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Dashboards as Mechanisms for Community Empowerment: Developing a Prototype for Child and Adolescent Well-Being in California

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Abstract

Context: In recent years, stakeholders in public health have emphasized measuring young peoples' well-being as a more holistic and upstream approach to understanding their health and development. However, summarizing the available indicators of well-being in ways that strengthen ongoing policy and community efforts remains a challenge.

Program: Our objective was to develop a measurement framework of young peoples' well-being that would be engaging and actionable to a broad and diverse set of stakeholders in California.

Implementation: We began with a scan of the relevant literature documenting previous efforts to measure young peoples' well-being, both within the United States and internationally. Subsequently, we individually interviewed a set of key informants and then convened a multidisciplinary panel of experts to solicit feedback on our approach. Throughout this iterative and collaborative process, we developed and refined a measurement framework based on the information provided across these various sources.

Evaluation: Findings suggest data dashboards are a promising approach for presenting a parsimonious yet holistic picture of young peoples' well-being. Dashboards can highlight well-

being's multidimensionality by categorizing indicators over different domains. Our framework organizes indicators over five types: child centric, subjective well-being, contextual determinants, developmental, and equity-focused. The design and flexibility of dashboards can also highlight important gaps in data collection that are of interest to end-users such as indicators not yet collected among the broader population. Furthermore, dashboards can include interactive features, such as selecting key data elements, that can help communities articulate priority areas for policy action, thereby generating momentum and enthusiasm for future iterations and improvements.

Discussion: Data dashboards are well-suited for engaging a variety of stakeholders on complex multidimensional concepts such as young peoples' well-being. However, to fulfill their promise, they should be co-designed and co-developed through an iterative process with the stakeholders and community members they intend to serve.

Keywords

Child Health; Adolescent Health; Mental Health; Psychological Well-Being; Public Health Surveillance

Young Peoples' Well-Being as a Key Indicator of Population Health

Major events from the past several years - the COVID-19 pandemic, the ensuing economic recession, the renewed focus on structural injustices against minoritized communities, and the uptick in climate-related environmental disaster events - have reaffirmed the notion that public health is affected by a complex network of social, economic, technological, and political forces. This is especially the case for young people, as shocks to these interlocking systems can have far-reaching effects on physical, biochemical, psychological, social, and cultural dimensions of development, with profound consequences for future lifecourse health trajectories.[1,2]

These considerations suggest that the status of young people should be considered a vital component of population health monitoring, with the potential to provide an "early warning" of future challenges.[3] Furthermore, because children appear at first glance healthier than adults, measures confined to aspects of physical health provide a limited picture of their potential health trajectories.[4,5] Given these concerns, a new approach to measurement, one that is more holistic and upstream-oriented, is needed.

In recent years, well-being has been proposed as an organizing approach that draws attention to many of these issues. Well-being has many definitions in the literature, but we prefer one offered by the Robert Wood Johnson Foundation:

> "*the comprehensive view of how individuals and communities experience and evaluate their lives, including their physical and mental health and having the skills and opportunities to construct meaningful futures.*"[6]

Well-being goes beyond measures typically used for population health monitoring such as absence of poor self-reported health, number of chronic conditions, physical disability, and mental distress. Certainly, all these aspects are deeply relevant, but well-being additionally incorporates positive and future-oriented aspects of health.[7] Furthermore, it highlights other

aspects of a satisfying and meaningful life. Many of these are often referred to as the social determinants which promote higher levels of health, such as material resources, educational attainment, and intrinsic assets located within families and communities.[8]

Challenges in Measurement of Child and Adolescent Well-Being at the Population-Level

However, operationalizing measurement of well-being poses many challenges. Returning to the definition above, it requires balancing considerations of individuals and communities; physical and mental functioning; and skills and opportunities. Perhaps unsurprisingly, well-being is the only one of Healthy People 2030's eight overall key measures without a standard method for measurement.[9]

