Fannie Mae®

Beyond the Guide

How to get the most from your quality control program

August 2023

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Beyond the Guide Introduction

Part D of the Fannie Mae *Selling Guide* describes our requirements for "Ensuring Quality Control (QC)." Achieving full compliance with the expectations of Part D is an ongoing journey, and *Beyond the Guide* provides a roadmap for the trip. The original edition of *Beyond the Guide* provided in its introduction: "Properly implemented, a lender's QC process contributes to business profitability and long-term success. QC pays for itself." That statement is as true today as it was in 2011 – and as important.

To meet evolving needs, we updated *Beyond the Guide* in 2016. Since that release, the mortgage industry has experienced record volume cycles, a global pandemic resulting in economic uncertainty, and significant workforce disruptions. The foundational loan quality work that was put into place since the last housing crisis served us well through this most recent tumultuous time, but we did not emerge unscathed from the upheaval. This last cycle exposed areas of opportunity where controls were not nimble or strong enough to mitigate all the various loan quality risks within the mortgage ecosystem.

With that context, this third edition of *Beyond the Guide* features:

- Expanded dialogue on key QC principles
- A focus on the importance of continuous improvement
- Consideration of advancements in technology

Overview

Beyond the Guide is a companion to the Fannie Mae *Selling Guide*. *Beyond the Guide* leads you past the minimum requirements of the *Selling Guide* by diving deeper into best practices from Fannie Mae and across the industry.

It's designed to help your organization achieve a higher level of efficiency and effectiveness from your QC program while keeping eyes on the future.

This edition of *Beyond the Guide* combines more than a decade of industry learnings and observations. It includes practical illustrations to provide the necessary tools to facilitate a best-in-class QC program.

Equitable and sustainable homeownership

An evolving priority for Fannie Mae and the housing finance industry is an enhanced focus on equitable and sustainable homeownership. Lenders' traditional focus on QC is largely driven by the potential financial impact of a repurchase or post-delivery price adjustment. But manufacturing quality loans also helps lenders more effectively support and serve borrowers and their communities. A strong QC program with actionable information enables lenders to innovate and promote a stronger, safer, and more efficient housing finance system.

Setting the stage

> **"Quality means doing it right when no one is looking."**
>
> *– Henry Ford*

Culture is what guides an organization's practices and focus.

Culture derives from values that an organization sets to achieve its core mission. Put another way: culture sets the values that determine what an organization is and what it wants to accomplish. Culture directs the actions of an organization's employees on a day-to-day basis. A strong quality culture is paramount for sustained success and is a priceless investment to navigate an ever-evolving environment. An effective QC program requires intentional investment and ongoing focus for creating and maintaining a culture where quality matters.

A culture of quality must start at the top and is vital for ensuring loan quality is embraced at all levels of an organization. Companies that promote a strong culture of quality never relegate quality to a tagline; quality is woven into the fabric of their organizations. In the housing market, companies with this kind of culture demand high quality standards that focus on sustainable homeownership, which is a pillar of a healthy economy and mortgage industry.

Three reasons why quality matters

Predictable Outcomes

Predictability allows leadership to more confidently manage markets, allocate loss reserves, and strategize for the future – all of which positively impact lender stability and profitability. Successful organizations use quality as a key performance indicator (KPI). This allows them to understand the business's performance and health to support critical adjustments in strategic goal execution.

Manufacturing Efficiency

QC helps lenders identify defective manufacturing processes. Reducing rework results in manufacturing loans quicker, cheaper, and using fewer resources. Greater efficiency directly impacts a company's bottom line by managing costs and maximizing revenue.

Reliable Data

Accurate data is essential and is used to drive almost every aspect of business decisioning in our industry. Risk management, collateral quality, product offerings, market footprint, pricing, and staffing are all data-driven. Loan quality data must be reviewed, monitored, and acted on in the same way as other key production performance data.

The value of good quality

A laser focus on quality allows the largest companies in the world to ensure the goods and services they produce meet customer expectations and deliver the best customer experiences. The results are high customer satisfaction and a minimization of the downside risks that can come after the transaction is completed. In the mortgage industry, those averted risks help lenders avoid eroded profitability, impacted reputation, and increased uncertainty.

Beyond the Guide explores ways that QC activities can enhance the value of good quality by:

- Verifying processes are working as intended and detecting poor quality
- Correcting defects to minimize impact
- Analyzing root cause to prevent future defects
- Confirming loans meet investor standards at closing and/or are corrected prior to being sold

We at Fannie Mae remain firmly committed to partnering with lenders to drive loan quality. We hope you find this updated *Beyond the Guide* helpful in managing your risk and meeting our QC requirements. Please also take advantage of the other resources we provide on our **Loan Quality page**.

Thank you for sharing our commitment to quality to support a resilient mortgage market and sustainable homeownership.

The Loan Quality Team at Fannie Mae

The Loan Quality Team at Fannie Mae

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Beyond the Guide

Section 1

QC Plans and Processes

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Section 1

QC Plans and Processes

Selling Guide D1-1-01

Getting the foundation right is key to any successful endeavor.

Whether building a house or a business, you need plans and specifications, competent workers, satisfactory inspections and tests, and a method to confirm the finished product complies with the original requirements. A successful quality control (QC) program requires defining, documenting, and building the foundational plans, processes, disciplines, and oversight. This ensures it is effective in guarding the lender and its investors against costly gaps in controls.

QC plan content – the framework of every lender's program

The QC plan is the road map that a lender uses to achieve its quality goals. The QC plan needs to state the quality objectives and define plans to achieve them. Fannie Mae's *Selling Guide* specifies the minimum requirements for lender QC plans. When writing its QC plan, a lender should consider its business model, risk tolerance, and investors' requirements.

The QC plan is a working document that should be referenced regularly.

Senior management may encourage frequent use of the QC plan in a few ways:

- Use the plan as source material for periodic operational staff training.
- Tie metrics used in management reporting back to the plan (i.e., compare actual quarterly repurchase costs to target defect rate calculations in the plan to determine any necessary actions).
- Establish regular intervals to calibrate the QC vendor's policies and procedures against the lender's QC policies and procedures to achieve appropriate alignment.
- Use the plan as a guide when developing action plans with operational staff.

Attributes of a strong QC plan

Attribute	Attribute meaning
Written from the lender's perspective	Plan must reflect the philosophy, specific risks, and necessary controls for the lender's unique structure (e.g., channels, geography, staff structure), in addition to ensuring investor requirements are being met.
Use standards, measurements, processes, and procedures that would apply to all loans originated	The plan should define controls for quality without customizing for a specific investor. For instance, sampling methodology should be designed with a primary focus on meeting the *lender's* requirements for testing risk but should also ensure any investor requirements are met.
Structured as guidance intended to be used and understood by internal and external readers	The plan should be easy to understand by staff, management, investors, and regulators. Vague or unnecessarily technical language could cause confusion and reduce the likelihood of the plan's practical use.

Quality standards – making standards relevant to the business

Having an effective QC plan requires measurements to determine when you are within the plan's objectives and when action is needed to get back on track. A lender must establish three critical quality standards that provide the organization the necessary information to confirm its quality is within acceptable ranges. These standards will also identify any enhancements needed to improve QC results and efficiencies:

Defect classifications (taxonomy)

A method of characterizing defects by category such as credit, employment, income, assets, property, or value — to support root cause analysis.

Defect severity levels

A method to categorize defects based on the impact of the manufacturing error, such as significant/material, moderate, and minor/informational. (The highest level of severity must be assigned to loans with defects resulting in the loan not being eligible as delivered to Fannie Mae.)

Target defect rate

The maximum percentage of ineligible/unsalable loans a lender is financially willing to accept. This metric defines defect percentage and financial impact. Target defect rate requirements apply to a lender's random post-closing sample. Tying these standards to financial exposure provides key performance indicators (KPIs) that executive management should monitor and to which it should respond.

Lenders must document the rationale used to establish their target defect rate.

Defect classification – taxonomy

A *defect taxonomy* is a predefined method of classifying loan-level defects based on their cause or type (i.e., income/employment versus liabilities). Fannie Mae does not require lenders to use a specific taxonomy, but some form of defect categorization should be used to track and trend defects and their root causes. **Fannie Mae publishes its taxonomy**, and QC audit software in the market typically comes with a similar basic taxonomy. Adopting an internal defect taxonomy that aligns with Fannie Mae's defect taxonomy allows you to aggregate multiple sets of different QC results to see a broader view of quality risk for your organization. Whatever taxonomy a lender uses, it must be sufficient to track and trend loan-level defects in all QC reports, identify defect's root causes, and support effective action planning.

Defect severities

Defect severities tell the story of an error and its impact. Fannie Mae requires that the most significant category represents loans that were ineligible for delivery. Most defects can have multiple severities based on their impact to the loan. For example:

Incorrect income calculation – self employed borrower

Finding	Significant defect
Original income calculation was $10,000 per month with a debt-to-income (DTI) ratio of 37%. Corrected income calculation was $9,000 per month with a corrected DTI of 41%. Desktop Underwriter® (DU®) resubmission resulted in an Approve/Eligible recommendation.	Original income calculation was $10,000 per month with a DTI of 37%. Corrected income calculation was $7,000 per month with a corrected DTI of 53%. DU resubmission resulted in an Approve/Ineligible or Refer with Caution recommendation.

Aggregating the data and trending defects across all severity levels provides insight and understanding of the breadth and scope of the errors, which can highlight potential process failures or control gaps. Having the broader level of information can result in more robust action planning, resulting in higher levels of quality across your organization.

Target defect rate

Sustained loan quality provides a level of certainty to a lender's management team and other stakeholders. Certainty of predictable outcomes is highly valued. Accurate data supports sound credit decisions that benefit homeowners and can help companies meet their financial objectives. This is achieved through metrics established by executive leadership. (A best practice is to tie goal attainment to the company's compensation structure.)

An effective way to establish loan quality targets is to model the financial exposure created at a certain defect level. Any loan with a defect has the potential to result in additional costs ranging from simple rework time costs to repurchase or regulatory costs. Attaining and maintaining a zero-defect rate is aspirational, but realistic targets should be set:

- As low as possible
- Designed to be reduced over time
- Based on financial analysis of costs associated with defective loans
- Evaluated at least annually against updated performance, default, and capital needs
- Used to quantify the risk exposure of defects and drive change

Gross versus net defect rate

Part D of the Fannie Mae *Selling Guide* does not have a requirement related to lenders' use of a gross versus net defect rate; we allow a lender to select the option that is most appropriate for its internal risk view. However, a best practice is for lenders to track both gross and net defect rates with established targets for each one.

- Gross (initial) defect rate is defined as the defect rate based on any initial findings prior to any rebuttal activity.
- Net (final) defect rate is defined as the defect rate based on the final findings after the rebuttal activity is complete.

Why is tracking both metrics important? The gross defect rate is an indicator of the total risk on your book prior to the expense and effort of resolving mistakes that were found. Those mistakes could be as simple as a document misfiled in your imaging system, or a much more significant error where your manufacturing process did not obtain the correct information needed to evaluate the transaction at origination. With the passage of time, obtaining documents from borrowers or reconciling significant analytical errors becomes increasingly difficult.

- A best practice recommendation is to establish a metric that differentiates documents that were misfiled in your imaging system versus documents never obtained so you have a much more granular view of the impact of "missing documents" on your quality risk.

Ask yourself:

- Is our target defect rate evident and understood as a metric of the company's quality?
- Are action plans treated as a proactive, continuous improvement activity, not just initiated if target defect rates are exceeded for multiple periods?
- Do our QC reports reflect the potential cost of elevated defect rates?
- Do we understand the difference between gross and net defect rates and have actions to improve both?

Modeling example

Consider the following illustration of the defective loan impact at different target defect rates:

Critical defect rate X loan production in units = repurchase risk		
1% X 2,500/month	=	25 loans/month
2% X 2,500/month	=	50 loans/month
5% X 2,500/month	=	125 loans/month
10% X 2,500/month	=	250 loans/month

If a lender has determined through analysis of previously repurchased loans an average repurchased loan cost, an estimated secondary market risk exposure can be calculated. For this illustration, the lender has observed an average loss of 15 basis points or 0.15% of the loan amount per repurchased loan. Assuming a loan amount of $400,000, the calculation below translates the estimated units above to a monthly dollar exposure:

Lender's average repurchased loan cost = $600 per loan Monthly defective loans X $600 = monthly repurchase financial risk		
25 X $600	=	$15,000/month
50 X $600	=	$30,000/month
125 X $600	=	$75,000/month
250 X $600	=	$150,000/month

Using this example, the annualized defective loan cost could range from $180,000 to $1,800,000 in just repurchase cost risk. Other factors such as projected market cost changes, loss reserve requirements for warehouse lines, and loan pay history, could impact financial risk.

