actual full-time workers employed <i>Head count</i>	# Actual part-time ² workers employed <i>Head count</i>	# Per diem workers employed <i>Head count</i>	# Agency / traveling FTEs employed <i>"0" if none</i>	# Contracted FTEs employed <i>"0" if none</i>	# Workers leaving ⁴ your organization between 2/15/06 – 2/15/07 <i>Head count</i>	In your opinion , is actual need greater than, equal to, or less than budgeted FTEs for this position?
Physical Therapist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Physical Therapy Assistant									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Speech Therapist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Respiratory Therapist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Other									
Operating Room Tech									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Central Sterile Re-processor Tech									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Pharmacist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Pharmacy Tech									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Social Worker									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Dietician / Nutritionist									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Dietetic Technician									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less
Other position									<input type="checkbox"/> Greater <input type="checkbox"/> Equal <input type="checkbox"/> Less

Please turn to the last page.

1. Does your organization need health care professionals with specialized skills who are currently not available?

Yes No Don't know



If yes, please list up to 3 types of skilled professionals who are needed but not currently available.

(a) _____

(b) _____

(c) _____

2. How does your institution cover for current staff vacancies? _____

3. In the last year (Feb. 15, 2006 to Feb. 15, 2007), please indicate the number of weeks required to fill each of these full-time positions. Or check if you had no vacancies in the last year, or do not employ this position at your institution.

	Average time to fill position	O R	We had no vacancies in last year	We do not employ this position
Medical Technologist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Medical Lab Tech	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Radiologic Technologist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Radiation Therapist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Nuclear Medicine Tech	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Ultrasound Tech / Sonographer	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Occupational Therapist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Certified Occupational Therapist Asst.	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Physical Therapist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Physical Therapy Assistant	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Speech Therapist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Respiratory Therapist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Operating Room Tech	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Central Sterile Reprocessor Tech	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Pharmacist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Pharmacy Tech	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Social Worker	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Dietician / Nutritionist	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>
Dietetic Technician	_____ # weeks		<input type="checkbox"/>	<input type="checkbox"/>

Do you have any additional comments regarding health professional staffing or about this survey?

Your survey responses are confidential and will be released only as summaries in which no individual organization's answers can be identified. We are requesting the name of the person completing this form, however, in case we have questions about the data:

(Optional) Your name: _____ Phone number: _____

Thank you very much for your time!

The Office of Nursing Workforce Research, Planning, and Development is funded by the Vermont Agency of Human Services, and is located at the University of Vermont's College of Nursing and Health Sciences

Attachment 6c - Reinier -
Measuring the Nursing
Workforce 2005

Medical Care Research and Review

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Measuring the Nursing Workforce: Clarifying the Definitions

Kyndaron Reinier, Mary Val Palumbo, Barbara McIntosh, Betty Rambur, Jane Kolodinsky, Laurie Hurowitz and Takamaru Ashikaga

Med Care Res Rev 2005 62: 741

DOI: 10.1177/1077558705281073

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Measuring the Nursing Workforce: Clarifying the Definitions

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Mary Val Palumbo
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Jane Kolodinsky
Laurie Hurowitz
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University of Vermont

Numerous articles have addressed the causes and implications of the current nursing shortage. Little has been published, however, about how to measure the nursing workforce. This article presents (1) a review of definitions for common workforce indicators such as vacancy and turnover rates and the relationship between these indicators and the need for nurses, (2) a review of the calculation of vacancy and turnover rates in several statewide and national surveys, and (3) the results from the development and pilot test of a health care workforce survey for use in Vermont. The review indicates that in practice, no standard method is used despite attempts to standardize the calculation of vacancy and turnover rates. The Vermont pilot study results demonstrate that a richer profile of the health workforce can be obtained by using both standard workforce measures and more subjective questions to assess a statewide need for nurses.