One approach taken by researchers in positive psychology is to collect information on young peoples' subjective well-being.[10] These include self-reported measures such as happiness, life satisfaction, flourishing, optimism, meaning, and many others. However, these measures remain largely unavailable at population-level in the United States.[5] This is a significant gap that public health leadership should play a role in addressing, since subjective well-being can provide valuable information about future health trajectories for younger segments of the population.[11] Several different measures of subjective well-being have clearly demonstrated relationships with future physical and mental health,[10,12] including healthier cardiovascular functioning;[13,14] lower likelihood of mortality;[15,16] lower likelihood of subsequent cancer, stroke, and diabetes;[17] and lower likelihood of subsequent mental illness.[18]

However, given the limited availability of population-based data on subjective well-being, alternative approaches are needed. Composite indices, which aggregate available social indicators related to well-being into a single number,[19,20] have been proposed as one such strategy. However, these indices have certain critical weaknesses. By seeking to simplify and summarize, they discard valuable information existing within individuals and communities. Furthermore, available social indicators like high school graduation and substance use in adolescence are increasingly weak proxies for underlying subjective well-being.[5] Lastly, indices are abstract by their nature, meaning their methodology can obscure contributing pathways and processes. Altogether, indices may struggle to motivate popular support for addressing well-being through policy change, or community-level interventions.

Data Dashboards as a Vehicle for Presenting Rich Information on Complex Constructs

One popular alternative to composite indices for information summary and dissemination is data dashboards.[21,22] These tools present information on several indicators at once using raw data, charts, and maps. Several well-known examples in population health monitoring have proliferated in the COVID-19 era.[23,24]

Potential reasons for the recent explosion of interest in data dashboards include the availability of multiple indicators relevant to the topic under study, greater expertise in

data and programming necessary to operate them, their ability to "see at a glance" multiple aspects of a population health, and their flexibility to incorporate additional information as it becomes available.[25] As public health responsibilities are increasingly designated to state and local entities, these tools fill a growing need for decisionmakers.

Furthermore, data dashboards hold enormous potential for promote a well-being policy agenda through community-driven processes. By including indicators of positive-oriented aspects of well-being, dashboards can help shift the public's understanding of health away from deficit-focused approaches that serve some, but not all, of young peoples' needs.[5,26] Additionally, by democratizing information available at increasingly local levels, and incorporating modular design aspects that highlight existing gaps in health monitoring systems, dashboards can promote action-oriented narratives and collaborative accountability for outcomes.[27,28]

Dashboards clearly present a tantalizing opportunity, but to leverage them to their potential, they must be designed strategically so as not to go unused by the people they are intended to ultimately serve.[29] Furthermore, certain features of dashboards, such as the ability to compare outcomes across communities, may be exploited to reinforce stigmatizing narratives that have served as a basis for disinvestment in young people in marginalized communities.[30]

Developing a Measurement Framework for Child and Adolescent Well-Being in California

With these potential benefits and challenges in mind, we recently led an interdisciplinary working group representing a wide range of professional and community experiences to develop and refine a prototype dashboard of well-being indicators for young people in the state of California.

California is a promising venue to pilot advances in building a well-being measurement framework. First, it has a long history of existing efforts that are ready to be leveraged.[31,32] Second, recent policy developments, such as a forthcoming universal transitional kindergarten program, present significant opportunities for accompanying monitoring and evaluation efforts. Third, trialing the dashboard across a variety of the state's local jurisdictions could prove valuable in understanding how to tailor these tools to different contexts. Fourth, success in a large and diverse state like California can serve as a call to action for other entities interested in pursuing this work.

To guide the design for this dashboard, the research team conducted a multistage learning process which had been developed by some of its members for similar work aiming to develop measurement systems for complex and abstract aspects of population health.[33] The first stage consisted of a scan of the literature on previous efforts to measure young peoples' well-being, both within the United States and internationally. In addition to theoretical work discussing the conceptual necessities such a measurement system should address,[7,8] we identified 10 specific initiatives. Although many of these efforts resulted in composite indices instead of a dashboard model, they shared several attributes that informed the

elements ultimately selected for our dashboard. This included drawing from a wide range of conceptual domains related to young peoples' lives, incorporating both positive and negative aspects of child health and development, and soliciting information from young people directly. A more extensive discussion of the findings can be found in Appendix A and Appendix Table 1. Based this work and an additional search process identifying California-specific data elements, we constructed a preliminary version of our dashboard (see Appendix Figure 1).

