

***Applying Health Equity to the Classroom:
Using the IOM Report on Social Determinants of Health to Teach Professionals***

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Abstract

The U.S. Institute of Medicine (IOM) 2016 report urges educators to incorporate the social determinants of health into training the U.S. health workforce at every level: clinicians, administrators, educators, researchers, and policy makers. The IOM study on a framework to support teaching health professionals about social determinants of health (SDH) was commissioned because “[e]ducating health professionals about the social determinants of health generates awareness of the potential root causes of ill health and the importance of addressing them in and with communities. ... [leading] to more effective strategies for improving health and health care for underserved populations.” Taking into account the social determinants of health improves all professional practice and helps us achieve equity at a population level. Tobacco and infant mortality provides cases showing the influence of SDH on health equity interventions and outcomes. These cases are reviewed using the lens of the Multilevel Model of Social Determinants of Health. Nurses and other professionals can answer the call to incorporate SDH into professional education. The IOM report offers a framework for transforming our curricula. It also offers frameworks and learning activities for use in the classroom. These are reviewed for usefulness.

Keywords: health equity, professional education, social determinants of health, methods, assessment, frameworks

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Introduction

The social determinants of health (SDH) consist of “the conditions in which people are born, grow, live, work, and age, including the health system”¹. Data that emerged from Canada in the 1970’s² demonstrated that these factors account for about half of health outcomes, while behavior, biology and health services account for far less (Figure 1). These data have been repeatedly reinforced in the decades since^{3,4}. Yet, we do not teach health professionals much about SDH, a serious deficiency in their preparation to serve in today’s world^{5,6}. Agencies in England and Canada, U.S. scholars, and World Health Organization (WHO) have issued calls for more holistic education of health professionals for today’s world, health professionals who understand the social determinants of health⁷.

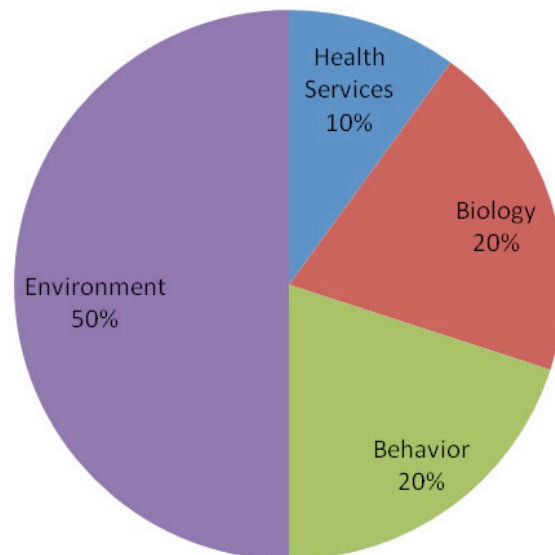


Figure 1. Contributors to Health Outcomes.

These data emerged in the 1970’s from Canada² and have remained remarkably stable over the decades since^{3,4}.

The Institute of Medicine (IOM) issued a recent report urging educators to incorporate the SDH into training the U.S. health workforce at every level: clinicians, administrators, educators, researchers, and policy makers⁸. The IOM report included recommendations, frameworks, and other resources to support teaching health professionals about social determinants of health. The report was commissioned because “[e]ducating health professionals about the social determinants of health generates awareness of the potential root causes of ill health and the importance of addressing them in and with communities. ... [leading] to more effective strategies for improving health and health care for underserved populations.”⁹ Taking into account the social determinants of health improves health services and helps us achieve equity at a population level.

In fact, we might call SDH social determinants of life, rather than health, since they affect many other outcomes than health. Educators in all professions that deal with human services can and should answer the call to incorporate them into curricula. But, educators often lack the tools for doing so. In the IOM report, it is noted that health professional educators generally lack sufficient training, diversity, community partners, a unifying framework, and evidence of appropriate educational approaches. SDH can be useful to educators in other disciplines, as they likely face similar issues. Below and using the IOM report resources, educators can begin to fill some of those gaps.

Social Determinants of Health

Students often show a passion to learn the practice skills of their proposed profession. The relevance of context to working with their patients (or clients, or customers) may not always be obvious to them. Faculty also sometimes feel this way about SDH. They may need training to increase their own understanding how that context, SDH, affects outcomes, and how it applies to their practice.

