Future Considerations for Reporting Total Cost of Care

Background

With the goals of recognizing, evaluating and synthesizing innovative solutions to measuring total cost of healthcare, an Innovation Team was formed as a subset of the Network for Regional Healthcare Improvement’s (NRHI’s) Getting to Affordability (G2A) Phase III project team. The team consisted of technical experts from regions across the country who have collaborated to measure and report HealthPartners’® Total Cost of Care (TCOC) in a standardized manner since November 2013. Representatives from Colorado, Minnesota, Missouri, Ohio, Oregon and Utah first met in February 2017 and have worked to ensure TCOC relevance as the market moves from a volume to a value-based payment system.

The specific goals of the Innovation Team were to provide a detailed summary of current and potential issues with measuring TCOC. This issue brief will recap those findings and discuss potential solutions.

The issues and innovations discussed in this paper include:

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- **Data Comparability**
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- **Data Expansion**
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Throughout this document, it is important to note that the purpose of the TCOC measure is to create a relative comparison of total healthcare cost, resource use and pricing. It is not designed nor intended to be an accounting ledger. The Innovation Team explored the details of several issues that could potentially impact comparisons among entities. Issues were investigated to determine if they impacted all entities equally or did not affect a significant segment of the dataset. If either was true for an issue, then the relative comparison remains valid. However, if evidence was found that the relative comparisons could be affected, potential solutions are proposed herein. These efforts did not intend to scrub for all claims completeness or accuracy since this is accomplished through the rigorous quality checks performed as part of the G2A measurement and reporting process.

**Payments Outside the Claim System**

*Not all healthcare payments are included in the Fee for Service (FFS) Administrative Claims System and therefore are not being included in the TCOC measurement.*

One challenge of measuring group-level performance using TCOC is to capture payments made as part of value-based performance contracts or alternative payment models (APMs). This type of provider reimbursement is typically paid by payer/purchasers outside of the normal claims process and is therefore generally not reflected in administrative claims data. Examples of value-based performance contracting models include: gainshare payments (upside and downside risk), withholds, lump sum bonus payments, episode payments (e.g. joint replacement), and care coordination payments.

Because these types of complex contracts are typically put in place between a payer and health system, a payer and hospital, or a payer and large multispecialty practice, failure to capture value-based payments may put practices without the means to have value-based contracts at
a disadvantage by undercounting costs associated with practices that do have value-based contracts.

In addition, such payments are often based on overall provider performance instead of a specific patient encounter. As a result, it can be difficult to properly proportion the cost to a specific patient or event.

This Innovation Team reviewed the percentage of total dollars found to be outside the claims system and whether that amount is changing over time.

The Healthcare Payment Learning & Action Network (LAN) is a public-private partnership launched in March 2015 to drive adoption and alignment of APMs. In October 2017, it released a survey containing data from more than 80 participants accounting for nearly 245.4 million people, or 84% of the covered U.S. population. The findings capture actual 2016 healthcare spending across commercial, Medicaid, Medicare Advantage, and FFS Medicare market segments from the following four data sources:

- The LAN
- America’s Health Insurance Plans (AHIP)
- The Blue Cross Blue Shield Association (BCBSA)
- The Centers for Medicare and Medicaid Services (CMS)

Overall results were in line with the LAN’s goals to tie 30% of total U.S. healthcare payments to APMs by 2016 and 50% by 2018. In 2016, the survey found, 29% of total U.S. healthcare payments were tied to APMs, up from 23% in 2015. The results underscore that payers across the country are shifting away from the traditional FFS approach toward value-based reimbursement models.
The LAN report calculates the percentage of healthcare dollars by payment category. Although the report does not address the percent of dollars excluded from claims systems, many of these APMs are fundamentally designed to distribute funds outside of a payer’s claims system. For example, shared savings and shared risk models typically distribute lump sum payments to providers or request funds from providers either on a quarterly or annual basis. Some APMs distribute directly versus payment via a claims system.

Only a portion of the APM payments are outside the claim system. If a contract has a shared savings program, generally, the major portion of the payment...
is in the claim system as a FFS contract. At the end of the period, there is a settlement between the provider and the payer for a specified period and percentage of the shared dollars.

