Kansas Demonstration to

Maintain Independence and Employment

# Final Report

Kansas Health Policy Authority

University of Kansas Center for Research, Inc.

**1. Overview of the project**

The Kansas Demonstration to Maintain Independence and Employment (DMIE) evaluated the effects of enhanced insurance coverage on access to health services, and economic and health outcomes for working individuals with potentially disabling conditions through a randomized controlled trial. The primary research hypothesis was that a program of health coverage and other supports would improve health status and quality of life and forestall or prevent the loss of employment and independence due to a potentially disabling and medically determinable physical or mental impairment.

**A. Specific target population**

The DMIE targeted individuals who have progressive impairments that, without early intervention and treatment, had a high probability of becoming disabling. As a catchment site for such people, the study drew its sample from people enrolled in the state’s high-risk health insurance pool. Historically, people in the Kansas high-risk pool (Kansas Health Insurance Association, KHIA) have transitioned to federal disability benefits at a rate eight times that of the general population (Hall & Moore, 2006).

High-risk pools provide the coverage of last resort for people who are medically uninsurable in the private market due to preexisting conditions. However, not all high-risk pool beneficiaries were appropriate subjects for the study. To be eligible for the Kansas DMIE, potential participants had to be:

* adults, ages 18 to 60 when entering the DMIE study, with the upper age limit excluding individuals who would begin receiving Medicare benefits during the study timeframe;
* currently working at least 40 hours per month, excluding people who had no employment to maintain;
* experiencing a potentially disabling condition rather than less serious or non-progressive impairments; and
* not currently eligible for or in the application process for federal disability benefits.

*Subject Recruitment*

For privacy reasons, the Kansas high-risk pool third-party administrator (TPA)—Benefit Management, Inc. (BMI)—handled the first phases of enrollment by mailing a letter describing the study to members 18 to 60 years of age. Members were then telephoned to further screen for eligibility. Those who appeared eligible and expressed interest were mailed application packets and were instructed to return completed applications and informed consent forms directly to the evaluation team. After verifying work status and qualifying medical diagnoses, evaluators randomized eligible subjects into two equal-sized groups, and mailed acceptance letters.

The study design required a minimum of 400 subjects. Limitations on the number of potentially eligible pool members (because many were over age 60 or did not meet work requirements) produced an initial sample of 261, which was further reduced by those who refused to participate once they learned they had been assigned to the control group. Large attrition also occurred during the first months of the study because subjects, primarily those in control group who were not receiving subsidized coverage, obtained other insurance coverage. For these reasons, a second round of recruitment, following similar procedures, was conducted, and a second cohort consisting of 169 subjects began the study 9 months after the first cohort. Additional attrition during the first 18 months of the study required a third round of recruitment, primarily to fill control group positions. A third cohort consisting of 119 members began the study 27 months after the first cohort and 18 months after the second.

**B. Intervention goals**

The DMIE study sought to answer the overarching research question: *Can a program of medical assistance and other supports forestall or prevent the loss of employment and independence due to a potentially disabling and medically determinable physical or mental impairment?* To answer this question the study tested 5 hypotheses related to participant employment, independence, and health, described below. The study also described participant characteristics and unmet health- and employment-related needs.

*Hypothesis 1: Intervention group members will maintain employment longer and at higher rates than control group members.* Employment stability is a complex function of numerous factors, some of which may be influenced by the intervention (e.g., less financial strain, guided access to appropriate services through case management, and enhanced services, leading to improved health status) and some of which may not. Therefore, several hypothesized predictor variables were examined, including health limitations and such individual differences as socioeconomic status and educational attainment.

*Hypothesis #2: Intervention group members will report greater work productivity than control group members.* Given the anticipated large number of self-employed persons in the sample, who have no fixed expected work hours, productivity must be evaluated in terms of the quality and quantity of work while on the job (often referred to as “presenteeism”) rather than absenteeism (hours worked compared to expected hours).

*Hypothesis #3: Intervention group members will apply for SSA benefits at a lower rate than control group members*. Better health outcomes resulting from the intervention were expected to lead to longer employment and slow or prevent disability.

*Hypothesis #4: Intervention group members will self-report better health status and quality of life than control group members*. Improved access to services (via decreased financial barriers and improved linkage through case management) and the addition of enhanced services were expected to lead to better overall health and quality of life.

*Hypothesis #5: Intervention group members will demonstrate better health outcomes over time than control group members*. Lowering of access barriers through the intervention were anticipated to temporarily increase case mix scores because the scores are partially based on utilization. However, over time these scores were expected to decrease as acute unmet needs were met and health status improved or stabilized.

**C. Program services**

Intervention group members continued to be covered by the Kansas high-risk pool. However, they also received a Medicaid-like package of benefits and non-traditional enhanced services as a wraparound to their risk pool plan. Enhanced services are detailed in Appendix A and are summarized below:

* Subsidies to reduce monthly premiums to $152 (average unsubsidized premium = $443)
* $3 co-payments
* No deductibles or coinsurance
* Nurse case management services
* Dental care
* Vision care
* Non-traditional services e.g., obesity management, health promotion activities, exercise program memberships, attendant care, and vocational rehabilitation
* Increased caps on benefits limited by the risk pool, e.g., mental health treatment, chiropractic treatment and home health services.

