**Supplementary Material**

**Supplementary Table 1:** **Medline Search Details:** Ovid MEDLINE: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® 1946-Present. Initial Search Date: October 16, 2019

|  |  |  |
| --- | --- | --- |
| **#** | **Searches** | **Results** |
| 1 | decision making/ or decision making, organizational/ or decision support techniques/ or prisoner dilemma/ or advisory committees/ or exp resource allocation/ or Health Policy/ or health care reform/ or ((decision adj4 making) or (decision adj4 support adj4 (model$ or technic? or technique?)) or (decision adj3 (methods or model$ or analys?s or aid?)) or (clinical adj4 prediction adj4 rule?) or (operations adj3 research) or reimbursement? or ((prisoner or prisoner's or prisoners) adj2 dilemma) or ((advisory or review) adj3 committee?) or (task adj3 force?) or (governmental adj3 commission?) or (resource? adj3 allocation?) or (efficiency adj3 allocative) or ((healthcare or health care) adj4 rationing) or (health adj2 polic$) or ((healthcare or health care) adj3 reform?)).ti,ab,kf. | 407361 |
| 2 | multi-institutional systems/ or one health/ or single-payer system/ or systems analysis/ or systems theory/ or population health management/ or state medicine/ or (((multi-institutional or multi institutional or multi-hospital or multi hospital or multihospital) adj4 system?) or one health or one medicine or "one world-one health" or "one medicine-one health" or ((single payer or single-payer) adj3 (plan? or system?)) or (system? adj3 (analys?s or integration? or theor$ or queuing or approach$ or dynamics or think$ or medicine)) or (system? adj5 complexity adj3 analys?s) or ((agent based or agent-based) adj4 modeling?) or (population adj3 health adj3 management?) or ((state or sociali?ed) adj3 medicine) or (national adj2 health adj2 service) or ((cross-sector$ or cross sector$ or subsector$ or multi-sector$ or multi sector$ or multi-payer$ or intra-sector$ or inter-sector$ or intrasector$ or intersector$) adj4 (healthcare or health care or medicine or system?))).ti,ab,kf. | 157717 |
| 3 | delivery of health care, integrated/ or cooperative behavior/ or public-private sector partnerships/ or comprehensive health care/ or provider-sponsored organizations/ or interinstitutional relations/ or ((integrated adj4 (healthcare or health care or system?)) or ((cooperat$ or compliant or helping) adj3 behavior) or ((cooperat$ or collaborat$) adj4 intersectoral) or ((collaboration? or cooperation? or partnership?) adj4 (public-private or private-public or public private or mix)) or (comprehensive adj3 (healthcare or health care)) or ((provider-sponsored or provider sponsored) adj3 organization?) or ((interdepartmental or interagency or interinstitutional or community-institutional or institutional-community) adj2 relation?)).ti,ab,kf. | 93035 |
| 4 | 1 and 2 and 3 | 980 |

**Supplementary Table 2:** **Medline Search Details:** Ovid MEDLINE: Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE® Daily and Ovid MEDLINE® 1946-Present   
Revised and Updated Search Date: April 1, 2020