Keywords: *nursing shortage; nursing workforce; vacancy rate; turnover rate*

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The current nursing shortage in the United States has received considerable attention in the nursing and medical literature. The size of the U.S. registered nurse (RN) workforce is predicted to be at least 20 percent below projected requirements by the year 2020, as aging RNs retire and a smaller cohort of younger nurses is available to replace them (Buerhaus, Staiger, and Auerbach 2000). Numerous articles have addressed the extent of the shortage, as well as its causes, cyclical patterns, and implications (Seago et al. 2001; Joint Commission on Accreditation of Healthcare Organizations 2003; Disch 2002; Steinbrook 2002; Cavouras 2002; Aiken et al. 2002; Berliner and Ginzberg 2002; Unruh, Fottler, and Talbott 2003). The American Hospital Association (2002, 9) warns of a "looming crisis in care" because of a shrinking nursing workforce and a growing demand for care. Clearly, there is an immediate and sustained need for accurate measures of the nursing workforce to guide interventions that address the nursing shortage.

NEW CONTRIBUTION

What is notably absent from the literature on the nursing shortage are discussions about the methods by which a shortage should be measured, definitions of workforce indicators, and how the need for nurses should be determined. While there have been attempts to standardize the definitions of *vacancy* and *turnover*, such as in the 1993 Interagency Conference on Nursing Statistics (ICONS) report, common definitions have not been universally adopted. Furthermore, reports on vacancy and turnover often do not explicitly identify the method used to calculate these measures, and therefore comparisons across workplaces or regions may be misleading (General Accounting Office [GAO] 2001). This article presents a review of issues related to measuring nursing workforce needs and makes recommendations for more standardized workforce measurement.

BACKGROUND

In July 2002, the Health Resources and Services Administration (HRSA) published a report on the projected supply and demand of RNs in the United States and noted that by 2020, the expected shortage of RN full-time equivalents (FTEs) is 29 percent (HRSA 2002). The HRSA report noted that state-specific predictions may be biased and that demand may be underestimated in states with small populations that are rural and mountainous. Vermont, a rural and mountainous state with a population of 600,000, was one of the few states that was not projected to have a shortage of nurses by 2020, nor was a shortage reported in the year 2000 (HRSA 2002). These results were not

consistent with the opinions of Vermont nurse executives and health care leaders (Cohen, Palumbo, and Rambur 2003) and with data collected by the Vermont Association of Hospitals and Health Systems, which reported an 8 percent vacancy for hospital RNs in 2001. Research indicates that state-level health manpower databases provide more reliable information than do national databases about supply, distribution, and use of health personnel (Bamberg et al. 1994).

In this context, the Office of Nursing Workforce Research, Planning, and Development at the University of Vermont assembled a team of researchers to develop and pilot test a new survey to assess Vermont's health care workforce in a more reliable and valid manner, including new ways to measure the state's need and demand for various health care workers. The goals of this research were to (1) conduct a literature review to identify published definitions of vacancy and turnover rates, (2) examine the use of vacancy and turnover rates in practice, (3) explore measures of perceived need for nurses, (4) pilot a new survey designed for workforce data collection, and (5) recommend an improved methodology for statewide collection of routine nursing workforce data.

LITERATURE REVIEW

Workplace-level and national indicators. Numerous approaches to measuring the nursing workforce exist. To put the commonly used measures of vacancy and turnover in context, this section briefly describes other staffing measures used at the level of the workplace and national level and examines the concepts of "need" and "demand" for nurses.

Individual workplaces' assessment of their need for nurses in part determines hiring practices and the demand for nurses. Unfortunately, determining nurse staffing requirements is not straightforward (Shullanberger 2000; Unruh 2002). Many hospitals estimate staffing needs using commercially available or custom-developed patient acuity systems (Seago et al. 2001). However, when five commonly used patient classification systems were compared (GRASP, NISS, Medicus, PRN 76, and PRN 80), the estimated hours of care needed per patient varied by nearly twofold depending on which patient classification system was used (Cockerill et al. 1993). These findings imply that the number of budgeted positions may vary widely for institutions with similar patient profiles, depending on the system used.

Hospital-level factors may also affect the perceived need for nurses, including RN staff expertise, physician availability, work intensity, support staff, and the physical layout of the work unit (Seago et al. 2001). Recent increases in hospital occupancy (from 60 percent in 1996 to 74 percent in 2001) and

decreases in the average length of stay (Cavouras 2002) have resulted in increased average patient acuity and an increased number of patients to admit and discharge per shift (Graf et al. 2003; Steinbrook 2002). Nurse administrators, staff nurses, and patients may perceive an increased need for nurses due to these changes, while demand may remain steady if based on more static measures.

