

50

YEAR HISTORY

COMMUNITY SYSTEMS FOUNDATION
1963-2013



BARTON R. BURKHALTER
KAREN B. SCHWARTZ

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INTRODUCTION

CSF: LOOKING AHEAD AT 50

Gary Goldman joined Community Systems Foundation (CSF) in March 2012 to be part of an organization he saw making a difference around the world. His work: sorting through information and creating a narrative around the information CSF collects via articles, web design, dashboard work, and news media.



Goldman, 2010's

“When I came across the work that CSF had accomplished over the last fifty years regarding information technology and design, it was a great fit. Based on my experience as a student, I was aware that working with raw data was (almost) always the first step in implementing change.” Yet, access to socio-economic information is often limited and difficult to visualize. The software applications that CSF had developed made it easy and convenient for decision-makers around the world to access, browse, visualize, analyze, and share key data.

Goldman works in the organization’s New York office on the cutting edge of CSF’s future. Under the leadership of Kris Oswalt (CSF Trustee and current CEO), he and Chris Dickey (CSF Director of Research and Innovations) work to develop new ideas and projects to empower government organizations, non-profits, and other development actors with their data management and analysis.

Oswalt took a chance on him, Goldman says, letting him oversee the content of its flagship project (DevInfo) content operations shortly after he finished college. Oswalt says, “I admire his ruthless work ethic and commitment to the organization, as well as its people. In less than ten months, he was sent on five missions around the world and he knows there are more great opportunities in store.”



Oswalt, 2010's

Goldman and his cohort are part of the latest wave of expansion for an organization that has been changing people’s lives for the better for five decades.

CSF: THE BEGINNING

Ask Dean Wilson (CSF cofounder, Trustee, staff, University of Michigan Industrial Engineering faculty, and avid farmer) how CSF started and he'll emphatically detail the beginnings of the non-profit organization. It all goes back, he says, to him, Karl Bartscht (CSF cofounder, Trustee, and staff), and Bart Burkhalter (CSF cofounder, Trustee, staff, CEO 1963-73).



Dean Wilson, 2010's

Bart and Karl were two of Dean's graduate students. Dean says, "Bart is a free thinker, a very smart guy and one of the reasons I liked him so much is that he was always thinking beyond what other people would think." Dean recalled Karl as an energetic and self-directed person who had been very active in the hospital work-study program run by the Department of Industrial Engineering with St. Joseph Mercy Hospital in Ann Arbor and some other nearby hospitals, and who then developed hospital staffing methodologies in the Industrial Systems Lab under Dean. "These methodologies were an important technology for CSF," says Dean.



Bartscht, 1960's

Dean thought, "These guys are getting a raw deal; they're paying good money to come to the University of Michigan and they're not learning anything. Maybe we can change things so they learn something useful. Why not start a non-profit and hire these guys?"



Burkhalter, 1960's

So they did. Looking back, Dean says he's worked in 61 countries and become part of a global network focused on doing good. CSF became a school, in the applied sense of the word, and resulted in profit and non-profit spinoffs and many related projects. "I didn't realize it'd be so much fun and I'd learn so much," says Dean.

Many management engineering student projects were done at St. Joseph Mercy Hospital ("St. Joe's") in Ann Arbor before CSF started. And after its start, St. Joe's provided by far the most opportunities for CSF staff and its largest source of funds. Sister Mary Leonette (Administrator of St. Joe's and CSF Trustee) considered St. Joe's the "motherhouse" for CSF and the CSFers who worked there as "her boys." She was tough, but always supportive, and may have contributed more than we know.

BLIZZARD AT ST. JOE'S

The CSF staff who worked at "St. Joe's" had a special relationship with each other and the hospital. One day a huge blizzard kept hospital personnel at home. But many of the CSF management engineers lived nearby and called in friends to help make patient's lives easier that day. They served patients their meals that evening, a special occurrence that made the CSF staff feel closer to the hospital because they usually had no contact with patients.

CSF'S MISSION AND METHODOLOGY

Ever since its inception, on a shoestring budget and the passion of its staff, CSF engaged in designing and installing practical data-driven, decision-making methodologies that have demonstrated the value of their use. Its clients have included hospitals, libraries, municipalities, community planning units, government agencies, international organizations such as the United Nations (UN), and even informal educational entities.

It has been a proving ground for the idea that pro-social applied research can be a rewarding and sustainable professional path. And for many of its participants, it was a source of personal growth and exploration, marked by close friendships and a tight-knit community of incredibly talented individuals with complementary goals.

Fred Goodman (long-time CSF Trustee and University of Michigan Professor) notes that an important part of the organization's mission is to help staff go on to jobs that weren't there before they worked for CSF. For example, some staff went on to top jobs in hospital management, state hospital associations, and hospital consulting firms. Burkhalter expands on Goodman's observation: Not only did CSF enable its staff to work productively in social settings, but it also demonstrated how its analytic and data-driven approaches can increase the performance of local and international communities and institutions, especially when done in close partnership with the communities and institutions themselves. For example, it demonstrated the relevance of management engineering to hospital operations, engaged communities in data-driven research to help them improve child nutrition, and made database construction key to UN-sponsored national and international Millennium Development Goals (MDGs).

Early on, CSF applied for a 501(c)(3) exempt Federal tax status but was denied. In response, the organization retained Ron Gregg (economist and recent graduate of Harvard Law School) to rewrite the application. Gregg described CSF as a sequential learning organization, one that analyzes designs and implements solutions to difficult organizational problems one institution at a time. It then applies the lessons learned from the previous effort to the next organization, always to improve a public charitable organization such as a hospital or local government; therefore CSF was engaged in exempt activity. This carried the day, and the 501(c)(3) exemption was awarded.

The idea of sequential learning was elaborated and applied further at CSF by Don Schon (CSF Trustee, MIT Professor and guru of the Design Thinking movement). Design Thinking identifies particularly difficult problems as “wicked,” using the word to describe highly complex situations whose improvement is best achieved by a sequence of well-designed interventions, each one building on the lessons learned from the one before; that is, learned from the previous intervention aimed at the same problem in the same setting. Wicked problems are usually found where a high degree of technical, social and political factors are interacting, creating a unique setting where “cookie-cutter” solutions derived from standard research techniques are insufficient. CSF’s approach for improving performance via management engineering for community institutions, nutrition planning research for governments and international agencies, and now in data systems for the UN, is a sequential learning methodology for the so-called wicked problems it has addressed. It is a form of Improvement Science; changes designed to improve a very complex situation, not find a “once-and-for-all” solution (Schon, 1983).



Schon, 1990's

As CSF has evolved through these three phases, it has upgraded its technology and, in many cases, led in the development of new technology to address the problems it has encountered. Because the world has become more complex, solutions to more “wicked” problems are required if human development is to be improved. It is likely that future development of CSF’s third phase will require not only more effort to promote open access to data as a public good, but also increased accessibility to this data by local officials in the form of understandable visual presentations of human development data.

The reader should recognize that many of CSF’s activities are programs, not projects, especially in phase one, but also in phases two and three. For example, in phase one the Michigan, Maryland and Connecticut Hospital Management Engineering programs include many projects in different hospitals; well over one hundred in some cases.

TOWARDS A SWEEPING VIEW OF CSF

This history of CSF aims to give the reader a sweeping view of CSF over the past 50 years—it’s innovations, programs, partnerships, successes, leadership, and growing pains. The evolution of CSF naturally falls into three sequential phases:

- 1 The application of management engineering in community institutions
- 2 Nutrition planning and research
- 3 The promotion of open access to data as a public good, especially with international organizations such as the United Nations

MANAGEMENT ENGINEERING IN COMMUNITY INSTITUTIONS

PHASE ONE: 1963-1973

1963-1973

MICHIGAN HOSPITAL MANAGEMENT ENGINEERING



Segall, 2000's

The number of Michigan hospitals served by CSF grew from 13 in 1963-64 to 55 by 1971. Many CSF staff contributed significantly to the growth and good service, with leadership from Bartscht, Pat Ludwig, Matt Steiner, LeRoy Anderson, Jack Segall, and Bob French; as well as other staff who helped to manage this large program, including Rick Braidwood, Keith Crane, Pablo Gonzales, and John Smith. Many key staff from the Michigan hospital program acquired leadership roles for the entire organization: Ludwig as Chairman of the Board, Steiner as CSF's Treasurer, L. Anderson as Vice-President, and Segall as Director of all regional hospital programs. Numerous articles were published (Burkhalter, 1968; Crook, 1964 & 1965; Giancola, 1965; Harris, 1965; Hopp, 1966; Steiner, 1965). Creative work abounded: cost analysis led to an eight-hospital shared laundry in the Saginaw area; a nurse staffing study in Blodgett Hospital found a point of diminishing returns as the number of direct care staff increased; a Surgery Data Profile documenting weekly room utilization (such as number of operations, operating and anesthesia time by week, room, procedure and surgeon) led to more equitable patient charging and reduced hospital cost by a large amount; and a project with Detroit Sinai Hospital, Michigan Blue Cross, and the Commission on Professional and Hospital Activities studied the effect of Continued Care Centers (CCCs) on the cost and care of near-well patients compared to sicker patients in hospitals with and without the CCCs. (The findings were not straightforward; more work was needed to understand the complexities of CCCs at different hospitals.)



Anderson, Burkhalter and Steiner, 1960-1970's

1963-1973

FINANCIAL SURVIVAL

How can a non-profit organization survive with no capital if it hires and pays staff to provide services but is not paid for its services until later? Steiner (Trustee, Treasurer, staff), with advice from Bob Lurie (friend and financial advisor), implemented a tough-minded but effective solution. Steiner was adamant: “No bounced checks.” The lowest paid staff got their paychecks first; if there was cash to pay them; higher paid staff had to wait until more cash came in. Several of the CSF customers who were also Trustees paid early, or even made advances in the beginning days of CSF so that the organization could meet its cash flow needs. But Steiner also believed in cordial communication with bank officers, so he and Burkhalter talked socially with the bank President and Vice-President about CSF’s growing business in hospitals and community institutions. The double-barreled approach paid off, and CSF enjoyed many years of superb banking relations.

1963-1973

UNIVERSITY OF MICHIGAN LIBRARY SYSTEMS ANALYSIS

CSF did management engineering improvement projects for the University of Michigan library, from simple cost studies (cost of reshelving using different approaches) to improvements with more complicated objectives (changing the charge-out period) to a plan for moving one million books (many in circulation) from the graduate to the new undergraduate library. Most of these projects were done by engineering students working part-time for CSF, initially under the direction of Burkhalter, and later under LaVerne Hoag and then M. Carl Drott, all in close coordination with library personnel. Probably CSF’s most valuable contribution to library management was the publication of a first-of-its-kind hardcover book: *Systems Analysis in a University Library* (Burkhalter [Ed.], 1968). Other valuable publications from the program include Drott, 1969, and Burkhalter & Hoag, 1970.

1963-1970

REGIONAL PLANNING AGENCY COMPUTER SIMULATIONS AND INFORMATION SYSTEMS

CSF worked with three regional planning agencies in Lansing, Louisville and Kansas City to develop and implement computer models of land use, population growth, and socio-economic data to help manage the growth of cities in rational ways. Dick Duke (Trustee) was responsible for convincing the planning agencies to take this approach and led the CSF team, while Crane provided the technical expertise to design and implement the computer models in Lansing, which were then applied to Kansas City and Louisville (Crane, 1964).



Crane, 1960's

1966-1968

RESEARCH ON DOCTOR-COMPUTER INTERFACE AND LEGAL ASPECTS OF AUTOMATED MEDICAL RECORDS IN A MULTI-HOSPITAL HOSPITAL COMPUTER SYSTEM

Detroit Macomb Hospital Association, a single corporate entity consisting of two hospitals (Detroit General and South Macomb) many miles apart, received a grant from the U.S. Public Health Service to work with CSF and the Health Law Center. Its purpose: design and implement an automated medical records system that was friendly and useful to doctors, while meeting all the necessary legal and security requirements for medical records. This study laid the groundwork for much of the extensive research that followed on both the legality and usefulness of automated medical records. Segall directed CSF’s part in the study.