|  |  |  |
| --- | --- | --- |
| **#** | **Searches** | **Results** |
| 1 | decision making/ or decision making, organizational/ or decision support techniques/ or prisoner dilemma/ or advisory committees/ or exp resource allocation/ or Health Policy/ or health care reform/ or ((decision adj4 making) or (decision adj4 support adj4 (model$ or technic? or technique?)) or (decision adj3 (methods or model$ or analys?s or aid?)) or (clinical adj4 prediction adj4 rule?) or (operations adj3 research) or reimbursement? or ((prisoner or prisoner's or prisoners) adj2 dilemma) or ((advisory or review) adj3 committee?) or (task adj3 force?) or (governmental adj3 commission?) or (resource? adj3 allocation?) or (efficiency adj3 allocative) or ((healthcare or health care) adj4 rationing) or (health adj2 polic$) or ((healthcare or health care) adj3 reform?)).ti,ab,kf. | 420687 |
| 2 | multi-institutional systems/ or one health/ or single-payer system/ or systems analysis/ or systems theory/ or population health management/ or state medicine/ or (((multi-institutional or multi institutional or multi-hospital or multi hospital or multihospital) adj4 system?) or one health or one medicine or "one world-one health" or "one medicine-one health" or ((single payer or single-payer) adj3 (plan? or system?)) or (system? adj3 (analys?s or integration? or theor$ or queuing or approach$ or dynamics or think$ or medicine)) or (system? adj5 complexity adj3 analys?s) or ((agent based or agent-based) adj4 modeling?) or (population adj3 health adj3 management?) or ((state or sociali?ed) adj3 medicine) or (national adj2 health adj2 service) or ((cross-sector$ or cross sector$ or subsector$ or multi-sector$ or multi sector$ or multi-payer$ or intra-sector$ or inter-sector$ or intrasector$ or intersector$))).ti,ab,kf. | 165713 |
| 3 | delivery of health care, integrated/ or cooperative behavior/ or public-private sector partnerships/ or comprehensive health care/ or provider-sponsored organizations/ or interinstitutional relations/ or ((integrated adj4 (healthcare or health care or system?)) or ((cooperat$ or compliant or helping) adj3 behavior) or ((cooperat$ or collaborat$) adj4 intersectoral) or ((collaboration? or cooperation? or partnership?) adj4 (public-private or private-public or public private or mix)) or (comprehensive adj3 (healthcare or health care)) or ((provider-sponsored or provider sponsored) adj3 organization?) or ((interdepartmental or interagency or interinstitutional or community-institutional or institutional-community) adj2 relation?) **or intersectoral action or inter-sectoral action).ti,ab,kf.** | 95297 |
| 4 | 1 and 2 and 3 | 1301 |

**Supplementary Figure 1:** Prisma Flow Chart

**Initial Search**: October 16, 2019

**Updated & Revised Search**: April 1, 2020

Records identified through database searching  
(n = 394)

Duplicates Removed  
(n = 24)

Records screened  
(n = 370)

Records excluded  
(n = 2131)

Full-text articles assessed for eligibility (n = 26)

Full-text articles excluded, with reasons  
(n = 22)

**11** Not looking at sub sector or cross-sector impacts

**5** Not looking at decision making for the reimbursement of health interventions

**2** Duplicate from initial search

**2**  Health system not relevant (i.e., LMICs)

**1** Full text not available

**1** Non-English

Records identified through database searching  
(n = 2795)

## Screening

## Included

## Eligibility

## Identification

Records screened  
(n = 2294)

Records excluded  
(n = 344)

Full-text articles assessed for eligibility (n = 163)

Full-text articles excluded, with reasons  
(n = 138)

**90** Not looking at decision making for the reimbursement of health interventions

**20**  Study design not relevant (e.g., editorial, commentary, etc.)

**17** Full text not available

**7** Conference abstract

**3**  Health system not relevant (i.e., LMICs)

**1**  Not looking at sub sector or cross-sector impacts

Studies included in qualitative synthesis  
(n = 29)

Duplicates Removed  
(n = 501)

