

**SPECIAL SYMPOSIUM: IMPROVING SHARED DECISION MAKING WITH LGBT RACIAL AND ETHNIC MINORITY PATIENTS****A Model of Organizational Context and Shared Decision Making: Application to LGBT Racial and Ethnic Minority Patients**

Rachel H. DeMeester, MPH<sup>1,2</sup>, Fanny Y. Lopez, MPP<sup>1</sup>, Jennifer E. Moore, PhD, RN<sup>3,4</sup>, Scott C. Cook, PhD<sup>1,2</sup>, and Marshall H. Chin, MD, MPH<sup>1,2</sup>

<sup>1</sup>Section of General Internal Medicine, Department of Medicine, University of Chicago, Chicago, IL, USA; <sup>2</sup>Robert Wood Johnson Foundation Reducing Health Care Disparities Through Payment and Delivery System Reform Program Office, University of Chicago, Chicago, IL, USA; <sup>3</sup>Institute for Medicaid Innovation, Washington, DC, USA; <sup>4</sup>Department of Obstetrics & Gynecology, Medical School, University of Michigan, Ann Arbor, MI, USA.

Shared decision making (SDM) occurs when patients and clinicians work together to reach care decisions that are both medically sound and responsive to patients' preferences and values. SDM is an important tenet of patient-centered care that can improve patient outcomes. Patients with multiple minority identities, such as sexual orientation and race/ethnicity, are at particular risk for poor SDM. Among these dual-minority patients, added challenges to clear and open communication include cultural barriers, distrust, and a health care provider's lack of awareness of the patient's minority sexual orientation or gender identity. However, organizational factors like a culture of inclusion and private space throughout the visit can improve SDM with lesbian, gay, bisexual, and transgender ("LGBT") racial/ethnic minority patients who have faced stigma and discrimination. Most models of shared decision making focus on the patient-provider interaction, but the health care organization's context is also critical. Context—an organization's structure and operations—can strongly influence the ability and willingness of patients and clinicians to engage in shared decision making. SDM is most likely to be optimal if organizations transform their contexts and patients and providers improve their communication. Thus, we propose a conceptual model that suggests ways in which organizations can shape their contextual structure and operations to support SDM. The model contains six drivers: workflows, health information technology, organizational structure and culture, resources and clinic environment, training and education, and incentives and disincentives. These drivers work through four mechanisms to impact care: continuity and coordination, the ease of SDM, knowledge and skills, and attitudes and beliefs. These mechanisms can activate clinicians and patients to engage in high-quality SDM. We provide examples of how specific contextual changes could make SDM more effective for LGBT racial/ethnic minority populations, focusing especially on transformations that would establish a safe environment, build trust, and decrease stigma.

**KEY WORDS:** shared decision making; practice redesign; disparities; lesbian; gay; bisexual; transgender; race and ethnicity.

J Gen Intern Med 31(6):651–662

DOI: 10.1007/s11606-016-3608-3

© Society of General Internal Medicine 2016

**BACKGROUND**

Shared decision making (SDM), in which patients and clinicians work together to reach care decisions that are both medically sound and responsive to patients' preferences and values, is a tenet of patient-centered care and an increasing priority for clinicians and health care organizations. Patients who reflect on care choices before meeting with clinicians may be more interested in and better able to evaluate decisions,<sup>1,2</sup> and patients involved in choosing their care plan are more likely to follow through.<sup>3,4</sup> Patients who participate in decision-making also have more efficient clinic visits and are less likely to switch providers.<sup>5,6</sup> Effective SDM can also improve clinical outcomes like control of blood pressure and glucose.<sup>3</sup> Some funders (commercial health plans; Medicare Shared Savings Program) are testing rewards for the provision of SDM and patient-centered care, and some accreditation bodies (including those that certify patient-centered medical home status) include SDM as a desired element of care.<sup>7,8</sup>

Unfortunately, disparities in the provision and quality of SDM exist for racial and ethnic minority groups and lesbian, gay, bisexual, and transgender (LGBT) populations.<sup>9–12</sup> Racial and ethnic minority populations that are also LGBT are at especially high risk for poor SDM.<sup>13,14</sup> Clinicians often lack the training to encourage disclosure of sexual orientation,<sup>15–17</sup> resulting in inadequate communication and SDM.<sup>18</sup> Moreover, generic patient engagement approaches geared toward predominantly white LGBT populations may not be appropriate for patients with multiple minority identities.<sup>15</sup> While many combinations of minority identities are possible, this paper uses the term “dual-minority” to refer to racial/ethnic minority LGBT patients.

Models of SDM can help guide providers and health care organizations as they attempt to improve SDM. A significant limitation is that most models of shared decision making focus only on the patient-provider interaction,<sup>13,19</sup> even though the organizational context (structure and operations) in which that visit occurs can strongly influence the willingness and ability of patients and clinicians to engage in SDM and can help institutionalize approaches that benefit minority patients. Context impacts all patients but can particularly impact dual-minority patients. For example, workflows and physical

layout can impact whether there is time or private space to discuss potentially sensitive information, like sexual orientation, that is necessary for SDM. Without this information exchange, SDM may not occur or may lead to decisions that fail to reflect the reality of patients' identities. A few SDM models acknowledge the potential impact of visit context on SDM, but do not identify how individual contextual drivers impact SDM.<sup>20–22</sup> Implementation science models identify contextual drivers that impact implementation of an innovation, but do not address specifically how SDM is affected.<sup>23,24</sup>

### CONCEPTUAL MODEL OF ORGANIZATIONAL CONTEXT AND SHARED DECISION MAKING

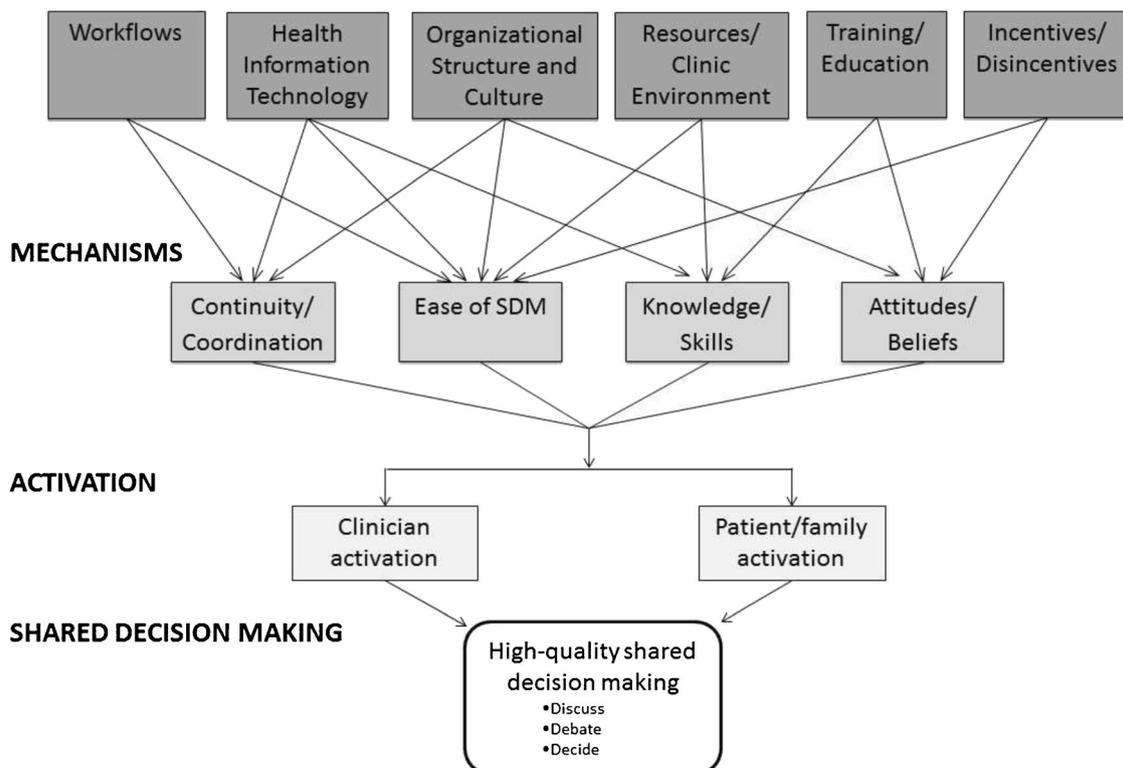
Therefore, we outline a conceptual model (Fig. 1) for how organizations can shape their contextual structure and operations to support SDM. Six drivers act through four mechanisms to improve clinician and patient/family activation and ultimately shared decision making. The six organizational drivers are workflows and procedures, health information technology, organizational structure and culture, clinic resources and physical environment, training and education, and the incentives and disincentives attached to SDM (Table 1).

Each driver impacts SDM through at least two of the following four mechanisms: continuity and coordination, ease

of SDM, knowledge and skills, and attitudes and beliefs (Fig. 1). Coordination across team members, visits, and organizations is required because decisions are rarely confined to a single visit. Clinicians and patients are more likely to initiate and be motivated to do SDM when it is easier to do, such as when SDM is integrated into expectations, culture, and day-to-day processes as a part of usual care. Specific knowledge and skills of both clinicians and patients facilitate SDM, including empathic, open-ended communication techniques, SDM methods, cultural competence, and insight into factors affecting care. Key attitudes and beliefs are necessary for effective SDM. Clinicians and patients must see value in SDM and expect that it will work. Trust and an equal power dynamic are necessary for open communication.<sup>8</sup> Table 1 describes specific components of each of the four mechanisms in more detail.

