

Monitoring Duration of Coverage in Medicaid and CHIP to Assess Program Performance and Quality

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ABSTRACT

OBJECTIVE: To assess measures of Medicaid and Children's Health Insurance Program (CHIP) coverage duration for potential inclusion in a core set of children's health care quality measures as called for by the Children's Health Insurance Program Reauthorization Act (CHIPRA) of 2009.

METHODS: We reviewed published and unpublished reports and spoke to researchers, analysts, and program officials at the federal level and in selected states. Measures available in administrative data were assessed with regard to the feasibility of implementation and their validity in terms of their association with child health outcomes and state policy choices.

RESULTS: Although many measures are feasible to construct using existing administrative data, prospective measures of duration that examine a cohort of new enrollees were found to be the most valid measures based on research linking their outcomes to program policies and their consistent interpretation across states with similar enrollment and renewal structures. However, the inability of some states to link together data from their Medicaid and CHIP enrollment files affects the interpretation of these and other measures across states.

CONCLUSIONS: Prospective and retrospective measures of duration were recommended for inclusion in the core set of

quality measures. Although the prospective and retrospective measures were ranked high in terms of validity and importance by the Subcommittee on Quality Measures for Children's Health Care in Medicaid and CHIP, concerns were raised about feasibility given that no state currently uses these measures to monitor program performance. Additional technical and financial resources and enhancements to administrative data systems will be needed to support state efforts in this area of quality assessment, particularly in the areas of linking Medicaid and CHIP data files, improving reason for disenrollment codes, and improving race and ethnicity coding. Monitoring how well states are doing at enrolling and retaining children in Medicaid and CHIP is a critical component to assessing overall program performance and quality and for interpreting many of the other proposed quality measures.

KEYWORDS: administrative enrollment files; child health care quality; Children's Health Insurance Program; duration of health insurance coverage; Medicaid; MSIS

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THE CHILDREN'S HEALTH Insurance Program (CHIP) Reauthorization Act (CHIPRA),¹ passed in early 2009, included a number of provisions aimed at improving quality of care and program retention for children.² Section 401 directed the Secretary of Health and Human Services to develop an initial core set of health care quality measures for children that includes, among other things, "the duration of children's health insurance coverage over a 12-month period." The CHIPRA provisions also include policies aimed at increasing participation in Medicaid/CHIP, such as new performance bonuses for states that both adopt 5 of 8 proposed simplification/outreach measures (eg, 12-month continuous eligibility, administrative or ex parte renewal) and exceed Medicaid enrollment targets.

Tracking coverage duration is important because it allows states to assess whether the policy changes they adopt are having the intended effects, and it helps the

federal government and states assess the extent to which programs are successfully addressing coverage gaps among the population targeted by Medicaid and CHIP. Millions of children are uninsured, despite being eligible for coverage under Medicaid or CHIP.³ Although Medicaid and CHIP have achieved higher participation rates than other means-tested programs,⁴ and although low-income families generally have positive perceptions of these programs, families often face numerous barriers to enrolling in these programs and to staying enrolled,^{5,6} including documentation requirements and other nonmonetary and monetary costs associated with completing the application and renewal processes, as well as premium payments.^{7–9}

The adverse consequences of uninsurance for children include lower access to needed health services, including preventive care, increased unmet health needs, and worse health outcomes.^{10,11} Research evidence suggests that gaps

in insurance coverage can also negatively affect children's access to care and health outcomes, making continuity of health insurance coverage of interest when considering measures of health care quality.^{12–15} Thus, retaining coverage for children who enroll in Medicaid or CHIP is critical to ensuring their continuous access to care.^{16,17}

Research evidence suggests that many children who disenroll from public coverage become uninsured.^{18,19} Thus, by retaining children in Medicaid/CHIP for longer periods of time, states are likely to also reduce the number of uninsured children. Moreover, increasing retention rates in Medicaid and CHIP could go a long way toward reducing uninsurance among children. Recent data suggest that one-third of uninsured children were enrolled in Medicaid or CHIP at some point in the prior 2 years (Urban Institute tabulations of the 2005–2006 Medical Expenditure Panel Survey).

