

# CDI yesterday, today, and tomorrow: Staying relevant in changing times

## POSITION PAPER

**Summary:** This position paper provides an overview of the clinical documentation improvement (CDI) profession past to present. It explains what CDI professionals do and how their efforts are traditionally measured. It then describes how the CDI profession is evolving to meet the changing demands of healthcare delivery.

CDI departments have historically worked to improve documentation integrity, making it more robust and true to the patient. These programs have had a twofold mission:

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- **Improving organizational financial performance where it's due.** The CDI profession grew from a need to capture appropriate reimbursement for treatment resources used. CDI professionals were stewards of the good financial health of their organizations, capturing complications and comorbidities (CC) and major CCs (MCC) to ensure accurate MS-DRG assignment. CDI later evolved to include financial protection, through denials prevention and appeal support.
- **Improving organizational quality outcome scores.** After improving organizational financial performance, CDI professionals expanded their focus to organizational quality reporting. If documentation is accurate and supports final coding, quality indicators can be appropriately tracked and trended. Examples of CDI efforts to improve quality outcomes include frequency of hospital-acquired conditions (HAC), Patient Safety Indicators (PSI), mortality reviews, and risk-adjusted quality measures.

CDI work has focused on documentation with a tangible (and relatively immediate) impact. Documentation clarifications must have a specific goal or outcome in mind, as excessive clarifications and queries can contribute to physician burnout and query fatigue. According to “Guidelines for Achieving a Compliant Query Practice (2019 Update),”

*Queries are not necessary for every discrepancy or unaddressed documentation issue. When determining the need to query, the query professional must consider if the provider can offer clarification based on the present health record documentation or resolve/seek clarification on conflicting documentation.*

*Organizational query policies and procedures should provide direction to guide staff when multiple opportunities exist. Specifically, organizations need to determine if there is a limit to how many questions may be issued at one time and how many queries may be communicated during the same encounter. (ACDIS/AHIMA, 2019)*

Healthcare is rapidly changing, and the CDI profession will change with it. Inpatient volumes have been declining for more than a decade, with a 6.6% drop in the number of stays, nationally, between 2005 and 2014 (Abrams, Balan-Cohen, & Durbha, 2018). To contain costs, health plans are more closely scrutinizing utilization of inpatient services. Additional criteria are being imposed to meet medical necessity, which has steered organizations to treat their patients in outpatient settings. Instead of inpatient surgery, patients have procedures performed in ambulatory surgery centers. Infusions are now performed at clinics rather than hospitals. As a result, the population CDI specialists have historically focused on—inpatient DRGs—is shifting elsewhere.

Most organizations have identified compliant, skillful workflows to capture secondary diagnoses (CCs and MCCs). There will always be a need for CDI excellence in provider education and compliant diagnosis capture. However, organizations are not the same delivery systems as they once were, thanks to shrinking inpatient volumes, limited reimbursement, evolving public policy, payer landscape changes, pharmaceutical price inflations, supply chain challenges, and EHR implementation costs, among other factors. A three-year stretch between 2015 and 2017 saw widespread income deterioration along with declining operating margins (O'Brien, 2018).

In addition, the Centers for Medicare and Medicaid Services (CMS) and other private entities such as GTE, General Motors, United Auto Workers, and Digital Equipment Corporation (Agency for Healthcare Research and Quality, 2018) are demanding better quality from providers, which is measured by utilizing administrative data to calculate mortality, readmissions, and complications. Administrative data is used in risk adjustments to measure quality. Data entered into these administrative databases must accurately reflect patients' severity of illness (SOI).

CDI must change with the times while continuing to focus on areas that impact organizational outcomes—even though, as will be described, these impacts may not be as tangible as reimbursement or quality outcomes. But rather than seeing the changes in healthcare as threats, ACDIS views them as growth opportunities. Organizations are better served through improved quality assessments. Operational efficiency is more important than ever, which means that any process requiring more robust documentation is an area ripe for CDI intervention.

### CDI today

Many CDI programs, historically and today, measure and monitor a subset of internal and external metrics. These key performance indicators (KPI) allow programs to evaluate the productivity, efficacy, and accuracy of the CDI team, as well as the team's impact on direct and indirect reimbursement. Many of these metrics have been monitored since the beginning of the CDI profession, but they remain valuable today, assuming they are well understood and considered in conjunction with other metrics. No single performance metric is indicative of CDI program success or failure. It behooves CDI leadership to keep a well thought-out dashboard of metrics that help capture the full picture of a CDI program.