Example: Patient population cost for 2016 should have been $1000. Actual cost was $900. Shared savings pool was $100. Practice was contracted as a 50/50 downside risk. Practice gets $50. Therefore the impact on total costs is 5%. 

Massachusetts Health Quality Partners (MHQP) has tracked payments including APMs over a three-year period using data collected from participating health plans and looked at the percentage of payments not included in the claims system.

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<tr>
<td><strong>Product</strong></td>
<td><strong>2013</strong></td>
<td><strong>2014</strong></td>
</tr>
<tr>
<td>Commercial Plans</td>
<td>5.2%</td>
<td>4.8%</td>
</tr>
<tr>
<td>MassHealth Managed Medicaid</td>
<td>11.1%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Medicare Advantage</td>
<td>13.2%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>


Overall, these APMs are expected to increase in frequency in the future, due mainly to the industry movement from volume to value-based payments. The rate of adoption and the mechanisms used in those APMs may vary by market and by insurance product across the country.

Currently, there does not appear to be a reliable way of adjusting the TCOC report to account for this type of payment at a clinic or medical group level.
Depending upon the contractual arrangement between payer and provider, the distribution of these type of payments vary and can be made by payers to either the attributed health system, hospital, or medical group.

If there is variation across regions in the prevalence of non-claims-based payments to providers, then TCOC comparison across regions could be affected. We do not currently have enough information to understand to what extent this is a problem or how to adjust for it.

**Summary of Options for Payments Outside the System**

- Request information from payers and purchaser adding to the TCOC as the data is available, and collect information on the volume of APMs/VBPs (volume-based payments) to gain a better understanding of potential impact
- Monitor activity for trends to determine potential impact on comparability across regions and/or providers
- Document the existing issue but don’t make changes to methodology or reporting until additional information becomes available

**Encounter Claims**

*For some provider contracts, a typical FFS claim is not generated. The use of this payment type varies by region. If this type of data is used in the TCOC model, it will impact the values for certain regions and therefore affect comparability across regions.*

Encounter Claims are healthcare transactions not paid with the standard cost information typical in the FFS process. Encounter Claims are defined as including most claim details — the patient, date of service, service (CPT/HCPCS code), diagnosis, number of services and may include a billed amount — but do not include the actual cost for services provided, known as the Allowed Amount. The HealthPartners’® methodology relies on the Allowed
Amounts that are missing from Encounter Claims. In general, members with Encounter Claims should be excluded from the TCOC analysis. This section explores different types of Encounter Claims and potential methods for approximating the Allowed Amounts required by the TCOC. The methods described here are not part of the HealthPartners® TCOC methodology.

**TYPES OF ENCOUNTER CLAIMS**

Encounter Claims are usually the result of a capitation agreement between a health plan and provider group. These agreements fall generally into three different categories:

- **Full Patient Capitation**: Providers are paid a set payment per patient regardless of the number of services rendered and payments occur outside the claims system. Most full capitation contracts have outlier provisions for either certain types of services (e.g. out of network services), that will generate standard FFS claims. In addition, these contracts will have limits (risk corridors) where the provider is only liable up to a certain threshold of costs.

- **Service Type Capitation**: Providers are paid a set amount for a specific type of service (the most common being substance abuse services). All other claims are paid with a standard FFS process.

- **Episode of Care**: Provider receives a fixed payment for a specific service, such as knee surgery for example.

All types of Encounter Claims are missing the Allowed Amount at the detailed procedure code level, a data point required by the standard HealthPartners® TCOC Methodology.

**REGIONAL EXPERIENCES INCLUDING ENCOUNTER CLAIMS WITHIN TOTAL COST OF CARE ANALYSES**

In most regions of the United States, the impact of Encounter Claims is limited. In Minnesota, commercial encounter claims are rare. Oregon has one health
plan that submits FFS equivalents for Behavioral Health encounter claims as required by their state All Payer All Claims (APAC) Database.

When the prevalence of Encounter Claims is higher, there may be ways to account for them. The method chosen should take into account the purpose of the analysis. Understanding cost trends might warrant a very different method from an analysis that is comparing medical practice performance. Two states where encounter claims are more common, California and Washington, are exploring ways to include encounter claims in TCOC type analyses.