Drivers and mechanisms lead to the intermediate outcome of activation, where clinicians and patients (and/or families) have the knowledge, skills, confidence, and motivation to engage in SDM. Patient activation is necessary for SDM and can improve patient outcomes,<sup>25–27</sup> but clinicians may underestimate patients' desire to participate in SDM.<sup>9,28</sup> Clinicians must also be 'activated' to accept, solicit, and act on patient input.<sup>20,29</sup> The final outcome, high-quality SDM, is defined by the quality of three pillars: information sharing, deliberation, and decision-making, or more simply, discuss, debate, and decide.<sup>9,30</sup>

#### ORGANIZATIONAL DRIVERS\*



\*Arrows depict how organizational drivers work through mechanisms to inspire patient and clinician activation (intermediate outcome) and ultimately high-quality shared decision making (outcome).

Figure 1 Conceptual model of organizational context and shared decision making. SDM = shared decision making.

Table 1. Organizational Drivers and Mechanisms for Shared Decision Making

Driver*	Brief description	Example components
1. <u>Workflows</u>	Day-to-day processes that affect patient flow and how staff share and complete tasks related to SDM. <sup>1</sup>	<ul style="list-style-type: none"> <li>• Patient flow through clinic/ Timing</li> <li>• Patient flow through care team/ Team composition               <ul style="list-style-type: none"> <li>○ Team-based care</li> </ul> </li> <li>• Population health management strategy               <ul style="list-style-type: none"> <li>○ Empanelment</li> <li>○ Data on race, ethnicity, language, sexual orientation, gender identity</li> </ul> </li> </ul>
2. <u>Health Information Technology</u>	The technology and capacity to exchange information and track workflows that support SDM.	<ul style="list-style-type: none"> <li>• Electronic medical records               <ul style="list-style-type: none"> <li>○ Patient portal, shared visit notes</li> <li>○ Clinical decision supports</li> </ul> </li> <li>• Patient access to technology (computer, phone, internet)</li> </ul>
3. <u>Organizational Structure and Culture</u>	An organization's willingness to prioritize SDM and ability to recognize and respond appropriately to patients' background and social context.	<ul style="list-style-type: none"> <li>• Leadership and staff commitment to SDM               <ul style="list-style-type: none"> <li>○ Policies/mission statements</li> </ul> </li> <li>• Staffing diversity and concordance with patient population</li> <li>• Relationships with community</li> </ul>
4. <u>Resources and Clinic Environment</u>	The patient-centered physical space, materials, and language interpretation services necessary for SDM.	<ul style="list-style-type: none"> <li>• Physical environment               <ul style="list-style-type: none"> <li>○ Welcoming visual cues</li> <li>○ Patient-centered space (private for SDM, resource center)</li> </ul> </li> <li>• Educational materials, decision aids               <ul style="list-style-type: none"> <li>○ Health literacy-appropriate</li> <li>○ Culturally tailored</li> </ul> </li> <li>• Language/interpretation services</li> </ul>
5. <u>Training and Education</u>	The methods chosen to help clinicians increase their familiarity with and skill in topics that support SDM, including with diverse populations.	<ul style="list-style-type: none"> <li>• Training in SDM</li> <li>• Training in cultural competence</li> </ul>
6. <u>Incentives and Disincentives</u>	Financial and non-financial support for doing SDM.	<ul style="list-style-type: none"> <li>• Financial incentives for SDM and patient experience</li> <li>• Non-financial incentives: Recognition of quality SDM and patient experience, including public reporting</li> </ul>
<b>Mechanism<sup>‡</sup></b>		
1. <u>Continuity/Coordination</u>	Coordination across team members, visits, and organizations. Required because decisions are rarely confined to a single visit.	<ul style="list-style-type: none"> <li>• Same provider team over time</li> <li>• External clinicians integrated with internal care team</li> <li>• Follow-up discussions about decisions (in between visits, at next visit)</li> </ul>
2. <u>Ease of SDM</u>	Clinicians and patients are more likely to initiate and be motivated to do SDM when it is integrated into expectations, culture, and day-to-day processes as a part of usual care.	<ul style="list-style-type: none"> <li>• Make SDM part of usual care (automatic, default process)</li> <li>• Efficient and sustainable (financially and otherwise)</li> </ul>
3. <u>Knowledge/Skills</u>	Specific knowledge and skill including communication, SDM methods, cultural competence, and insight into factors affecting care. Applies to both clinicians and patients.	<ul style="list-style-type: none"> <li>• Cultural competence (provider, organization)</li> <li>• Individualizing care (provider)</li> <li>• Eliciting patient preferences, values, and beliefs (provider)</li> <li>• Insight into care (patient and provider)</li> <li>• Technology savviness (patient and provider)</li> <li>• Health literacy (patient)</li> <li>• Increased trust (patient)</li> <li>• Increased sensitivity/ understanding (provider)</li> <li>• Equal power dynamic (patient and provider)</li> <li>• Expect that SDM is relevant and will work (patient and provider)</li> <li>• Value/prioritize SDM (patient and provider)</li> </ul>
4. <u>Attitudes/Beliefs</u>	Patients and clinicians must also see value in SDM and expect that it will work. Trust and an equal power dynamic are necessary for open communication. <sup>8</sup>	<ul style="list-style-type: none"> <li>• Make SDM a social norm in organization and community—expect SDM as part of good care</li> <li>• Health care-related cultural norms and historical context (patient and provider)               <ul style="list-style-type: none"> <li>○ Sexual orientation / gender identity</li> <li>○ Race/ethnicity</li> </ul> </li> </ul>

\* Drivers: The main factors that enhance or undermine SDM

† SDM: Shared decision making

‡ Mechanisms: The effects of the drivers; why and how drivers might impact SDM

This model builds on practical experience among the author team and colleagues and existing models. Notably, the drivers and mechanisms (Table 1) correspond with many constructs in models by Damschroder (*Consolidated Framework for Implementation Research*) and Greenhalgh (*Diffusion of Innovations in Service Organizations*).<sup>23,24</sup>

We describe each driver's impact on SDM. We also provide examples (Table 2) of how health care provider organizations

can operationalize the model to improve SDM specifically for LGBT racial and ethnic minority patients.

## DRIVER 1: WORKFLOWS

Clear workflows can help overcome provider inertia to engaging in SDM<sup>56</sup> and allow organizations to build SDM into usual care, thus making SDM easier. Clear workflows can also facilitate coordination of SDM within care teams and across

Table 2. Improving Organizational Context around Shared Decision Making for LGBT Racial/Ethnic Minority Patients

Driver	Example components	Specific considerations and examples*
1: Workflows	<i>Patient Flow through the Clinic / Timing</i>  <i>Patient Flow through the Care Team / Team Composition</i> <i>Population Health Management Strategy</i>	<ul style="list-style-type: none"> <li>- Provide private, confidential space for check-in and check-out<sup>31,32</sup></li> <li>- Call for and address transgender patients using their preferred name and pronouns<sup>33</sup></li> <li>- Design all workflows and tasks to be culturally competent</li> <li>- Expect and encourage all health care providers to become competent in the care of racial/ethnic minority LGBT<sup>†</sup> patients</li> <li>- Encourage providers to collaborate with team members with expertise in these areas</li> <li>- Combine clinical results with information about sexual orientation and gender identity to identify potential candidates for SDM<sup>§</sup> around treatment options. For example: <ul style="list-style-type: none"> <li>o Screen for depression to discuss possible treatment. LGBT patients are at higher risk for depression,<sup>34</sup> especially those who are also racial/ethnic minorities<sup>33</sup></li> <li>o Track HIV<sup>‡</sup> and sexually transmitted disease testing to identify candidates for HIV pre-exposure prophylaxis based on Centers for Disease Control and Prevention guidelines<sup>35</sup></li> </ul> </li> <li>- Collect data on sexual orientation, gender identity, preferred names/pronouns, race/ethnicity, and key relationships in an affirming manner<sup>36,37</sup></li> </ul>
2: Health Information Technology	<i>Electronic Health Records: Patient Portals and Shared Visit Notes</i>  <i>Electronic Health Records: Clinical Decision Supports</i>	<ul style="list-style-type: none"> <li>- Talk to racial/ethnic minority LGBT patients about which aspects of their identity they feel comfortable having documented in visit notes and explain why this information is pertinent to care<sup>33</sup></li> <li>- Use respectful and non-judgmental language to address race/ethnicity, sexual orientation, gender identity, and sexual behaviors in shared visit notes. Use terms and labels chosen by the patient<sup>33</sup></li> <li>- Help patients feel comfortable bringing partners of any gender to the visit. In the initial stages of building rapport with new patients, patient portals may be a viable way to engage partners in care remotely but should not replace more permanent efforts to demonstrate inclusion in care decisions</li> <li>- Adapt electronic health record templates to allow collection of data on sexual orientation, gender identity, preferred names/pronouns, race/ethnicity, and key relationships<sup>38</sup></li> <li>- Implement screening templates and clinical decision supports to flag opportunities to ask about behaviors potentially affecting disease risk<sup>39,40</sup> For example, the prevalence of intimate partner violence is higher for transgender patients. Thus, a clinical decision support triggered by gender identity could prompt the clinician to screen sensitively for intimate partner violence and engage in SDM if appropriate</li> </ul>
Driver 3: Organizational Structure and Culture	<i>Leadership and Staff Commitment</i>  <i>Staff Diversity and Concordance</i>  <i>Relationship with the Community</i>	<ul style="list-style-type: none"> <li>- Complete one of the national benchmarking surveys assessing organizational competence in care of diverse populations including racial/ethnic minority LGBT patients<sup>41</sup></li> <li>- Include both the terms “sexual orientation” and “gender identity” in patient non-discrimination policy<sup>39</sup></li> <li>- Build culture of diversity and inclusion in organization. Include a commitment to diversity in mission statements and policies</li> <li>- Recognize that the experiences of racial/ethnic minority LGBT patients may be different from majority LGBT patients and that there are significant variations in lived experiences within LGBT patients as a category</li> <li>- Implement quality improvement activities designed to reduce health and healthcare disparities suffered by racial/ethnic minority LGBT patients, beyond generic approaches to improving SDM overall</li> <li>- Hire diverse workforce including clinicians and staff reflective of patient population, including multiple minority identities<sup>33,42,43</sup></li> <li>- Discordant clinicians should build trust through patient-centered communication and learn about racial/ethnic minority LGBT health needs to become allies<sup>44</sup></li> <li>- Develop partnerships and reputation with community organizations serving racial and ethnic minority LGBT patients<sup>14,33,43,45</sup></li> <li>- Obtain feedback from community members and organizations on how SDM could best meet their needs<sup>18,43,45</sup> <ul style="list-style-type: none"> <li>o Maintain a community advisory board</li> <li>o Survey or interview patients about their health care experiences and needs</li> </ul> </li> <li>- Participate in provider referral programs through LGBT organizations<sup>33,39</sup></li> <li>- Advertise clinics in media and events serving LGBT and racial/ethnic minority LGBT communities<sup>14,33</sup></li> </ul>

(continued on next page)

visits. Workflows pertinent to SDM include patient flow through the clinic and care team, as well as population health management.