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Additionally, CDI leadership must select metrics that align with organizational goals. For example, if a key organizational goal is to improve performance on risk-adjusted CMS mortality measures, metrics that capture this potential impact must be included in performance assessments. Selection of appropriate measures leads to more accurate assessment of CDI programs and effectively demonstrates program value to hospital leadership.

### *Organizational KPIs*

Today, organizations typically track the following metrics to monitor the productivity and performance of their CDI staff:

**Selection of appropriate measures leads to more accurate assessment of CDI programs and effectively demonstrates program value to hospital leadership.**

- **Reviews.** Chart reviews may be concurrent, including initial and subsequent reviews. They may also be retrospective, including post-discharge reviews, reviews requested by coding and other departments, or reviews performed as part of a DRG reconciliation process. CDI departments should track their staff's reviews. As discussed in ACDIS publications (ACDIS, 2016b), review goals vary depending on an organization's focus, resources, or institutional definitions. However, each program should establish a review goal to evaluate CDI productivity and identify issues that may reduce review volumes.
- **Queries.** All queries, written or verbal, should be tracked as part of an internal metric. Program goals regarding desired query volume may depend on the program's focus or maturity, but CDI departments should establish a consistent goal as a benchmark and include it in program evaluation. The purpose of concurrent CDI reviews is to identify query opportunities. Query rates that are consistently high or low require further evaluation by CDI leadership. While not every record will require a query, exceedingly low query volumes may indicate that the current review process lacks return on investment. A consistently low query rate should trigger an audit to determine if query opportunities are being missed, or if there simply aren't enough potential query opportunities (if so, CDI resources might be better directed at other patient populations, or more goals might need to be added to reviews). An audit should also be considered in the case of a consistently high query rate. This audit should determine whether superfluous queries are being placed on records or whether additional targeted provider education is needed. Audits should also be used to validate whether queries are compliant.
- **Query response.** Query response may be indicative of provider buy-in as well as compliant query formulation. Traditionally, CDI programs have identified responses as either "agree" or "disagree." Effective use of these two categories requires careful consideration and establishment of explicit definitions. At times, CDI may find the categories to be overly simplistic, especially since some clarifications may not have an explicitly right or wrong answer. For this reason, and for increased value of response data, some programs may add choices beyond "agree" and "disagree." Some "disagree" responses should be expected, though. Trends in "disagree" responses can be used to identify providers that lack program buy-in, or to identify opportunities for provider or CDI education. Trends in "clinically

undetermined/indeterminable” are often good indicators of physician engagement, with high rates meaning that providers may be clicking the option merely to get off their work list.

- **DRG mismatch.** Most CDI programs include assignment of a working DRG in their processes. These programs typically track the percentage of cases where the working DRG assigned by the CDI specialist does not match the final DRG assigned by the coding professional. These mismatches sometimes occur when documentation is added to the record after the last CDI review. Moreover, CDI specialists often lack experience in complex Procedure Coding System (PCS) coding, the assignment of which can change the working DRG. For programs that include a DRG reconciliation process in their workflow, DRG mismatch information can help identify areas where CDI or coding require additional education.

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### *Reimbursement*

Today, healthcare professionals operate amid a variety of reimbursement methodologies. Most CDI programs were initially developed to optimize compliant revenue through more accurate documentation practices. However, as the profession evolved, some CDI professionals began to perceive reimbursement as a secondary component not directly related to patient care. This is a misconception. The business of healthcare is expensive, and many institutions are struggling financially. Revenues earned by the CDI process are used to:

- Hire more nurses, aides, and technicians
- Obtain better equipment
- Finance necessary improvements to hospital operations

These improved revenues help smaller hospitals to survive, and allow bigger institutions to acquire better technologies and advance their research.

