



Human Progress and Human Services 2035: A Scenario Exploration



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Human Progress and Human Services 2035: A Scenario Exploration

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Using Human Progress and Human Services 2035: A Scenario Exploration

Visit <http://altfutures.org/projects/human-progress-and-human-services-2035/> for an electronic copy of this report, driver forecasts, and scenarios for eight state and local human service providers. You will also find a “toolkit” with which any organization or community can conduct their own scenario workshop. The toolkit includes workshop agendas, instructions, worksheets, invitation language and presentation materials. The scenario workshop enables the groups to “step into” each of the futures and consider implications, bound uncertainty and identify robust recommendations. Using the scenarios in this way can assure that plans address the better informed and longer-term futures for human progress and human services.

The Human Progress and Human Services 2035 project was supported by The Kresge Foundation.

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Visit The Kresge’s Foundation website at [Kresge.org/human-services-2035](https://kresge.org/human-services-2035/);

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Introduction

What will human progress, human need and human services be in the United States in 2035? What implications does this have for today's strategies for public and private human service providers and community partners? The Human Progress and Human Services 2035 Scenarios offer a tool to explore these questions and to better inform future-oriented, long-term strategies and efforts. For this purpose, these scenarios consider a range of forces, challenges, and opportunities shaping local and national human services. They offer a plausible set of expectable, challenging, and visionary pathways for how human services may change over the years to 2035, and the roles that current human service providers could play in these differing futures.

This report presents the Human Progress and Human Services 2035 scenarios and the results of a scenario workshop among national leaders who stepped into the scenarios, considered the implications, and developed recommendations. In addition, human service agency heads or community leaders in Memphis TN, San Antonio TX, Richmond VA, Montgomery County MD, Jefferson County CO, San Diego County CA, Connecticut and Mississippi convened Human Services 2035 Scenario efforts. This report merges the insights and recommendations from the national workshop and these state and local efforts. This report is an important part of a larger project on the futures of human services conducted by the Institute for Alternative Futures (IAF) and supported by The Kresge Foundation. These national scenarios and the state and local ones have allowed human service leaders, practitioners and partners to: consider their own work in the context of these alternative futures; challenge their own assumptions about the future; identify emerging risks and opportunities; and formulate more robust strategies with a greater potential to achieve their vision over the decades to come.

These national scenarios have been presented and used in a variety of settings already, and their release in 2018 is accompanied by a “tool kit” that will enable human service government agencies, community-based providers, and schools to explore these futures and consider the implications for their directions, strategies and vision. The eight state and local Human Services 2035 scenarios and the results of those efforts will be available at the IAF website here: <http://altfutures.org/projects/human-services-2035/>. The “tool kit” is available here: <http://altfutures.org/projects/human-services-2035/> and walks potential users through design choices and provides instructions and forms needed to create their community's 2035 scenario experience.

Why scenarios?

The future is uncertain. However, scenarios – different stories describing how the future may unfold – can be used to bind that uncertainty into a limited number of paths. These paths help us think about different probabilities in a larger space of possibilities. Scenarios also force us to consider the systems surrounding our topic and to clarify our assumptions. People who work with scenarios find more creative options than those who plan based only on the past and present. Strategies, plans, and actions can also be “future tested” against the different scenarios to assure robust initiatives rather than continued efforts based on outdated assumptions. Scenarios are thus a powerful method for systematically addressing the uncertain future.

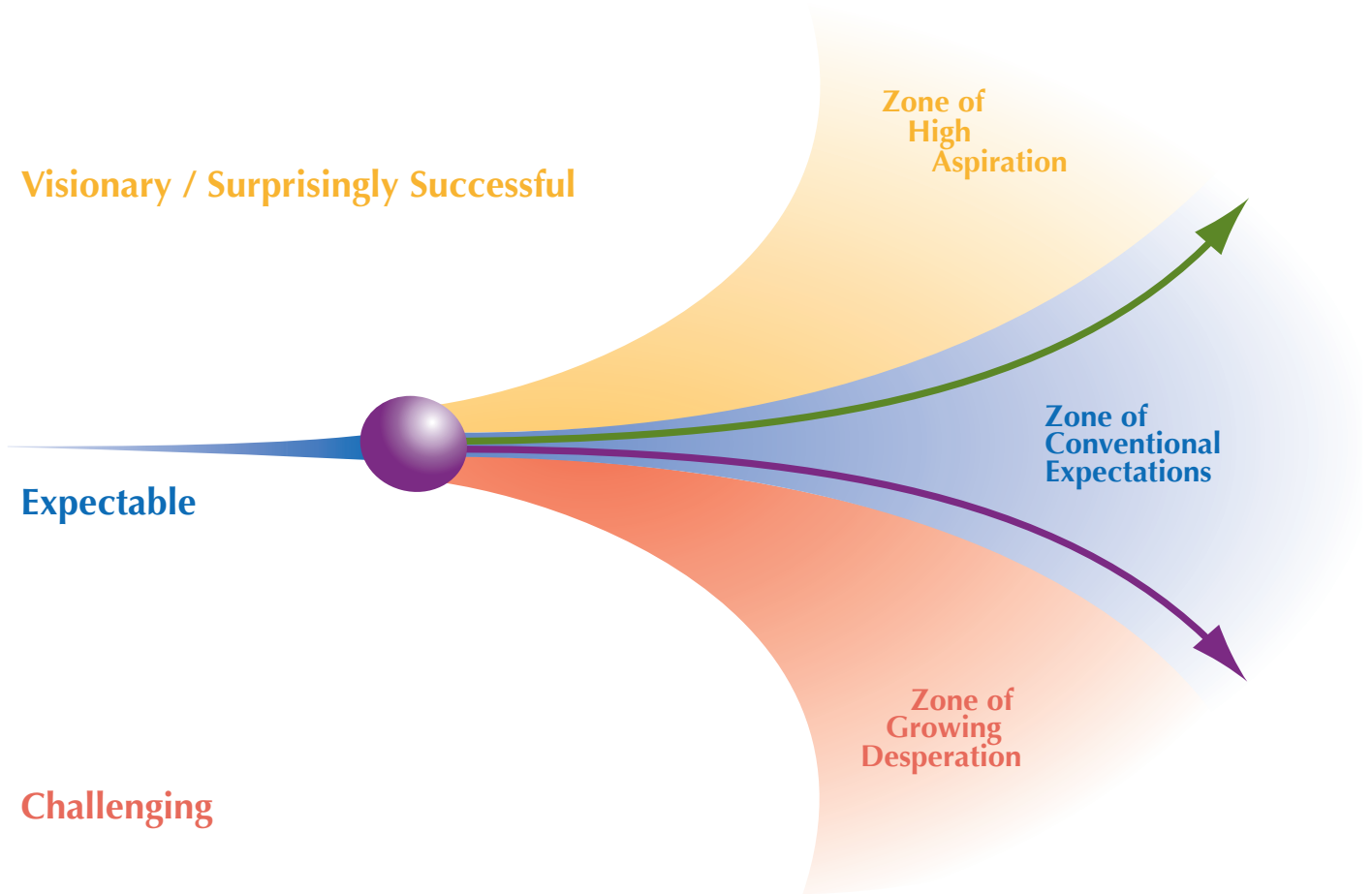


Figure 1. IAF's aspirational futures approach.

This process of national and local input, from experts and practitioners, public agencies and community organizations developing the scenarios, then using the scenarios to explore the implications for their visions and strategies, yielded the four scenarios here.

Scenario 1: Reductions and Rebounds (Expectable)

The first scenario is “expectable” or “most likely” given current trends. It assumes a period of likely human service cuts during the 2017-2021 Administration, with rebounds in the 2020s, as well as the evolution of human service delivery, automation and the use of intelligent agents in all sectors of the economy along with expectable job loss.

Scenario 2: Navigating Unending Challenges (Challenging)

The second scenario is challenging and considers some key things that “could go wrong” (including another Great Recession, funding cuts).

Scenario 3: Building Human Potential (Visionary)

The third and fourth scenarios are visionary. The third explores human progress in attitudes; technology including “abundance advances,” and policy – particularly a Guaranteed Basic Income.

Scenario 4: Thriving Communities (Visionary)

The fourth explores surprisingly successful changes in attitudes, a living minimum wage, technology including job loss to automation, policy transformations, and “abundance advances”.

Origin and Development of the Human Progress and Human Services 2035 Scenarios

In developing these scenarios IAF worked with our National Advisory Committee, acknowledged in the Appendix, and the Human Services Team at The Kresge Foundation to identify driving forces shaping human services, then developed preliminary long-term forecasts for key areas of human services (aging; behavioral health; children, youth and family; disability; housing; and income support). We also interviewed a wide range of experts on the forces in the larger macroenvironment (e.g., the economy, employment, technology, social and environmental trends) and additional human service experts. This project follows similar IAF national futures projects on *vulnerability*, *primary care*, *health and health care services*, and *public health* and benefited from those efforts. The first draft of these national scenarios was used at the May 2017 National Scenario Workshop which developed the recommendations below. We continued to explore the various forces shaping the field and specific human service areas as we worked with the eight state and local communities on their scenarios. We appreciate the leadership of the conveners (identified in the Appendix) and their colleagues in hosting these cooperative scenario development efforts.

As we developed the scenarios there were aspects of the driving forces that call for greater explanation than the scenario narratives allow. This larger explanation is given in a series of end notes at the back of this report:

- **Job loss to Automation** – between 9% to 47% of U.S. jobs could be lost to automation by 2030ⁱ (included in all Scenarios).
- **Abundance Advances** – a cluster of technologies that, if applied appropriately can lower the cost of living by providing in-home and in-community production of food, energy, and many home goodsⁱⁱ (in Scenarios 3 and 4).
- **Options for Increasing Low-income Housing Stock** – options include expanded government funding; increasing neighborhood density; encouraging Accessory Dwelling Units (ADUs); low-cost 3D printed homesⁱⁱⁱ (various options across the Scenarios).
- **Guaranteed Basic Income** – faced with permanently high unemployment, a Guaranteed Universal Basic Income would give \$12,000 a year to each adult and \$4,000 for each child^{iv} (in Scenario 3 only).
- **The Human Services Value Curve** – a vision for the human services field.^v
- **Equity Rising** – the transformative influence of equity as a value and attitude shift affecting policy, personal, and neighborhood political decisions.^{vi}

In developing the scenarios, we used the “Aspirational Futures” approach that IAF has evolved over our four decades of this work. This means that we develop forecasts and scenarios in each of three zones (see Figure 1):

- A “zone of conventional expectation” reflecting the extrapolation of known trends, the expectable future or most likely future (scenario 1);
- A “zone of growing desperation” which presents a set of plausible challenges that an organization or field may face, a challenging future (scenario 2); and
- A “zone of high aspiration” in which a critical mass of stakeholders pursues visionary strategies and achieves surprising success (scenarios 3 and 4). These two scenarios allow exploring different paths to visionary success.

Introduction Scenario 1: Reductions and Rebounds

The two decades between 2015 and 2035 were turbulent, with overall economic growth of 1 to 2% in most years, interspersed with mild recessions. But the economy and employment were transforming.

Full time employment in “jobs” declined but remained for most workers until 2030 when it was overtaken by the percent of “gig” workers. For workers in jobs, the federal minimum wage generally rose slowly. Some states and cities raised theirs to \$15 per hour by the late 2010s and kept moving toward a living wage in the 2020s. Driven by job loss to automation, structural unemployment grew significantly. This led to a net loss of 7% of jobs by 2025 and significantly more by 2030.

The information environment kept growing; the internet and social media claimed more time and attention, allowing remote interactions and telepresence. Virtual reality became as ubiquitous in the 2020s as broadcast and cable TV. Smart phones enhanced their capacity and morphed into wearable and implantable devices. Siri, Alexa and other intelligent agents on our phones and devices got better at knowing preferences and anticipating needs. Intelligent agents in education, medical care, and behavioral health became increasingly more effective. Public reception of intelligent agents became more comfortable and favorable, but human interactions and services remained important – particularly for seniors and other non-digital natives. Powerful, culturally sensitive language translation was widely used during the 2020s. These tools made life easier and richer, even as they “took over” many jobs.

The Federal Administration, 2017-2021, was marked by increases in defense spending, but decreases or flat spending for other areas. Many human service programs were kept flat, cut or eliminated. There was an increase in block granting during this time.

Human services overall became more efficient and productive, integrated and collaborative. Funding mostly rebounded in the 2020s. The federal government encouraged data integration to track recipients and eligibility. Some counties across the country successfully positioned themselves to have more influence on the distribution of these block grant funds. For the states that had expanded Medicaid, the funding level of the Medicaid Block was set at the post-expansion level. Yet, there were cuts for many human service programs and greater work requirements for many, even as job loss to automation reduced the prospects for employment.

Many human services departments implemented two and multi-generational strategies, which meant addressing needs of the entire family. Human service departments enhanced their collaboration with schools, businesses and community partners, allowing better resource sharing and greater empowerment of individuals and families.

Leading human service agencies became more collaborative, integrative and generative –spurred on by their commitment to a framework called the Human Services Value Curve. This approach includes several core components: a person-centered approach, evidence-based practices, cross-sector partnerships, a workforce that can build community well-being, effective change management processes, and accountability to achieving improved health and self-sufficiency. The principles that guided these human services included: prevention- and strengths-based orientation; customized service planning; pre-trauma and trauma-informed strategies; fatherhood engagement; common indicators across well-being and health domains.

Some human service funding moved towards a “pay for success” model. Better public-private partnerships accelerated achieving these markers of success. Data integration and cross-agency partnerships increased across government agencies, including state and federal, schools, and health care providers. Data integration was used for predictive analytics that enabled human services to better prioritize or triage (often underfunded) services. In many cases, predictive analytics enabled human services to anticipate and prevent incidents such as child or elder abuse.

Many human service jobs were automated or done by expert systems – this ranged from 80% of secretaries and receptionists to 10% of social workers. The remaining human service workers became more productive as inefficiencies in work flow were lessened.

1 Children, Youth and Family Services

Children Youth and Family Services include child and adult protective services, family/domestic violence prevention, child care, early childhood development, energy and phone assistance, kinship programs, transportation, job training, immigration and asylum assistance.

The need for children and youth services increased through the 2020s as cycles of poverty, substance abuse, environmental disasters and other factors led to continued child abuse and neglect and a rise in the need for foster care; by the late 2020s, there were 430,000 children out-of-home, up from 415,000 children out-of-home in 2014¹.

Child Services historically were funded through federal and state governments, which paid about equal amounts, and by local governments paying smaller percentages. The 2017-2021 Administration cuts in Federal spending affected this, as did the block granting of programs and Medicaid waivers which significantly increased the variation across states in how much is spent on specific child and family programs. Medicaid continued to cover some child and family needs, such as behavioral health and some residential care services, subject to redirection under a state's Medicaid waiver.

Delivery of services evolved with two generation strategies common in the 2020s, involving the parents and/or grandparents in identifying needs and setting priorities. Data integration across local agencies (schools, police, health care) allowed better awareness of each child's and family's needs. A virtual national data base of child abuse cases and victims and other family services clients launched in the 2020s, enabled by privacy and discrimination protections. When combined with local data on factors such as neighborhood violence, school truancy, business closures, human service providers could use predictive analytics to determine what services would best improve outcomes and set agency and program priorities. Privacy and security protection ensured that the information was used appropriately and not as a tool for profiling.

Overall child and youth services were more targeted, effective, integrative and generative by the end of the 2020s. Child and family services used cognitive computing systems to target and enhance their work. By automating some of child and family service workers' tasks, they became more effective.

Federal spending on child care and early childhood development programs, including Head Start, was reduced during 2017-2021. Fewer kids 0 to 4 received subsidized child care; fewer had Head Start or Pre-K. The funding rebound in the 2020s increased overall funding for children under the age of four and improved quality of care, allotting \$25 billion in new funding between 2024 and 2029. This money was allocated to states based on numbers of young children below the poverty line.

Child care and Pre-K quality increased, made more effective with technology. Care providers were better trained and often more regulated, which improved quality. Interactive learning technology, using affective computing, tablet apps (like ABC Mouse), and personalized learning activities charted the child's development. By the early 2020s the child services community had ensured that technology developers provided effective, culturally and linguistically sensitive versions of these tools that were affordable for publicly funded programs.

Immigrant and refugee services varied by state and by year. The 2017-2021 Administration dramatically lowered immigration and deported a large number of undocumented immigrants. Many communities continued to be welcoming of immigrants and provided immigrant and refugee services supporting a wide range of languages, cultures and practices. Culturally sensitive language translation was widely available by mid 2020s.

1 Aging Services

Aging services typically include senior centers, senior nutrition programs, assisted living services, in-home care services, social services for adults, chore services, and emergency response systems. These services were affected by the increased elder population, advancing technology, and cuts and rebounds in government spending.

¹ Child Trends, Data Bank Foster Care: Indicators of Child and Youth Well-Being, <https://www.childtrends.org/indicators/foster-care/>

The 65 and older population in the U.S. nearly doubled to 73 million in 2030; nearly 9 million were 85+. Diabetes and Alzheimer's worsened across the country. 10% of adults over the age of 65² had Alzheimers; reaching 7 million by 2030. Diabetes grew from 12 million in 2015 to nearly 19 million in 2030. Some advances did treat or slow the progression of these diseases but were expensive and mostly not covered by Medicare. Demand for aging services, home care, health care and nursing care all increased.

Aging services and other human service programs became easier to apply for and coordination across agencies provided automatic enrollment.

Many government-provided senior services were limited due to budget cuts during the late 2010s, and spending rebounded in the 2020s. Most communities increased their senior activity services, integrating them into other community sites and services, including libraries, schools, cafes, and churches. Many senior centers changed their names and broadened their audience and range of services.