### Patient Flow through the Clinic / Timing

More research is needed on how clinic flow impacts SDM for minority patients. While there is little evidence that SDM requires more time, in practice, than usual care,<sup>28</sup> increased time with patients has sometimes been associated with greater patient participation in SDM.<sup>28,31,32</sup> Minority patients may

require additional time or sensitivity to build trust if they are not receiving care as frequently or have had prior negative experiences.<sup>39</sup> Organizations can streamline SDM by preparing patients before the encounter or by finding other ways to distribute SDM across the visit.<sup>1,57,58</sup>

### Patient Flow through the Care Team / Team Composition

Another way to make SDM more feasible for clinicians is to spread SDM across the care team.<sup>59</sup> Team-based care spreads

Table 2. (continued)

Driver	Example components	Specific considerations and examples*
4: Resources and clinical environment	<i>Physical Environment: Welcoming Visual Cues</i>	<ul style="list-style-type: none"> <li>- Display stickers or symbols (pink triangle, LGBT flags)<sup>33,39</sup> in conjunction with artwork or photos of prominent racial/ethnic minority LGBT leaders – e.g., Bayard Rustin, Ruth Ellis. The combination is important since general LGBT symbols may not always resonate as readily for dual-minority patients</li> <li>- Display artwork and educational materials depicting diverse individuals and relationships<sup>39</sup></li> <li>- Provide intake forms and documents that are LGBT inclusive<sup>33</sup></li> <li>- Designate single-use restrooms as gender neutral<sup>33</sup></li> <li>- Ensure that staff are LGBT friendly<sup>39</sup></li> </ul>
	<i>Physical Environment: Patient-Centered Space</i>	<ul style="list-style-type: none"> <li>- Provide private space to build trust and facilitate disclosure of sexual orientation and related health care issues<sup>16</sup></li> <li>- Provide a resource center/space with education materials<sup>46,47</sup> inclusive of racial/ethnic minority LGBT concerns</li> </ul>
	<i>Educational Materials and Decision Aids</i>	<ul style="list-style-type: none"> <li>- Include referral information for social services and community organizations pertinent to LGBT racial/ethnic minority populations<sup>39</sup></li> <li>- Participate in continuing medical education on common LGBT health issues<sup>14</sup>—e.g., HIV pre-exposure prophylaxis, viral hepatitis, routine health maintenance screening in LGBT patients, the increased chances that LGBT patients will have experienced sexual assault and other traumatic events, mental health issues such as increased risk for depression and suicidal ideation and attempts in LGBT youth and transgender women, surrogacy issues for older persons, intimate partner violence, gender affirming surgeries and cross-hormone therapies<sup>40</sup></li> <li>- Provide reading materials specific to LGBT health concerns (for example, magazines and brochures that address breast cancer, safer-sex, hormone therapy, mental health, and substance use)<sup>33,39,48</sup></li> </ul>
	<i>Language and Interpretation Services</i>	<ul style="list-style-type: none"> <li>- Ensure that interpreters are familiar with and sensitive to LGBT issues</li> <li>- Translate materials accurately and in a culturally sensitive way.<sup>14</sup> The absence or limited availability of a certified medical interpreter means that educational materials might be the only way to educate a limited English proficient LGBT patient</li> </ul>
5: Training and Education	<i>Shared Decision Making (SDM) Training</i>	<ul style="list-style-type: none"> <li>- Provide clinicians with SDM training that includes specific modules that teach how to communicate and practice SDM with dual-minority patients<sup>49</sup></li> <li>- Provide patients with training or education materials to learn more about the SDM process and activate them<sup>50,51</sup></li> </ul>
	<i>Cultural Competence Training for Clinicians and Organizations</i>	<ul style="list-style-type: none"> <li>- Discuss existence of disparities, etiologies, and solutions                             <ul style="list-style-type: none"> <li>o Explore definitions of: sexual orientation and gender identity, safe organization; confidentiality; intersectionality of LGBT and racial/ethnic identities<sup>36</sup></li> <li>o Explore mistrust, subconscious bias, stereotyping<sup>13,14</sup></li> <li>o Acknowledge that race/ethnicity may influence how patients conceptualize and express their LGBT identities<sup>52</sup></li> <li>o Acknowledge that, historically, many racial/ethnic minority LGBT persons have felt excluded from the majority LGBT community; some have experienced outright discrimination.<sup>14,53</sup> This may influence expectations of discrimination in the healthcare setting.</li> </ul> </li> <li>- Improve communication and trust building skills                             <ul style="list-style-type: none"> <li>o Use pronouns and partner labels that do not assume gender identity, heterosexuality, or race/ethnicity. Ask about preferred pronouns.<sup>33</sup></li> <li>o Take a sexual history and screen for health conditions that are prevalent based on risk behaviors (i.e. HIV) and not on sexual orientation or identity<sup>33</sup></li> </ul> </li> <li>- Nurture commitment to reduce disparities<sup>54,55</sup></li> <li>- Partner with LGBT community organizations to provide training to all staff on a regular basis<sup>33,39</sup></li> </ul>
6. Incentives and Disincentives	<i>Financial</i>	<ul style="list-style-type: none"> <li>- Consider performance-based incentives to reduce disparities that affect racial/ethnic minority LGBT patients</li> <li>- Link financial incentives to processes that impact SDM, including the six drivers in this paper. For example, provide HIT staff and quality improvement teams incentives to implement SDM-specific HIT supports and prompts</li> </ul>
	<i>Non-financial</i>	<ul style="list-style-type: none"> <li>- Report clinical performance data stratified by race, ethnicity, and LGBT status</li> <li>- Highlight racial/ethnic minority LGBT stories in organization’s newsletters, websites, and other outreach and dissemination materials</li> <li>- Create awards for advancing diversity and inclusion and reducing health disparities</li> </ul>

\* Some of these considerations apply to both minority and non-minority patients and differ by matter of degree. For example, all patients require confidentiality and respect, but this need is heightened substantially for racial/ethnic minority LGBT patients

† LGBT: lesbian, gay, bisexual, and transgender

‡ HIV: human immunodeficiency virus

§ SDM: shared decision making

work across various clinicians and staff to balance patient needs with available staffing,<sup>60</sup> prevent burnout, and inspire high quality care.<sup>61</sup> For example, medical assistants could help patients complete decision aids prior to discussing treatment options with the primary provider. More information is needed

on the most appropriate roles for different health care professionals and the key elements of collaboration that would best support SDM.<sup>62–65</sup>

Proper workflows to ensure coordinated communication and avoid confusion are necessary to support high-quality SDM.

## Population Health Management Strategy

Population health management strategies can facilitate SDM. For example, one component of population health management is patient empanelment, which allows patients and clinicians to build consistent relationships and the trust necessary for SDM. Another component of population health management is identifying patients at high risk for poor outcomes or who may be eligible for certain treatments. Clinics could stratify clinical data by sexual orientation or gender identity (when electronic health records permit; driver 2) to identify opportunities to engage minority patients in tailored shared decision making around issues for which they, as a group, may be at greater risk (Table 2).

### DRIVER 2: HEALTH INFORMATION TECHNOLOGY

Health information technology (HIT) facilitates information sharing, leading to knowledge, insight, and coordination between patients and clinicians. HIT can also make SDM easier when tools to support SDM are integrated into the electronic health record. Common applications of electronic health records (EHR) that can support shared decision making are patient portals and shared visit notes for patients,<sup>66,67</sup> and clinical decision supports for providers.<sup>68</sup> EHR registries can also support population management (driver 1). Decision aids are often, but not always, delivered via HIT and will be discussed later (driver 4). Patients' access to technology such as computers or the internet is an important component of the HIT driver.

### EHR: Patient Portals and Shared Visit Notes

Patient portals and direct access to visit notes can support the information-sharing and deliberation steps of SDM by engaging patients in their own care<sup>69-71</sup> and increasing clinicians' responsiveness to patients' preferences and needs.<sup>72</sup> Well-designed patient portals can function similar to decision aids; patients who use patient portals to reflect on their health status and care before a visit may be better able to process risks and benefits of a health decision.<sup>73</sup> By allowing patients to see their own clinical information,<sup>70,71,74</sup> patient portals and shared visit notes help equalize the power dynamic and can inspire greater trust and insight into care.<sup>70,73,75</sup> Patient portals may also provide patients with more convenient access to care<sup>73</sup> and an efficient way to share information with loved ones involved in care.<sup>70</sup> While clinicians must consider individual patients' access to and familiarity with technology, patient portals are likely accessible even for underserved communities. Many underserved patients report high rates of Internet access and wanting to communicate with health providers via e-mail to enhance health care decisions.<sup>76-80</sup>

Some patients may have concerns about trust and privacy that could be worsened by real or perceived stigma in visit notes.<sup>71,74,81</sup> For example, in a Veterans Affairs shared notes study, some patients took issue with the way their clinicians described them.<sup>71</sup> Clinicians can help mitigate concerns by

purposely writing and speaking with cultural sensitivity; this includes asking racial/ethnic minority LGBT patients which terms they prefer to describe their identities (Table 2). Organizations must also build trust through other means in the patient-provider interaction and the clinic environment (drivers 3 and 4).

