

Attaining minimally disruptive medicine: context, challenges and a roadmap for implementation

¹ND Shippee, ²SV Allen, ³AL Leppin, ⁴CR May, ⁵VM Montori

¹Assistant Professor, Division of Health Policy and Management, University of Minnesota, Minneapolis, MN, USA; ²Assistant Professor of Medicine; ³Research Associate, Assistant Professor of Medicine, ⁵Professor of Medicine, Mayo Clinic, Rochester, MN, USA; ⁴Professor of Healthcare Innovation, University of Southampton, Southampton, UK

ABSTRACT In this second of two papers on minimally disruptive medicine, we use the language of patient workload and patient capacity from the Cumulative Complexity Model to accomplish three tasks. First, we outline the current context in healthcare, comprised of contrasting problems: some people lack access to care and others receive too much care in an overmedicalised system, both of which reflect imbalances between patients' workloads and their capacity. Second, we identify and address five tensions and challenges between minimally disruptive medicine, the existing context, and other approaches to accessible and patient-centred care such as evidence-based medicine and greater patient engagement. Third, we outline a roadmap of three strategies toward implementing minimally disruptive medicine in practice, including large-scale paradigm shifts, mid-level additions to existing reform efforts, and a modular strategy using an existing 'toolkit' that is more limited in scope, but can fit into existing healthcare systems.

KEYWORDS Cumulative Complexity Model, evidence-based medicine, overmedicalisation, minimally disruptive medicine, multimorbidity, patient engagement

DECLARATION OF INTERESTS No conflict of interest declared.

Correspondence to ND Shippee
 Division of Health Policy and Management
 School of Public Health
 University of Minnesota
 D375 Mayo MMC 729
 Minneapolis
 MN 55455
 USA

e-mail nshippee@umn.edu

INTRODUCTION

As discussed in the first part of this two-part series,¹ minimally disruptive medicine (MDM) seeks to orient patients' interactions with healthcare in a way that optimises how healthcare fits with patients' lives. A central task of MDM involves managing the patients' workload and their capacity to address it. The Cumulative Complexity Model,² a heuristic model outlining this workload-capacity interaction, was created as a response to the situations of people who receive too little or too much care. In this paper, we consider the context created by these two situations, clarify challenges and tensions for MDM, and offer strategies for attaining MDM that comprise a roadmap forward.

CONTEXT: TOO LITTLE, TOO MUCH

Under the Cumulative Complexity Model, workload-capacity imbalances create two contrasting scenarios, which are outlined below. Both are entrenched, well characterised, longstanding problems, and both represent mismatches between the work required of patients and the resources or abilities patients have to carry out this work.

Lack of access and unmet need

Many individuals lack full and timely access to needed

care. The inability to address this fact is one of the great, persistent failures of healthcare. A vibrant literature has established several sources of inequity, including low socioeconomic status, distrust, discrimination, language barriers, lack of transportation, limited availability of care, and other issues.^{3–7} These barriers may act independently or intersect with other factors, such as mental illness, in driving unmet need.⁸ Although lack of access is correlated with socioeconomic disadvantage, not all barriers are financial, and simply providing health insurance coverage does not guarantee access.⁹

Overmedicalisation

An explosion of knowledge in the last century has created a situation where healthcare is capable of doing far more than is necessary or useful. Consequently, for those who have access, healthcare is in danger of pervading people's lives from birth¹⁰ through death¹¹ via overscreening, overdiagnosis, and overtreatment.^{12–14} These patterns may be due to broadened definitions of disease, misapplied diagnostic criteria, defensive medicine, blindness to comorbid and social contexts, or inaccurate estimation of harms and benefits by clinicians or patients.^{13,15–18} Personalised or precision medicine paradigms, depending on their application, may further this trend by driving additional diagnostic or genomic testing in the search for targeted treatments.