The second stage consisted of identifying potential members for a Technical Advisory Panel to provide feedback on our proposed approach. Initially, the research team conducted a series of 22 Key Informant Interviews from September 2021 through February 2022 to hear from local, state, national, and international experts and professionals about the sorts of measures currently being collected on young people in California, and in other locations. We adopted a "snowball sampling" approach, whereby initial interviewees were drawn from an extensive network of children's health-related organizations that the research team had existing relationships with beforehand, but were supplemented by additional informants recommended by the initial participants. The aim was to include many of the most important organizations working on children's health in the state, and to gather a diversity of perspectives. Interviewees comprised a diverse group of health providers, academics, state and local government officials, public health experts, and staff from non-government and non-profit organizations serving children and families, with approximately 30% from minoritized groups (as assessed by the research team).

Interviewees were asked for a preliminary critique of the strengths and weaknesses of existing approaches, as well as potential improvements, for how to measure young peoples' well-being. These discussions covered a wide-ranging set of aspects, including the content of the measures, their uses, locations where data could be collected, and platforms where they might be displayed. The research team then analyzed notated summaries of the interviews for common themes and extracted common themes to synthesize key learnings (see Appendix B). Additionally, interviewees were asked for advice regarding the size of the final Technical Advisory Panel, as well as the scope for the additional planned activities.

After the interview stage, 14 of the 22 interviewees, together with 11 additional stakeholders chosen to address recognized gaps in representation (e.g. school health and place-based initiatives) participated with the core research team in the third and final stage of the learning process. This consisted of two professionally facilitated virtual meetings over Zoom during April and May of 2022, during which the prototype dashboard was finalized. Table 1 provides additional detail on the broad range of professional interests and roles among the attendees. The agenda was broadly organized as follows:

- **Meeting 1:** _Why_ is measuring child well-being important for the state of California? _What_ would an idealized vision for a framework of measurement for the state look like? And what is a more realistic version that could be implemented in the meantime to move toward this vision?

- **Meeting 2:** Defining *what* an interim measurement framework might look like for California, and *how* to begin the process of building it, with a long-term goal of achieving the idealized version laid out in the first meeting?

Figure 1 provides a visual depiction of this process and Appendix C includes additional meeting materials. This study was certified as exempt from review by the University of California Institutional Review Board because it did not meet the definition of Human Subjects Research.

Prototype Dashboard Results

The final dashboard prototype, representing a synthesis of the literature review and modifications made based on the feedback from Technical Advisory Panel, is presented in Figure 2. Designed with the user experience in mind, the top features a dropdown menu from which users would select their jurisdiction to facilitate a more localized understanding of well-being. The dashboard is presented over five domains, which are based on the findings from the literature scan:

- **Child-centric outcomes**: a set of measures assessing aspects of children's lives, such as their health, education, and healthy behavior. They center children themselves as the unit of measurement, rather than their surrounding environments.

- **Subjective well-being measures**: a set of validated psychological scales assessing aspects of subjective well-being. In the prototype dashboard, we display a set of instruments on life satisfaction included in the Children's Worlds survey,[34] but this could be extended to other areas.

- **Contextual determinants:** a set of measures assessing the surrounding environments that shape young peoples' lives, such as their families, schools, and communities.

- **Developmental measures:** a set of validated, age-specific developmental scales. In the prototype dashboard, we display the Early Development Instrument,[35] but others could be added.

- **Equity-focused measures:** a collection of measures from previous domains which reflect differences in outcomes across social disadvantage. We present several measures focusing on race/ethnicity, but these could be expanded to cover other social categorizations, such as gender, income and wealth, and sexual orientation.

Many domains have a summary score, but unlike composite indices they are not subsequently aggregated across the domains to a final value. Several indicators are grouped into core measures, which are always included in the domain score, and optional measures that allow users to select other features that may be of particular importance to them. Additional information on data sources for the indicators are presented in the Figure 2 notes.

Key Takeaways from Discussion with Technical Advisory Panel

After presenting the preliminary prototype dashboard and discussing its design with the Technical Advisory Panel over both meetings, several thematic strengths emerged (see below and Table 2):

Strengths of the Dashboard

- *Variety and comprehensiveness of measures related to well-being*: Several advisors valued that the measures in the dashboard, as organized by the conceptual domains, spanned a wide range of topics and ecosystems influencing children.