### EHR: Clinical Decision Supports

Clinical decision supports (CDS), or automated reminders embedded in EHRs, could make SDM logistically easier by providing timely information that facilitates risk assessment, improves patient education, and improves referral decisions.<sup>82</sup> Existing CDS for SDM tend to focus on a single condition.<sup>83-85</sup> As organizations institute SDM as "usual care" for multiple conditions, this could become overwhelming and lead clinicians to ignore CDS due to "alert fatigue."<sup>86-88</sup> More research is needed about how to improve SDM with CDS most effectively.

### DRIVER 3: ORGANIZATIONAL STRUCTURE AND CULTURE

Common organizational barriers to SDM include logistics, cost, and lack of buy-in from providers and staff.<sup>25,50,59,62,89,90</sup> Leadership and staff commitment can remove such barriers to SDM. Staffing diversity and relationships with the community can help organizations coordinate SDM and build attitudes and a culture that support SDM.

#### Leadership and Staff Commitment

Commitment from leadership and staff are crucial for SDM. Leadership identifies priorities and allocates resources. Staff supply daily operations and interact directly with patients. Organizations can encourage commitment by dedicating resources to incentivize SDM (driver 6),<sup>90</sup> providing evidence that SDM is effective,<sup>50</sup> and providing time and compensation for training (driver 5).<sup>62</sup> Committed leadership and staff can help integrate SDM into usual care and encourage patients and clinicians to expect SDM as part of quality care. For example, organizations should include a commitment to diversity and culturally appropriate SDM<sup>91</sup> in mission statements and policies (Table 2).

#### Staff Diversity and Concordance

Staff diversity and concordance with patients' minority identities can improve trust and communication. Organizations should seek to hire and retain a diverse workforce and should ensure that all staff, regardless of demographics, are trained and given the resources to provide culturally sensitive services.<sup>42</sup> Both racial and ethnic minority patients<sup>42-44,92,93</sup> and LGBT patients<sup>14,33,39,44</sup> have reported being more satisfied or comfortable with care when their clinicians are concordant by

race or sexual orientation. To our knowledge, no information exists on comfort with dual-minority clinicians. However, clinicians who are ‘discordant’ can still build trust through patient-centered communication and the very act of encouraging SDM.<sup>44</sup>

### Relationship with the Community

An organization’s reputation and relationship with the communities it serves can strongly impact patient and provider attitudes toward SDM.<sup>94</sup> Organizations may need to do additional outreach with communities who have endured negative health care experiences based on their minority identities for these communities to expect that SDM is relevant and can work.<sup>14</sup> Organizations should collaborate with community organizations that serve racial/ethnic minority LGBT populations to obtain feedback on how SDM could best meet their needs (Table 2).<sup>18,45</sup> Organizations must also ensure that their entire staff is committed to building and maintaining a positive reputation in these communities.<sup>39</sup>

#### DRIVER 4: RESOURCES AND CLINIC ENVIRONMENT

Resources necessary for SDM include a physical environment conducive to decision-making, tailored educational materials and decision aids, and language and interpretation services. These resources help patients understand their care options and enable clinicians to gain insight into patients’ risk/benefit appraisals to individualize SDM. Resources primarily increase knowledge for patients and clinicians, while a well-designed clinic environment makes SDM easier.

#### Physical Environment: Welcoming Visual Cues

Visual cues, like prominently displayed non-discrimination policies, “safe zone” symbols,<sup>95,96</sup> and gender-neutral signs on single-use restrooms help reassure patients of a “safe space”<sup>39,48</sup> in which to engage in SDM. Patients are more likely to seek care and disclose sexual orientation or gender identity to their health providers in a safe environment.<sup>16,39,96</sup>

Organizations should display these visuals only if paired with other deeper efforts to create a welcoming environment.<sup>14,96</sup>

Dual-minority patients may require welcoming visuals beyond traditional LGBT signage to feel safe, since some dual-minority patients may feel excluded from majority LGBT social and health spaces (Table 2).<sup>97</sup>

#### Physical Environment: Patient-Centered Space

A patient-centered physical space can improve trust and facilitate information exchange to support high-quality SDM.<sup>25</sup> Organizations can arrange physical space to ensure that patients and providers have privacy to discuss sensitive information, access to risk/benefit information, and an atmosphere of collaboration.<sup>98</sup> Privacy is particularly important for racial/ethnic minority LGBT patients to facilitate disclosure of

sexual orientation and to protect against physical and emotional harm (Table 2). Organizations should also set aside space for resources (like a resource center/library, or a decision aid station) where patients and their caregivers can obtain health information to prepare for SDM.<sup>46,47</sup> Resource centers should include LGBT-specific educational materials written in plain language, and available in different languages. Finally, organizations can support an equal power dynamic for SDM by arranging computers in the exam room to be visible to both clinicians and patients.<sup>99–103</sup>

### Decision Aids and Educational Materials

Decision aids (DAs) are structured educational tools (such as pamphlets, videos, or computer-based tools) that convey information about clinical options and open a conversation about the relative risks and benefits.<sup>104</sup> Best practices for implementing and evaluating DAs exist, but do not address minority patients specifically.<sup>105,106</sup> Preliminary evidence suggests that DAs can improve communication and psychological outcomes for racial/ethnic minority populations; however, existing decision aids cover a limited range of topics and rarely address LGBT patients.<sup>106</sup>

Tailored educational materials support patient satisfaction, understanding, and adherence to treatment.<sup>42,43</sup> For most minority patients, cultural tailoring goes beyond language<sup>107</sup> and literacy,<sup>108</sup> for example, LGBT-specific educational materials can help LGBT patients discuss their options and preferences with clinicians.<sup>33,39</sup> Materials should acknowledge the intersection of minority identities by depicting and incorporating multiple facets of diversity (e.g., sexual orientation, race, ethnicity, age, gender).

### Language and Medical Interpretation Services

Limited English Proficient (LEP) patients often struggle to communicate with clinicians and understand diagnosis and treatment options.<sup>109</sup> Having language-concordant clinicians with training in medical interpretation is ideal,<sup>110</sup> but organizations should at least offer access to certified medical interpreters to facilitate SDM.<sup>43</sup> A lack of professional medical interpretation services leads to errors in diagnosis and treatment, decreases patient satisfaction and continuity of care, and increases distrust.<sup>109–111</sup> Organizations should also avoid using patients’ family members as interpreters, which can compromise patient privacy, introduce interpretation errors, and possibly harm family relationships.<sup>43</sup> This could be particularly problematic for LGBT patients who have not disclosed their sexual orientation or gender identity to family members and need additional privacy for successful SDM.

#### DRIVER 5: TRAINING AND EDUCATION

Training programs impact skills, knowledge, and attitudes and should address both general SDM and cultural competence.

## Shared Decision Making (SDM) Training

SDM training programs for clinicians and inter-professional care teams exist,<sup>59,112,113</sup> but few address SDM for minority populations.<sup>114</sup> No training programs in a recent literature review address racial/ethnic minority LGBT patients.<sup>51</sup> Health care organizations can provide specific SDM training for both clinicians and patients to enhance their knowledge and skills in SDM,<sup>50,51,114</sup> and encourage them to value and prioritize SDM.

## Cultural Competence Training for Clinicians and Organizations

Many clinicians feel unprepared to serve minority patients due in part to lack of training,<sup>46,115,116</sup> while clinicians who have participated in cultural competence trainings report an improvement in their knowledge and skills.<sup>43,117</sup> Clinicians should receive training on the social context and healthcare needs of racial/ethnic minority LGBT patients to be competent in building rapport, providing a safe environment to facilitate disclosure of sexual orientation, and asking the right questions to effectively serve them.<sup>13,14</sup> Clinicians should also be competent in using language that is respectful and simple, both verbally and in electronic health records,<sup>25,107,108</sup> and this training should begin in health care education and continue throughout clinicians' careers.<sup>92</sup>

Organizations can also work to become culturally competent. Health care provider organizations can start by assessing their current competence for dual-minority patients; for example, the Healthcare Equality Index measures LGBT organizational competency,<sup>41</sup> and the *National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care* (CLAS standards)<sup>118</sup> help organizations address race and ethnicity (driver 3). Organizations should then offer training to all administrators, staff, and clinicians on LGBT health and cultural competency.<sup>15,18,39,107</sup> These trainings can be conducted regularly in collaboration with community-based organizations serving LGBT communities to enhance effectiveness and build relationships.<sup>33,39</sup> Leading LGBT organizations and researchers have published recommendations to improve the quality of health care services and outcomes for LGBT patients,<sup>15,16,33,39</sup> and future iterations should also address intersectional issues (Table 2);<sup>13,49</sup> existing cultural competence trainings typically focus only on a single minority identity such as race/ethnicity or LGBT identity.<sup>119,120</sup>

### DRIVER 6: INCENTIVES AND DISINCENTIVES

Provider and payer organizations can provide financial and non-financial incentives to support SDM and remove financial disincentives that hinder effective SDM. The correct balance of incentives encourages motivation around SDM and makes SDM easier and sustainable as a part of usual care.