Health equity is one issue—perhaps the most salient one in the US—for clinicians to take SDH into account. Healthy People 2020, the national plan for public health, has included equity as an overarching goal, defining it as the “attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.”¹⁰ This started with racial disparities, but now includes other populations, such as rural, or Lesbian/Gay/Transgender/Intersex, or any population that experiences a preventable disparity.

SDH help us understand health inequities. These inequities appear on the population level, as differences between groups, perhaps in an agency where we work. When we provide care for individuals, we see health inequities as our outcomes, at the end, the results. Where do they come from? If we take a couple of steps back, we see disparities in the care of medical conditions. We have enormous bodies of evidence for this in the US¹¹. We know from these data that women don't get the same care for heart disease as men, and rural and poor populations have harder times getting to primary care providers, etc. This is where clinical health care providers are, in the clinical agency, providing clinical care. Actually, the care we give is a social determinant of health. But, we usually think of this in a systems level, in terms of access to care. If, as in the Trajectory of Health Inequities (Figure 2), you take a couple more steps back, you see more disparities that lead to health inequities in outcomes, in terms of exposures and behaviors. So, if you are American Indian you are more likely to smoke¹², and lower paying jobs tend to have more occupational hazards¹³. If you take a couple more steps back, you get to environmental exposures that have disparities. For example, poor neighborhoods are more likely to be unsafe¹⁴ or have toxic waste¹⁵.

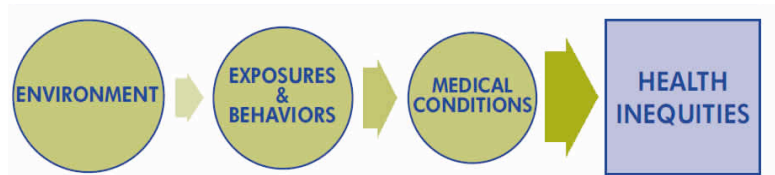


Figure 2. The Trajectory of Health Inequities

The Trajectory of Health Inequities helps us to identify the root causes of health inequities by taking us a few steps back, to the social determinants of health that lie behind the immediately obvious inequities of medical conditions between populations we see in at health agencies¹⁶.

SDH are experienced by people before they enter the examination rooms. And, prevalences of SDH occur in populations, which may or may not be present in the individual in front of us. Addressing inequities in SDH falls out of our control as health professionals, right? Not exactly. Addressing SDH As clinical providers, we do need to take SDH into account as we care for people, and we can't do that if we do not know about them. When we counsel and advise, we need to take them into account. When we counsel diabetic patients to eat more fresh produce, for example, we need to know if fresh produce is available in their neighborhoods or if they have to ride two buses for an hour each way to get to a source of healthy food. If we ask persons heart disease to quit smoking, can they get free nicotine patches to help them? If we recommend to someone get regular exercise, we need to know if there are safe places to walk or ride a bike in their communities. (See Jones¹⁷ for more on this.) If there are not such resources, we as professionals should speak on behalf of developing them, using the resources of our education and credibility to advocate for our people and our community. And, we should teach this to students, that health means more than just clinical care, that a profession means more than practice, more than an office and a desk.

In other professions, SDH also apply to the work. We call them the social determinants of *health*, but they affect every aspect of the quality of our lives and our behavior. Architects, for example, might create excellent plans for their clients. But, if the supply chain does not have the right materials available, those plans will not result in good buildings. Civil engineers might design bridges beautifully to withstand earthquakes, but if the contractors and inspections are corrupt in their region, the bridges will fall. The sales staff might believe that their skills will make the sale, but the conditions in which their customers live and work affect their decisions just as much. All these professions need to know the SDH of those they serve in order to serve them well. So, those who educate them must understand and teach about SDH.

Multilevel Model of the Social Determinants of Health

One way to help students understand SDH is to use frameworks to illustrate their interactions with each other and influence on health outcomes and/or quality of life. The multilevel model shown in Figure 3 offers a general approach, one Dalhgren and Whitehead developed for the WHO in its work on health equity¹⁸. All of the factors listed in the model affect both behaviors and health outcomes, at both the population and individual level. (Examples taken from tobacco and infant mortality follow.) The central factors of age, sex, constitution (e.g., genetics, appearance, family

history), cannot be modified. As you move out in the shells, factors can be modified, but less and less by the individual, and more and more by larger groups in society. This model can work well to explain SDH and their influence to students, both in health and other professions.

