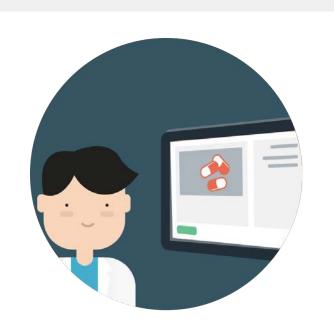
Patient Care through Telepharmacy May 2016

Greg Janes

Agenda

- Origins of Telepharmacy
- Why now?
- Telepharmacy process
- Regulatory environment
- Future Applications

Telepharmacy



Prescription verification



Counseling & Education

History

Origins of Telepharmacy

- 1942 Australia's Royal Flying Doctor Service
- 2001 U.S. has first state pass telepharmacy regulation
- 2003 Canada begins first telepharmacy service
- 2010 Hong Kong sees first videoconferencing consulting services



US Telepharmacy Timeline

- 2001 North Dakota first state to allow
- 2001 Community Health Association in Spokane, WA launches program
- 2002 NDSU study begins
- 2003 Alaska Native Medical Center program
- 2006 U.S. Navy begins telepharmacy
- 2012 New generation begins in Iowa







North Dakota Telepharmacy

- First to pass regulation
- Rural community pharmacy closing
- NDSU College of Pharmacy study



NDSU Telepharmacy Study

Study from 2002-2008

- 81 pharmacies
 - 53 retail and 28 hospital
- Rate of dispensing errors <1%
 - Compared to national average of ~2%

• Positive outcomes, mechanisms could be improved

Source: The North Dakota Experience: Achieving High-Performance Health Care Through Rural Innovation And Cooperation. May 2008



Limitations of Early Technology

- Live video feed restrictions
 - Point-to-point
 - Expensive hardware
 - Heavy broadband need
 - Lack of documentation
 - Scalability
 - Workflow obstacles

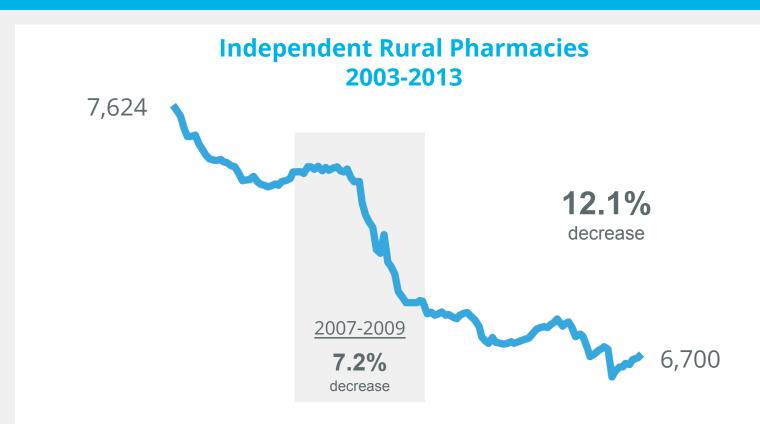






Industry Changes

Pharmacy Closure Trend



Source: Update: Independently Owned Pharmacy Closures in Rural America, 2003-2013; RUPRI Center for Rural Health Policy Analysis, Rural Policy Brief June 2014; Fred Ullrich, BA; Keith J. Mueller, PhD

Rural Pharmacy Closures



Source: Update: Independently Owned Pharmacy Closures in Rural America, 2003-2013; RUPRI Center for Rural Health Policy Analysis, Rural Policy Brief June 2014; Fred Ullrich, BA; Keith J. Mueller, PhD Mar 2003 - Dec 2013

924

independent rural pharmacies closed

490

rural communities lost their only pharmacy

Consequences of Closures

- Gap in healthcare, fragmentation of care
- Dying Main Street
- Job loss
- Decreased medication adherence

Source: Knowledge, attitudes and beliefs of patients and carers regarding medication adherence: a review of qualitative literature; Dec 2014



Medication Adherence

- 187MM Americans take 1+ prescriptions¹
- 50% do not take as prescribed²
- \$100+ billion a year in excess hospitalizations³
- 31% of new prescriptions go unfilled⁴
- Readmission costs between \$15-25 billion/year.⁵

¹ Osterberg, L., Blaschke, T. (2005). Adherence to medication. N Engl J Med, 353(5), 487-497.