Disenrollment from public coverage often occurs around the 6th or 12th month of enrollment, at the point of coverage renewal or eligibility redetermination.^{20,21} State policies aimed at reducing burdens on families to maintain coverage appear to improve program retention.^{21,22} For example, studies indicate that longer periods of continuous eligibility, streamlined renewal processes, and the use of administrative or *ex parte* verification of ongoing eligibility promote longer enrollment periods for children.^{20–25}

Here, we consider the strengths and weaknesses of alternative measures of enrollment duration available from administrative data and recommend measures for inclusion in the initial core set of health care quality measures.²⁶ We conclude with a set of recommendations for improving the information available for assessing program quality and performance.

METHODS

We assessed available duration measures that are based on administrative data with respect to feasibility (ie, the extent to which individual states could report on the measure in a timely, accurate fashion) and validity (ie, the extent to which variation in the measure would be associated with improvements or deterioration in child health outcomes and the extent to which the measure would be sensitive to state policy changes aimed at altering program retention outcomes). Whether the measure could stand alone or whether it would need to be considered in the context of other related measures was assessed. Finally, a measure's potential to become a building block for compiling a more complete set of measures was also considered.

We examined how existing administrative data systems such as state enrollment files and the Medicaid Statistical Information System (MSIS) could be used to assess program retention, enrollment duration, and churning at the state level. The MSIS contains administrative data reported by all states to the Centers for Medicare and Medicaid Services (CMS) on their Medicaid and Medicaid expansion CHIP programs in a standardized format.²⁷ Administrative enrollment files indicate who is enrolled in

Medicaid, and in some states CHIP, and their program eligibility category (eg, Temporary Assistance for Needy Families/cash assistance, Supplemental Security Income/disability, poverty-related, CHIP), along with limited demographic information (eg, age, sex, and with varying degrees of reliability, race/ethnicity) and geographic location. To the extent that states maintain program eligibility categories for certain income groups (eg, those subject to premium payments), detailed income information may be available for some enrollees. For states operating fee-for-service programs, examining patterns in the claims data may also yield a measure of health status.^{18,24}

Our assessment was based on published and unpublished literature and reports that used administrative data to examine different measures of program duration and retention (see online [Appendix Table](#)). To identify relevant literature, we searched combinations of the keywords “children,” “health insurance,” “uninsured,” “duration,” “continuous,” “enrollment,” “retention,” “churning,” “Medicaid,” “CHIP or SCHIP,” and “quality” in PubMed and GoogleScholar databases; we examined Web sites of organizations known to conduct research on this topic; and we used reference lists on all the publications we found to identify additional studies. When needed, we obtained unpublished literature directly from authors. In addition, we talked with 28 individuals knowledgeable in this area, including researchers at academic institutions and other organizations ($n = 11$), analysts at national organizations and in the federal government ($n = 9$), and program officials and staff in selected states ($n = 8$). The objectives of the discussions were to identify additional relevant research, program data, and measures, and to gain a broad range of perspectives about both the feasibility and validity of alternative measures under consideration.

FINDINGS FROM THE LITERATURE

The search identified measures in 4 broad categories: prospective and retrospective duration measures; continuity ratios and average duration measures; retention/disenrollment rates; and churning rates (Table 1).

PROSPECTIVE AND RETROSPECTIVE DURATION MEASURES

These measures examine the duration experience of a given cohort of enrollees, defined in a specific month or set of months. The prospective measure can also be defined as a cohort of enrollees in the first month of enrollment. In the case of the prospective measure, which many researchers have analyzed using hazard and survival models, the number of months enrollees stay continuously enrolled in the program is examined looking forward.²⁸ With this measure, it is possible to track the share of enrollees who are still enrolled after a certain period of time and to identify which enrollees (ie, by age, sex, geography, eligibility category, and possibly race/ethnicity) are disenrolling from public coverage. In the case of the retrospective measure, the coverage duration of enrollees is examined looking backward to determine the length of the current enrollment period. This measure permits the