METHODS FOR ESTIMATING ALLOWED AMOUNTS

By their nature, Encounter Claims do not include actual cost per service, however, health plans have developed ways to estimate Allowed Amounts. For capitated contracts that include a limited number of services, such as Behavioral Health, the health plan may be able to estimate the cost per service, or a FFS equivalent Allowed Amount. In cases where the occurrence of encounter claims is limited, FFS equivalents may be included in a TCOC analysis.

The HealthPartners® TCOC model was built for FFS claims only and does not have a direct process for inclusion of Encounter Claims. To be able to measure TCOC in markets with significant penetration of capitated contracts, a process for inclusion would need to be developed.

Using Encounter Claims depends on the market penetration of capitated contracts. If the volume is small, the best solution may be to exclude any patient that has any type of encounter contracts. If the market penetration is significant, it may still be possible to include Encounter Claims for some cost and utilization measures. As regions and markets have different measurement goals and Encounter Claims usage, each will need to be reviewed individually to determine the best solution.
Assuming the following data items are available, it may be possible to calculate some aspects of the TCOC:

• The capitation payment for each patient or contracted provider

• The out of pocket amount paid by the patient

• An understanding of the outlier and risk corridors for the specific arrangement

• Patient enrollment records including age, gender, and assignment (attribution)

• Resources available to run the calculation outside of the standard Total Cost Index (TCI), Total Care Relative Resource Value (TCRRV™) project

Calculating the Adjusted Clinical Group® (ACG®) Risk Score: With diagnoses and patient demographics (age, gender), an ACG® category can be assigned to each patient, and therefore a risk score can be developed for the patient.

Important note on calculating risk weights: These patients cannot be part of the calculation for the risk weights as risk weight calculation relies on Allowed Amounts. Alternative options are to use the national ACG® weights or use the market weights for all non-capitated patients.

Calculating the TCI: For arrangements where all costs are capitated, the TCI can be calculated for the capitated patients as: \[
\frac{\text{capitated amount} + \text{patient out of pocket}}{\text{member months} / \text{risk score}}
\]
Since the capitated amount is paid to provide all the health services, it is the TCOC, and therefore can be fairly compared to FFS patients.

For arrangements where claims are incurred outside the capitation contract — out of network claims for example, the TCI is:

\[
\frac{\text{capitated amount} + \text{patient out of pocket} + \text{fee for service claims allowed}}{\text{member months} / \text{risk score}}
\]

Calculating the Resource Use Index (RUI): The TCRRV™ requires the Allowed Amount to (1) be used when the procedure is not found in the standard
TCRRV™ tables and (2) validate reasonableness of the unit value without allowed amounts, it will be far more complex to calculate the RUI.

Utilization Metrics: The HealthPartners® Utilization Metrics do not require the Allowed Amount to calculate the standard set of metrics (see section on Utilization) so patients with Encounter Claims can be included in Utilization Metrics, assuming the Encounter Claims include procedure code and unit values.

Concerns
• In some cases, capitated amounts may be risk adjusted. If the capitated amount is risk adjusted and the TCI also is risk adjusted, are the patients effectively double risk adjusted?
• Is the attribution for the capitation substantially different than the attribution for the FFS patients? Capitation arrangements often assign patients to a provider prospectively, before claims are encountered. Prospective attribution and retrospective attribution can produce different results.
• If capitated patients are included in the TCI calculation and the Utilization Metrics but not the Resource Use Index (RUI) and the Price Index (PI) the results in the market will not be comparable, separate reports will have to be created. This may cause more confusion and doubt than value.

Options for Encounter Claims
1. When feasible, report the amount of encounter claims on any report.
2. If the encounter claims are removed, verify that all other claims from the patient with encounter claims are also removed.
3. If a model is used to estimate the FFS amount, use it for overall TCI but not for the RUI or PI.
4. Document the encounter claims issue but make no adjustment.
Intentional Exclusions of Specific Types of Claims

Not all data sources have access to all claim types. Pharmacy Claims and/or Substance Use Disorder (SUD) claims can be missing for some All Payer Claims Databases. Is it possible to still include data sources that do not have all claims?