Control group members received stipends for completing surveys as they continued receiving coverage through the Kansas high-risk pool. Their coverage was more expensive and less comprehensive than employer-based insurance. For example, a 25-year-old non-smoking female would pay $624 monthly premiums for a plan with a $1,500 deductible and 30% coinsurance.

**D. Approach to evaluation**

The demonstration utilized a longitudinal (3 year), randomized controlled experimental design with intervention and control groups. Telephone surveys (SF-12v2, WHO HPQ, WHOQOL-BREF), claims data, ACG case mix scores, and focus group transcripts documented effects of the intervention. Following is a summary of the approach to evaluation.

|  |  |  |
| --- | --- | --- |
| **Project Research Question**  | **Data Sources**  | **Outcome measures** |
| 1. Do intervention group members maintain employment longer and at higher rates than control group members? | World Health Organization’s Work Performance Questionnaire (HPQ) | Continued employment (dichotomous) |
| 2. Do intervention group members report greater work productivity than control group members? | World Health Organization’s Work Performance Questionnaire (HPQ)  | Better job performance (continuous) |
| 3. Do intervention group members apply for SSA benefits at a lower rate than do control group members? | Annual telephone assessment  | Lower rate of applications for SSA disability (dichotomous) |
| 4. Do intervention group members self-report better health status and quality of life than control group members? | QualityMetric’s SF-12v2® Health Survey(a shorter version of the SF-36v2® Health Survey that measures functional health and well-being from an individual point of view)World Health Organization Quality of Life brief assessment (WHOQOL-BREF) | Domain scores (continuous) |
| 5. Do intervention group members demonstrate better health outcomes over time than control group members? | Administrative data in combination with Johns Hopkins Adjusted Clinical Group (ACG) Case Mix system  | Case-mix scores (continuous) |
| 6. What unmet health- and employment-related needs do participants encounter? | Focus group transcripts | List of unmet needs (narrative) |
| 7. How can participants be characterized descriptively? | Administrative dataSurvey data | Descriptives (narrative) |

*Data collection procedures*

Telephone surveys were administered to intervention and control group members by a third party at regular intervals. Claims and administrative data were provided by BMI, the TPA of the Kansas high-risk pool. Semi-structured focus groups were conducted with small groups of both intervention and control group members, with the principal investigator and staff using guiding questions about health concerns and health insurance.

*Data analysis methods*

Quantitative analyses of survey and claims data included repeated measures ANOVA, regression analyses, and latent growth curve modeling. Qualitative analysis of focus group transcripts used a pile sorting and theme identification method.

**2. Evaluation Results**

**A. Outcome measures**

1. *Do intervention group members maintain employment longer and at higher rates than control group members?* Quantitative analyses of the HPQ responses showed no significant differences between groups.

2. *Do intervention group members report greater work productivity than control group members?* Analyses of HPQ responses showed no significant differencebetween groups; however in open-ended survey questions intervention group members self-reported greater work productivity due to the intervention.

3. *Do intervention group members apply for Social Security Administration (SSA) benefits at a lower rate than do control group members?* No significant differences existed between the groups in the number of individuals applying for or transitioning to any federal disability program during the study period.

4. *Do intervention group members self-report better health status and quality of life than control group members?* SF-12v2 Physical Component Summary scores, for which normal age-related decline over 2 years would be -0.8 points, decreased 0.89 for intervention and 2.5 for control group members over 32 months—a statistically **significant difference** between groups, with a medium to large effect size of 2.81 mean difference between the intervention and control groups after the 4 measured occasions (based on Cohen’s 1988 parameters).

**Significant differences** between intervention and control groups existed for self-reported health trajectory during the study period. Thirty-six percent of intervention group indicated their health had improved compared to 22% of control; conversely, only 19% of intervention group reported worsening health compared to 31% of control.

The WHOQOL-BREF environmental domain responses were **significantly different** between groups with higher scores for the intervention. This domain includes questions related to respondents’ financial resources, access to health care, and physical environment.

5. *Do intervention group members demonstrate better health outcomes over time than control group members?*

 The planned metric for answering this question was the ACG case mix score. ACG software generates a number of different metrics that measure comorbidity and predict future health care costs. Among those are a case mix score, the “reference unscaled concurrent weight,” which is a continuous scale that measures comorbidity of an individual or group relative to the average comorbidity of the general population.  Because the average case mix score of the general population is scored as 1, an individual’s or group’s comorbidity can be compared to that of the general population based on the calculated case mix score.  Thus, a case mix score of 3.5 would indicate that an individual or group is about three and half times sicker, and uses about three and a half times more health services, than the average person in the U.S.  The case mix score is calculated from ICD (international classification of disease) codes contained in claims, NDC (National Drug Codes) from pharmacy claims, total dollar amounts of medical and pharmaceutical utilization for the previous year, and the individual’s age and gender.