Table 1. Available Measures of Duration of Coverage*

Measure	General Definition
Prospective duration of coverage‡	(Number of children in a new cohort who are still enrolled after \times years (eg, 1, 2, 3))/(Total number of enrollees in original cohort of new enrollees)
Retrospective duration of coverage‡	(Number of children at time t enrolled for \times years (eg, 1, 2, 3))/Total number of children who are enrolled in time t)
Continuity ratios‡	(Average monthly number of enrollees in a fiscal year)/(Number of unduplicated enrollees over the entire year)
Average duration of coverage‡	Σ ((Number of months child had public coverage)/12)
Retention rates (1)§	(Number of children remaining enrolled after month of renewal)/(Number of children due for renewal in month)
Retention rates (2)§	(Number of children remaining enrolled in month of renewal)/(Number of children due for renewal in month who remain eligible for program)
Disenrollment rates (1)§	(Number of children disenrolled from coverage in month of renewal)/(Number of children due for renewal in month)
Disenrollment rates (2)§	(Number of children disenrolled from coverage in month of renewal)/(Number of children due for renewal in month who remain eligible for program)
Churning	Alternative variants available. See online Appendix Table for examples in the literature.

*See online [Appendix Table](#) for examples in the literature that use these measures.

‡These measures are currently in use by researchers but not by states. The prospective measure is the most valid of all measures evaluated, while the retrospective measure has some additional validity concerns as a result of the definition of the sample base. Ideally, both measures would be calculated at the individual level by eligibility category, age, sex, race/ethnicity, and geography; for Medicaid and Children's Health Insurance Programs together and separately; and separately for enrollees who were eligible for coverage at time of disenrollment.

‡Continuity ratios and average duration of coverage measures are aggregate measures in use by both researchers and states that can be calculated with existing data systems. They are feasible and somewhat valid, but they may have different interpretations across states.

§Retention and disenrollment rates are in use by both researchers and states, but they may have different interpretations across states as a result of varying definitions and program structures.

||Measures of churning were not explicitly assessed in this paper because they build on the prospective and retrospective duration measures. There are a number of ways to define churning based on this framework.

tracking of average enrollment duration for the children who are enrolled in Medicaid or CHIP coverage at a particular point in time, thus capturing the duration experiences of a different set of children enrolled in the program than those captured in the new enrollee cohorts.

CONTINUITY RATIOS AND AVERAGE DURATION MEASURES

The continuity ratio, which equals the average monthly enrollment for a fiscal year divided by the total number of unduplicated enrollees over the entire year, has been computed for all 50 states by Ku and colleagues on the basis of publicly available data for 2006 and earlier from the MSIS.²⁹ The continuity ratio is very similar to the measures of average length of enrollment for a 12-month period that are being tracked by CHIP programs in 10 states and the District of Columbia, although the underlying methodology that is used may vary across states.³⁰ Separate ratios can be calculated by eligibility category (ie, aged, disabled, children, and adults), and a summary ratio for all enrollees can also be standardized across states by weighting the ratios of the different eligibility categories by the national caseload mix of the 4 eligibility groups. The closer the ratio is to 1, the larger the proportion of enrollees who have Medicaid coverage over the entire year.

RETENTION/DISENROLLMENT RATES

A number of researchers have examined retention and disenrollment,^{20,21,31} and 12 states currently track data on retention at the point of renewal, although the methodology used is not standardized across states.³⁰ There are 2 major variants on these measures. The first takes as the numerator the number of children who stay

enrolled in the program through the month of renewal or for at least 1 month past the renewal date and includes as the denominator all children who were due for a renewal in a given month. The second measure is a more refined version of the first, using the same numerator but attempting to limit the denominator to those children who were still eligible for the program at the time of renewal. Defining this population requires data on the reasons for disenrollment, which is currently tracked by 15 states;³⁰ however, the coding of reason for disenrollment is not standardized across states, and at this point is not available on the MSIS. In addition, the information available on reasons for disenrollment is sometimes problematic. For example, the reason category "did not complete process" contains no information on why the disenrollee failed to complete the process. Accurate information is often missing as a result of the difficulty of tracking children after they leave the program. A third approach would be to track retention among the children who applied for a renewal of coverage (Christopher Trenholm, Mathematica Policy Research, personal communication, November 2009), which could provide insights about the extent to which administrative factors (such as income documentation requirements) affect retention and enrollment duration. Such a measure would require flags in the administrative data files to identify the children who are attempting to renew their coverage.