The TCRRV™ model includes a method for estimating the impact of missing pharmacy claims but there is concern in the event that other claim types are missing entirely, specifically SUD treatment claims.

One solution is to remove the same claim types from all comparison regions or clinics but due to data source type, that is not always possible. The next best solution is when a patient has the SUD treatment claim, no matter if it is on one claim or on all the patient’s claims, remove the patient entirely from the model, in numerator, denominator and for the risk score calculation. Due to data restrictions, this may not always be feasible either. If the claims are removed further upstream, the programmer would have no way of determining which patients had the claims removed.

For SUD treatment claims, the impact of removing only the claims with SUD diagnosis is to reduce the overall cost per patient by 2.9% (estimate based on information from one Minnesota based health plan).

Utah performed an analysis in which three payers were selected who are known to have submitted SUD treatment claims and filtered to get only those claims for patients included in the analysis. Their raw and risk adjusted per member per months (PMPMs) including SUD and excluding them were calculated for each payer for each month. Both ICD-9 and ICD-10 codes were included. Below are some of the findings:

- Raw PMPM was influenced about 3% by including SUD claims.
- Risk adjusted PMPM was about half that at 1.3%.
- There appeared to be “spikes” of high SUD costs, assumed to be from a few patients with high cost claims.
• ACG assignment mostly stayed the same, surprisingly there were still many psychosocial ACGs coming through even without the SUD claims.

### Impact of Intentional Exclusions of Specific Types of Claims

1. Document missing claim types and their potential impact on results, if possible.

2. If the value or amount of the missing claim type is known, publish the amount.

3. Adjusting the TCI model to account for the missing values is not recommended.

### Coding Intensity Variation

*The risk adjustment for this measure set is entirely based on the diagnosis codes that are included in the administrative claims used to generate the report. Variation in diagnostic coding can and will impact the results. Can this model be adjusted to reflect known or suspected coding variation?*

The background of coding variation or "coding intensity variation" is complex. Codes were generally designed and formatted to help payments account for the degree of acuity or treatment intensity present in patients. CMS has a history of making payment adjustments for coding practice.¹

There appears to be variation in coding practice across regions.² Coding intensity can lead to higher risk scores and the higher the risk score, the lower the TCI. The TCI is calculated by taking the unadjusted total cost and dividing by the risk score. As a result, when the risk score rises, the TCI lowers. TCI is designed to allow for comparisons of patient panels of various illness burdens. If there is a difference in coding practice, it has the potential to impact the TCI.

⁴Adjusting Risk Adjustment – Accounting for Variation in Diagnostic Intensity, Amy Finkelstein, PH.D. New England Journal of Medicine
How to account for coding variation is not clear. A model that reduces coding intensity runs the risk of removing variation due to illness burden. Therefore, at this time, no change to the model is recommended until there is a commonly accepted and scientifically proven method to address coding intensity variation.

It is important to be aware of and note coding intensity variation when analyzing results at regional or provider levels.

### Coding Variation Options

- Continue to search for scientifically proven and commonly accepted methodologies to identify coding variation.
- Always note the potential for coding intensity variation in any publication of results.

### Truncation Adjustment

*The HealthPartners® TCRRV™ methodology has a specific annual cost per patient limit. What effect does changing the limit have on the model?*

In the September 2017 version of the National Quality Forum-endorsed TCOC methodology, HealthPartners® raised the level at which individual patient costs are truncated from $100,000 to $125,000. In the online document “Total Cost of Care and Total Resource Use Validity Testing Analysis”, HealthPartners® explains the increase: “Given medical inflation has been 2-4% per year, it is necessary to increase the spend truncation level to account for the natural rise in healthcare cost. Multiple truncation levels were tested; however, a cap level of $125,000 returned the percent of patients and spend included in the model, and R-squared values closest to the original model ($100,000).”

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The document goes on to say that “There is minimal change in relative TCIs for provider groups when the truncation level is increased to $125,000. However, because the provider groups with higher cost positions have greater potential for capped patients, they experience an increase in TCI as they were benefiting from the lower truncation levels.”