Finally, if the target defect rate is a true model of financial risk as well as a key metric used by management, it would be expected that all management areas – particularly senior management – would know:

1. the target defect rate,
2. the organization's current status in relation to the target, and
3. if not within target, what action is being taken to return within target.

Considerations:

- Include historic loan quality trends combined with future projected production when performing target defect rate analysis to derive a realistic target defect rate.
- Maintain formal documentation of the regular target defect rate assessment.
- Implement action plans if actual defect rates do not align with the target defect rate.

Confident defect rate reporting through calibration

Measurements are only as valuable as their accuracy. Calibration is defined as "the act of checking or adjusting (by comparison with a standard) the accuracy of a measuring instrument (or metric)." Calibration for mortgage lending asks the question "Do two different entities (whether internal or external) review discrepancies the same way?" If not, what are the differences? Why are there differences? What adjustments should be made?

The calibration process helps maintain consistency and repeatability in measurements, assuring accurate and reliable benchmarks. The act of calibrating is an ongoing process that should be performed routinely.

Ask yourself:

- Are our prefunding and post-closing QC review processes performed using the same testing methods?
- Are the same severity levels used in both reviews? If not, why?
- Are our investors (or other reviewers, such as mortgage insurers) finding the same or different defects that we are finding in our QC reviews? If not, why are there differences?

Tips for successful ongoing QC alignment

- Gather internal review results and investor review results to identify differences in cited defects and severities.
- Track individual defects cited over time by investor and internal results, identify areas where the investor is citing defects that are not found internally, and review to understand why.
- If outsourcing to a vendor, use the lender sampling of the vendor's results as a type of calibration.
  - Calculate and track monthly concur rates from your review sample and discuss with the vendor monthly; monitor trends and know when to act.
- Scrutinize loans that were reviewed in both prefunding and post-closing – assuming they had the same information, were the same defects cited? Perform a similar analysis by auditor.

Examples of combining, tracking, and trending defect calibration results:

Summary table of defect alignment / differences

Example of 33 lender findings reviewed against Fannie Mae results:

- 31 were found consistent with lender Moderate Findings
- 1 was out of scope (Fannie Mae does not test for that defect)
- 1 was a defect, but Fannie Mae would cite different severity

Calibration	Finding	Significant	Grand total
Out of scope	1	1	2
Yes	31	16	47
Yes – severity difference	1		1
Total	33	17	50
Yes accuracy score	93.94	94.12	

Addressing oversight policies for third-party originations in the QC plan

The QC plan must outline the requirements for reviewing a sample of originations from each third-party originator (TPO) at least once annually through the QC process. Lenders with third-party origination channels are responsible for managing loan manufacturing risk that is not always within their immediate control, which requires different forms of diligence than retail origination. The QC plan should outline your strategy for monitoring the loan quality of third-party originations through various QC activities:

QC activity	Policies that impact TPO sampling and loan quality oversight
Prefunding policy (pre-purchase)	The QC plan should include a process to target TPO deliveries in sampling criteria as well as the strategy for adapting QC testing criteria to TPO by type (broker versus correspondent).
Post-closing policy (post-purchase)	The QC plan should address the process to include TPO deliveries in the random sampling methodology as well as the strategy for targeting TPOs consistently in discretionary samples.
Reporting policy	The QC plan should contain a policy requiring monthly QC reporting to include a separate breakout of trending results for each individual origination channel (retail, broker, and correspondent). This approach supports loan quality monitoring activities as well as the strategy for ranking actual defect rates by each TPO channel over time to identify trends.

Consider examples of how these QC activities could be delineated in the QC plan to ensure holistic and strong policy controls for measuring and managing TPO risk.

TPO prefunding / pre-purchase QC reviews

The QC plan should recognize that QC testing of third-party originations often differs from QC testing protocols for retail originations. QC processes designed for TPO originations must be structured to account for the unique attributes of TPO loan manufacturing processes as well as distinct loan quality objectives. It is required to perform prefunding (pre-purchase) quality control reviews regardless of the type of third-party originations you acquire. Fully closed loans as well as loans that are partially completed by a third party are subject to Fannie Mae prefunding QC requirements.

Considerations:

- Track and trend TPO QC results separate from retail – trends may emerge in either retail or TPO that could reveal different control gaps.
- Use the QC results to formulate a scorecard by channel or counterparty, possibly including other quality metrics such as repurchases, missing documentation, and areas with improvement opportunity.

QC vendor management

Choosing to outsource certain QC functions to vendors can be an effective way of managing limited resources. Lenders that use this option successfully understand that outsourced QC functions must be managed as closely as internal staff and include oversight of the vendor like any third-party vendor contracted by your company. Lenders retain responsibility for the final work and that work's compliance with Fannie Mae requirements. This oversight responsibility includes loan-level testing of at least 10% of the vendor's work and assignments.

Lender responsibilities

Confirm and incorporate

- Ensure vendor's staff is qualified and experienced
- Confirm vendor's policies and procedures align with lender and investor requirements
- Fully incorporate vendor's results into lender's reporting and remediation process

Test and verify

- Review vendor's work monthly (minimum 10%) for accuracy/completeness
- Include loans with defects and no defects
- Lender must perform file reviews – cannot contract out

Review and report

- Include results of vendor review in monthly QC reports
- Describe the review sample selected and concurrence rates
- Detail discrepancies identified by lender's review

While vendors maintain certain responsibilities as well, it remains the lender's responsibility to ensure an acceptable audit is performed and contractual obligations are met.

Vendor responsibilities

Document and perform

- Maintain policies and procedures
- Comply with lender contract
- Provide timely loan-level reporting results to lender

Ask yourself:

- Have we defined a benchmark for acceptable vendor quality and tested to confirm the vendor is performing as desired?
- Are results of vendor testing discussed with the vendor when discrepancies are identified?
- Do we have a clear escalation path for action if the vendor's work is found to be unacceptable?

Considerations:

- Vendor oversight is a key component of the lender/vendor relationship and requires testing, monitoring, and reconciliation of the acceptability of the vendor's work product.
- Consider what factors may influence changing the scope and scale of QC vendor use and how adjustments to current usage may affect the QC process.
- Understand the data delivery, access, and retention capabilities of the QC vendor's software, including alignment with necessary digital security requirements.

Addressing internal audit and governance of the QC plan

The QC plan must outline the lender's process to perform an independent audit of the QC functional area to ensure the lender's QC staff follows all policies and procedures that govern the QC function. Independent testing is required to confirm that the QC controls in place are adequate to protect the company from risks, that the controls are effective, and that they are compliant with company, regulator, and investor governance requirements.

Addressing requirements to maintain complete QC audit files in the QC plan

The QC plan must include policies that establish standards to ensure that each QC audit file contains a complete record of the entire QC assessment. This documentation must include sufficient evidence of the testing performed, including outcomes, to determine the accuracy of the underwriting decision and ensure compliance with Fannie Mae requirements. An audit file consists of all written and electronic records created as part of the QC review (D1-3-06). The completeness of these files becomes very important when internal or external audits of QC are performed. Failure to provide evidence of complete audit records can result in investor or regulator findings. As with all things in QC, consistent and predictable documentation avoids problems!

As with all things in QC, consistent and predictable documentation avoids problems!

Items that should be part of the basic audit file include:

- Audit review summary document with auditor notes and findings
- All applicable audit checklists
- All reverifications, including reverifications sent/received dates
- Income calculation worksheets
- Audit credit report
- Evidence of collateral risk assessment
- Tax transcripts
- Screenshots of applicable online webpages used during audit

Some QC software programs offer audit review summary forms in their standard report packages, but any worksheet used by the auditor will work. The primary objective is to document what data and documents the auditor reviewed and how they arrived at their results.

Self-assessment opportunities to build a comprehensive QC plan

Taking stock of your current risk controls and adjusting for gaps will strengthen your QC processes and help maintain a healthy risk management program. Fannie Mae has several risk self-assessments that can be leveraged by any size lender to review and improve current risk control systems. Our self-assessments cover a variety of risk controls. Refer to our Resources section for links to these powerful tools.

Resources

How to calculate a defect rate

Selling Guide A1-1-01

Seller/Servicer Risk Self-Assessment

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Beyond the Guide

Section 2

Prefunding QC – Because It Drives Change!

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Section 2

Prefunding QC – Because It Drives Change!

Selling Guide D1-2-01

Prefunding QC is a foundational element of an effective QC program.

Fannie Mae provides tools, like this guide and our ***Quality Insider*** articles, among other things, that enable you to move your quality control (QC) program to the next level. Reimagining your prefunding QC (PFQC) is a logical starting point. Lenders with a deliberate and strategic method of pulling suspected quality issues forward to PFQC can make timely changes to loans moving through the pipeline. This approach yields tangible benefits by correcting quality issues before closing and reducing costly risk exposure. Only PFQC can effect change *before* mistakes are final and material impacts to both the borrower and the business are realized!

The *Selling Guide* outlines the essential PFQC requirements, but it's intentionally not prescriptive. This allows a lender flexibility to use PFQC to best address the risks unique to its organization. Sampling loans with known risks earlier in the manufacturing process enables actions that:

- prevent closing or acquisition of ineligible loans,
- permit corrections to individual loans,
- control for inaccurate or incomplete file data and documentation,
- identify and reduce fraud or misrepresentation,
- test corrective process changes for effectiveness, and
- provide real-time feedback on the origination process.

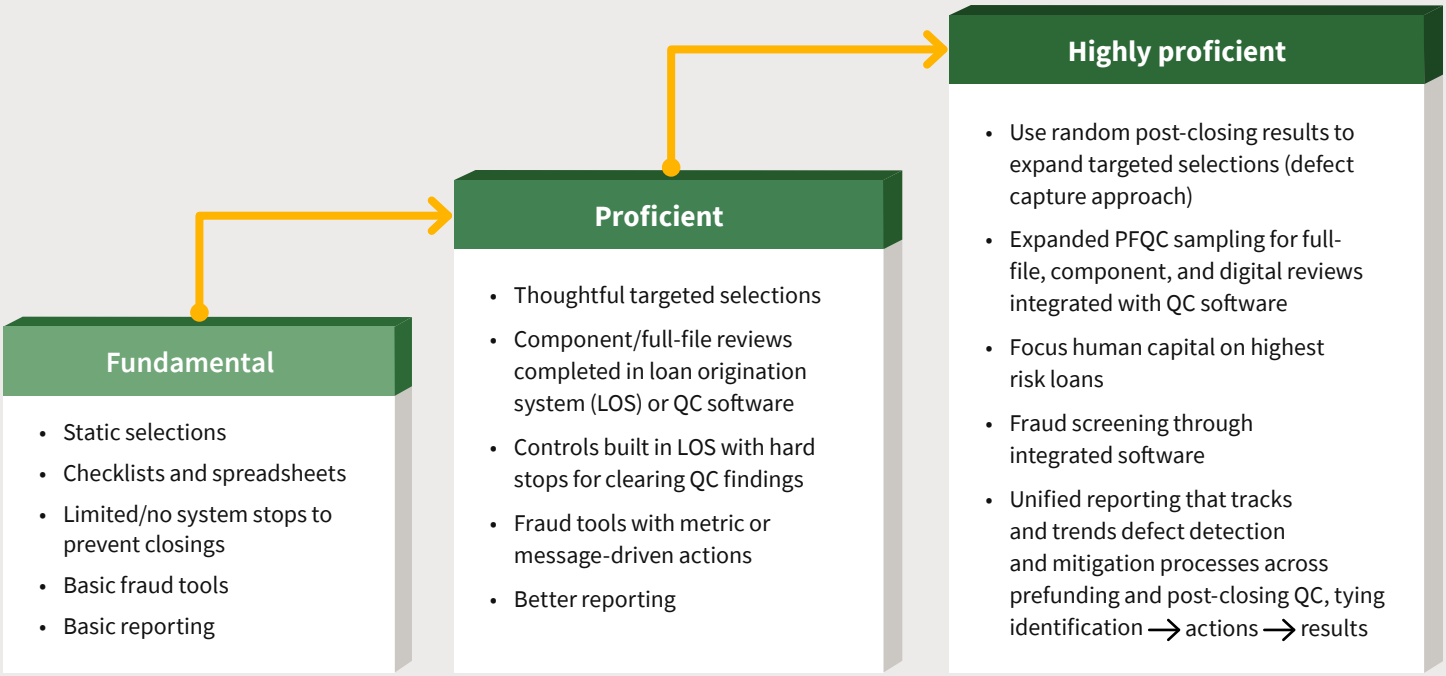
These benefits can be realized only if the PFQC focus is strategic and deliberate. The *Selling Guide* gives lenders the room to use PFQC with the intention that they would match QC sampling scope and sample sizes with the current quality risk environment. This allows for timely, efficient, and **actionable** file reviews. In past market cycles, many lenders did not increase PFQC as quality deteriorated – which was the driver for Sept. 2023 *Selling Guide* policy update.