Predicting national or regional need for nurses is also difficult since there is no consensus on the optimal number of health professionals necessary to meet the population's health care needs (GAO 2001). Nationally, the measure of demand calculated by the HRSA of the National Center for Health Workforce Analysis is based on a complex model including measures of current health care use (e.g., inpatient days, number of visits, number of nursing facility residents) and factors that affect health care use (population age, gender, and urban/rural characteristics; the health care operating environment; economic conditions; and population health; HRSA 2002). This approach to modeling may not adequately account for differences across states in how nurses are used within the health delivery system. Regional demand for nurses is also determined by employer hiring practices, which may be affected by changes in how workplaces use nurses, prevailing wages, population-level factors such as the health needs and aging of the population, and factors that affect health-seeking behavior such as specific medical services offered (Steinbrook 2002; GAO 2001).

Various measures of workforce adequacy should ideally result in similar conclusions. However, in an article comparing different measures of the nursing shortage, Grumbach and colleagues (2001) noted only moderate to low correlation between hospital administrators' subjective impressions of a shortage, measures of vacancy and turnover, adjusted RNs per inpatient year, and regional supply of RNs per capita.

The literature review illustrates that the perceived need and resulting demand for nurses at the workplace level is influenced by a number of patient, employer, and economic factors. Demand projections based on national models are also influenced by these factors. Measurement of vacancy and turnover thus takes place in the context of substantial uncertainty about staffing adequacy at the workplace and national level.

Vacancy and turnover rate calculations. In general, the vacancy rate, a measure of unfilled positions, is used to indicate the severity of a shortage at a particular workplace or regionally across workplaces. Vacancy rates alone are not a direct measure of a nursing shortage but rather an indicator of how difficult it is for a facility to fill positions. If many workplaces in a region have high va-

VACANCY RATE

A. Position vacancy rate (from ICONS 1993 and Grumbach et al. 2001)

$$VR = \frac{\text{Total number of vacant FTEs}}{\text{Total vacant FTEs} + \text{Total filled FTEs}} \times 100$$

B. Average vacancy rate (from ICONS 1993)

$$VR = \frac{\sum (\text{vacant FTEs in each agency} / (\text{vacant} + \text{filled FTEs in each agency}))}{\text{Number of agencies}} \times 100$$

C. Vacancy rate (from GAO 2001)

$$VR = \frac{\text{Total number of budgeted FTEs unfilled}}{\text{Total number of budgeted FTEs}} \times 100$$

FULL-TIME EQUIVALENT

Estimated approach

$$FTE = \text{Total full time employees} + \frac{\text{Total part time employees}}{2}$$

Refined approach

$$FTE = \text{Total full time employees} + \frac{\text{Total part time employee's hours}}{\text{Usual hours of work for full time employee}}$$

TURNOVER RATE

$$TR = \frac{\text{Number of employees leaving}}{\text{Average number of employees}} \times 100$$

FIGURE 1 Methods to Calculate Vacancy Rate, Full-Time Equivalent (FTE), and Turnover Rate, as Identified in Literature Review

cancy rates, and if high vacancy rates persist over time, this may indicate a shortage.

Three publications were located that included definitions of vacancy and turnover rates (GAO 2001; Grumbach et al. 2001; ICONS 1993). Formulas identified for calculating these measures are shown in Figure 1. The ICONS, which compiled definitions of various nursing workforce indicators currently in use (ICONS 1993), identified two approaches: the position vacancy rate (Figure 1, formula A) and the average vacancy rate (Figure 1, formula B). Using the position vacancy rate, a statewide hospital vacancy rate for RNs would be the proportion of RN positions currently vacant and under recruitment in the state across all hospitals. Larger hospitals influence this statistic more than do smaller hospitals. Conversely, using the average vacancy rate, each institution is given equal weight; thus, smaller hospitals have an

influence disproportionate to the number of their employees. Grumbach et al. (2001) defined the vacancy rate similarly to the ICONS position vacancy rate: as the number of vacant RN positions divided by the number of vacant plus staffed RN positions. For these calculations, the number of vacant positions is taken to mean the number vacant and currently under recruitment. In contrast, the U.S. GAO document reported that while there was no standard for vacancy calculations, the typical definition of a vacancy rate was the number of budgeted positions unfilled divided by the number of budgeted FTE positions, as shown in Figure 1, formula C. Although the GAO report did not specify, it is assumed that this calculation is commonly performed by position rather than averaged across facilities. If the number of positions budgeted does not equal the number of positions currently filled plus those vacant and under recruitment, vacancy rates calculated using formulas A and C will differ.

