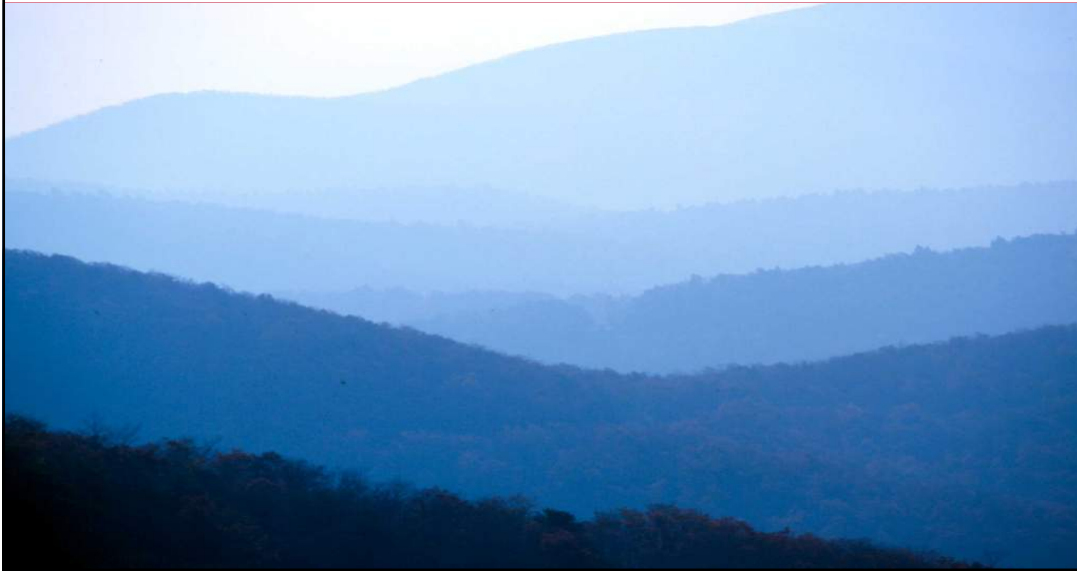




## *UVA Telemedicine Program: Partnerships to bring care*



## *Telemedicine*

*The use of advanced telecommunications and other technologies for:*

- *Medical diagnosis*
- *Ongoing patient care*
- *Health-related distance learning*

- Alexander Graham Bell
- Hugo Gernsback (vision)
- University of Nebraska
- Massachusetts General
- NASA
- Dept of Defense
- University of Virginia



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*Facilitate the Health System's missions of*

- Clinical Care
- Teaching
- Research
- Public Service

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## Services

- *Videoconferencing for patient care*



- *Store and forward applications*
- *Distance learning*

*health professionals*  
*patients*  
*students*

## Partnerships

- *Academic-community hospital linkages*
- *Academic-academic hospital linkages*
- *Rural clinics (FQHCs, Veteran's clinics)*
- *Health department linkages*
- *Correctional health care*
- *School health*
- *Nursing home*
- *Home telehealth*





## *Patients served\* ('97-'08)*

- *> 12,500 patient encounters*
- *Services in >30 different specialties*
  - *Emergency*
  - *Urgent*
  - *Single consults*
  - *Block scheduled clinics*
  - *Screenings*

*\*Not including Teleradiology program*

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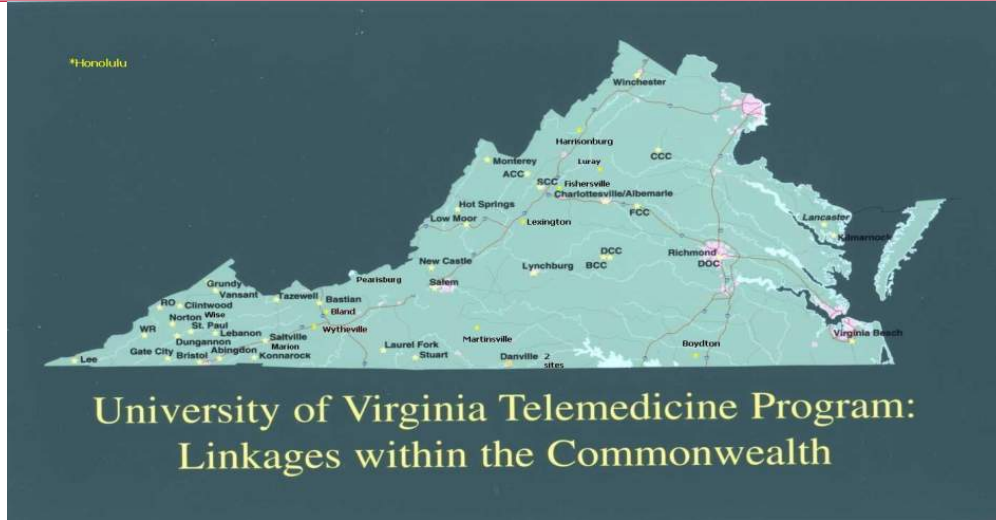