- *Emphasis of local experience*: Advisors appreciated the ability to drill down to local contexts. While not all metrics of interest are currently available at such granularity, many experts felt it important to include the potential for such measures, both for local engagement and to drive the provision of resources and expertise to collect these data in the future.

- *Flexibility*: Advisors preferred dashboards that could be tailored to local needs and preferences. Although standardization of some core measures is important, modular aspects allowing for user customization keeps dashboards relevant to community needs. These aspects can help communities to build their own collective narrative of young peoples' well-being, which is vital for sustaining action over the long-term.

- *Greater emphasis on subjective well-being*: Several advisors valued the emphasis on subjective well-being, even though these data do not currently exist in California. This is a key benefit of the modular dashboard approach, as data do not need to be immediately available for each indicator.

Areas for Improving the Dashboard

Additionally, several design features that could strengthen the dashboard were noted:

- *Additions to facilitate engagement:* Some advisors advocated for more features to promote engagement, such as queries that solicit user feedback, tools to guide users through the interface, and county comparisons.

- *Explicit ties between the measure and the bigger picture*: Advisors noted that raw data is not enough to drive action, and that contextualizing the data would help stakeholders make sense of the information. This could be incorporated directly into the dashboard or as a supplementary resource alongside the data. Since the academic impulse to extensively document existing literature on each outcome may not resonate with the intended audience, alternatives, like infographics and other storytelling methods, might be more effective mediums for this role.

- *Broader issues with how data are chosen and arranged*: There was a lack of consensus on the critical concern of how to incorporate equity. Currently this area is set aside as its own domain, envisioning it on equal footing with

population-level summary measures. However, some respondents suggested it should be weaved throughout. How best to incorporate equity is a key tension point that will need to be resolved in the future.

- *Specific measures that could be included*: Advisors suggested adding to the richness of the data by including more positive measures and identifying new sources of data. Many of these were incorporated into the prototype dashboard presented in Figure 2. However, this is an ongoing design and development process, particularly when unmeasured constructs, such as a sense of security in personal identity, have strong arguments to be included with actual data at a future date. As such, we observed it may not be feasible, or even beneficial, to include every single suggested measure in a more permanent version of the measurement framework. As such, there is a need for a democratic and transparent decision-making process to make final judgements about what there is enough space to reasonably accommodate.

- *Acknowledge and coordinate with other initiatives sharing a similar goal*: Several advisors noted that many other dashboards and well-being initiatives exist, both within California and across the country. Following up on this concern of duplicating efforts, we began assembling relevant information for some of these data sources and ongoing initiatives (see Appendix Tables 2 and 3), although significant work remains to be done in reaching out and working across these various initiatives.

Next Steps for Building the Measurement Framework in California

To make this vision of measurement a reality in the state of California, advisors suggested a series of next steps:

- *Building the measurement framework in a medium that can accommodate its desired features:* Advisors suggested a web-based platform could handle the dashboard's key features, including adaptability to community input, modularity of indicators to facilitate customization, responsiveness to data refreshes, capacity to track improvement over time, and linkage to companion initiatives and policy efforts. Consequently, gathering the technical expertise necessary to build and host such a platform is a key next step.

- *Trialing the dashboard in several localities:* To maximize potential impact, the measurement framework should be developed iteratively and collaboratively with communities. One potential strategy is to trial the dashboard across several cities, school systems, and/or other localities that would be interested in receiving valuable information and resources to inform their ongoing efforts. However, these piloting relationships should be chosen with equity in mind: often communities most prepared for these partnerships have more resources and fewer competing demands. Thus, the piloting process will need to be executed deliberately, with a genuine intention to improve the design such that it will benefit the communities most in need.

- *Integrating the measurement initiative into existing evidence to encourage changes in public policy:* For the dashboards to advance public policy towards issues concerning young peoples' well-being, it will be critical for the project team to articulate an actionable and concrete strategy, and evaluate how improvements in measurement translate into this broader vision. However, the immediate next steps for achieving this remain somewhat unclear. Panel suggestions include locating "champions" within cities that can advance progress, identifying specific priority measures to guide portfolios of community action, and holding collaborative meetings across cities where stakeholders can learn from one another's successes and failures.