1966-1972

MARYLAND HOSPITAL MANAGEMENT ENGINEERING

With the formal endorsement and support of the Hospital Council of Maryland, which became the Maryland Hospital Association in 1968, the number of Maryland hospitals serviced by CSF grew from six in 1966 to 32 by 1971. Ludwig and Vern MacLeod moved to Maryland in 1966 and played key leadership roles in this success.

Rudy Pendall, Executive Director of the Council, and Arnold Kurlander, Administrator of Baltimore Sinai Hospital, joined the CSF Board. This was a huge boost for CSF—innovative and successful programs were done in many Maryland hospitals by CSF, including a package to analyze and increase the number or pre-admission procedures that could be done in outpatient clinics to reduce surgical inpatient time on an outpatient basis prior to admission; and a package that totally restructures rehab care, significantly reducing the cost and time the patient must spend in the rehabilitation center. As in the Michigan Hospital Management Engineering program, numerous articles and reports were published; for example, MacLeod & Vaughan, 1969. The formation of the Maryland Cost Review Commission in 1969 stimulated additional project work for CSF aimed at efficient use of hospital resources. The Maryland program also contracted with three hospitals to perform long-range planning studies to evaluate future market strategies, care programs, and physical plant requirements. The financial boost to CSF was significant. Moreover, Ludwig, MacLeod, and other CSF staff participated in policy discussions for hospitals in the state. After Ludwig moved to the New York State Hospital Association in 1968, MacLeod took over the directorship of CSF in Maryland, receiving important management help from Jim Kuyawa, Dick McCleary, and George Whitlock.



MacLeod, 1960's

THE ORIGINAL TUB FILE

After graduating in industrial engineering from Johns Hopkins University, Jerry Macks found his way from a telephone equipment factory to CSF. “Then along comes CSF to the Hospital Counsel of Maryland, starts a program, and soon needs more help,” Macks says. So after two years in a factory and told by his then-boss that there is no future in hospitals for industrial engineers, he went to work for CSF in 1966. Over five years he worked in multiple hospitals, several days a week at each. His first CSF office was a room used for overnight visitors to the hospital. “We had a small efficiency room and a bathroom with a tub, shower, toilet and sink,” Macks said. “Our office had all these desks crammed into a space that used to have a bed and dresser. We used the bathtub for filing—an original tub file. We didn’t dare use the toilet in that room, because it was part of the office.”

1965-1970

CITY OF ANN ARBOR MANAGEMENT ENGINEERING

As with many institutional management engineering programs, Ann Arbor's program started with projects that had limited objectives, such as to reduce costs or investigate potential areas for improvement. CSF's program had a major impact when the city contemplated the purchase of a computer to implement a voter registration system. The city accepted CFS's recommendation to buy time at a local bank instead, eliminating the voting machines and introducing a more efficient and accurate system. In another project, a police information system simplified incident reporting and produced computer maps of violations by vehicle, individual, type of violation, and date and time of day. Then CSF developed a Planning-Programming-Budgeting-System (PPBS) for the city that linked budgets to services, and provided the city with the means for integrating planning and budgeting. The management engineering program with Ann Arbor was led by Burkhalter initially, and then by Jerry Mader as part of the R&D division of CSF.



Mader, 1960's

1966-1968

INDIANAPOLIS MULTI-HOSPITAL SHARED COMPUTER SYSTEM

Late in 1966, the Indianapolis Hospital Development Association (IHDA) asked CSF to help it develop a shared hospital computer system for Indianapolis area hospitals. CSF accepted and hired three experienced staff to work there: Bob Vaughan (Director), Richard Altman, and L. Anderson. In 1968, IHDA merged with the Indiana Hospital Association, effectively ending the work on the shared computer system for Indianapolis hospitals. But the CSFers took important positions elsewhere in CSF: Altman became the director of the CSF Connecticut hospital program that was about to start; L. Anderson became head of the Michigan hospital program and later of all hospital activities in CSF; Forbes Polliard, who was head of IHDA, moved to Michigan and later formed and headed the Minneapolis CSF office; and Vaughan moved to Maryland to work with CSF.

1968-1973

CONNECTICUT HOSPITAL MANAGEMENT ENGINEERING

In 1968, the Connecticut Hospital Association (CHA) invited CSF to open a management engineering program for all its member institutions (similar to the one in Maryland) from CHA's New Haven office; CSF accepted. Herb Anderson, Executive Director of CHA, joined the Board of CSF, and Altman moved to New Haven to assume directorship of the CSF program. He was later joined by Ted Kelly, Clyde McCollum Jr, and Don Pyle to help him manage the Connecticut program. The program worked with 18 hospitals. In its first year, CSF worked hand-in-glove with hospital personnel to find cost savings. The result: Over \$1.2 million saved. This led to a request from hospital personnel: Would CSF help them increase the quality of each hospital's health care delivery system? Challenging for sure, but this led to many different investigations in search for improvements that would increase quality. Many of the improvements that all agreed should be implemented involved nurse staffing, computerized records, and exam room utilization.



Altman, 1960's

1969-1973

HOSPITAL MANAGEMENT ENGINEERING WITH HOSPITALS AND STATE ASSOCIATIONS IN ME, VT, NH, DE, AND D.C.

With the endorsement of the Maine, New Hampshire, and Vermont Hospital Associations, CSF opened programs in each, managed from the Connecticut program. Dick Friedland was director of the New Hampshire program and D'Anne Schick of the Maine program, both reporting to Altman. The local Blue Cross provided partial financial support in all three states to supplement the in-depth hospital management engineering programs, especially to implement state-wide training programs in hospital management engineering. CSF implemented hospital management engineering programs in the District of Columbia and the State of Delaware, with support from the Hospital Council of the National Capital Area and the Delaware Hospital Association. Unlike the programs in New England, CSF activities in both D.C. and Delaware were managed from the Maryland CSF office. The six D.C. hospitals receiving CSF services focused primarily on the Nursing Quality Control package CSF had developed and tested.

1963-1973

INFORMATION DISSEMINATION

CSF Reports

By the end of 1972, CSF had produced over 1,200 reports and publications describing their work on a wide variety of topics, in many different community institutions (hospitals and others), and by many authors from CSF (often in cooperation with staff from the institutions CSF serviced). In his role as Associate Director, Polliard organized these reports, gave a complete set to all CSF state programs, and advertised the complete listing in the 1970-71 and 1971-72 CSF Annual Reports so that anyone could obtain copies of what they needed.

Consumers Union

A different approach emerged in CSF's information project with Consumers Union. Largely as a result of Gordon Barhydt's work, CSF coordinated with Consumers Union to enable potential buyers to estimate air conditioning BTU requirements and life insurance needs as part of their purchase decision.

1966-1973

HOSPITAL STAFFING METHODOLOGIES

The Hospital Staffing Methodologies are workbooks that enable a hospital department to estimate the number of staff needed for a given workload based on demand and equipment. They were developed by the University of Michigan with a grant from the U.S. Public Health Service, under the direction of Bartscht. Staffing methodologies were developed for admitting, dietary, housekeeping, laundry, medical records, pharmacy, and radiology. (See References for a complete list of titles.) In the 12-month period June 1968 to May 1969, CSF distributed 474 methodologies throughout the country, and developed Methodology Tutoring Sessions used widely. The methodologies were an extremely important technology that had a profound effect on rationalizing hospital staffing (Bartscht, 1967; Bartscht, French & Gonzales, 1968).

1969-1973

CONNECTICUT HOSPITAL INCENTIVE REIMBURSEMENT EXPERIMENT

At the time of this study, the Social Security Administration paid most hospital costs and therefore reaped most of the financial benefits if hospitals cut their costs. The Connecticut Hospital Incentive Reimbursement study attempted to discover if more of the cost reduction was given to the hospital, would more cost reduction occur? Not an unreasonable hypothesis. CSF, the Connecticut Hospital Association, and the Department of Hospital Administration at the University of Michigan received funds from the Social Security Administration and Connecticut Blue Cross to test this hypothesis. Simply stated, CSF's contribution was the scientifically prepared budgets at the department level that the budget approval Boards of hospital personnel used to establish target costs. The study compared cost reduction in 18 Connecticut program hospitals to cost reduction in the comparison hospitals. Unexpectedly, no difference was found between the two groups. The researchers hypothesized that since the cost reductions were being made at the departmental and service level (not the hospital level), then the financial incentive should also be at the departmental and service level.

1969-1972

MINNEAPOLIS CSF OFFICE: HOSPITAL MANAGEMENT ENGINEERING SERVICES

CSF established a Minneapolis office under Polliard to provide management engineering services to hospitals in upper mid-west states. After two to three years they had worked with 16 hospitals, including Colorado (1), Illinois (3), Iowa (2), Minnesota (5), Missouri (1), North Dakota (2), and Wisconsin (2).

1966-1972

STAFFING AND SCHEDULING IN NURSING AND SURGERY

Staffing and scheduling of nurses and surgical facilities are highly related. This developed into a major topic of expertise for CSF's hospital management engineering programs. In Maryland, 17 hospitals participated in a joint CSF nursing utilization study that resulted in better nursing manpower forecasts and better nurse staffing in surgical units, as well

as analyzed the effect of alternative nursing patient care and staffing procedures. In Connecticut, five hospitals adopted the CSF Nurse Utilization Package. CSF's Nurse Staffing and Scheduling Package enabled hospital managers to see the effects of a new service (such as a cobalt or hemodialysis unit) on nurse staffing and scheduling in a matter of days. The package was expanded to include quality measurements. As with most of the CSF proposed improvements, the success of both nursing packages depended on the active participation of nursing managers to articulate the hospital's nursing philosophy, as well as in the study design, process, and implementation.

1966-1970

RESEARCH AND DEVELOPMENT IN HEALTH CARE AND COMMUNITY INSTITUTIONS

CSF consolidated most of its health research and community institution consulting in one division under the leadership of Bartscht in 1966. The new division included, among other activities:

- Doctor-computer interface and legal aspects of automated medical records
- Burn unit research
- State-of-the-art reviews for Secretary of the Health, Education and Welfare (HEW) Committee on hospital effectiveness
- The Michigan Heart Association study
- Behavioral approaches to training
- Municipal studies and housing managers training for the City of Ann Arbor

1966-1970

UNIVERSITY OF MICHIGAN HOSPITAL BURN UNIT RESEARCH

The University of Michigan School of Medicine obtained funding from the U.S. Public Health Service to design a model burn unit. CSF's role, with the leadership of Bartscht and Crane, was to computerize procedures and help analyze outcomes of care for the many types of burn cases and treatment options. This research produced the first realistic information on the scope of the burn problem in the country, and provided a major advance for the design of effective burn units in the U.S.

1967-1968

STATE-OF-THE-ART REVIEWS FOR THE SECRETARY OF THE HEALTH, EDUCATION AND WELFARE'S (HEW) COMMITTEE ON HOSPITAL EFFECTIVENESS

CSF won a contract to prepare 13 state-of-the-art review papers for the Health, Education and Welfare (HEW) Committee. Bartscht served as a member of the HEW committee; Gregg and Dick Grimes wrote most of the papers, along with Bartscht. Some of the papers included:

- *Tax Structure and Tax Policies Affecting the Health Care Industry*
- *Shared Hospital Services*
- *Automation and New Technology – Contributions to Hospital Effectiveness*
- *Role of the Hospital in the Community*
- *Prototypes of Hospitals of Different Sizes and Different Locations*
- *Discrimination and Its Effect on Hospital Effectiveness*

1969-1970

MICHIGAN HEART ASSOCIATION

The Board of the Michigan Heart Association (MHA) retained CSF to review its entire community service and educational program, except for its program in cardiovascular disease. Using in-depth interviewing and document review, it became clear that MHA volunteers and staff were extremely proficient at identifying problems and suggesting ways to solve them, due largely to the voluntary nature of MHA. Furthermore, numerous highly-regarded volunteers with expert knowledge about particular issues made proposals that were rarely challenged even though they may not have included measurable objectives, adequate financial resources, nor plans for rigorous evaluations. Financial and staff resources were insufficient to carry out all of these programs. CSF proposed that the MHA Board adopt a formal procedure for all proposed projects that includes a mission statement, a problem definition, specific selection criteria, an implementation plan, evaluation, and widespread application.