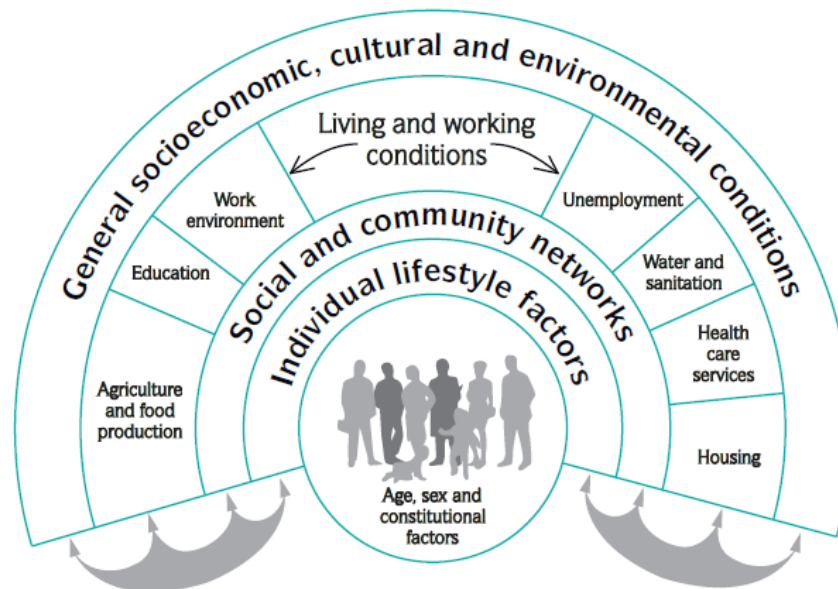


Figure 3. Multilevel Model of Social Determinants of Health

Dahlgren and Whitehead introduced this model of the social determinants of health in 1993 for the World Health Organization to use in its work on health equity in Europe. Here it is shown in a revised design¹⁸.

Reducing Tobacco Use by Addressing Social Determinants of Health

Most considerations of SDH look at broader areas, such as educational opportunities, employment, or community safety. A more focused target, such as the environmental change of eliminating second hand smoke from public places, does not usually come to mind. Yet, this focused intervention using a SDH has important effects, and shows us their power. The WHO has sponsored the Framework Convention on Tobacco Control, the first treaty negotiated by the WHO, starting in 2005 with 40 countries. Now ratified by 168 parties¹⁹, it covers 2.8 billion people globally²⁰. Treaty provisions contain evidence-based policies that reduce tobacco dependence. “Interventions were defined as cost effective if the cost per disability adjusted life years (DALY) averted was less than three times the country’s gross domestic product per capita and very cost effective if each DALY could be averted at a cost less than the gross domestic product per capita.”²¹ In other words, all treaty provisions not only effectively stop people from smoking, but also save governments money. This example of SDH shows that a focused SDH intervention can have clear benefit. Many think of tobacco use as eminently individual, but SDH have enormous effects on this individual behavior.

Treaty provisions all do this by changing SDH, resulting in changes in individual decisions about tobacco use and tobacco cessation. Provisions work mainly via the general socioeconomic, cultural, and environmental conditions shell of the Multilevel Model just introduced.

- Regulation of tobacco product contents
- Elimination of public tobacco smoke
- Packaging and labelling of tobacco products
- Price and tax measures
- Education, communication, training and public awareness
- Tobacco advertising, promotion and sponsorship
- Illicit trade in tobacco products
- Sales to and by minors
- Provision of support for economically viable alternative activities

Tobacco provides an example of how interventions changing the social determinants can target a specific health behavior. It is pretty direct, looking at environmental factors directly related to tobacco. But, the WHO, the IOM report, and many others also make the argument that more general social determinants of health also must be addressed to promote health generally, and health equity specifically. Health disparities in U.S. infant mortality rates provides an excellent example. We can use SDH to understand this critical health issue.