**Adapted from**: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

**Supplementary Table 3:** Detailed Reasons for Study Exclusion on Full Text Review (n=160)

|  |  |
| --- | --- |
| Author (Year) | Reason for Exclusion |
| Adebowale 2015 | Full text not available |
| Adler 2011 | Study design not relevant (e.g., editorial, commentary, etc.); |
| Adshead 2006 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Anell 1996 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Anonymous 2018 | No consideration for system integration or impact |
| Appel 2019 | No consideration for system integration or impact |
| Armstrong 2006 | No consideration for system integration or impact |
| Atun 2006 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Bachmann 2006 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Baker 1971 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Balasubramanian 2013 | Full text not available |
| Barnett 2011 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Barron 1995 | Full text not available |
| Batal 2015 | Conference abstract |
| Baum 2019 | No consideration for system integration or impact |
| Belmont 2011 | Study design not relevant (e.g., editorial, commentary, etc.); |
| Bendix Andersen 2018 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Bergevin 2016 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Bircher 2017 | No consideration for system integration or impact |
| Blanchet 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Boden 2017 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Boden 2017 | Study design not relevant (e.g., editorial, commentary, etc.); |
| Bousquet 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Boyer 1995 | Full text not available |
| Brennan 2005 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Brickman 1998 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Browman 2014 | Full text not available |
| Buse 2013 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Butcher 2014 | Study design not relevant (e.g., editorial, commentary, etc.); |
| Chernichovsky 2009 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Christens 2007 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Clancy 2007 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Clancy 2009 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Clark 1995 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Clark 2011 | Study design not relevant (e.g., editorial, commentary, etc.); |
| Cohen 1995 | Full text not available |
| CoileJr 1995 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Compagni 2011 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Conforti 2006 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Conrad 1996 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Conrad 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Cook 1954 | Full text not available |
| Cors 1997 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Cowdell 2002 | Full text not available |
| Cramm 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Dalton 2015 | Full text not available |
| Dawson 2015 | No consideration for system integration or impact |
| deAndrade 2015 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Dekker 2000 | Full text not available |
| Dworkin 2016 | No consideration for system integration or impact |
| Elf 2007 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Enthoven 2009 | Study design not relevant (e.g., editorial, commentary, etc.); |
| Evans 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Evans 2013 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Feachem 2005 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Forder 2019 | Duplicate from Initial Search |
| Gallacher 2019 | Duplicate from Initial Search |
| Ghazzawi 2016 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Gillies 1997 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Gleason 2014 | Conference abstract |
| Griffith 2004 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Grol 2007 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Grudniewicz 2018 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Ham 2008 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Harris 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Harvey 1991 | Full text not available |
| Herbert 2011 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Hernandez 2000 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Hippen 2018 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Hodges 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Jaglal 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Janssen 2002 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Johnson 1981 | Full text not available |
| Jones 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Jones 2016 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Jordan 2011 | Non-English |
| Kaboru 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Karvonen 2007 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Kaye 2018 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Khoury 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Kiefer 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Kindig 1998 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Kirkman-Liff 1994 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Knai 2018 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Kodner 2009 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Krause 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Kurtzman 2015 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Lagnese 2018 | Conference abstract |
| Laokri 2017 | Health system not relevant (i.e., LMICs) |
| Laugesen 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Lawn 2008 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Lloyd 2000 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Lloyd 2017 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Lloyd-Puryear 2010 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Lohse 2011 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Lomas 1997 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Loureiro 2012 | No consideration for system integration or impact |
| Manley 2016 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Mapa 1993 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Marshall 2012 | Conference abstract |
| Marshall 2013 | Conference abstract |
| Marshall 2014 | Conference abstract |
| McLellan 2012 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Messner 2015 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Miller 1996 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Minvielle 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Miro 2014 | No consideration for system integration or impact |
| Mohler 2013 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Mundy 2019 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Mundy 2019 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Mur-Veeman 2003 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Narad 1998 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| O'Malley 1996 | Full text not available |
| Paphitou 2013 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Paton 2016 | Full text not available |
| Peters 2018 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Phares 2019 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Philbin 1992 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Pinto 2015 | No consideration for system integration or impact |
| Pronk 1997 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Ricci 2018 | Conference abstract |
| Roberts 2016 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Schaefer 1982 | Full text not available |
| Scheffler 2016 | Full text not available |
| Schlenker 2015 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Schmittdiel 2017 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| SchusseleFilliettaz 2018 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Sculier 2011 | Health system not relevant (i.e., LMICs) |
| Senathirajah 1998 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Shinnick 2005 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Shortell 1993 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Shortell 2000 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Shortell 2010 | Full text not available |
| Shortell 2010 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Sieck 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Slaytor 2018 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Smith 1988 | Health system not relevant (i.e., LMICs) |
| Sofaer 1991 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Spitters 2017 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Stange 2009 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Stansfield 2019 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Storm 2011 | No consideration for system integration or impact |
| Strandberg-Larsen 2011 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Suter 2009 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Tahara 2014 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Tang 2015 | Health system not relevant (i.e., LMICs) |
| Thaldorf 2007 | Not Not looking at decision making for the adoption or de-adoption of a healthcare intervention at decision making for the reimbursement of health interventions |
| Trbovich 2014 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Triska 2005 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| vanEyk 2019 | No consideration for system integration or impact |
| Verma 2016 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Vize 2014 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Walker 2016 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Walldius 2015 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Watkins 2017 | Health system not relevant (i.e., LMICs) |
| Wen 2017 | Full text not available |
| White 2015 | Study design not relevant (e.g., editorial, commentary, etc.) |
| Wilson 2009 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Young 2001 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |
| Zuckerman 1995 | Not looking at decision making for the adoption or de-adoption of a healthcare intervention |