Technology, including virtual visits and affective computing enabled services and increased interaction for elders. Some of these, like home care robots, were too costly for low-income elders. Others, like many smart phone apps (virtual reality, biomonitoring and emotion monitoring, smart home monitoring, enhanced hearing and language translation, smart digital assistants that emotionally engage the elder person) were in widespread use by 2025 among low-income elderly.

Housing, particularly for low-income older adults, remained an issue. Many preferred to age in place and many neighborhoods enhanced community interaction across generations. Naturally Occurring Retirement Communities (NORCs) expanded, providing better access to services and interaction to enhance aging in place. Zoning and regulations changed in many communities to allow Accessory Dwelling Units (ADUs) to be added to a home or built in the yard. While not aimed exclusively at seniors, many seniors took advantage of ADUs to downsize and stay at home. Often, family members moved into the elders' original home on the property, or the new unit housed the full-time aide/caretaker for the seniors.

Villages, informal group homes and aging generally were shaped by technology. As 3D printing, home and community food production grew, village managers and volunteer leaders helped facilitate these for tools in their communities. The sharing of services increased, helping elders save money. The internet of things added more devices with embedded sensors communicating across homes and neighborhoods. These worked to make the community "smarter" and enhanced formal and informal services.

Meals on Wheels experienced dramatic federal cuts during the late 2010s, and few communities were able to compensate for the loss, leading to increased hunger. In the early 2020s the program's funding rebounded, but the cost of food rose. When possible, these services increasingly tried to use locally produced ingredients – some from local enterprises doing urban agriculture and community gardens. More seniors produced some of their own food, often with training from the senior center or senior services.

The caregiver shortage worsened, particularly for more frail and low-income seniors. Family and friends had always provided most of this care, but by 2030 the ratio of family and kin capable of caring for an elder changed from 1 to 7 to 1 to 4. On-line and virtual support services and networks evolved, some of which were available to low-income seniors. These worked for many, but still left millions of frail low-income seniors without adequate care.

Across hospitals, home healthcare providers and physician's practices, healthcare and senior living industries converged in the 2020s. This network better customized aging service delivery and better engaged individuals and families in care plans. In-home and wearable health monitors became common, as well as sensor devices such as monitoring that follows a person's whereabouts in the house, analyzes steps and gait and records falls and their intensity.

Health care and senior services were shaped by a change in how seniors determine the quality of their lives and for those dying at home, the circumstances of their deaths.

1 Disability Services

Services for people with disabilities include supportive housing, education, habilitation and rehabilitation, personal assistance, assistive technology, employment supports, long-term and temporary relief for families of a person with a disability, emergency response systems, and home and vehicle modification assistance. Disability support payments came primarily from Medicaid Supplemental Security Income (SSI) and Medicare, along with some state and local funding.

Large increases in disabilities came with the increased number of older adults and the accompanying increase in diabetes and Alzheimer's in the 2020s. Developmental disabilities grew as well, some caused by the mother's poor prenatal health, substance use, and lack of access to health care.

Funding for disability services varied with the fiscal health of the national and state economies, with reductions in some programs around recessions and during very conservative Administrations. There were reductions in federal Social Security Disability Insurance (SSDI) payment levels, tougher eligibility standards for SSI, and barriers to access, such as needing to reapply for payments every six months.

By the mid-2020s there were remarkable medical and technological advances affecting disabilities. Some congenital conditions could be addressed in utero, and some after the person was born. Other advances included:

- 3D printing of home equipment and even smart prosthetics;
- Sophisticated home monitoring;
- Home care robots, and mobility aids;
- Friendly intelligent agents that act as helper, guide, counselor, therapist, translator, speech and hearing enhancer. (These personal intelligent agents also communicate with family members, caregivers and medical personnel about their person with disability);
- Direct brain control of limbs for paraplegics;
- Slowing or reversal of some diabetes and Alzheimer's; and
- Vision and hearing restoration.

But many of these advances were costly and only affordable by the wealthy or covered by the best health insurance policies (not Medicare and Medicaid).

Education became more inclusive of kids with developmental or intellectual disabilities; prompted in part by the increased prevalence of Autism Spectrum conditions, and by the cost of individual programs for those not included in regular classes and activities. There was a wide variation among states, with California, Massachusetts, and New Jersey leading in this inclusiveness.

1 Behavioral Health

Behavioral health needs encompassed developmental disabilities and behavior detrimental to overall health and relationships such as opioid abuse, gambling addiction, or violent behavior. Services included counseling and transitional services.

The need for behavioral health services increased due to the stress of economic downturns, social and economic exclusion, extreme weather events, neighborhood and domestic violence, and Adverse Childhood Experiences (ACEs). These ACEs had serious impacts on social, emotional, physical, mental and behavioral health development of the children involved, impacting their later health and quality of life as adults.

Drug dependency, poly-substance abuse and related co-occurring disorders increased throughout the late 2010s and into the 2020s, while access to treatment and success rates varied across race and socioeconomic classes.

Despite prevention efforts pursued through the 2020s, the poverty rate nationally increased, worsening already low-income areas. Children in high poverty neighborhoods continued to grow up in environments that contributed to behavioral health problems. Health and human service providers' ability to identify at risk children became more sophisticated and took advantage of linked information from schools, medical records, and neighborhood peers. Teachers, school counselors, and in-school clinics were trained to identify behavioral risks and needs. However, funding constraints often meant the needs were not fully addressed.

The Obama-era health reform had called for the integration of medical and behavioral health care. Trump Administration changes slowed this integration and reduced some funding streams for behavioral health, but these generally rebounded in the 2020s. Medicaid continued to be the largest funder of behavioral care throughout the 2020s, with the ongoing state by state variation in Medicaid expansion, coverage and payment levels.

Receiving behavioral health services became less stigmatized as research showed it to be cost effective and people became more accepting of it.

Prisons and jails continued to be major sites for providing residential behavioral care. Twenty-five to forty percent of those incarcerated had or have behavioral health issues, and for many their severe mental illness was a direct cause of their criminal offenses. Some communities recognized this in their policing and court systems, but many did not.

Behavioral health care, across providers, in the 2020s made use of effective and affective virtual behavioral health counselors. These programs had a warm and comforting delivery tailored culturally and linguistically to the person. These tools proved to be effective for people dealing with more easily addressed behavioral health problems (like mild anxiety and depression), rather than more severe mental illness such as schizophrenia. Health care providers provided these interactive programs, deployed as smart phone apps, to their patients. While not "practicing medicine," the best of these systems do provide effective behavioral care. Community health centers and other Medicaid providers were using them consistently by 2025.

Virtual counselors displaced some human therapists during the 2020s, and those remaining were providing oversight of patients' use of these programs and delivering in-person services to those who were not fully served by the virtual tools.

1 Housing

Housing remained at the forefront of human service issues. Renting, as opposed to owning, continued to increase as did the percentage of people paying between 30-50% of their income on rent; as rents increased faster than wages, more and more people were spending 50% or more of their incomes on rents.

The cuts in federal spending from 2017 to 2021 for public housing, Section 8 and other programs saw some rebounds in the 2020s, but demand continued to grow faster than the supply of attainable housing.

Communities around the country used several approaches to increase the stock of low and very low-income housing, including:

- Promoting/subsidizing Accessory Dwelling Units as low-income housing;
- Incentivizing/requiring landlords to take housing vouchers;
- Raising the number of unrelated people who could live in a home;

- Allowing group homes for elderly or special needs individuals;
- Trying to fill some gaps after federal spending cuts;
- Encouraging more mixed-income neighborhoods;
- Providing density bonuses in exchange for more low-income units in the development.

Few communities used all strategies, though many communities used some of them to enlarge the stock of attainable housing. Yet even in successful communities, the increased housing stock could not keep up with the demand. Most better off neighborhoods remained unwelcoming of low-income housing or special needs housing on their block – NIMBY slowed the growth of low-income housing in those neighborhoods.

As cycles of job loss, rehiring cycles and recessions continued, many households found themselves repeatedly on the edge of poverty. This meant recurring need for utility payment assistance and eviction assistance in those communities who were still able to maintain these programs. The integration of human services with other agencies and community organizations allowed the creation of “alerts” for the housing services department. If residents were identified as employed by a company that had major layoffs, human services were alerted and housing services could offer utility payment assistance or rent aid. This information sharing on employment was voluntary but very common.

Housing services coordinate with other services – many use the Arizona Self-sufficiency matrix (or a similar tool) to assess the range of a client’s needs and to identify the best, case-specific plan of action. This helps providers ensure the right mix of resources and services. While understanding of priorities improved, agencies often have only enough resources to meet only some need.

Home repair for the elderly was done to support aging in place, with yearly variation in funding levels. Much of the work was done by volunteers coordinated by local agencies or the non-profits they fund. Some communities added more energy efficient materials and installation of solar energy and storage to the repairs. Supportive housing for the disabled – on both sides of age 65 – continued. In many communities, large homes were converted to supportive housing. Emergency shelter in cases of abuse or neglect continued, though the need periodically exceeded the supply. Homelessness grew in most communities; shelters were consistently overcrowded. Increasingly, churches and other community organizations stepped up even more to provide shelter, particularly during severe weather.

1 Income Supports

During the 2017-2021 Administration, the Temporary Assistance for Needy Families (TANF) payments were more limited; time of assistance was cut down to 90 days and required employment by the end of this period. For a few years TANF continued to fund early education and child development until these were dropped in the 2020s as they did not support parents’ ability to work.

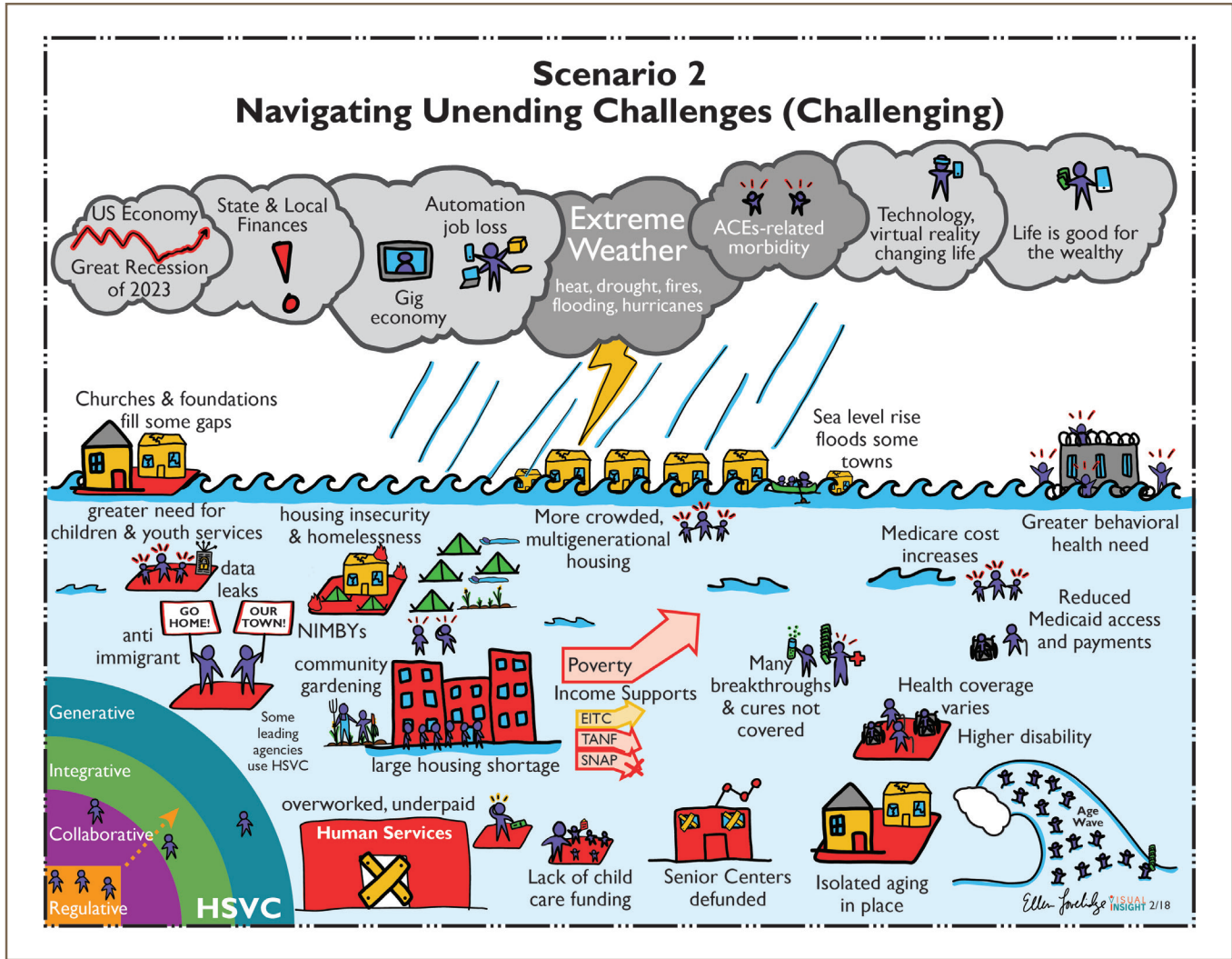
The levels of cash allowances under TANF rebounded in the 2020s and were adjusted for inflation. By 2024, TANF reforms had followed the recommendations of the American Public Human Services Association (APHSA) on TANF as a tool to stimulate meaningful employment. This included goals and quotas that are specific to the economic climate of each state and reflective of the shift of jobs to the gig economy and job automation. TANF payments supported pursuing all work regardless of the field, hourly wage rates, or hours per week. Education was supported as a key component of employability. Predictive analytics applied to the TANF recipient matched skills, interests and local job markets to steer the person toward optimal jobs or assignments.

The Earned Income Tax Credit (EITC) maintained bipartisan support and continued to supplement low-income families by reducing or eliminating their federal taxes. Federal payment levels were held flat then and grew slightly above

inflation in the 2020s. By 2030, the number of states that added to federal EITC increased from 26 to 35. However, job loss to automation included many low wage jobs, which reduced the number of people benefitting from the EITC.

Food and nutrition income support programs evolved as well. Cuts were passed that hurt some nutrition programs. Fewer school children received school meals because of these higher barriers to qualifying and reduced funding. SNAP, which since the 2014 Farm Bill was being reduced about 1% a year through 2024, was cut further. This brought on stricter limitations such as a 3-month limit for unemployed and childless clients, a ban on drug felons, and requiring photo IDs, along with work requirements.

In the 2020s, total funding levels for SNAP were raised and applying was made much easier and quicker as data linked with other government programs for automatic qualification. SNAP's Employment and Training programs worked to operate as a team with other employment programs. As with TANF, SNAP benefits became conditional on proof of actively looking for work, and benefits were shortened. Training programs targeted jobs that would not be automated. But even after the training in many communities, job shortages remained and/or the people offered jobs did not have reliable transportation.



Scenario 2: Navigating Unending Challenges (Challenging)

What else could go wrong? The economy grew in the late 2010s, but so did poverty and unemployment. The 2017-2021 Administration lowered human service funding even as need grew. Then the Great Recession of 2023 slammed the economy. Federal, state and local revenue and spending fell. Throughout the years to 2035, extreme weather events worsened in almost all parts of the country. Jobs lost to automation reached 30 million by the late 2020s. The increase in older adults that added 27 million more Americans over 65 overwhelmed health care and senior services. While most care for older adults remained in families, by 2030 the number of family and kin available to care for an elder changed from 7 family and kin for each senior to 4 to 1. Human services were forced to do more with less, automate where it could, and remind its overworked and underpaid staff of the essential importance of their mission. Many human service non-profit organizations closed. In some communities, churches, local philanthropies and community organizations were able to provide more emergency shelter, food programs, and other services. Services evolved – spurred by limited funds and by the creativity and inventiveness of both human service organizations and those in need. This commitment and creativity in the face of repeated challenges was crucial in providing resources effectively and encouraging the community to use its collective and individual capacity to generate resources.

Introduction Scenario 2: Navigating Unending Challenges

The need for human services grew, even though funding did not. The economy overall grew slowly for most of the two decades to 2035, with periodic recessions, including the Great Recession of 2023. This proved particularly challenging to employment, tax receipts, and human service spending. The digitization of life continued for work and play – moving from the internet, social media and smart phones to the internet of things, virtual reality, artificial intelligence and cognitive computing. This improved many aspects of life and learning, but increased job loss to automation. Poverty and inequality increased.

Diseases of despair, including opioid and substance addiction, depression and suicide, all grew. This impacted populations across most communities, including laid off human service workers.

The economic challenges did lead to an increase in self-sufficiency efforts, particularly family and community food production as well as the trading of services and other resources in low-income communities.

As climate change continued, extreme weather events hit virtually all the U.S., impacting low-income areas the most. Disruptions included hotter temperatures, droughts, flooding, fires, longer periods of mosquitos and other insects spreading disease, and periodic threats to water availability or quality. Sea level rise by 2030 affected many low-lying communities, creating climate refugees.

Cuts in government funding sometimes meant that communities turned to local non-profits, foundations and churches. In some fortunate communities these were able to step up despite often struggling themselves.

Human service organizations were forced to “do more with less;” to automate what they could, collaborate to ensure that the funds and services provided were deployed most effectively for each individual and family’s unique needs and reinforce their overworked and underpaid employees on the importance of their mission. Only a few leading human service agencies and organizations implemented the Human Service Value Curve. Overall in human service departments about 15% of human service jobs were lost to automation and cognitive computing in the 2020s; many had additional losses after the Recession and other economic downturns.