Racial and Ethnic Inequities in U.S. Infant Mortality Rates

U.S. infant mortality rates have dropped steadily over the last several decades (Figure 4). However, the gap between the races have changed very little over that time. As Wise put it, each death is a “shame,” but the gaps in the rates are “shameful”²². How can so much progress be made overall, and so little in the health inequity? SDH help explain this contradiction.

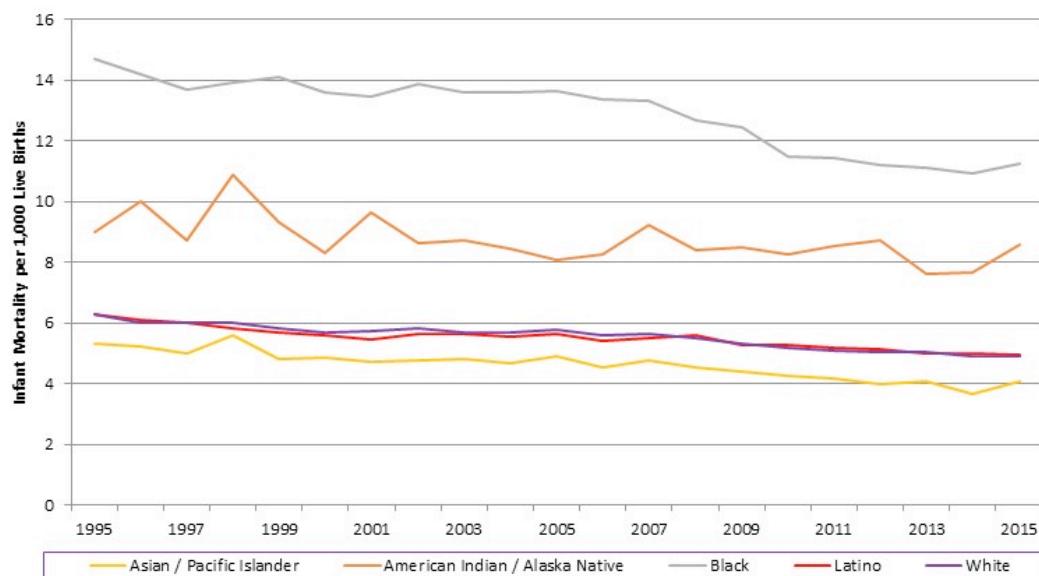


Figure 4. U.S. Infant Mortality Rates by Race & Ethnicity

Although infant mortality rates have dropped in all groups over the last 20 years, gaps between populations persist. Source: CDC/NHCS National Vital Statistics System.

Although at one time it held currency, few now argue that genetic differences drive racial disparities in infant mortality²³. Low birth weight (LBW) is the biggest risk factor linked to infant mortality rates. David and Collins published a landmark study of racial disparities in LBW²⁴, early in a wave of studies that show that SDH have far more effect on inequities in rates of both LBW and infant mortality. This study of birth weights in Illinois from 1980 to 1995 showed that birthweights of U.S.-born Blacks consistently averaged lower than those of U.S.-born Whites, while those of African-born Blacks were similar to U.S.-born Whites. This data helped eliminate support from the hypothesized genetic tendency of Blacks toward a normal range of smaller birth weights. Conversely, the David and Collins' data supported the Weathering Hypothesis^{25,26}, that the experience of stress over a lifetime contributes to poor birth outcomes among U.S.-born Blacks.

Racial inequities in infant mortality rates provide an example of how the Multilevel Model may be used to explain health or other inequities, using each level in the model. Studies provide data for how SDH in every part of the Multilevel Model contribute to racial disparities in U.S. infant mortality rates. The contribution of SDH shows that such disparities are preventable and inequitable.

Age, Sex, and Constitutional Factors

- Mothers older than 40 years or in their adolescence have babies more likely to die in infancy²⁷.
- Rates of infant mortality in the US have substantial variation by race and ethnicity (Figure 3). Black American and American Indian babies die a 100% and 50% higher rates than European American babies, respectively²⁷. And, these inequities have widened over the last decade, as rates overall have dropped²⁷.

Individual Lifestyle Factors

- Maternal use of tobacco, alcohol, and recreational substances are associated with increased rates of infant mortality²⁸.