**Supplementary Table 4:** Detailed Extraction: Study Details

| **Study Details** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Author** | **Year** | **Country of First Author** | **Country of Analysis** | **Applied or Theoretical** | **Therapeutic Area** | **Intervention(s) Assessed** | **Integration** |
| **Decision Models & Cost-effectiveness Analyses** | | | | | | | |
| Rosenheck | 2016 | US | US | Applied | Mental Health | Multiple interventions | Impact of interventions on other phases of care |
| Cheng | 2014 | Australia | Australia | Theoretical | Multiple therapeutic areas | Health Policy | Policy Options |
| Santos | 2013 | Canada | Canada | Applied | Neurological | Multiple interventions | Impact of interventions on other phases of care |
| Gidwani | 2012 | US | US | Applied | Infectious disease | Screening Program | Impact of interventions on other phases of care |
| Mooy | 2001 | Netherlands | Netherlands | Applied | Public Health | Multiple interventions | Policy Options |
| **Framework Development** | | | | | | | |
| Forder | 2019 | UK | UK | Both | Multiple therapeutic areas | Multiple interventions | Impact of interventions on other phases of care |
| Liu | 2018 | China | No specific jurisdiction | Theoretical | Public Health | Multiple interventions | Policy Options |
| Steele Gray | 2018 | Canada | Canada | Both | Chronic Diseases | Health Policy | Impact of interventions on other phases of care |
| Loo | 2015 | US | US | Applied | Oncology | Multiple interventions | Impact of interventions on other phases of care |
| **Qualitative Studies** | | | | | | | |
| Maniatopoulos | 2019 | UK | UK | Both | Cardiovascular Disease | Diagnostic | Policy Options |
| Embuldeniya | 2018 | Canada | Canada | Applied | Multiple therapeutic areas | Health Policy | Policy Options |
| Willmott | 2016 | UK | UK | Theoretical | Public Health | Multiple interventions | Policy Options |
| **Systematic Review** | | | | | | | |
| McGuire | 2019 | UK | No specific jurisdiction | Both | Multiple therapeutic areas | Multiple interventions | Policy Options |
| Zhang | 2018 | Germany | Germany | Theoretical | Multiple therapeutic areas | Health Policy | Policy Options |
| **Non-Systematic Review and/or Discussion** | | | | | | | |
| Isaranuwatchai | 2018 | Canada | No specific jurisdiction | Theoretical | Public Health | Health Policy | Impact of interventions on other phases of care |
| Dulai | 2018 | US | US | Both | Gastroenterology | Multiple interventions | Impact of interventions on other phases of care |
| Leonard | 2018 | US | US | Applied | Multiple therapeutic areas | Pharmaceuticals | Policy Options |
| Tannenbaum | 2017 | Canada | Canada | Both | Multiple therapeutic areas | Pharmaceuticals | Impact of interventions on other phases of care |
| Munar | 2015 | US | US | Theoretical | Perinatology | Multiple interventions | Policy Options |
| Skouteris | 2015 | Australia | Australia | Applied | Perinatology | Multiple interventions | Policy Options |
| Cheng and Soloman | 2014 | US | US | Both | Multiple therapeutic areas | Multiple interventions | Impact of interventions on other phases of care |
| Luke | 2012 | US | US | Theoretical | Public Health | Multiple interventions | Policy Options |
| Abrams | 2010 | US | US | Theoretical | Public Health | Multiple interventions | Policy Options |
| Best | 2003 | Canada | Canada | Theoretical | Public Health | Multiple interventions | Impact of interventions on other phases of care |
| Boult | 1999 | US | US | Applied | Multiple therapeutic areas | Multiple interventions | Impact of interventions on other phases of care |
| **Commentary, Editorial, Research Note, Opinion Piece** | | | | | | | |
| Gallacher | 2019 | Europe | Europe | Both | Neurological | Pharmaceuticals | Impact of interventions on other phases of care |
| Wheeler | 2018 | US | US | Both | Oncology | Screening Program | Impact of interventions on other phases of care |
| Freebairn | 2017 | Australia | Australia | Applied | Public Health | Multiple interventions | Policy Options |
| Boudreaux | 2016 | US | US | Both | Perioperative | Multiple interventions | Impact of interventions on other phases of care |