## *Office of Telemedicine subspecialty participants*

- |   |   |
|---|---|
| ▪ <i>Dermatology</i>                    | ▪ <i>Oncology</i>                       |
| ▪ <i>Hepatology</i>                     | ▪ <i>Ophthalmology</i>                  |
| ▪ <i>Pediatric and Adult Cardiology</i> | ▪ <i>Orthopedics</i>                    |
| ▪ <i>Infectious Disease (HIV)</i>       | ▪ <i>Adult and Pediatric Nephrology</i> |
| ▪ <i>Psychiatry</i>                     | ▪ <i>Pulmonary medicine</i>             |
| ▪ <i>Childhood obesity</i>              | ▪ <i>Pain management</i>                |
| ▪ <i>Genetics</i>                       | ▪ <i>Plastic Surgery</i>                |
| ▪ <i>Endocrine</i>                      | ▪ <i>Urology</i>                        |
| ▪ <i>Neurology</i>                      | ▪ <i>Gynecology</i>                     |
| ▪ <i>Neurosurgery</i>                   | ▪ <i>Oncology</i>                       |
| ▪ <i>ENT</i>                            | ▪ <i>Emergency Medicine</i>             |
| ▪ <i>Emergency Medicine</i>             | ▪ <i>Geriatric medicine</i>             |
| ▪ <i>Hematology</i>                     | ▪ <i>Surgery</i>                        |
| ▪ <i>Rheumatology</i>                   | ▪ <i>Radiology</i>                      |
| ▪ <i>Toxicology/Poison control</i>      | ▪ <i>Wound care</i>                     |

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## Telehealth affiliations (60 sites)



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## International linkages Live interactive and store forward (SCT)



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- Fewer “core based services” in rural areas
  - Emergency medical services
  - Long term care (SNF, Hospice)
  - Mental health and substance abuse services
- Physician recruitment/retention challenges
- Fewer specialists
- Slower to adopt new technologies
  - Urban adoption rate of EMR 150% of rural

Dear Doctor

It is the right time during THANKS GIVING that we have to THANK YOU for saving DHEVA's life from the ravages of DiGeorge Syndrome. Any amount of thanks is not enough to express our gratitude, however this is the only way we can do it with a LITTLE card. GOD BLESS YOU ALWAYS.

Dheva Muthuramalingam







## Facilitating expert care: *Tele-dermatology*

- Significant specialty shortages, long (>6month) waits in most rural areas
- Study of 87 rural patients
  - Cost of care in 6 months following diagnosis 50% of that of 8 months prior to teledermatology consult
- Teledermatologists recommended biopsy 10% more frequently than in-clinic dermatologists <sup>2</sup>
  - Countered by potential benefit of diagnosis at an earlier stage

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## Facilitating expert care: *Breast and cervical cancer screenings*

- Commonwealth of Virginia data<sup>1</sup>
  - 36<sup>th</sup> in the nation in terms of women screened
  - 10<sup>th</sup> in the nation in mortality
  - Women are being diagnosed at later stages of illness
- USDA grant to expand cancer outreach with support from the Tobacco Commission, Verizon Foundation
- 2008 Congressional appropriations to expand access

<sup>1</sup>ACS 2004 Cancer Prevention and Early Detection Facts and Figures

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## Facilitating expert care: *Breast cancer*

- *Mobile digital mammography*
- *Broadband facilitated early diagnosis*



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## Facilitating expert care: *Cervical cancer/Tele-colposcopy*



**VIRGINIA BREAST & CERVICAL CANCER  
EARLY DETECTION PROGRAM**  
The Virginia Department of Health  
1525 East Main Street  
Room 135  
Richmond, VA, 23219  
Phone: 804-786-5916  
Fax: 804-786-3406  
E-Mail: Breast\_Cancer@vdh.state.va.us  
Website: www.vahhealth.org/brsastcancer

- *CDC grant to Virginia for screenings of low-income, uninsured or underinsured women*
- *Real-time tele-colposcopy services by UVA gynecologic-oncologists supporting rural NPs*
- *Training of nurse practitioners from rural communities*

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*Facilitating expert care:  
Additional cancer services*

- *Collaborative tumor boards*
- *Access to cancer education*
- *Access to clinical trials*

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*Facilitating expert care:  
Tele-mental health*

- *Shortage of mental health providers in rural areas*
- *Consultations, medication management*
- *Children and adults: >3000 services*
- *Sign language for hearing impaired*
- *Interpreter services*

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## *Facilitating expert care: HIV/AIDS*

### *Outcomes: UVA Telehealth HIV Program*

- *213 correctional patients treated with 1812 visits over 5 year period*
- *Of patients naïve to therapy:*
  - *77% attained undetectable viral load (<50 copies/ml)*
  - *50-60% in HIV clinic*
  - *40% receiving community based care by non-HIV specialists*

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## *Facilitating expert care: Infant mortality*

### *Partnership with community health center in Shenandoah Valley with high infant mortality*

- *On site clinic combined with telemedicine case management of high risk obstetric patients*
- *Early enrollment and access to care*
- *Decrease costs to state Medicaid program*
- *Improved long-term outcomes*