- *Maintaining and building the Technical Advisory Panel:* Building the measurement framework and establishing its legitimacy as the preeminent source of information on young peoples' well-being in California will require continuing engagement with members of the Technical Advisory Panel. In a post-meeting questionnaire, many experts expressed willingness to participate in multiple aspects of the work (evaluating the dashboard measurement system, reviewing reports generated from the ongoing work, and partnering on grant proposals).

- *Secure sustainable funding for the measurement framework and supporting materials:* The scope of future work requires substantial and consistent funding to build a sustainable dashboard, and communicate its importance to policymakers, advocates, and communities. The broad set of benefits to Californians suggests that funders in both the public and non-profit sectors might be interested in supporting this work. Furthermore, there may be nontraditional sources of funding, such as business or neighborhood interest groups, that can be tapped into.

We are currently in the early stages of several of these activities: building a beta version of the web-based platform, pilot-testing across several smaller jurisdictions, and developing a funding portfolio to attract sustainable support for the project. Readers interested in collaborating on this work can reach us at CHCFC@mednet.ucla.edu.

Potential Limitations

Despite, the extensive background research and diverse set of participants in the key informant and expert panel activities, there are several limitations that should be noted. First, selection of Technical Advisory Panel participants was influenced by previously existing connections to members of the research team. Second, the research team opted not to include community members in the early ideation and design stage process, choosing instead to incorporate representatives from several advocacy organizations, with a plan to emphasize the co-design aspects at later stages. Lastly, although we worked to ensure racial/ethnic diversity on the Technical Advisory Panel, the existing literature is dominated by studies of predominantly White, non-Hispanic children, meaning preferences of minoritized families and communities in defining and measuring young peoples' well-being may be inadequately represented.

Implications for Policy & Practice

- Young peoples' well-being is a growing area of importance to the public health mission. Despite this, measurement remains limited and outdated.

- Data dashboards demonstrate enormous potential for hosting holistic and upstream data on young peoples' well-being. Furthermore, they have the capacity to highlight existing weaknesses like missing indicators and poor information on local contexts, as well as drive community engagement towards prioritizing issues affecting young people.

- With input from a panel of experts, we proposed a prototype dashboard of indicators that could be used within California.

- However, to maximize the ability of data dashboards to support a well-being agenda for young people, they need to be further developed, customized and operationalized collaboratively and iteratively with local stakeholders and communities, since they are the ultimate users of these products.

Conclusion

Young people in California currently face significant risks to their well-being. Building and sustaining the case for a new way forward requires a system of measurement that is accurate and responsive to their needs. Advances in data dashboards and information visualization suggest potential new approaches to measuring young peoples' well-being, but broader success will require new forms of engagement and partnership with a range of professionals, stakeholders, and family and community representatives.