We hypothesized that, as DMIE participants became healthier as a result of increased access to health services, their case mix scores would decrease because they would have fewer exacerbations of chronic conditions, resulting in lower health care costs.  In fact, the opposite occurred: because the barriers to access were lowered, and participants sought care that previously had been deferred, higher utilization of all types of medical care drove up the case mix score, making intervention members appear sicker than previously.  At baseline, the combined ACG score for both DMIE groups (intervention and control) was 3.23, which suggested a comorbidity more than three times that of the general population.  The control group score was actually higher, at 3.59, than that of the intervention group (2.97), although the difference was not significantly different statistically.  The average participant had 2.6 chronic conditions, of which 1.1 were considered major illnesses, and the average cost of medical services was $9,638.  One year later, the case mix score for the intervention group had risen to 4.2, which was significantly higher than that of the control group at 3.1 (p < .05) and their chronic condition count had risen to 3.4, compared to a slight drop of 2.4 for the control group (p < .01), while the average intervention cost was also higher ($13,361) than that of the control group ($10,431), although that difference was not significant.  The finding that the intervention group had become sicker as a result of higher utilization was counterintuitive and contradicted by many other outcomes, both quantitative and qualitative, showing improved health status for the intervention group.  We thus conclude that the ACG could not accurately measure one-year change in comorbidity because the DMIE population was underserved at baseline, and thus measures of comorbidity were artificially depressed.  With increased access during the DMIE, utilization spiked, driving up all ACG metrics.  Because of pent-up demand, it cannot be concluded that the year 1 ACG scores accurately measure comorbidity any more than those at baseline; however, the ability to measure previously untreated conditions likely produced a more accurate picture of true comorbidity for both DMIE groups.  These findings are supported by similar outcomes from the Texas DMIE.

To shed more light on utilization, we compared use of medical services during the study period and noted **significant differences** between intervention and control groups (see below).

*Differences between Intervention and Control Groups’ Allowed Claims Monthly Cost per Member and Proportion of Members Served at Baseline and Year 1*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Baseline |  | Year 1 |
|  | Interventiona |  | Controlb |  | Interventiona |  | Controlb |
| Claims category | Average monthly claim ($)c | Proportion served |  | Average monthly claim ($)c | Proportion served |  | Average monthly claim ($)c | Proportion served |  | Average monthly claim ($)c | Proportion served |
| **Comparable Services** |
| Hospitalization | 277.30 | 36.4 |  | 302.40 | 39.4 |  | 320.13 | 57.0 |  | 277.61 | 39.4\*\*\* |
| Prescriptions | 187.68 | 80.4 |  | 204.99 | 77.8 |  | 275.27 | 95.8 |  | 200.14 | 79.8\*\*\* |
| Diagnostic or preventive | 138.47 | 86.9 |  | 139.56 | 87.9 |  | 216.02 | 96.7 |  | 180.07 | 87.9\*\*\* |
| Surgeries | 70.85 | 47.7 |  | 145.36\* | 49.5 |  | 185.53 | 54.7 |  | 115.26 | 42.4\*\* |
| Office visits | 34.54 | 88.8 |  | 34.78 | 84.3 |  | 54.74 | 97.7 |  | 32.26\*\*\* | 86.4\*\*\* |
| Mental health care | 10.86 | 12.6 |  | 28.00 | 18.7 |  | 16.60 | 23.4 |  | 27.22 | 18.2 |
| Medical equipment | 7.61 | 9.8 |  | 4.70 | 9.6 |  | 18.76 | 18.2 |  | 5.42\* | 6.6\*\*\* |
| **Subtotal comparable services** | 759.62 | 96.3 |  | 921.53 | 92.4 |  | 1160.81 | 100.0 |  | 879.52 | 94.9\*\*\* |
| **Enhances services** |
| Acupuncture |  |  |  |  |  |  | 0.70 | 1.9 |  |  |  |
| Dental |  |  |  |  |  |  | 114.65 | 72.0 |  |  |  |
| Exercise-Health club |  |  |  |  |  |  | 2.10 | 5.6 |  |  |  |
| Hearing |  |  |  |  |  |  | 9.70 | 2.8 |  |  |  |
| Massage |  |  |  |  |  |  | 0.97 | 1.4 |  |  |  |
| Vision |  |  |  |  |  |  | 15.96 | 15.8 |  |  |  |
| Weight loss program |  |  |  |  |  |  | 0.28 | 1.9 |  |  |  |
| **Subtotal enhanced services** |  |  |  |  |  |  | 144.35 |  |  |  |  |
| **Total** |  |  |  |  |  |  | 1305.16 |  |  |  |  |

Notes: aIntervention *n* = 214; bControl *n* = 198; cAverage monthly claims represents a per member per month cost that was computed as [total claims for the year] / [sum of members enrolled each month].

\*p <= .05 \*\*p <= .01 \*\*\*p<=.001

6. *What unmet health- and employment-related needs do participants encounter?*

 a. At baseline.

 Despite the fact that focus group members were well-educated and predominantly middle-class individuals, the evidence suggests that their medical behaviors and decisions were not based on sound medical judgment, but rather on ability to afford services (Hall, Carroll, & Moore, 2010; Hall & Moore, 2008). Participants reported that they avoided preventive and wellness services such as annual physicals, dental care, vision care, mental health services, or seeing specialists. They also reported foregoing Pap smears, mammograms, colonoscopies, bone density scans, electrocardiograms, stress tests, breathing tests, upper and lower GI studies, sleep studies, and a variety of blood tests. Participants indicated they did without such medical equipment as hearing aids, new glasses, and breathing equipment for sleep apnea; others reported going without such surgeries as ureter stent replacement, bone spur removal, and hernia repair.