In other words, if all participants in a given measurement period use the same truncation level, the exact level of that truncation will affect only a few practices, and only in the precise TCI, not in their ranking within the group.

HealthPartners® does caution that “Since the model needs to remain stable year over year to accommodate trending usability, the truncation level also needs to remain stable, with only periodic updates.” As long as the truncation levels are similar, trending is only minimally affected. It is sufficient to document the first year that used the new truncation level in any table displaying multiple years of TCI, RUI or PL.

The change in truncation calls attention to an aspect of the TCOC Toolkit that is sometimes forgotten; that TCOC does not in fact include the total cost of healthcare for all patients. Since the purpose is to compare the efficiency of practice patterns, and one or two high cost patients in a panel could distort the measure for that panel, TCOC does not include every dollar spent. Other costs of healthcare that are not part of TCOC include non-claims-based payments, premiums, and unreimbursed care. The costs that are included are selected to allow fair comparisons of the way primary care practitioners manage the ongoing care of their patient panels.

The untruncated per patient costs have value as does the calculation of how much of the regional cost data was removed due to the truncation. It is recommended to include the untruncated dollar amounts per patient but in such a way that it is not part of the TCRRV™ calculation, such as in an appendix.

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3. The TCOC toolkit supports comparison only of indexes, not of actual $ PMPM values.
Summary regarding Truncation Adjustment

1. Within a measurement year, all participants must use the same per patient truncation amount.

2. If the truncation amount changes from year to year, the level should be noted along with an overall estimate of the change in the cost per patient due to the change in truncation.

3. Trending from year to year should be done using the TCI Ratio, not any specific dollar amount.

4. Display the proportion of cost removed from each measured participant (practice, region, etc.), along with the proportion of patients who exceed the truncation threshold.

Utilization Metrics and Risk Adjustment

The TCRRV™ is a combination of number of units and intensity of service. It does not include a direct method for determining whether variation in Relative Resource Use is due to a variation in intensity (an MRI instead of an X-ray for example) or a variation in the number of units (three x-rays when most other providers are ordering one). Without separating intensity from unit counts, there is not a clear direction for how to interpret relative resource use.

To drill into this further, a comparison of case mix adjusted standard utilization metrics, such as admissions, office visits, Emergency Room (ER) utilization and pharmacy use could give insight into utilization. The expanded TCRRV™ software includes utilization metrics using the same patients and claims as the TCOC and TCRRV™.

Recall that the TCOC is a function of both price and the amount of resources used:

\[ \text{Total Cost} = \text{Price} \times \text{Resource Use (Utilization)} \]
And further, that resource use (TCRRV™) is a function of both number \((n)\) of events and the intensity \((i)\) of the events. For example, a single lower extremity MRI has the same resource units as seven knee X-rays.

\[
\text{Total Cost} = \text{Price} \times f(n,i)
\]

If the analysis stops there, it is difficult to determine which has a greater impact, the number of services or the intensity of the services. Thus, the HealthPartners® software has the option of including a measure of common utilization metrics for attributed TCOC patients. The common utilization metrics are compared to the medical group’s expected number based on a mix of patient risk, age and gender.

The utilization metrics include:

<table>
<thead>
<tr>
<th>Inpatient Admissions</th>
<th>Inpatient Days</th>
<th>Surgery Admissions</th>
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<tbody>
<tr>
<td>Surgery Days</td>
<td>Medical Admissions</td>
<td>Medical Days</td>
</tr>
<tr>
<td>Emergency Room Visits</td>
<td>Outpatient Surgery</td>
<td>Primary Care Office Visits</td>
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<tr>
<td>Specialty Office Visits</td>
<td>Lab tests</td>
<td>Radiology</td>
</tr>
<tr>
<td>High Tech Radiology</td>
<td>Pharmacy Use</td>
<td>Generic Pharmacy Use Ratio</td>
</tr>
</tbody>
</table>

Notes:

- Emergency Room Visits exclude ER visits that result in the patient being directly admitted to the hospital. These become part of the Inpatient utilization and spending measures.

- Outpatient Surgery includes both hospital based and standalone surgery center activity.