FTEs rather than actual numbers of workers are used in the calculation of vacancy rates to adjust for part-time workers and different numbers of total hours in the workweek across workplaces. The ICONS (1993) report noted that FTEs can be reported using an estimated or refined approach (see Figure 1). Using the refined approach, assuming that 40 hours per week is considered 1 FTE, an individual who works 30 hours per week represents 0.75 FTEs ($30/40 = 0.75$). The estimated approach to calculating FTEs involves adding the number of full-time workers to half the number of part-time workers.

Turnover rates indicate the stability of the workforce in a particular position. There was agreement across reports, with all three defining turnover as the number of individuals or RN positions leaving in a particular time period divided by the total number of individuals or RN positions during that period, expressed as a percentage (see Figure 1; GAO 2001; Grumbach et al. 2001; ICONS 1993). The ICONS report specifies that individual employees, not FTEs, should be used for both the numerator and denominator of this calculation (ICONS 1993). Using FTEs rather than individual workers may produce different conclusions if turnover differs between part-time and full-time workers. For annual turnover rates, the average number of employees for the year is usually estimated by adding the number of employees at the beginning and end of the year and dividing by two (ICONS 1993).

REVIEW OF EXISTING WORKFORCE SURVEYS

Health workforce survey instruments were requested and received from state organizations in Illinois, Maine, Maryland, New Jersey, North Carolina, and Washington and from two national organizations, the American Hospital Association and the American Health Care Association. The workforce data

gathered to enable calculation of vacancy and turnover in each survey were reviewed.

Table 1 illustrates that in practice, no standard method is used to calculate vacancy or turnover rates. For vacancy rates, four of the eight surveys requested budgeted FTE information (the denominator for formula C), while others requested numbers of vacant plus filled FTEs (the denominator for formula A). Similarly, some surveys used as a numerator the number of positions vacant and currently under recruitment (formula A), while others used the difference between the number budgeted and those currently filled (formula C). Instructions for calculating FTEs were not explicitly given for most of the surveys reviewed. The calculation of turnover rates was also inconsistent, and instructions were not always provided as to which employees should be included (see Table 1). Some surveys used FTEs to calculate turnover, while others used the number of workers.

In summary, the literature review and the review of surveys currently in use by state and national organizations demonstrate that the calculation of vacancy and turnover rates is not standardized. Comparisons across states or across surveys are thus problematic, and conclusions about the adequacy of the workforce are hampered.

PILOT STUDY

Survey development methods. Following the literature review, the review of existing surveys, and a consultation with the Center for Health Workforce Studies at SUNY Albany, the team developed a survey to produce a more complete profile of the health workforce in Vermont. The survey instrument included questions regarding budgeted and currently filled FTEs, the need for specific positions, issues with recruitment and retention, and the impact of potential workforce shortages. Different surveys were developed for each of four settings: hospital, long-term care, home health agency, and primary care physician's office. A panel of experts reviewed the initial survey draft for content validity and usability, and nurse leaders at a statewide meeting tested the survey. Comments from these reviews were incorporated into further drafts of the survey instrument.

Information to calculate the vacancy rate for each nursing position was gathered by obtaining the number of FTEs budgeted and the number of FTEs currently employed (modeled after Figure 1, formula C). This approach was chosen because it was the most common approach in the surveys reviewed (see Table 1), and it produces a direct measure of the proportion of budgeted positions not filled. Also of interest was the possibility that the number of

TABLE 1 Calculation of Vacancy and Turnover Rates on State and National Health Workforce Surveys