Participants also reported such behaviors as “saving up” needed services to meet a deductible and skipping or inappropriately using prescription medications. They also related many increased levels of stress and anxiety due to concerns about unmet health care needs (Hall, Carroll, & Moore, 2010; Hall & Moore, 2008). Finally, many people reported adverse outcomes due to delayed care. When the intervention group was relieved of a deductible obligation, those participants cited increased use of such appropriate medical care as diagnostic testing and prescription medications. This change in utilization suggests that high deductible plans or plans with greater cost sharing may be especially problematic for a high-risk population that experiences a variety of potentially disabling mental and physical health conditions.

 b. Post-intervention.

 Control and intervention groups **significantly differed** in responses to the question, Have you needed but delayed or been unable to get (medical services)? While 45% of control group members reported an unmet need, only 11% of intervention group members did so.

7. *How are participants characterized descriptively?* Highlights of participant characteristics at baseline are listed below. Details appear in Appendix B.

* Participants experienced a range of serious and potentially disabling conditions, including diabetes, mental illnesses, cardiovascular disease, cancers, and back and joint conditions.
* Comorbidity burden was more than three times greater than that of the general population, based on ACG case mix scores.
* 55% experienced difficulties with at least one activity of daily living (ADL) or instrumental activity of daily living (IADL), primarily mobility-related.
* Incomes varied widely; however, 20% had family incomes less than 200% FPL and another 20% 200-300% FPL.
* 72% met common criteria for being underinsured (deductibles > 5% family income or out of pocket medical expenses > 10% family income).
* 29% had medical debt (median $3,000, range $430,000).
* Most reported having delayed or forgone care due to costs.

Most of these findings were or will be disseminated through peer-reviewed papers, white papers, and national conference presentations. Appendix C lists these materials and activities.

**B. Key findings from implementation/Process evaluation**

Generally speaking, administration of the Kansas DMIE was smooth. The process was facilitated by open communication between the State, BMI, and the case management company (Shorman Solutions). The group met by phone weekly, biweekly or monthly, as appropriate, for planning and problem resolution. Evaluators participated in most calls.

Perhaps the greatest strength as well as a limitation of the Kansas DMIE was its status as a wrap-around benefit superimposed on an existing insurance plan. The wraparound strategy was a strength because the population was already insured and much of the infrastructure necessary to conduct the DMIE was already in place. This infrastructure included: an easily accessible population with a relationship to BMI; a package of benefits that could be subsidized and enhanced; and a claims processing capacity. The limitation arose from the fact that the infrastructure sometimes was not able to accommodate differences in the requirements of the KHIA benefit and the DMIE benefit.

*Claims processing difficulties*

Even though BMI was able to process DMIE claims immediately after paying the KHIA benefit, enabling both portions (KHIA and DMIE) of the claim to be paid relatively quickly with separate checks, initially created some confusion for providers. However, this confusion was cleared up quickly.

A more persistent issue throughout the study was the inability to provide point-of-service payment for prescription drugs, a standard practice in most group and public insurance plans. Because the DMIE was a wrap-around benefit, all claims had to be processed for the KHIA obligation first and then reprocessed for DMIE. KHIA requires that patients pay for prescriptions out-of-pocket and submit a claim for reimbursement; no payment is made until the member has satisfied the plan deductible, and then the reimbursement is 50% for most prescriptions. Even though the DMIE paid the deductible and all coinsurance except a $3 copayment, this payment could not be made until KHIA processed the claim. Providing point-of-service payment would have required BMI to alter claims processing for the subset of members enrolled in DMIE in ways that simply were not feasible, especially for a limited period. Despite the fact that BMI pays most claims promptly, occasionally members were out-of-pocket for as much as two months’ prescriptions for at least a short time. This was a special hardship for members with modest incomes and high-cost prescription needs.

The overlayment of certain DMIE services not normally covered by KHIA also created claims processing issues. Wellness services (e.g., gym memberships, weight control plans) and nontraditional medical services (e.g., acupuncture, therapeutic massage) had to be priced and paid manually because insurance repricers, the normal channel for routing claims, do not handle these items, and usual and customary charges have not been established. Eyeglasses purchased through retail merchants and dental care also were problematic. The State had to determine what procedures should be covered and establish prices and procedure codes for electronic processing. A few prescription drugs normally covered by Medicaid (e.g., birth control, weight loss, smoking cessation, adult ADHD medications) were not covered by KHIA and were automatically denied when processed electronically. BMI was able to override the denial through a manual data entry process.

*Higher than expected costs*

Because BMI and the State lacked experience administering comprehensive dental benefits, it was unexpectedly hit by the high unmet need for restorative dental services, which quickly became a problem as some individuals began to expend thousands of dollars for services for extensive and long-term treatment plans. As a result, a lifetime benefit limit on dental services was established. In most cases, people were allowed to complete work already in process, and most did so. The state made decisions to pay over the limit on a case-by-case basis.