This section highlights new concepts and tactics that can put greater focus on PFQC and take quality to the next level.

Prefunding development phases and attributes

Effective PFQC processes allow for real-time risk management. The graphic below shows the spectrum of structures and attributes Fannie Mae has observed. These processes range from a fundamental structure designed to meet minimum requirements to a highly proficient structure that is tailored to the organization's risks and flexible enough to adapt to changing markets.

Advancement stages of prefunding QC



This information is intended to help a lender strengthen or enhance current processes, regardless of where its organization falls on the spectrum.

Sampling strategy and defect rates

Sampling strategies and objectives for PFQC, when implemented thoughtfully, are one of the most effective ways to identify and remediate quality risk prior to closing. The PFQC sample should be one of a lender's most dynamic samples – ensuring the process is looking for the right risks.

A targeted approach to PFQC loan sampling helps achieve four goals:

1. Fix loan-level defects prior to closing.
2. Review areas of known risk to lower instances of defects, issues, or problems.
3. Test theories to tease out pockets of risk.
4. Test effectiveness of action plan controls.

Effective targeted sampling allows a lender's PFQC process to become an advanced tool in their manufacturing control arsenal.

The *Selling Guide* states that loans selected for prefunding QC reviews must target areas that the lender identifies as having a higher potential for errors. The *Selling Guide* requires a minimum prefunding sample size that represents 10% of the prior month's total originated loans or 750 loans. In addition to the required targeted sample, a best practice is to implement a random sample in PFQC. A random sample of a lender's pipeline is not required as part of a PFQC sampling strategy, but it can be a useful tool to understand current health of the loans in process and identify emerging issues in real time.

Targeted sample effectiveness

If a sampling strategy is on point, the number of gross defects cited during PFQC should be **high**. Understanding this concept can help management know whether prefunding sampling strategies are targeting the right population of loans. Higher gross defect rates in the PFQC should be the desired outcome. Low defect rates on targeted populations should not be dismissed without understanding the reason. If the criteria were selected because the business believed there was a higher likelihood of defects, the absence of those defects should be examined.

Ask yourself:

- Were the auditors performing the QC tests that target the areas identified as being high risk or having a higher potential for errors?
- Has the likelihood of a defect occurring been mitigated through systems, processes, or market changes?

Constant examination of sampling criteria and how it is tested ensures that PFQC has the best chance of efficiently capturing loans with defects that can be corrected.

Defect capture rate

As a complement to assessing sample effectiveness, it is important to assess the effectiveness of the defect capture rate. Defect capture rate is a measure of how much quality risk you can identify based on your targeted samples. The measure of how much quality risk and where that risk lies is based off your post-closing random sample. Your post-closing random sample results are a representation of the quality of your total originations. In the example below, if your defect rate is consistently 3% and you originate 1,000 loans a month, you close approximately 30 loans a month with significant defects.

Defect capture rate is a measure of how much quality risk you can identify based on your targeted samples.

Example

	Jan.	Feb.	March
Loans closed	1,000	1,000	1,000
Defect rate	3%	3%	3%
Number of defective loans closed	30	30	30

Top defects:

- Self-employed income calculation
- Omission of debt not documented
- Base income calculation

Having this information and understanding your top defect drivers allows you to enhance your targeted samples to find these loans. The defect capture rate reflects how many of those defective loans you were able to find by either expanding your prefunding targeted selections or using your post-closing discretionary reviews.

Don't forget

- Defects identified in post-closing can show hidden or emerging risks that can be incorporated into the PFQC samples. (And as noted above, once solutions to drivers of these defects are implemented, prefunding tests those solutions, thus creating a cycle of pre- and post-closing QC synergy.)
- Assess sampling methodology at *least* quarterly, but more often if possible. Consider:
  1. What is happening in the economy that may lead to manufacturing risks (e.g., rising interest rates = fewer rate/term refinances and more purchase transactions)?
  2. What personnel changes have happened in operations that could affect manufacturing quality (e.g., high rate of personnel turnover and role transitions)?
  3. What new products has the organization introduced (e.g., home equity line of credit, manufactured housing)?

- Utilize the same taxonomy for PFQC that you use for post-closing QC.
- Create a comprehensive view of risks by aggregating QC results from investors, mortgage insurers, servicing entities, and your internal data. The collection may yield information that can help you determine high-risk areas to target.
- Use technology to identify risk by targeting high-risk data points within loan transactions. Deploy sampling models and tools that select loans with heightened risk based on the information available to you.

Prefunding versus pre-purchase

PFQC requirements apply to loans closed by the lender (prefunding reviews) as well as any closed loan that a lender acquires (pre-purchase reviews). At their most basic levels, both reviews must be designed to protect the lender from funding or acquiring defective loans, but each review type should consider the unique risks and limitations of its origination source.

Prefunding reviews	Pre-purchase reviews
Retail and wholesale (broker) originations	Correspondent originations
Loan file is completed through underwriting	Loan file is funded with closing documents
Corrections **can** be made before loan is closed	Corrections **cannot** be made to the loan
If defects identified cannot be corrected, loan is not closed	If defects identified cannot be cured, loan is not purchased
Review results give insight to process or staff effectiveness	Review results give insight to counterparty production quality

Full-file versus component

The *Selling Guide* requires that some portion of a lender's PFQC contain full-file reviews so that new risks can be identified earlier than post-closing random reviews would reveal, but no minimum requirement is set. This gives lenders flexibility to use component reviews to target specific risk attributes. The chart below is not all inclusive but provides examples of full-file and component review options.

Targeted areas may include:	Full-file	Component
Loans with characteristics or circumstances related to errors or defects identified in prior prefunding and post-closing review results	✓	✓
Loans that were impacted by a recent policy change	✓	✓
Loans with complex income calculations (for example, rental income, self-employed, and short history of receipt of income)		✓
Loans requiring the use of nonstandard processing or underwriting guidelines (for example, multiple financed properties, assets used as income, or manual reserve calculations)	✓	
Loans originated or processed through various business sources, branch office, staff person, contractor, third-party originator, or appraiser	✓	✓
Loans that require a higher level of documentation	✓	

Being intentional about when to use component reviews versus when to use full-file reviews can help with defect capture rates and staff efficiencies. Component reviews typically take less time to complete, which enables you to cast a wider net over known risk components, yielding more efficient utilization of review resources. The time saving created by performing the component review allows lenders to increase the percentage of loans that can be reviewed without having to increase staff. Perform full-file reviews for loans with layered or broader risk.

Prefunding cycle timing

Prefunding reviews must be effective in identifying and preventing ineligible loans from funding. Timing is critical. Selections must be made when the documentation is complete and, at a minimum, when the loan is conditionally approved or cleared to close *but not* closed. PFQC needs a reasonable amount of time to perform the review and operations needs adequate time to make any corrections identified by PFQC - all while minimizing manufacturing delays.

Selections must be made when the documentation is complete and, at a minimum, when the loan is conditionally approved or cleared to close but not closed.

Here are some best practices to facilitate smooth and efficient reviews:

Set expectations

Partner with operations to ensure reasonable expectations for process.

Define process expectations

Define turn times that make sense (4-hour, 6-hour, or 24-hour turn time).

Flexible selections

Select files early in the process but only perform review when sufficient documents are received.

Process for priorities

Define expedited process for reviewing and clearing high-priority loans to meet special circumstances without sacrificing quality.

Clear escalation contacts

Consider establishing defined points of contact between operations and QC that oversee remediation processes, ensuring timely remediation.

Define checkpoints in the process

Use QC checkpoints for fraud and data screening tools that highlight red flags throughout the process to streamline the final review. Include LOS hard stops requiring documenting of operations/QC comments and actions.

Reporting

The best PFQC program will lose an important piece of its value if management reporting is not done well. The *Selling Guide* requires that PFQC's selection details and file review results are reported to management monthly. You might meet this requirement by publishing a simple spreadsheet with flat numbers, but you won't be giving management what it needs to drive quality and act where needed. If the underlying root cause or source of defects is not addressed, the same defects are likely to occur and the PFQC function will be like a "whack-a-mole" exercise.

Refer to *Beyond the Guide* Section 6, QC Reporting, for an in-depth view of various methods lenders have used to design, create, and publish actionable report packages. These reports keep the organization apprised of its performance relative to its quality standards. The Reporting section provides specific suggestions for prefunding areas such as:

- Designing informative, uniform prefunding reports
- Quantifying the value of prefunding QC
- Highlighting patterns, trends, and process gaps
- Merging operations and QC metrics for action
- Tying prefunding QC results back to post-closing QC results

Considerations

- Publish your most recent month's prefunding QC report with your current monthly post-closing results (report May PFQC results with February post-closing results).
- To be effective, prefunding reports must include overall defect trending and granular defect-level trending. Trending only general categories fails to provide sufficient information to drive action.
- Display selection reasons in plain language.
- If prefunding is testing for action plan effectiveness, ensure results are called out and include expected confirmation of effectiveness in post-closing results. (Refer to *Beyond the Guide* Section 7, Corrective Action and the Action Plan, for additional details.)
- Include loan amounts in relevant reports and highlight costs and/or repurchase risks that were avoided to provide regular visibility into the contribution PFQC provides to the bottom line.
- Create a system that allows for identification of the areas responsible for deficiencies (also known as points of failure) to help align QC functions, produce better action planning, and improve communication.

Resources

***Selling Guide* D1-2-01**

Quality Insider

Fannie Mae®

Beyond the Guide

Section 3

Post-Closing Quality Control

Fannie Mae

Section 3

Post-Closing Quality Control

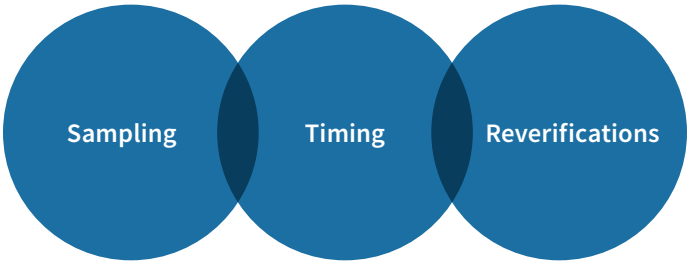
Selling Guide D1-3-01

Post-closing QC is an essential process and key to understanding a lender's quality risk.

The process answers the question, "Is the loan you closed the loan you thought you closed?" If that answer is "no", it is the lender's responsibility to evaluate the severity of the issue and determine if the loan was not eligible to be delivered to the investor. A key part of the quality control (QC) process is also to provide information to eliminate errors on future production. QC results are a critical input to find and correct systemic issues within loan manufacturing. This work can positively impact loans in the origination pipeline and help discover other issues that pose risk.

The post-closing QC process is expected to go beyond the identification and remediation of individual defects. QC should also identify the source and impact of defects. The impact of a defect should be viewed more broadly than just a cause of financial impact to the organization – it can also harm borrowers. Using incorrect income or inaccurate credit data in the origination process can result in an excessive debt-to-income (DTI) ratio that impacts homeowner sustainability.

This section focuses on three key strategies to ensure lenders are properly building and leveraging their post-closing QC program to strengthen controls and operate effectively.



Sampling strategy

Effective QC sampling is fundamental to ensuring your organization has visibility into quality risk. This allows you to leverage actionable insights about the effectiveness of your operational controls and make well-informed QC sampling decisions. This is critical for identifying and mitigating risk as well as strengthening loan manufacturing controls.

Are you being strategic?

- When was the last time you assessed your organization's rationale for selecting your post-closing QC samples?
- Does your QC sampling strategy include trigger points to respond to shifts in production volume and market conditions in order to make necessary changes?
- Are your QC resources sufficient to support the demands of your QC sampling model?