CHURNING RATES

Churning captures the extent of disenrollment and reenrollment over a period of time, allowing the length and number of gaps in coverage to be examined. Because this

measure builds on the prospective and retrospective duration measures, it is considered an extension of that approach rather than an approach to be assessed separately.

PROS AND CONS OF ALTERNATIVE MEASURES

Although all the measures considered here are feasible and, to some degree, valid, there are a number of concerns and caveats that should be kept in mind when developing and using duration measures for use in assessing program performance.

FEASIBILITY

Prospective and retrospective measures of duration can be derived from existing state Medicaid and CHIP administrative enrollment data. Moreover, they can be defined for key subgroups of interest—by age, sex, eligibility category, and geographic location for all states and by race/ethnicity and primary language for some states. Detailed specifications for these 2 types of measures have been developed by a number of different researchers and have been implemented with data from a number of states.^{18–20,22–24,32–35} However, no state currently reports on the prospective duration measure.

In contrast, the continuity ratio and the average duration of enrollment measures are already in use and are based on data currently available and regularly reported by states, requiring little additional effort to compute and no additional investments in data systems.

Because it is difficult or costly for some states to link their Medicaid and separate CHIP enrollment data (because of the use of different enrollee identifiers and/or incompatible data systems across the 2 programs), it is not feasible to calculate combined duration measures for Medicaid/CHIP in a number of states. In these states, children who transfer from one program to another would be considered disenrollees, whereas in states that can link their Medicaid and separate CHIP data they would be considered continuously enrolled. Therefore, the definition of a new enrollee will not be the same across the states that do and do not link their Medicaid and CHIP data. Given these differences, it will be important to consider these states separately from states with linked data.

In addition, existing enrollment files in some states provide little information on whether the children who disenroll are still eligible for coverage (other than information on children aging out of coverage) and often lack information on whether a child who disenrolls gains private coverage. Therefore, in many states, it is not currently feasible to examine duration among the children who are likely to still be eligible for coverage.

VALIDITY

The prospective measure has the fewest concerns about its validity, followed by the retrospective measure. Using a prospective framework, researchers have found that 12-month continuous eligibility, lower or no premiums, and simplified or passive renewal procedures lead to

longer periods of continuous enrollment.^{18,19,22–24,34} The retrospective measure may not be as robust an indicator of how program duration is changing relative to the prospective measure because the composition of enrollees can change over time in ways that affect the measure, even if underlying program duration is not changing (eg, if the number of children enrolling in the program doubled over a 6-month period, duration based on the retrospective measure could decline because there are so many more recent enrollees, even if there is no change in the underlying duration distribution).

As indicated below, there are more concerns about the validity of the continuity ratios and the retention rates, particularly for cross-state comparisons. Although the continuity ratio has face validity (eg, ratios are larger for the disabled population and for children than they are for nondisabled adults), no research has assessed how sensitive the continuity ratio is to changes in program characteristics related to retention as has been done for the prospective duration measure. In addition, the continuity ratio may not be an accurate indicator of program performance. In particular, a midyear outreach campaign or some other set of circumstances that brings large numbers of children into public coverage over the course of a year—such as a back-to-school initiative—would reduce the continuity ratio. It is also important to note that this ratio does not measure duration of continuous enrollment per se; rather, it reflects a ratio of monthly enrollment counts to total enrollment over the course of a fiscal year and therefore does not distinguish between 10 months of continuous enrollment versus two 5-month periods of enrollment separated by a 2-month gap in coverage. Finally, given that the work of Ku and colleagues²⁹ draws on MSIS data, it reflects CHIP (Title XXI) data only in states that report that data to MSIS, meaning that the estimates for the states without CHIP data are biased downward relative to other states.