The result is care that is often overly burdensome, needlessly iatrogenic, poorly matched to patients' preferences and goals, not evidence-based, and costly and wasteful at both a personal and societal level. People become *patients* too easily, and patients are expected to work hard, be activated and stay engaged, and make room for treatment (if not illness) in their lives. They must satisfy this expectation, even at the expense of the energy and attention they would rather place on meeting their role expectations and pursuing their lives' hopes and dreams.

CAN WE FIND 'JUST RIGHT'? CHALLENGES AND CLARIFICATIONS FOR MINIMALLY DISRUPTIVE MEDICINE

Both scenarios above reflect enduring problems which are culturally and structurally embedded. In this context, can we find 'Goldilocks' medicine and the need to get it 'just right'? Doing so sounds straightforward, particularly with some existing strategies for access and patient-centredness which overlap with MDM to a degree. However, it is important to identify ongoing challenges for MDM, and to clarify differences between MDM and other strategies and the tensions that may arise. Below, we outline and address five caveats and potential misinterpretations of MDM.

i) *MDM ≠ social cure* MDM is healthcare-based, and will always be limited to what medicine (or medicine plus integrated social services) can do, which is a small part of people's health. In acknowledgment of this, beyond careful decision-making, care must be delivered accessibly, in a way that best recognises and counteracts the disparities outside of healthcare. Barriers represent a workload and a lack of fit; reducing barriers at the low end of economic inequality is as central to MDM as combating overmedicalisation.

ii) *MDM ≠ rationing* In avoiding excessive, burdensome care, MDM cannot be a plan for simple rationing of care or lowering of costs for their own sake. However, reducing waste via removing unneeded or unwanted care, with the goal of better fit for patients' lives, is not broadly incompatible with the underlying ethics of equity-based rationing.¹⁹ Streamlining and reducing of low-value patient work are necessary to improve the relation between capacity and workload. Within the MDM framework, simple cost reduction and resource savings are potentially counterintuitive; initial costs and expanded scopes of services may be necessary to build a long-term foundation for patient and community capacity.

iii) *MDM ≠ more efficient overmedicalisation* Increasing the efficiency with which patients' normalise excessive care into more areas of their lives bypasses the root of the problem of overmedicalisation. Put differently, attempting to fit more care with less disruption still fails to question

whether 'more' actually needs to be done. MDM cannot simply be a way for healthcare to navigate its way into people's lives with less disruption; it also requires questioning whether something should be done in the first place. This may prove difficult even if clinicians 'buy in', since, as noted above, overmedicalisation is a product of both clinician practices and *patient* demand.

iv) *MDM ≠ evidence-based medicine* Both MDM and evidence-based medicine (EBM) are important, but are not the same thing. Certainly, a comprehensive and compassionate approach to EBM, inclusive of evidence, context, and patient preferences, can empower MDM against unneeded and unwanted care. However, EBM in practice is not immune to problems, including influence by vested interests and a shift from symptom-based disease to risk-based disease.¹⁶ Indeed, one component of overmedicalisation is our lack of understanding and inability to communicate to patients the limited directness and quality of evidence for many common interventions and its inappropriate application to the complex lives and comorbidity profiles of individuals; existing guidelines, algorithms, and recommendations often miss the mark in this way. As such, MDM and EBM may be better considered as mutually informative in supporting patient-centeredness.

v) *MDM ≠ patient engagement* Patient engagement has been identified as key to the future of health and healthcare under large-scale reform efforts in the US and UK,^{20,21} partially based on evidence of better outcomes and lower costs among more-activated patients.^{22,23} In turn, policies which promote patient engagement may assume that the most complex, high-risk patients must be better activated and take a more prominent role in their health and care.

However, an all-in approach to activating patients ignores the overall toll taken on patients who are already overburdened. From an MDM standpoint, 'activation' may increase treatment burden without improved capacity. Using patient engagement or activation as a way to get patients to take on a greater share of the work, without consideration of their capacity to do so, is irresponsible (and likely counterproductive and wasteful). Lessening workload-capacity imbalances for complex patients requires services that facilitate patients' engagement in self-care, whenever possible, and setting goals that are based on patients' values and personal definitions of 'health'.