Gregg, 1970's

1970-1972

CREATING A NEW BREED OF PUBLIC HOUSING MANAGERS

The State of Michigan initiated a novel low-income housing program that provided government insured loans to local housing developers. CSF collaborated with the Institute of Social Research (University of Michigan) and the Michigan State Housing Development Authority to develop a unique management training program that altered the job descriptions of government subsidized housing managers. The new breed became more than rent collectors and plumbers; they functioned as community developers seeking to improve the quality of life of the residents. The program's first result: 25 trained managers with backgrounds reflecting the residents—60% African-American, 30-60 years old, with previous jobs ranging from ministers to factory workers. This profound shift in focus to include government management training was led by Mader (Director, CSF Municipal programs) and Andy Arizala.

1970-1975+

COMMUNITY SYSTEMS FOUNDATION (AUSTRALASIA)

In 1969, Peter Cabban, a highly regarded Australian hospital consultant, made a study tour of the U.S. primarily to learn about the Hospital Staffing Methodologies. In Ann Arbor, he decided that the entire spectrum of technologies and services provided by CSF far surpassed the staffing methodologies. This resulted in the decision to establish a CSF affiliate in Australia. Community Systems Foundation (Australasia) was conceived to provide management engineering to hospitals in Australia, New Zealand, and Papua New Guinea. Burkhalter traveled to Australia to secure the decision and help start the new organization, which flourished under Cabban's leadership.



Cabban, 1970's

KANGAROOS

A Burkhalter visit to Australia helped launch CSF(Australasia). During the visit, Cabban and Burkhalter met with the Deputy Head of the Victoria Hospital and Charities Commission, Bob Thomas, at Thomas' club for lunch. Afterward he asked if they would like to see the kangaroos that roamed the golf course. "Of course" was the response. But Thomas warned they each must carry a golf club. "Why, are the kangaroos dangerous?" "No" said Thomas, "the opposite; they are used to people carrying a golf club, but if you don't have one they get nervous and run away."

1963-1973

TRAINING

Technical Training

The CSF hospital management engineering and urban housing programs undertook numerous training programs:

- 1 A management engineering student training program that incorporated 24 university students from seven universities into its hospital management engineering activities by 1986.
- 2 One-on-one tutoring sessions and a day-long group training in the use of various hospital staffing methodologies and other programs, including the nurse staffing and scheduling program, the Michigan staffing methodologies, and the surgery data profile.
- 3 The municipal housing managers training described in Phase One.
- 4 Programmed instruction for hospital scrub technicians and surgical technicians, and administrative aspects needed by hospital maintenance engineers.
- 5 Work simplification courses for hospital employees.
- 6 Training urban planners in computer use.
- 7 Developed training programs to modify behavior rather than knowledge (Wallace, 1968).

Simulation and Policy Negotiations

- 1 Duke started the Urban Simulation Lab at the University of Michigan, initially drawing on the CSF experience with population and land use models in Lansing, Kansas City, and Louisville. The idea was to involve regional planners in a simulation based on data about their own community.
- 2 Policy Negotiations (designed by Goodman) is deceptively simple. Designed as a so-called “frame game,” originally to address school board issues, it is easily modified to other institutions, communities, and issues because the participants in Policy Negotiations ultimately redefine the community’s or institution’s own goals. For example, participants in the



Goodman, 2010's

initial application of Policy Negotiation at the Local Government Operational Research Unit (LGORU) in the U.K first “played” Policy Negotiations in the “getting started” mode as U.S. school boards, but then were to redefine the players and objectives to fit what they felt was the situation they faced in the U.K. This would involve changing the agenda, making all players vulnerable in some way, but with influence. The LGORU application also led to many issues being postponed, a large element of chance, and estimates of the importance of a player’s influence and prestige in getting issues on the agenda or keeping them off. This led to a group rather than one individual hammering out the details of the design in an environment of playful rivalry. In short, the players of this version of Policy Negotiations was to provide the opportunity to totally redesign the situation to fit their notions of reality in U.K. local government, and to redefine the community’s or institution’s own goals.

FLEDGLING INTERNATIONAL ACTIVITIES

Local Government Operational Research Unit (LGORU) in the U.K.

The Local Government Operational Research Unit (LGORU) provides operations research services to local councils (municipalities, counties, schools) in the U.K. similar to management engineering services provided by CSF in the U.S. Ray Ward, director of LGORU, and Burkhalter exchanged visits, followed by exchanges of personnel between the two organizations and sharing of documents. During his sabbatical in London, Goodman had the LGORU staff design and “play” their version of his Policy Negotiations game, an experience that revealed the many objectives of the numerous actors involved in their studies and the political forces influencing LGORU’s studies.

Peace Corps Hospital Maintenance Training in Venezuela

The Center for Hospital Maintenance and Engineering in Venezuela, established by the Pan American Health Organization (PAHO), the UN, and the Venezuela Ministry of Health, asked the Peace Corps and CSF to assist in recruiting skilled personnel who would move to Venezuela and train Venezuelans to provide needed maintenance and engineering services to Venezuelan hospitals. This was accomplished, largely by the leadership of Rik Laird, an ex-Peace Corp volunteer in the Dominican Republic and ex-Peace Corps Director in Venezuela. Probably CSF’s first international project.

1970-1973

SPIN-OFFS: CHI SYSTEMS, OASIS, AND CSF, LTD.

CSF spun off three organizations from 1970 to 1973. First was CHI Systems, which included the health business of the R&D Division. CHI Systems was headed by Bartscht, with support from Steve Gray and financial acumen from Lurie. Second was The OASIS Nonprofit Corporation, which included much of the municipal and housing related activities. OASIS was headed by Mader, with support from Arizala. The housing work proved especially fruitful. Third to spin-off was CSF, Ltd., which assumed all of the hospital activity in several hospital state and regional programs. CSF, Ltd. was led by L. Anderson (President), Steiner (Treasurer), Segall (Regional Hospital Programs Director, including Director of the Michigan program), and the three other Regional Directors: Altman (Connecticut), MacLeod (Maryland) and Polliard (Minneapolis). Although Burkhalter joined CSF, Ltd. when it was formed, he resigned shortly thereafter and returned to CSF after several months.

1963-1973

CSF BOARD OF TRUSTEES AND OFFICERS

CSF was founded in June 1963. For the first two to three months Karl Bartscht served as its CEO. Then he continued his graduate studies and joined the Industrial Systems Lab under Dean Wilson to head the Hospital Staffing Methodology project. Bart Burkhalter returned from overseas in August and became CEO of CSF.

Board of Trustees

Three separate interests served on the Board in Phase One—staff, clients, and scientific/academic experts.

Staff on Board

Karl Bartscht, **Bart Burkhalter**, **Pat Ludwig**, and **Matt Steiner**. (Later in Phase One, Ludwig was Associate Director of the New York State Hospital Association.)

Clients on Board

Sister Leonette and **Malcolm MacCoun** (both Michigan hospital administrators), **Rudy Pendall** (Director of the Hospital Council of Maryland), **Arnold Kurlander** (Maryland hospital administrator), **Herb Anderson** (Executive Vice President, Connecticut Hospital Association), **Forbes Polliard** (Executive Director, Indianapolis Hospital Development Association, until it merged with the Indiana Hospital Association

in 1968, at which time Polliard left Indiana and the CSF Board), **Robert Fryer** (Executive Director, Michigan Municipal League), and **Dick Davidson** who became Executive Vice-President of the Maryland Hospital Association when Pendall retired.

Scientific and academic experts on Board

William Cooper (Dean, School of Urban and Public Affairs, Carnegie-Mellon University), **Bill Drake** (Chair, Ph.D. Program in Urban and Regional Planning, University of Michigan), **Dick Duke** (Director, Environmental Simulation Lab, University of Michigan), **Merrill Flood** (Professor of Mathematics, Mental Health, and Industrial Engineering, University of Michigan; Principal Experimental Scientist, SDC, Santa Monica, CA; Owner/President, Merrill Flood and Associates, Santa Monica, CA), **Fred Goodman** (Professor of Education, University of Michigan), **Ted Newcomb** (Professor of Psychology and Sociology, University of Michigan), **Ken Shouldice** (President, Lake Superior State College), **Gabriel Velazquez-P** (Visiting Professor of Social Medicine, Harvard; Dean, Social Projects, Universidad del Valle, Cali, Colombia) and **Dean Wilson** (Associate Professor; Director of the Industrial Systems Lab, University of Michigan).



Flood (Cb.) and Shouldice, 1960's

Flood was especially successful in his efforts to attract well known and highly regarded scientists to the Board.

NUTRITION PLANNING AND RESEARCH

PHASE TWO: 1970-1997

1970-1979

COMMUNITY NUTRITION AND PLANNING NEAR CALI, COLOMBIA

In 1970, Wilson received a grant from the Rockefeller Foundation that enabled him to join the faculty of the Universidad del Valle in Cali, Colombia. It was the start of CSF's Phase Two. Alberto Leon, Dean of the Engineering School at the Universidad del Valle, had received his Ph.D. at the University of Michigan under Wilson. Gabriel Velasquez-P had been a CSF Trustee for several years and just returned to Cali. Wilson used his Nutrient Flow Model to redefine nutrition problems in the poor



Eckroad 1970's

villages around Cali, thereby enabling the villagers and university faculty to learn about, and possibly even solve, the nutrition problems. Numerous other individuals were involved, including Giovanni Acciarri, James (Kip) Eckroad, Luis Fajardo (faculty at del Valle), and Alberto Pradilla (soon to join WHO). All shared the understanding that managerial hierarchies were not needed; the villagers had to decide for themselves.

Many valuable studies were accomplished in the villages. The village closest to Cali (Candelaria) had received many interventions from the del Valle School of Medicine over the years (health clinic, water, sewer, school feeding, immunizations, home visitation, family education) and, as expected, malnutrition and diarrhea in pre-school children dropped dramatically. But the contributions of the many interventions to the decrease in malnutrition and diarrhea was not well understood and therefore difficult and expensive to reproduce in other villages. The Nutrient Flow Model helped to sort this out. A more remote village (Villa Rica) had high child malnutrition, but the causes were not known. The Nutrient Flow Model suggested the most likely causes and systematic measurements of these causes were taken over the course of a year. Villagers analyzed these with Wilson and other CSFers and faculty from del Valle. Unfortunately, this process did not produce clear cut answers for the villagers. In the third and most remote village (Buenos Aires), different types and amounts of food were fed to rats by the school children to see which rats gained the most weight. This caused the school children to lobby their parents for different diets for themselves at home. In addition to the village-focused interventions, more general issues were addressed, such as the measurement of malnutrition at different ages (Aciccarri et al., 1977).



Fajardo 1970's



Wilson, 1970's

1975-1979

NATIONAL NUTRITION PLANNING AND RESEARCH IN CHILE

Consejo Nacional de Alimentación y Nutrición (CONPAN, the Chilean cabinet-level agency responsible for feeding and nutrition programs), the U.S. Agency for International Development (USAID) in Chile, and CSF collaborated to improve Chilean nutrition programs, with funding from USAID. Wilson took the lead in writing the proposal, with assistance from Burkhalter and colleagues from CONPAN and USAID. The entire project was characterized by very collegial personal relationships among the staff from the three implementing organizations, unencumbered by any sense of hierarchy. CSF staff included Jaime Benavente, Conrado Briceno, Manuel Ogalde, Gloria Quintero, Jose Riumallo and Jorge Weinberger from Chile; and Burkhalter, Eckroad and David Nelson, U.S.