Survey	Survey Sponsor	Vacancy Calculation ^a	FTE Definition	Turnover Calculation ^a	Employees Included in Turnover
A	Hospital association	1 - (FTEs on payroll/budgeted FTEs)	1 FTE = 40 hours/week	Terminations and separations (FTEs)/budgeted FTEs	Not specified
B	State chamber of commerce	NA (used self-reported projected vacancies)	NA (used number of workers)	NA	—
C	Hospital association	Vacant FTEs/budgeted FTEs	Not specified	Separated FTEs/actual FTEs	All personnel except management
D	Nursing workforce development organization	NA (used severity of shortage measure)	Not specified	NA	—
E	Nursing workforce development organization	Vacant FTEs/vacant plus nonvacant FTEs	Not specified	Separated workers/average number of workers	Individuals moving within organization not included
F	Hospital association	Vacant FTEs/vacant plus nonvacant FTEs ^b	Estimated	Separated workers/average number of workers	Regular/on-payroll staff
G	Hospital association	Vacant FTEs/budgeted FTEs	Not specified	NA	—
H	Long-term care association	Vacant FTEs/budgeted FTEs	Refined	Total terminations (FTE)/total established FTEs	No contract or temporary labor

Note: A-H = state and national organizations whose surveys were reviewed for this study; FTE = full-time equivalent; NA = not applicable.

a. If formulae for vacancy and turnover calculations were not specified on the state/national organization survey form, they were assumed based on questions included in survey.

b. Or, vacant FTEs/budgeted FTEs: data were collected on both budgeted FTEs and number FTEs currently employed, and the formula for vacancy was not specified on survey.

FTEs on staff could exceed the number of budgeted FTEs, if the number of positions budgeted was inadequate to fill staffing needs.

Pilot test. The survey instrument and cover letter were mailed to all acute care hospitals ($n = 16$), long-term care facilities ($n = 43$), home health agencies ($n = 12$), and primary care provider offices ($n = 250$) in Vermont for a pilot test. Surveys were sent to administrators who were deemed more likely than human resources staff members to be able to answer subjective questions about the need for nursing positions and the impacts (if any) of a workforce shortage. For hospitals, this was the chief nursing officer, who was instructed to oversee the completion of the survey and to consult with human resources staff and other departments as needed. For each of the other workplace types, surveys were sent to the individual in a similar position: director of nursing in long-term care facilities, the executive director for home health agencies, and the office manager for outpatient provider offices.

The time to complete the survey varied widely depending on setting. Hospitals reported spending an average of 2 hours, home health agencies 48 minutes, long-term care facilities 36 minutes, and outpatient provider offices 10 minutes to complete the survey. Completed surveys were received by mail from 15 of 16 hospitals (94 percent), 11 of 12 home health agencies (92 percent), 26 of 43 long-term care facilities (60 percent), and 141 of 250 primary care provider offices (56 percent). Follow-up postcards, telephone calls, and the mailing of a replacement survey improved response rates from less than 40 percent following the first mailing to their final numbers.

Pilot study findings. Vacancy rates varied according to nursing position and setting. In hospitals and home health agencies, the staff RN vacancy rate was 12 percent, similar to the vacancy rate in U.S. hospitals of 13 percent (American Association of Colleges of Nursing 2002). Long-term care settings had a higher vacancy rate, at 19 percent, while physician's offices had only a 6 percent vacancy rate. Contrary to results of the nationwide HRSA study (HRSA 2002), this study did confirm a nursing shortage in Vermont similar to the national shortage.

Of methodological interest, the number of currently employed FTEs did exceed the number of budgeted FTEs for staff RNs in three hospitals (by up to 7 percent), three home health agencies (by up to 11 percent), and three long-term care facilities (by up to 21 percent), indicating that the number of budgeted positions may be less than required in these institutions. In three hospitals and three long-term care facilities, the number of employed licensed practical nurse (LPN) and licensed nursing assistant (LNA) positions also exceeded the number budgeted, by up to 53 percent for LNAs and 80 percent for LPNs.

Budgeted FTEs appeared to be incorrectly reported for many long-term care and primary care provider office settings; that is, the number of reported FTEs on staff was implausible based on the number of reported full-time and part-time workers. For such surveys, vacancy rates could not be reliably calculated. For hospitals and home health agencies, reported FTEs appeared to be credible.

Annual turnover was calculated as the number of workers leaving the organization in the past year divided by the number of workers currently on staff in that position. Turnover rates for staff RNs were 13 percent in hospitals, 24 percent in home health agencies, 35 percent in long-term care facilities, and 8 percent in physician's offices, and they were higher for LPNs and LNAs in most settings. Institutions with high staff RN turnover tended to have high staff RN vacancy rates. In hospitals, the correlation between staff RN turnover and vacancy rates was significant (Spearman $r = .55$, $p = .04$).