With significant assistance from a Technical Advisory Panel of experts, we have developed a shared vision of well-being measurement for young people in the state of California, as well as several strategic considerations for future action to make this vision a reality. The next step will be to attract the personnel, resources, and community feedback necessary to develop and maintain this measurement framework. There will undoubtably be significant challenges to this vision, but the time for prioritizing well-being as a key outcome of public health is long overdue. Building effective and community-driven measurement systems represent an essential step in moving towards a healthier and more equitable future.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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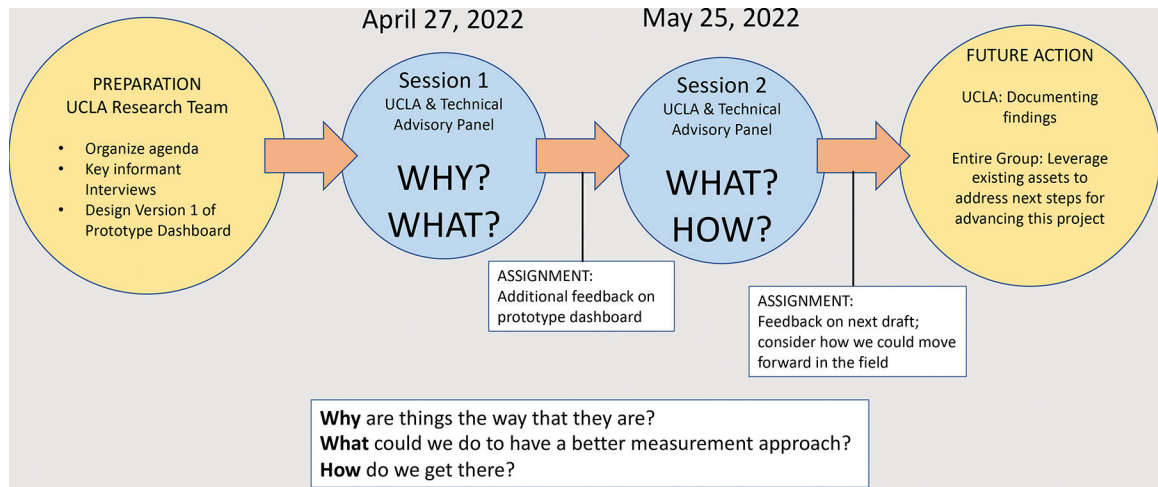
Figure 1:
Process Map: Measuring Child and Adolescent Well-Being

Dashboard of Children's Well-Being for [CALIFORNIA]

| Child-Centric | Subjective Well-Being | Contextual | Developmental | Equity |

Overall: 0.88* ●

Core Measures	Low birthweight[1] 7.0% ● (red)	Food secure (0-17)[2] 86.4% ● (green)	Feel good and happy most or all of the time (Elementary)[3] 73.0% (hatched)	No alcohol or drug use in past month (Grade 11)[3] 77.0% ● (green)	High School cohort graduating on time[4] 84.0% ● (green)
Optional Measures (select to include)	☐ Caring relationships with peers (Elementary)[3] 67.0% (hatched)	☐ 3-4 year olds attending preschool[5] 50.9% ● (yellow)	☐ Self-efficacy (Elementary)[3]** 78.0% (hatched)	☐ Exercise 4 or more days per week (Elementary)[3] 54.0% (hatched)	☐ Experienced chronic sadness / hopelessness (Grade 7)[3] 70.0% ● (red)
	☐ Sleep 8 hours or more per night (Grade 11)[3] 23.0% (hatched)	☐ Chronically absent (High School)[6]*** 12.1% ● (red)	☐ Ever diagnosed With asthma (0-17)[7] 11.9% ● (green)	☐ Juvenile felony arrests per 1,000[8] 3.1 ● (green)	☐ Percent of labor force employed (20-24)[5] 91.0% ● (green)

● (green) indicates improvement from when last measured   ● (yellow) indicates same as when last measured   ● (red) indicates worsening from when last measured

(hatched) indicates data not available in prior years

Sources: [1] 2018 California Comprehensive Master Birth File; [2] 2019 Map the Meal Gap Estimates; [3] 2017-2019 California Healthy Kids Survey; [4] 2018-2019 Adjusted Cohort Graduation Rate from National Center for Education Statistics; [5] U.S. Census data; [6] 2018-2019 California Department of Education DataQuest; [7] 2019-2020 California Health Interview Survey (downloaded from CDPH dashboard) ; [8] 2019 California Department of Justice Crime Statistics. Notes: * = Constructed as average of selected measures (core and selected); range is from 0 (worst possible) to 1 (best possible) ; ** = indicates can do most things if try, tries to work out own problems, and does many things well ; *** = missed 10 or more days in school year.

Dashboard of Children's Well-Being for [CALIFORNIA]

| Child-Centric | Subjective Well-Being | Contextual | Developmental | Equity |

Children's Worlds Subjective Well-Being Scale

I enjoy life XX	My life is going well XX	I have a good life XX	Things in my life are excellent XX	I like my life XX	I am happy with life XX

Children's Worlds: Domain-Based Subjective Well-Being Scale

Overall: How satisfied are you with … … life overall? XX					
… the people you live with? XX	… your life as a student? XX %	… your friends? XX	… your local area? XX	… the things you have? XX	… how you use your time? XX
… your safety? XX	… your freedom? XX	… how you look? (appearance) XX	… what may happen to you later in life? XX	… your health? XX	

Sources: Children's Worlds Survey (see https://www.frontiersin.org/articles/10.3389/fpsyg.2021.650691/full)
Notes: For each question, respondents rate their satisfaction on a 0 ("Not at all") to 10 ("Totally/Completely satisfied") scale.