2 Children, Youth and Family Services

The need for child and family services – driven by poverty, racial and ethnic disparities, and cuts to programs – grew for most of the two decades to 2035. Federal funding cuts put in place from 2017-2021 were somewhat reversed by 2022, when the Great Recession of 2023 arrived. Increasing poverty correlated with greater child abuse and neglect, domestic abuse, addiction, teen pregnancy, housing insecurity, food insecurity and depression. For children, these ACEs would negatively affect their gene expression for years to come. Need for foster care grew way beyond the 430,000 out-of-home youth expected by 2030, even as payments to foster families diminished.

The school achievement gap between schools worsened. High school graduation rates decreased, and youth incarceration rates rose. The number of disconnected youth – those not in school or working – increased, sometimes leading to higher gang activity.

Adult protective services and refugee assistance services were cut repeatedly. Other programs that experienced cuts, or elimination, included: child care subsidies, programs to provide school clothing, transportation assistance, home repair funding, and job training.

Child and family services worked to improve their services, despite challenges, and automated some work to deal with staff cuts. Human service areas used integrated information systems – sharing data with health care, police and schools- to target the best set of services from their dwindling pool of programs and funds. But there were times when the information systems were not updated or reliable. Human service providers encouraged family self-sufficiency through home and community food production, trading time and services and sharing 3D printing for making many of the things they needed.

Immigration reform never happened. The 2017-2021 Administration deported many undocumented immigrants, some of which left behind U.S. born children to enter foster care. The U.S. stopped accepting refugees from war-torn areas of the Middle East. The refugees that were already in the U.S. often met resentment and phobic sentiments from neighbors. Some refugee families formed their own isolated communities. Human services continued to provide immigrant services in most communities, though the level of support was often reduced. Human services did support immigrants' home and community food production and other self-sufficiency activities. Language translation apps were widely used in the 2020s, slightly reducing immigrants' and refugees' isolation.

2 Aging Services

The aging baby boomers (27 million more aged 65+ by 2035) and their needed services were significantly underfunded, taking its toll on health care, home and nursing care programs and other senior services.

Diabetes and Alzheimer's in seniors across the country worsened. Alzheimer's impacted 1 in 10 adults over the age of 65². By 2030, 7 million seniors had Alzheimer's. Diabetes among seniors grew from 12 million in 2015 to nearly 19 million in 2030. Black and Hispanic seniors were disproportionately impacted.

High tech and high touch home care and cures for Alzheimer's and diabetes were accessible to the affluent, but were expensive and not covered by Medicare or Medicaid. Many low-income seniors had to continue to rely on family members when they could. The 2023 economic downturn disrupted families as some family members moved away for employment. When family members did fill the role of caregivers, there were difficult emotional, financial, and physical impacts on the caregivers.

Technology, particularly smart home technology and programs functioning as smart phone apps (and their successors) were generally available to low-income older adults and did provide some enhanced connection, personal biomonitors, telemedicine and better self-care, and home management assistance.

Other aging services, particularly nutritional programs, in-home and out-of-home care, emergency response, care coordination, and senior activity centers, experienced funding cuts then rebounds, not only around the Great Recession but at other times during the two decades leading to 2035.

Workers in aging services who did not lose their jobs went for long periods without raises in their already low paying jobs. Some of the non-profit organizations they worked for went bankrupt; others remained tenuous, not getting adequate payment for overhead or institutional support. Workers were often getting paid late, while organizations were intermittently losing major contracts and having to lay off workers.

2 Disability Services

Developmental disabilities grew in the 2020s, fueled by parental drug abuse, lack of prenatal care and the spread of the Zika virus and other diseases. Accident caused disabilities continued to grow. Deregulation of some industries contributed to some of the increased accidents. And the increase in diabetes and Alzheimer's brought increased disabilities. 55 million had diabetes in 2030 (about ¼ of which was undiagnosed) including 6 million with visual impairment, 89,000 with renal failure and 67,000 leg amputations in 2030.³ By 2035, 10% of the 75 million seniors in the U.S. had Alzheimer's.

² Alzheimer's Association, 2016 Alzheimer's Disease Facts and Figures, <http://www.alz.org/facts/>

³ IAF, Diabetes 2030 Forecasts, 2015, United States Diabetes Data and Forecasts, <http://www.altfutures.org/projects/diabetes-2030/>

There were technological and medical advances that removed disabilities or lessened their impact, but most low-income people could not afford many of the technological advances (e.g. self-driving cars, 3D printed prosthetics and orthotics, home robots, neuro-enhancements and direct brain control of limbs) and most were not covered by Medicare or Medicaid. These treatment advances and technologies heightened the differences between those who were sufficiently well off to be newly enabled rather than disabled, versus those whose lives were marginalized and shortened.

However, as more took place in cyberspace or virtual reality, smart phones and their successor devices had more accessible services. This included intelligent agents that link biomonitoring and other health data with health care providers to alert the person, or their family or doctor as needed. Many of these low-cost, smart phones linked services were included in Medicaid and Medicare coverage (particularly in capitated plans).

The level of state and local disability services had a wide range of variation. And for most, demand exceeded the supply of services, with long waiting lists to get services. Those lists grew longer during the 2020s.

2 Behavioral Health

Behavioral health services decreased dramatically due to budget cuts even while the evidence accrued to show these services reduce cost in the long run. Health care reform slowed the integration of behavioral health into primary care. Poverty grew, along with its associated increases in diseases of despair, domestic and community violence, teen pregnancy, housing and food insecurity, and chronic disease. Drug abuse, including opioids, continued its increase with growing harm to individuals, families and communities. Despite evidence from demonstration projects around the country showing that behavioral health can counter the epidemic of drug abuse, funding became scarcer during the 2020s.

Health care reform left more uninsured and there were cuts in Medicaid, reducing the number receiving Medicaid and payment levels. Behavioral health service levels varied widely from state to state. However, Medicaid remained the main source of public funding for behavioral health across the U.S.

Behavioral health expert systems did become very effective by the mid- 2020s. These were available to those on managed care plans, including Medicaid managed care systems and Medicare Advantage plans.

Prisons remained leading sites for providing behavioral care, with wide variations across states and even within states. The return of a “get tough” stance in criminal justice in some administrations and communities led to increased arrests and convictions. Black and Hispanic populations were most affected because their arrest rates remained higher and their sentences longer than for the white population.

Predictive analytics helped behavioral health providers triage the population when budget cuts meant people must be cut from programs, but these took a toll on both providers and their clientele.

2 Housing

Federal housing assistance levels had been declining from the mid-1990s to 2015. The 2017-2021 Administration, and more hostile Congresses, led to a decline in housing assistance levels not seen since the Reagan administration. These were worsened by the Great Recession. There were some periodic rebounds in the 2020s and 2030s, and some states, cities and counties did cover some of the lost housing funds. But mostly, housing services had to determine who got what services, with often a large share of the needy and eligible group not served.

Job loss was a frequent cause for loss of housing, accelerated with the ongoing job loss to automation and the Recession. Other contributing factors to housing instability such as severe cost burdens for rent, domestic violence, and disabilities were increasing as well. Declines in housing values and increase in blight as dramatic as those in Detroit became

common to many communities around the nation. Large numbers of people lost their homes while human services had little to offer in response. Homeless populations soared while spending on them dropped. Some churches in some communities were able to periodically step in and provide shelter and meals. Tent cities sprang up in many communities.

Laws and regulations were changed in many communities to allow more unrelated individuals to share housing units and to permit secondary dwelling structures in yards or attached to existing homes. In many neighborhoods, existing residents were hostile to those who were increasing the neighborhood's density and resisted these changes. Illegal secondary units were added in many communities and more low-income families shared homes (often in violation of local regulations on the number of residents permitted in the same home).

Utility assistance and eviction prevention services were kept very busy where they still existed, but in many communities this spending had been cut and their human service workers had been laid off.

2 Income Supports

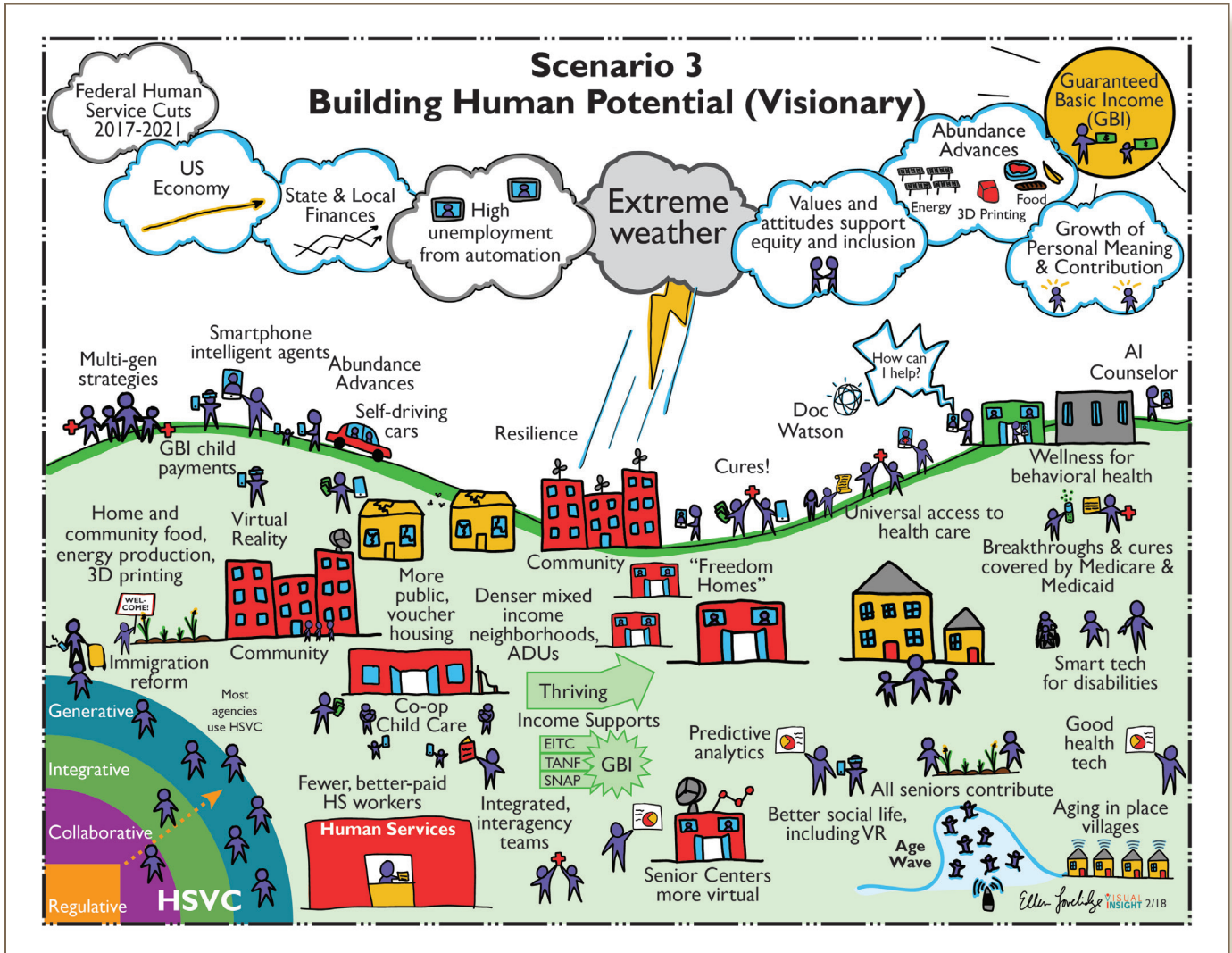
The need for income supports grew as unemployment rose, particularly after the Great Recession. More people required emergency assistance, medical assistance, and temporary disability assistance but there were fewer financial and programmatic resources available.

There were cuts during the 2017-2021 administration, with rebounds in 2022 and then further cuts with the Great Recession. When TANF payment levels were not being cut, they failed to rise with inflation.

By 2035, a growing number of the population in prison were former TANF recipients who had resorted to crime for survival. More families turned towards the informal or underground economy as neither paid work nor adequate government assistance could be found.

EITC payment levels were reduced during the 2017-2021 Administration but grew slightly above inflation through the 2020s. Some states joined, some stopped their EITC efforts, so by 2030 there were 28 states supplementing the federal credit. However, higher unemployment reduced the number of families benefiting from EITC.

Food costs increased between 2.5 and 5% each year, yet wages and family incomes declined, and the SNAP program suffered significant cuts. Switching SNAP into a block grant further reduced its economic and nutritional impact, disproportionately harming recipients. While there were periods of SNAP payment rebounds, the overall decline continued until the late 2020s, when despite overt need, the SNAP program ended all together. In 2015, 46 million people received SNAP benefits nationally – by the late 2020s, before the program was terminated, that number had fallen to 20 million.



Scenario 3: Building Human Potential (Visionary)

The 2020s were a time of change. Human services were tested between 2017-2021, when funding was cut across the board and stricter regulations for programs were put in place. Meanwhile, more jobs were lost to automation and work was shifting to the “gig” economy. Building on a value shift that had long been growing, the 2020s brought major shifts in beliefs and policies that embraced equity and inclusion. The policy shifts nationally increased low-income housing, created universal access to single payer health care, reformed immigration, and protected the environment. The passage of a universal basic income helped alleviate absolute poverty. “Work requirements” for receiving income supports shifted to recognize each person’s contribution to their community whether through paid work, caring for family, or volunteering. Abundance advances in technology lowered the cost of living by enabling low-cost and sustainable home and community production of food, energy and goods. The need for human services was reduced but remained. Human services focused on wellness and thriving by promoting effective contributing, financial and wealth capacity, home and community self-sufficiency, particularly effective use of the abundance advances. Human service agencies, community-based providers, and partners were fully integrated and enabled by data and predictive analytics, and were able to successfully intervene earlier or prevent potentially harmful incidents or circumstances.

Introduction Scenario 3: Building Human Potential

The economy continued to grow slowly and transform, including major shifts in employment. By 2025, there was a net loss of 7% of jobs to automation – this was followed by greater job loss in the years to 2035. Much remaining paid work shifted to piece work on the “gig economy”. Manufacturing evolved as home goods, electronics, and even food could be 3D printed locally or in the home.

Simultaneously, a major shift in values and attitudes was shaping communities and policies. Support for equity and inclusion had been growing. It was accelerated by the unfairness and inequality that grew during the 2017-2021 administration. This value shift became the norm in most communities in the nation. In the 2020s, this led to major transformations in a range of policies: housing, health care, education, justice and income supports. Medicare for All, a universal, single payer health care, was passed.

Given the growing job loss to automation and the complexity and insufficiency of the patchwork of income support programs, a Guaranteed Basic Income (GBI) program was created that unconditionally gives all adult citizens \$12,000 yearly and pays \$4,000 for each child. California and some other states “topped up” basic income levels given their higher cost of living.

Education evolved to be more inclusive and prepare students to be able to contribute and succeed in the changing economy. This included technical training and apprenticeship programs for workforce preparedness as well as training for child and elder care, food production, and other community volunteering tasks. Concurrently, the population aged and there was greater focus on valuing and caring for elders.

The information and communication environment also changed. The successors to smart phones and their related apps became more intelligent and did more for us. AI or cognitive computing enabled better home security, language translation, self-driving cars, medical diagnoses and prescriptions. Virtual reality became as widely used in the 2020s as the internet had been in the 2000s, including by elders. Smart homes and smart communities supported social interaction, personal growth, and community self-sufficiency.

Technologies, ultimately called “abundance advances” allowed families and communities to produce much of their energy, food and home goods (and even lower cost homes). This reduced the cost of living for low-income families. Policies supported the spread of these abundance advances. Human services provided training and support in their effective use.

Human services were shaped by and often accelerated these transformations. Federal human services funding had been cut in the late 2010s. In the 2020s they more than rebounded; they were transformed. The Guaranteed Basic Income (GBI) ensured that no citizens would fall below the poverty line. And abundance advances lowered the cost of living. Human services provided training on wealth and financial literacy for families to successfully manage their basic income payments, optimize their use of abundance advances and have each family member aware and proud of their contribution whether through caring for family, volunteering or paid work.

With reduced poverty and greater equity and inclusion across communities, the need for some human services was reduced. But the challenges of aging, abuse and neglect, behavioral health, developmental and other disabilities, housing and homelessness required ongoing human services. The growing attitudes supporting equity and inclusion, and the universal nature of the GBI payments destigmatized income supports and receiving human services generally.

Human services focused on a wellness/thriving model addressing the physical, mental, and emotional well-being of individuals and families and improving the communities and environment in which they live, work, and play. Many communities established shared visions that included equity, inclusiveness, and thriving. These visions helped human services transform to a person-centered, integrative and generative model of service delivery, where all the services connect.

In these integrative systems, data was widely shared, with protections for security, privacy and discrimination. This allowed human services to use predictive analytics to anticipate needs and optimize services. The increased use of block grants and greater flexibility in funds across programs allowed human services to optimize the services that an individual or family needed.

The GBI largely eliminated some cash transfer programs, such as SNAP, TANF, EITC and others. Where payment levels, such as for disability support, exceeded \$12,000 those payments were maintained.

3 Children, Youth and Family Services

Children, Youth, and Family Services were affected by the reduction in poverty from the GBI, greater inclusiveness in communities, more household self-production and co-production of food, energy, and home goods. This led to greater family stability, a reduction in family violence and child abuse, lower teen pregnancy rates and increased high school graduation rates.

The need for child and family services persisted, though at reduced levels. Two and multi-generational strategies were deployed and resources delivered in more tailored, case specific ways. Shared data across human services, health care, police, and schools along with predictive analytics allowed better targeting of need and anticipating family problems. This enabled far more effective case management and early interventions that helped reduce issues such as family violence and helped keep more children in their homes.