Benavente, 1970-1980's

citizens residing in Chile. Some of the studies and interventions undertaken in the Chile program included a pilot program to increase breastfeeding (Burkhalter & Quintero, 1980; Burkhalter & Marin, 1991), developing a system of recuperation centers throughout the country for severely malnourished infants, and an investigation to improve the national school lunch program.



Briceno and Nelson, 1970's

1976-1979

RESEARCH ON RELATIONSHIP OF PIPED WATER, SEWERS, AND HYGIENE EDUCATION ON INFECTIOUS DISEASE AND NUTRITION IN SANTIAGO SETTLEMENTS

As part of the Chile Nutrition Planning program, CSF and its partner organizations (CONPAN, USAID) carried out a large experimental program on the effect of piped water, sewers, and hygiene education on infectious diseases and malnutrition in Santiago's new settlement slums. Most recent settlers build cheap tarpaper shacks on very small plots of land, usually fronting on dirt roads or trails with no piped water or sewage. A typical such settlement might include 400 families. This experiment was done in two such settlements separated by a large, busy highway. The experimental settlement received one "caseta" for each two families, with each caseta having two toilets connected to one sewage pipe, and two "kitchens" connected to potable water. Thus each caseta had one water pipe and one sewer pipe, but two toilets and two food preparation areas. The non-experimental settlement across the highway had no piped water, sewage or casetas. The study measured the differences between the experimental and non-experimental settlements. The measurement of infectious disease and child malnutrition, and ascribing differences to the two settlement areas proved to be a challenging analysis, particularly in light of the rapid turnover of families in the two areas. But some clear improvements in toilet and food preparation practices in the experimental group were found.

DO CASETAS BUILD HOMES?

A 24-hour study found that residents of the tarpaper shacks in the project settlement zone with casetas were building far more upgraded living structures than the residents of tarpaper shacks in the control zone across a busy highway without casetas. As a result, the Chilean government immediately began to construct such casetas with sewage and piped water in other areas, not because of better health and nutrition, but because it was a cheap way to increase the housing quality.



1976-2001

CHANGE TO CSF “ASSOCIATES” (1978) AND OWNERSHIP OF CSF OFFICES AT 1130 HILL ST, ANN ARBOR

When Drake assumed the CEO position in 1978, he moved to change all CSF staff to CSF Associates and paid them as consultants rather than as salaried employees. This reduced the accounting and administrative burden, and also helped to eliminate hierarchies among the CSFers. The purchase of the 1130 Hill Street house on the edge of the University of Michigan campus in 1976 proved to be an important factor in the functioning of CSF in Phase Two. Faculty, graduate students and clients—especially from overseas—congregated there, and held meetings and work sessions. The office provided an ideal location to carry out the work.



Drake, 1970's

1970-1996

TRAINING

Technical Training at CSF (Australasia)

CSF(A) conducted trainings in executive development, cost containment, new food services, housekeeping, and clerical procedures in hospitals where it did studies. In addition, trainings were provided to hospital staff member understudies, senior nursing administrators, and several Health Commission officers. A program of seminars, workshops and consultation, largely related to nursing, was funded by a grant from the W.K. Kellogg Foundation.

Policy Negotiations

Gene Cheatum and Burkhalter helped the National Association for the Advancement of Colored People (NAACP) apply Policy Negotiations to their New York activities in a workshop in the early 1970s. Not only did the NAACP teams recognize that their objectives were totally different from the education objectives for which Policy Negotiations was originally designed and should be changed to reflect the NAACP objectives, but also that many social and politically motivated participants in the NAACP overall objectives were not even represented in the exercise and needed to be included to formulate any workable solutions.

In the late 1980s, Goodman arranged for Flood to return to Ann Arbor to develop his ideas on alternative definitions of democracy, specifically “dynamic value voting,” which were based on three principles:

- 1 Probability voting instead of majority voting
- 2 Voters expressing their “intra-personal preferences” by means of utility theory
- 3 Voters expressing their “inter-personal preferences”

Briefly, each eligible voter has numerous votes (flotes) that s/he can partition out to different candidates or issues depending on the relative importance s/he assigns to each one, or can save some flotes for use in the next election. The mathematics underlying dynamic probability value voting and flotes are formidable (Flood, 1978). Later, Goodman dropped principle one (probability voting), thereby transforming the model into a Policy Negotiations framework that was more understandable to non-mathematicians. This new application of Policy Negotiations is yet to be tested, but may take Policy Negotiations to a new level of application.

1974-1987

NUTRITION, FEEDING AND MATERNAL AND CHILD HEALTH EVALUATION AND SHORT-TERM CONSULTANCIES IN MANY COUNTRIES

Afghanistan

A short-term CSF consultancy informed donors about conditions in rural Afghanistan so they could make informed decisions about humanitarian assistance (1987).

Bangladesh

CSF reviewed the Food-for-Work monitoring and evaluation system for road construction workers (1984).

Bolivia

- 1 Wilson and other CSFers based in Colombia provided consulting in nutrition, sanitation and related functions needed to build an effective health planning process in Bolivia (1974-75).
- 2 Burkhalter joined an evaluation team funded by the WHO/UNICEF Joint Nutrition Support Program (JNSP) to assess if the goiter control project was being successful and should receive continued funding to increase salt iodization. Iodine deficiencies in pregnant women were severe in Bolivia, and the evaluation concluded that the program should definitely be extended (1985-86). (WHO/UNICEF JNSP, 1987).

Burma

CSF conducted a non-quantified review of the objectives of the Burma nutrition program to clarify the program objectives, and propose activities to meet the objectives similar to the 1982 Dominican Republic (DR) review (1982). (Sahn, Merrill & Pines, 1982).

Central America

The Institute for Nutrition in Central America and Panama (INCAP) asked CSF to help define a novel operations research program for Costa Rica, El Salvador, Guatemala, and Honduras to identify problems and develop criteria for assessing which problems to attack, interventions to apply, and evaluation strategies to determine if the improvements worked. It then developed workshops to teach this approach (1985-88).

Dominican Republic

A non-quantitative review of the DR nutrition program was conducted by CSF to clarify the program objectives and propose activities to meet the objectives (Gall, Eckroad & Stanfield, 1982; CSF, 1978).

Ecuador

CSF worked jointly with Checchi and Co. in Phase One on a study to determine the nutritional needs of children in widely different settings: jungle, mountains, and plains. The second phase, program evaluation and redesign, was funded by the Inter-American Development Bank (1983-86). (Benavente, 1985).

Egypt

CSF cooperated with Catholic Relief Service and Egypt's Nutrition Institute in an assessment of how Egypt could best reduce its dependency on donated food, and document lessons learned in its PL 480 Title II program. The final report (Burkhalter, 1986) observed that the project (NEHCP) had expanded from 534 health centers to 1,400 centers too quickly and well before an evaluation of the program in the initial 534 centers was completed. There was some evidence that the Knowledge, Practice and Attitudes (KAP) scores of nurses increased, but only weak evidence that nutrition KAP scores of mothers improved. In short, the consultancy concluded that the project design was overambitious, and the evaluation plan was unrealistic and under-budgeted. The assessment also concluded that useful parts of the project should be applied to a Child Survival project that followed.

El Salvador

CSF completed an assessment for USAID of nutritional status in El Salvador and its probable causes, based on the Nutrient Flow Model (1977). (Burkhalter & Benavente, 1986). (See *Central America*.)



Burkhalter, 1980's

THE NEW HONDURAS DOCTOR

The analysis of 18 months of data of a Save the Children supplementary feeding program in Honduras revealed an unanticipated change in the nutritional status of new participants to the program midway through the 18 months. No convincing explanation could be found for this change by the analysts sitting in Ann Arbor. Save the Children gave many possible explanations for this change—none of which proved to be correct. What had happened was that the routine rotation of medical doctors by the government brought a new medical doctor to the region. This doctor recognized that the size of the supplement was inadequate to rehabilitate malnourished children so he changed the policy to give the food to those showing signs of moderate malnutrition in hopes that those children would not fall further into serious malnutrition. He proved to be correct.

Guatemala

Working with INCAP and the University Research Co. PRICOR project, CSF helped to prepare revised proposals with an operations research methodology, and organized and conducted seven-day operations research seminars for INCAP staff (1985-87).

Haiti

An analysis of the high malnutrition rate in Haiti was conducted by CSF on how the Haitian PL 480 Title II school feeding could help or hinder this problem (1983-85).

Honduras

A smaller, shorter-term version of the DR review was conducted by CSF (1982). (Stanfield, Eckroad & Sahn, 1978). (See *Central America*.)

India

CSF conducted an evaluation of USAID/India Food-for-Peace program. The aim of this program was to reduce malnutrition via two food interventions: (1) provide short term food to malnourished children, and (2) provide income opportunities for poor families. In child weighing centers (anganwadis) children could receive food supplements, and day care and health services. Most evaluations of the program estimated the pre-post implementation of one or both of the food programs, plus the causal effect of these programs on malnutrition. CSF argued that, instead, a useful evaluation should regularly monitor child nutritional status and how community leaders could analyze the data to discover if the program was working. The two CSF reports describing the program (Miller & Pyle, 1981; Sahn & Pestronk, 1979) focus primarily on a pre-post assessment of the two

INDIA'S BROKEN SCALE

Stopping unannounced at one of Angawati Child Centers, the CSF team found remarkable results ... every single child gained one kilo every month. When asked to borrow the scale to check if it was weighing correctly, the Angawati worker said “Oh! The scale is broken but I was instructed that it was a good thing for a child to gain weight every month.”

food programs, but minimize estimates of the effect of those food programs on malnutrition for several reasons, including the great difficulties in measuring community malnutrition over time, and the many programs going on at the same time as the Food-for-Peace program. An immediate follow-on assessment by CSF identified constraints to success, strategies for resolving conflicting and confused objectives, and issues to address in future evaluations. As a result of this analysis, John Snow Institute (JSI) and CSF proposed a monitoring and evaluation system for the Integrated Child Development System (ICDS) in India (1983-85).

Indonesia

CSF assisted the Government of Indonesia in planning to integrate the Family Planning, Nutrition and Health programs on the Island of Lombok (1981), and in Bali and East Java provinces (1983-86). The so-called “KB-Gizi” evaluation relied primarily on a cross-sectional survey of 4,800 households in 1985, in which a significant positive relationship was found between a mother’s KAP scores and her attendance at child weighings, which in turn was significantly related to a high prevalence of contraception use when controlling for the mother’s education and age.

Madagascar

A CSF study of Madagascar’s Food-for-Peace program determined the manpower, materials, and administrative and technical assistance required for country-wide implementation (1983-84).

Malaysia

CSF’s brief consultancy with the University of Malaysia provided technical assistance in micro-computers for rural primary health care patient records, as well as in research design aimed to improve service delivery in squatter settlements (1987-88).

Mexico

The team that evaluated the Mexico PL 416 Food Program included CSF staff. The evaluation addressed recipient nutrition, family income, distribution, warehousing, shipping, losses, beneficiary selection, monitoring and control, effect on local food production, stability and prices, and inter-organizational cooperation.

Morocco

With funding from USAID, CSF assisted the National Agricultural Research Institute in Morocco to develop more efficient management systems (1987-89).

Nepal

A preliminary study in Nepal was conducted to assist the government and donor agencies develop strategies to improve critical food deficits in certain regions (1983-84). (Fletcher & Sahn, 1984).

Nigeria

This short consultancy produced a report on the value of an information system to monitor the quality of life in Nigeria (Timmons, 1988).

People's Republic of China

As a result of meetings in Ann Arbor in April, 1984 with Chinese scholars from South China Normal University in Guangzhou, CSF visited China to work on a nutrition planning, monitoring and evaluation system (1984).

Papua New Guinea

As a result of a series of visits and intensive field reviews, CSF concluded that a training program for primary health care workers and a system of regionally-based supervisors would do more to improve maternal and child health than anything else (1985-87). (See *CSF[Austrasia]*.)