As with the other measures, the ability to identify children who are transferring from one program to another affects the interpretation of retention and disenrollment rates. In addition, because retention and disenrollment rates only include in the denominator children who are still enrolled at the renewal point, the measure contains no information on how many children leave the program before the renewal point, introducing concerns about comparability across states. For example, a state that loses a large share of enrollees before the renewal date would have a smaller denominator for its retention rate than a state with fewer midyear disenrollees. If these states have similar retention rates at renewal, they may appear to be doing equally well at keeping children enrolled despite the fact that the second state has more children reaching the renewal point. In addition, some states have recertification every 6 months, complicating their comparison to states with 12-month recertification periods. One way to address this limitation would be to report the disenrollment rate in nonrenewal months (number disenrolled/total enrolled) in addition to the measures described above, which would provide information on how many children leave the program before and after renewal.

Retention measures have proven to be powerful monitoring tools for individual states and have been shown to be closely tied to programmatic changes aimed at reducing barriers to reenrollment.^{36,37} At this point, they are less meaningful for making comparisons across states, given the differences in renewal and recertification periods and the lack of coding standardization of the reasons that children disenroll from coverage.

There are a number of caveats regarding validity that should be kept in mind when considering duration measures for inclusion as part of a core set of quality measures. Although higher proportions of children staying enrolled for 12, 18, and 24 months could indicate that the program is more successful at keeping children continuously enrolled, economic or other factors external to program administration and management could affect the measures. In order to improve the saliency of these measures, it will be important for states to use targeted information on the reasons that children are disenrolling from public coverage to identify the children who remain eligible for coverage and to assess how duration is changing for them.

In addition, the share of children staying continuously enrolled in Medicaid/CHIP may be high while underlying uninsured rates among the target population are growing. For example, some states have introduced waiting lists or freezes on their CHIP programs, making it difficult or impossible for new applicants to gain coverage. At the same time, this policy may provide a strong incentive for current enrollees to stay enrolled for fear of being unable to regain coverage once it is lost. In such cases, program duration may be increasing, but larger numbers of eligible children may be going without coverage. It is therefore important to consider these measures in the context of overall enrollment changes in the programs and changes in underlying uninsured rates among the target population and for states to report on major policy changes implemented during the reporting period that could affect interpretation of these measures.

Third, retroactive eligibility may mask short gaps (less than 3 months) in coverage because once the child is reenrolled, the period of retroactive eligibility may be applied to those months, which could give the appearance of continuous enrollment. Conversely, presumptive eligibility could have the effect of lowering coverage duration to the extent that these children are only enrolled for the presumptive period and are not subsequently enrolled in another eligibility category.

RECOMMENDATIONS TO SUBCOMMITTEE

After assessing the pros and cons of the available measures, the prospective and retrospective duration measures were recommended to be included as part of a core set of quality measures for children in Medicaid and CHIP. Although all the measures considered from administrative data are feasible to construct, these measures were found to be the most valid based on research linking their outcomes to program policies.

These measures ideally should be computed separately for Medicaid and CHIP coverage, and in the states with data systems that allow linkages between Medicaid and CHIP enrollment, they also should be computed for the 2 programs together. Furthermore, these measures should be used to assess the extent of successful and unsuccessful transitions between the 2 programs as a result of age and/or family income changes. Taken together, they provide the building blocks for developing measures of program churning and for assessing the extent to which the children leaving the program remain eligible for coverage.

Both the prospective and the retrospective duration measures were recommended for inclusion because once one is developed, the additional programming required to develop the other would be marginal, given how interrelated they are, and because together they provide a rich picture of states' performance in retaining children. A key advantage to these measures is their flexibility. Cohorts can be defined for any time period of interest, and enrollment duration can be tracked as far into the future or the past as the data are available. Defining the cohort in the first month of enrollment improves the validity of the prospective duration measure by more accurately measuring the length of the enrollment period. A measure of average duration for a coverage period, as well as the share of children staying continuously enrolled past certain key points of policy interest (ie, renewal points at 6 or 12 months, or shortly after renewal—eg, at the 13th or 14th month—to account for grace periods in some states) can be calculated and considered. States may also choose to examine the share of children who remain enrolled for only 2 or 3 months, which could reflect administrative problems associated with processing applications of presumptively eligible children. In addition, the definition of new enrollees (how many consecutive months a child must not be enrolled in public coverage before the new enrollment period begins) and disenrollees (how many consecutive months of disenrollment a child must have) can vary depending on policy objectives and the desired stringency of the measure's definition. It will be important for these definitions and the time periods of analysis to be standardized to allow comparisons across states.