Markets, staff, and loan profiles change over time, and top defects shift as action plans are implemented to remediate and eliminate top issues. Be attentive to your samples and carefully identify areas of new or potential quality risk.

Fannie Mae requires both random and discretionary sampling as part of the QC file selection process. Random and discretionary samples differ from one another as each method provides a distinct view of risk into your loan population. The review results provide valuable feedback that can drive improvement in the loan manufacturing process and help deliver certainty to your organization by effectively evaluating quality risks and impacts.

Random sampling provides information that represents the quality of your total loan originations for a particular period. The random sample gives you an investor-agnostic look at the overall quality of your originations and can surface issues that exist outside typical high-risk areas. For example, is your origination team less diligent in making sure all derogatory credit is properly addressed on lower loan-to-value transactions? Is your team adhering to the investment quality guidelines for loans that are being placed in an investment portfolio?

The table below is a simple depiction showing distribution of a random QC sample. The chart illustrates how you can ascertain if your sample coverage is adequate across different origination segments. This allows management to see that the sample provides a representative view of different products, purposes, and origination sources.

Random QC sample distribution by product, purpose, and channel

	Conv.	FHA	VA	USDA	Portfolio	COR	LCOR	Purch	Retail	CORR	Broker
Closed loan % (curr. mo.)	55.00%	36.00%	5.00%	2.00%	3.00%	15.00%	23.00%	62.00%	75.00%	20.00%	5.00%
Post-close QC% (curr. mo.)	52.00%	33.00%	6.00%	3.00%	6.00%	12.00%	28.00%	60.00%	71.00%	24.00%	5.00%
Closed loan % (roll 3 mo.)	50.00%	35.00%	5.00%	5.00%	5.00%	20.00%	35.00%	45.00%	78.75%	17.25%	4.00%
Post-close QC% (roll 3 mo.)	49.50%	34.50%	5.00%	5.50%	5.50%	17.00%	33.00%	50.00%	73.00%	20.00%	7.00%

Random sampling – 10% versus statistical method

Lenders have the option to implement one of two methods of random sampling:

- a 10% sample of all monthly loan production, or
- a statistically valid sample of all monthly loan production.

Both samples require the lender to randomly select loans. Knowing which sampling method is best for your organization is essential to efficiently allocating your QC resources.

- The **random 10% sampling method** is generally used by lenders with annual production of 3,500 or fewer loans. Benefits of this sampling method include:
  - simple implementation without the need to manage a statistical calculation process
  - no periodic evaluation required to ensure the sample size is valid
  - tends to strike the most balanced use of QC resources for smaller production populations
  - produces results that can be used to extrapolate loan quality conclusions across the entire book of business

- The **statistical sampling method** is generally advantageous for lenders with annual production of more than 3,500 loans. Benefits of this sampling method include:
  - produces statistically valid results that can be used to extrapolate loan quality conclusions across the entire book of business with different confidence and margin of error factors
  - for lenders with a consistent defect rate, produces a predictable monthly sample that does not vary due to large swings in production volume.

If the statistical sampling method is used, at a minimum, the statistical sampling model (variables) must be calculated using a 95% confidence level with a 2% precision rate and a statistical statement of a **maximum** of six months. Lenders with strong risk management controls frequently use a three-month (Fannie Mae recommended) or one-month statistically valid statement. This strategy increases the sample size, reduces the margin of error, and provides a more accurate view of the quality of the overall book of business over a shorter period. A random sample must contain a minimum selection count that will still provide a meaningful monthly review. Statistical samples can generate smaller sample sizes with more precision; however, a notable misstep is being dismissive of results that identify only one or two defects. Mitigate this risk by setting a minimum floor on your sample size. Whether you choose the 10% or statistical sampling method, a full-file review must be completed.

Although these samples have specific attributes that influence their selection, full-file reviews are still useful in testing for known and unknown risks and can provide information to assist in action planning.

Discretionary or targeted sampling

Discretionary selections supplement a lender's random sample. The purpose of a discretionary sample is to **identify and test loans that may pose unique or elevated risks and validate that certain controls and processes are working as intended**. This supports the overarching goal of the selection to provide insights on the general loan production quality. Some lenders perform multiple discretionary samples for specific individual risks while others may perform a single discretionary sample with a group of defined risk attributes. Discretionary loan samples provide a more surgical approach to loan testing and can be accomplished through either full-file or component reviews that are tailored to the specific purpose of the discretionary testing.

Discretionary review requirements

Discretionary selections allow you to optimize your reviews and target high-risk loan characteristics identified in your prefunding and post-closing random selections. The risk factors utilized in your selection criteria should be current, relevant, and defined in the monthly reporting. Targeted component reviews allow flexibility to increase the overall number of reviews completed on your loan production.

Discretionary full-file sampling strategies

Full-file reviews require reverification of all components. Below are some examples of when full-file reviews are appropriate:

- sample targeted to test new hires, new products, and/or newly implemented processes
- sample targeted to test at least one loan from all third-party originators for an annual review
- selections based on layered risk loan attributes

Although these samples have specific attributes that influence their selection, full-file reviews are still useful in testing for known and unknown risks and can provide information to assist in action planning.

Discretionary component file sampling strategies

Targeted reviews allow reverification of only those elements being tested. Optimizing QC resources while monitoring many possible risks is always a challenge. As discussed in the prefunding section, component reviews are an effective way to accomplish this objective.

Targeted areas may include:	Full-file	Component
Validate all required assets from sale of property were documented		✓
Loans with complex income calculations (e.g., rental, self-employed, or short history of income)		✓
Confirming borrowers were employed at closing		✓
Loans originated / processed through various business sources, branch offices, personnel, contractor, third-party originator, or appraiser	✓	✓
Loans with top defects identified in prefunding or investor results		✓
Analyzing root causes for development of action plans to reduce known defects in the future or to test the effectiveness of implemented corrective actions		✓

Note: Some files may start out with a component review but wind up needing a full-file review. This highlights the flexibility component reviews can bring to your testing strategy.

Component reviews typically take less time to complete, which enables you to cast a wider net over known risk components, yielding more efficient use of review resources. Employing component reviews saves time, which may increase the percentage of loans that can be reviewed without having to increase staff. Full-file reviews are best leveraged for loans with layered or broader risk.

Other data to consider

Continued advancements in the manufacturing process, along with enhanced reporting capabilities, provide opportunities to target selections on a variety of data points to assist in your discretionary selections.

- Automated underwriting system recommendations can be targeted to determine if the loan met the underwriting recommendations.
- Income validation sources can identify calculation discrepancies.
- Undisclosed debt monitoring tools can help target loans with higher DTI ratio concerns.
- Closing disclosure data elements can identify excessive interested party contributions.
- Collateral Underwriter® scores and messaging can be used to assess the appraisal.
- EarlyCheck™ identifies eligibility defects that would be flagged at loan delivery.

Leveraging data to make informed discretionary selections is a best practice. The prefunding QC section of this guide addresses sampling effectiveness and defect capture rates – concepts that can be equally effective in post-closing discretionary testing.

Leveraging data to make informed discretionary selections is a best practice.

Post-closing QC timing strategy

Mortgage loans must be selected for post-closing QC reviews on at least a monthly basis. Effective as of the September 2023 QC cycle, the entire QC process (selection, review, rebuttal, and reporting) must be completed within 90 days from the month of the loan closing.

Example: Fannie Mae required 90-day post-closing QC audit time

Audit cycle stages	Day 1-10	Day 11-70	Day 70-90
Prior month's funded loans selected and prepared for QC review. Initiate reverification process: credit/employment/income/asset, etc.	*10 days*		
Complete comprehensive file reviews with reverification, remediation, and rebuttals complete, and sample closed.		*60 days*	
Post-closing monthly QC reports created and published to senior management by day 90.			*20 days*

The 120-day QC cycle was a legacy requirement that was put into place prior to technology enhancements that allow for a shorter cycle. Many lenders perform their QC cycles within a much shorter timeframe to get QC results to the business as quickly as possible. Providing management with results in a shorter time enables senior leadership to action plan and remediate top issues shortly after the issues have been detected. The example below demonstrates how time frames for each step can be adjusted to achieve shorter timelines that best practice lenders achieve versus the Fannie Mae minimum required 90-day cycle.

Example: Process excellence 45-day post-closing QC audit time

Audit cycle stages	Day 1-5	Day 6-35	Day 36-45	Day 64-90
Prior month's funded loans selected and prepared for QC review. Initiate reverification process: credit/employment/income/asset, etc.	*5 days*			*45-day lift in executive management reporting*
Complete comprehensive file reviews with reverification, remediation, and rebuttals complete, and sample closed.		*30 days*		
Post-closing monthly QC reports created and published to senior management by day 90.			*10 days*	

Start the reverification process as soon as possible - reverifications often require multiple attempts, and an effective QC review includes having reverifications in the file when reviewed!

Reverification strategies

The reverification of all information relied upon to make the underwriting decision is critical to an effective post-closing QC review process. Benefits to performing reverifications include:

- validates the accuracy of the data used to support the loan decision
- provides data that helps ensure the loan is **still eligible for sale to Fannie Mae** when irregularities are identified in the credit or collateral file
- serves as a preventive control by keeping industry participants mindful that a portion of loans will be verified again
- significantly contributes to the identification of misrepresentation by finding file irregularities that lead to identifying individual and systemic fraud schemes.

"Reverification" is confirming that employment, income, asset, and collateral data used to qualify the borrower is true, accurate, and justified. Each element of the loan file can require different methods to ensure complete reverifications. The following tables highlight the expectations for the reverification process.

Income and employment reverification

Reverification	Questions to ask, things to consider, best practices to increase confidence in accuracy
Employment	Was the borrower(s) employed at the time of closing? (Note: Borrower Not Employed at Closing is a top defect cited by Fannie Mae.)
Income	Was the income used to qualify the borrower(s) represented accurately? • If the employer is not willing to reverify income, ask if they can confirm the amount if provided to them.
Self-employment	Can you verify if a business is legitimate? This is especially critical for self-employed borrowers. • To validate a business, try one or more of the following tactics (this is critical if the borrower is self-employed): ◦ Perform an online search of the business address to confirm its existence. ◦ Look for current business advertisements. ◦ Search business name and/or phone number via reverse look-up. ◦ Search state and corporate/LLC business licensing websites (i.e., Dunn & Bradstreet®, Manta, etc.).
4506-C Tax Transcripts	• Upon receipt, reconcile transcripts with income documents used to qualify the borrower(s) and look for discrepancies. • Compare income documents and information (e.g., borrower's name and address against W-2s) to Form 4506-C to prevent rejections of the form. • **Tips for success:** ◦ Add checks in prefunding /pre-purchase QC to ensure the signed Form 4506-C is completed correctly. ◦ Order transcripts as early as possible during the post-closing QC cycle to allow adequate time to receive them prior to the start of the QC review. ◦ If using a QC vendor, consider pulling transcripts in-house and sending them to the vendor. Alternatively, if the QC vendor's attempt to obtain transcripts fails, ask the vendor to refer the loan back to your QC team for review and a reattempt. ◦ Ensure QC cites a defect when Form 4506-C can't be executed. Discrepancies identified during the reconciliation of tax transcripts versus the income data used to qualify the borrowers can reveal both income and employment misrepresentation.
Social Security / Disability Awards Letter	Is Form SSA-3288 completed accurately? • Pay any fee associated with obtaining this information from the Social Security Administration. • Perform a routine prefunding QC targeted component review of Form SSA-3288 prior to loan closing. Test for presence, accuracy, and completeness so that if errors are found, they can be corrected prior to loan closing and funding.

Source of funds reverification

Funds used for down payment, closing costs, and any required reserves must be reverified directly with the source of the original documentation (such as financial institutions and gift donors). Asset reverification significantly contributes to the identification of misrepresentation, highlighting areas where there may be heightened risk that requires additional oversight and manufacturing controls.

Reverification	Questions to ask, things to consider, best practices to increase confidence in accuracy
Assets	• Do balances on the reverification bank statements align with the balances reflected on the origination bank statements? • Are there any undocumented large deposits? This is especially critical when reviewing for undisclosed debts to source the borrower(s) down payment. • Do payroll deposits align with the income documentation used at origination? This can be helpful in determining if the bank statement has been altered from its original state. • Is the borrower an account holder on the reverification bank statement? • Are there any red flags on the documentation used to qualify the borrower(s)? • Review bank statements for recent payroll deposits; the information may indicate a change in the income level and/or payroll deposits from a different organization. Expect high-income earners to have direct deposit.
Gifts	• Do gift letter reverifications support that the funds were not borrowed?