Questions to measure need. Two subjective questions were asked about perceived need for nurses. The first question, "In your opinion, is actual need greater than, equal to, or less than budgeted FTEs for this position?" was asked for each category of nurse (staff RN, LPN, LNA, advanced practice nurses, and nurse managers). Fifty-five percent of responding hospitals rated the need for staff RNs as greater than budgeted, as did three of the four hospitals that employed clinical nurse specialists. In contrast, no more than 25 percent of responding hospitals rated the need for other nursing positions as greater than budgeted FTEs. Hospitals that perceived need to be greater than budgeted FTEs for staff RN positions had a nonsignificantly higher mean vacancy rate (11 percent vacancy vs. 9.2 percent vacancy) and higher mean turnover rate (15.8 percent turnover vs. 11.6 percent turnover).

The second question was, "Does your organization need nurses with specialized skills who are currently not available?" and if yes, the respondent was asked to list up to three types of nurses. Eighty percent of hospitals, 50 percent of home health agencies, and 36 percent of long-term care facilities responded affirmatively, citing a need for nurses with specialty training in various areas. Only 20 percent of primary care provider offices reported a need for nurses with specialized skills currently unavailable. Differences across workplace settings in this measure provide additional information about workforce needs beyond vacancy and turnover.

Collection of other information. Other staffing information included the actual number of full-time and part-time employees, per diem staff, and the use of agency or traveling FTEs. Staff recruitment and retention were explored with questions about the importance of salaries in retaining nurses, pay differentials for educational preparation, and the perceived difficulty of hiring nurses

with specific training. At least 50 percent of hospitals surveyed reported difficulty in the past year (February 2002 to February 2003) filling RN positions in critical/intensive care, the operating room, the emergency room, and in obstetrics; for these hospitals, the average number of weeks to fill these positions ranged from 15 to 22 weeks. Other workplace settings also reported difficulty but reported fewer weeks to fill positions. The use of traveling nurses was also assessed as an indication of need.

Finally, respondents were asked a series of questions adapted from the American Hospital Association's Workforce Shortage Survey regarding whether, as a result of a workforce shortage, their institution had experienced any of various impacts. Hospitals were more likely than other workplace settings to report experiencing impacts related to workforce shortages. Impacts experienced at least monthly by hospitals included decreased patient satisfaction (40 percent), decreased staff satisfaction (34 percent), emergency room overcrowding (33 percent), delayed or diverted admissions (27 percent), delayed hospital discharges (26 percent), mandatory staff overtime (20 percent), and a reduced number of staffed beds (14 percent).

DISCUSSION

In existing nursing workforce literature, no standard definition was identified for the calculation of vacancy and turnover rates. The review of statewide and national nursing workforce surveys currently in use identified wide variability in the calculation of these measures in practice. Uniform, transparent data collection is critical because local and national health care budgets are based in part on workforce data. Meaningful workforce data are also of crucial importance in maintaining an adequate supply of nurses.

The following example illustrates the extent to which different approaches to calculating vacancy rates can affect the apparent severity of the nursing shortage. A fictitious group of hospitals has 300 staff RN FTEs budgeted, has 270 FTEs currently on staff, and is recruiting for 15 vacant FTE positions. Due to budgetary constraints, 15 budgeted FTE positions (5 percent of the total budgeted) are vacant and are not being recruited. Using formula A (see Figure 1), the vacancy rate is 15 (FTEs vacant and under recruitment) divided by 285 (FTEs vacant and under recruitment plus FTEs currently filled), or 5.3 percent. Using formula C, the vacancy rate is equal to 30 (budgeted FTEs unfilled) divided by 300 (budgeted FTEs), or 10 percent.

In addition, the vacancy rate is a measure of the demand for nurses and health professionals in an economic sense (i.e., whether there are nursing jobs available) but may not reflect the actual need for these professionals in a clinical sense. We note that a vacancy rate calculated using formula A is an

indication of the number of positions an employer is actively trying to fill at a particular time and is therefore dependent on current economic constraints. Formula C indicates whether budgeted positions are filled, but the number of budgeted positions may depend on the methods used to estimate nursing workforce needs and on longer term economic constraints.