The most traditional metrics used in inpatient CDI are as follows:

- **Reimbursement impact.** This is traditionally calculated through the difference in weights between the initial and final billed (pre- and post-query) DRG weights, multiplied by the blended rate. Determining reimbursement impact can be time-consuming, and many organizations now rely on data analytics estimates.
- **CC/MCC capture rate.** This is preferably benchmarked with peer organizations. New programs traditionally focus on DRG impact, and the capture rate seems to be the easiest way to demonstrate that the program is working. This metric can be calculated for the whole organization as well as for different services and departments.
- **Case-mix index (CMI).** A hospital’s CMI is a highly visible metric that the C-suite and department chairs pay attention to. It measures the average DRG relative weights treated within the organization. A higher CMI indicates that the hospital is generally treating more complex cases and should receive higher reimbursements for its efforts. However, CMI includes many factors beyond the scope of CDI reviews. For example, if a

high-performing surgeon leaves an organization, the CMI for that surgeon's service line will drop; if the hospital opens an observation unit, thus decreasing the number of short-stay low-weighted DRG admissions, the CMI will increase due to a shift to outpatient non-DRG payment.

Recently, CDI has begun to expand into outpatient services. This opens the door to multiple opportunities that include:

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- Ensuring that infusion start and stop times are appropriately documented (according to *Official Guidelines for Coding and Reporting*, when the infusion time cannot be calculated, the procedure should be coded as an IV push).
- Educating providers on documentation guidelines, so the appropriate evaluation and management (E/M) level can be captured both in hospital and physician billing.
- Creating physician documentation templates for certain procedures to ensure documentation meets criteria for local and national coverage determinations (LCD/NCD). For example, per a coverage determination for Prolia® (denosumab), correct coding requires that a bone metastasis diagnosis (ICD-10-CM code C79.51) be present on the claim as a primary diagnosis and that the original cancer or history of cancer be included as a secondary diagnosis (National Government Services, 2018). An oncology clinic will not be reimbursed for a denosumab injection if C79.51 is not present on the claim, but many physicians, unaware of this rule, list only primary cancer on their orders or referral forms. Building an order template will provide a more accurate clinical picture and reduce denials.
- Prospectively reviewing the health records of patients scheduled for clinic or office visits, to ensure accurate and complete capture of diagnoses impacting assigned Hierarchical Condition Categories (HCC), which affect Risk Adjustment Factor (RAF) scores for Medicare Advantage patients.
- Reviewing emergency department (ED) documentation to ensure physician documentation reflects the physician's clinical judgment, demonstrates medical decision-making, and captures patient acuity, which will lead to fewer medical necessity denials. The ED is also the gateway to inpatient admissions, so clear documentation regarding the reason for inpatient care can strengthen the accuracy of the principal diagnosis as well as the medical necessity of the admission (ACDIS, 2016a).

By linking revenue enhancement and quality in the outpatient environment, CDI can help ensure all relevant conditions are documented during an encounter. Complete documentation plays a large role in Risk Adjustment (RA), which is a methodology used by HHS to pay health plans. RA classifies certain conditions into HCCs and measures the disease burden to predict the cost of care for members. It also takes disease interactions into account. There are different HCC models, but all use claims data to determine a RAF score. RAF is a relative measure used to predict the expenditure level of the patient. More accurate and complete documentation will result in a higher RAF score, and this will determine



the reimbursement level for the following year. Each diagnosis needs to be established during each calendar year to ensure the following year's payments cover the cost of care (Watson, 2018; Formativ Health, 2018).

Most organizations use the following metrics to evaluate the efficacy of outpatient CDI efforts:

- HCC volume. Similar to the CC/MCC capture rate for inpatients, this metric reflects the capture of HCC conditions.
- Average RAF scores.
- HCC specificity.

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### *Quality/indirect reimbursement*

Many quality initiatives are based on documentation in the health record, and correspondingly CDI has a great impact. Hospital Value-Based Purchasing (HVBP) links provider payments to improved performance by healthcare providers. This form of payment holds healthcare providers accountable for both the cost and the quality of their care. It attempts to reduce inappropriate care and to identify and reward the best-performing providers (CMS, 2018). The Merit-based Incentive Payment System (MIPS) program under the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) scores clinicians on the following three performance categories in calendar year (CY) 2019:

- Quality
- Improvement Activities
- Advancing Care Information

There is a fourth performance category, Cost/Resource Use, but clinicians will not be scored on this category until CY 2020. The EHR is one of the listed reporting options for all but the Cost/Resource Use category (Buttner, 2018).