Having insight into your reverification results is imperative to the overall success of your QC program. Asset reverifications provide valuable information on the overall risks facing your organization and allow your QC department to proactively mitigate these risks.

Occupancy reverification

A vital step to validating occupancy of the subject property is identifying inconsistencies in the loan file that raise questions about the authenticity of the occupancy as disclosed. The presence of one or more red flags in a file does not necessarily mean the occupancy is inaccurate, but it should warrant further investigation.

Reverification	Questions to ask, things to consider, best practices to increase confidence in accuracy
Occupancy	• Check to see if borrowers changed their mailing address shortly after closing or loan setup. • Contact the insurance company and validate the terms of coverage - has a homeowner's policy been converted to landlord policy or vice-versa? • Reverify any lease agreements in the file, especially on the borrower's departure home, to confirm the authenticity. • Use MERS® registration to identify potential undisclosed mortgages: Is the borrower in the process of purchasing a new primary home or a new rental? Is the borrower in the process of obtaining a cash-out refinance on another property? • Validate the borrower's primary residence with driver's license, voter, or vehicle registrations. • Confirm whether the borrower has applied for homestead exemption at the subject property. • Use third-party tools and/or door knockers to confirm who resides in the subject property. • Review the servicing notes to identify changes to the mailing address or indications that the occupancy is not accurate at origination. • Track any returned mail that was addressed to the subject property.

What to do when reverifications are not returned

Despite your best efforts, there are times when reverifications do not get returned. In those instances, other activities can provide a level of assurance that the information used for the lending decision was accurate. The depth of additional due diligence and time spent should take into account the likelihood of a potential issue or indication of red flags. See *Beyond the Guide* Section 4, Red Flags, Fraud Detection, and Managing Risk Tools, for more detail.

Reverification	Questions to ask, things to consider, best practices to increase confidence in accuracy
Employment	• Email the borrower at his/her work email address to request a reply. • Obtain the borrower's employer's work number from the internet and call to speak to the borrower. • Use social media to look for evidence of borrower job changes. • Review bank statements for recent payroll deposits; the information may indicate a change in the income level and/or payroll deposits from a different organization. Expect high-income earners to have direct deposit. Do the asset amounts align with what is expected for the income level? • Review the credit report; is the employer listed differently from what is disclosed on the application?
Income	• Recheck Social Security withholdings on paystubs and W2s in the loan file (confirm correct percentage through IRS.gov). • Review the credit report; is the employer listed differently from what is disclosed on the application? • Review bank statements for recent payroll deposits; the information may indicate a change in the income level and/or payroll deposits from a different organization. Expect high-income earners to have direct deposit. Do the asset amounts align with what is expected for the income level? • Search websites such as Glassdoor.com or Indeed.com for salary ranges for the borrower's profession, which might raise a red flag that warrants further investigation. • Check websites for state and federal employee salaries that are public records (i.e., teachers, police officers, city workers, etc.).
4506-C Tax Transcripts	• Track attempts to obtain transcripts and the IRS rejection reasons (e.g., sent date, receipt date, rejections; by branch, originator, third-party originator). • When transcripts are not received, document the attempt and the rejection reason in the QC file. • Review periodically for trends (higher level of failures for certain staff or origination sources). • If a trend of failed attempts is identified, conduct a component discretionary QC sample targeting the trend characteristics. Focus reviews on income only and obtain tax transcripts. • Investigate the root cause of all rejections and implement a corrective action plan, when necessary.
Assets	• Do payroll deposits align with the income documentation used at origination? This can be helpful in determining if the bank statement has been altered from its original state. • Is the borrower an account holder on the reverification bank statement? • Are there any red flags on the documentation used to qualify the borrower(s)? (See Red Flags, Fraud Detection, and Managing Risk Tools section.) • Do the asset amounts align with what is expected for the income level?

Reverification tracking: a powerful QC review tool

A reverification tracking system is a highly recommended best practice and can be a very effective tool for optimizing your overall reverification success rate. Aggregating reverification data helps organizations be more effective in several ways. First, from a risk management perspective, it can help identify different parties (loan officer, branch, broker, correspondent, etc.) with reverification return rates significantly lower than average. This can indicate a potential discrepancy worth monitoring or investigating. Second, from a review efficiency perspective, tracking average return times for reverifications can help optimize your process to ensure reverifications are present at the start of the file review process, allowing for fewer touches in post-closing QC. Capturing even a couple of unique data elements from the reverification process can provide important data for your organization.

A tracking system should capture:

- date the reverification was sent,
- target receipt date based on average turn times for the entity,
- follow-up date based on the average number of days needed for processing,
- second attempt sent date,
- date each reverification was received.

Optional information to capture could include the name of underwriter, processor, loan officer, branch, third-party originator, employer, and/or financial institution.

Loan-level reverification information can be summarized to show the overall success rate, as well as to highlight potential reverification inconsistencies or anomalies, which can be investigated and corrected.

Example of a reverification tracker summary report

Reverification	Oct-20					Rolling 3-month				
Tracking	Ordered	Received	Success rate	Discrepancy*	Discrepancy rate	Ordered	Received	Success rate	Discrepancy	Discrepancy rate
Asset documentation	184	152	82.61%	4	2.63%	389	303	77.89%	9	2.97%
Gift letters	13	9	69.23%	1	11.11%	27	22	81.48%	5	22.73%
Income documentation	196	187	95.41%	11	5.88%	553	514	92.95%	18.00%	3.50%
Employment	190	175	92.11%	2	1.14%	537	494	91.99%	13.00%	2.63%
IRS transcripts	87	83	95.40%	3	3.61%	235	224	95.32%	13.00%	5.80%
Credit reports	101	101	100.00%	0	0.00%	286	276	100.00%	1.00%	0.35%
Field reviews	11	11	100.00%	4	36.36%	29	29	100.00%	6.00%	20.69%

Example of discrepancy tracker report

October discrepancies	Total issues	Details
Assets	4	Assets Not Supported (3); Account Does Not Belong to Borrower (1)
Gift letters	1	Donor Did Not Sign Gift Letter
Income documentation	11	Income Not Supported (9); Income Statements Fraudulent (2)
Employment	2	Borrower No Longer Employed (2); Borrower Time on Job Inaccurate- Missing Full Two-year History (1)
IRS transcripts	3	IRS Code 10 Reject
Field reviews	4	Value Not Supported- CURS 3.5 (1); Use of Dissimilar Comparable Sale(s)- CURS 4.5 and 5 (2); Subject View of Location Reported Inaccurately- CURS 1.5 (1)

Track the success rate for all entities involved in the loan manufacturing process and create an aggregate view to identify potential areas of risk. Tracking the reverification success rate and capturing key data points enables the QC department to more easily spot outlier return rates that may warrant a closer inspection. This will help to increase your QC program's efficiency and enable implementation of proactive mitigation measures.

Tracking the reverification success rate and capturing key data points enables the QC department to more easily spot outlier return rates that may warrant a closer inspection. This will help to increase your QC program's efficiency and enable implementation of proactive mitigation measures.

Next steps – tips for a successful reverification process

Efficiency is critical in every phase of the mortgage process, including post-closing QC. It is more efficient to have all reverifications received before the file is reviewed by the QC auditor. This allows the auditor to have all critical information available for a one-time QC file review.

- Get a head start by pulling your post-closing QC sample as early as possible (i.e., pull weekly throughout the month as loans close; you can sample early even if you don't start reviews for several weeks).
- Start ordering reverifications immediately after the loan has been selected for review, increasing the likelihood of having responses received when your auditor starts or allowing time for a second attempt.

- Establish a reverification tracking mechanism for follow up.
  - What is the overall success rate?
  - Do you have target rates in place?
  - Do you have indicators to alert you to anomalies?
  - Do you have an action plan in place in case of poor results?
- Attempt to reverify several times until you are successful. Fannie Mae has noticed increased success for lenders who perform two or more inquiries. Once you have successfully received your reverifications, analyze all documents with a critical eye. If something doesn't add up, investigate further.
- If a written reverification is not received, follow up with a phone call to try to reverify the information verbally. Be sure to capture the telephone number, name, and title of the person who provided the information.
- Having insight into your reverification results is imperative to the overall success of your QC program. Reverifications provide valuable insight into the overall risks facing your organization and allow your QC department to proactively mitigate these risks.

Reverifications serve as a detective and preventive control in the QC process. They significantly contribute to the identification of potential misrepresentation, highlighting areas where there may be an increased risk that calls for additional oversight and manufacturing controls. Reverifications provide useful information about a subject transaction, and aggregated reverification data creates a powerful tool that provides insights to help you build a more effective QC process. Aggregating reverification data can highlight trends and potential risks that you cannot see on a loan-by-loan basis.

Reverifications significantly contribute to the identification of potential misrepresentation, highlighting areas where there may be an increased risk that calls for additional oversight and manufacturing controls.

Resources

Selling Guide D1-3-01

Best practices for income and employment verifications

Guidelines Related to the IRS Form 4506-C and Tax Return Transcripts

QC Self-Assessment Worksheet

QC Post-Closing Collateral Risk Assessment FAQs

Post-purchase Review Process Overview

Sample Quality Control Vendor Management Documents

Reverifications Tracker Template

Fannie Mae®

Beyond the Guide

Section 4

Red Flags, Fraud Detection, and Managing Risk Tools

Fannie Mae

Section 4

Red Flags, Fraud Detection, and Managing Risk Tools

Selling Guide A3-4-03

One of the objectives of QC is to identify and reduce fraud and misrepresentation that can occur with any loan purpose or type.

Red flag awareness is needed throughout an organization – from strategic and broad scale (digital testing of entire book) to tactical (loan-level). Staying alert for red flags through multiple methods and tools is critical. Red flag identification should be part of both post-closing and prefunding QC (PFQC) processes, but PFQC is uniquely positioned to support production teams in identifying and remedying these defects.

Red flags are not just something listed on an automated underwriting system or credit report or even a mortgage fraud screening tool. A red flag is *"something that indicates or draws attention to a problem, danger, or irregularity"* (Merriam-Webster – definition as noun). Irregularities can take many forms.

Strong QC programs assess all files for any irregularities to determine both the materiality and the cause of each irregularity. Such causes include human error, process gaps, data irregularities, misinformation, misrepresentation, and/or fraud. Human errors are likely to be isolated. Irregularities can be surfaced through use of digital technologies (fee or no-fee) or simply by comparing similar data in various locations throughout the loan file (e.g., borrower Social Security number is consistent on all documents in the loan file). Misinformation can be corrected through confirmation. However, multiple instances of error and misinformation may indicate misrepresentation or fraud.

Consider the various methods available for detecting red flags:

Red flag detection sources

Automated systems	Data validation tools	Manual observations/ validations
Desktop Underwriter® (DU®)	Fraud detection software	Reviewing documents for inconsistencies
Collateral Underwriter® (CU®)	Pattern recognition software	Written or verbal reverification of information
Credit Reports	Data validation/ reconciliation software	Online search engines to identify corroborating information

Considerations

- Consider tracking and trending observed red flags to look for patterns – all red flags that are cleared should be documented, including how they were cleared and red flag source (e.g., production channel, parties to the transaction, red flag types).
- All discrepancies should be adequately addressed and not assumed to be "just an error."
- Documentation provided to address discrepancies should be reviewed with extra scrutiny.
- Perform a final overall loan assessment after completing all validation checks to ensure the loan makes sense in its entirety.

New risks and solutions in a digital world

Every day more of our business is conducted in a digital environment. Digital tools that have been in the marketplace for years, such as optical character recognition, are being upcycled and paired with artificial intelligence for new uses in the mortgage industry. Many loan origination systems capture digital information so that conveniences such as e-signatures and digital verifications of income, employment, and assets can yield efficiencies for both lenders and consumers. However, these new environments present new risks and challenges that organizations should respond to.

What are some types of digital information that QC can validate/monitor?

Borrower email address	Are emails from the borrower coming from the email address provided on the loan application? Is the borrower's email address consistent throughout the file?
IP addresses	If available, compare borrower public IP address to current location and subject property location to identify discrepancies.
Accuracy of third-party calculations	Are digital calculations performed by third-party tools being performed correctly? Periodic testing of calculations can reveal contradictory and conflicting information.