*Data security breach*

Data security was compromised early in the study when a CD containing DMIE claims data, including personal health data and identifiers, was lost in the KHPA mailroom. The incident triggered a revision in data exchange and security protocols, including encryption and electronic transmission via BMI’s password-protected encrypted FTP website. Approximately 200 intervention group individuals whose data were involved were notified of the loss by letter and advised to check credit reports for possible data theft. A few individuals called case managers to ask for clarification, but none dropped out of the study, and no one reported negative consequences as a result of the data loss.

*Participation issues*

Recruitment and attrition proved problematic throughout the study. Initially, for a variety of reasons, the pool of KHIA members who met eligibility requirements proved smaller than originally believed. Approximately 12% of those originally accepted into the study later decided not to participate because they were disappointed about not being randomly placed in the intervention group with enhanced benefits. Other control group members dropped out as the pressure of high premiums forced them to either find other insurance or become uninsured. Though they were no longer eligible for the study, most of these agreed to continue to participate in surveys so that their long-term outcomes could be tracked.

As a result of smaller than expected initial enrollment, two additional waves of participants had to be recruited. The second cohort began the study 9 months and the third 27 months after the first. These additions required redesigning the study and rescheduling data collection. First, because growth curve modeling required at least 3 data points to measure change, data collection was telescoped into 8-month intervals to capture the minimum three rounds during the study period. Second, during analysis, survey rounds from varying time periods had to blended, which may have introduced extraneous variance due to external factors, such as the economic downturn.

The need to repeat recruitment also offered an opportunity to apply lessons learned about the importance of having potential participants contacted by a familiar and trusted recruiter. Initially, some KHIA members appear to have refused to receive information about the study due to suspicion and the feeling that the benefit was too good to be true. During the second and third rounds of recruitment, we hired the TPA to make initial phone contact, resulting in a much higher acceptance rate.

Tracking enrollment was a problem throughout the study for a number of reasons. First, KHIA members did not always notify BMI when they discontinued their policies; they simply stopped paying. Sometimes, they forgot premiums or paid late and were terminated without realizing it. Both situations result in ambiguity as to who is actually enrolled at any given time. Until we emphasized to BMI the importance of their notifying us, we faced the challenge of attempting to analyze data on participants who were no longer eligible for the study. Even after we were notified and contacted participants to find out why they had dropped out, we sometimes found that participants had not realized their coverage had been dropped. BMI allowed those individuals with no previous premium lapses to appeal and reinstate coverage, so often we found ourselves adding back to quarterly report tallies participants we had deleted the previous quarter.

*Communication with participants*

Communication with study participants was improved by introducing newsletters in 2007. Separate versions were created for intervention and control groups and mailed quarterly throughout the study. Among other purposes, newsletters were used to remind participants of upcoming surveys and questions about specific topics that might require advance preparation, such as utilization, out-of-pocket costs, and income.

Feedback from telephone survey participants indicated that some people were having trouble remembering the scales to answer Likert-like survey questions, and a few requested written copies of the questions. As a consequence, the evaluators developed survey guides containing, first, scaled questions, and, later, the entire survey. Because of the survey length, compressing the questions into a 3-4 page format proved challenging but ultimately was successful and appears to have helped surveys proceed faster and more smoothly. Average time to complete a survey decreased steadily with each round.

*Post-study care issues*

A serious concern was that some DMIE participants faced serious health problems and, because of limited resources, would not be able to maintain KHIA coverage once the DMIE ended. Even though encouraging them to apply for disability could potentially affect study outcomes by increasing the number of intervention group members transitioning to disability benefits, we felt that it would be unethical not to inform them of the Medicaid Buy-In for which some might be eligible. Ultimately, the State decided to obtain KHIA board permission to inform the entire risk pool of the program through a special mailing. Overall, we received about 60 calls from KHIA members in response to the mailing about the Buy-In, Working Healthy. Of these, about 10 were not working and thus were ineligible. The remaining 50 were referred to a Benefits Specialist to discuss eligibility and application procedures; 30 of these individuals were DMIE participants. Several ended up qualifying for the Buy-In, and several more are still in the process of applying or appealing. While the number of DMIE participants who transitioned to Working Healthy or Medicare was small, our mailing may have had some affect on the comparative disability outcome between intervention and control groups.

We also created and mailed a resource guide to all DMIE participants as the study ended. The guide listed safety-net clinics, prescription drug assistance programs, and other medical benefits available at no or reduced cost across the state.

*Staff turnover*

One difficulty in overall administration of the DMIE was a high turnover rate in the CMS leadership assigned to these projects. DMIE states worked with no fewer than 4 project officers over the 5 years of project funding.

**C. Study Limitations**

Although the study is limited to a single state, studies based on small, geographically limited samples can be helpful for highlighting the need for more work in understanding broader needs. (Hall, Carroll, & Moore, 2010). Findings were intended to be relevant to the same population in at least the 34 other states that operate high-risk pools. Further, subsequent to this study, a temporary national high-risk pool (also known as the Pre-existing Condition Insurance Plan, PCIP) has been formed, and the findings from this study may be important to understanding the population in the new pool. Finally, the study results will also inform policy makers as they finalize regulations and requirements for coverage through the Exchanges, which begin in 2014. In particular, coverage available through the Bronze, or basic, plans may be somewhat similar to risk pool coverage and potentially result in inadequate coverage for people with potentially disabling conditions.