² Enhancing Prescription Medicine Adherence: A National Action Plan. National Council on Patient Information and Education (August 2007).

³ Sokol, M.C., McGuigan, K.A., Verbrugge, R.R., et al. (2005). Impact of medication adherence on hospitalization risk and healthcare cost. Med Care, 43(6), 521-530.

⁴ Primary Medication Non-Adherence: Analysis of 195,930 Electronic Prescriptions. Fischer MA, Stedman MR, Lii J, et al J Gen Intern Med. 2010; 25:284-290

⁵ PriceWaterhouse Coopers' Health Research Institute. (2008). The Price of Excess: Identifying Waste in Healthcare, 2008.



Present

Technology as a Disruptor



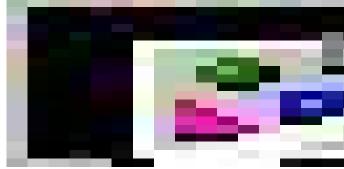




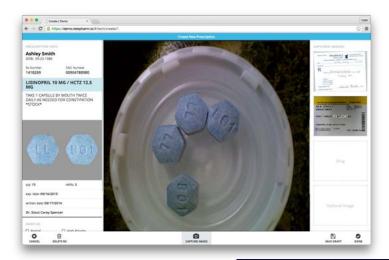
Hardware-based solutions







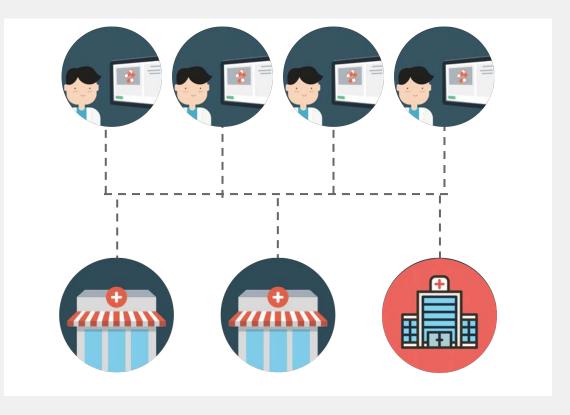
Software Solutions





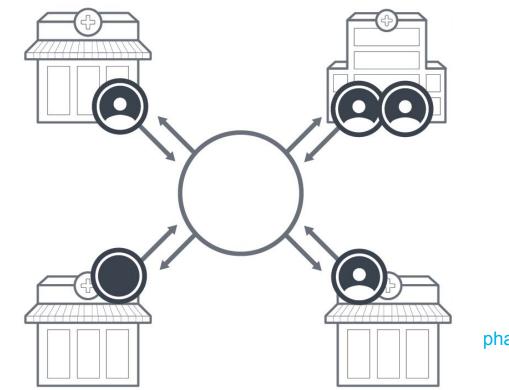


Technology Enables Advancement



Dynamic Workflow

Pharmacists can share the workload between sites



Prescriptions filled directly in rural hospitals

Specialists available in all locations including rural areas Patient care is enhanced and pharmacists are more available