A ROADMAP WITH MULTIPLE PATHS

We can answer the challenges above through multiple strategies for change; these strategies are not mutually exclusive, but do operate on different rates and scales of change.

TABLE 1 Some elements for a minimally disruptive medicine toolkit

Remove disruptions in accessing care	
Times	Structuring care delivery hours and days to best match community and patient needs
Clinic and service locations	Plans for optimally locating clinics and/or co-locating services in the community
Transportation	Bus/rail passes and other options (shuttles, etc.) when possible
Payment	Detailed charity care processes, enrollment protocols, and other plans to address financial barriers
Identify what is wanted and needed, and what is not	
Goal-elicitation	An attempt to identify transcendent patient goals for life that can be entered into the medical record and used to orient care
Patient partnerships	A structured commitment among patients and clinicians to work together to identify the right care and to make the right care happen
Shared decision making	Used to incorporate patient values and preferences into management decisions, legitimise partnership, and arrive at feasible care strategies
Capacity assessments	Structured, within-encounter screens used to identify contextual limitations in patient capacity that impact care effectiveness and that may be amenable to support or intervention
Workload assessments	Structured, within-encounter screens used to identify the intrusiveness of health on life and to find opportunities for treatment plan augmentation
Patient-reported outcome tracking	Systematic, ongoing recording of patient-reported health status, burdens of life and health, and changes in the quality or availability of support
Provide care and services that have good 'fit'	
Capacity coaching	Between-clinician encounter interactions that screen for progress in goals and the influence of capacity and workload on health and wellness
Resource registries	Lists of resources within and outside of the health system that have explicit and predefined agreements to provide specific support to specific patients
Lean consumption	Healthcare provider-initiated efforts to improve the efficiency of interacting with health care from the patient's perspective (e.g. by shortening waiting times, streamlining administrative hurdles)
Medication therapy management	A version of medication therapy management that focuses on optimisation of medication regimens in regards to not only patient need, but also want and fit; best implemented with the power to 'deprescribe' low-value and burdensome medications
Community navigators	Individuals that can be used to more intimately connect patients to community resources
Relational coordination	Method of organising care based on shared aims and understanding that uses specific analytics to identify within-team relationships that are impeding care effectiveness
Choosing Wisely Campaign	Used to promote a practice or system-level culture of parsimonious and patient-centered care and to establish social norms that counteract the bias toward intervention

Big picture changes

First, we can change culture and practices on as large a scale as possible in order to introduce MDM paradigmatically. We label these idealistic because, in a sense, they require the most work and most strongly

contradict the existing context. Such changes include fostering a new paradigm in 'quality of care', with metrics for workload-capacity imbalances, and greater flexibility and space for patient input in creating and following guidelines. Accordingly, we support the call for a patient

revolution,²⁴ and believe it will lead to better fit and less disruption in care. Portents of such a movement already exist. Calls for patients to have better access to their own medical records suggest an interest in upending the existing order. Likewise, patient- and community-initiated groups and studies²⁵ suggest that patients, or at least those patients with sufficient capacity to act, may be tired of slow and/or tokenistic change.

Build into existing reform: piggybacking and add-ons

We propose this second approach in light of the fact that healthcare is in flux under large-scale changes included in the Affordable Care Act in the US, the Health and Social Care Act in England, and other reforms. Such add-ons could be a part of ongoing efforts at implementing accountable care organisations, healthcare homes, and other models of care and payment to ensure workload-capacity balance is a goal of those initiatives. As might be intimated, this requires fewer revolutionary steps, though this approach would still require evidence, stories, and buy-in from standards organisations and expert panels, clinician leaders, politicians, and/or local health system administration. Given that at least some of the reform efforts and evaluations underway are aimed at greater access, coordination, and quality, shaping their implementation toward minimally disruptive practices is possible in the abstract. However, defensive medicine, adherence to existing quality metrics, and other factors will likely complicate such half-measures in the absence of fundamental change.