## Financial Incentives

Direct financial incentives to support SDM are currently uncommon,<sup>121,122</sup> but interest in providing these incentives is growing as patient-centered care becomes a standard component of high-quality care. For example, some payers have experimented with incentives for SDM in demonstration projects,<sup>8</sup> and the Center for Medicare and Medicaid Innovation has funded SDM as part of its advanced primary care initiatives and included multiple SDM projects in their health care innovation award portfolio.<sup>123</sup> In addition to incentivizing the absolute quality of SDM, incentives could explicitly aim to reduce disparities in SDM quality.

The business case for financially rewarding SDM is based on health benefits to patients and savings for the larger health care system.<sup>124–127</sup> The current volume-based, fee-for-service system is often cited as a barrier to SDM implementation for individual providers,<sup>128</sup> and low-resource organizations, often those serving predominantly minority populations, may be affected most acutely. Negotiations with payers to allow reimbursement for SDM activities could ease challenges of time, scheduling, and staffing (driver 1) and provide the capital to procure space and technology to support SDM (drivers 2 and 4). In this way, incentives can make SDM easier to incorporate into usual care.

The best incentives and measures are not known yet;<sup>121</sup> some incentives are based on patient experience and communication, and others focus on the use of decision aids. However, several measures approved by the National Quality Forum represent growing consensus and are integrated into the widely-used *Consumer Assessment of Healthcare Providers and Systems Clinician & Group Survey (CG-CAHPS)* survey.<sup>129</sup> Further consensus and distribution of measures can guide organizations in incentivizing high-quality, equitable SDM.

## Non-financial Incentives

Non-financial incentives, such as public reporting of patients' perceptions of the quality of SDM, target clinicians' professionalism and reputation among peers and patients. Clinicians want to excel and be perceived as competent providers. Clinicians and health care organizations that receive high publicly-reported ratings of the quality of their SDM may be able to attract more business. Non-financial incentives could include creating awards to acknowledge excellent efforts to advance diversity and reduce disparities in the receipt and quality of SDM for racial/ethnic minority LGBT patients (Table 2).

## DISCUSSION

The organizational context in which SDM occurs represents a remarkable opportunity to improve patient experience and the quality of care. The structure and operations

of a health care organization greatly influence whether time, trust, and resources are available to support SDM between patients and clinicians. While most efforts and research to improve SDM have focused on direct patient-provider communication, improving the context of care in which this interaction occurs has the potential to be transformational and increase the sustainability of SDM. Populations at highest risk for poor SDM, such as racial/ethnic minority LGBT patients, might particularly benefit from changes in organizational context that establish a safe environment, increase trust, and decrease stigma—all critical for becoming a culturally competent organization.

Our model of the organizational context for SDM has limitations. First, the model's presentation is more linear than reality. While we show the flow of SDM in only one direction for visual simplicity, SDM tends to be a cycle of multiple decisions over time,<sup>20</sup> particularly in chronic disease management. Second, some drivers may fit into multiple categories or influence each other in both directions. For example, a single intervention to implement team-based care would likely impact most of the drivers in this model, not just workflows or organizational structure. Additionally, this model has not been empirically tested and validated in racial/ethnic minority LGBT populations. However, it has been informed by an ongoing project focused on this population. Despite limitations, this model describes useful ways in which provider organizations can improve shared decision making for minority populations.

Further research is needed on how changing organizational context can improve SDM for different patient populations in different settings. SDM processes and tools are generally not designed with minority patients in mind even though they may face additional barriers to SDM, such as mistrust. Organizations should monitor and tailor SDM approaches as necessary.

Organizations should also take a broad view of “minority” status when they consider their approaches to SDM. Familiarity and competence with one minority population does not guarantee competence with issues of intersection between race/ethnicity, sexual orientation, gender, religion, or any other patient identity,<sup>130</sup> yet these intersections make up the whole of patient preference and engagement in SDM.<sup>13</sup> Patient input can help reduce the risk of overgeneralization. The United States' population is becoming increasingly diverse. To improve patient experience and outcomes most effectively, we must improve the organizational context in which SDM occurs.

---

**Acknowledgements:** This project was supported by the Agency for Healthcare Research and Quality (1U18 HS023050) and the Robert Wood Johnson Foundation Finding Answers: Disparities Research for Change Program. Dr. Chin was also supported by a National Institute of Diabetes and Digestive and Kidney Diseases Midcareer Investigator Award in Patient-Oriented Research (K24 DK071933) and the Chicago Center for Diabetes Translation Research (P30 DK092949). Some of paper's content was presented as a workshop at the Society of General Internal Medicine Annual Meeting in Toronto, Canada, 23 April 2015.

**Corresponding Author:** Marshall H. Chin, MD, MPH; Section of General Internal Medicine, Department of Medicine, University of Chicago, 5841 South Maryland Avenue, MC 2007, Chicago, IL 60637, USA (e-mail: mchin@medicine.bsd.uchicago.edu).

**Compliance with Ethical Standards:**

**Conflict of Interest:** The authors declare that they do not have a conflict of interest.

## REFERENCES

- Gilliam M, Martins SL, Bartlett E, Mistretta SQ, Holl JL. Development and testing of an iOS waiting room “app” for contraceptive counseling in a Title X family planning clinic. *Am J Obstet Gynecol*. 2014;211(5):481.e1–481.e8.
- Ahmad F, Skinner HA, Stewart DE, Levinson W. Perspectives of family physicians on computer-assisted health-risk assessments. *J Med Internet Res*. 2010;12(2), e12. doi:10.2196/jmir.1260.
- Greenfield S, Kaplan SH, Ware JE, Yano EM, Frank HJ. Patients' participation in medical care: effects on blood sugar control and quality of life in diabetes. *J Gen Intern Med*. 1988;3:448–57.
- Heisler M, Bouknight RR, Hayward RA, Smith DM, Kerr EA. The relative importance of physician communication, participatory decision making, and patient understanding in diabetes self-management. *J Gen Intern Med*. 2002;17:243–52.
- Levinson W, Roter DL, Mullooly JP, Dull VT, Frankel RM. Physician-patient communication: the relationship with malpractice claims among primary care physicians and surgeons. *JAMA*. 1997;277:553–9.
- Kasteler J, Kane RL, Olsen DM, Thetford C. Issues underlying prevalence of ‘doctor shopping’ behavior. *J Health Soc Behav*. 1976;17:329–39.
- Aligning Forces for Quality. Primer/Brief: Forces Driving Implementation of the CAHPS Clinician & Group Survey. May 2013. Available at: [http://forces4quality.org/af4q/download-document/5809/Resource-forces\\_driving\\_implementation\\_of\\_the\\_cahps\\_clinician\\_and\\_group\\_survey.pdf](http://forces4quality.org/af4q/download-document/5809/Resource-forces_driving_implementation_of_the_cahps_clinician_and_group_survey.pdf). Accessed December 3, 2015.
- Primer/Brief: Shared Decision-Making and Benefit Design: Engaging Employees and Reducing Costs for Preference-Sensitive Conditions. Robert Wood Johnson Foundation and American Institutes for Research. April 2013. Available at: <http://www.rwjf.org/content/dam/farm/reports/reports/2013/rwjf405304>. Accessed December 3, 2015.
- Peek ME, Odoms-Young A, Quinn MT, Gorawara-Bhat R, Wilson SC, Chin MH. Racism in healthcare: Its relationship to shared decision-making and health disparities: A response to Bradby. *Soc Sci Med*. 2010;71(1):13–17.
- Peek ME, Tang H, Cargill A, Chin MH. Are there racial differences in patients' shared decision-making preferences and behaviors among patients with diabetes? *Med Decis Making*. 2011;31(3):422–31.
- Cooper-Patrick L, Gallo JJ, Gonzales JJ, et al. Race, gender, and partnership in the patient-physician relationship. *JAMA*. 1999;282:583–9.
- Levinson W, Hudak PL, Feldman JJ, et al. It's not what you say.: racial disparities in communication between orthopedic surgeons and patients. *Med Care*. 2008;46:410–6.
- Foglia MB, Fredriksen-Goldsen KI. Health disparities among LGBT older adults and the role of nonconscious bias. *Hast Cent Rep*. 2014;44(4):S40–4. doi:10.1002/hast.369.
- Peek ME, Lopez FY, Williams HS, et al. Development of a conceptual framework for understanding shared decision-making among African-American LGBT patients and their clinicians. *J Gen Intern Med*. doi:10.1007/s11606-016-3616-3.
- Wilson PA, Yoshikawa H. Improving access to health care among African-American, Asian and Pacific Islander, and Latino lesbian, gay, and bisexual populations. In *The Health of Sexual Minorities*. Meyer IH, Northridge ME, eds. United States: Springer; 2007:607–637. Available at: [http://link.springer.com/chapter/10.1007/978-0-387-31334-4\\_25](http://link.springer.com/chapter/10.1007/978-0-387-31334-4_25). Accessed December 3, 2015.
- Potter J, Goldhammer H, Makadon HJ. Chapter 1: Clinicians and the Care of Sexual Minorities. In *The Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health*. United States: ACP Press; 2008:3–24.
- St. Pierre M. Under what conditions do lesbians disclose their sexual orientation to primary healthcare providers? A review of the literature. *J Lesbian Stud*. 2012;16(2):199–219. doi:10.1080/10894160.2011.604837.
- Ulmer C, Bruno M, Burke S, eds. *Future Directions for the National Healthcare Quality and Disparities Reports*. Washington, D.C.: National Academies Press; 2010.