Considerations

- Be on the lookout for digital solutions that can enable QC to be more effective (think automated fraud tools). Watch for new solutions to automate lower-risk data accuracy elements, leaving human resources free to perform more complex reviews.
- CAUTION: Digital solutions also have limitations – it's imperative that lenders know and control for those limitations! Think of adaptive cruise control on cars. This technology can maintain safer cruising distances or brake faster, but drivers still need to keep their eyes on the road. Over-reliance on any technology solution can cause more harm than good!
- Keep up with new or enhanced digital solutions deployed within operations – adjust testing as needed.

Be on the lookout for digital solutions that can enable QC to be more effective. Watch for new solutions to automate lower-risk data accuracy elements, leaving human resources free to perform more complex reviews.

Tools for the job

Leveraging technology tools can be an effective way of identifying risks in your book of business. Examples of tools include various mortgage industry fraud detection tools, Fannie Mae's CU, and lender-developed proprietary tools for scrubbing internal data. Using tools such as these to surface red flags and elevated risk can be helpful to identify loans that should be sampled. Other tools exist that can also be helpful, but to ensure you are selecting the best tools for your organization you should develop a method for selecting, testing, and monitoring the efficacy of the tools you use.

Considerations for effective implementation and use of tools

Effective implementation of automated risk tools requires a thoughtful approach. Below are some thoughts that should be considered when implementing a new tool or evaluating an existing tool:

- Maximize the effectiveness of any automated risk and data-screening tools by ensuring, when possible, they are deployed across all loan production.
- Automated risk and data-screening tools complement, but do not replace, a comprehensive prefunding QC program.
- Ensure any automated tool is customized for your company's desired controls before use. Out-of-the-box settings typically do not align with a lender's unique risks.
- The output of your tools should promote action that reduces a "check the box" approach.
- Consider integrating your tools into your loan origination system. Integration creates an opportunity for strategic loan selections and system hard stops for loans with defined eligibility, compliance, or fraud flags.
- If automated hard stops are not possible, implement a funding condition or post-funding review process to ensure loans with unresolved eligibility, compliance, or fraud flags do not get delivered to investors.
- Define clear escalation paths for when the tool identifies flags or alerts, including individual management-level authorities.
- Ensure reporting, evaluation, and oversight of tools are independent of the origination and underwriting staff.
- Monitor false positive levels for tool efficiency. Adjustments to testing parameters should be considered to ensure the proper balance between defect identification and false positives.
- Tools can fail or have gaps. Continuous monitoring of results may reveal deficiencies and highlight opportunities for tool enhancements and improvements. Continue to think of ways the tool can fail and how to fill those gaps operationally.

When utilizing a tool(s), it is important to understand each tool's strengths and weaknesses and where gaps or blind spots may exist. This will ensure the right tool is being used for the intended purpose.

Resources

Fannie Mae's Mortgage Fraud Prevention page

Fannie Mae®

Beyond the Guide

Section 5

Collateral Risk Assessment for Prefunding and Post-Closing QC

Fannie Mae

Section 5

Collateral Risk Assessment for Prefunding and Post-Closing QC

Selling Guide D1-3-04

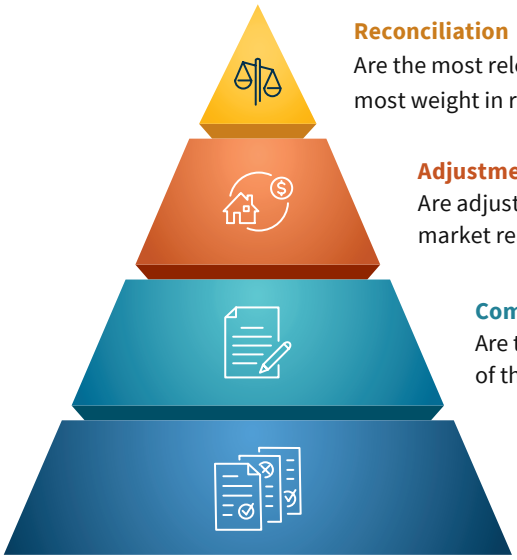
Focusing primarily on credit aspects of loan files and minimizing appraisal reviews can result in a significant loan quality gap.

When looking at industry collateral QC processes and the results of lender reviews, there is a significant difference between how many in the industry perform collateral quality control and Fannie Mae's view of collateral quality risk. Acceptable and adequate collateral is a critical element of a quality loan. Accordingly, the appraisal/collateral assessment is a critical component of QC reviews.

The appraisal/collateral assessment has three objectives:

1. Ensure the data in the appraisal report is accurate.
2. Confirm the property value is supported.
3. Address any Collateral Underwriter® (CU®) or other collateral tool flags and messages.

An appraisal review can be broken into four components:



Reconciliation
Are the most relevant comps given the most weight in reconciliation?

Adjustments
Are adjustments based on typical market reaction?

Comp selection
Are the selected comps representative of the subject property?

Data integrity
Are physical attributes and transaction terms accurately reported?

The **Components of Appraisal QC** pyramid shows that all of the other components rest on data integrity. Since data integrity is the foundation of the appraisal, much of the collateral assessment should focus on validating the appraisal data.

Data integrity

- Is the subject property described accurately, (is it the right property) and does it meet the loan eligibility requirements?
- Inaccurate data on the subject or comparable sales can result in significant errors in adjustments or the final reconciliation of value.

Comparable selection

- The market approach studies recent sales of similar assets, adjusting for the differences between them.
- A market approach is only reliable if the most representative comparable sales are used in the analysis. It is important to see if the appraiser has done this and supported their selections.

Adjustments

- Assuming data integrity and comparable selection are spot-on, there are likely differences between the subject and the comps. This means the appraiser needs to make "market based" adjustments to the comparables selected, to reflect how a typical buyer would react to the difference. Measuring market reaction has always been a core responsibility of appraisers.
- The quality of the adjustment component is critical because if the appraiser provides accurate data (data integrity) and uses the most relevant comps (comparable selection), they can still have an unsupported appraised value if they don't make accurate, market-based adjustments.

Reconciliation

- All three of the other components can be on track but still result in an unsupported value if emphasis or weight is placed on the least similar sale. Appraisers must consider all completed analysis accurately by weighing the most relevant comparable sales to properly support value.

Performing this review requires reliable sources to validate the data provided in the appraisal. To assist lenders in performing a comprehensive review of data elements in the origination appraisal, Fannie Mae provides Form 1033. Although lenders are not required to use Form 1033 in their reviews, it can serve as a framework for validating the underlying data elements that are used to determine value.

To assist lenders in performing a comprehensive review of data elements in the origination appraisal, Fannie Mae provides Form 1033. Although lenders are not required to use Form 1033 in their reviews, it can serve as a framework for validating the underlying data elements that are used to determine value.

The table below provides some of the tools currently available to assist lender reviews:

Source	Description
CU web application	***If you are not currently using CU in your operations and quality control functions, you are at a competitive disadvantage.*** It's highly recommended that lenders leverage the CU web application in both the manufacturing process and QC. CU issues a collateral risk score that can be used to focus on higher risk appraisals, enabling users to identify appraisals with a heightened risk of property eligibility or policy violations, overvaluation, or appraisal quality issues. Lenders with strong collateral risk control processes take full advantage of CU and the insights to data accuracy and value determination that it provides both in operations and QC. Refer to the Collateral Underwriter Learning Center for videos and more information about leveraging CU's powerful capabilities to simplify your collateral underwriting and quality control tasks.
Submission Summary Report (SSR)	For lenders without access to CU on correspondent loans, the SSR provides a summary of score, flags, and messages that can highlight potential quality issues. This is actionable information. All appraisals successfully uploaded to the Uniform Collateral Data Portal® (UCDP®) receive an SSR for each government-sponsored enterprise (GSE) submission. The SSR contains a summary of the appraisal submission(s) for each loan, the status of the submission(s), and a Document File Identifier (Doc File ID), which is part of the unique appraisal identifier generated by UCDP. One Doc File ID is assigned per loan and is the same for delivery to either GSE.
MLS (multiple listing service) listings	MLS listings provide detail on most real estate transactions and are used by the appraiser to select comparables and obtain property data on the subject and comparables.
Public records	Most states, counties, and municipalities provide access to real estate property information (deeds, plats, legal descriptions, tax assessments) online. Data may include general information or access to copies of deeds and surveys. Information is often free.
Real estate websites	These websites provide visibility to properties that are currently for sale or have been listed and/or sold recently – sometimes as far back as one to two years. In many cases, exterior and interior photos are available, which provide insight to condition and quality ratings assigned by the appraiser.
Fraud screening tools	Some third-party fraud reports include appraisal data.
Appraisal review vendors	Multiple vendors provide traditional value-focused reviews such as desk reviews, broker-price opinions, and field reviews. Keep in mind that regardless of review tools used, lenders are responsible for compliance with Fannie Mae's collateral risk review requirements.

By leveraging these sources in conjunction with a comprehensive review process, QC auditors can perform meaningful appraisal reviews.

Some lenders have staff appraisers to perform these reviews, but even without a licensed or certified appraiser, using a data validation approach can manage risk effectively. Conducting a complete review of the data and elements of the appraisal can still control for most collateral risk.

Appraisal defects, like credit defects, should have areas of responsibility (AOR) within the lender's organization. The AOR can be a staff appraiser, another internal team member, or both.

Aggregating appraisal defects by AOR provides insight to appraisers with chronic data integrity issues. This data can guide lenders to manage their appraisal management companies or panel of appraisers using data, which helps drive constructive discussions and improvement.

If you're enhancing your appraisal reviews or starting an appraisal review program from the ground up, here are some best practices to consider:

- Understand the significance when validating data elements in the appraisal. When errors exist, critically evaluate the impact of a particular data error on the overall value.
- Review your Fannie Mae appraisal quality defects and calibrate to your own review process to understand what creates disparate results.
- Develop an appraisal quality scorecard based on appraisal quality feedback from Fannie Mae and your own QC findings to help identify specific trends or gaps, and develop training opportunities or process improvements.
- Align your QC review with Fannie Mae's process; ensure your QC staff is trained to effectively apply available appraisal tools, including CU. Leverage Fannie Mae's CU training.
- Include the CU risk score with the appraisal quality defects in your QC reports to gain additional insight into the possible root causes of quality errors.
- Use Fannie Mae's appraisal quality feedback to target loans with potential appraisal quality concerns, such as those with high CU risk scores (2.6 - 5). Feedback sources include SSRs on appraisal uploads to the UCDP, reports in Fannie Mae Connect™, and the workflow function in CU.
- Target higher loan-to-value ratio loans in prefunding selections because potential defects could cause a negative impact to the property value and are more likely to result in an ineligible loan.
- Use prefunding samples to target loans with high CU risk scores and appraisal quality flags.
- Ensure the collateral risk assessment performed on the loans in your random post-closing sample addresses the key requirements described in the *Selling Guide*.
- Leverage Fannie Mae tools, post-acquisition loan review results, and all other available data to produce loans with the highest appraisal quality possible.
- Use the optional Post-Closing QC Collateral Risk Assessment Analysis (Form 1033) as part of your appraisal QC process.

Having a robust and holistic appraisal review program in place, in both originations and prefunding/post-closing QC, can better position your company to effectively manage appraisal quality regardless of market conditions.

Resources

Post-Closing QC Collateral Risk Assessment Analysis (Form 1033)

***Selling Guide* D1-3-04**

Collateral Underwriter Learning Center

Fannie Mae®

Beyond the Guide

Section 6

QC Reporting

Fannie Mae

Section 6

QC Reporting

Selling Guide D1-1-01, D1-2-01, D1-3-06

QC reporting is the primary way QC aggregates loan-level results to tell the story of how an organization's loan manufacturing process is performing.

The *Selling Guide* states, "QC reports are a *critical* component of the QC program." Prefunding and post-closing reports should reflect review outcomes, provide reliable data that drive manufacturing improvements, and identify potential future challenges for the organization's management. A QC program without effective reporting is like driving without a map. We know where we want to go — QC reporting is the map that helps us get there.

The *Selling Guide* provides minimum reporting requirements for prefunding, post-closing, and vendor review results. Lenders must develop reporting that is effective and actionable, taking into consideration layout, style, format, and any value-added information.