**Supplementary Table 5:** Detailed Extraction: Systems Integration and Decision Context

| **Systems Integration and Decision Context** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Author** | **Year** | **Integration Outcomes** | **Existing Integrated Care Setting** | **Sector** | **Health Sub-sector Details** | **Non-Health Sector Details** | **Decision Context** |
| **Decision Models** | | | | | | | |
| Rosenheck | 2016 | Health and Resource Use | NA | Health | Hospital (inpatient, outpatient) | NA | To assess the value of a comprehensive early treatment program for schizophrenia (i.e., first episode) compared to standard community care over 2 years from a health care system perspective. |
| Cheng | 2014 | Health and Resource Use | NA | Health | Public and Private Sector | NA | To develop and apply a microeconometric framework to analyse the effect of policy incentives on the decision to buy private health insurance, and the effect of private insurance on the decisions of whether to obtain hospital care from the public or private sector, and how much care to consume |
| Santos | 2013 | Health and Resource Use | NA | Health | Pre-hospital (i.e., emergency response), acute care, rehabilitation, discharge into community | NA | Assessing the impact of interventions beyond the specific phase of care within which they are applied - but to consider the long-term implications upstream and downstream. |
| Gidwani | 2012 | Health and Resource Use | US Veterans Affairs | Health | Hospital budgets (pharmacy, inpatient, outpatient) | NA | To determine the financial feasibility of implementing a rapid-test HIV screening program compared to usual care recognizing that there may be early implementation costs but these may be off-set by reductions in hospital use. |
| Mooy | 2001 | Health | NA | Health and Non-Health | Primary care, specialty care | Health, education, transportation | Using simulation modelling to compare different policy options and their impact on health. Intersectoral decision making to improve population health in the Netherlands. |
| **Framework Development** | | | | | | | |
| Forder | 2019 | Health and Resource Use | UK Commissioning Groups | Health | Primary care, community care, LTC | NA | To understand the relationship between primary care physician service visits and the use of community based LTC |
| Liu | 2018 | Health and Resource Use | NA | Health and Non-Health | Public Health | Environment | Aggregate level resource allocations. |
| Steele Gray | 2018 | Health and Resource Use | NA | Health | Primary care, acute care, and community care | NA | Better understand whole systems approach to care delivery for older people with chronic conditions in Canada and New Zealand and how to apply existing theoretical frameworks to make decisions in this area. |
| Loo | 2015 | Health and Resource Use | US Kaiser Permanente | Health | Primary care and specialty care | NA | Implementing best practice comprehensive care for men with prostate cancer who are part of Kaiser Permanente which involved screening, shared decision making for treatment after diagnosis, and care improvement for men with localized and advanced disease. Kaiser Permanente, implementing a comprehensive model for men with prostate cancer across the disease spectrum (screening/prevention to surgical factors, etc.) to improve care and reduce costs |
| **Qualitative Studies** | | | | | | | |
| Maniatopoulos | 2019 | Health and Resource Use | UK Commissioning Groups | Health | Primary and specialty care | NA | Commissioning health care technologies for PAD diagnostics by the NHS by clinical commissioning groups for primary care |
| Embuldeniya | 2018 | Health and Resource Use | Canada Bundled Care | Health | Acute care (Hospital), community care | NA | Describes the barriers and facilitators of implementing and structuring an integrated care model with integrated funding between hospital and community settings. Worked collectively to develop a process map for the best possible care for the patient |
| Willmott | 2016 | Health and Resource Use | NA | Health and Non-Health | Public Health Programmes | Community Safety, Transportation | Exploring the ways in which directors of public health are attempting to influence local governments to invest in public health. |
| **Systematic Review** | | | | | | | |