In those cases where the child must leave their parents' home, the \$4,000 GBI child payment followed them to foster care or group homes. Foster care services became more tailored to specific needs; for example, gender neutral homes for LGBTQ youth.

Family services also included enhancing families' financial capabilities, including: their knowledge of optimizing the GBI and other support payments and services, accessing checking and savings accounts and credit cards, effectively deploying abundance advances and saving for mortgage down payment. This was supported by national changes in how credit scoring was done and in the availability of commercial financial services, as well as a savings matching program for low-income families saving for their first home purchase.

Early childhood services, such as Head Start and Pre-K, were made universally available in early 2020s. Their impact on learning was enhanced over the decade by better trained day-care providers and the widespread use of engaging learning technology and increased accessibility of neighborhood parenting and cooperative day care programs.

Adult protective services focused on plans that enhance the threatened adult's choices in their services. Many cases of adult mistreatment were identified through primary care screenings, which enabled prompt intervention, often preventing or lessening recurring mistreatment. Studies had shown that when caught early (e.g., before verbal abuse escalates to physical attacks) the stress levels and psycho-social damage is far less.

The United States in the 2020s returned to being welcoming of refugees and immigrants. A steady flow arrived throughout the 2020s and 2030s. Among American citizens, attitudes became more inclusive and welcoming. Services for these individuals and families came from federal, state, local, and private programs with blended funding streams. Translation was made easier due to widespread use of smart phone apps.

3 Aging Services

There were nearly 48 million people aged 65 and older in 2015. By 2035, that number had grown another 27 million to 75 million. This aging of baby boomers increased demand for aging services was paralleled by the movement of human services towards more integrated, customized, and generative services. There was greater integration of data across various services – such as those addressing housing, nutrition, health care, and overall well-being. Human services particularly supported elders in volunteering – everyone can contribute to their community. Televisits and virtual reality

enabled those with mobility issues to continue contributing. Smart hearing aids and language translators translate across languages but also enhance the volume and clarity of words for the hearing-impaired, schedule appointments, communicate with doctors' offices and arrange transportation. Medicaid and Medicare, or human service agencies, provided these smart tools to low-income elderly.

The Guaranteed Basic Income "topped up" those 65+ whose Social Security or pension/retirement income was less than \$12,000 annually (inflation adjusted annually, as with Social Security payments).

Most communities increased their senior activities and integrated senior services into libraries, schools, churches, cafes, and other settings, including homes and neighborhoods. Multigenerational centers that encouraged intergenerational activity were common. As computer games and virtual reality evolved, seniors used them more for interaction, networking, and play. Their physical and virtual shared activity decreased isolation, encouraged meaningful relationships, and enhanced the community.

Universal design became widespread in the 2020s; all new developments, multi-unit housing, and many individual homes were wheelchair accessible and community facilities were designed to be accessible for all. Transportation was made easier as self-driving car services became ubiquitous and inexpensive. The cost of support for some of these networks of self-driving cars (many are wheelchair friendly) that provide transportation for low-income seniors was shared among state and local human services departments, health departments, health care providers, and other stakeholders. In some communities, public transit systems evolved to embrace the flexibility of self-driving vehicles for their systems, including for paratransit.

Health care evolved, improved in quality, and focused on extending healthy years. Treatments were found that slowed or reversed diabetes and Alzheimer's in many. These were covered by the Medicare for All system.

Meals on Wheels programs rebounded after cuts. In the 2020s, some deliveries were made by small drone-copters and more programs used local foods. These programs became more customer focused, including optimizing the person's meals for their nutritional needs (informed, where the senior agreed to the data sharing, by input from the person's health care providers).

Senior volunteer opportunities and engagement increased. This reinforced the importance of giving to a person's sense of meaning. Intelligent agents using affective computing and conversational interfaces allowed seniors to match their interests and skills to needs that volunteers could meet. Aging services support these volunteer matching systems and provide quality control on their operation.

Senior group living and co-housing grew steadily through the 2020s, as did "smart homes" for many seniors. Smart home features play many roles – a friend, bookkeeper, secretary and counselor. Accessory dwelling units (ADUs), or "granny flats", were promoted in many communities, allowing seniors to "age in place" often with family moving into the original house, or the senior's health aide moving into the ADU. Also, by the late 2020s many low-income seniors remained active as food producers both in-home and through community gardening and working in urban agriculture.

Aging services and protective services used predictive analytics and integrated data (from health care, police, other human services) to anticipate potential abuse and neglect. Some elder abuse and neglect remained but it was diminished.

3 Disability Services

Disability or its impacts were reduced across income levels during the 2020s. The reduction was caused by: the slowing or reversal of chronic diseases – particularly diabetes, arthritis and Alzheimer's, physical activity and weight loss among overweight and obese individuals, and safer and healthier work places. Developmental disabilities were reduced somewhat with reduced poverty and substance abuse, consistent prenatal care, and safer environments. Yet disparities in disability levels along racial, ethnic and income lines persisted, even as awareness of these disparities furthered efforts to reduce them.

The amount of disability payments that exceeded the \$12,000 yearly GBI payment were maintained.

There were remarkable technological advances affecting disabilities:

- 3D printing of home equipment and even smart prosthetics;
- Sophisticated home monitoring and home care robots;
- Friendly intelligent agents that acted as helper, guide, counselor, therapist, translator, speech and hearing enhancer;
- Self-driving cars and ride-hailing systems that enhanced mobility;
- Direct brain control of limbs for many paraplegics;
- Vision and hearing restoration for some.

As the medical advances were proven effective and safe, and their initial costs dropped, they were covered by Medicare for All.

Human service agencies were able to share and integrate data to understand the genetic proclivity or environmental promoters of disability among family members and could do predictive analytics to optimize the services they provided. This family-focused data, along with community data, and data on effectiveness of services and technology allowed more effective priority setting for what services to provide.

Education became more inclusive of those with disabilities. By the mid-2020s the factors associated with autism were better understood, allowing better prevention and better medical treatment and education approaches. A commitment by schools to greater inclusiveness, from increased understanding and technology (which included autism spectrum friendly intelligent agent/electronic friend/coach software) led the majority of these students to be in regular inclusive classrooms. California, Massachusetts, and New Jersey continued their lead in creating this inclusiveness.

Group homes for adults with disabilities, and those without, evolved with special smart home technology geared to residents' needs. Some call these Freedom Homes. Health care and human service agencies supported social enterprises that develop and manage these homes. These management organizations provide property management, cleaning, home health care aides (equipped with language translation and speech augmentation devices), and other services needed to keep the home's residents independent.

3 Behavioral Health

Behavioral health needs encompassed developmental disabilities and behavior detrimental to overall health and relationships such as opioid abuse, gambling addiction, or violent behavior. Care included counseling and transitional services. The need for behavioral health was somewhat reduced in the 2020s because of reduction in poverty and universal access to behavioral care as part of health care. For those no longer pursuing paid work, the need to “contribute” and do meaningful work was reinforced during the 2020s. The societal value shifts toward inclusion and equity were palpable in the 2020s and affected low-income and marginalized communities – removing some of the social isolation they felt.

But behavioral health issues remained, caused by genetic conditions, accidents, trauma, abuse and neglect by parents, neighborhood violence; and the impacts of adverse childhood experiences in those now adults.

It became more common to seek and receive behavioral care. Health care providers gave behavioral care parity with physical medicine in the 2020s, as universal access to health care was put in place. Epigenetic research showed how a person's environment and experiences affected gene expression, including their predispositions to behavioral health issues. This epigenetic research and their environmental and family experiences (ACEs) were part of their health record.

Teachers, school counselors, and in-school clinics identified behavioral risks and needs. With privacy and discrimination protections in place, human service providers integrated data from health care and schools and used predictive analytics to both identify people at risk and to triage their efforts.

Technology significantly accelerated behavioral care; effective and inexpensive software developed and used by leading health care providers proved to be very successful in the 2020s. Medicare for All followed Kaiser Permanente's lead in fostering the use of effective self-care tools for their patients, including effective virtual counselors. These programs had a warm, comforting delivery tailored culturally and linguistically to the person. These tools proved to be effective for people dealing with more easily addressed behavioral health problems (such as mild anxiety and depression), rather than more severe mental illness. Health care providers gave these interactive programs, deployed as smart phone apps, to their patients. Community health centers and other providers to low-income families were using them consistently by 2025.

Prisons and jails continued their role as leading locations where residential behavioral health care was provided. Twenty to forty percent of those incarcerated had or have behavioral health issues, and for many their severe mental illness was a direct cause of their criminal offenses. Most communities developed alternative courts or criminal justice procedures to deal with these offenders. Some cities and counties integrated psychologists in uniform with police teams.

Homes for adults with behavioral health issues and disabilities evolved with special smart home technology geared to resident's needs. These are sometimes called Freedom Homes. Residents often do home food production with aeroponics and use virtual reality to relate to other communities. Health care and human service agencies supported social enterprises that develop and manage these homes.

The behavioral health workforce evolved as counseling expert systems displaced some human therapists. Those who remain focused on the more challenging behavioral health conditions as well as overseeing the automated systems.

3 Housing

GBI payments provided a low level of stable income, and in some communities, apartments were available for \$300 to \$600 a month - 30% of the person or couples' GBI payment. Though in most communities housing was far more expensive.

Funding for federal housing programs dropped from 2017 to 2021, then rebounded – providing more funding for building public housing and for Section 8 vouchers in the 2020s.

Changing attitudes supporting equity and inclusion, the recognition of housing as a fundamental need, and effective leadership enabled policy and program changes that significantly increased the moderate, low-income and very low-income housing stock, much of it in mixed-income neighborhoods. Homelessness and housing were viewed as a barrier to health and wellness, and affordable housing became a high priority for public support.

Changing attitudes supporting equity and inclusion, increased federal and local funds, and technology were important in the success of many housing efforts, including:

- Massive growth of ADUs added across communities, with over half typically of the ADUs available as low-income housing
 - Following Los Angeles County's lead, many communities with serious housing issues provided cash grants to home owners to build secondary units on their property and keep them at affordable rents for several years;
- Increased building of public housing, including multi-family units; often in middle and higher income communities;
- Funding for more housing vouchers and regulations requiring their acceptance by landlords;

- Advanced lower cost construction (3D printing of components or the whole house on site). The 2018 3D printing of a one-bedroom house in 24 hours for \$10,000 meeting the city codes of Austin TX, was one of several successes that accelerated small home construction.
- Supporting self-sufficiency expanded with regulations, policies and training enabling abundance advances – encourage energy production and in community storage; food production; 3D printing/local production of home goods and electronics. For example, providing regulations and incentives to landlords to install low-cost energy production and storage and pass the savings to renters.
- Transportation improved, including low-cost autonomous vehicle services, better connecting affordable housing residents to work opportunities.
- Density bonuses were given to builders in exchange for additional affordable housing in the development.
- Rent control and just-cause eviction protections were increased.
- The use of smart home and smart-community or smart-NORCs (Naturally Occurring Retirement Communities) grew to increase social engagement, community security, and access to services. These were widely used in public housing multi-unit buildings and complexes.
- Middle and upper income neighborhood residents, supporting greater equity and inclusion, became YIMBY – yes, supporting low-income and disability housing projects and ADUs in the neighborhood and their back yard.

Home ownership by low-income and minority households rose in the 2020s, thanks to GBI payments, increased financial capabilities (checking and savings accounts, improved credit scoring, down payment assistance including savings match program) and abundance advances. By 2030 the 30%-point gap in home ownership between white and black populations had been cut in half.

Households became more generative of some of their needs as they produce and co-produce food and other necessities. Housing services were well integrated, consumer focused, and use predictive modeling and advanced analytics to anticipate emergency housing and other needs. Most human services agencies used the Arizona Self-sufficiency matrix (or a local variation) for each individual case to assess needs and identify best, case-specific plans of action.

Universal access to health care that includes behavioral health helped many homeless with behavioral health issues. GBI and housing policies made low-income housing more available. Homelessness was drastically reduced.

3 Income Supports

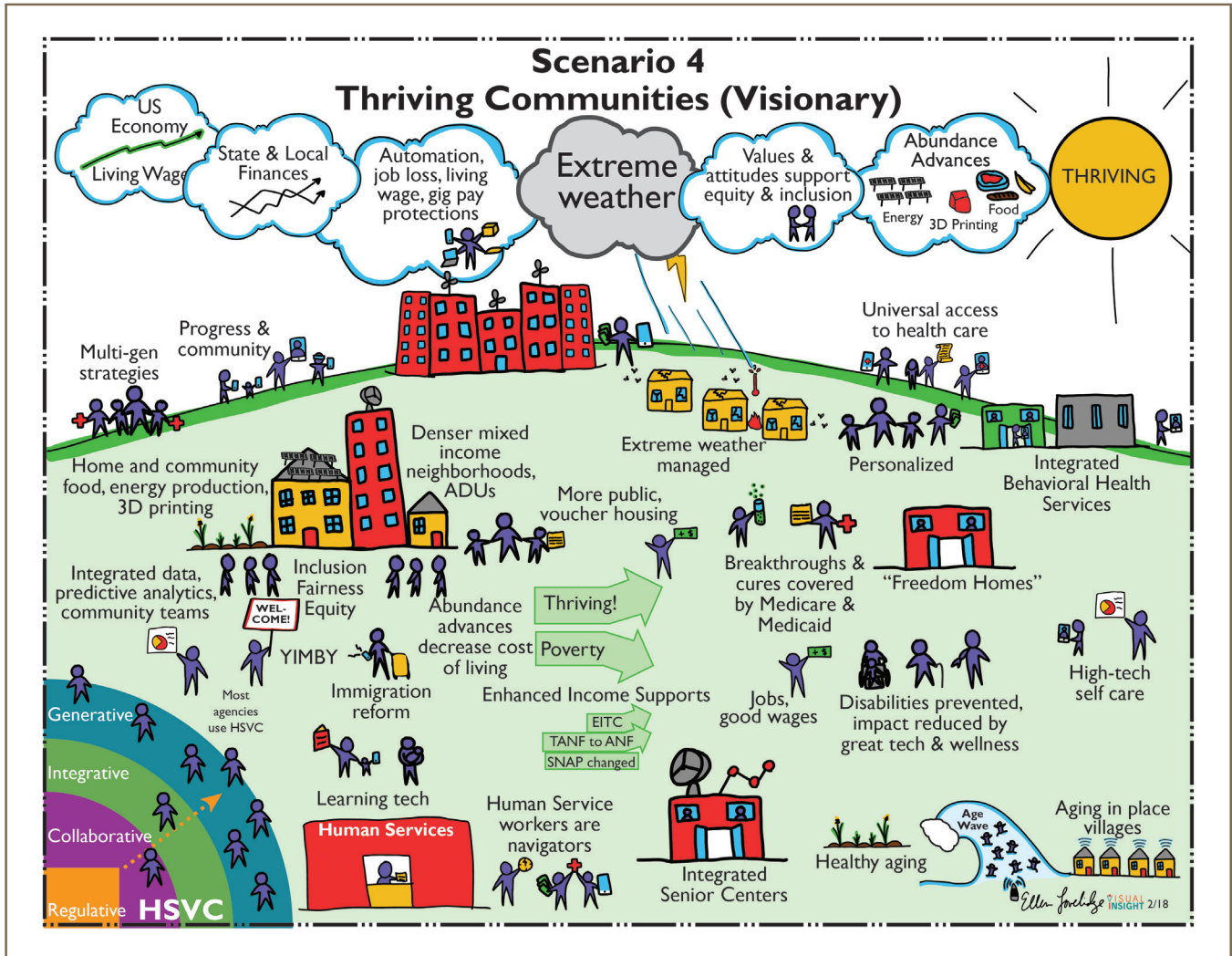
Income support programs transformed in the 2020s with the Guaranteed Basic Income. Given the GBI payments, EITC and TANF were largely eliminated along with SNAP and others.

Some programs such as financial assistance after natural disasters continued. And where current payments exceeded the \$12,000 yearly level of the GBI payment, the excess was still provided. Disability payments were a frequent example of this. Yet in most cases, GBI payments enabled people to have better lives in which they contribute to their communities and society. Refugees and immigrants were not eligible for GBI, so alternative systems remained in most communities to meet the needs of this population.

Financial and wealth literacy became a larger part of human services. New fiscal policies incentivized savings, including a program that matched savings for a house down payment. Human services worked to ensure that all who they serve have a strong sense of meaning and contribution. Taking care of children, elders and neighbors, volunteering and developing the community were among contributions that people made to others. Human services also promoted self-sufficiency through the effective deployment of the abundance advances.

In particular, food insecurity was significantly reduced by the ability to buy food because of the GBI payments as well as self-production of food in homes and in communities utilizing both traditional and technology-assisted growing. Community food production efforts lead to the emergence of community leaders, helped build well-being and implement evidenced based best practices for food and nutrition security.

However, some food insecurity remained, as did homelessness, pockets of poverty, and soup kitchens and other feeding programs. All food and nutrition services were integrated fully with other social services, often with volunteer or employment opportunities offered so that clients were provided meaningful ways to help others meet their food needs. The role of food in forming community and spiritual connection with others was recognized as an important facet of providing people with security, and this was celebrated in community programs and supported by state and federal funding agencies, even as specific cash or income supports diminished and many households were producing more of their own food.