Philippines

CSF assessed child nutritional status, economic conditions affecting food consumption, and the capacity of the Philippines to assume responsibility for the nutrition programs in the event of a phaseout of PL 480 Title II (1985-87). (Nystuen, Foster, Florencio, Lynch & Monares, 1985). Earlier in 1979, it undertook a smaller, shorter-term version of the DR review (1982).



Nystuen, 2010's

Soloman Islands

In a series of visits and intensive field reviews, CSF concluded that a popular (but partially completed) water and sanitation program could be turned into a short-term diarrhea control effort with Oral Rehydration Therapy (ORT), in addition to its longer-term water and sanitation goals (1985-87).

Sri Lanka

Everything pointed to commercial success for Thripasha, the locally produced supplementary food in Sri Lanka: (1) Sri Lankans loved the product; (2) local manufacture stimulated growth in farming of soy beans; and (3) conversion of the development project to a commercial venture appeared to be the path to sustainability. But evaluation was weak, so USAID asked CSF to evaluate. CSF obtained data from growth charts of participating Sri Lankan children, analyzed the data back in Ann Arbor, and returned to Sri Lanka to review the results with program managers and government officials, and then to transfer the technology to Sri Lankans (Drake et al., 1982; Miller & Drake, 1983).



Drake, 1970's

Sudan

Two studies were conducted. First, a baseline survey of the Joint WHO/UNICEF Nutrition Support Program. Second, a study of Sudan's Food-for-Peace program determined the manpower, materials, and administrative and technical assistance required for country-wide implementation (1983-84).

Thailand

Three separate food and nutrition consultancies over several years were done by CSF in Thailand.

1 NATIONAL FOOD AND NUTRITION PLAN

Burkhalter and Jim Pines (Trans-Centry Corp.) worked with Thailand's national food and nutrition planning team and USAID to build nutrition into Thailand's five-year plan. The work was done in two visits consisting of several months each and over a year apart, and included analysis of the nutrient content and availability of various foods, as well as the estimated number of infant and child deaths in Thailand due to malnutrition (1975-76). (Burkhalter, 1982).

2 EVALUATION FOR CHILD HEALTH CENTERS

Roy Miller (Trustee) proposed an ongoing evaluation process using existing mini-computer technology to assess Thailand's ongoing child nutrition program, similar to the one CSF designed for India. Unfortunately, a travel ban prevented Thai officials from implementing the program. But two years later at a conference in Nepal, Thailand presented the program (designed after the CSF India program but not yet implemented) that was highly received at the conference (1982-83).

3 MONITORING AND EVALUATION FOR RURAL HEALTH CARE CENTERS

CSF worked with Harvard University staff to develop a monitoring and evaluation system for rural health care programs in the Northeast of Thailand (1984).

Tunisia

CSF conducted a smaller, shorter-term version of the Dominican Republic review in 1982 (1979).

Zaire

Wilson explored a long-term nutrition planning relationship with Zaire and USAID, but concluded it was too risky for CSF to undertake such a long-term objective in light of payment uncertainties. Instead, CSF wrote specifications for a Zaire national nutrition planning program and helped identify organizations that could implement such a program (1973-76).

INFORMATION PROJECTS AND LITERATURE REVIEWS

Review of State-of-the-Art in Nutrition Planning

1972-1974

Funding for this review was obtained from USAID based on a proposal by Burkhalter and a lot of intellectual assistance from Harold Rice (then with USAID's Office of Nutrition and later a CSF Trustee). The overall finding of the

review was discouraging; in project after project nutrition planning did not reduce malnutrition, although projects that included the strong political and social forces at work did better. This project provided one of Drake's early involvements in nutrition planning. He looked at the Doña Elena community development project started in the 1950s in Puerto Rico, and concluded that the long duration and many interventions made it impossible to determine which had actually caused the clear improvement in nutritional status (a wise conclusion that perhaps reflected the many interacting factors causing the improvement in nutrition—gradually improved feeding, improved maternal and child health, better human services, and a generally rising economic tide.)

Nutrition Planning Journal and Information Service

1976-1981

The *Nutrition Planning Journal and Information Service* was the most important information project created by CSF in Phase Two. The journal published summaries of unpublished reports in four issues a year, about 100 summaries per issue. The complete reports were stored at the CSF Ann Arbor office and anyone having a subscription could purchase, at a low cost, each complete report. Burkhalter saw the need for such a journal and information service while working in Chile and wrote a proposal to USAID that was fully funded. Burkhalter was the first Editor, later succeeded by Rich Paullin, David Sahn and Robert Pestronk. The journal had a well-known international advisory board (See *Nutrition Planning Journal* in references for the names of the international advisory board and key staff.) In 1984, the journal and information service was sold to OGH Publishers.



Sahn, 1978

Nutrition Program Evaluations

1978-1981

With funding from USAID, staff from the *Nutrition Planning Journal* abstracted 67 different nutrition evaluations (Sahn & Pestronk, 1979). The findings were published in *Review of Issues in Nutrition Program Evaluation*.

Annotated Bibliography on Family Planning

1983-1984

As part of the National Family Planning Board (BKKBN) project in Indonesia, CSF produced an annotated bibliography of family planning, nutrition and health evaluations in Indonesia; integrated programs of family planning, nutrition and health in Southeast Asia; worldwide studies with evidence linking interventions to impact on family planning; nutrition or health; and successful evaluation techniques used to study these issues.

1978-1980

“RED POTATO”: META-EVALUATION OF COMMUNITY NUTRITION STUDIES IN SIX COUNTRIES

This study was generally referred to by CSF as the “Red Potato” to escape from the stodginess of the official title. This meta-evaluation included seven small community nutrition intervention longitudinal studies from Asia and Latin America, plus cross-sectional data from several other studies to help interpret the findings. The analysis of the data led to four findings:

- 1 Communities and their environment change during the course of an intervention; therefore, what seems like the best approach at the start may prove to be ineffective after a year or two. This suggests a strategy that incorporates ways to modify programs as time progresses—modifications that provide good monitoring of local conditions, as well as the response of the community to interventions already in place.
- 2 Interventions that emphasize local involvement, both in design and implementation, are more likely to succeed than interventions imposed from outside the community. Local involvement helps secure “buy-in” from the community but, equally important, it brings the intimate knowledge of local conditions vested in the community into play at all phases of the intervention.
- 3 Program directors bridge two worlds—the world of the community and the world of science and technology that has often been successful in changing more developed communities.

BUGS IN THE DATA

One of the data sets analyzed during the “Red Potato” project came from an ongoing intervention in an urban barrio in Cali, Colombia. The CSF team retrieved the data by making copies of computer punch cards while visiting Cali and transporting the cards back to the Ann Arbor office. When trying to read the cards, a substantial number of cards proved to be unreadable. Examination of those cards revealed that an extra hole, usually round instead of square, appeared in the same place on those unreadable cards. Colleagues in Colombia confirmed that there was a bug in the tropics that ate through paper. A bug would start at a hole in one punch card and make its way through the stack eating additional holes when it encountered cards without holes. The CSF team had to rekey all of the cards with square holes instead of round ones, eliminating the extra hole in order to maintain the integrity of the data. This gives a new meaning to “bugs in the data”!

- 4 The intensity of an intervention should be maintained for long enough to change local behaviors, and to institutionalize those activities that appear to be critical to sustaining nutritional well-being in the community.

This meta-evaluation, one of the most important of Phase Two, had many CSF associates and Trustees in key roles including: Drake, Miller, Margaret Humphrey, Bob Timmons, John Nystuen, Schon, Fajardo, and John Field.

1978-1984

REFLECTION-IN-ACTION

Most community nutrition evaluation projects are based on quasi-experimental designs that try to determine if the project interventions will reduce malnutrition. For example, will a project intervention to increase potable water reduce diarrhea, which in turn will reduce malnutrition? However, none of the seven projects in the CSF’s “Meta-Evaluation of Nutrition Studies” successfully applied the quasi-experimental methodology. There were several reasons, including:

- 1 Many events and changes in the study communities that occurred between the pre and post measurements of malnutrition might have altered malnutrition in the communities.
- 2 The study community itself may have changed significantly between the pre and post measurements.
- 3 The accuracy of pre and post measurements of malnutrition may be different for those receiving the intervention than those who are not, and may have changed drastically pre to post.

Reflection-in-Action (RIA) was designed specifically by CSF as a methodology to foster nutrition improvement in a community and not as a methodology for advancing the quasi-experimental goals of learning about the relationship of the intervention to nutritional status. It is a methodology to foster improvement; general learning is secondary. RIA calls for much more frequent measurement of nutritional status and interventions, even if not as rigorous as the quasi-experimental methodology would like, and makes changes in the interventions quickly as a result of those measurements. It calls for the project director to spend most of her/his time in the community, not at a nearby university or agency, working alongside community members, as well as taking frequent

measurements of increases or decreases in nutritional status of the population because of factors other than the planned interventions.

In summary, CSF applied quasi-experimental methods to a sample of community-level nutrition interventions, having chosen from a very large sample those that seemed most amenable to being treated as experiments. For the most part, CSF found the results of the experiment indeterminate. In only two cases did CSF find a positive change in nutritional status, but even then the change could not be attributed to the planned interventions. Reflection-in-Action would have local practitioners redefine their job as a process of iterative experimentation, undertaken on the spot and much more frequently than is typically done in quasi-experimental designs. The point is for the local practitioner to make improvements by a process of iterative learning (Schon, Drake & Miller, 1984; Drake, Miller & Schon, 1983).

REFLECTION

When presenting the argument for Reflection-In-Action at a conference, Roy Miller was stunned by the realization that the printed words “Reflection-In-Action” conveyed the message correctly but that when spoken, many in his audience heard “Reflection-Inaction.” At the time, colleagues at UNICEF were embracing similar ideas as “Reflection-In-Action” but UNICEF made an important improvement—it coined the phrase “Triple-A-Cycle” to describe a continuous cycle of Assessment, Action, and Analysis for nutrition programming.

1978-1984

THE SURPRISING EFFECT OF MISCLASSIFICATION OF NUTRITIONAL STATUS

Small errors in the measurement of nutritional status can lead to surprisingly large errors in estimates of program impact. Impact is always underestimated if the rate at which individuals are misclassified remains constant. The misclassification of individuals in the baseline, and in subsequent estimations of that prevalence, can cause a substantial under-estimation of the change that actually occurred.

While the effects of misclassification on nutritional impact can be computed mathematically, the mathematics are somewhat complicated and it is rarely done, thereby invalidating many nutrition evaluations. A CSF study (Drake, Miller & Timmons, 1984) reported seven types on misclassification:

- 1 Imperfect correspondence between measure and malnutrition
- 2 Inappropriate standards/classification
- 3 Incorrect measurements (due to faulty measurement devices, inaccurate age estimates, measurement variation between and within subjects and observers)
- 4 Recording errors
- 5 Transcription errors
- 6 Coding and/or keying errors
- 7 Errors introduced during analysis

Classification errors can cause the measured prevalence of malnutrition to be significantly higher or lower than it actually is. This depends on many factors including the size of each of the seven types of misclassification errors; the accuracy of weight-for-age and weight-for-height as indicators of nutritional status (sensitivity, specificity); and the number of sequential measurements of nutritional prevalence (e.g., before and after an intervention, or several sequential measurements). Although the interaction of the many variables influencing nutritional prevalence is complicated mathematically, the CSF study reviewed many nutrition evaluations and concluded that only half of the true change in nutrition prevalence is being reported.

SMALL MISCLASSIFICATION, LARGE EFFECT

CSF analysts looked at the error introduced in stunting prevalence by the addition of a fraction of a centimeter to the height of all children in the one data set available that measured height. The amount added was less than the accuracy of the device used to measure height given its calibration. This small increase in children’s heights caused a decrease in stunting prevalence of 17%. All were amazed.