| McGuire | 2019 | Health and Resource Use | NA | Health and Non-Health | Public health, mental health, pharmaceuticals, hospitals, community care, rehabilitation. | Education, social, housing, justice, agriculture | Looking at studies that consider co-financing (i.e., joint financing) of interventions by two or more budgets that have different sectoral objectives but recognize that together they may be able to achieve their separate goals more efficiently. Support decision making / policy development between multiple sectors (majority including the health sector) to consider the facilitators and barriers of various co-financing models for intersectoral action interventions. |
| Zhang | 2018 | Health and Resource Use | NA | Health | Multi-facility providers (primary health care clinics, hospital (inpatient, ER), public health, physiotherapy, dental), highly specialized tertiary units. | NA | DES is also able to allow decision makers to conduct “what if” analyses by changing the operational scenarios and rules, to predict the possible impacts resulting from a variety of policy alternatives before truly translated into practice without any alteration in present system. High-level decision supports can be provided via DES models for hospital managers in terms of the diagnosis of system inefficiencies and evaluation of alternative system configurations. In general, authors were exploring use of DES in healthcare modeling, and make the point that DES lends itself well to policy evaluation and planning and operational issues of health care delivery. Found that increasing number of studies modeling complex integrated healthcare providers since 2010. In general, healthcare management could benefit a lot from DES used to model integrated providers as a whole rather than just limiting to single units. |
| **Non-Systematic Review and/or Discussion** | | | | | | | |
| Isaranuwatchai | 2018 | Health and Resource Use | NA | Health and Non-Health | Hospital, public health | Transportation, environment, housing | Decision-makers who are making decisions about the funding and resource allocation decisions of intersectoral action programs (i.e., when two or more sectors cooperate to address a problem) - simultaneously considering the impact of two or more interventions especially when there are differences in outcomes both within and between sectors - and want to assess the joint impact. |
| Dulai | 2018 | Health and Resource Use | NA | Health | Acute care, long-term care | NA | Aim is to provide the best care to patients with IBD by taking a population health management approach: i.e., Improving outcomes of the at-risk population requires implementation of a multi component chronic care model designed to shift delivery of ambulatory care from acute, episodic, and reactive encounters, to proactive, planned, long-term care. |
| Leonard | 2018 | Health and Resource Use | Multi-Hospital Systems in the US | Health | Multiple hospitals | NA | Looking to reimburse the most appropriate drugs across hospitals within a managed health system. |
| Tannenbaum | 2017 | Health and Resource Use | NA | Health and Non-Health | Providers, health-related organizations, health policies | Social policies, research, and innovation | Recognition that use of medication may cause more harm than benefit. Benzodiazepine drugs for example, are among the most worrisome; they are the most frequent class of inappropriate drugs used in Canadian seniors (Morgan et al., 2016) and are associated with falls, fractures, confusion, dementia, and mortality. Long-term use of PPIs can cause Clostridium difficile infections, community-acquired pneumonia, hypomagnesemia, fractures, and both acute and chronic kidney disease. Sulfonylurea use is linked to an increased risk of hypoglycaemia, as well as falls, fractures, hospitalisation, and mortality. Cross Canada practices for deprescribing - Policy change at the federal, provincial, and territory levels |
| Munar | 2015 | Health and Resource Use | NA | Health and Non-Health | Acute and Community Care | Employment, transportation | The focus is on policy-makers decision-making on a coordinated approach to decision-making in perinatology. Using group model building to have a discussion about the ideal interventions to implement. |
| Skouteris | 2015 | Health | NA | Health and Non-Health | Providers - obstetrics, midwifery, allied health, primary care, endocrinology, exercise physiology, psychology, nutrition, population health, public and private health insurance. | Marketing and Consumer Behaviour | To inform practice and policy by working with a facilitator and a modeller to visually represent the problems of periconception obesity within a complex health system, focussing on the causal mechanisms that drive system behaviour and providing a theoretical foundation for policy formulation and management action. Goal was to jointly establish research questions aiming to optimise periconception lifestyle, weight and health. |