Dashboard of Children's Well-Being for [CALIFORNIA]

Child-Centric	Subjective Well-Being	Contextual	Developmental	Equity

			Overall: 0.652* ●		
Core Measures	Not housing burdened[1]* 59.0% ●	At least one parent with High School degree[1] 80.0% ●	School provides adequate counseling and support services[2] 34.0% �íí	Feeling of connectedness to school (Elementary)[2]** 74.0% ●	Access to green space[3]*** 79.0% ●
Optional Measures (select to include)	☐ *Living in a household with two parents/guardians[1]* 67.0% ●	☐ *Not living in a high poverty area[4]**** 91.0%* ●	☐ *At least one parent full-time employed[1]* 73.0% ●	☐ *Meaningful participation at school (Grade 9)[2]***** 26.0%* ●	☐ *Positive Childhood Experiences score (Teenager)[5]****** XX* �íí

● indicates improvement from when last measured   ● indicates same as when last measured   ● indicates worsening from when last measured

�íí indicates data not available in prior years

Sources: [1] 2019 American Community Survey; [2] 2017-2019 California Healthy Kids Survey; [3] Parks for all Californians; [4] 2015-2019 American Community Survey ; [5] California Health Interview Survey

Notes: * = household not spending more than a third of income on rent, mortgage, and other housing expenditures; ** = based on student response to 5 questions indicating sense of belongingness. *** = Defined as percent of all residents living within a half mile of a park ; **** = Defined as living in a census tract where the poverty rate is below 30% ; ***** = based on student response to five questions related to autonomy at school ; ****** = 7 question scale being added to future survey instrument.
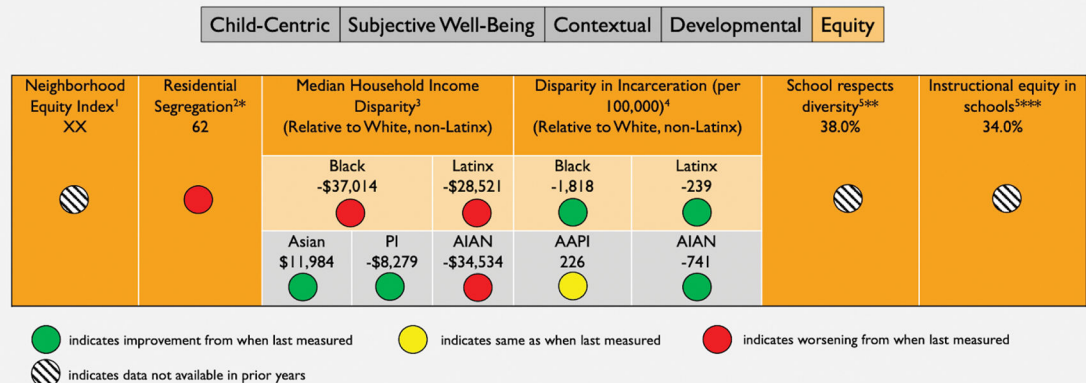
Dashboard of Children's Well-Being for [CALIFORNIA]

Child-Centric	Subjective Well-Being	Contextual	Developmental	Equity

[EARLY DEVELOPMENTAL INSTRUMENT]

Domains:	XX % at risk on one or more domains				
	Physical Health XX % at risk	Social Competence XX % at risk	Emotional Maturity XX % at risk	Language and Cognitive Skills XX % at risk	Communication Skills and General Knowledge XX % at risk

Sources: Data collected by UCLA Center for Healthier Children and Families. More information about the EDI instrument and methodology is available at https://edi.offordcentre.com/

Figure 2:
Prototype Dashboard for Measuring Child and Adolescent Well-Being in California

Table 1.

