BIOGRAPHICAL SKETCH

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NAME: Burdick, Timothy E.

eRA COMMONS USER NAME (credential, e.g., agency login): BURDICKT

POSITION TITLE: Associate Chief Research Officer for Informatics, Associate Professor, Dartmouth Health

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
Dartmouth College, Hanover, NH	B.A.	09/1985	06/1989	Earth Sciences
Virginia Polytechnic Institute, Blacksburg, VA	M.Sc.	08/1993	05/1996	Forest Biology
Dartmouth Medical School, Hanover, NH	M.D.	08/1998	06/2002	Medicine
Middlesex Hospital, Middletown, CT		06/2002	06/2003	Family Medicine
Central Maine Medical Center, Lewiston, ME		06/2003	06/2005	Family Medicine
Oregon Health & Science Univ, Portland, OR	M.B.A.	08/2014	05/2017	Healthcare MBA

A. Personal Statement

I have been a practicing family physician continuously for the past 20 years, including time as a medical director and leading quality improvement and implementation teams. I am familiar with the patient and clinician needs for improvement in rural healthcare delivery. For the past 15 years, I have led many large clinical and research informatics projects, including at Central Vermont Medical Center, the University of Vermont, OCHIN, and Oregon Health and Science University (OHSU). As Chief Medical Informatics Officer at OCHIN, I worked on clinical and research informatics projects with rural health clinics on more than 30 states. At OHSU, I was the inaugural Chief Clinical Research Informatics Officer and led the CTSA Informatics Core, overseeing all clinical research informatics systems and governance. At Dartmouth, I oversee use of data and informatics systems for research, including pragmatics implementation studies in clinical settings. In these roles, I supported individual research projects and also worked to develop research informatics infrastructure across organizations in order to make research more efficient. For the past 4 years, I have also taught a course in statistics for quality improvement course in The Dartmouth Institute's MPH program.

Ongoing projects that I would like to highlight include:

1U01CA225451-01   Hass, Atlas, Tosteson (co-PIs)   10/01/2019 – present
NIH/NCI
"Promoting Follow-up of Abnormal Cancer Screening Tests Using Population-Based Systems to Support Stepped Care Multilevel Intervention"
Role: Co-Investigator; Clinical Research Informaticist

Citations:

a) Bohm A, **Burdick TE**, Oliver BJ. 2022. Statistical Process Control for Attribute Data. Chap 7 in: Practical Measurement in Health Care Improvement. Oliver BJ, Ogrinc G (Eds). Joint Commission Resources, Oakbrook Terrace, Illinois. ISBN 978-1-63585-306-3

b) Van Citters AD, **Burdick TE**, Oliver BJ. 2022. Developing a Data Analysis and Visualization Plan. Chap 4 in: Practical Measurement in Health Care Improvement. Oliver BJ, Ogrinc G (Eds). Joint Commission Resources, Oakbrook Terrace, Illinois. ISBN 978-1-63585-306-3

c) Haas JS, Atlas SJ, Wright A, Orav EJ, Aman DG, Breslau ES, **Burdick TE**, Carpenter E, Chang F, Dang T, Diamond CJ, Feldman S, Harris KA, Hort SJ, Housman ML, Mecker A, Lehman CD, Percac-Lima S, Smith R, Wint AJ, Yang J, Zhou L, Tosteson ANA. Multilevel Follow-up of Cancer Screening (mFOCUS): Protocol for a multilevel intervention to improve the follow-up of abnormal cancer screening test results. Contemp Clin Trials. 2021 Oct;109:106533. doi: 10.1016/j.cct.2021.106533. Epub 2021 Aug 8. PMID: 34375748; PMCID: PMC8900526

d) DeVoe J, Gold R, Cottrell E, Bauer V, Brickman A, Puro J, Nelson C, Mayer K, Sears A, **Burdick T**, Merrell J, Matthews P, Fields S. The ADVANCE Network: Accelerating Data Value Across a National Community Health Center Network. *J Amer Med Informatics Assoc.* 2014. PMCID: PMC4078289