Ultimately, the Subcommittee on Quality Measures for Children's Healthcare in Medicaid and CHIP did not recommend that a duration of coverage measure be included in the initial core set of measures. Although the prospective measure in particular was ranked high by the subcommittee in terms of validity and importance, concerns were raised about its feasibility given that no state currently uses this measure to monitor program performance.

CONCLUSIONS

Monitoring how well states are doing at enrolling and retaining children eligible for Medicaid and CHIP is an important component of assessing overall program performance and quality. Such measures provide important information that can be used to assess the extent to which these programs are reaching the children they target and to

examine the impact of policy changes aimed at reducing uninsurance rates and improving access to care and health outcomes among eligible children.

The fact that many children are not enrolled in Medicaid/CHIP continuously over a 12-month period raises concerns about the extent to which the other quality indicators included as part of the core set reflect the access and quality experiences of all children who have Medicaid/CHIP coverage in a given year. Of the 24 measures recommended as part of the core set, 9 are defined only for children who are enrolled continuously in Medicaid/CHIP over a 12-month period.³⁸ National estimates suggest that at least one-fourth of children who enrolled at some point during the year are not enrolled in Medicaid and/or CHIP coverage for the full year and therefore would be excluded from quality measures that require enrollment of 11 months or longer (Urban Institute tabulations of the 2006 Medical Expenditure Panel Survey). Moreover, when considering Medicaid or CHIP coverage separately, the proportion of children who are not enrolled for the full year is even higher.

Stability of public coverage varies across different subgroups of children³⁹ and across states,⁴⁰ which means that the share and composition of enrollees included in the denominator of quality measures will also vary. Likewise, it is important to recognize that the issues with Medicaid and CHIP data systems that have been discussed in this report also have implications for other quality and access measures. Thus, children who switch between Medicaid and CHIP over the course of a year may be excluded from these measures in a number of states. Consideration should be given to the development of measures that are more inclusive of such enrollees. For example, measures could track how quickly enrollees get particular services (like well-child visits or dental

checkups) after enrollment or examine receipt of services over shorter timeframes.⁴¹ Another approach would be to reweight existing measures to more accurately reflect the composition of all enrollees, not just those included in the measure. Such strategies could help address concerns about the generalizability of quality measures derived for the population enrolled continuously over a 12-month period.

OTHER POLICY RECOMMENDATIONS

Although prospective and retrospective duration measures based on currently available administrative data would provide very important information, there would be substantial benefits to making a number of other enhancements to state enrollment files (Table 2) and to considering a larger set of coverage measures that draw on both survey and administrative data. These broader measures would be reported for each state to provide a full picture of program performance in this area. Reporting on measures of both enrollment levels and enrollment duration for key groups (ie, age, sex, geography, eligibility category, and possibly race/ethnicity and primary language) along with measures of uninsurance among the target population would provide a more valuable assessment than measures of enrollment duration alone. Some states maintain information on the disposition of applications for Medicaid or CHIP (eg, whether the applicant successfully enrolled, and if not, why not—did family income exceed eligibility limit? did they fail to provide paperwork or income verification?) and on the reasons that children were disenrolled (eg, whether the child was no longer eligible because of his/her age or family income, whether the child's family did not return the renewal application because the child moved out of state or gained

Table 2. Recommendations to State and Federal Agencies for Development of Duration of Coverage Measures for Medicaid and CHIP*

Recommendations for Immediate Implementation

- Finalize precise specifications for duration of enrollment measures (including prospective and retrospective duration measures) in concert with new reporting requirements from Centers for Medicare and Medicaid Services.
- Provide technical assistance to states to assist in the implementation of the measures separately for Medicaid and CHIP programs and together, where possible.
- Reassess the role that the federal government can play in developing state-level duration and other quality measures.
- Encourage reporting on major program changes and overall program enrollment levels over time periods consistent with those defined for the duration measures.