Technical Advisory Panel Member Characteristics

Primary Area of Expertise	Primary Geography of Expertise
Advocacy: 4	Local (City or county): 10
Data Analysis & Evaluation: 6	State-level: 11
Education: 2	National: 4
Health Care Delivery: 3	
Government: 5	
Program and Services Provision: 5	

Source: Authors' records on Technical Advisory Panel members.

Table 2.

Advisory Panel Input on Preliminary Well-Being Data Dashboard

Strengths	
Category	Quoted Feedback
Comprehensiveness of included measures	*"Variety in measures, acknowledging complexity of wellbeing"* *"data reported from multiple perspectives – youth, parents, teachers"*
Greater emphasis on the local	*"ability to include local data as necessary"* *"Adds to the unit of Cities"*
Flexibility in approach	*"I like that we are building in flexibility some people love a dashboard with lots of measures, others would prefer a small suite."* *"dashboards that are dynamic that allow users to visualize aspects (measures) important to them"* *"Not reliant on a limited index which tells too narrow a story."*
Inclusion of subjective well-being	*"Comprehensive analysis including subjective wellbeing that is new!"* *"Having measures that are directly from kids' voices (subjective wellbeing)"* *"Measures of subjective well-being generally clear"*

Areas for Improvement	
Category	Quoted Feedback
Design features to promote community engagement	*"how to make the dashboard dynamic and adaptive to places and issues"* *"Having local data is essential, and we cannot assume that each community can or will independently build its own."* *"Tailoring of dashboard experience based on purpose and needs"* *"Community voice - How does the measurement relate to what the community sees/feels/experiences. (vet with community boards and advocates so it meets their needs)"* *"Incorporate feedback from parents and youth"* *"Should we consider the potential through a web-based platform for individualized dashboards i.e. people can choose what they are interested in for their own needs/ purpose."* *"Need a core set of indicators for which data are provided for all cities. Can then provide additional modules that are optional."* *"likely need to develop a how-to guide/TA to help cities customize their dashboard, but always should have some common measure for comparison"* *"A reference point to contextualize the results - average, standard deviation, etc."* *"Might be better to align with units of analysis by county as well"*
Tie measures in with broader relevance to well-being	*"We need a brief explanation of what each measure means/ reflects."; "Make clear for users how the different sections relate to one another or could be used together"; "measurement that is about personal purpose / meaning"; "data to action guide, e.g. advocacy talking points"; "history / backstory of how we got here (e.g., housing segregation impacting racialized wealth gaps)"; "Did actionability and signal value of measures come up?"; "should there be some theory of change or investment behind the measures"; "figure out how to engage others in using the dashboard-perhaps local business and real estate professionals"; ""how can we better integrate education metrics as part of overall children's well-being--i.e., child not doing well in school leads to behavioral issues, etc."*
Reconsider the arrangement and presentation of broad categories	*"are the measures too downstream?"* *"not sure how equity is threaded through"* *"what do we mean by contextual so that it's a small defined set, otherwise it's overwhelming"* *"how is measurement relate back to gender identity not just racial/ethnic identity"* *"Not all measures of Subjective wellbeing work the same way across all race/ethnicities; consider how subjective wellbeing measures may need to be varied"* *"Important to disaggregate Asian American subgroups when possible as aggregated data makes needs of certain subgroups, such as Southeast Asians invisible (for example, CHIS, certain school districts and LACDMH collect data on Asian as well as Latino subgroups)"* *"Equity currently stands apart as if it is a singular distinct measure. It should be a part of each dimension of measurement."*
Missing key measures related to well-being	*"how does security in personal identity fit into this?"* *"belonging in local context"* *"include measures of anxiety, more common than depression in childhood"* *"More measures that get to the heart of what we are aiming for- children are hopeful, find their neighborhoods peaceful, experience joy at least at times."*
May duplicate ongoing efforts elsewhere	*"Align the kid WB dashboard with other kid focused measurement systems"* *"Collaborate with efforts of the California and Youth Behavioral Health Initiative if not already doing so."* *"Example of effective data policy lab dashboards: https://healthpolicy.ucla.edu/health-profiles/Pages/NHPI-COVID-19-Dashboard.aspx"*

Source: Authors' meeting notes and feedback provided by participants through MURAL meeting software.