B. Positions and Honors

Positions and Employment

2022-present	Associate Chief Research Officer for Informatics, Dartmouth Health, Lebanon, NH
2022-present	Associate Professor, Department of Biomedical Data Science, Geisel School of Medicine at Dartmouth, Hanover, NH
2021-present	Associate Professor, Department of Community and Family Medicine and The Dartmouth Institute, Geisel School of Medicine at Dartmouth, Hanover, NH
2020-present	Assistant Professor, The Dartmouth Institute, Geisel School of Medicine at Dartmouth, Hanover, NH
2016-present	Assistant Professor, Department of Community and Family Medicine, Geisel School of Medicine at Dartmouth, Hanover, NH
2016-present	Family Physician, Dartmouth-Hitchcock Health
2016-2017	Assistant Professor, Department of Biomedical Data Science, Geisel School of Medicine at Dartmouth, Hanover, NH
2016-2018	Assistant Medical Director, Manchester Division Primary Care Service Line, Dartmouth-Hitchcock, Lebanon, NH
2016-2017	Adjunct Assistant Professor, Department of Medical Informatics & Clinical Epidemiology, Oregon Health & Science University, Portland, OR
2015-2016	Chief Clinical Research Informatics Officer, Oregon Health & Science Univ., Portland, OR
2015-2016	Assistant Professor, Department of Medical Informatics & Clinical Epidemiology; and Department of Family Medicine, Oregon Health & Science University, Portland, OR
2013-2016	Physician, OHSU Family Medicine at Scappoose (Rural Health Clinic), Scappoose, OR
2014-2015	Adjunct Assistant Professor, Department of Medical Informatics & Clinical Epidemiology, Oregon Health & Science University, Portland, OR
2013-2015	Adjunct Assistant Professor, Department of Family Medicine, Oregon Health & Science University, Portland, OR
2013-2015	Chief Medical Informatics Officer, OCHIN, Portland, OR
2012-2013	Interim Director of Medical Informatics, Fletcher Allen Health Care, Burlington, VT
2011-2012	Lead Physician Informaticist, Fletcher Allen Health Care, Burlington, VT
2009-2011	Physician Lead, Ambulatory EHR Implementation, Fletcher Allen Health Care, Burlington, VT
2009-2013	Associate Professor, Dept. of Family Medicine, UVM College of Medicine, Burlington, VT
2009-2013	Physician, Berlin Family Health, Berlin, VT
2008-2010	Founder, EHR Solutions LLC (Consulting), Waterbury Center, VT
2007-2008	Medical Dir. of Ambulatory EHR, Central Vermont Medical Center, Berlin, VT
2005-2008	Physician/Medical Director, Montpelier Health Center, Montpelier, VT

Other Experience and Professional Memberships

2016-2018	Director, Board of Directors, DARTNet Institute
2016-2018	Member, American College of Healthcare Executives (ACHE)
2011-2017	Member, American Medical Informatics Association (AMIA)
2008-2014	Member, Healthcare Information and Management Systems Society (HIMSS)
2002-2012	Member, American Academy of Family Physicians (AAFP)

Honors

2022, 2023	NH Top Doctors – NH Magazine

2014-2016	Health Information Technology Fellow, Office of the National Coordinator (ONC), DHHS
2014	Board Certification in Clinical Informatics, American Board of Preventative Medicine
2011	Certified Professional of Healthcare Informatics and Management Systems (CPHIMS)
2008	Fellow, American Academy of Family Physicians (FAAFP)
2007	Fellow, Wilderness Medical Society (FAWM)
2004	Amer Acad of Family Physicians National Excellence Award in Graduate Medical Education
2002	John Radenbaugh Award for Community Service, Dartmouth Medical School
2002	Julian Melba Award for Academic Excellence and Leadership, Dartmouth Medical School
1998-2002	Rural Health Scholar, Dartmouth Medical School
1998	Pfizer National Scholar Award