Benefits of Telepharmacy



Provides access to a healthcare provider



Prevents traveling long distances

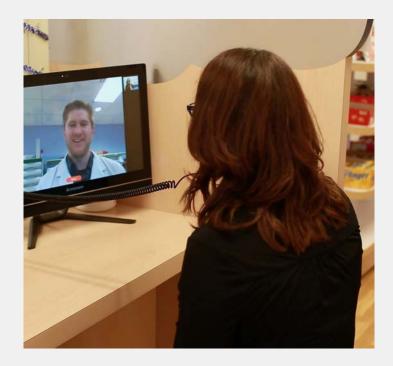


Reduces dispensing errors

Integrated Health Care

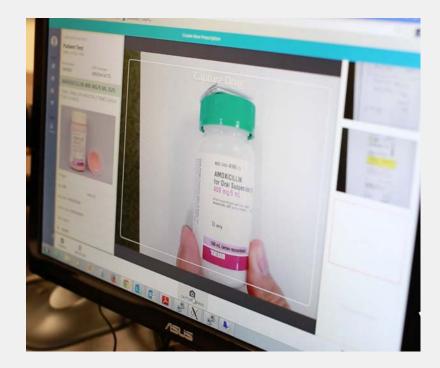
- Retrieve medications easily at the same location
- Only 5% did not fill their initial prescriptions
- Better integration = better adherence

Source: New Prescription Medication Gaps: A Comprehensive Measure of Adherence to New Prescriptions. Andrew J. Karter, Melissa M. Parker, Howard H. Moffet, Ameena T. Ahmed, Julie A. Schmittdiel, Joe V. Selby (October 2009).



Common Questions

- Fill accuracy
- Staff & location safety
- Potential for diversion
- Internet outage protocol
- Retail, Long Term Care, Health Systems



Local Pharmacy Provides

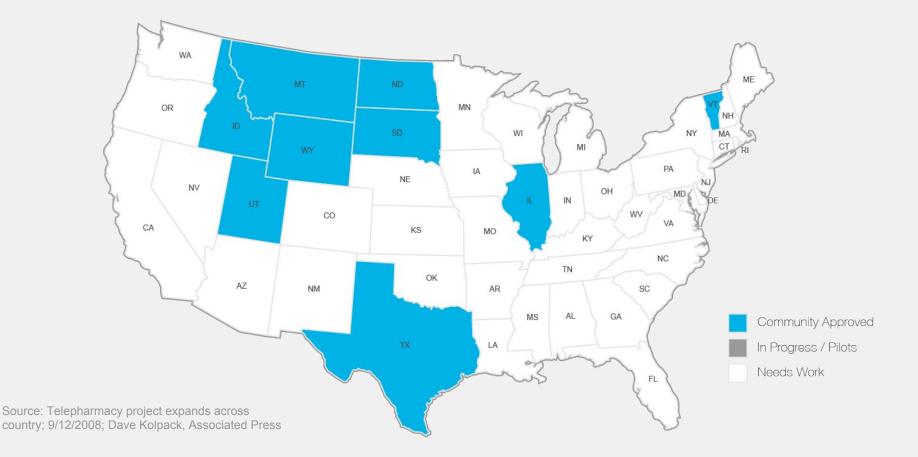
- Full primary care
- Business on Main St
- Local jobs
- Increased medication
 adherence
- \$640,000 economic impact

Source: Rural Economic Technical Assistance Center (RETAC) in Macomb, IL; Economic impacts of a pharmacy for Deiterich, Illinois, June 2015