Recommendations for Further Methodological Work

- Assess validity and reliability of state-level insurance coverage estimates from the American Community Survey.
- Conduct additional assessments on the validity of alternative duration measures, including how well they track with changes in underlying uninsured rates and coverage continuity among the target population.
- Encourage/support linkages of Medicaid and CHIP enrollment data in all states, with testing for validity.†
- Develop, implement, and analyze standardized codes on reason for disenrollment.
- Implement flags that identify the first month of actual enrollment in the administrative data and the renewal month to assist in the definition of enrollment and renewal periods.
- Develop and encourage use of standard race/ethnicity codes in administrative data.

*The recommendations in the final report to AHRQ included consideration of the continuity ratio/average coverage duration measure as an alternative to the prospective/retrospective duration measures given its feasibility for implementation in all states based on Medicaid Statistical Information System data. Because the Subcommittee on Quality Measures for Children's Healthcare in Medicaid and CHIP did not include any duration measures in the final set of recommended quality measures, we recommend that future efforts be targeted at developing the most valid measures (prospective and retrospective duration measures). CHIP = Children's Health Insurance Program; AHRQ = Agency for Healthcare Research and Quality.

†The Patient Protection and Affordable Care Act (PL III-148) extends CHIP funding through fiscal year 2015.

private coverage, whether they failed to submit a form or provide income verification, whether they failed to pay their premiums, and whether they were transferred to the other program).

In all states, these data could be a valuable source of supplemental information to the duration measures that are currently available from administrative files. Adding codes and standard coding protocols for collecting these data and matching to external private health insurance data would help states identify which children are becoming uninsured versus enrolling in other coverage and which children are disenrolling despite being eligible for coverage. Likewise, requiring states to add a flag to their enrollment files indicating the first month of actual enrollment for each child would simplify the identification of enrollment periods and renewal periods and could provide states with a more valid measure of retention. Encouraging the greater use of the race/ethnicity and primary language fields across states and improvements in the quality of these data elements would improve the reliability of these measures for examining different subgroups of children and for assessing disparities.

NEXT STEPS

Although the proposed duration measures have been shown to reflect changes in state policy efforts aimed at reducing barriers to reenrollment, they have not routinely been used to track progress at the state level or been directly linked to changes in uninsured rates among the target population. Research is needed to assess the strength of these linkages and particularly how robust they are with respect to the alternative duration measures considered here.

Whether states adopt these measures will likely depend in large part on the availability of sufficient technical and financial resources to induce states to implement and report them. Special attention will need to be given to the states that currently use different data systems to measure enrollment in Medicaid and CHIP. Many states already report separate CHIP enrollment data into MSIS, which means that it is feasible to compute combined duration measures for enrollment in both programs in those states to the extent that the CHIP enrollment data is complete. Moreover, in the coming years, all states will be required to report CHIP enrollment into MSIS.¹

The merits of having CMS create these measures for some or all states on the basis of the MSIS or Medicaid Analytic Extract (MAX) data that CMS has in house should also be considered, despite the inability to examine reason for disenrollment on the current version of these files.²⁷ Numerous researchers have developed specifications for constructing variants on the duration of coverage measures proposed here. Ultimately, the precise specifications for these measures may best be determined through a decision-making process that involves various stakeholders from state Medicaid and CHIP programs, researchers, and administrators from CMS and/or the Agency for Healthcare Research and Quality (AHRQ).

This process could be informed by work currently underway at CMS defining new annual reporting requirements as mandated by Section 402 of CHIPRA¹ and by ongoing research sponsored by AHRQ, private foundations, and others.⁴²⁻⁴⁷

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SUPPLEMENTARY DATA

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.acap.2010.06.005.

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