Although we used formula C in our pilot study, its use has limitations. Primarily, it may exaggerate demand if employers are not actively hiring for unfilled budgeted positions. Or, if employers are actively hiring for more positions than budgeted, it may underestimate demand. Also, some respondents in our pilot study could not accurately report the number of budgeted FTEs; nurse leaders (particularly in the long-term care setting) may be less familiar with the definition of an FTE or unaware of the numbers of positions actually budgeted for. For these reasons, we decided to use formula A in a subsequent study.

The turnover rate calculations identified in the literature and in current surveys did not explicitly define which type of employee should be included. Inclusion of temporary or project-based positions may affect the turnover rate substantially, as will inclusion of within-organization transfers. A related issue is whether per diem workers should be included in the calculations of the total number of employees. If per diem workers are not included, turnover rates for positions filled primarily with per diem workers may not reflect reality.

Explicit definitions of FTEs, vacancy rates, and whom to include in reporting turnover should be included on workforce surveys. Some training may be required to make certain that respondents answer questions accurately. However, despite the difficulties in obtaining the information from settings other than hospitals, it is critical to expand health workforce measurement to all workplaces since roughly half of all nurses work outside of the hospital setting (Unruh et al. 2003).

Based on findings from this study, the only nursing positions rated as having a need greater than budgeted FTE positions by the majority of respondents were staff RNs and clinical nurse specialist positions in the hospital setting. In contrast, LPN and LNA positions in the hospital and RN positions in other settings were not rated by most respondents as having greater need than budgeted, regardless of vacancy and turnover rates. One possible explanation of this finding is that the chief nursing officers' perception of a need for RNs is accurate and that vacancy rates do not reflect ideal staffing requirements. This finding is significant in that there was a decrease of hospital RNs per patient day in the 1990s (Unruh 2002).

Employers were also able to identify a need for nurses with specific skills not currently available and to provide information about recruitment and

retention issues and the impacts of the workforce shortage. In summary, the survey produced a rich set of data about the nursing workforce without a large increase in the amount of time required for employers to complete the survey, compared to previous years' vacancy and turnover surveys.

In large national workforce analysis, an increased likelihood of sampling error in small states (e.g., Hawaii) has been acknowledged by the HRSA Bureau of Health Professions (2003): "Smallness affects supply, demand, and adequacy estimates because small states are more sensitive to small changes in either the supply or demand for RNs." A carefully designed statewide workforce survey administered in a variety of settings can provide a more complete picture of the state's nursing workforce. In addition, questions that attempt to measure the need for nurses (as distinct from demand) provide important additional information and are also warranted. Results of our pilot survey indicate that state-level data may provide more reliable estimates of workforce shortages than do national-level data.

RECOMMENDATIONS

The review of the literature and of state and national workforce surveys highlights the need for clearer definitions of the basic workforce measures such as vacancy and turnover to better understand the current nursing shortage and make comparisons across settings and states. At a minimum, published reports should fully describe methods of calculating workforce measurements.

We recommend use of the position vacancy rate, as described in the ICONS (1993) report and illustrated in Figure 1, formula A. Based on our review, this vacancy rate produces the most valid measure of demand because by using the number of vacant positions currently under recruitment, it reflects actual hiring patterns for FTEs, which may be higher or lower than budgeted FTEs. Standardization of FTE definitions would improve comparability, and ideally, the refined definition should be used, but the ability to do this may depend on the type of information available to employers when reporting these data. For turnover rates, we recommend using numbers of workers rather than FTEs. It is premature to recommend inclusion or exclusion of specific types of workers from turnover rates; therefore, we advocate that researchers provide explicit descriptions of the type of workers included in the numerator and denominator of both vacancy and turnover rate calculations.

The pilot study findings suggest that asking subjective questions regarding the need for specific nursing positions provides useful information and does not add a significant time burden to respondents. Further work validating vacancy and turnover rates against these and other subjective ratings of need,

as well as against other quantitative measures of nurse staffing adequacy, would make vacancy and turnover measures more interpretable. Standardization of the most common workforce measures, such as vacancy and turnover, would enhance comparability across regions and over time. Finally, the states with the smallest populations should question results of national workforce analysis when the experience of nurse executives and health care leaders do not match the study conclusions.

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