We believe that this study had insufficient time for observing long term health and employment outcomes. Although funding was for 5 years, ramp up and phase down activities consumed approximately a year, resulting in a maximum of 3.5 years for the intervention. Further, study attrition necessitated recruitment of more participants in the second year of the study, who then received only 2 years of intervention. Miller (2005) noted that the median working-age male with a work-limiting condition waits 7 years, and females 8 years, before applying for SSA benefits.

**3. Conclusions and Next Steps**

The Kansas DMIE confirmed that providing enhanced health services to people with potentially disabling conditions can prevent or forestall declines in health status that could eventually lead to dependence on federal disability programs. This finding has significant implications in light of the recent rapid growth in applications to and awards of federal disability benefits; the DMIE suggests that it is cost-effective to provide improved health care early in the course of a chronic illness to offset greater longer-term costs. As such, it is a model that should be further tested and expanded. In anticipation of future replications, we offer here several lessons learned from the Kansas DMIE that may help to inform future Demonstration and/or health reform efforts.

The majority of DMIE participants were underinsured through the Kansas high-risk pool, meaning that their deductible was more than 5% of their income, or that their out-of-pocket health care costs were more than 10% of income. Because basic, or Bronze coverage through the Exchanges will have actuarial values similar to those of many risk pool plans, their enrollees may also be underinsured—potentially leading to poor health outcomes over time.

One important component of the DMIE in Kansas—and similar to models in the other DMIE states—was the provision of nurse case management services. DMIE participants reported high satisfaction with this service and credited the case managers with helping them to more efficiently navigate the health care system. If health reform efforts result in substantial numbers of Americans becoming newly insured, such a service might prove very cost-effective in assisting them to utilize their new benefits appropriately.

Finally, as noted above, a longer demonstration period would likely have resulted in more robust outcome measures, given the length of the typical trajectory to disability for adult workers. The recent Patient Protection and Affordable Care Act (PPACA; P.L. 111-148) legislation includes demonstration authority that potentially provides opportunities for additional DMIE-related studies.

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**Appendix A: Wraparound benefits description**

While participating in DMIE intervention group members’ premiums were $152 ($304 if both spouses were participants in the program). They paid no deductible and/or co-insurance for services obtained from In-Network providers. They were required to make co-payments of $3 per service and, in some cases, any charges that exceed maximum allowable fees.

For Out-of-Network providers they were also required to pay the any charges above the usual, reasonable, and customary amount for a covered service. They were still required to follow all KHIA provider network and prior authorization rules to avoid additional expense.

The following *additional* services were covered through DMIE:

1. Outpatient self-management training and education
2. Dietetic professional to provide assessment and education to improve health.
3. Remote monitoring of vital signs
	1. Glucose-reagent strip
	2. Measurement of oxygen levels in the blood
	3. Blood pressure
4. Attendant Care/ Personal Services home visits for assistance with activities of daily living and personal care.
5. Sixty (60) home health services days in addition to the 270 services days provided through KHIA coverage, totaling 330 days per year.
6. Additional mental disorders or substance abuse coverage, including depression disease management. In-patient Benefits: after 30 days or $7,500 in benefits; Out-patient Benefits:visits up to 52 visits a year.
	1. Outpatient treatment for mental disorders / substance abuse
	2. Screening, evaluation, and referral
	3. Short-term family therapy
	4. Home visit for individual or family counseling
7. Non-restorative physical or occupational therapy needed to maintain function (e.g. lifting, pulling, bending)
	1. Massage therapy
	2. Aqua therapy
	3. Music therapy
8. Therapeutic and intervention counseling for smoking cessation including drug aids.
9. Coverage for obesity management
	1. Health and behavior assessment
	2. Surgical procedures related to the restriction of excess weight.
10. Evaluation of physical training
11. Dental coverage for semi-annual exams, cleaning and regular restorative dentistry.
12. Vision services and supplies
	1. Annual eye exam
	2. One pair of glasses every two years
13. Hearing services and supplies
	1. Exams and testing
	2. Hearing aids
14. Medical equipment to support/train specific area of the body.
15. Health promotion activities
	1. Therapeutic exercises to develop strength and endurance, range of motion and flexibility
	2. Biofeedback training
	3. Acupuncture
	4. Influenza and pneumonia vaccine
	5. Sleep studies
	6. C-PAP and Bi-PAP
	7. PET Scan
	8. Diabetic foot care
16. Medically necessary breast reduction surgery
17. Bone Density testing
18. Wound Therapy to promote healing using
	1. Non-selective surgical removal of dead or contaminated tissue and removal of foreign matter from a wound.
	2. Negative pressure wound therapy
19. Additional chiropractic services above the KHIA 20 visit per year limit.
20. Drugs and medicines requiring a written prescription by a Doctor. Drugs covered by the KHIA plan will be covered with a $3 co-payment. Coverage will be based on the cost of a generic, if available. If not available or if the prescription requires Name Brand, coverage will be based on the Regular Charge of the Prescription. You must go through a Prescription Network Provider to get your Prescription filled.