CDI can make a significant impact in the following areas:

- **SOI and risk of mortality (ROM) when used as surrogate measures of accurate quality measurement.** SOI and ROM are attributes of APR-DRGs. The APR-DRG grouper is not used to calculate reimbursement in many states, but these attributes provide valuable organizational insights. If a CDI program is focused on medical record integrity, some clarifications will not result in MS-DRG changes, but changes in SOI and ROM still demonstrate additional nuances and enable correct capture of a given case's complexity. Monitoring the initial SOI and ROM metrics can also help evaluate whether your provider education is effective.
- **HACs.** CDI specialists can help decrease the number of reported HACs by clarifying documentation—e.g., clarifying whether a pressure ulcer was present on admission, whether an infected line was inserted into an artery and not a vein, etc.

Healthcare is changing, and the CDI profession is confronting new challenges: increasing denials, physician burnout, all-payer review, copy and paste, and consumer transparency (e.g., public report cards and patient choice), to name a few.

- **PSIs.** As above, CDI specialists can clarify items such as whether a serosal laceration sustained during abdominal surgery was really a complication or was unavoidable because of dense adhesions (Gold, 2015). Through some clarifications, CDI can add a reportable condition. However, the goal is overall accuracy and compliant reporting, and in some mature programs, clarifications can result in a decreased number of reportable conditions. Reporting the difference between initial and final coded HACs and PSIs is an important metric.
- **Observed-to-expected (O/E) rates, including mortality index.** CMS risk adjustment for inpatient quality measures uses a complex statistical and mathematical process. Most organizations can only review their quality results risk-adjusted several years after the performance period. The main method used to provide such near real-time quality measurement is O/E rates (as calculated by algorithm). These rates represent a risk-adjusted measurement of what otherwise would be crude percentages.

### CDI tomorrow

Healthcare is changing, and the CDI profession is confronting new challenges: increasing denials, physician burnout, all-payer review, copy and paste, and consumer transparency (e.g., public report cards and patient choice), to name a few. This expansion has led to a need for a new vision and new metrics to reflect specialists' performance in the CDI of tomorrow. This paper groups these efforts into three categories: 1) revenue accuracy, 2) provider documentation quality and integrity, and 3) patient care/patient as consumer.

CDI professionals can make an outstanding impact on these challenges. However, given their current commitments and responsibilities to *today's* reimbursement and quality initiatives, CDI professionals may find themselves lacking resources or administrative support to push their program's metrics forward.

#### Revenue accuracy

The CDI programs of tomorrow should report metrics reflective of CDI activities that result in both positive and negative financial impact (i.e., revenue accuracy). Following are some recommended areas for CDI expansion in this area:

**Reimbursement accuracy.** Reimbursement is often the elephant in the room when discussions are held surrounding the work of CDI specialists, but revenue *accuracy* is key—not merely revenue improvement or enhancement. Queries and clarifications that result in reduced reimbursement on a given case indicate that a CDI program is operating compliantly, as CDI programs should ask questions not simply for *increased* reimbursement, but also for *appropriate* reimbursement. Queries issued by CDI specialists that result in negative financial impact can better reflect care rendered and resources utilized.

**Denials management has traditionally been the focus of a dedicated denials management department or of HIM/coding, but CDI specialists are increasingly lending their expertise.**

**Denials management** has traditionally been the focus of a dedicated denials management department or of HIM/coding, but CDI specialists are increasingly lending their expertise. In addition, payers are utilizing nurses and providers to support DRG or clinical validation denials. HIM/coding and CDI departments should work in harmony to support accurate code assignment as early as possible. Tracking and trending denials data, and sharing it systemwide, can be beneficial in educating CDI specialists, coders, and providers, as well as in decreasing organizational denials.

**Clinical validation** has become an area of expansion for many CDI programs (ACDIS, 2019b). More payers are creating and utilizing their own clinical indicators to support as well as deny diagnoses. Payers now attempt to dictate what clinical evidence supports coding of a diagnosis, leading to clinical denials regardless of providers' rationale and support. (This conflicts with the *Official Guidelines for Coding and Reporting*, which indicate that providers can utilize their medical judgment and clinical support for coding assignment.) In response, facilities are using evidence-based medicine as well as organizational task forces to develop facility clinical indicators, which in turn may combat clinical validation denials. The challenge is getting facility providers to agree on a set of clinical indicators to support certain diagnoses. With its blend of clinical acumen and coding expertise, CDI can help lead these efforts.