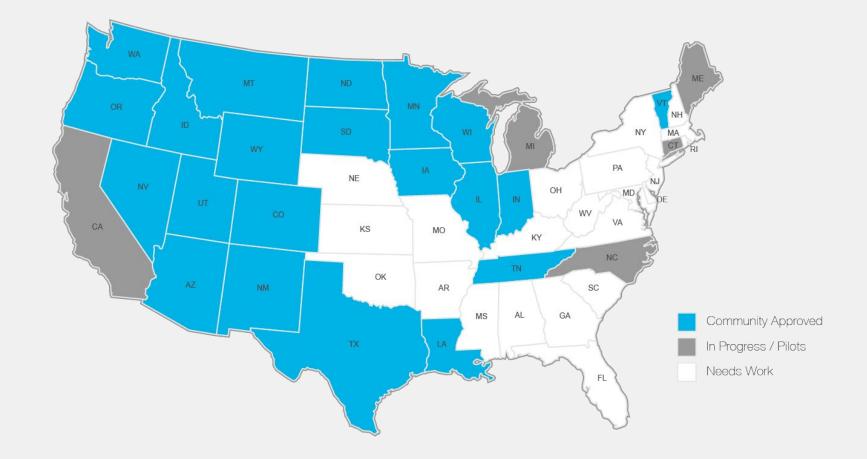


Regulatory

2008 Regulatory Environment



Current Regulatory Environment



NRTRC State Regulatory

State	Allowed	Administrative Rule	Notes
AK	Yes	<u>52.423</u>	Ten mile radius
ID	Yes	<u>710</u>	Requires approval, currently updating
MT	Yes	24.174.1302	Twenty mile radius
OR	Yes	855-041-4200	Individual approval by the Board
UT	Yes	<u>58.17b.301</u>	Rural hospitals or clinics
WA	Waiver	WAC 182-531-1730	Need a waiver from the Board
WY	Yes	<u>14-1</u>	Twenty-five mile radius



Alaska Statistics

- **65,389** residents in pharmacy deserts
- 44 pharmacy deserts

• 32 at-risk communities



Idaho Statistics

- 24,148 residents in pharmacy deserts
- 28 pharmacy deserts

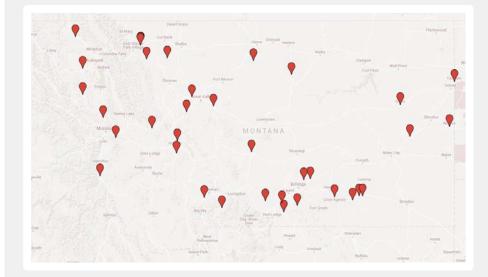
• 25 at-risk communities



Montana Statistics

- **33,969** residents in pharmacy deserts
- **35** pharmacy deserts

• 61 at-risk communities



Oregon Statistics

- **41,078** residents in pharmacy deserts
- **31** pharmacy deserts

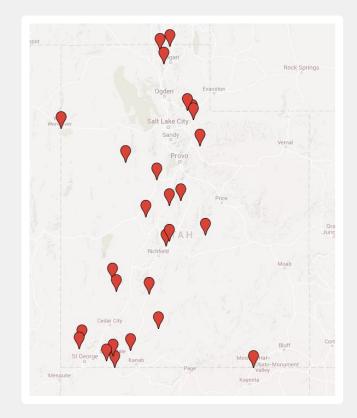
• 44 at-risk communities



Utah Statistics

- **25,799** residents in pharmacy deserts
- 27 pharmacy deserts

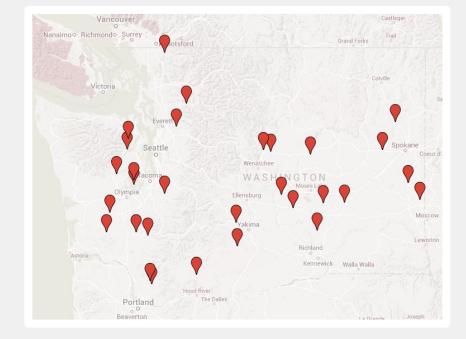
• 26 at-risk communities



Washington Statistics

- **33,761** residents in pharmacy deserts
- **30** pharmacy deserts

• 62 at-risk communities



Wyoming Statistics

- **12,649** residents in pharmacy deserts
- 15 pharmacy deserts

• 14 at-risk communities



Future Applications

- "Health Hub" for rural communities
- Access to pharmacists from anywhere
 - Direct connection to patient rooms
 - At hospital discharge
 - On your cell phone
- 24 hour pharmacist coverage
- Pharmacist relief



Questions?

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