19. **Mail PD.** The case for expanding educational and community-based programs that serve lesbian, gay, bisexual, and transgender populations. *Clin Res Regul Aff.* 2002;19(2-3):223-73. doi:10.1081/CRP-120013249.
20. **Charles C, Gafni A, Whelan T.** Shared decision-making in the medical encounter: what does it mean? (or it takes at least two to tango). *Soc Sci Med.* 1997;44(5):681-92.
21. **Moore JE, Titler MG, Kane Low L, Dalton V, Sampsel C.** Transforming patient-centered care: development of the evidence informed decision making through engagement model. *Womens Health Issues.* 2015;25(3):276-82.
22. **Légaré F, Stacey D, Pouliot S, et al.** Interprofessionalism and shared decision-making in primary care: a stepwise approach towards a new model. *J Interprof Care.* 2011;25:18-25.
23. **Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC.** Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implement Sci.* 2009;4:50. doi:10.1186/1748-5908-4-50.
24. **Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O.** Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q.* 2004;82(4):581-629. doi:10.1111/j.0887-378X.2004.00325.x.
25. **Hibbard JH, Stockard J, Mahoney ER, Tusler M.** Development of the Patient Activation Measure (PAM): conceptualizing and measuring activation in patients and consumers. *Health Serv Res.* 2004;39(4 Pt 1):1005-26. doi:10.1111/j.1475-6773.2004.00269.x.
26. **Joseph-Williams N, Elwyn G, Edwards A.** Knowledge is not power for patients: a systematic review and thematic synthesis of patient-reported barriers and facilitators to shared decision making. *Patient Educ Couns.* 2014;94(3):291-309. doi:10.1016/j.pec.2013.10.031.
27. **Guadagnoli E, Ward P.** Patient participation in decision-making. *Soc Sci Med.* 1998;47(3):329-39. doi:10.1016/S0277-9536(98)00059-8.
28. **Stewart MA.** Effective physician-patient communication and health outcomes: a review. *CMAJ.* 1995;152(9):1423-33.
29. **Frosch DL, Kaplan RM.** Shared decision making in clinical medicine: past research and future directions. *Am J Prev Med.* 1999;17(4):285-94.
30. **Moore JE, Kane Low L, Titler MG, Sampsel C, Dalton V.** Moving towards patient-centered care: women's decisions, perceptions, and experience of the induction of labor process. *Birth.* 2014;41(2):138-46.
31. **Elwyn G, Scholl I, Tietbohl C, et al.** "Many miles to go ...": a systematic review of the implementation of patient decision support interventions into routine clinical practice. *BMC Med Inform Decis Mak.* 2013;13(Suppl 2):S14. doi:10.1186/1472-6947-13-S2-S14.
32. **Gotler R, Flocke SA, Goodwin MA, Zyzanski SJ, Murray TH, Stange KC.** Facilitating participatory decision-making: What happens in real-world community practice? *Med Care.* 2000;38(12):1200-9.
33. **Gay and Lesbian Medical Association (GLMA).** Guidelines for Care of Lesbian, Gay, Bisexual, and Transgender Patients. 2006:1-60. Available at: [http://glma.org/\\_data/n\\_0001/resources/live/GLMA%20guidelines%202006%20FINAL.pdf](http://glma.org/_data/n_0001/resources/live/GLMA%20guidelines%202006%20FINAL.pdf). Accessed December 3, 2015.
34. **King M, Semlyen J, See Tai S, et al.** A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatr.* 2008;8:70. doi:10.1186/1471-244X-8-70.
35. **Centers for Disease Control and Prevention.** Recommendations for HIV prevention with adults and adolescents with HIV in the United States, 2014: Summary for clinical providers. Dec 2014. Available at: <http://stacks.cdc.gov/view/cdc/26063>. Accessed December 3, 2015.
36. **The GenIUSS Group.** Best practices for asking questions to identify transgender and other gender minority respondents on population-based surveys. J.L. Herman (Ed.). Los Angeles, CA: The Williams Institute. Available at: <http://www.lgbtagingcenter.org/resources/pdfs/geniuss-report-sep-2014.pdf>. Accessed December 3, 2015.
37. **Bradford JB, Cahill S, Grasso C, Makadon HJ.** Fenway Institute Policy focus: How to gather data on sexual orientation and gender identity in clinical settings. Available at: [http://thefenwayinstitute.org/documents/Policy\\_Brief\\_HowtoGather...\\_v3\\_01.09.12.pdf](http://thefenwayinstitute.org/documents/Policy_Brief_HowtoGather..._v3_01.09.12.pdf). Accessed December 3, 2015.
38. **Institute of Medicine (2012).** Collecting sexual orientation and gender identity data in electronic health records: workshop summary. Washington, DC: The National Academies Press. Available at: <http://www.nap.edu/catalog/18260/collecting-sexual-orientation-and-gender-identity-data-in-electronic-health-records>. Accessed December 3, 2015.
39. **Wilkerson JM, Rybicki S, Barber CA, Smolenski DJ.** Creating a culturally competent clinical environment for LGBT patients. *J Gay Lesbian Soc Serv.* 2011;23(3):376-94. doi:10.1080/10538720.2011.589254.
40. **Makadon H.** Guest blog: optimizing use of sexual orientation and gender identity information in the EMR. *Healthcare Informatics.* 2014. Available at: <http://www.healthcare-informatics.com/article/guest-blog-optimizing-use-sexual-orientation-and-gender-identity-information-emr>. Accessed December 3, 2015.
41. **Healthcare Equality Index 2014: Promoting equitable and inclusive care for lesbian, gay, bisexual and transgender patients and their families.** Human Rights Campaign Foundation. Available at: <http://www.hrc.org/campaigns/healthcare-equality-index>. Accessed December 3, 2015.
42. **Betancourt JR, Green AR, Carrillo JE, Ananeh-Firempong O.** Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Rep.* 2003;118(4):293-302.
43. **Brach C, Fraser I.** Can cultural competency reduce racial and ethnic health disparities? A review and conceptual model. *Med Care Res Rev.* 2000;57(Suppl 1):181-217. doi:10.1177/1077558700574009.
44. **Street RL, O'Malley KJ, Cooper LA, Haidet P.** Understanding concordance in patient-physician relationships: personal and ethnic dimensions of shared identity. *Ann Fam Med.* 2008;6(3):198-205. doi:10.1370/afm.821.
45. **Fisher TL, Burnet DL, Huang ES, Chin MH, Cagney KA.** Cultural leverage interventions using culture to narrow racial disparities in health care. *Med Care Res Rev.* 2007;64(5 suppl):243S-82. doi:10.1177/1077558707305414.
46. **Silow-Carroll S, Alteras T, Stepnick L.** Patient-Centered Care for Underserved Populations: Definition and Best Practices. The W.K. Kellogg Foundation; 2006:1-43. Available at: [http://www.issuelab.org/resource/patientcentered\\_care\\_for\\_underserved\\_populations\\_definition\\_and\\_best\\_practices](http://www.issuelab.org/resource/patientcentered_care_for_underserved_populations_definition_and_best_practices). Accessed December 3, 2015.
47. **Institute for Patient- and Family-Centered Care.** Patient and Family Resource Centers. Available at: <http://www.ipfcc.org/advance/topics/pafam-resource.html>. Accessed December 3, 2015.
48. **McGarry K, Hebert MR, Kelleher J, Potter J.** Chapter 15: Taking a comprehensive history and providing relevant risk-reduction counseling. In: *The Fenway guide to lesbian, gay, bisexual, and transgender health.* ACP Press; 2008:419-437.
49. **Agency for Healthcare Research and Quality.** Research protocol: improving cultural competence to reduce health disparities for priority populations. Jul 2014. Available at: <http://www.effectivehealthcare.ahrq.gov/search-for-guides-reviews-and-reports/?pageaction=displayproduct&productid=1934>. Accessed December 3, 2015.
50. **Légaré F, Ratté S, Gravel K, Graham ID.** Barriers and facilitators to implementing shared decision-making in clinical practice: update of a systematic review of health professionals' perceptions. *Patient Educ Couns.* 2008;73(3):526-35. doi:10.1016/j.pec.2008.07.018.
51. **Légaré F, Politi MC, Drolet R, Desroches S, Stacey D, Bekker H.** Training health professionals in shared decision-making: an international environmental scan. *Patient Educ Couns.* 2012;88(2):159-69.
52. **Dean L, Meyer IH, Robinson K, et al.** Lesbian, gay, bisexual, and transgender health: findings and concerns. *Journal of the Gay and Lesbian Medical Association*, Vol. 4, No. 3, 2000. Available at: <http://www.felgth.org/rs/334/d112d6ad-54ec-438b-9358-4483f9e98868/91/filename/2000-dean-l-lgbt-health-findings-and-concerns.pdf>. Accessed December 3, 2015.
53. **Balsam KF, Molina Y, Beadnell B, Simoni J, Walters K.** Measuring multiple minority stress: the LGBT people of color microaggressions scale. *Cultur Divers Ethnic Minor Psychol.* 2011;17(2):163-74. doi:10.1037/a0023244.
54. **Greenhalgh T, Robert G, Macfarlane F, Bate P, Kyriakidou O.** Diffusion of innovations in service organizations: systematic review and recommendations. *Milbank Q.* 2004;82(4):581-629. doi:10.1111/j.0887-378X.2004.00325.x.
55. **Ward J.** White normativity: the cultural dimensions of whiteness in a racially diverse LGBT organization. *Sociol Perspect.* 2008;51:563-86.
56. **Peek ME, Harmon SA, Scott SJ, et al.** Culturally tailoring patient education and communication skills training to empower African-Americans with diabetes. *Transl Behav Med.* 2012;2(3):296-308.
57. **Chan YF, Nagurka R, Richardson LD, Zaets SB, Brimacombe MB, Levine SR.** Effectiveness of stroke education in the emergency department waiting room. *J Stroke Cerebrovasc Dis.* 2010;19(3):209-15.
58. **Kinnersley P, Edwards A, Hood K, et al.** Interventions before consultations for helping patients address their information needs. *Cochrane Database Syst Rev.* 2007;3, CD004565.
59. **Col N, Bozzuto L, Kirkegaard P, et al.** Interprofessional education about shared decision making for patients in primary care settings. *J Interprof Care.* 2011;25(6):409-15. doi:10.3109/13561820.2011.619071.