**CMI by service line.** Overall CMI is a traditional metric used to report the performance of CDI programs. CDI programs reporting CMI by service line have experienced success, particularly concerning physician engagement. In working with a service line, CDI specialists can tailor education and information relevant to that provider group. Looking at CMI via service line gives a more "apples to apples" comparison than overall CMI, often leading to discovery of physician documentation opportunities (e.g., uneven capture of CCs).

**Discharged not final billed (DNFB) reduction.** DNFB is influenced by many factors, some outside of CDI's control. CDI should focus its efforts on promoting a medical record that is complete and accurate as soon as it is received by the HIM/coding staff. This achieves two outcomes: 1) the medical record will be reflective of the care given and resources used, and 2) the HIM/coding professional will be able to accurately code the record without further clarification from the provider. Accurate and complete documentation, in theory, should reduce DNFB, but outside factors (e.g., missing operative reports and discharge summaries) often slow this process. A realistic goal for CDI managers is tracking the number of charts on hold due to unanswered queries. Organizations should develop internal escalation policies that help staff get queries answered in a timely manner.

### *Provider documentation quality and integrity*

Tomorrow's CDI programs may wish to explore the following documentation initiatives:



CDI professionals should monitor what is copied and pasted in the EHR, using education to discourage ineffective documentation habits.

**Provider education.** Time spent with providers—whether daily rounds, monthly meetings, or one-on-one conversation—is never wasted. CDI specialists are ideal candidates for teaching providers appropriate documentation and coding terminology. ACDIS recommends capturing and reporting this educational time, as it is often much more valuable than review time. Through this work, CDI can reduce provider burnout by making physicians feel more supported and valued—a vital contribution, as provider burnout is a call to action for everyone in healthcare. A recent Medscape survey of 29,000 physicians reported that 44% of physicians reported feeling burned out, 11% were colloquially depressed (i.e., reported “feeling down” or similar language), and 4% were clinically depressed (Medscape, 2019).

**Copy and paste reduction.** Copy and paste is a rampant problem in healthcare organizations due to the proliferation of the EHR. A 2017 literature review of 51 publications, conducted by *Applied Clinical Informatics*, concluded that “66% to 90% of clinicians routinely use copy and paste. One study of diagnostic errors found that copy and paste led to 2.6% of errors in which a missed diagnosis required patients to seek additional unplanned care. Copy and paste can promote note bloat, internal inconsistencies, error propagation, and documentation in the wrong patient chart” (Tsou et al., 2017). As just one example, copy and paste does not allow for resolution of sepsis to be captured, or the capture of disease progression. But copy and paste is also a problem without a clear owner: It is alternately laid at the feet of HIM, compliance, or even IT. ACDIS believes the problem should be addressed through a multidisciplinary task force, with CDI playing a role. CDI professionals should monitor what is copied and pasted in the EHR, using education to discourage ineffective documentation habits. They cannot eliminate copy and paste, but with intervention they can reduce its incidence. One recommended method is to talk about copy and paste with residents and medical students before they become reliant on it.

**All-payer reviews.** CDI must move beyond review of just Medicare charts. The same queries should be placed regardless if a payer uses DRGs. This helps promote consistency with provider communication and emphasizes overall documentation integrity.

### *Patient care/patient as consumer*

Finally, with an eye to the emerging reality of healthcare consumerism, CDI should consider the following as we head into the future:

**Accuracy of publicly reported data.** Organizations today are faced with increasing quality care and regulatory measures. Quality measures on patient care, patient safety, and patient satisfaction significantly impact the success of an organization or health system. Measures such as patient safety are evaluated by The Joint Commission and required by the Department of Health, and they factor into public reporting. Publicly reported data can include sources like Leapfrog, Healthgrades, and CMS quality reporting (financial rewards or adjustments). The measures impact organizational reputation and publicly reported quality ratings. Data that demonstrates a hospital’s quality attracts patients to the hospital and makes it a more desirable place for healthcare professionals to work. This data

also assists in payer contracting efforts. CDI can affect publicly reported data by, for example, focusing reviews on PSIs, mortality risk adjustment, readmissions, and CMS bundles. In essence, CDI can help take the noise out of the data. To move to the observed data and dive into the root cause of clinical care barriers, thereby truly improving quality care, a team approach is required.