Toolkit and modular approaches

Even if the context above does not change, small-scale changes can be, and are being, made. Existing efforts include targeted, highly coordinated care delivery for complex populations or conditions (e.g. HIV clinics) and medication reconciliations (which can reveal unnecessary

medications). An initial toolkit for MDM already exists and its components can be picked up and used with some flexibility within existing payment and delivery models (Table 1, modified from²⁶). Plans for limiting workload could include reducing patients' administrative burdens (fewer forms, more streamlined visits or payments) or removing barriers (e.g. orienting clinics' hours of operation to better fit patients' schedules). Conversely, building and mobilising²⁷ patients' capacity could mean supporting caregivers to amplify their efforts, optional training and classes, and other interventions delivered with kind respect to the limitations in the capacity that our patients can mobilise to address healthcare work. Implementing such modules, adapted for each context, is likely to be the most immediate way to introduce MDM.

CONCLUSION

In sum, attaining MDM requires meeting challenges which have long bedevilled healthcare. MDM, however, does bring focus to some unique tensions. These include seeking a 'Goldilocks' balance, and managing tensions between engaging patients and ensuring their input is informed by a good understanding of evidence, while staying cognisant of their capacity. Regardless, adding to and using an MDM toolkit may be the most feasible way to introduce MDM today, while we also work for larger cultural and structural changes to the existing backdrop of healthcare delivery.

REFERENCES

- 1 Abu Dabrh AM, Gallacher K, Boehmer KR et al. Minimally Disruptive Medicine: the evidence and conceptual progress supporting a new era of healthcare. *J R Coll Physicians Edinb* 2015; 45: 114–7.
- 2 Shippee ND, Shah ND, May CR et al. Cumulative complexity: a functional, patient-centered model of patient complexity can improve research and practice. *J Clin Epidemiol* 2012; 65: 1041–51. <http://dx.doi.org/10.1016/j.jclinepi.2012.05.005>
- 3 Ben-Shlomo Y, Chaturvedi N. Assessing equity in access to health care provision in the UK: does where you live affect your chances of getting a coronary artery bypass graft? *J Epidemiol Community Health* 1995; 49: 200–4.
- 4 Call KT, McAlpine DD, Garcia CM et al. Barriers to care in an ethnically diverse publicly insured population: is health care reform enough? *Med Care* 2014; 52: 720–7. <http://dx.doi.org/10.1097/MLR.0000000000000172>
- 5 Sigfrid LA, Turner C, Crook D et al. Using the UK primary care Quality and Outcomes Framework to audit health care equity: preliminary data on diabetes management. *J Public Health* 2006; 28: 221–5.
- 6 Adams P, Kirzinger W, Martinez M, editors. *Summary health statistics for the U.S. population: National Health Interview Survey, 2011*. Atlanta, GA: National Center for Health Statistics; 2012.
- 7 Morris S, Sutton M, Gravelle H. Inequity and inequality in the use of health care in England: an empirical investigation. *Soc Sci Med* 2005; 60: 1251–66.
- 8 Shippee ND, Call KT, Weber W et al. Depression, access barriers, and their combined associations with unmet health needs among publicly insured individuals in Minnesota. *Soc Ment Health* 2012; 2: 85–98. <http://dx.doi.org/10.1177/2156869312448081>
- 9 Kotagal M, Carle AC, Kessler LG et al. Limited impact on health and access to care for 19- to 25-year-olds following the Patient Protection and Affordable Care Act. *JAMA Pediatr* 2014; 168: 1023–9. <http://dx.doi.org/10.1001/jamapediatrics.2014.1208>
- 10 Johanson R, Newburn M, Macfarlane A. Has the medicalisation of childbirth gone too far? *BMJ* 2002; 324: 892–5.
- 11 Lo TJ, Wu HY, Ong WY et al. An audit on antibiotic use at the end of life in inpatient hospice patients – Are we contributing to over-medicalization of dying? *Prog Palliat Care*. <http://dx.doi.org/10.1179/1743291X14Y.0000000111>