60. **Bodenheimer T, Willard-Grace R, Ghorob A.** Expanding the roles of medical assistants: who does what in primary care? *JAMA Intern Med.* 2014;174(7):1025–6.
61. **Willard-Grace R, Hessler D, Rogers E, Dubé K, Bodenheimer T, Grumbach K.** Team structure and culture are associated with lower burnout in primary care. *J Am Board Fam Med.* 2014;27:229–38.
62. **Stacey D, Légaré F, Pouliot S, Kryworuchko J, Dunn S.** Shared decision making models to inform an interprofessional perspective on decision making: a theory analysis. *Patient Educ Couns.* 2010;80(2):164–72. doi:10.1016/j.pec.2009.10.015.
63. Agency for Healthcare Research and Quality. About TeamSTEPS. TeamSTEPS: National Implementation. Available at: [http://teamsteps.ahrq.gov/about-2cl\\_3.htm](http://teamsteps.ahrq.gov/about-2cl_3.htm). Accessed December 3, 2015.
64. Agency for Healthcare Research and Quality. Comprehensive unit-based safety program (CUSP). Available at: <http://www.ahrq.gov/professionals/quality-patient-safety/cusp/index.html>. Accessed December 3, 2015.
65. **Waters HR, Korn R, Colantuoni E, et al.** The business case for quality economic analysis of the Michigan Keystone Patient Safety Program in ICUs. *Am J Med Qual.* 2011;26(5):333–9. doi:10.1177/1062860611410685.
66. **Allen M, Iezzoni LI, Huang A, Huang L, Leveille SG.** Improving patient-clinician communication about chronic conditions: description of an internet-based nurse e-coach intervention. *Nurs Res.* 2008;57(2):107–12. doi:10.1097/01.NNR.0000313478.47379.98.
67. **Fiks AG, Mayne SL, Karavite DJ, et al.** Parent-reported outcomes of a shared decision-making portal in asthma: a practice-based RCT. *Pediatrics.* 2015;135(4):e965–73. doi:10.1542/peds.2014-3167.
68. **Légaré F, Witteman HO.** Shared decision making: examining key elements and barriers to adoption into routine clinical practice. *Health Aff.* 2013;32(2):276–84.
69. **Nagykaldi Z, Aspy CB, Chou A, Mold JW.** Impact of a wellness portal on the delivery of patient-centered preventive care. *J Am Board Fam Med.* 2012;25:158–67.
70. **Delbanco T, Walker J, Bell SK, et al.** Inviting patients to read their doctors' notes: a quasi-experimental study and a look ahead. *Ann Intern Med.* 2012;157(7):461–70. doi:10.7326/0003-4819-157-7-201210020-00002.
71. **Woods SS, Schwartz E, Tuepker A, et al.** Patient experiences with full electronic access to health records and clinical notes through the My HealthVet Personal Health Record Pilot: qualitative study. *J Med Internet Res.* 2013;15(3), e65. doi:10.2196/jmir.2356.
72. **Finkelstein J, Knight A, Mrinopoulos S, et al.** Enabling patient-centered care through health information technology. Evidence Report/Technology Assessment No. 206. Johns Hopkins University Evidence-based Practice Center; Jun 2012;206. Contract No. 290- 2007-10061-I. Rockville MD: Agency for Healthcare Research and Quality. Available at: [http://effectivehealthcare.ahrq.gov/ehc/products/451/1157/EvidenceReport206\\_Patient-Centered-Care-Health-IT\\_FinalReport\\_20120816.pdf](http://effectivehealthcare.ahrq.gov/ehc/products/451/1157/EvidenceReport206_Patient-Centered-Care-Health-IT_FinalReport_20120816.pdf). Accessed December 3, 2015.
73. **Otte-Trojel T, de Bont A, Rundall TG, van de Klundert J.** How outcomes are achieved through patient portals: a realist view. *J Am Med Inform Assoc.* 2014; 0:1–7.
74. Centers for Medicare & Medicaid Services. Patient electronic access tipsheet. Aug 2014. Available at: [https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Patient-ElecAccTipsheet\\_06182014-.pdf](https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/Patient-ElecAccTipsheet_06182014-.pdf). Accessed December 3, 2015.
75. **Marchibroda JM.** The impact of health information technology on collaborative chronic care management. *J Manag Care Pharm.* 2008;14(2 Suppl):S3–11.
76. **Goel MS, Brown TL, Williams A, Cooper AJ, Hasnain-Wynia R, Baker DW.** Patient reported barriers to enrolling in a patient portal. *J Am Med Inform Assoc.* 2011;18(Suppl 1):i8–12. doi:10.1136/amiajnl-2011-000473.
77. **Saidinejad M, Teach SJ, Chamberlain JM.** Internet access and electronic communication among families in an urban pediatric emergency department. *Pediatr Emerg Care.* 2012;28(6):553–7. doi:10.1097/PEC.0b013e318258ad76.
78. **DeMartini TL, Beck AF, Klein MD, Kahn RS.** Access to digital technology among families coming to urban pediatric primary care clinics. *Pediatrics.* 2013;132(1):e142–8. doi:10.1542/peds.2013-0594.
79. Community Marketing & Insights. CMI's 8th Annual LGBT Community Survey. Community Marketing, Inc.; 2014:1–65. Available at: [http://www.communitymarketinginc.com/documents/CMI\\_8thAnnualLGBTCommunitySurvey2014\\_USReport.pdf](http://www.communitymarketinginc.com/documents/CMI_8thAnnualLGBTCommunitySurvey2014_USReport.pdf). Accessed December 3, 2015.
80. **Zickuhr K, Smith A.** Digital differences. Pew Research Center's Internet & American Life Project; 2012:1–21. Available at: <http://www.pewinternet.org/2012/04/13/digital-differences/>. Accessed December 3, 2015.
81. **Stablein T, Hall JL, Nissenbaum H, Anthony D.** Gay Males and Electronic Health Records: Privacy Perceptions, Age and Negotiating Stigma. Annual meeting of the American Sociological Association, Denver, CO. 2012. Available at: <http://sharps.org/wp-content/uploads/STABLEIN-ESS-Annual-Meeting.pdf>. Accessed December 3, 2015.
82. **Midboe AM, Lewis ET, Cronkite RC, et al.** Behavioral medicine perspectives on the design of health information technology to improve decision-making, guideline adherence, and care coordination in chronic pain management. *Transl Behav Med.* 2011;1(1):35–44. doi:10.1007/s13142-011-0022-6.
83. **Jones JB, Bruce CA, Shah NR, Taylor WF, Stewart WF.** Shared decision making: using health information technology to integrate patient choice into primary care. *Transl Behav Med.* 2011;1(1):123–33. doi:10.1007/s13142-011-0023-5.
84. **Mann DM, Lin JJ.** Increasing efficacy of primary care-based counseling for diabetes prevention: Rationale and design of the ADAPT (Avoiding Diabetes Thru Action Plan Targeting) trial. *Implement Sci.* 2012;7:6. doi:10.1186/1748-5908-7-6.
85. **Zou H, Fairley CK, Guy R, Chen MY.** The efficacy of clinic-based interventions aimed at increasing screening for bacterial sexually transmitted infections among men who have sex with men: a systematic review. *Sex Transm Dis.* 2012;39(5):382–7. doi:10.1097/OLQ.0b013e318248e3ff.
86. **Ash JS, Sittig DF, Campbell EM, Guappone KP, Dykstra RH.** Some unintended consequences of clinical decision support systems. *AMIA Annu Symp Proc.* 2007;2007:26–30.
87. **Kesselheim AS, Cresswell K, Phansalkar S, Bates DW, Sheikh A.** Clinical decision support systems could be modified to reduce 'alert fatigue' while still minimizing the risk of litigation. *Health Aff.* 2011;30(12):2310–7. doi:10.1377/hlthaff.2010.1111.
88. **Phansalkar S, Edworthy J, Hellier E, et al.** A review of human factors principles for the design and implementation of medication safety alerts in clinical information systems. *J Am Med Inform Assoc.* 2010;17:493e501. doi:10.1136/jamia.2010.005264.
89. **Légaré F, O'Connor AM, Graham ID, et al.** Primary health care professionals' views on barriers and facilitators to the implementation of the Ottawa Decision Support Framework in practice. *Patient Educ Couns.* 2006;63(3):380–90. doi:10.1016/j.pec.2006.04.011.
90. **Burkhard C, Doster K, McIntyre H.** Shared Decision Making in Health Care Delivery: Background Information and Policy Options for New Hampshire. The Nelson A. Rockefeller Center; 2011:1–21. [http://rockefeller.dartmouth.edu/sites/rockefeller.drupalmulti-prod.dartmouth.edu/files/prs\\_brief\\_1011-08.pdf](http://rockefeller.dartmouth.edu/sites/rockefeller.drupalmulti-prod.dartmouth.edu/files/prs_brief_1011-08.pdf). Accessed December 3, 2015.
91. **Peek ME, Odums-Young A, Guinn MT, Gorawara-Bhat R, Wilson ST, Chin MH.** Race and shared decision-making: perspectives of African-Americans with diabetes. *Soc Sci Med.* 2010;71:1–9.
92. **Cooper LA, Powe NR.** Disparities in patient experiences, health care processes, and outcomes: the role of patient-provider racial, ethnic, and language concordance. The Commonwealth Fund; July 2004. Available at: [http://www.commonwealthfund.org/~media/files/publications/fund-report/2004/jul/disparities-in-patient-experiences-health-care-processes-and-outcomes-the-role-of-patient-provider/cooper\\_disparities\\_in\\_patient\\_experiences\\_753-.pdf.pdf](http://www.commonwealthfund.org/~media/files/publications/fund-report/2004/jul/disparities-in-patient-experiences-health-care-processes-and-outcomes-the-role-of-patient-provider/cooper_disparities_in_patient_experiences_753-.pdf.pdf). Accessed December 3, 2015.
93. **Tervalon M, Murray-García J.** Cultural humility versus cultural competence: a critical distinction in defining physician training outcomes in multicultural education. *J Health Care Poor Underserved.* 1998;9(2):117–25. doi:10.1353/hpu.2010.0233.
94. **Nowakowski KE, Tilburt JC, Kaur JS.** Shared decision making in cancer screening and treatment decisions for American Indian and Alaska Native communities: can we ethically calibrate interventions to patients' values? *J Cancer Educ.* 2012;27(4):790–2. doi:10.1007/s13187-012-0412-6.
95. North Dakota State University. Safe zone ally training. 2010. Available at: [http://www.fs.fed.us/cr/Safe\\_Zone\\_Training\\_PacketUpdated.pdf](http://www.fs.fed.us/cr/Safe_Zone_Training_PacketUpdated.pdf). Accessed December 3, 2015.
96. **Bewley MT.** The safe zone symbol: Its impact on attitudes about seeking mental health services. 2012. Available at: <https://repositories.tdl.org/ttu-ir/bitstream/handle/2346/45198/BEWLEY-DISSERTATION.pdf?sequence=2&isAllowed=y>. Accessed December 3, 2015.
97. **Crawley AT.** Can You be BLACK and work here? Social justice activist organizing and BLACK aurality. In Davis DA, McGlotten S, editors. *Black genders and sexualities.* Palgrave Macmillan; 2012.
98. **Detsky ME, Etchells E.** Single-patient rooms for safe patient-centered hospitals. *JAMA.* 2008;300(8):954–6. doi:10.1001/jama.300.8.954.