**Nursing and ancillary documentation.** There are numerous aspects of nursing and ancillary documentation that impact compliance and regulatory standards and support the patient's clinical picture and treatment plan. Common elements for review by CDI are vital signs; Glasgow Coma Scale; behavioral and nutrition status; restraint monitoring; pressure injury reporting, staging, and care; stroke manifestations and laterality dominance; medication administration and changes; and wheelchair and bedbound status. CDI specialists can show nursing and ancillary providers how improved documentation in these areas can impact specific clinical support and coding practices. This practice should extend to nutrition departments. Developing and adopting standard definitions for malnutrition and a standard process for documenting diagnosis and clinical support in the EHR can lead to reduced denials.

**EHR prompts for improved early diagnosis detection.** Sepsis alerts and notification of nutrition (for patients at risk of malnutrition) can impact quality of care in addition to reimbursement. EHR alerts that prompt patient transfer to the ICU or critical care unit should encourage CDI and safety to review these cases for capture of increased severity or patient safety concerns. There are also additional components within most EHR programs to capture HCCs and social determinants of health.

**Integration with new technologies.** Organizations can use technology enabled with natural language processing (NLP) to automate basic queries. CDI specialists will continue to play an important role by assisting with NLP query development and rules governing query delivery, validating accuracy and precision of automated queries, developing ideas and structure for new queries, and maintaining query rules and logic as clinical definitions and practice patterns change, regulations change, and as documentation requirements from regulatory bodies change.

**Capture of social determinants of health.** CDI professionals can help accurately capture Z codes and their documentation, which provides caregivers with a broader knowledge of patient populations and more accurate care. This data will also result in improved capture of conditions that impact readmission reduction, mortality metrics, and the Medicare Shared Savings Program. These conditions affect patient care, quality, and revenue—and, in turn, publically reported data. CDI professionals can educate coding, nursing, providers, nutrition, care coordination, and social workers to ensure capture of this documentation within the medical record. Diagnosis specificity helps reduce clinical variation among providers and improve cost, as well as identify high-risk populations to assist in risk-based contracting. For example, in diabetic populations, there is a significant prevalence of associated depression and anxiety. These conditions are a barrier

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to attendance rates for care in outpatient settings. By identifying such conditions, CDI professionals can help remove barriers to care for these patients (ACDIS, 2019a). Organizations can perform outreach to their area family physicians, rehabilitation centers, and skilled nursing facilities to capture this documentation and formulate a plan of support for patients. For common Z code focus areas, please see the appendix of this paper.

*Note: A planned part 2 of this paper will include a discussion on the term CDI” and whether the “I” in “improvement” should be changed to “integrity” to reflect the changes in the profession.*

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## Appendix

### *Common Z code focus areas*

- Z51.5 Encounter for palliative care
- Z55.0 Illiteracy and low-level literacy
- Z55.8 Other problems related to education and literacy
- Z56.0 Unemployment, unspecified
- Z56.9 Unspecified problems related to employment
- Z59.0 Homelessness
- Z59.1 Inadequate housing
- Z59.4 Lack of adequate food and safe drinking water
- Z59.5 Extreme poverty
- Z59.6 Low income
- Z59.7 Insufficient social insurance and welfare support
- Z59.9 Problems related to housing and economic circumstances (transportation)
- Z60.2 Problems related to living alone
- Z60.4 Social exclusion and rejection
- Z60.9 Problems related to social environment
- Z62.21 Child in welfare custody
- Z63.3 Absence of a family member
- Z63.31 Absence of a family member due to military deployment
- Z63.8 Other specified problems related to primary support group
- Z74.01 Bed confinement
- Z74.09 Chair ridden/reduced mobility
- Z74.1 Need for assistance in personal care
- Z74.3 Need for continuous supervision
- Z75.1 Person awaiting admission to adequate facility elsewhere
- Z75.4 Unavailability and inaccessibility of other helping services

#### **What is an ACDIS Position Paper?**

An ACDIS Position Paper sets a recommended standard for the CDI industry to follow. It advocates on behalf of a certain position or offers concrete solutions for a particular problem. All current members of the ACDIS Advisory Board must review/approve a Position Paper and are encouraged to materially contribute to its creation.