Social and Community Networks

- Unmarried mothers have a 73% higher chance of their babies dying in infancy²⁷. This may be related to less access to social networks than mothers with a partner.

Living and Working Conditions

- Mothers with lower educational levels more often have babies who die in the first year of life²⁸.
- Starting care later in pregnancy or absence of medical insurance are risk factors both linked to preterm delivery (PTD)²⁹, which is a substantial risk factor for infant mortality^{27, 28, 29}.
- Longtime residents of poor and higher density communities also experience higher rates of LBW, which is the biggest risk factor for infant mortality²⁸.

General Socioeconomic, Cultural, and Environmental Conditions

- The strongest risk factors linked to infant mortality are LBW and PTD. Infant mortality is 25 times more likely among LBW babies²⁷. LBW is found in two thirds of all infant mortality³⁰, PTD in one third³¹. Leading scholars of infant mortality, LBW, and PTD have identified maternal stress and specifically racism as etiological in these outcomes^{32, 33, 34, 35}.
- Low socioeconomic status has also been identified as leading to higher rates of infant mortality²⁸.

Frameworks

The IOM report provides guidance for teaching SDH. It provides seven frameworks useful for classroom teaching. The report also provides a framework for incorporating service learning into an educational program. One chapter gives the results of a review of the literature of learning activities useful for teaching SDH, and offers examples of learning activities. Finally, the report presents a framework for incorporating SDH into an educational program, a framework which applies to health professional and other education programs. These resources are presented briefly here. Those that seem useful in specific cases can be examined in more detail in the report itself.

The IOM reports devotes a chapter to present a model to help educators incorporate teaching SDH throughout an educational institution, including placing the institution itself within a context of SDH. This conceptual model (Figure 5) illustrates an institutional shift “from individual examples of education, networks, and partnerships to the broader concept of frameworks within which curricula and programs can be tailored to meet situational requirements.”³⁶. This shift helps educational institutions provide support for an integration of SDH into education at all levels, for new providers, graduate education, continuing education, practicing professionals, policy makers, and administrators. The goal at the center is lifelong learning.

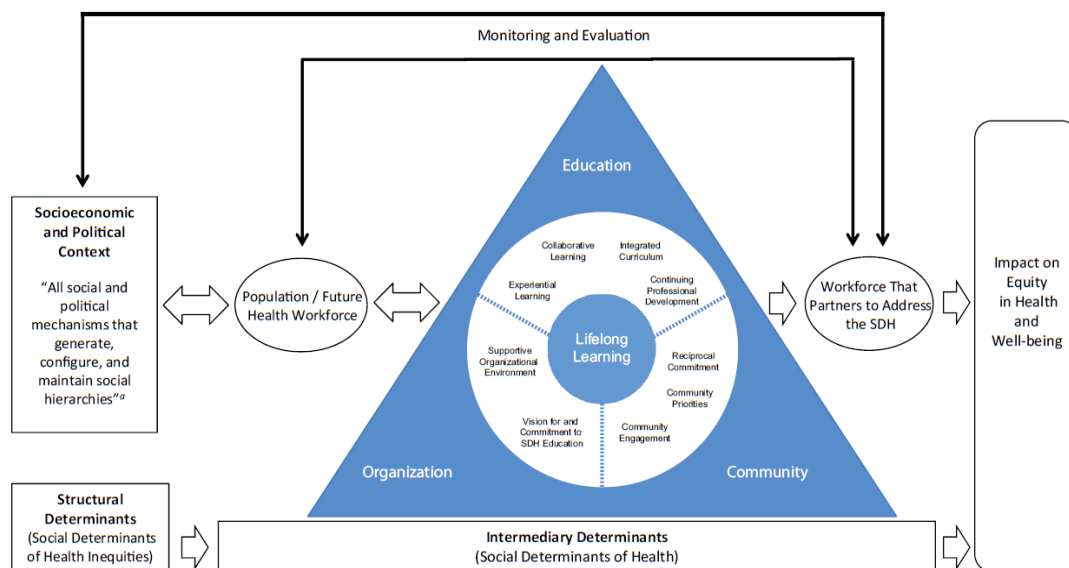


FIGURE S-2 Conceptual model for strengthening health professional education in the social determinants of health.
 NOTE: SDH = social determinants of health.
^a Solar and Irwin, 2010, p. 5.