1983-1984

CHANCES FOR SUCCESS OF NUTRITION PROGRAMS, INCLUDING TARGETING

CSF described a “Chances for Success” scheme for proposed nutrition programs based on its extensive experience in nutrition improvement programs, plus a formal analysis of computer studies of six nutrition improvement programs (Drake & Timmons, 1984). The scheme for success includes nine characteristics:

- 1 Accommodation to local conditions
- 2 Adjustment to changing conditions
- 3 Regional infrastructure
- 4 Use of a targeting strategy
- 5 Number and characteristics of the different components in the nutrition program
- 6 Commitment to exceed a minimum threshold of several proposed interventions
- 7 The components of the proposed intervention with a strong commitment to implement
- 8 Effort to attain self-sufficiency
- 9 Feedback to beneficiaries and local managers

The report concluded that the most important is the first—accommodation to local conditions (“one size does not fit all”). The CSF analysis also concludes there is a high degree of interaction among the nine characteristics; for example, self-sufficiency is more related to inter-family food sharing than to regional infrastructure, especially in the face of food shortage (Drake & Timmons, 1984).

CSF published a special study on the effectiveness of targeting based on in-depth analyses of the data from five supplemental feeding programs in Brazil, Colombia, India, Sri Lanka, and Thailand (Timmons, Miller & Drake, 1983). Data from these programs indicated that they were rarely successful—the food was offered to the children too late to do any good. But interventions designed to prevent nutritional deprivation before children become malnourished did have some chance of succeeding. Therefore, the recommendation for supplementary feeding programs was to feed all children between the ages of six and 18 months of age rather than

wait and feed older children who were already malnourished. USAID changed its approach to supplementary feeding based on these findings and, more recently, the global effort to address malnutrition known as Scaling-Up-Nutrition emphasizes intervention in the first 1,000 days—the time starting with conception and ending when the child reaches 24 months.

1984-1986

EVALUATION OF INDONESIA INTEGRATED NUTRITION, HEALTH AND FAMILY PLANNING PROGRAM IN BALI AND EAST JAVA—“KB-GIZI”

CSF assisted the National Family Planning Board of Indonesia (BKKBN) in interpreting a very large data set of pre-intervention activities collected in 1980 and post-intervention interviews in 1985, with items from over 4,800 households in 176 villages located in Bali and East Java. This evaluation was done by staff from BKKBN with assistance from CSF and three Indonesian universities (Drake, Nystuen & Sahn, 1984). The “KB-Gizi” evaluation program was judged successful by BKKBN in the sense that knowledge, attitudes and practices related to family planning and nutrition improved pre-to-post, especially among women who frequented the monthly weighing posts that were at the heart of the intervention program. However, it was difficult to establish strong causal relationships between the interventions and improvements in nutrition, health, and family planning because of the many interventions occurring in the villages during this period.

A very important activity undertaken by CSF in the “KB-Gizi” evaluation was having all the BKKBN participants visit Ann Arbor in the summer of 1986 to analyze the data themselves. CSF worked closely with them throughout the summer, providing training in the use of computers and methods for analyzing large data sets, as well as two courses at the Survey Research Center at the University of Michigan. In addition, they all received computers and were provided with work space at the CSF offices. As one CSFer remarked, that summer is when the Indonesians came to realize that they owned the data and now had the capacity to analyze it however they wanted (BKKBN, 1986).

1979-1988

COMPUTER MAPPING APPLICATIONS

CSF began to apply various computer mapping applications during this period. These were very useful in some of CSF's programs, especially the Indonesia and Syria programs in which Indonesian and Syrian data analysts came to Ann Arbor to learn and use the software. CSF acquired the needed hardware and software, and hired University of Michigan graduate students to train and work with the visitors at 1130 Hill Street.

1975-1995

COMMUNITY SYSTEMS FOUNDATION (AUSTRALASIA)

Under Cabban's leadership, much of the technical work was managed by Cabban's Deputy, Jim Caswell, and Annette Williams, a nursing consultant. CSF(Australasia) received a series of important grants from the W.K. Kellogg Foundation to develop and disseminate approaches to nursing staffing, and scheduling and quality systems, as well as to give training workshops to nurses on many hospital productivity issues and other workshops on the application of management engineering. CSF(A) reported completing more than 200 productivity studies in over 100 hospitals in Australia and New Zealand, plus special studies in seven Health Commissions and Departments, three universities, three city councils, two churches, and one state rail authority. After several years, Kellogg supported the preparation and dissemination of a report (Cabban and McCaffery, 1979; Cabban and Caswell, 1979) to all Australasia hospitals on CSF(A)'s approaches and achievements to increase productivity and potential cost savings it had achieved (well in the millions of dollars). The success of this report led to a highly acclaimed conference in Orlando organized by CSF(A) and attended by leaders in the field of hospital productivity and cost containment that was reproduced in two West European countries. (See *Phase Two Training*.)

CSF(A) in Papua New Guinea

A very interesting opportunity presented itself to CSF(A). The outgoing Australian health officials asked CSF(A) to come to Papua New Guinea (PNG) to present the estimated costs of staffing a new state-of-the-art medical center being proposed by architects backed by the incoming PNG politicians. Cabban and Burkhalter went to PNG, heard the plans for the new medical center, and applied several different staffing methodologies being used by CSF(A), including the Michigan Staffing Methodologies. The estimated staffing costs of the new medical center were much higher than the entire current staffing costs for all the medical facilities being run by the Australians throughout PNG. This result convinced the architects to back off, at least until the Australian health officials had left PNG.

1987-1997

MONITORING NUTRITION AT THE COMMUNITY LEVEL IN INDIA

CSF contributed to strengthening the monitoring of the Indian Integrated Child Development Services program, the country's primary social welfare scheme to reduce malnutrition and health problems of children below six years of age. CSF worked with USAID and other development agencies to provide health and nutrition information to the mothers of young children, and to enhance the child rearing capacity of mothers. CSF's component of the project was to develop innovations in data management in two high priority districts and then to scale up these innovations to other districts. The main innovation developed was the Integrated Child Development Services (ICDS) Progress Reporting System, which captured monthly reports at sub-district level and fed the data back to key stakeholders to address program gaps and weaknesses. By the end of 2010, the ICDS program reached more than eight million pregnant mothers and 39 million vulnerable children under six years of age.



Drake and Oswald, 1990's

1985-1996

U.S. LIBRARY OF CONGRESS

CSF provided technical assistance to the Library of Congress to use information technology to streamline the acquisition of new materials for its vast collection through its six field offices around the world. CSF developed the Integrated Order, Accounting and Distribution system, or IOAD. IOAD basic task was to provide processing support for items ordered for the cooperative acquisition program of the Library of Congress where program participants, such as the major academic libraries of the U.S, would acquire copies of titles selected by the Library of Congress for its own collection. IOAD matched a participating library's profile against codes for subject, country, and language assigned to a new title to automatically issue an order for the number of copies of a title to be distributed to the participating libraries. CSF's innovative system significantly reduced the level of time and effort required to manage and process acquisitions.

1994-2004

INNOVATIONS IN FAMILY PLANNING SERVICES IN UTTAR PRADESH, INDIA

The broad objective of the USAID-funded Innovations in Family Planning Services (IFPS) project was to increase access, improve quality, and promote demand of reproductive and child health services in the largest state in India, Uttar Pradesh. The primary goal of the project was to reduce the rate of population growth to a level consistent with the state's long-term social and economic goals. Through collaboration with the Center for Development and Population Activities (CEDPA), CSF provided technical assistance in management information systems design to support the activities of the IFPS project. The main innovations involved the development and implementation of data capture, and analysis and feedback mechanisms to strengthen supervision and management.

1990-2013+

SPIN-OFF: RURAL COMMUNITY LEARNING CENTER

After Wilson retired from the University of Michigan faculty, he and his family purchased three farms near Camden, MI (just north of the Ohio border) and built a learning center for youth. First came the dormitories, followed by some practical problem-solving with simple engineering (e.g., inclined plane, boats that float); then energy self-sufficiency (e.g., windmills, solar panels); and most recently, topsoil preservation (e.g., minimize and measure runoff, preserve swamps, no ploughing, grass-fed livestock). Students who participated included youth from rural county schools, Girl Scouts from Colombia and local boys from a nearby detention center.



Wilson Farm, 2012

For several years Wilson has focused on topsoil preservation. He says that soil experts estimate that 1,000 years in natural settings are required to replace one inch of topsoil. (See Allan Savory's TED Talk, "How to Fight Decertification and Reverse Climate Change for approaches that might shorten this time.) So, Wilson undertook measurements of possible topsoil loss from different sources on the farms. Two culprits were found: (1) topsoil loss from the driveways, and (2) grain-fed cows. The driveway problem was easily solved by some reconstruction, but the grain-fed cows proved more difficult. Several years were required to replant and grow grass that the dairy cows feed upon. Today, all the dairy cows have been grass-fed since birth and, because of this, they are now healthier, their milk tastes better, and the cheese made from their milk is far better. Also, the grass-fed approach has meant lower costs (no grain purchase) and higher income (from the healthy herd and sale of the excellent cheese).

During the great flood of 2011, federal officials estimated that more than 16 billion tons of topsoil were flushed down the Mississippi River and into the Gulf of Mexico—an incredible disaster. Wilson's objective is to find strategies that prevent such disasters in the future, and that offer a commercially viable alternative to the corporate strategy of short-term profits from grain feeding. CSF has strongly supported this effort.

1973-1996

CSF BOARD OF TRUSTEES AND OFFICERS

The composition of the CSF Board of Trustees changed significantly in Phase Two, when a majority of the Board came from the scientific/academic community and a few from the staff; none were client representatives. In 1973, all six Board members were from the scientific/academic area (**Burkhalter, Drake, Flood, Goodman, Shouldice, Wilson**). By 1987, the Board had expanded to 11 individuals (Burkhalter, Drake, **Bob Farrell**, Flood, Goodman, **Gottlieb-Harrison, Nystuen, Rice, Sahn, Schon, Wilson**), many of whom were both CSF Associates and members of the scientific/academic community (Burkhalter, Drake, Goodman, Nystuen, Sahn, Schon, Wilson). A few were prominent in the Ann Arbor area (**Naomi Gottlieb-Harrison, Bob Grosse** [also in the academic community], **Kathy Huss, Ken Pierce, Richard Shackson**). During much of the 70s, CSF functioned without officers, although leadership was provided by Wilson and, to a lesser extent, by Burkhalter in their role as staff. **Drake** took over as President in 1978 and functioned in that role until 2003, except a few months in 1980 when **Eckroad** served as President. During the late 90s and early 2000s, **Oswalt** and Drake developed a mutually supportive leadership team, with Oswalt gradually taking over the CEO function.

**PROMOTING OPEN
ACCESS TO DATA AS
A PUBLIC GOOD**
PHASE THREE: 1996-2013+

SYRIAN MINISTRY OF HEALTH

Maternal and Child Health Care / Family Planning (MCH/FP)

In partnership with the United Nation's MCH/FP program, CSF provided technical assistance to strengthen the management of the Syrian MCH program. CSF developed and implemented the MCH Progress Reporting Systems to monitor the delivery of services at more than 500 reproductive health care centers across the country. This project involved six missions between Ann Arbor and Damascus—three trips by Drake and Oswald to Damascus, and three by members of the Syrian team to CSF in Ann Arbor to learn the mapping technology and use the hardware and software to analyze the Syrian health data. When the Syrian team dug deeply into the data, they discovered new meaning about the human condition in their country. For example, they studied methods to map the health data to administrative boundaries at the province, district and community levels, and geocoded and tagged it in ways to improve decision support. They also created “Animaps” that mapped Syrian monthly data to reflect change in MCH/FP key performance indicators through time (Oswalt & Drake, 1990).

PAKISTAN (PUNJAB) MINISTRY OF HEALTH, MCH/FP AND SCHOOL MAPPING

This MCH/FP and school-mapping project in Pakistan was built on the Syrian MCH/FP project described earlier, but at a smaller scale. It also provided technical support through USAID and the World Bank to use CSF's advanced desktop computer mapping technology to strengthen planning and monitoring within the education system of Pakistan.