**Appendix B: Participant characteristics**

Table 1

*Demographics by Intervention and Control Groups*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Intervention | Control | Total |
| Age (average at time of enrollment) | 51.0 years | 51.4 years | 51.2 years |
| Female (% of group) | 49.5 | 50.5 | 50.0 |
| Married (% of group) | 57.5 | 54.5 | 56.1 |
| Urban residence (% of group) | 58.9 | 63.1 | 60.9 |
| Educational attainment (% of group) |  |  |  |
| High school or less | 21.5 | 16.7 | 19.2 |
| Some college | 40.2 | 36.4 | 38.3 |
| 4-year degree | 18.2 | 24.7 | 21.4 |
| More than 4-year degree | 20.1 | 22.2 | 21.1 |

Table 2

*Major Potentially Disabling Conditions by ICD-9 code for Total Sample*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Claims-based conditions |  | Self-reported conditions |  | Maximum combined |
| ICD-9 category (codes) | Percent of group | *n* |  | Percent of group | *n* |  | Percent of group | *n* |
| Immune (042, 279) | 1.7 | 7 |  | 1.7 | 7 |  | 2.2 | 9 |
| Cancers (140-165, 170-72, 174-77, 179-208, 230-35) | 13.1 | 54 |  | 15.8 | 65 |  | 18.7 | 77 |
| Diabetes/Endocrine (250, 277) | 25.0 | 103 |  | 25.5 | 105 |  | 28.6 | 118  |
| Blood (282-289) | 7.0 | 29 |  | 2.7 | 11 |  | 8.0 | 33 |
| Psychiatric (294-301, 310-11) | 17.2 | 71 |  | 33.5 | 138 |  | 36.4 | 150 |
| Neurological (331-337, 340-45, 350-59) | 10.7 | 44 |  | 10.9 | 45 |  | 16.3 | 67 |
| Stroke (430-38) | 2.7 | 11 |  | 1.7 | 7 |  | 3.2 | 13 |
| Sensory (360-65, 369, 386-88) | 7.0 | 29 |  | 3.6 | 15 |  | 9.7 | 40 |
| Cardiovascular (393-98, 410-17, 420-29, 440-48) | 22.8 | 94 |  | 25.5 | 105 |  | 31.6 | 130 |
| Respiratory (491-96, 500-04) | 8.3 | 34 |  | 18.2 | 75 |  | 19.9 | 82 |
| Gastrointestinal (555-56, 570-73) | 4.1 | 17 |  | 8.3 | 34 |  | 9.7 | 40 |
| Renal (580-89) | 1.5 | 6 |  | 1.7 | 7 |  | 2.7 | 11 |
| Musculoskeletal (710-25, 731-32, 737, 741) | 34.5 | 142 |  | 37.4 | 154 |  | 51.9 | 214 |

Table 3

*Employment and Income by Intervention and Control Groups*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Intervention | Control | Total |
| Mean (*SD*) work hours in prior month | 146.5 (86.0) | 149.2 (76.5) | 147.8 (81.5) |
| Self-employed (% of group) a |  68.9% |  73.6% |  71.1% |
| Full time equivalency (% of group) |  |  |  |
| Full time (160 hours or more) |  42.5% |  52.0% |  47.1% |
| Half to full time (80–159 hours) |  40.7% |  29.3% |  35.2% |
| Less than half time (40–79 hours) |  16.8% |  18.7% |  17.7% |
| Own annual earned income ($ in 000) b |  |  |  |
| Mean (*SD*) | $46.3 (55.5) | $49.8 (64.2) | $48.0 (59.8) |
| 5% trimmed mean | $38.2 | $40.7 | $39.4 |
| Median | $30.0 | $32.0 | $30.0 |
| Family annual total income ($ in 000) c |  |  |  |
| Mean (*SD*) | $69.3 (69.1) | $72.2 (72.4) | $70.7 (70.6) |
| 5% trimmed mean | $60.9 | $63.2 | $62.0 |
| Median | $50.0 | $50.0 | $50.0 |

Notes: a*n* = 388, 24 people did not answer question; b*n* = 401, 11 people refused to disclose own income; c*n* = 397, 15 people did not know or refused to disclose family income.

Table 4

*Insurance Plan, Underinsurance, and Medical Debt at Baseline (percent of group)*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Intervention | Control | Total |
| Plan deductible at baseline |  |  |  |
| $500 |  1.4 |  3.0 |  2.2 |
| $1,000 |  18.7 |  16.2 |  17.5 |
| $1,500 |  20.6 |  24.7 |  22.6 |
| $2,500 |  10.7 |  11.6 |  11.2 |
| $5,000 |  28.0 |  28.3 |  28.2 |
| $7,500 |  19.2 |  15.2 |  17.2 |
| $10,000 |  1.4 |  1.0 |  1.2 |
| Criterion for under-insurancea |  |  |  |
| Deductible > 5% of family income |  54.6 |  52.1 |  53.4 |
| Out-of-pocket expenditures > 10% of family income |  40.5 |  35.9 |  38.3 |
| Either of the above |  75.6 |  68.8 |  72.3 |
| Medical debtb |  27.1 |  30.5 |  28.7 |

Notes: a *n* = 397 because of 15 refusals to disclose family income; b Question administered in Round 2 survey, 8 months after study began.