- 12 Berman SM, Satterwhite CL. A paradox: overscreening of older women for chlamydia while too few younger women are being tested. *Sex Transm Dis* 2011; 38: 130–2. <http://dx.doi.org/10.1097/OLQ.0b013e3182027e00>
- 13 Bruchmüller K, Margraf J, Schneider S. Is ADHD diagnosed in accord with diagnostic criteria? Overdiagnosis and influence of client gender on diagnosis. *J Consult Clin Psychol* 2012; 80: 128–38. <http://dx.doi.org/10.1037/a0026582>
- 14 Andrews MA, O'Malley PG. Diabetes overtreatment in elderly individuals: Risky business in need of better management. *JAMA* 2014; 311: 2326–7. <http://dx.doi.org/10.1001/jama.2014.4563>
- 15 Yudkin JS, Montori VM. The epidemic of pre-diabetes: the medicine and the politics. *BMJ* 2014; 349: g4485. <http://dx.doi.org/10.1136/bmj.g4485>
- 16 Greenhalgh T, Howick J, Maskrey N. Evidence based medicine: a movement in crisis? *BMJ* 2014; 348: g3725. <http://dx.doi.org/10.1136/bmj.g3725>
- 17 Hoffmann TC, Del Mar C. Patients' expectations of the benefits and harms of treatments, screening, and tests: a systematic review. *JAMA Intern Med* 2015; 175: 274–86. <http://dx.doi.org/10.1001/jamainternmed.2014.6016>
- 18 Wyatt KD, Stuart LM, Brito JP et al. Out of context: clinical practice guidelines and patients with multiple chronic conditions: a systematic review. *Med Care* 2014; 52: S92–S100. <http://dx.doi.org/10.1097/MLR.0b013e3182a51b3d>
- 19 Brody H. From an ethics of rationing to an ethics of waste avoidance. *N Engl J Med* 2012; 366: 1949–51. <http://dx.doi.org/10.1056/NEJMp1203365>
- 20 James J. Health Policy Briefs: Patient Engagement. *Health Aff* 2013. http://www.healthaffairs.org/healthpolicybriefs/brief.php?brief_id=86 (accessed 25/5/2015).
- 21 Department of Health. *Choosing Health: Making healthy choices easier* (Public Health White Paper). London: Department of Health; 2004.
- 22 Hibbard JH, Greene J. What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. *Health Aff* 2013; 32: 207–14. <http://dx.doi.org/10.1377/hlthaff.2012.1061>
- 23 Hibbard JH, Greene J, Overton V. Patients with lower activation associated with higher costs; delivery systems should know their patients' 'scores'. *Health Aff* 2013; 32: 216–22. <http://dx.doi.org/10.1377/hlthaff.2012.1064>
- 24 Richards T, Montori VM, Godlee F et al. Let the patient revolution begin. *BMJ* 2013; 346: f2614. <http://dx.doi.org/10.1136/bmj.f2614>
- 25 patientslikeme. About us; 2014. <http://www.patientslikeme.com/about>
- 26 Leppin AL, Montori VM, Gionfriddo MR. Minimally disruptive medicine: a pragmatically comprehensive model for delivering care to patients with multiple chronic conditions. *Healthcare* 2015; 3 : 50–63.
- 27 May C, Eton D, Boehmer K et al. Rethinking the patient: using Burden of Treatment Theory to understand the changing dynamics of illness. *BMC Health Serv Res* 2014; 14: 281. <http://dx.doi.org/10.1186/1472-6963-14-281>