| Cheng and Soloman | 2014 | Health and Resource Use | Medical care homes | Health and Non-Health | Primary care, acute care, dental care, nutritional services, counselling | Housing, agriculture, transportation, environment, education, social services | Recognition that early childhood interventions has the potential to change the child’s health trajectory and reduce risk of disease in adolescence and adulthood. Policy making across sectors - policies regarding housing, agriculture, transportation, environment, and general budget priorities. Another context for health service integration is health care provider context (medical homes that can integrate services for example) |
| Luke | 2012 | Health and Resource Use | NA | Health and Non-Health | Hospital and Public Health | Environment, Social, Tax Policy, education | Particularly for the use of system dynamic methods - recognition of the dynamic interplay between interventions and policies within a system. Decision making in public health policy to integrate complex systems for public health issues |
| Abrams | 2010 | Health | NA | Health | Public Health and Primary Care | NA | Treatments and Policies to improve population health - decision-maker not specified. |
| Best | 2003 | Health | NA | Health and Non-Health | Public Health and Community Care | Planning, Tax Policies | Policy-related questions of: How should health and its related services be organized and designed? How should we pay for health care and invest in health? Not a specific decision context, but considers policy (investment, program planning) that might foster collaboration between community/public health/health sector for health promotion. |
| Boult | 1999 | Health and Resource Use | Comprehensive care system in the US | Health | Hospital departments, outpatient care, home care, nursing homes | NA | Describe approaches to integrating the organization, delivery, and financing of healthcare for groups of older people. |
| **Commentary, Editorial, Research Note, Opinion Piece** | | | | | | | |
| Gallacher | 2019 | Health and Resource Use | NA | Health Sector | Public health, private health services | NA | A collaboration between public and private institutions to identify a common set of outcomes and a common disease trajectory to evaluate the value of potential new treatments for Alzheimer’s disease recognizing that treatment benefit may not be realized until later in the disease course and may be difficult to capture in trials shorter than 5 years. |
| Wheeler | 2018 | Health and Resource Use | Cancer Control Program | Health Sector | Screening (public health, outpatient), diagnosis, treatment and surveillance, health insurance, area health education centres. | NA | Recognition that multiple factors influence screening across different populations and contexts, multi-level interventions and implementation strategies are needed to effectively target those factors, and combinations of strategies interact synergistically to improve outcomes. Recognize the potential for systems thinking and simulation modelling can offer an approach to aid decision-makers in selecting and implementation of optimal interventions. In the example provided the context was: These findings were recently used to inform a pragmatic quality improvement effort with NC Medicaid, Community Care of North Carolina, and the Mecklenburg County Public Health Department, which proactively mailed screening reminders and stool testing kits to unscreened Medicaid beneficiaries in a large, urban area in NC with relatively low screening rates |
| Freebairn | 2017 | Health and Resource Use | NA | Health and Non-Health Sector | Public health and health services | Sport, Transport, Tax policy | Involved the collaboration between health departments, clinicians and regional planners to think through the most appropriate interventions to use to reach a specific policy target or objective using participatory modeling approach for policy decision making. |
| Boudreaux | 2016 | Health and Resource Use | Surgical Care Home | Health Sector | Hospital departments | NA | Looking to provide the most appropriate interventions to the appropriate patients (focusing more specifically on the role of anesthesiologists) along the continuum to prevent unnecessary complications and readmissions. |

NA = not applicable