C. Contribution to Science

1. Advancing research in rural communities and populations with health disparities. Much of my efforts have focused on creating and studying the use of EHRs for clinical decision support in Federally-Qualified Health Centers, Rural Health Clinics, and in populations with health disparities. The clinical topics have emphasized disease screening, including colon cancer, depression, and substance abuse. We have demonstrated that the EHRs can be configured to improve clinical outcomes, but the work requires significant effort to customize commercially-available EHRs which are often better suited out-of-the-box for academic medical centers.

   a) Coronado G, Vollmer W, Petrik A, Taplin S, **Burdick T**, Meenen R, Green, B. Strategies and Opportunities to Stop Colon Cancer in Priority Populations: Design of a Cluster-Randomized Pragmatic Trial. *Contemp Clin Trials*. 2014 Jun 14;38(2):344-349. PMID: 25411657
   b) DeVoe JE, Angier H, Likumahuwa S, Hall J, Nelson C, Dickerson K, Keller S, **Burdick T**, Cohen DJ. Use of Qualitative Methods and User-Centered Design to Develop Customized Health Information Technology Tools within Federally-Qualified Health Centers to Keep Children Insured. *Journal of Ambulatory Care Management* 2014 Apr-Jun;37(2):148-54. PMID: 24594562
   c) DeVoe J, Angier H, **Burdick T**, Gold R. Health Information Technology: An Untapped Resource to Help Keep Patients Insured. *Ann Fam Med*. 2014 Nov;12(6):568-72. PMID: 25384821
   d) **Burdick T**. Health information exchange in safety net clinics. Invited testimony for Office of the National Coordinator, HIT Policy Committee Interoperability & HIE Workgroup Governance Subgroup Listening Session. 8/15/2014.

2. Primary care integrated behavioral health. Over the past decade, I have worked with national leaders to redesign EHRs to support the collaborative care model of integrated behavioral health. These efforts have led to the development and study of clinical decision support tools for substance/alcohol abuse screening, brief intervention, and referral for treatment (SBIRT) and for depression screening. We have demonstrated that the EHR tools can be implemented with minimal disruption to clinic workflows and lead to improved rates of screening and treatment.

   a) **Burdick T**, Kessler R. Development and use of a clinical decision support tool for behavioral health screening in primary care clinics. *Appl Clin Inform*. 2017; 8(2):412-429.
   b) Woodson TT, Gunn R, Clark KD, Balasubramanian BA, Jeteline KK, Muller B, Miller BF, **Burdick TE**, Cohen DJ. Designing health information technology tools for behavioral health clinicians integrated within a primary care team. *Journal of Innovations in Health Informatics*. 2018;25(3):158–168.
   c) Muench J, **Burdick T**, Kessler R, Winkle JR. Innovative EHR Tools May Improve Documented Performance of SBIRT in Primary Care (poster). American Society of Addiction Medicine 46th Annual Conference, Austin, TX. 4/2015.
   d) Muench J, **Burdick T**. SBIRT Implementation: Role of the Electronic Health Record. SAHMSA SBIRT Grantee Meeting. 10/2013.

3. Implementation of electronic health records for clinical care and research. Although we already are beginning to think of the electronic health record (EHR) as a ubiquitous tool for clinical decision support and research, EHRs have only become common in the past 5-10 years. The transition from paper order entry, documentation, and test results has taken a large effort. Since 2006, I have dedicated my professional career to the implementation of EHRs, believing that this provides an unprecedented opportunity for clinical quality improvement and research. In the past 5 years, I have dedicated considerable effort in making EHRs accessible via patient portals, advocating for change at the local and national level. This effort began with a

belief that patients should be able to access their records easily, including real-time review of test results and medical encounter notes. I was one of the initial leaders in the Northwest OpenNotes Consortium and one of the first physicians in Oregon to share my clinic notes with patients in real time. Subsequently, I offered testimony during proceedings of the Office of the National Coordinator for Health IT and at meetings in Washington, DC. Patient portals and OpenNotes have subsequently spawned numerous research projects across the country, including foci on patient-centered outcomes, health economics, and health policy. I have also focused on regional and national efforts on EHR interoperability to facilitate data movement.