1990-2010

NEW MAPPING THEORY AND TECHNOLOGY

CSF launched a program to develop new computer mapping theory and technology (not just apply existing mapping software). Most of the work was done by Sandy Arlinghaus with assistance from other CSFers including Bill Arlinghaus, Nystuen and Roger Rayle, and was published in *Solstice: An Electronic Journal of Geography and Mathematics*, *The Geographical Review* and others. This more

theoretical work may prove to be very important for portraying the data in the ChildInfo and DevInfo programs, which will be discussed later in this section. A few of the more notable publications by CSF include:



Arlinghaus, 2010's

- *Mathematical Geography and Global Art: The Mathematics of David Barr's Four Corners Project*
- *The Fractal Theory of Central Place Hierarchies: A Diophantine Analysis of Fractal Generators for Arbitrary Loschian Numbers*
- *Geometry of Boundary Exchanges: Compression Patterns for Boundary Dwellers*
- *Practical Handbook of Digital Mapping: Terms and Concepts (CRC Press)*
- *Patterns, Maps, and Fractals: The Case of United Kingdom Historical Data Sets*
- *Pall-Gelman Plume, A Contemporary Google Earth View*
- *Desargues's Two-triangle Theorem*
- *Kioskland: A Strategy for Linking Hierarchical Levels of Virtual Reality Maps*
- *Bisectors, Buffers, and Base Maps*
- *A Graph Theoretic View of the Join-count Statistic*
- *Web Fractals: An Overview*
- *The Quadratic World of Kinematic Waves*

1995-2003

CHILDINFO

CSF developed the ChildInfo database and the technology behind it to assist UNICEF in monitoring key performance indicators (Millennium Development Goals, or MDG's) of the World Summit on Children. The database focused on organizing reliable data in a format easily accessible by government program officers responsible for child development. The program officers followed monthly scores of the MDG indicators that were most related to child development and then made the most of this data. They used this information to make adjustments to their programs, reinforce their successful programs (as manifested by high scoring indicators), and modify programs with low and/or downward trending indicators of child development.

On November 7, 2002, UNICEF offered its success with ChildInfo to the UN system in order to strengthen the monitoring of a broad spectrum of MDG indicators. The following year CSF and UNICEF worked together to increase the accuracy of the MDG indicators and the technology underlying the MDG measurements, thereby increasing the desirability of ChildInfo to the entire UN organization.

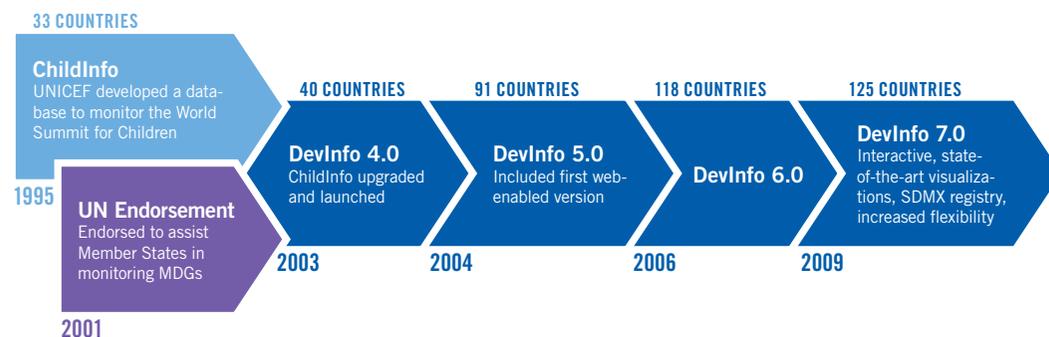


Illustration: Transition from ChildInfo to DevInfo

2004-2013+

DEVINFO

In February 2004, the UN completed two years of intensive audits of ChildInfo and CSF. As a result of the audits, the UN formally requested UNICEF and CSF to transfer ownership of ChildInfo to the UN so it could be used as a data platform for DevInfo, an expanded version of ChildInfo. (See *Transition from ChildInfo to DevInfo illustration.*)

The global DevInfo initiative, led by UNICEF on behalf of the UN and distributed free to all UN member states, is dedicated to furthering human development. DevInfo achieves this by integrating management and geographic information systems, software training, technical support, data dissemination, and technical reports. In general, DevInfo strives to add value to existing national statistical systems by strengthening existing databases and bridging data dissemination gaps in order to more fully engage governments and civil society in policy choices that achieve measurable results.

“The strength of DevInfo lies in its capacity to monitor a wide range of key performance indicators, while focusing on ways to achieve good development outcomes through sustainable and efficient development processes.”

The first version of DevInfo (DevInfo 4.0) was released in 2004 with 48 MDG indicators embedded at its core. DevInfo 4.0 and 5.0 expanded from 40 countries initially to over 200 countries by 2008. A 2009 global evaluation of DevInfo reported that:

“DevInfo is a relevant initiative that contributes to the standardization of statistical data that are indispensable for sound policy and decision making related to human development within and among countries. Its value is anchored in the normative and analytic mandates of the UN system, and this represents its comparative advantage in an environment of rapidly evolving and competitive innovations in information technology.”

From 2009 to 2013, CSF, UNICEF and its UN partners worked to respond to the 2009 evaluation. One result was the further expansion of DevInfo to 124 member countries, including 40 of the 48 Least Developed Countries. Another result was the adaptation of its software to provide data not only to national statistical offices but also to regional and non-governmental organizations. Since 2009, the number of regional adaptations increased by 41% in Africa, 31% in Asia, and 50% in the Middle East.

The development of local capacity in DevInfo is another important contribution of CSF in partnership with UNICEF and the UN. CSF developed a program that trained and certified DevInfo trainers who have subsequently trained an estimated 40,000 development personnel from national and local human development related offices in the use of DevInfo. The training has occurred both on and off-site, and in English, Spanish, and French.



Drake and Oswald, 2000's

These achievements by DevInfo go hand-in-hand with CSF's contributions to information and mapping technology, content enhancement, and capacity building. With each new version of DevInfo (4.0, 5.0, 6.0 and 7.0), CSF also developed associated software tools, such as *di Monitoring*, which is used especially by the UN Development Assistance Frameworks (UNDAF) to monitor planned versus actual achievement of key performance indicators.

VIRTUAL KNOWLEDGE SHARING EVENTS PROMOTING UNDERSTANDING AND ACCESS TO DEVINFO

UNICEF DEE/CIS, WHO/PAHO and DevInfo, in participation with IDEAS and IOCE, offer a series of live webcast Knowledge Sharing Events (KSE) on country-led monitoring and evaluation (M&E). The KSEs are free and open to all interested persons, and can be accessed from a work or home computer anywhere in the world. During the webcast, global-level speakers will contribute international perspectives, and participants can ask questions and make comments. These events enable the sharing of good practices and lessons learned on designing and implementing national and local M&E systems.

CSF'S VISION FOR DEVINFO

Promoting Open Access of Data as a Public Good

CSF's vision is for DevInfo to be a key component in the emerging data revolution for sustainable development, particularly in the run-up to 2015 and in post-2015, at which time it is likely that the UN will replace MDGs with a wider range of human development indicators—in much smaller subnational areas—that communities can use to gauge their own progress.

DevInfo summarizes census data, international household surveys, subnational surveys, administrative data and other types of socio-economic data. These data help planners to identify the most vulnerable individuals, and devise equitable and reliable essential service delivery systems.

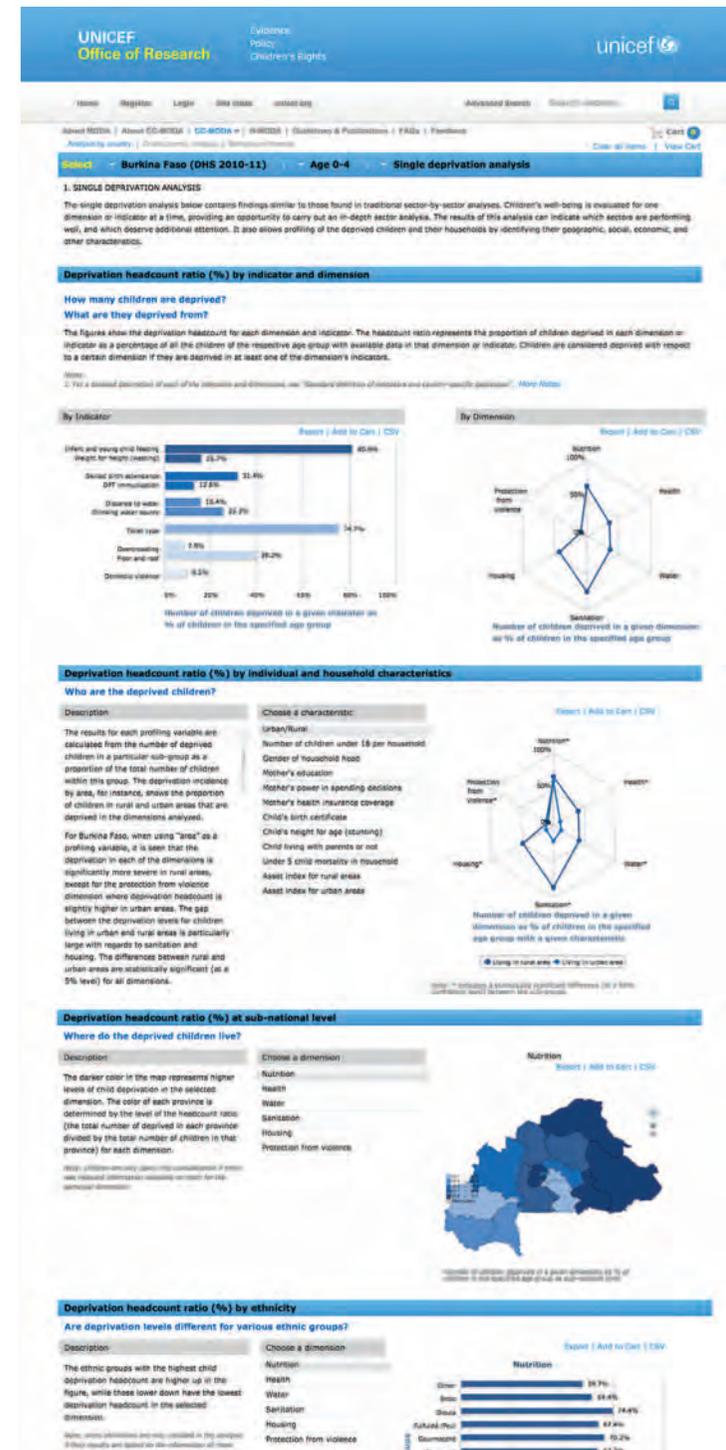
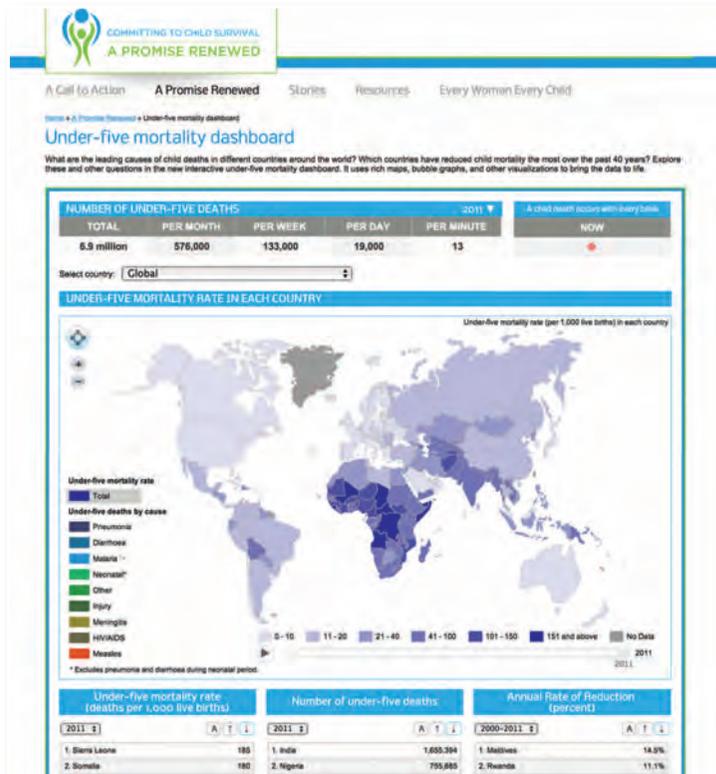
More and more, DevInfo, is helping communities undertake their own monitoring of key development indicators by timely and easy access to relevant data. It also helps communities to hold service providers accountable for public sector program delivery through transparent reporting from the ground up—community, district, province and national. CSF believes this will lead to a more equitable and prosperous world where DevInfo contributes to the transformation of data to knowledge, and knowledge to better decisions about human development.