**Appendix C: Dissemination of findings**

**Publications**

*Preventing disability among working participants in Kansas’ high-risk insurance pool: Implications for health reform.*Hall, J.P., Moore, J.M., & Welch, G.W. (submitted manuscript). *Journal of Vocational Rehabilitation.*

*Health care behaviors and decision-making processes among enrollees in a state high risk insurance pool: Focus group findings.* Hall, J.P., Carroll, S., & Moore, J.M. (2010). *American Journal of Health Promotion, 24*(5), 304-310.

*Disability prevention among enrollees in a state high-risk insurance pool.*Hall, J.P., Carroll, S.L., & Moore, J.M. (2010). *Disability and Health Journal, 3*(2), e3.

*Staying healthy to stay in the workforce: The role of health insurance.*Hall, J.P. (2009). *Policy & Practice of Public Human Services, 67*(3), 24.

*Impact of current health care reform proposals on people with chronic illnesses.*Hall, J.P., Moore, J.M., Otto, B., & Salley, S. (Nov. 2009). National Consortium on Health Systems Development Policy Brief. Available at http://www.nchsd.org/library/file.asp?id=300779.

*Does high risk pool coverage meet the needs of a population at risk for disability?*Hall, J.P., & Moore, J.M. (2008). *Inquiry, 45*(3), 340–352.

*The Kansas Demonstration to Maintain Independence and Employment: Preventing or forestalling disability among participants in the Kansas high risk insurance pool.*Hall, J.P., & Moore, J.M. (2008, November). *Working Healthy Policy Brief Number 11*. Lawrence: University of Kansas.

**Presentations**

*Interventions for potentially disabling conditions: Findings and lessons for reform from the DMIE.*Hall, J.P. (2010). To be presented to the 2010 Fall Conferences of the National Association of State Medical Directors (NASMD), November 8-10, 2010, Arlington, VA.

*Effects of enhanced insurance on health outcomes of people with potentially disabling conditions.*Hall, J.P. & Moore, J.M. (2010). To be presented to the 138th American Public Health Association (AHPA) Annual Meeting, November 6-10, 2010, Denver, CO.

*Health insurance with high cost-sharing: Implications for health care reform.*Hall, J.P., Moore, J.M., & Chapman, S.C. (2010). To be presented to the annual conference of the Kansas Public Health Association (KPHA), September 29-30, 2010, Topeka, KS.

*A first look at PCIPs across the states.*Hall, J.P., & Moore, J.M. (2010). To be presented at the annual conference of the National Association of State Comprehensive Health Insurance Plans (NASCHIP), September 22-24, 2010, San Diego, CA.

*Implications of the Kansas DMIE for national health care reform.*
Hall, J.P. & Moore, J.M. (2010). Presented to MIG/DMIE Employment Summit, April 21, 2010, Pittsgurgh, PA.

*Using the ACG as a longitudinal measure of comorbidity in a state high risk pool.*
Moore, J.M. & Hall, J.P. 2010 ACG International Conference, May 10-12, 2010, Tucson, AZ.

*Health care behaviors among enrollees in a state high-risk insurance pool*.
Hall, J.P., Carroll, S.L., & Moore, J.M. (2009). Presentation a the American Public Health Association Annual Meeting and Exposition, November 11, 2009, Philadelphia, PA.

*Medicaid Buy-Ins and state high risk pools: Can they work together?*Hall, J.P., & Moore, J.M. (2009). MIG/DMIE Employment Summit, April 29, 2009, San Francisco, CA.

*Kansas Demonstration to Maintain Independence and Employment: Overview and preliminary findings.*Hall, J.P. (2008). Presentation to the Kansas Health Insurance Association. July 17, 2008, Topeka, KS. [invited]

*Barriers to employment and health care for rural Kansans with disabilities*.
Hall, J.P. (2008). Presentation at “Strengthening the Intersection of Demand and Supply-Side Disability Employment Research: Toward a Coordinated Federal Research Agenda,” State of the Science Conference, Federal Interagency Committee on Disability Research. June 24, 2008, Washington, DC. [invited]

*Dealing with attrition*.
Hall, J.P. (2008). Topical discussion at the MIG/DMIE Employment Summit: Reducing Barriers by Melding Data and Policy. April 22, 2008, New Orleans, LA. [invited]

*The Kansas Demonstration to Maintain Independence and Employment*.
Hall, J.P. (2008). Presentation for Senate and House Congressional Briefings. April 15, 2008, Washington, DC. [invited]

*Potentially disabling conditions and health services utilization among participants in the Kansas high-risk health insurance pool*.
Hall, J.P. (2007). Presentation at the AcademyHealth Annual Research Meeting, Disability Research Interest Group. June 5, 2007, Orlando, FL.

*Historical disability outcomes of enrollees in the Kansas high-risk pool: A white paper.*
Hall, J.P., & Moore, J.M. (2006). Presented to CMS by the Kansas DMIE Project, January 2006. http://kuscholarworks.ku.edu/dspace/handle/1808/6668