    a) Bazemore AW, Cottrell EK, Gold R, Hughes LS, Phillips RL, Angier H, **Burdick TE**, Carrozza MA, DeVoe JE. "Community Vital Signs": Incorporating geocoded social determinants into electronic records to promote patient and population health. *J Am Med Inform Assoc.* 2015 Jul 13. PMID: 26174867

    b) **Burdick T**. Patient-mediated health information technologies. Panelist, Office of the National Coordinator Consumer Health IT Summit, Washington, DC. 9/15/2014.

    c) Haas JS**,** Atlas SJ, Wright A, Orav EJ, Aman DG, Breslau ES, **Burdick TE**, Carpenter E, Chang F, Dang T, Diamond CJ, Feldman S, Harris KA, Hort SJ, Housman ML, Mecker A, Lehman CD, Percac-Lima S, Smith R, Wint AJ, Yang J, Zhou L, Tosteson ANA. Multilevel Follow-up of Cancer Screening (mFOCUS): Protocol for a multilevel intervention to improve the follow-up of abnormal cancer screening test results. Contemp Clin Trials. 2021 10; 109:106533. PMID: 34375748.

    d) McCarty D, Leed R, Payment M, **Burdick TE**. Using Mychart® to assess patient attitudes toward cannabis use. J Drug Alcohol Dependence. *Drug and Alcohol Dependence Abstracts* 171 (2017) e136. DOI:10.1016/J.DRUGALCDEP.2016.08.376

4. Improving the design of EHRs to facilitate clinical research. Most EHRs are built on software platforms dating back to the 1960s and 1970s, originally intended for capturing encounter information for billing and claims submission. As the platforms evolved into clinical documentation tools, there has been some improvement in the functionality and flexibility of EHRs. However, the use of EHRs for clinical research has lagged. I have spent the past few years leading teams in adapting the EHR for large pragmatics trials and comparative effectiveness research. This work has blended clinical skills, EHR/IT programming, interface design methods, prototyping, and usability testing. Although these fields of study have long-established methodologies independently, there has been less published on how these methodologies can be integrated in the context of EHR-enabled clinical research.

    a) Likumahuwa-Ackman S, Angier H, Sumic A, Harding RL, Cottrell EK, Cohen DJ, Nelson CA, **Burdick TE**, Wallace LS, Gallia C, DeVoe JE. IMPACCT Kids' Care: a real-world example of stakeholder involvement in comparative effectiveness research. *J Comp Eff Res.* 2015;4(4):351-7. PMCID: PMC4538706

    b) Krist AH, Green L, Phillips RL, Beasley JW, DeVoe J, Klinkman MS, Hughes J, Puro J, Fox CH, **Burdick T**. Health Information Technology Needs Help from Primary Care Researchers. *J Am Board Fam Med.* 2015 May-Jun;28(3):306-10. PMID: 25957361

    c) Coronado G, **Burdick T**, Kapka T, Retecki S, Green B. Using an Automated Data-driven EHR-Embedded Program for Mailing FIT kits: Lessons from the STOP CRC Pilot Study *J Gen Pract.* 2014, 2:141. PMID: 25411657

    d) Bazemore AW, Cottrell EK, Gold R, Hughes LS, Phillips RL, Angier H, **Burdick TE**, Carrozza MA, DeVoe JE. "Community Vital Signs": Incorporating geocoded social determinants into electronic records to promote patient and population health. *J Am Med Inform Assoc.* 2015 Jul 13. PMID: 26174867