Scenario 4: Thriving Communities (Visionary)

After the cuts to human services and increased poverty from 2017 to 2021, the 2020s brought major changes in values, policies and technology. Support for equity and inclusion became the norm affecting many areas of life – from support for mixed-income neighborhoods to destigmatizing receiving behavioral care or human services. The minimum wage rose beyond \$15 an hour to a living wage, even as much work moved from jobs to “gig work” and millions of jobs were lost to automation. Income support payment levels were raised and made permanent as structural unemployment was high and growing throughout the 2020s. Several technology advances lowered the cost of living and increased self-sufficiency as homes and communities could produce much of their needs – including energy, food, home goods and even low-cost housing. Job-training focused on work that would not be automated, on highly-effective volunteering, and on the ability to use self-sufficiency technology.

Delivery of human services became more integrated and efficient, operating in a generative business model and creating additional value. Each client had a case manager/mentor who ensured they get the most appropriate services as well as support and encouragement for self-reliance. Many human service tasks were effectively automated and delivered via artificial intelligence and cognitive computing. There were fewer human service workers, but they specialized in providing human touch when needed and in doing quality assurance for the automated services. For those remaining employees, human services paid competitive salaries and consulting rates, and paid its non-profit providers promptly, including appropriate overhead. These changes, along with a shared sense of vision, helped more people not only to survive but to thrive.

Introduction Scenario 4: Thriving Communities

The 2020s saw accelerated change in attitudes, economics, and policies. The previous Federal administration had ridden into office on discontent with the economy – but little was done for those long unemployed and those newly unemployed because of automation. The economy grew during the late 2010s as did unemployment, income inequality, and gridlock in Washington. And that set up a major shift in policies and regulations in the 2020s driven by major value shifts.

This deeper value shift toward more empathy, equity and inclusion was not new – it had been growing throughout the first two decades of the 21st century. It became more visible during the 2017-2021 Administration and became a powerful force in the 2020s. It led to public support for new policies, regulations and community as the economy was transforming. This affected many policy areas: health care, housing, education, public safety and justice, taxation, and income supports.

Job loss to automation grew, with millions of jobs lost before the end of the 2017-2021 Administration, and a net 7% loss of jobs by 2025 in the U.S. This was followed by higher losses in the following decade. Many of those still working no longer had “jobs” but were doing piece work or consulting on the “gig economy”. Policy changes, starting in the 2020s included the minimum wage rising to a living wage and pay protections and some benefits for those working on the “gig economy”.

Technology continued transforming the economy and how we live – from information, social media and communication, to manufacturing, food and health care.

One class of these technologies lowered the cost of living and enabled families to become more self-reliant. These abundance advances provided low-cost energy, highly productive in-home and in-community food growing, and local manufacturing (3D printing) of many home goods, electronics, home components and even whole homes. Policies promoted the spread and use of these advances; for example, requiring landlords to install and use low-cost energy and share the savings with their tenants.

Human services shifted fully towards a wellness model, addressing the physical, mental, and emotional well-being of individuals and families. Human services became more integrated, automated, efficient and effective. Programs were integrated across Federal, State and local levels, with accelerated eligibility determination and enrollment, integration of data across agencies and sites (e.g. school, work, medical care), and customized care with predictive analytics.

Human services had adequate funds, including higher pay for the reduced number of human service staff and adequate overhead for human service provider organizations. Each client had a case manager/mentor who ensured they get the most appropriate services as well as support and encouragement towards wellness.

Many aspects of human service tasks were effectively delivered via virtual reality, smart phone apps and their successors in the 2020s. Smart phones and adequate internet were universally accessible. Human service workers specialized in providing human touch when needed and in doing quality assurance for the automated services.

Human services worked to empower people into wellness. This included supporting abundance advances and their effective use by low-income families and “behavioral vaccines” – preventative measures that engage healthy social behaviors, often with a very high return on investment. Among these were Positive Parenting Programs (PPP) and the Good Behavior Game (GBG). With this empowerment, human service agencies were operating at the generative level of the Human Service Value Curve.

Given the high structural unemployment from automation and underemployment, payment levels for EITC and TANF were increased, eligibility expanded, and maximum length of time for receiving the benefits extended. Eligibility and payment became more simplified and efficient. Housing remained a major issue and efforts were successful at increasing the stock of low-income housing – by funding more public housing, more vouchers, and allowing denser neighborhoods including adding secondary dwelling units to existing housing. The value shift toward equity and inclusion led many affluent communities to welcome new lower-income neighbors and to make the increased density work for all.

Many programs retained their requirement for seeking work but expanded the categories of acceptable work to include volunteering in the community and providing child care or elder care. Job training focused on skills needed in jobs or gig economy work that would not be automated.

The need for human services, particularly among formerly high utilizers, was reduced, largely due to effective preventative measures. Longevity increased as premature deaths were prevented. Predictive analytics could identify who was most at risk, determine which services and how they were delivered for best outcome. As a result, much of the human suffering which human services had responded to was prevented or reduced. This led to an increased faith in government.

Emotionally and psychologically masterful navigators helped clients find what they need in very timely ways. Many of these navigators were virtual, though there were always qualified humans working with them to offer the special touch that people need. Integrated service teams formed around clients that included the client, their family and friends.

4 Children, Youth and Family Services

Children, youth and family services evolved, driven by national, state and local equity movements. The nation made strides in addressing segregation and historical racial inequities. The nation was intentional about reducing the opportunity gap, desegregating communities and approaching all human service work in culturally sensitive ways. Need for child and family services were also influenced by the introduction of a living wage, higher and more stable income support payments, and abundance advances which helped provide greater family stability.

Multi-generational approaches became the default mode for child and family services in the 2020s because they were shown to be the most effective way to improve health and prosperity for families and communities. Positive parenting programs were widespread and impactful. This helped prevent many potential needs for child welfare intervention. Good behavior games were integrated into school curriculum and help children develop positive behaviors that they then carried into adulthood. Certain states, such as Connecticut and California, pioneered these programs and showed them to be effective.

Integration of data and predictive analytics identified at-risk children, allowing for early intervention. This helped keep more children in their homes. Cases were addressed in a way that worked with a customized plan, specific to children and family members.

Technology helped shift from predictive analytics to prescriptive analytics, with interventions to detected needs – current and oncoming. For example, human service workers were able to identify families most at-risk and work with them. This work included working with an expecting mother and being at the hospital for the birth. They could work with the family and ensure there were home visits, coaching models, and certain support programs – beginning at the start of the child's life. This was proactive as these families were determined to have a higher likelihood of requiring services further down the road.

Genetic information and family history was linked between human services and health care allowing for early detection and intervention for some conditions. For example, high cortisol levels in mothers can be an indicator that a child may develop asthma in a stressful environment. When these were detected, human service workers joined with the mothers to help lessen the stress of their environment and reduce their cortisone levels.

As families and communities grew stronger, child abuse and neglect were reduced, along with the need for foster care. There were more resources helping children stay in-home or with family members in healthy environments. Families were more willing and able to take foster kids into their homes. And gender-neutral homes for LGBTQ youth were common in most communities.

After the slowdown of immigration during the 2017-2021 Administration, legal immigration was significant throughout the 2020s. Refugees services included housing support, clothing, nutritional services, physical and mental health care, some income support, and job training or small business creation coaching as well as self-sufficiency training.

Translation was made easier due to widespread use of instant translation apps for most languages. Services became more culturally sensitive and appropriate every year. Among American citizens, media and political narratives helped shift attitudes towards being increasingly welcoming of refugees, as did the upsurge in the values of inclusion and equity.

Other areas of child and family services that evolved included:

- Unintended pregnancies continued to be reduced, due in part to reliable access to high quality birth control covered with universal health care.
- The number of single parent households declined as young people recognized that having two parent-led households offered more financial stability and other positive impacts.
- Educational inequity was reduced, allowing higher educational attainment rates for low-income youth, particularly women and mothers.
- Parental leave, for those with jobs, was established nationally along with universal access to infant and early childhood care and universal Pre-K.
- Human services provided employment training that was optimally matched to the client's skills, knowledge and capacities, focused on jobs not likely to be automated; this training used the optimal learning technologies including virtual reality.
- Family services provided training in self-sufficiency practices and using abundance advances (particularly low-cost energy, distributed manufacturing and food production).
- While instances of domestic abuse declined, remaining cases were more frequently identified sooner through primary care screenings or integrated community data.

4 Aging Services

Aging services accelerated its movement to more integrated, customized, and generative services. The ability to aid in addressing physical, social and spiritual needs of people up to and through their dying days increased the wellness of low-income elders. Aging was approached with pro-active planning, for all aspects of care and life.

Formal, informal, and virtual senior centers all grew, expanding nutrition and activity opportunities for seniors. Most changed their names to community centers and engaged multiple generations. And senior services were integrated into libraries, schools, churches, cafes, and other settings. As computer games and virtual reality evolved, human service providers fostered senior gaming and networking. Seniors shared and traded services, time and goods in the community. This included providing baby-sitting, tutoring or mentoring kids, and senior assisted living services, in-home care services and light house cleaning.

Beyond sharing or trading services, the culture of giving/contributing grew, along with the recognition of the importance that contributing or giving provides to a person's sense of meaning. This giving and shared activity by seniors decreased social and physical isolation, encouraged meaningful relationships, and enhanced the community.

Aging in place was enhanced with more common use of "granny flats" or ADUs, senior group living and co-housing and smart home features for most seniors. Features of many senior lives and homes included:

- Universal design became widespread in the 2020s; all new developments, multi-unit housing, and many individual homes were accessible.
- Transportation was aided by self-driving car services.

- In-home and in-community food production increased.
- Smart home or phone-linked features play many roles – friend, bookkeeper, secretary, counselor, appliance and home maintenance monitor, and security monitor.
 - Smart homes monitored elders’ health and could track falls and other events. For example, sensors can detect and differentiate a slumping fall from a concussive fall and smart monitoring systems can anticipate falls by identifying changes in gait.
 - Smart hearing aids and language translators translate across languages but also enhance the volume and clarity of words for the hearing-impaired, schedule appointments and communicate with doctors’ offices and arrange transportation.

Human service workers helped define a customized balance of technology and human support based on the need of individuals.

Health care evolved, improving in quality and its success in extending healthy years. Treatments that slowed or reversed diabetes and Alzheimer’s were found. Health care was re-reformed and the single payer system covered most breakthroughs. Much elder health care came to be delivered remotely or in virtual space. Prevention, senior activity and healthier living, enhanced personal contribution and meaning, and the advances in treatment led to healthier elders who delayed the frailty and disability of their final years.

A major elder food program, Meals on Wheels, was cut between 2017 and 2021 but rebounded in the 2020s. Senior nutritional programs evolved through predictive analytics to customize food and services based on the senior’s nutrient needs, encouraging more local food, including self and community food production.

Employment services for the elderly focused on training, often virtual, for jobs not likely to be automated. As people lived better into their mature years, greater longevity led to seniors exploring their second, third, or fourth career opportunity well past their sixties. There was more reskilling of elders, job sharing, and gig economy work, often done remotely or virtually.

With the aging of baby boomers came increased opportunity for elder abuse and neglect. Aging protective services used predictive analytics and integrated data (from health care, police, schools, other human services) to anticipate potential abuse and neglect.

There was greater education for family members around preparing for all aspects of aging, including developing a will, end of life planning, and long-term care and supports. These conversations and legal actions helped eliminate some of the stress that often came with aging and life transitions. Web-based support for this expanded and developed more interactive virtual consultations.

4 Disability Services

Disability, or its impacts were reduced, in part driven by: reductions in drug use, consistent pre-natal care, better genetic screening, slowing or reversal of some chronic diseases and safer and healthier work places and work styles. Yet, despite awareness, disparities in disability levels along racial, ethnic and income lines persisted.

Health care and human services became more integrated, sharing data and developing partnerships across all levels of delivery. Mental and developmental disability screening takes place with pediatric and primary care exams which increased the number of people who sought and received care. Physical and mental services were customized for each person with a disability, and they were better guided through a continuum of care providers, including public agencies and non-profits.

Data integration helped caregivers understand genetic proclivity or environmental promoters of disability among family members and use predictive analytics to optimize the services they provided. By the late 2020s genetic analysis could predict disabilities and in utero testing and gene level repair was available in some countries. Diseases such as sickle cell disease, fragile X disease, retinitis pigmentosa, and others which are due to an abnormal gene, became treatable or preventable. There was also progress in treating conditions caused by gene duplication, such as Down Syndrome. Many of the diseases or conditions causing disability became preventable. And while not yet preventable, additional genetic diseases such as schizophrenia, type 1 diabetes, and other chronic diseases were better treated.

Family-focused and community data combined with data on effectiveness of services and technology allowed more effective priority setting for what services to provide. Hot spotting, or identifying areas of greatest needs and placing resources in these areas, was driven by data analytics.

Predictive and preventive measures worked in combination with remarkable medical and technological advances affecting disabilities. In addition to enhanced mobility from self-driving vehicles, smart home services, and by the mid-2020s direct brain control of limbs for paraplegics, reversal of diabetes and Alzheimer's and vision and hearing restoration were available and covered by Medicare for All. Human service agencies provided some of these services directly and helped families chose among providers or vendors.

Education became more inclusive of those with disabilities. Widespread screening for autism had increased diagnosis rates. A commitment by schools to greater inclusiveness, aided by technology, led the majority of these students to be taught in regular, inclusive classrooms.

Many homes evolved with special smart home technology geared to resident's various needs. These technologies changed the role of human service workers, as they served more in providing oversight. Residents did home food production and used virtual reality. Some called these Freedom Homes. Health care and human service agencies helped support the social enterprises that developed and managed these homes, providing property management, cleaning, home health care aides (equipped with language translation and speech augmentation earpieces), and other services needed. In many communities, the downsizing of families left many large homes open for turning into the Freedom Houses. These were often encouraged in communities where altered zoning and regulations had allowed more density and the neighborhood welcomed the diversity, calmed the expanded traffic, and kept up their value.

4 Behavioral Health

Behavioral health issues and care evolved through the 2020s. Universal access to health care included behavioral care. The societal value shifts toward inclusion and equity were palpable in the 2020s and touched many low-income and marginalized communities – removing some of the social isolation they felt. In parallel with self-sufficiency gains and social value shifts there was an increase in behavioral health literacy that destigmatized receiving behavioral health care. This led to greater acceptance of differences and of people seeking treatment – and being able to talk about it.

Enhanced approaches to identification and prevention emerged. “Behavioral Vaccines,” behavioral interventions that ward off mental health issues, like Good Behavior Games, were developed and deployed. These Behavioral Vaccines had been proven effective in the U.S. and other countries and were widely deployed in the 2020s. Positive and early influence on an entire family prevented some behavioral health problems in children.

The growing power of genomics produced a large knowledge base of associations between genes and the environment, which enabled an explosion of epigenetic research. For some behavioral health conditions that were largely genetic in their origin, in the 2020s effective genetic interventions were proven successful. The Medicare for All system covered or provided these advances. Better understanding of genetics, epigenetics, nutrition, and the social determinants of health led to more effective medical and social prescriptions and better outcomes.

While reduced, many behavioral health issues remained in the 2020s. Unemployment negatively affected many, particularly those who didn't volunteer or otherwise contribute to the community.

Behavioral health providers, employed in health care systems, or practicing independently, became more sensitive and capable. Use of the Harvard Tool for Implicit Bias and similar tools led to more sensitive care, while advances in clinical care, evaluation of that care, and targeting for individuals contributed to higher efficacy of human counselors, as well as the virtual counselors that were widely deployed in the 2020s. Predictive analytics also allowed behavioral health providers to identify individuals and families at risk and reach out to them.

In many communities, a new level of human provider emerged; community health workers (CHWs) deployed by health care providers. These CHWs, often residents of the neighborhood they worked in, met with families in their homes to identify needs and barriers and to reinforce care/counseling given by clinicians or virtual counselors. A few states had grown their pool of community health workers by developing training and certification programs, and by developing the data that showed their use could reduce costs.

Homes for adults with behavioral health issues or disabilities evolved with special smart home technology geared to resident's needs. Residents often did home food production, used virtual reality to relate to other communities and generally, increased self-reliance and independence through technology.

4 Housing

The growing support for equity and inclusion in the U.S. helped neighbors and neighborhoods to be more welcoming of diversity – including low and very-low-income housing, and special needs housing. Federal, state and local policies took advantage of this, building more dense, mixed-income housing with ample very low-income units. State and local regulations changed to allow secondary dwelling units built onto homes or in yards; and to allow more unrelated individuals in housing. Neighbors and local governments worked to have these denser, mixed-income neighborhoods feel neighborly, safe and not lose their market value. During the 2020s these mixed-income neighborhoods reduced concentrations of poverty.

There was more success at moving people towards home ownership. Home ownership by low-income and minority households rose in the 2020s, thanks to the living wage for those with jobs, higher income support payments for those unemployed, increased financial capabilities (checking and savings accounts, improved credit scoring, savings matching programs and down payment assistance) and abundance advances. In 2015 over 70% of whites owned their home, but only just over 40% of blacks did. By 2030, that 30-point gap had been cut in half.

Housing authorities were able to create attainable, mixed use housing in most communities. With rebounded funding, each community could identify how mixed-income and mixed use would best fit into the fabric of their community. Housing for persons with special needs was no longer developed in a way that was obviously 'different'. Rather, there was greater mixed-income, mixed use, and mixed ability housing. Public housing was consciously ecologically integrated into communities, aided by "smart city" planning. Older homes were refurbished, which helped address and avoid blight. This tapped into the historical pride of many communities. And accessory dwelling units added millions of small homes, many of which remained affordable.

Voucher programs were an area of opportunity for increasing housing options and embracing integration. This allowed mixed-income housing in middle and higher income areas. Vouchers and available units increased in the 2020s.

Housing services were well integrated, consumer focused, and used predictive modeling and advanced analytics to anticipate emergency housing and other needs. Most human services agencies used the Arizona Self-sufficiency matrix (or a local variation) for each individual case to assess needs and identify best, case-specific plans of action. Housing services integrated with other areas, such as behavioral health and transportation.