- Lab tests and imaging services provided in an inpatient setting are excluded.
Pharmacy Use is the count of “30 Day” prescriptions that were filled at a pharmacy and paid through the patient’s pharmacy benefit. It does not count prescriptions for less than 30 days (7-day antibiotic for example) nor does it include pharmacy paid via the medical benefit.

Since the utilization is based on the same patients and the same data set, it can deepen the understanding of the TCRRV™ results.

If the clinic has a high inpatient TCRRV™, we do not know if that is due to more admissions, longer length of stay or a higher intensity of service. If the utilization results show an average number of admissions and days, then the reason for the high TCRRV™ is more intensity. The utilization measures are simply counts of understandable activity, for example: number of inpatient admissions. The results from the utilization software do not include risk adjustment for utilization. However, comparison across regions or across clinics within a region should be determined.

**Risk Adjustment**

Utilization requires a different risk adjustment process than what is used for the cost and resource use. MN Community Measurement, which has been publishing utilization metrics for three years, recommends risk adjustment using the following variables:

- ACG Cell
- Patient Age
- Patient Gender

While age and gender are part of the algorithm used for calculation of ACG risk scores, testing of predictability showed improvement in results by adding age and gender in addition to ACG risk category. Note that the ACG Cell is not the same thing as the ACG risk score but rather is used to calculate a unique expected utilization rate for each combination of ACG Cell, Gender and Age Range.

A stated concern regarding the utilization metrics is the fact that there is no outlier limit, the cost and TCRRV™ truncate the values at $125,000 per patient.
and there is no equivalent truncation for utilization. Both HealthPartners® and MN Community Measurement publish the rates untruncated and simply state the fact that the rates are not capped, the user must decide on the usefulness.

### Utilization Metrics

1. Recommend inclusion of the utilization metrics that are a part of the expanded TCRRV™ software.

2. Risk adjust the utilization measures separately from the risk score used for the cost and resource use measures (TCRRV).

3. Document the fact that, unlike the cost and TCRRV™, the values are not truncated at the patient level.

### Summary

The HealthPartners® methodology and calculations were originally designed for comparison of medical groups within a single network. In expanding the use of TCRRV™ across regions in the U.S., careful consideration should be given to most of the issues identified by the Innovation Team that result from variations across multiple claims data sources. For issues such as payments outside the claims system and coding intensity that occur in all regions, but the degree of variation is unknown, the issues should be monitored and documented in the results but changes to the TCRRV™ calculations are not recommended. However, if issues such as Encounter Claims and exclusion of specific types of claims vary across regions, footnoting an estimation of the issue impact, if known, is a potential solution that allows the audience to take unmeasured variation into consideration when comparing results.

When using the measure for national reporting, special care must be taken to ensure standardization and comparability between regions. If the measure is to be used locally, discussion should be had with local stakeholders to tailor this measure to meet local/regional needs.
Acknowledgments

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PRIMARY AUTHORS
Minnesota Community Measurement

CONTRIBUTORS
Network for Regional Healthcare Improvement (NRHI)
Center for Improving Value in Health Care (CIVHC)
HealthInsight Oregon
HealthInsight Utah in partnership with the Utah Office of Healthcare Statistics
Integrated Healthcare Association
Judy Loren
Massachusetts Health Quality Partners
Midwest Health Initiative
The Health Collaborative
Washington Health Alliance

ABOUT THE NETWORK FOR REGIONAL HEALTHCARE IMPROVEMENT (NRHI)
The Network for Regional Healthcare Improvement (NRHI) is a national organization representing more than 30 member regional health improvement collaboratives (RHICs) and state/regional affiliated partners. These multi-stakeholder organizations are working in their regions and collaborating across regions to transform the healthcare delivery system. They share the goal of improving the patient experience of care, including quality and satisfaction; improving the health of populations; and reducing the per-capita cost of healthcare. The RHICs are accomplishing this transformation by working directly with physicians and other healthcare providers, provider organizations, commercial and government payers, employers, consumers, and other healthcare-related organizations. Both NRHI and its members are non-profit, non-governmental organizations. For more information about NRHI, visit www.nrhi.org.

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