99. **Frankel R, Altschuler A, George S, et al.** Effects of exam-room computing on clinician-patient communication. *J Gen Intern Med.* 2005;20(8):677–82. doi:10.1111/j.1525-1497.2005.0163.x.
100. **Ulrich R, Guan X, Zimring C, Joseph A, Choudhary R.** Role of the physical environment in the hospital of the 21st century: A once-in-a-lifetime opportunity. The Center for Health Design; Sep 2004. Available at: [https://www.healthdesign.org/sites/default/files/Role%20Physical%20Environment%20in%20the%2021st%20Century%20Hospital\\_0.pdf](https://www.healthdesign.org/sites/default/files/Role%20Physical%20Environment%20in%20the%2021st%20Century%20Hospital_0.pdf). Accessed December 3, 2015.
101. **Almquist JR, Kelly C, Bromberg J, Bryant SC, Christianson TJH, Montori VM.** Consultation room design and the clinical encounter: the space and interaction randomized trial. *HERD.* 2008;3(1):41–78.
102. **Unruh KT, Skeels M, Civan-Hartzler A, Pratt W.** Transforming clinic environments into information workspaces for patients. *CHI Conf Proc.* 2010:183–192. doi:10.1145/1753326.1753354.
103. **Sullivan F, Wyatt JC.** How computers can help to share understanding with patients. *BMJ.* 2005;331(7521):892–4.
104. **Stacey D, Légaré F, Col NF, et al.** Decision aids for people facing health treatment or screening decisions (Review). *Cochrane Libr.* 2014;1, CD001431.
105. **Holmes-Rovner M.** International Patient Decision Aid Standards (IPDAS): beyond decision aids to usual design of patient education materials. *Health Expect: Int J Publ Particip Health Care Health Policy.* 2007;10(2):103–7.
106. **Nathan AG, Marshall IM, Cooper JM, Huang ES.** Use of decision aids with minority patients: a systematic review. *J Gen Intern Med.* doi:10.1007/s11606-016-3609-2.
107. **Purnell L, Davidhizar RE, Giger JN, Strickland OL, Fishman D, Allison DM.** A guide to developing a culturally competent organization. *J Transcult Nurs.* 2011;22(1):7–14. doi:10.1177/1043659610387147.
108. **Misra-Hebert AD.** Physician cultural competence: cross-cultural communication improves care. *Cleve Clin J Med.* 2003;70(4):289–289. doi:10.3949/ccjm.70.4.289.
109. **Wilson E, Chen AH, Grumbach K, Wang F, Fernandez A.** Effects of limited English proficiency and physician language on health care comprehension. *J Gen Intern Med.* 2005;20(9):800–6. doi:10.1111/j.1525-1497.2005.0174.x.
110. **Fernandez A, Schillinger D, Grumbach K, et al.** Physician language ability and cultural competence. *J Gen Intern Med.* 2004;19(2):167–74. doi:10.1111/j.1525-1497.2004.30266.x.
111. **Anderson LM, Scrimshaw SC, Fullilove MT, Fielding JE, Normand J.** Culturally competent healthcare systems: a systematic review. *Am J Prev Med.* 2003;24(3 Supplement):68–79. doi:10.1016/S0749-3797(02)00657-8.
112. **Mincer S, Adeogba S, Bransford R, et al.** Shared decision-making (SDM) toolkit: Train-the-trainer tools for teaching SDM in the classroom and clinic. *MedEdPORTAL Publications;* 2013. Available at: <https://www.mededportal.org/publication/9413>. Accessed December 3, 2015.
113. **Healthwise shared decision making skills course.** Available at: <http://www.healthwise.org/products/sdmskillscourse.aspx>. Accessed December 3, 2015.
114. **Agency for Healthcare Research and Quality.** The SHARE approach. Available at: <http://www.ahrq.gov/professionals/education/curriculum-tools/shareddecisionmaking/>. Accessed December 3, 2015.
115. **Weissman JS, Betancourt JR, Campbell EG, et al.** Resident physicians' preparedness to provide cross-cultural care. *JAMA.* 2005;294(9):1058–67.
116. **Park ER, Betancourt JR, Kim MK, et al.** Mixed messages: residents' experiences learning cross-cultural care. *Acad Med.* 2005;80(9):874–80.
117. **Delgado DA, Ness S, Ferguson K, Engstrom PL, Gannon TM, Gillett C.** Cultural competence training for clinical staff measuring the effect of a one-hour class on cultural competence. *J Transcult Nurs.* 2013;24(2):204–13. doi:10.1177/1043659612472059.
118. **National Standards for Culturally and Linguistically Appropriate Services in Health and Health Care.** Available at: <https://www.thinkcultural-health.hhs.gov/content/clas.asp>. Accessed December 3, 2015.
119. **Culture, language & health literacy resources: Gender.** Health Resources and Services Administration, US Department of Health and Human Services. Available at: <http://www.hrsa.gov/culturalcompetence/gender.html>. Accessed December 3, 2015.
120. **Culture, language & health literacy resources: Race/ethnicity.** Health Resources and Services Administration, US Department of Health and Human Services. Available at: <http://www.hrsa.gov/culturalcompetence/race.html>. Accessed December 3, 2015.
121. **Durand MA, Barr PJ, Walsh T, Elwyn G.** Incentivizing shared decision making in the USA – where are we now? *Healthcare.* Available online 21 November 2014. doi:10.1016/j.hjdsi.2014.10.008.
122. **Veroff D, Marr A, Wennberg DE.** Enhanced support for shared decision making reduced costs of care for patients with preference-sensitive conditions. *Health Aff.* 2013;32(2):285–93. doi:10.1377/hlthaff.2011.0941.
123. **Centers for Medicare & Medicaid Services.** Health Care Innovation Awards. Available at: <http://innovation.cms.gov/initiatives/Health-Care-Innovation-Awards>. Accessed December 3, 2015.
124. **Wennberg JE, O'Connor AM, Collins ED, Weinstein JN.** Extending the P4P agenda, part 1: how medicare can improve patient decision making and reduce unnecessary care. *Health Aff.* 2007;26(6):1564–74.
125. **O'Connor AM, Bennett CL, Stacey D, et al.** Decision aids for people facing health treatment or screening decisions (Review). *Cochrane Library.* 2009; 1.
126. **Lee EO, Emanuel EJ.** Perspective: shared decision making to improve care and reduce costs. *N Engl J Med.* 2013;368:6–8. doi:10.1056/NEJMp1209500.
127. **Burkhard C, Doster K, McIntyre H.** Shared decision making in health care delivery: Background information and policy options for New Hampshire. The Nelson A. Rockefeller Center; 2011:1–21. [http://rockefeller.dartmouth.edu/sites/rockefeller.drupalmulti-prod.dartmouth.edu/files/prs\\_brief\\_1011-08.pdf](http://rockefeller.dartmouth.edu/sites/rockefeller.drupalmulti-prod.dartmouth.edu/files/prs_brief_1011-08.pdf). Accessed December 3, 2015.
128. **Friedberg MW, Van Busum K, Wexler R, Bowen M, Schneider EC.** A demonstration of shared decision making in primary care highlights barriers to adoption and potential remedies. *Health Aff.* 2013;32(2):268–75.
129. **NQF measure 0005: CAHPS Clinician & Group Surveys (CG-CAHPS)-Adult, Child.** Available at: <http://www.qualityforum.org/ProjectMeasures.aspx?projectID=73867>. Accessed December 3, 2015.
130. **Smith WR, Betancourt JR, Wynia MK, et al.** Recommendations for teaching about racial and ethnic disparities in health and health care. *Ann Intern Med.* 2007;147:654–65.