Home repair for the elderly was done to support aging in place, with much of the work done by volunteers coordinated by local agencies or the non-profits they funded. In the 2020s more energy-efficient materials and installation of solar energy and storage were added to the repair work in some communities.

Emergency shelter in cases of abuse or neglect continued to be provided though in some communities, the need periodically exceeded the supply.

Homelessness was reduced. The remaining homeless persons and families received more personal attention and services from local agencies, and there was a greater awareness of the services available, and how to access them. Extreme weather events periodically added to short term homelessness. Local government, churches and other community organizations stepped up when needed to provide emergency shelter.

4 Income Supports

Income support programs became, in the 2020s, more flexible, better coordinated. Personal and family self-sufficiency was aided as abundance advances lowered the costs of living. In the 2020s the work requirements for TANF and other programs were reduced and broader education or training as well as volunteer efforts were allowed. It was recognized that, given the growing structural unemployment, key income supports would not be temporary for many. TANF became AF – Aid to Families. Other policies included: raising the minimum wage to a living wage, pay protections for “gig workers,” increased SNAP and “Savings Match” and down payment assistance programs for first time low-income home buyers.

The EITC was affected by the increase in the minimum wage, rising to \$15 hourly and then to a living wage. This led to cost increases and inflation, disproportionately affecting low-income workers. The federal “poverty level” was adjusted accordingly and incorporated local variations in cost. EITC was amended to apply proportionately to single individuals and childless couples as it had to those with children and its income ceilings were raised. Those who were able to get full time jobs were making the living wage, above the raised EITC level. But millions of workers were part time or doing piece work on the “gig economy” and they remained below the poverty level. EITC applied to these workers. During the 2020s, over 30 states provided state supplements to the federal EITC payments.

SNAP and other nutrition programs rebounded in the 2020s; expanding their incentives to buy fruits and vegetables, particularly from local sources. This reduced food insecurity, as did in-home and in-community food growing.

The regulations for income support programs, both federal and in most states, were adjusted to allow integration of support payments for an individual or family – this allowed both an aggregation of the funds and broader choice on how the funds were spent.

Recommendations Developed from using the Human Progress and Human Service 2035 Scenarios

The Human Progress and Human Services 2035 Scenarios above are the national scenarios updated with input from the eight state and local efforts. Thus, there are nine sets of these scenarios (one national, eight state and local), all available at <http://altfutures.org/projects/human-progress-and-human-services-2035/>. In each of the nine efforts, leaders took part in developing their scenarios and held a Scenario Workshop, where they stepped into alternative futures to explore, imagine, and vision. The national scenarios (presented here) focused on the country as a whole. Each of the state and local scenarios considered the major driving forces nationally and in their community along with their unique challenges and assets. Participants in each of the nine Scenario workshops considered the implications of their four scenarios and what should be done in each, voted on the likelihood and preferability of each scenario, compared the results, considered what insights and actions were “robust” and then developed recommendations. Across the whole process and the nine efforts, 382 human service and community leaders took part in the process. In the workshops, the recommendations focused on the near term (2017 to 2020) and the long term (the 2020s and 2030s).

As noted, at each of the nine Scenario Workshops participants voted on the likelihood and preferability of each of their Human Services 2035 scenarios. On a scale from 0 to 100, participants valued each scenario as totally preferable (100) or not at all (0) and totally likely (100) or not at all likely (0). On average across the nine efforts, Scenario 1 (Expectable) was found to be most likely at 64%. This compares with the likelihood of Scenario 3 and 4 (Visionary) which each averaged 39%. Scenario 2 (Challenging) was found to be somewhat likely at 46%, but very low in preferability at 9%. Both Scenarios 3 and 4 Visionary Scenarios were desirable – 69% and 80% preferable respectively. One lesson from these results is the risk of reinforcing a suboptimal future. Scenario 1 represents the type of forecasts that are often used in strategic planning, but Scenario 1 is not as preferable as either Scenario 3 or 4. Communities are at risk of building their plans solely in reaction to the most likely future.

Below is a synthesis of the recommendations from the nine efforts. The recommendations and next steps in the Scenario Workshop Report from each of the eight state and local efforts were reviewed, coded, compared with the national workshop recommendations and synthesized into the set below. These recommendations focus on the how and what of human services, as well as the other parts of the community ecosystem affecting human need and human services. And they focus on the short term (through 2020) and long term (the 2020s and 2030s). The recommendation development was influenced by the Human Services Value Curve (see Endnote v) that serves as a widely-shared vision for the human services field. Scenarios 3 and 4 consider successful paths to ending or dramatically reducing poverty and achieving greater equity. They include three major assumptions: first, given job loss to automation (see Endnote i) and other transformations in the economy, that a Guaranteed Basic Income (see Endnote iv) or similar increase in income support payments that become permanent; second, that a “mind and heart change” is occurring in values and attitudes that support equity and inclusion (see Endnote vi); and third, that a set of technologies will be put in place and used by low-income families, that lower the cost of living (the abundance advances – including low-cost energy production and storage, home and community 3D printing and food production – See Endnote ii). Some of the recommendations focus on the role of human services in supporting these trends, in ensuring their use by low-income families and in recognizing the need for all “to contribute” whether through paid work or volunteering.

These recommendations provide blueprint for heading to a preferred future for the Human Services field, for equity and human progress. As such they are relevant for policy makers, philanthropy, human service leaders and organizations, and communities to pursue.

Recommendations for Human Services

1. Promote equity in human centered design

- Support universal adoption of human centered design with equity – impacting physical plans, service menus, technology and data use, and human capital
- Engage participants in the design, implementation and evaluation of human services
 - Engage the entire family appropriately when designing service plans; e.g., pursuing job skills for a parent is incomplete without also considering child care
 - Deliver services and programs together with recipients, rather than assuming what recipients need
 - Engage local communities in identifying their main areas of concern and focus, and form partnerships around these
 - Work directly with clients to develop a care plan that uses their individual strengths
 - Recognize and empower the already embedded solutions within communities
- Develop an equity plan or standard to guide policies and services at the state and local level
- Leverage policy change to reinforce cultural and environmental shifts towards greater equity

2. Enhance human service leadership and vision

- Develop the vision capacity of human service leaders and the human services workforce
- Develop shared vision in communities and among human service leaders
 - Recognize this vision as a human capital building strategy
- Recognize and utilize APHSA and other human service and public health organizations with national and local networks to serve as collaborative leaders
- Develop collectives for action, and have human service networks serve as an anchor at the organizational level

3. Change the narrative – build public will and support with a long-term campaign around building well-being

- Tap into momentum and generate a movement to build public will and change the narrative around building well-being
- Develop a new narrative for the country for framing families and communities in America
- Begin to articulate the commonality of people’s needs, regardless of demographic, economic, and other differences
- Foster dialogue about equity and inclusion as a part of, and essential to, more inclusive and proactive services
- Showcase how public sector agencies and community-based organizations help unleash human potential and build well-being
- Engage a citizen’s movement around reclaiming and changing the narrative while also building well-being
- Create new platforms, utilizing social media and other mediums, for this movement to come together
 - Partner with the tech industry to use virtual reality as the means to develop a collection of experiences of community members that provide compelling stories of how human services unlock human potential and build well-being
- Use place-based strategies across the country, with national and local networks communicating with one another on strategies and successes
 - Communities hold potential and their own solutions; human service leaders should listen and tap into these movements for bottom-up plans

4. Focus on Financing Capabilities and Models

- Personal/family finance and capabilities
 - Assess financial needs and products with the lens of human centered design and equity, with an emphasis on addressing inherent structural inequities impacting race
 - Show savings that result from access to and use of creative finance
 - Integrate financial capability enhancement into human services
 - Increase wealth equity by:
 - Committing to cutting racial disparities in home ownership in half
 - Promoting home ownership
 - Change credit scoring to be less discriminatory, lessen impact of job loss and part time or variable time employment
 - Develop a down payment savings match program
 - Community/State/Federal Budgeting
 - Enable communities to budget holistically and flexibly, looking upstream and across programs, with an equity lens
 - Consider developing an “ultimate block grant” that merges funding across systems and streams as an opportunity to better hold systems and organizations accountable to the people they serve

5. Recognize the fundamental role safe and stable housing plays in health and well-being

- Use policies, regulations and funding to increase the supply and support of attainable housing
- Develop housing with both equity and smart development to enrich neighborhood diversity and inclusion; foster multiple approaches including increased voucher use, accessory dwelling use, and public housing; build and create more mixed-income/mixed generational housing and neighborhoods
- Reinforce equity and inclusion in communities to shift from NIMBY (Not In My Backyard) to YIMBY (Yes In My Backyard)
- Ensure safe neighborhoods and develop family stability first to then enable education, workforce and career development
- Enable families to become more self-sufficient through self-production and community co-production of energy, food, home goods and services

6. Anticipate Changing Job Realities, Workforce Development and “Making a Contribution”

- Be proactive and flexible in evolving along with changing work, workforce and workforce development, and contributing apart from paid work
- Anticipate job loss to automation; focus on job training for jobs and work that won’t be automated and newly created jobs
- Create more apprenticeships and entrepreneurial programs; ensure better remote access to job experiences
- Strategize with the business community; focus on vocational training and balancing hard and soft skills; prepare for “gig work” as well as new jobs
- Engage local Chambers of Commerce to serve as champions of community and business development at the local level
- As job loss increases, especially if a Guaranteed Basic Income or other enhanced income supports are put in place, enhance people’s ability to contribute apart from paid work
 - This involves both recognizing the need to make a contribution, and training for the specific tasks (e.g. child or elder care; food production; community volunteering)

7. Enhance Technology and Strategic Capacities

- Utilize technology and influence technology development to support connection, equity and enhanced services to:
 - Engage the human services community and our partners in other parts of the country or world to share best practices and experiences
 - Anticipate automation and its impact on jobs in the community and the impact on human service needs and delivery
 - Automate human services, as appropriate, to enhance services, achieve greater equity and outcomes, optimize personal and virtual care
 - Use technology for enhanced community engagement and to enhance social health rather than isolation
 - Influence the application of AI, automation and technology to benefit low-income individuals and families – e.g. appropriate use of virtual counselors; language translation; hearing enhancement; virtual home visitations
- Do Data Integration and Predictive Analytics Right
 - Ensure that privacy and discrimination protections are in place that enables sharing across community organizations and agencies (e.g. human services, health care, police and education)
 - Develop predictive analytics that can support prevention and more effective services without profiling and discrimination
 - Build ecosystems that support evidence-informed, outcome-driven service
 - Use data and technology tools to map and identify strengths and opportunities for increased collaboration
 - Incorporate participants’ perspectives
 - Tap into emotional intelligence and humanize the work while continuing the strategic use of data
- Promote effective use of abundance advances
 - As technology evolves for low-cost energy and storage, home and community food production, local manufacturing/ 3D printing of home goods, support the evolution of this technology that lowers the cost of living for low-income families
 - Encourage/develop technology applications for low-income communities
 - Ensure that individuals and families are trained in their use
 - Provide regulations and incentives as needed (e.g. incentives and regulations for landlords to install low-cost solar energy and storage and for energy utilities to support in-home and in-community production and storage)

Appendix - Acknowledgements

National Advisory Committee

Uma Ahluwalia

Director
Montgomery County Department of
Health and Human Services

Nancy Andrews

President and CEO
Low-income Investment Fund (LIIF)

Reginald Gordon

Director
Richmond Office of Community
Wealth Building

Roderick Bremby

Commissioner
Connecticut Department of Social Services

Molly Cox

President / CEO
SA 2020

John Davis

Executive Director
Mississippi Department of Human Services

Susan Dreyfus

President and CEO
Alliance for Strong Families and Communities

Tracy Wareing Evans

Executive Director
American Public Human Services Association

Adolph P. Falcón

Senior Vice President
National Alliance for Hispanic Health

Rosanne Haggerty

President / CEO
Community Solutions

Lynne Johnson

Executive Director
Jefferson County Department of Human
Services

Irv Katz

Founder
Civic Sector Strategies

Nick Macchione

Director
San Diego County Health and Human
Services Agency

Mauricio Lim Miller

Founder, President and CEO
Family Independent Initiative

Antonio Manuel Oftelie

Fellow
Harvard University (SEAS)

Kenneth Robinson

President / CEO
United Way of the Mid-South

State and Local Human Progress and Human Services 2035 Efforts and Conveners

Memphis, TN – United Way of the Mid-South,
President / CEO Kenneth Robinson

San Antonio, TX – SA2020,
President / CEO Molly Cox

Richmond, VA – Office of Community Wealth Building,
Director Reginald Gordon

Montgomery County, MD – Department of Health
and Human Services,
Director Uma Ahluwalia

Jefferson County, CO – Department of Human Services,
Executive Director Lynne Johnson

San Diego County, CA – Health and Human
Services Agency,
Director, Nick Macchione

Connecticut – Department of Social Services,
Commissioner Roderick Bremby

Mississippi – Department of Human Services,
Executive Director John Davis

Human Service Leaders National Workshop Participants

Uma Ahluwalia, Montgomery County Department of Human Services, Director

Sandy Ambrozy, The Kresge Foundation, Senior Program Officer of Human Services

Susan Dreyfus, Alliance for Strong Families and Communities, President and CEO

Tracy Wareing Evans, American Public Human Services Association, Executive Director

Astread Ferron-Poole, Connecticut Department of Social Services, Chief of Staff

Lynnae Flora, Jefferson County Human Services, Deputy Director

Adolph Falcón, Senior Vice President National Alliance for Hispanic Health

David Fukuzawa, The Kresge Foundation, Managing Director of Health and Human Services

Reggie Gordon, City of Richmond Office of Community Wealth Building, Director

John Grossman, Third Sector Capital Partners, Managing Director and General Counsel

Rosanne Haggerty, Community Solutions, President

Raquel Hatter, The Kresge Foundation, Deputy Director of Human Services

Christina Karas, The Kresge Foundation, Communications Officer

Irv Katz, Civic Sector Strategies, Founder

Andrea Levere, Corporation for Enterprise Development, President

Nick Macchione, County of San Diego Health and Human Services Agency, Director

Ann Mosle, Ascend, Executive Director

Kenneth Robinson, United Way of the Mid-South, Director

Jodi Sandfort, University of Minnesota, Professor and Academic Director

Michael Shaw, The Kresge Foundation, Program Office of Human Services

Katya Fels Smyth, Full Frame Initiative, Founder and CEO

Human Service Leaders National Workshop Technical Advisor

Mishaela Duran, HHS/ACF Office of Regional Operations, Director

IAF Staff

Clement Bezold
Chairman and Senior Futurist

Mary Carenbauer
Futurist

Jonathan Peck
President and Senior Futurist

Robert Olson
Senior Fellow

Sandra Tinter
Executive Assistant

Ellen Lovelidge, Visual Insight
Infographic Developer

Linda McCulloch, Design That Works
Communications Inc.
Report Designer

Endnotes

i Job loss to automation

Job loss to automation and cognitive computing will have a major impact on the economy, family income, and the need for human services in the years ahead. We believe this has been happening and it will eliminate more jobs through the 2020s. As with past disruptions of this type, new jobs will be created. Some of these new jobs are identified in the sources below. And there will be teaming of AI and human workers. Yet overall, the number of new jobs created is likely to be far fewer than the jobs lost.

For this report, we have used the Forrester estimate of a net loss, by 2025, of 7% of U.S. jobs (see first bullet below). And we assume that net job loss will accelerate in the later 2020s and 2030s. We have worked with human service experts to apply and check forecasts for specific human service jobs as well. Below are highlights of the forecasts that indicate the range from which we developed the forecasts we are using in our scenarios.

- Forrester forecasts in the report “The Future of White-Collar Work: Sharing Your Cubicle With Robots” that cognitive technologies such as robots, artificial intelligence (AI), machine learning, and automation will replace 22.7 million (or 16%) of U.S. jobs, while 13.6 million will be created — a net loss of 7% of U.S. jobs by 2025. Office and administrative support staff will be the most rapidly disrupted. Newly created jobs will include robot monitoring professionals, data scientists, automation specialists, and content curators. Forrester Research. (2017). *The Future Of Jobs, 2027: Working Side By Side With Robots*. As cited in Schiller, B. (2015, August). *Robots Will Take Your Job, But First They’ll Be Your Annoying Coworker*. Retrieved from <https://www.fastcompany.com/3050428/robots-will-take-your-job-but-first-theyll-be-your-annoying-co-worker>.
- Within five years (of 2016), robots and intelligent agents will eliminate many positions in customer service, trucking and taxi services, amounting to 6 percent of jobs, according to a Forrester report. “By 2021, a disruptive tidal wave will begin,” said Brian Hopkins, VP at Forrester Research. “Solutions powered by AI/cognitive technology will displace jobs, with the biggest impact felt in transportation, logistics, customer service, and consumer services.” Taylor, H. (2016, September). *AI will eliminate 6 percent of jobs in five years, says report*. Retrieved from <http://www.cnbc.com/2016/09/12/ai-will-eliminate-six-percent-of-jobs-in-five-years-says-report.html>.
- McKinsey Global focuses on probability of tasks within occupations being automated and determined that 49% of time spent on tasks could be automated with current technologies, but only 5% of total jobs could be automated away in the report by McKinsey Global (2017). *A Future that Works: Automation, Employment, and Productivity; Harnessing Automation for a future that works*. Retrieved from <http://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works>.
- An OECD policy brief forecasts that an average of 9% of U.S. jobs (13 million) are at high risk for automation; these are jobs for which 70% of the tasks could be automated. OECD (2016). *Policy Brief on the Future of Work: Automation and Independent Work in a Digital Age*. Retrieved from <https://www.oecd.org/els/emp/Policy%20brief%20-%20Automation%20and%20Independent%20Work%20in%20a%20Digital%20Economy.pdf>.