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## Changing patient care needs:

### *Aging population*

- 2000 Census: 14% population > 65 yrs
- 50% suffer from chronic disease
- For every nursing home patient, there are 3-4 x as many patients residing at home with similar needs
- AHRQ National healthcare quality report:
  - Nursing home and home health expenditures accounted for \$139B or 9% of national health expenditures

## Changing patient care needs:

### *Remote monitoring and Home telehealth*

- Remote monitoring
  - CHF
  - Diabetes
  - COPD/ Asthma
- Home Telehealth
- Cohort of CHF patients
  - Reduce hospitalizations (per patient/yr) 1.7 to 0.26
  - Reduce 30 day readmission rate for same DRG 23% to 3%
  - Reduce hospitalization days from 6.2-1.2 days/year
  - Reduce cost of care 53%



## *Educational programs*

- *Broadcast continuing health professional education*
- *Patient education (diabetes, cancer)*
- *School Health Projects*



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## *Public Service* *Freedom calls foundation*



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*Not mainstream healthcare YET*  
*Issues in need of resolution*

- *Reimbursement*
- *Confidentiality*
- *Licensure*
- *Malpractice*
- *JCAHO*
- *Telecommunications venue/costs*
- *Interagency alignment related to policies*
- *Integration with EMRs/RHIOS*

*Issues in need of resolution:*  
*Non-reimbursement*





## *Issues in need of resolution: Non-reimbursement*

- *In 1995, there was no formal reimbursement structure*
- *Deliberately did not use eligible grant funds*
- *Since 1995, we have received coverage for services from*
  - *Medicare (only for rural sites) – BIPA 2000*
    - *Annual expenditure a fraction of what was expected*
    - *Bill passed 6/24/08 expands eligible originating sites to allow skilled nursing facilities, dialysis, and community mental health centers*
  - *Virginia Medicaid 2003 (rural and urban, no store forward, no home telehealth)*
  - *Limited private insurer reimbursement*
  - *Contracts (DOC, Hospitals)*

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## *Reimbursement*

- *2003: Grant from Anthem Blue-Cross Blue Shield for any uninsured or otherwise uncovered patient in Virginia*
- *2003: Broad coverage from Virginia Medicaid*
- *No coverage for state employees*
- *States have mandated reimbursement both for Medicaid and third party payers*

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## Other states activities re reimbursement

- **Mandatory comprehensive private payer reimbursement legislated by states:**
  - Louisiana (1995)
  - California (1996)
  - Oklahoma (1997)
  - Texas (1997)
  - Kentucky (2000)
- **Other states with statutory language**
  - Hawaii (1998)
  - Colorado (2002)
- **Medicaid**
  - 27 states
- **State employees**
  - California

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## Issues in need of resolution: Malpractice

- **Loss of the Virginia malpractice cap if we consult elsewhere in the US**
- **New local standard of care?**
- **Potentially broader exposure to include telecommunications and equipment vendors**



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## *Issues in need of resolution: Telecommunications costs*

- *Vary with mechanism of transport/and bandwidth utilized*
- *1996 Telecommunications Law*
  - T1 to Wise \$5800/month (1995)*
  - T1 to Wise \$1000/month (2001)*
  - Universal service fund \$~200/month (2008)*
- *FCC Pilot program – UVA awarded \$2.7 million from FCC, and matching funds from the Virginia Tobacco Commission*

## *Issues in need of resolution: Licensure*

- *Current standards of licensure:*
  - Faculty must apply for licensure in every state in which we provide services*
- *Licensure less of an issue in the international health marketplace*



*Issues in need of resolution:  
Confidentiality*

- *Password protected systems*
- *Encryption technologies*
- *HIPAA compliance*

*Health Information Portability and  
Accountability Act*

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*Issues in need of resolution:  
JCAHO*

- *Serve as consultants*
- *Must be credentialed and privileged if  
we prescribe and/or maintain control of  
the patient*

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*Issues in need of resolution:  
Interagency alignment (lack thereof)*

- *No single federal definition of rural*
- *Sub-optimal coordination across the agencies*
  - USDA*
  - HRSA*
  - FCC*
  - CMS*
  - Homeland Security*
- *Opportunity to leverage deployment of technology for multiple applications*
  - Emergency preparedness*
  - Clinical care*

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*Issues in need of resolution:  
Foster HIE*

- *Integration of EMRS with telehealth programs*
- *Incentivization of physicians critical*

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## *Lessons Learned/goals*

- *Strive for partnerships and collaborations*
  - *VTN*
- *Innovative applications (clinical trials, remote surgery)*
- *Identify local clinical champions*
- *Grass roots support*
- *Build the business case*
- *Engage state and federal legislators*
- *Learn from others*
- *Document outcomes*
- *Be persistent*

## *Champions*



**State Senator William Wampler**

## Champions



**Governor Mark Warner**

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## Champions



**Congressman Rick Boucher**  
Co-chair, Congressional Internet Caucus

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