So how *does* a lender determine the format and necessary information to provide high-value reporting? Reports are created using data generated by loan reviews. Aggregating that data results in structured information, which creates stories about loan quality. The stories should then lead to action, which includes communication between teams, changes in processes, and technology upgrades, all of which enable continuous improvement. A well-crafted QC report should not be a listing of the loan-level defects found; it should include key data, important information, solid stories, noteworthy action, and wins. There are three key elements of effective and actionable QC reporting:

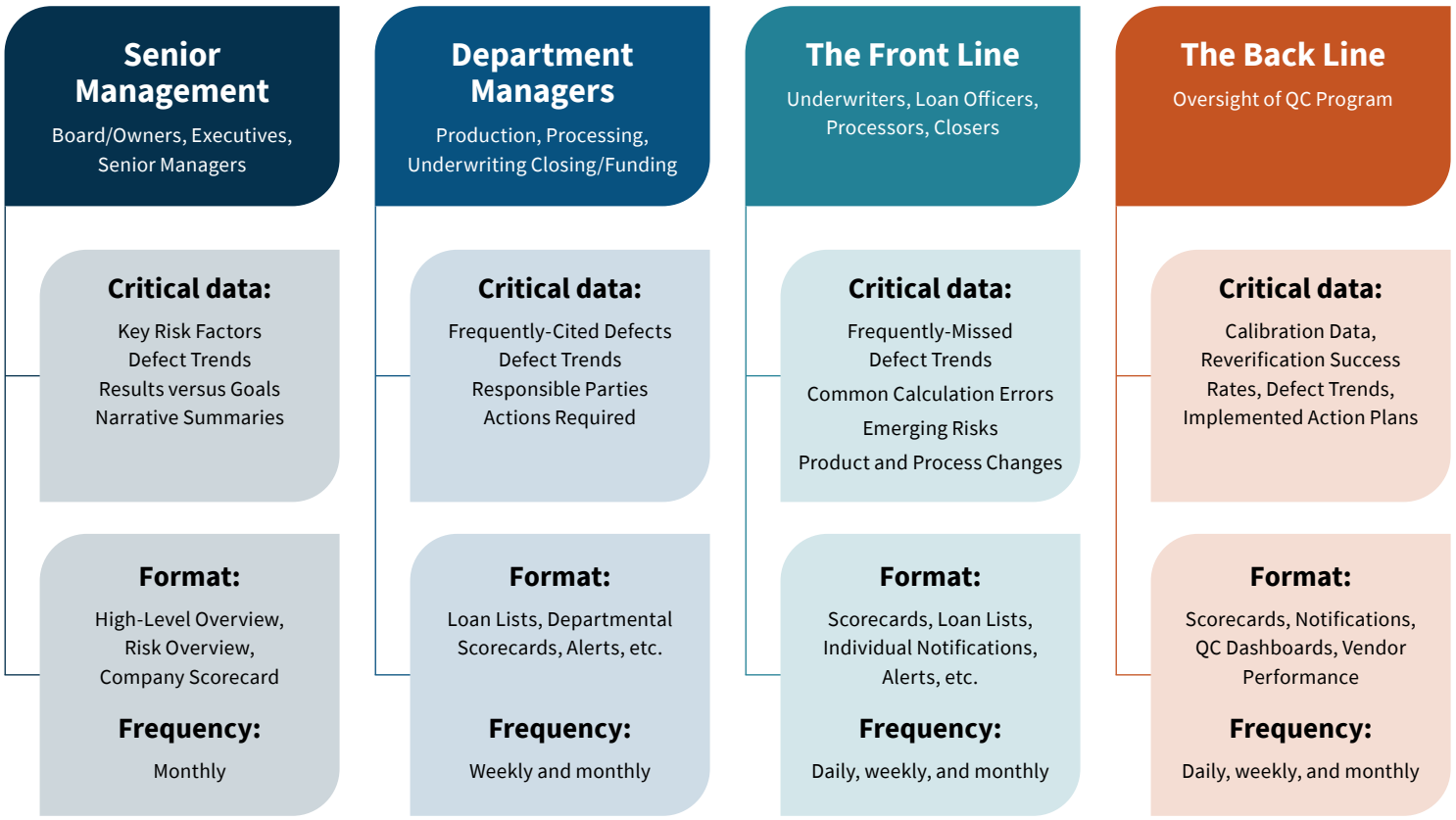
- Define your audiences.
- Create a structure for your audiences.
- Create content that fits into your structures.

We'll explore each of these areas.

Define your audiences

The foundation of effective communication is to define and know the audience. There are necessary elements to all QC reporting, but the information and the level of detail can and should vary based on the focus and needs of the intended audience. Considering ***who*** is in your various audience groups and ***how*** they will use the information will inform the design and richness of content as well as reporting frequency.

The image below illustrates how various lender responsibility areas may receive and use business information differently based on their responsibilities and functional need-to-know:



Senior management – manage the business

These are the leaders that chart the path of the organization at a high level. Senior management is hyper-focused on issues that have a financial impact to the organization, which includes identifying and managing risk exposure.

Critical data

- Actual loan defect rates compared to target defect rates
- Summary narratives
- Financial impact and top risks
- Progress on high-value action plans
- Defect trending

Reports for this audience must be finalized and fully vetted.

Format considerations

QC reports must tell the story beginning with a concise description of the key takeaways for that reporting cycle. Elements can include changes to defect rates, emerging or continuing top defect drivers, trends, and any area requiring management action or focus. Supporting information should identify and predict risk exposure.

Frequency

Monthly reporting cycles are required for this management segment.

Departmental managers – manage execution

Departmental managers oversee the work done by sales, processing, underwriting, closing and funding, third-party originator managers, and other frontline personnel.

Critical data

- Actual loan defect rates compared to target defect rates for the company and by area of responsibility, such as operations centers or underwriting/closing teams
- Summary narratives should have more granularity than senior management narratives
- Operations centers or underwriting/closing results compared to peer results
- Progress details on applicable action plans may also be valued

Format considerations

Since the departmental managers oversee departments and individual employee performance, they require a more tactical look into the QC results. The 'big picture' performance of the organization remains important, but a view into individual business unit and employee performance is required to execute on organizational goals. Preliminary and final reports should include QC scorecards with top defects, defect trends, responsible parties, action plans, loan-level review results, and recommendations.

Frequency

This management segment benefits from having both weekly and monthly reporting.

Frontline employees – execute day-to-day operations

Frontline employees, including underwriters, processors, and closers, perform transactional work required to move a loan through origination to closing. Information critical to a frontline employee is centered around the day-to-day work being done.

Critical data

- Loan-level details with defect narratives
- Comparison to peer team results and goals may be helpful

Format considerations

These reports should keep your frontline staff engaged in their key goals and metrics. Frontline information must be presented with enough granularity for the employees to correct open issues and improve their performance going forward. Loan lists must show work performed and issues identified. Individual QC scorecards should be used to identify areas for improvement, showcase best practices, and celebrate individual and team wins.

Frequency

Frontline employees will benefit from a higher frequency of reporting. A weekly or biweekly reporting cadence keeps individual performance and QC trends at the forefront of employees' minds.

QC team – execute trusted testing

Because QC employees validate transactional work, the information they need is similar to what's needed by frontline employees. Internal QC employees need to be aware of results, such as reverification success trends, calibration disconnects, and possible instances of suspected misrepresentation to ensure consistent, actionable information is maintained and delivered to management.

Critical data

- Accuracy or concurrence rates
- Reverification success rates
- Defect trends
- Calibration results

Format consideration:

QC scorecards work well with internal employees to ensure accuracy and accountability in the QC process. Since accuracy of QC testing drives trust in the function, this reporting must focus on the quality of the loan file review by tracking concur rates, uncited defects from management testing, and audit results from investor or internal audit reviews.

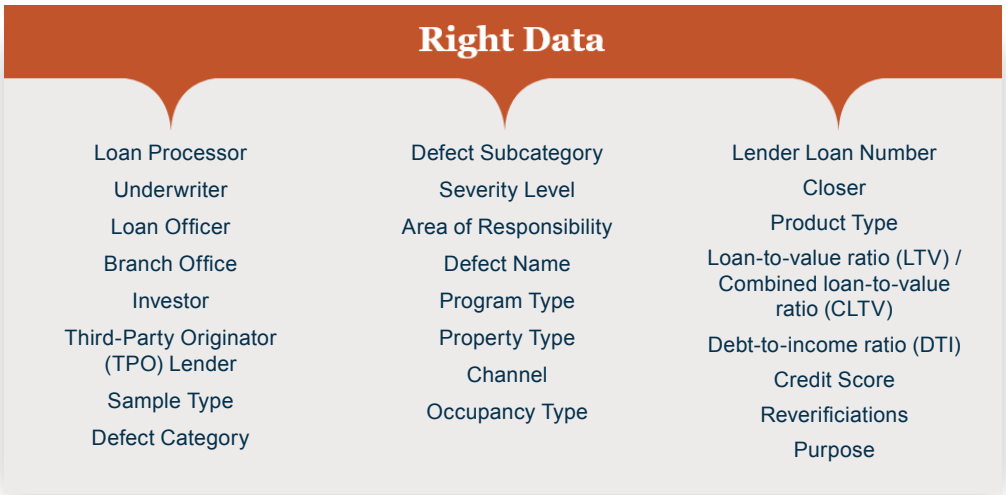
Note: Reporting on the accuracy of QC testing is vital whether QC reviews are internal or outsourced. In addition to being a required element of the monthly QC report, including outsourced QC accuracy rates demonstrates transparency and assures management that accountability for quality is the responsibility of everyone.

Frequency

As with frontline employees, frequent granular reporting is desirable.

Creating a structure for your audiences

The most important aspect of QC reporting is that it is useful for management evaluation and monitoring of mortgage loan production quality. The best way to ensure the final format meets these criteria is to collaborate with the report stakeholders. Collaboration provides an excellent opportunity to build reporting that meets business needs and achieve buy-in from all levels of management. Creating an effective report format for the end user is a matter of understanding the basic requirements, the informational needs of the business area, and preferences of display (e.g., visual versus narrative).



The table below gives examples of metrics your various audiences may find relevant. Given the amount of data, information, stories, actions, and wins you will include, your report for senior management may be a mere two pages while your report for your front and back lines may be filled with dense, granular information with page numbers in the double digits.

Metric = monthly defect rate

***Selling Guide* requirement: Reflect the final defect rate for the results of the current review period (taking into account responses and resolution of the initial QC findings).**

Senior management	Department management	Front/Back line
• Total company gross and net defect rates • Defect trending by credit and compliance with comparison to targets • If applicable, channel investor breakdowns	• Total company gross and net defect rates • Defect trending by credit and compliance with comparison to targets • If applicable, channel/investor breakdown • Business unit defect trends • Area of responsibility (processing, underwriting, closing) • Loan-level detail • Business unit stack-ranking	• Total company gross and net defect rates • Business unit defect rates and trends • Area of responsibility defect rates and trends (processing, underwriting, closing) • Individual defect rates and trends • Individual stack ranking • Loan-level detail for reporting period

As illustrated above, the presentation of data can differ for each segment of the report depending on the audience. Different reporting elements and information can impact not only the granularity of the report, but also the size of the document. Executive-level reporting may contain a few pages with key metrics and action plans while department managers and internal QC reporting may have multiple pages filled with very detailed information.

Create content that fits into your structures

- Results summary
- Defect rates and trends including comparison to targets and goals
- Specific defect trends and severity distribution by review type (random and discretionary)
- Potential repurchase activity and financial exposure
- Action plans for correcting defects and defective processes

Common components exist to form a consistent reporting foundation no matter your audit type. These must exist in each QC report, whether prefunding or post-closing, random or discretionary. Consistency across reports enables each user to digest the information more easily and communicates key takeaways.

Results summary

Results summary	Defect rates and trends including comparison to targets and goals	Specific defect trends and severity distribution by review type (random and discretionary)	Potential repurchase activity and financial exposure	Action plans for correcting defects and defective processes

The purpose of a summary is to provide readers with the proper context, including the review purpose, selection reasons, and the description of sample chosen. The summary includes what, when, and why loans were selected – information that supports decision-making about manufacturing quality and employee performance. This description puts the information in context and confirms the sample meets internal and investor requirements, such as a 10% sample size or a statistical sample in the post-closing random review.

Random summary example:

Post-closing random sample

420 loans were reviewed out of 3,960 loans funded in the retail channel. This represents 10.61% of the funded loans. 22 loans were reviewed out of 152 loans funded in the wholesale channel. This represents 14.47% of the funded loans. The overall sample is 10.75% of January fundings.