- A study by the UK office of PWC analyzed the workforce in several countries. In terms of specific sectors, it found different degrees of risk for automation. The following economic sectors have varying probabilities of automation, represented as a percentage: transportation and storage (56%), manufacturing (46%) and wholesale and retail (44%), but lower in sectors like health and social work (17%). Overall, the U.S. jobs at high risk of automation by the early 2030s was 38%.
- PriceWaterhouseCooper. (2017). Will robots steal our jobs? The potential impact of automation on the UK and other major economies. PWC UK Economic Outlook. Retrieved from <https://www.pwc.co.uk/economic-services/ukeo/pwcukeyo-section-4-automation-march-2017-v2.pdf>.
Nelson, E. (2017, March). Why Americans have a higher risk of automation than jobs in Germany, the UK, and Japan. Retrieved from <https://qz.com/941163/pwc-study-automation-risk-is-higher-for-american-jobs-than-for-workers-in-germany-the-uk-and-japan/>.
- One of the most cited studies is from Oxford University researchers Frey and Osborne. They project about 47% of total U.S. employment is at risk for automation by 2030.
Frey, C., & Osborne, M. (2017). The future of employment: How susceptible are jobs to computerization?. *Technological Forecasting and Social Change*, 114, 254-280. Available at http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf.
- The Bain & Company 2018 report “Labor 2030: The Collision of Demographics, Automation and Inequality” states that “In the U.S., a new wave of investment in automation could stimulate as much as \$8 trillion in incremental investments and abruptly lift interest rates. By the end of the 2020s, automation may eliminate 20% to 25% of current jobs, hitting middle- to low-income workers the hardest. The study estimates an average annual displacement of 2.5 million workers from 2020 onward over the next 10 to 20 years. Bain & Company. (2018). *Labor 2030: The Collision of Demographics, Automation and Inequality*. Bain. Retrieved from <http://www.bain.com/publications/articles/labor-2030-the-collision-of-demographics-automation-and-inequality.aspx>.

New Jobs Created

While there will be a net loss of positions, technology will create new jobs.

- The number and types of jobs projected span a wide range. Forrester forecasts that by 2027, there will 14.9 million jobs created (although there will be a loss of 24.7 million jobs in the same period). New jobs will be created in software, engineering, design, maintenance, support, training, and other specific areas.
Forrester Research. (2017). Forrester Predicts Automation Will Displace 24.7 Million Jobs and Add 14.9 Million Jobs by 2027. Retrieved from <https://www.forrester.com/Forrester+Predicts+Automation+Will+Displace+247+Million+Jobs+And+Add+149+Million+Jobs+By+2027/-/E-PRE9745>; Cited in Passy, J. (2017). This is how many U.S. jobs robots will create over the next 10 years. Retrieved from <https://www.marketwatch.com/story/this-is-how-many-us-jobs-robots-and-automation-will-create-over-the-next-10-years-2017-04-04>.
- Types of jobs created include robot monitoring professionals, data scientists, automation specialists, and content curators. Many new jobs will be in the fields of software, engineering, design, maintenance, support and training. Other future jobs include avatar designers, synthetic acting casting agents, roboticists, fluid interface engineers and programmable surface designers.
- There are several main AI technologies which are advancing and may change business operations. These include: natural language generation, speech recognition, virtual agents, machine learning platforms, AI optimized hardware, deep learning platforms, semantic technology, biometrics, image and video analysis, and robotic process automation. These technologies may replace positions or they may supplement tasks within positions.
Press, G. (2017 January). Top 10 Hot Artificial Intelligence (AI) Technologies. Retrieved from <https://www.forbes.com/sites/gilpress/2017/01/23/top-10-hot-artificial-intelligence-ai-technologies/#445a6afa1928>.

- There are many projections about the future of work evolving through robots and humans working together across various sectors. For example, established and traditional jobs may need additional skills to monitor the interactions between humans and robots, such as newly specialized lawyers and new human resources positions to guide staff as robots enter the workplace.
- It is projected that by 2020, 20% of businesses will have workers that monitor and guide neural networks. Gartner. (2017). The Disruptive Power of Artificial Intelligence. Retrieved from <https://www.gartner.com/smarterwithgartner/the-disruptive-power-of-artificial-intelligence/>.
- The CEO of IBM asserts that ultimately AI will create jobs – including programmers, developers, and jobs that manage the relationship between AI and humans. Business Insider Intelligence. (2017). IBM CEO says AI and automation will create jobs. Retrieved from <https://www.businessinsider.com/ibm-ceo-says-ai-and-automation-will-create-jobs-2017-1>.

ii Abundance Advances

Technological advancements that could become widely used in the 2020s could lower the cost of living and can support equity and sustainability along with increasing self-sufficiency and helping families and communities meet some of their basic needs. These include technologies for low-cost energy and storage, food production, and 3D printing of home goods, electronics, and even homes. We refer to these as “abundance advances”.

Energy Abundance

A variety of advances in energy production and storage are likely to lower the cost of this basic item. This includes solar, hydrogen, nuclear and even fusion energy. An important aspect of low- cost energy is the potential to transform lives of low-income communities.

Low-cost Solar Energy

Low-cost solar energy production and storage is likely in the 2020s. New solar cell technologies for low-cost production include nantennas, kerovskite and perovskite materials that will likely provide highly effective solar cells.

- Perovskite cells are an efficient photovoltaic technology that have the potential to be produced at low-cost.
- Hybrid perovskite cells may double the efficiency of solar cells, and ultimately lower cost. Purdue University. (2017). Crystalline material could replace silicon to double efficiency of solar cells. Retrieved from <https://www.purdue.edu/newsroom/releases/2017/Q2/crystalline-material-could-replace-silicon-to-double-efficiency-of-solar-cells.html>.
- Perovskite cells for solar energy are being created at the fastest pace in solar energy history. As reported in Solar Magazine, the cells must achieve increased durability and scalability of production to be a widespread use but do hold great potential. Burger, A. (2018). Industrial Chimera or Evolutionary Leap: Perovskite Solar Cells and Cheap, Ubiquitous Solar Energy. Solar Magazine. Retrieved from <https://solarmagazine.com/perovskite-solar-cells-commercialization/>. See also: National Renewable Energy Laboratory. (2018). Perovskite Solar Cells. Retrieved from <https://www.nrel.gov/pv/perovskite-solar-cells.html>.

- Another advancement lowering the cost of solar energy is a new manufacturing process which claims the ability to reduce the cost of silicon wafers, “the platform for a solar power cell”, by half.
Behr, P. (2016). Closing in on a Solar Power Breakthrough. Retrieved from <https://www.eenews.net/stories/1060044628>.
- A breakthrough by University of Cambridge researchers in developing semi-artificial photosynthesis that uses algae to split water into its components of oxygen and hydrogen. This could yield a potent new generation of solar panels capable of producing unlimited amounts of energy, using only sunshine and algae. It could also provide low cost hydrogen for use by fuel cells.
Market Watch (2018). Opinion: This Breakthrough in a type of photosynthesis could provide the world with unlimited energy, <https://www.marketwatch.com/story/this-breakthrough-in-a-type-of-photosynthesis-could-provide-the-world-with-unlimited-energy-2018-09-12?siteid=yhoof2&ypr=yahoo>. Citing Katarzyna Sokol, et. al., Bias-free photoelectrochemical water splitting with photosystem II on a dye-sensitized photoanode wired to hydrogenase, Nature Energy 03 September (2018).
- Other advances include a solar cell designed to be full spectrum with the ability to capture nearly all of the solar spectrum.
George Washington University. Scientists design solar cell that captures nearly all energy of solar spectrum. (2017). Tech Xplore. Retrieved from <https://techxplore.com/news/2017-07-scientists-solar-cell-captures-energy.html>.

Installation and Storage costs for solar are decreasing and are projected to continue to become less expensive.

- Solar and energy storage costs have been declining and are likely to continue to fall. “These declines reflect innovation and benefits from mass production and are welcome signs on the road to greater adoption of renewable energy for electricity” according to J.P. Morgan Chase & Co. (2017). Annual Energy Paper. Retrieved from <https://www.jpmorgan.com/jpmpdf/1320736484665.pdf>.
- As solar energy advances, costs will drop. As reported by the Solar Energy Industry Association (SEIA), from 2010-2017, the cost to install solar energy declined by 70% while solar grew in terms of installation and share of energy capacity across the United States. Labor costs, permitting and installation fees and supply chain costs related to solar likewise declined. SEIA. (2018). Solar Industry Research Data: Solar Industry Growing at a Record Pace. Retrieved from <https://www.seia.org/solar-industry-research-data>.
- As projected by Green Tech Media, prices of solar are projected to continue to decline at the rate of 4.4% for a 27% reduction by 2022. Wesoff, E., & Lacey, S. (2017). Solar Costs are Hitting Jaw-Dropping Lows in Every Region of the World. Retrieved from <https://www.greentechmedia.com/articles/read/solar-costs-are-hitting-jaw-dropping-lows-in-every-region-of-the-world>.
- Storage prices are dropping much faster than anyone expected, due to the growing market for consumer electronics and demand for electric vehicles (EVs). Major players in Asia, Europe, and the United States are all scaling up lithium-ion manufacturing to serve EV and other power applications. No surprise, then, that battery pack costs are down to less than \$230 per kilowatt-hour in 2016, compared with almost \$1,000 per kilowatt-hour in 2010. McKinsey research has found that storage is already economical for many commercial customers to reduce their peak consumption levels. At today’s lower prices, storage is starting to play a broader role in energy markets, moving from niche uses such as grid balancing to broader ones such as replacing conventional power generators for reliability, providing power-quality services, and supporting renewables integration. David Frankel and Amy Wagner. Battery storage: The next disruptive technology in the power sector, McKinsey & Company. Retrieved from: <https://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/battery-storage-the-next-disruptive-technology-in-the-power-sector>.

Fuel Cell, Nuclear, and Other Energy Forms

Other forms of sustainable energy, such as small scale fusion and fuel cell production, may make low-cost energy more available.

- Nuclear fusion power has the potential to produce nearly four times the energy as nuclear fission with very low carbon emission and could provide accessible, clean energy. Tokamak Energy's ST40, was successful in 2017 in achieving first steps toward fusion energy. Developers hope to have a successful power generator by 2025 and be delivering fusion energy to the grid (in the UK) by 2030.
Lant, K. (2017, May 18). Mini Reactors Could Make Affordable Fusion Power a Reality by 2030. Retrieved from <https://futurism.com/mini-reactors-could-make-affordable-fusion-power-a-reality-by-2030/>.
- Small scale fusion is a low-cost form of energy production in which atomic nuclei release energy, capable of powering a small town using a unit the size of a flatbed truck. See 21st Century Tech. (2016). Fusion Reactors Two Steps Closer to Reality. Retrieved from <http://www.21stcentech.com/fusion-reactor-step-closer-reality>.
- Small scale nuclear (fission) power stations are being proposed and in 2018 one developer argued they would be online in 8 years – by 2026. The company, NuScale, is aiming for commercial operations in 2026 for a plant in Utah comprised of a dozen 50-megawatt reactors. Retrieved from Polson, J. (2018, April 10). First Small-Scale Nuclear Reactor May Be Just Eight Years Away. Available at <https://www.bloomberg.com/news/articles/2018-04-10/first-small-scale-nuclear-reactor-may-be-just-eight-years-away>.
- Hydrogen fuel cells have been proposed as a clean source of energy. Though it has been costly to develop the feedstock for hydrogen, recent research published in the Journal of Catalyst has found that ammonia can be used to stimulate hydrogen fuel. Cited in Robitzki, D. (2018, April 30). Cheap Hydrogen Fuel Was a Failed Promise – But its Time May Have Arrived. Retrieved from <https://futurism.com/ammonia-hydrogen-fuel>.
- According to an article published on Energy Central, fuel cell technology will change daily lives in five ways. These are: cleaner vehicles with less or no carbon emission, more reliable power for homes and buildings, enhancing mobile phone charge and design, incorporation into fossil fuel design to bridge the gap with renewables, and freedom from the grid towards independent and individual energy production. Hughes, J. (2016, February 15). Top 5 Ways That Fuel Cells Will Impact the Way We Live in the Future. Retrieved from <https://www.energycentral.com/c/uu/top-5-ways-fuel-cells-will-impact-way-we-live-future>.

3D Printing

3D printing for distributing and manufacturing of goods may disrupt global supply chains and allow local and customized production of goods, often using sustainable and upcycled materials. 3D printing has the potential to impact the lives of low-income communities, including through 3D printing of home goods and even whole homes, transportation aids and vehicles, and prosthetics. Communities can become empowered through low-cost 3D printing, and as 3D printers become more affordable they can be shared and accessed in libraries, community centers or the equivalent of Kinkos stores. Housing for low-income can also be transformed by 3D printing.

- 3D printing can help alleviate poverty in several ways, including housing, argues Ashley Morefield in Borgen Magazine. Engineering constructed 10 single story homes in 24 hours at a cost of \$5,000 each; transport vehicles, starting with mountain bikes have been 3D printed. A Harvard Business Review argued that “with five years (of 2015), one can expect to see fully automated, large-quantity manufacturing systems that are extremely economical” Morefield, A. (2016, October 14). Borgen Magazine, Five Ways 3D Printing Can Help Alleviate Poverty. Retrieved from <http://www.borgenmagazine.com/3d-printing-alleviate-poverty/>.

- 3D printing of homes and multi-unit buildings has already begun. For example, San Francisco based company Apis Cor built an entire small 400 square foot home through 3D printing in 24 hours. However, workers completed touches such as painting and some manual installation.

Moon, M. (2017). A San Francisco startup 3D printed a whole house in 24 hours. Retrieved from <https://www.engadget.com/2017/03/07/apis-cor-3d-printed-house>.

- 3D printed homes are also being manufactured at an economical price. Texas based company ICON in cooperation with New Story created a 650-square foot 3D printed home that costs \$10,000; took 24 hours to complete; and meets the building codes of the City of Austin where it was built. New Story intends to build these in developing countries for a cost of \$4,000.

Resinger, D. (2018, March 12). This Company will 3D Print a House for \$10,000. Retrieved from <http://fortune.com/2018/03/12/sxsw-2018-3d-print-home-icon/>.

Food Abundance

Food insecurity and inability to access healthy foods are common problems for many low-income communities across the nation. This may be challenged further with environmental and economic changes; however, there are technologies that may empower communities to increase self and shared sufficiency and produce nutritious, affordable food.

While conventional agriculture is being challenged by climate change – particularly drought, higher temperatures – but also floods and fires, in-community and in-home food production is growing, both conventional gardening and more high-tech options, such as hydroponics and aeroponics. In addition, 3D printing and cultured meat could change food patterns.

- Advances in food production include aeroponics and hydroponics (growing plants in an air, mist or water environment) to produce nutritious food in large amounts quickly and sustainably. This can be done in urban environments using vertical farms and other techniques. Vertical farming, which grows food usually with hydroponic or aeroponics methods in stacked layers, offers a more sustainable year-round crop production with high yields and climate resiliency. There are employment opportunities including with engineers and workers in maintenance. Then, as automation increases, new jobs will include system analysis and software development positions.

Benke, K. & Tomkins, B. (2017). Future food production systems: vertical farming and controlled-environment agriculture. *Sustainability: Science, Practice and Policy*, 13, 13-26.

- David Rosenburg, CEO of AeroFarms (see more: <http://aerofarms.com/>) is quoted as explaining vertical farming can grow produce in around half the length of time observed in a field, using 95% less water, around 50% less fertilizer, and no herbicides, fungicides, or pesticides.

Brennan, M. & Gralnick, J. (2015). Vertical farming: The Next Big Thing for Food- and Tech. Retrieved from <https://www.cnbc.com/2015/06/24/vertical-farming-the-next-big-thing-for-food-and-tech.html>.

Another area of food abundance is cultured meat, which is progressing in taste and affordability and may become a major sustainable and accessible source of producing protein.

- When lab grown burgers first emerged, they were extremely expensive – and not particularly tasty. In 2013, Mosa Meat produced a cell-cultured beef burger which took months to produce and would have cost \$1.2 million per pound to sell. But, in four years, the price has fallen dramatically. In four years, the price of lab-grown “meat” has fallen by 99% and there’s still a long way to go.

Purdy, C. (2017, June 5). There’s still a long way to go. Retrieved from <https://qz.com/997565/in-four-years-the-price-of-lab-grown-meat-has-fallen-by-96-theres-still-a-long-way-to-go/>.

- Mosa Meat can currently produce meat that costs \$27 to \$45 per pound, and they will enter the market with a premium priced product in five years (thus, around 2021) and that in another five years (around 2026) the prices will be competitive to what people currently pay for beef. The lower competitive price, combined with a convincingly real taste and sensation, and environmental and animal rights motivations, may allow for widespread production and consumption of cultured meat.
Burningham, G. (2016, February 28). Lab-Grown Beef Will Save the Planet – And Be a Billion Dollar Industry. Retrieved from <http://www.newsweek.com/2016/03/11/lab-grown-beef-will-save-planet-and-be-billion-dollar-business-430980.html>.
- Several other companies, including Impossible Foods (see more: <https://www.impossiblefoods.com/>), are producing fully plant-based meats and cheeses. In 2017 the chain Clover Food Lab began selling Impossible Food’s meatballs in a sandwich or platter in its stores. Retrieved from <https://www.cloverfoodlab.com/locations/location/?l=clloverhsq>.
- In 2017, the Futurist Thomas Frey in a review of the emerging sector and the companies involved, forecast that “by 2025 industrial grown meats will become the world’s cheapest food stocks”. The Coming Meat Wars (2017). Retrieved from <https://www.futuristspeaker.com/job-opportunities/the-coming-meat-wars-17-mind-blowing-predictions/>.