EXAMPLES OF DEVINFO PANELS AND PRESENTATIONS

UN MDG Info



A Promise Renewed Dashboard

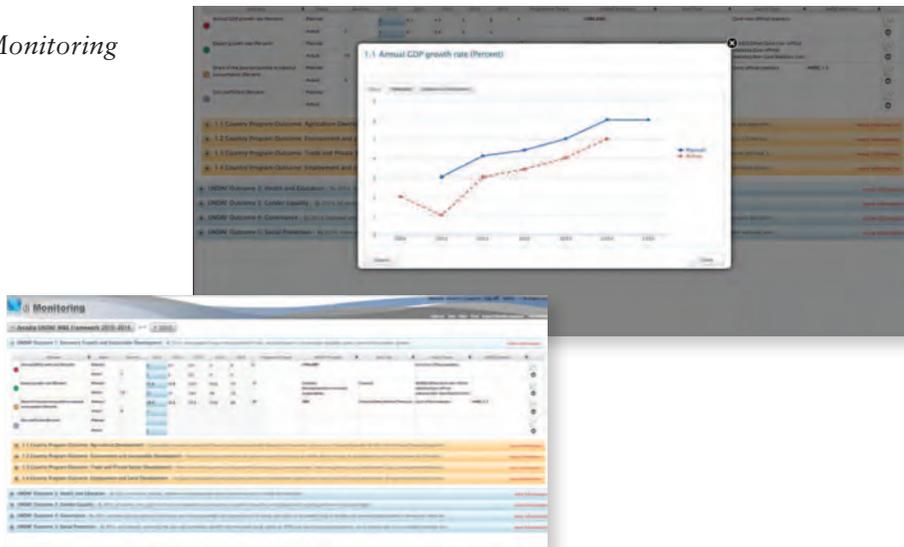


Multiple Overlapping Deprivation Analysis (MODA) Dashboard

UN Censusingo Initiative



di Monitoring



Child Mortality Estimates Info (CME Info)

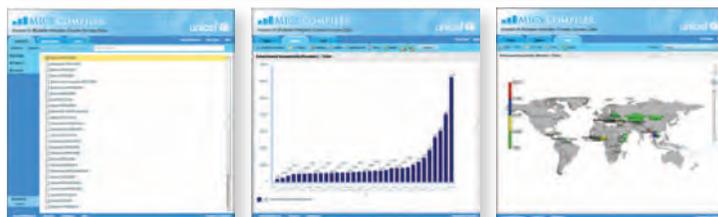
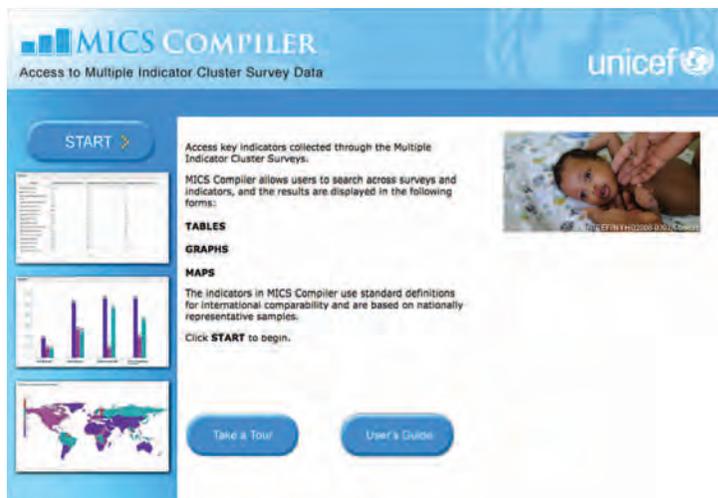


Marginal Budgeting for Bottlenecks (MBB)

Inter-Agency
Group for Child
Protection Case
Management
Database



Multiple Indicator
Cluster Survey
(MICS) Compiler



World Economic
Forum GTR
Dashboard



	2001	2011
Adults and children living with HIV	29.4 million [27.3 million - 32.1 million]	34 million [31.8 million - 35.9 million]
Adults and children newly infected with HIV	3.2 million [2.9 million - 3.4 million]	2.5 million [2.2 million - 2.8 million]
% Adult prevalence	0.8 [0.7 - 0.9]	0.8 [0.7 - 0.9]
Adult and child deaths due to AIDS	1.9 million [1.7 million - 2.2 million]	1.7 million [1.5 million - 1.9 million]
Young people (15-24) prevalence (%)	Male 0.4 [0.2 - 0.6]	0.3 [0.2 - 0.4]
	Female 0.7 [0.6 - 0.8]	0.5 [0.4 - 0.6]

UNAIDS Dashboard (AIDS Info)

DEVINFO GAMEWORKS

Cultivating Global Awareness

CSF believes that people, especially young ones, learn far more from making a game than playing it, especially if the game makers are part of a social network of other game makers.

CSF and its partner organizations launched *di Gameworks* (DIGW), a game making, social network-based pilot project that brings wide-ranging information on the condition of humanity to young people through software that supports the creation, exchange and play of games based on development data from around the world. Its goal is to provide opportunities that cannot be matched by just playing games.

The pilot project included 15 schools in three countries. Participating students in each pilot school were provided templates (based loosely on games such as tic-tac-toe, and other familiar card and paper and pencil games), which they could play competitively or solitaire, as well as online or printed and played off-line. They were also given information related to the MDGs in their country, and assistance to establish social networks through the *Gameworks* website to enable DIGW players to share games with friends, chat while they play, and suggest improvements to other user' games. In South Africa, the organization M-Ubuntu provided the students with camera phones, a strategy that gave significant additional bounce to the game-making, social networking approach. Some India pilot projects decided that unstructured data (e.g., natural languages, videos) were better than structured data (e.g., spreadsheets).

This project was funded by the MacArthur Foundation, led by CSF Associate Jeff Kupperman, and was the recipient of the MacArthur Foundation Digital Media and Learning Award. Early evaluation of the pilot projects was very positive. However additional funding to continue the project beyond the pilot project state has not been secured.

NEW SOURCES OF FUNDING

Chris Dickey (Director, Research and Innovations) is leading the effort to diversify funding sources beyond the UN. One short-term approach is to sub-contract for the Monitoring and Evaluation function on USAID contracts—especially when UN agencies will be important users of the data—until CSF can resume serving as

a primary contractor for USAID. Chris's team is also pursuing projects with a number of other foundations, including the Bill and Melinda Gates Foundation and the Rockefeller Foundation, that would leverage CSF's enormous technology and data innovation specialties to help advance those foundations' development goals. Chris is also working with Dean Wilson and others at CSF to secure research funds from U.S. agencies anxious to find solutions to pressing problems such as the loss of top soil. Carving out Research and Innovation as a separate group is a CSF effort still in its early days, but the team has already started showing impressive results.



FINANCING AND OFFICES

Although CSF owned its offices at 1130 Hill Street outright (no mortgage), it lost revenue on its operations for several consecutive years during the 1990s. This shortfall was covered by personal loans from some officers. To put CSF on a more sustainable and professional path, the 1130 Hill Street house was sold and the income was used to repay the personal loans, and the remainder was invested in stocks. Several years later, in the early 2000s, CSF established a relationship with an international bank (Chase) to manage its assets, conduct international transfers, and provide a checking account that functioned internationally.

The CSF office in Ann Arbor (219 S. Main St, Ann Arbor, MI 48104) became the administrative headquarters, while an office was established in New Delhi, India in the 90s (headed by Oswald who resided in New Delhi), in cooperation with CSF's primary technical partner (KORD IT), to undertake all the central technical activity related to ChildInfo and later DevInfo. Years later, in the late 2000s, CSF opened another office in New York City to service the UNICEF contracts and explore additional funding in the United States. At about the same time, it opened an office in Singapore (where Oswald was then living) to provide technical support and development work.

1997-2013+

CSF BOARD OF TRUSTEES AND OFFICERS

During this period, the Trustee composition gradually shifted to a younger Board with more Trustees of scientific/academic background, and several with greater focus on international and United Nations activity. Scientific/academic Trustees included **Arlinghaus, Brown, Burkhalter, Goodman, Holland, Jennings, Kapp, Miller, Nystuen, Rice, Weisserman, Antoinette WinklerPrins, and Wilson.** (Diana Silimperi and Frank Zinn, both scientific/academic, left the Board.) Two prominent Ann Arborites were on the Board in the last couple of years (Gregg, Huss), but another (Shackson) left. **Drake** was officially President until 2003 (when he died) but **Oswalt** had gradually assumed the leadership and CEO role in the late 90s as CSF's work with data technology and the United Nations expanded.

CSF TRUSTEES AND MEMBERS

1963-2013

TRUSTEES 1963-2013

Anderson, Herb (1968-1973)
Arlinghaus, Sandy (1994-2013)
Bartscht, Karl (1963-1969)
Brown, Ken (2008-2013)
Burkhalter, Bart (1963-1988; 2003-2013)
Carros, Don (1963-1965)
Cooper, William (1970-1973)
Davidson, Dick (1969-1973)
Drake, Bill (1968-2003)
Drake, Chuck (2013)
Duke, Dick (1963-1970)
Farrell, Bob (1978-2000)
Flood, Merrill (1964-1986)
Fryer, Bob (1966-1973)
Goodman, Fred (1965-2013)
Gottlieb-Harrison, Naomi (1986-1994)
Gregg, Ron (2009-2013)
Grosse, Bob (1991-1994)
Holland, Maurita (2009-2013)
Horvath, Bill (1977-1982)
Huss, Kathy (1994-2013)
Jennings, Larissa (2012-2013)
Johnson, Clyde (1963)
Kapp, Jon (2012-2013)

Kurlander, Arnold (1965-1967)
Leonette, Sister Mary (1963-1973)
Ludwig, Pat (1965-1973)
Macoun, Malcolm (1963-1969)
Miller, Roy (1994-2013)
Newcombe, Ted (1969-1973)
Nystuen, John (1981-2013)
Oswalt, Kris (1991-2013)
Pendall, Rudy (1965-1969)
Pierce, Ken (1983-1986)
Polliard, Forbes (1966-1969)
Rice, Harold (1984-2003)
Roman, Bill (1964-1965)
Sahn, David (1983-1991)
Schon, Don (1974-1997)
Shackson, Richard (2002-2013)
Shouldice, Ken (1969-1974)
Silimperi, Diana (2004-2007)
Steiner, Matt (1965-1973)
Velazquez-P, Gabriel (1969-1973)
Weisserman, Gary (2008-2013)
Wilson, Dean (1963-2013)
WinklerPrins, Antoinette (2011-2013)
Zinn, Frank (2002-2008)

MEMBERS 1963-2013

Bartscht, Karl (1963-1968)
Burkhalter, Bart (1963-2013)
Cabban, Peter (1968-2013)
Drake, Bill (1968-2003)
Flood, Merrill (1968-1992)
Goodman, Fred (1968-2013)

Nystuen, John (2008-2013)
Oswalt, Kris (1995-2013)
Schon, Don (1974-1997)
Wilson, Dean (1963-2013)
Zinn, Frank (2006-2008)

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