Figure 5. Institute of Medicine Conceptual Model for Framework for Strengthening Health Professional Education in the Social Determinants of Health³⁷ The IOM report points out the need for three domains for successful integration of SDH throughout an educational program: content, structural support, and community partners. Each domain has necessary components. It also places the educational institution inside its own set of SDH. This model draws on several sources, given in the original report.

The IOM report recommends that we use the framework in many areas of education. It calls for educators to use it to create lifelong learners. Providers should use it to guide work and missions. Researchers should use it to guide the development of an evidence base to teach this content, which sorely lacks. They also ask for programs that include interprofessional education, community-engaged learning, experiential education, and health outcomes research.

The model presents three domains needed for successful integration of SDH into an educational institution, each with needed components, all addressed in the report. The education domain has four components. Experiential learning is one, which includes, applied learning, community engagement, and performance assessment. Collaborative learning is another component, which includes problem and project-based learning, student engagement, and critical thinking. An integrated curriculum is the third component in this domain, which encompasses interprofessional and cross-sectoral content and is longitudinally organized across the curriculum. Finally, continuing professional development provides the last component, which includes both faculty development and interprofessional workplace learning.

The Community domain has three components. First, it must have a reciprocal commitment in terms of community assets, willingness to engage, networks, and, resources. Also, community priorities must be taken into account in terms of

evaluation of health impacts toward equity and well-being. The domain also requires community engagement, in terms of workforce diversity, recruitment and retention.

The Organization domain refers to infrastructure and administrative support for teaching SDH. This domain requires the component of a vision for and commitment to education in the social determinants of health, which can be seen in the policies, strategies, and program reviews, in resources allotted, in how the infrastructure is designed, and in promotion and career pathways. Another component is a supportive organizational environment, which includes transformative learning, dissemination of pedagogical research, and faculty development and continuing professional development.

Learning Activities

Like most educational research, few data have been generated about how to teach professionals to incorporate SDH into their practice. In the IOM report, scholars reviewed the literature looking for examples of health professional programs that taught SDH. They did not identify any long term evaluations for educational interventions, such as community-based or health outcomes³⁸.

The review did identify descriptions of course activities and student reports of their evaluations of them. Service learning topped the list as the type of experience most often used to teach students about SDH. After that came community-based learning, such as needs assessments and service, reflections, and interprofessional activities. Results that students reported included the ability to see a “bigger picture,” feeling less biased, increased comfort in the community, and changes in career choices. Students preferred to have more variety of activities, clinically based experiences, and guidance in their activities.

An individual assessment of SDH was another example given of a learning activity to teach SDH³⁹. Duke University School of Nursing uses this and other learning activities in a summer pipeline program of high school students interested in nursing. Staff in the program administer the assessment to identify potential barriers to student success. Afterwards, staff debrief students to address any potential distress caused by the sensitive nature of the questions. Based on student response, staff create Prescriptions for Success. The tool was developed with a grant from the Nursing Workforce Diversity Program of the Bureau of Health Professions of the Health Resources and Services Administration (personal communication).

In another example, the Herbert Wertheim College of Medicine provides a curriculum on SDH. The college’s Green Family Foundation Neighborhood Health Education Learning Program organizes interprofessional home visits in partnership with community agencies. At the visits, students and the professionals help families address SDH. Community agencies recruit the families. Service learning is also incorporated into this innovative curriculum. As described in the IOM report, the Wertheim program clearly incorporates the components of all of the domains of the IOM model of SDH⁴⁰.

Community windshield or walking surveys provide another learning activity that helps students learn more about the community and SDH (one not included in the IOM report). Students survey the neighborhood where their clients live, either walking or driving. Getting outside of the classroom can surprise students (and faculty). Directions for doing this are common, including some good ones from the University of Kansas⁴¹.

Conclusion

Students and faculty alike might not immediately see the application of SDH to professional practice, but evidence that they matter profoundly to our customers and patients abounds. The IOM report gives educators some of the tools for meeting the challenge of teaching SDH to the next generation of professionals. Using those tools, identifying others, finding out which of approaches work, and developing new ones provide educators with challenges for the future.

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