Some advocates of cultured meat argue for it as a way to get beyond animal agriculture and its harmful impacts on the environment – contributing to as much as 19% of greenhouse gases. And some are calling it the “clean meat” industry.

- The cattle and beef industry is objecting to the terms cultured meat or clean meat and pressing for regulation to prevent the use of the term “meat”. They succeeded in having the state of Missouri where a bill passed with bi-partisan support that says that only products that are derived from harvested production livestock or poultry (which died by slaughter) can be called meat. From Haridy, R. (2018, May 20). Lab-grown meat not meat according to state of Missouri. New Atlas. Retrieved from <https://newatlas.com/lab-grown-meat-classification-bill-missouri/54687/>.

There will be issues of nutrients, micronutrients, and other issues to be dealt with, but if Thomas Frey’s forecast above is correct, cultured meat could be a major food by the late 2020s.

More Abundance

For a more extensive look at abundance, some entrepreneurs project that technology will advance incredibly rapidly in the upcoming two decades and enable the basic needs of water, food, energy, health and education to be met for every person on the planet.

- Peter Diamandis published his book in 2012: See: Diamandis, P., & Kotler, S. (2012). *Abundance: The Future is Better Than You Think*. New York: Free Press. And has an ongoing monitoring of developments that he and his colleagues report in their weekly “Abundance Insider” blog. <https://www.diamandis.com/blog/topic/abundance-insider>.

And nanotechnology expert K. Eric Drexler, argues that in the 2030s the full flowering of nanotechnology will allow us to do nano-manufacturing of most of our needs at relatively low costs – hence the title of his book: *Radical Abundance*. For example:

- Molecular biology and chemistry will enable many of the items we use daily to be built with atomic precision.
- Transportation, construction, manufacturing, water and food production will become easier to do and so more accessible and beneficial to more people globally.
See: Drexler, K. Eric. (2013). *Radical abundance*. New York: PublicAffairs.

iii Developing low and very low-income housing options

Housing remains a major human need. Housing insecurity brings a series of other needs. Communities around the country are and will use a variety of approaches to increase the stock of low and very low-income housing, including:

- Rezoning to allow secondary living units, typically called accessory dwelling units, attached to or in the yards of existing homes.
- Allowing a higher number of unrelated individuals to live in the same house;
- Encouraging sustainable, energy efficient, low cost construction of new units;
- Fostering neighborhood parking and driving regulations to calm traffic from increased residents;
- Taxing unoccupied homes;
- Prohibiting or taxing AirBnb and related uses of rental properties or taxing that use to provide a fund to make other properties available;
- Require or incentivize landlords to accept housing vouchers;
- In addition to federally funded vouchers, create state or locally funded vouchers;
 - This serves to help alleviate concentrations of poverty by giving voucher holders more options of where to live.
- Tax construction profits to add to the funds for low-income housing development;
- When low-cost solar and other sustainable energy production and storage becomes available, require or incentivize landlords to install this and pass the savings on to renters;
 - Or enable, through loans from utilities or others, to install this equipment; paying the loans off with the energy savings.
- Adjust regulation to support fast construction of safe, sustainable and energy efficient new developments that include very low-income housing;
- Support and encourage alternative construction, including 3D printing of housing components and repurposed materials, using modular and “tiny homes”;
 - Use of local 3D printing of home parts with quick on-site assembly will be available in many communities in the 2020s (see discussion above of developments in 3D home printing).
- Following Los Angeles’ lead, providing cash grants to home owners to build secondary units and agree to rent the units to formerly homeless individuals. Retrieved from <https://la.curbed.com/2017/8/16/16157282/los-angeles-homeless-housing-accessory-dwelling-granny-flat>.
- As the city of Denver demonstrated, where some high-end apartments are vacant, subsidized low to middle income renters moved into the units. (Schiller, B. (2018). Denver’s Solution to Its Housing Crisis: Subsidize Rent for Expensive, Empty Apartments. Retrieved from <https://www.fastcompany.com/40515202/denvers-solution-to-its-housing-crisis-subsidize-rent-for-expensive-empty-apartments>.
- Use various combinations of these approaches to deconcentrate poverty.

iv The Guaranteed Basic Income

The Guaranteed Basic Income (GBI), also called the Universal Basic Income, the Negative Income Tax, the Citizen's Income, and the Basic Income Guarantee has been proposed by conservatives and liberals in the U.S. for decades. Richard Nixon proposed the Negative Income Tax.

- Support by liberals and conservatives offers different rationales. For example, some conservatives favor reduced government spending, eliminating duplicative programs and staff, through an effective way to reduce poverty. Gordon, N. (2014, August 6). The Conservative Case for a Guaranteed Basic Income. Retrieved from <https://www.theatlantic.com/politics/archive/2014/08/why-arent-reformicons-pushing-a-guaranteed-basic-income/375600/>.
- Leading conservative Charles Murray supports basic income to help keep the United States competitive during labor market transformation to robotics and replace the current welfare program. Murray, C. (2016, June 3). A Guaranteed Income for Every American. Retrieved from: <https://www.wsj.com/articles/a-guaranteed-income-for-every-american-1464969586>.
- Basic income is presented as a way to make welfare programs more impactful, challenge ideas of safety nets, adapt to technological change and evolve the relationship between work, income and identity. Flowers, A. (2016, April 25). What Would Happen If We Just Gave People Money? Retrieved from <http://fivethirtyeight.com/features/universal-basic-income>.
- Basic income experiments have occurred, and are currently occurring, across the world. In Canada and Namibia, both of their GBI experiments saw a reduction in poverty and other positive impacts. A program in Canada yielded higher rates of remaining in school, lower rates of hospitalization, and hardly a change in work rates. The amount of money recipients received was determined by need. See Surowiecki, J. (2016). Money For All. The New Yorker. Retrieved from <https://www.newyorker.com/magazine/2016/06/20/why-dont-we-have-universal-basic-income> and Lum, Z. (2014). A Canadian City Once Eliminated Poverty And Nearly Everyone Forgot. The Huffington Post. Retrieved from https://www.huffingtonpost.ca/2014/12/23/mincome-in-dauphin-manitoba_n_6335682.html.

While experiments are occurring around the world, basic income is gaining attention and policy action in the United States.

- Hawaii has become the first state to pass a bill in its State Legislature to study a universal basic income, (UBI) bill HRC89. Hawaii has experienced job declines in their agricultural sector and service jobs being automated. The bill sets up a working group to explore options for a state UBI, involving members from State House and Senate, director of human services, Chamber of Commerce and University of Hawaii's Economic Research Organization. This group will develop policy recommendations. Matthews, D. (2017, June 15). Hawaii is considering creating a universal basic income. Retrieved from <https://www.vox.com/policy-and-politics/2017/6/15/15806870/hawaii-universal-basic-income> and Business Insider. (2017). Hawaii just became the first U.S. state to pass a bill supporting basic income. Retrieved from <http://www.businessinsider.com/hawaii-basic-income-bill-2017-6>.
- Y Combinator, the private investment company that launched Airbnb, did a small pilot test giving a handful of people in Oakland, California between \$1,000 and \$2,000. A larger study with 3,000 people in two states is being planned. Weller, C. (2017, September 21). One of the biggest VCs in Silicon Valley is launching an experiment that will give 3,000 people free money until 2022. Business Insider. Retrieved from <http://www.businessinsider.com/y-combinator-basic-income-test-2017-9>.

- In an effort to boost the economy and support families in poverty, Stockton, California is piloting a basic income program, and will provide participants \$500 each month. The Stockton experiment aims to collect data on how the unconditional money can impact the economic, health and wellbeing aspects of low-income families. Langone A. (2018, April). Why This 27-year-old Mayor is Giving His City's Poorest Residents \$500 a Month – No Strings Attached. Retrieved from <http://time.com/money/5243564/why-this-27-year-old-mayor-is-giving-his-citys-poorest-residents-500-a-month-no-strings-attached/>.

Financing a Basic Income

There are a range of levels at which the GBI has been proposed, e.g. \$10,000 yearly income plus \$3,000 for health insurance (Charles Murray); up to \$32,000 yearly in Switzerland. The level used in Scenario 3 is the \$12,000 yearly for adult citizens and \$4,000 per child proposed by Andrew Stern.

See Stern, A. & Kravitz, L. (2016). *Raising The Floor: How A Universal Basic Income Can Renew Our Economy And Rebuild The American Dream*. 1st ed. New York: Public Affairs. Print.

That is \$12,000 and \$4,000 in 2015 dollars; in Scenario 3 we assume that these figures would be adjusted for inflation, and so would be higher when they begin in the 2020s, and they would grow with inflation after they are established.

Stern argues that the costs of a GBI would be roughly \$3 trillion yearly. An income of \$12,000 for every adult, would cost between \$1.75-\$2.5 trillion in federal funds each year. The \$4,000 for each person under 18 would add another \$296 billion. Stern's book proposed several ways to pay for the UBI. Below is a list of options for funding GBI from Stern and other proponents:

- Ending all or many of the current 126 welfare programs, which cost \$700 billion in government and \$300 billion state government
 - Eliminating food stamps (save \$76 billion), housing assistance (\$49 bil.), and EITC (\$82 bil.)
- Adjusting long term retirement policy for future generations, but not changing Social Security for those who have already been contributing to the system
- Creating a new and more cost effect non-employer based healthcare system
- Some redirection of government spending and taxation
 - Raise revenue by eliminating all or some of the federal governments \$1.2 trillion in tax expenditures; do away with reductions such as investment expenses, preferential treatment of capital gains, foreign taxes, charitable contributions, mortgage interest, and accelerated depreciation.
 - Look at trimming expenditure on the federal budget, such as reducing military budget (current \$600 billion), farm subsidies (\$20 billion), or subsidies to oil and gas companies (\$30+ billion)
- Increased revenue from new sources
 - Consider a value added tax (VAT) of 5 to 10% on the consumption of goods and services, with all revenue funding basic income
- Implement a Financial Transaction Tax (FTT) (also known as the "Robin Hood Tax" and "Tobin Tax") a tax on financial transactions, such as a federal tax on stock sales
- Wealth tax, a levy on the total value of personal assets, including housing and real estate, cash, bank deposits, money funds, stocks, etc.

- Carbon Tax, which at a rate of \$15/ton of CO₂ would bring \$80 billion in annual revenue, or about \$250 per U.S. resident
- A “common goods tax” such as the one placed on oil to fund the Alaska Permanent Fund

√ Human Services Value Curve

In developing these scenarios, we looked for human service visions, or descriptions of their visionary states. One leading contender for the preferred future of the field is the Human Services Value Curve, developed by Harvard’s Technology and Entrepreneurship Center’s Leadership for a Networked World with the American Public Human Services Association (APHSA).

APHSA argues that the desired progression in value can best be described from the point of view of the consumer in this way:

- At the regulative level, consumers receive a specific product or service that is timely, accurate, efficient and easy to understand.
- At the collaborative level, consumers “walk through a single door” and have access to a complete array of products and services that are available “on the shelf.”
- At the integrative level, products and services are combined into packages, and designed and customized with input from the consumer themselves, delivered in the most convenient ways, with the objective of best meeting the consumer’s true needs and driving positive outcomes.
- At the generative level, those providing products and services are joining forces to make the consumer’s overall environment better for them, resulting in value that is broader and more systemic than an individual or family might receive

More information available:

https://aphsa.org/APHSA/Value_Curve_Toolkit/Toolkit__Moving_through_the_Value_Curve_Stage.aspx.

A group of local human service agency leaders within APHSA developed the “local vision” for the human services value curve in terms of what it would include, namely these core components:

- A resolute focus on a person-centered approach to casework and service delivery
- Testing and implementation of innovative evidence-based practices
- Partnering with other organizations and systems across sectors
- An integrated infrastructure, with information technology systems that enable and produce cross-system data; led first by the integrated health and human services information system.
- A workforce of “skilled tradespeople” able to build community well-being— with the competencies to deliver evidence-based practices
- Effective and efficient internal change management processes that enable leaders to continuously improve their organizations
- Accountability processes that clarify outcome measures and quantify impacts, including reduced health care costs, improved health, and greater self-sufficiency.

And these principles guiding human services:

- Solid prevention- and strengths-based orientation
- Two-generation and multi-generation approaches
- Holistic, person-centered, and customized service planning
- Both pre-trauma and trauma-informed strategies
- Sustained attention on fatherhood engagement
- Commitment to defining and tracking of a set of common indicators across all well-being and health domains.

See: A New Pathway Toward Prosperity And Well-Being, A Concept Paper by the National Council of Local Human Service Administrators, May 16, 2016

^{vi} Equity Rising

Equity is a value that has been driving movements for social, political and economic changes in the U.S. and globally that has been growing and becoming more refined in recent decades. It is accompanied by attitudes supporting inclusion and rejecting exclusion. This “equity rising” trend is forecast in Scenarios 3 and 4 of these Human Progress and Human Services 2035 Scenarios to play a significant part of the transformations of policies, local attitudes, and local development.

Equity in this sense, means offering each person what they may need to succeed. This is different from equality, which promotes treating everyone the same. Equity acknowledges that not everyone is equally or fairly positioned in society, which relates to human and social services in understanding how to best distribute and redistribute resources.

- Health equity is a component of equity and the public health community has usefully defined health equity as a “state in which every person has the opportunity to attain his or her full health potential and no one is disadvantaged from achieving this potential because of socioeconomic or environmental conditions”. Source: HCPH Strategic Plan; Adapted from CDC, Promoting Health Equity. (2008). In Harris County Public Health, Health Equity Policy, retrieved from <http://sites.bu.edu/nephtc/files/2017/11/Health-Equity-Policy.pdf>.
- Equity rising reflects society changing its mind about fairness and what is appropriate fairness. This happened with slavery, spanning decades in the 19th century and required a Civil War to accomplish. That was followed by Jim Crow laws, discrimination and lynchings. The Civil Rights Act of 1964 represented society’s mind change on discrimination. Other mind changes include voting rights for women, environmental protections, employment and pay equity, education. More recently the relative rapid protection of LGBTQ rights and gay marriage reflect ongoing changes of mind (and heart). In all of these cases, unfairness has certainly not totally disappeared. But discrimination and other offences are no longer legally acceptable. This equity rising reflects a maturing of thought on the components of opportunity – a recognition of social and economic determinants, including structural racism and exclusion. The growth of this awareness can be traced to many developments in the U.S. and globally.
- One manifestation of these mind changes are visions or statements of goals. Globally the major shared goals developed collectively by the nationals of the world are the Millennium Development Goals for 2015 and their successor Sustainable Development Goals (SDGs). These consciously include equity in calling for elimination of poverty and hunger; gender equality; reduced inequality; quality education, water and sanitation, peace and justice. See: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>.

- In the health arena, the World Health Organization (WHO) in its 1998 restatement of the definition of “health for all” added the commitment to the ethical concepts of equity, solidarity and social justice and a gender perspective, while emphasizing the importance of reducing social and economic inequities in improving health of the whole population. World Health Organization. HEALTH21: An Introduction to the Health for All Policy Framework for the WHO European Region. European Health for All Series; No. 5, page 4. Retrieved from <http://www.euro.who.int/en/publications/abstracts/health21-the-health-for-all-policy-framework-for-the-who-european-region>.

In the U.S., the growing focus on equity was illustrated in the Healthy People Objective for the Nation that set goals for the coming decade. In the late 1990s, the nation set its Healthy People 2010 Objectives for the Nation, including two overarching goals: “increase quality and years of healthy life” and “eliminate health disparities.” For 2020, these goals were amended to say, “achieve health equity, eliminate disparities, and improve the health of all groups.” The draft 2030 overarching goals include “eliminate health disparities, achieve health equity, and attain health literacy to improve the health and well-being of all.”

- The CDC in the 2000s increased its focus on health equity and the social determinants of health. In state and local government equity and health equity offices were created in a large number of jurisdictions. And budgeting and policy making consciously adopted an “equity lens” for determining distribution of services that consider neighborhood disparities in income, infrastructure and other conditions. See more: https://www.cdc.gov/nchs/healthy_people/hp2010.htm.

Equity movements are emerging across the globe and the United States. Many of these movements have specific focuses on race or gender within the larger framework of equity. These are sometimes understood as social justice movements, and are responses to oppression, injustice, inequity or driven by other cultural ideologies for progress.

- Black Lives Matter is a national movement with many local chapters which utilized social media to leverage political advocacy promoting racial justice and action against violence inflicted upon African American communities. Black Lives Matter brought conversations around privilege and race-based violence and oppression into national areas, including political spheres. See more: <https://blacklivesmatter.com/>.
- The “Me Too” movement is a national movement which has gained momentum in supporting survivors of sexual assault and promoting the end of sexual violence. See more: <https://metoomvmt.org/>. Movements for equal pay and equal treatment across genders have also gained national attention, as well as movements which support the rights of all people to be safe and respected in their gender orientation.
- The Dreamers Movement and United We Dream movements which support immigrant rights have had success in influencing national policy. See more: <https://unitedwedream.org/>.

As with most of these major “mind changes” there are periodic reversals or counter trends. Currently those include increased minority and immigrant hostility, the rise of white nationalism, the election of President Trump and many of the policies of his administration. The forecast of “equity rising” argues that the support for equity, attention to policies and services that ensure opportunity to the excluded, and personal attitudes of inclusion will continue to grow, leading to support for the policy transformations and community inclusion featured in Scenarios 3 and 4.



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