Retail random sample			
Loan type	**Loans funded**	**QC sample**	**QC sample %**
Conventional	1760	180	10.23%
FHA	550	50	9.09%
VA	370	50	13.51%
Portfolio	1280	140	10.94%
Other	0	0	0.00%
Total	**3960**	**420**	**10.61%**

Wholesale random sample			
Loan type	**Loans funded**	**QC sample**	**QC sample %**
Conventional	125	15	12.00%
FHA	5	2	40.00%
VA	20	5	25.00%
Portfolio	2	0	0.00%
Other	0	0	0.00%
Total	**152**	**22**	**14.47%**

The loans selected for review are clearly stated with the underlying funding numbers included. Management can quickly confirm the sample meets the 10% standard. Additionally, a comparison of the funding loan types/channels against the random samples can help confirm the selections are truly random, as the random sample represents the entire book of business.

Discretionary summary example:

As important as it is to describe the random sample, it is even more important for the discretionary sample because it is dynamic. It can change from month to month as pockets of risks are actively reviewed or as action plan effectiveness is measured. Using tables or narratives, the WHY and strategy behind each discretionary sample should be clearly stated. A visual can facilitate assessment of the results. Explaining the purpose of the strategy drives understanding of the sampling approach.

Post-closing discretionary sample

- Full-file reviews for recently hired mortgage loan originators (MLOs), underwriters, new brokers, and brokers on watch for emerging risk in the retail and wholesale channels.
- Two new brokers have been approved for delivery and will continue to have all loans reviewed in post-closing for the next six months or until 20 satisfactory reviews have been completed.
- Four brokers on watch for emerging risk will continue to have all loans reviewed in post-closing until further notice.
- Prior QC results for appraisals with elevated Collateral Underwriter® (CU®) risk scores drove appraisal selections to test effectiveness of CU training conducted in January and February.
- A self-employment income calculation tool was implemented in March. A targeted/component review of loans using the new tool were chosen to confirm the tool's effectiveness.
- New verbal verification of employment (VVOE) process implemented four months ago has shown defects in prefunding reviews. Testing in post-closing to track improvement after rollout adjustments.

Retail discretionary

Audit description	Review count	Gross critical defects		Net critical defects		Gross mod defects		Net mod defects	
		#	%	#	%	#	%	#	%
Second home purchases with gifts	4	1	25.00%	0	0.00%	2	50.00%	1	25.00%
New MLOs	38	3	7.89%	1	2.63%	4	10.53%	2	5.26%
New underwriters	25	5	20.00%	0	0.00%	3	12.00%	1	4.00%
Component - self-employed calcs	25	7	28.00%	2	8.00%	2	8.00%	0	0.00%
Appraisals with CU scores > 4	16	3	18.75%	0	0.00%	4	25.00%	1	6.25%
Component - new VVOE process	40	2	5.00%	0	0.00%	3	7.50%	2	5.00%

Wholesale discretionary

Audit description	Review count	Gross critical defects		Net critical defects		Gross mod defects		Net mod defects	
		#	%	#	%	#	%	#	%
Brokers on watch	5	2	40.00%	1	20.00%	2	40.00%	2	40.00%
New brokers	27	3	11.11%	1	3.70%	1	3.70%	0	0.00%
New wholesale (W/S) underwriters	10	1	10.00%	0	0.00%	1	10.00%	1	10.00%
Component - self-employed calcs	24	2	8.33%	0	0.00%	2	8.33%	1	4.17%
Appraisals with CU scores > 4	16	1	6.25%	0	0.00%	3	18.75%	1	6.25%
Component - new VVOE process	40	3	7.50%	0	0.00%	4	10.00%	0	0.00%

Displaying the loan counts and defects by discretionary audit description provides information to determine whether the risk hypothesis was accurate, the sampling strategy should change, and/or action should be taken.

Finding the "so what" of discretionary reviews

Discretionary and targeted review results should be reported by each audit description so action can be tailored to each sampling reason. If all types of discretionary reviews are lumped into a single group with a single defect rate, the insight desired from the specific sampling strategy will be lost. If high-risk loans are grouped in with new broker and recently hired loan officer loans, the risks identified from each sample may not be readily apparent and opportunities for improvement could be lost.

Wholesale discretionary									Commentary
Audit description	Review count	Gross critical defects		Net critical defects		Gross mod defects		Net mod defects	
		#	%	#	%	#	%	#	%	
Brokers on watch	5	2	40.00%	1	20.00%	2	40.00%	2	40.00%	ABC broker continues to have critical defects. Escalate to risk comm.
New brokers	27	3	11.11%	1	3.70%	1	3.70%	0	0.00%	No trending by new brokers observed. Maintain sampling.
New wholesale (W/S) underwriters	10	1	10.00%	0	0.00%	1	10.00%	1	10.00%	No trending by new underwriters observed. Maintain sampling.
Component - self-employed calcs	24	2	8.33%	0	0.00%	2	8.33%	1	4.17%	Defects reduced from prior month. Maintain sampling for three mos.
Appraisals with CU scores > 4	16	1	6.25%	0	0.00%	3	18.75%	1	6.25%	Defects reduced since CU training noted. Maintain sampling for three mos.
Component - new VVOE process	40	3	7.50%	0	0.00%	4	10.00%	0	0.00%	Defects reduced from prior month. Maintain sampling for three mos.

Notice how simple highlighted commentary can help the reader quickly identify what discretionary results require action.

Defect tracking and trending – rates, goals, and categories

- Results summary
- **Defect rates and trends including comparison to targets and goals**
- **Specific defect trends and severity distribution by review type (random and discretionary)**
- Potential repurchase activity and financial exposure
- Action plans for correcting defects and defective processes

Two key concepts of effective reporting are tracking and trending. These concepts are not exclusive to defect rates or types but should be applied to all QC data. Building and maintaining a broad spectrum of data provides QC a rich warehouse of data that can support powerful reporting. The terms tracking and trending are frequently used interchangeably, but they are two distinct actions.

Defect tracking

This is the process of selecting specific metrics and attributes to monitor. Defect attributes include defect severity, category, subcategory, name, and individual defect rates within a sample. It can also be helpful to track certain loan attributes including loan purpose, product, loan to value (LTV) ratio, debt to income (DTI) ratio, and credit scores (among many others). A richer base of tracked data provides information to analyze and understand defects, which supports root cause identification and action planning to address the issues.

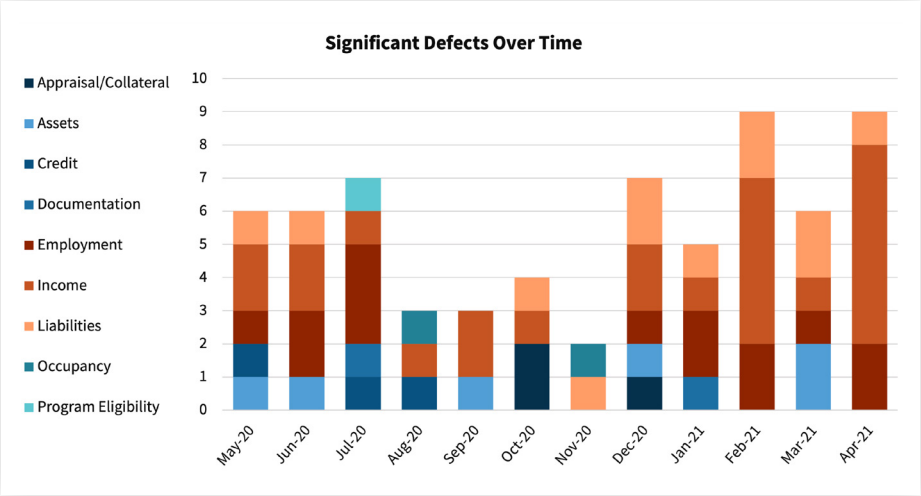
Defect trending

This is the process of looking at defect categories, severities, and rates over time to gain insight into the overall defect rates, types, and severities of the issues identified. Trending reveals if issues are decreasing or if there are emerging defects and risks to the organization.

For example, if the target defect rate is 3% and actual defect rate trending has remained at or below 3% over the past six months, the trend might be interpreted to be favorable. However, if within that 3%, the defect subcategory driving these defects is concentrated in self-employed income calculation and has increased from 0.75% to 2.75% over that same six-month period, the trend should be interpreted as an emerging problem that requires action.

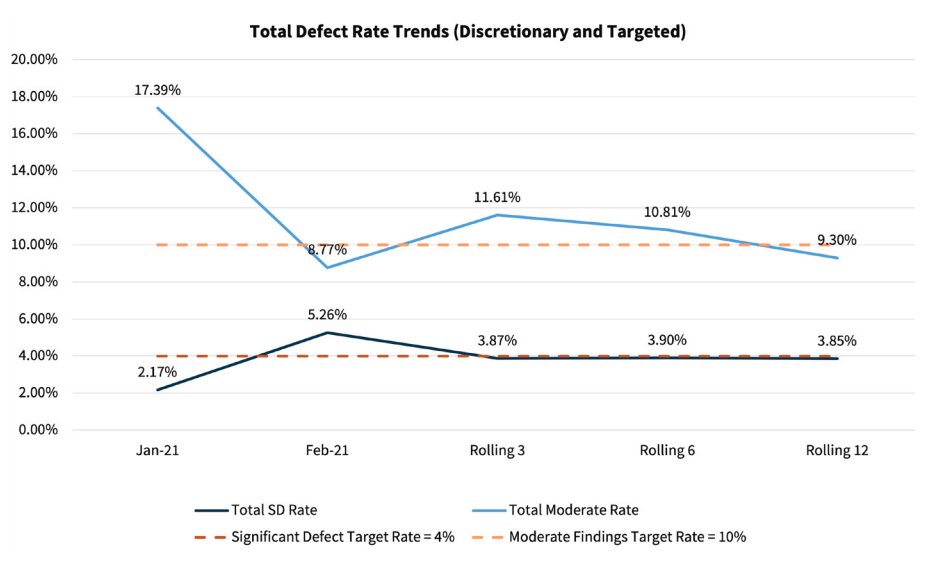
Defect tracking and trending comes in many different formats and views. It is important to know what the audience needs to see when presenting defect and trending results. Consider the examples below. These trending examples provide various views to help managers absorb the relevant information.

Defect category trending example



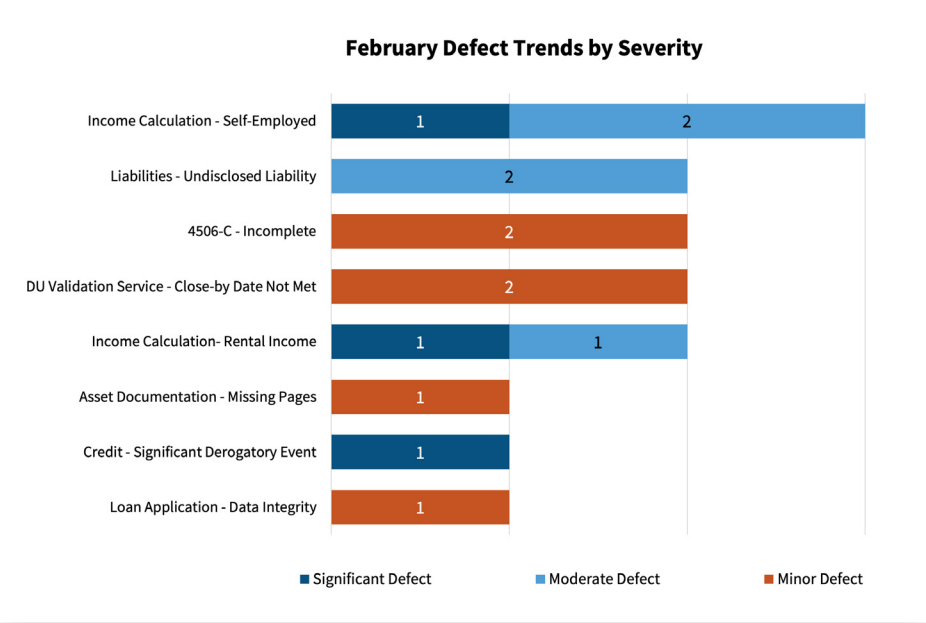
This bar chart identifies defect categories at a high level and then assigns a color to the issue, so it is easily trended across time. A view like this gives a quick snapshot of the overall monthly defect trend with enough granularity at the defect category level to identify areas of concern. For instance, this example shows **Income** is a rising defect category.

Defect rate trending against targets example



A line graph is useful for trending metrics' movement over time. In this example, the significant and moderate defect rates are displayed against target defect rates. It highlights when targets are breached and whether trending is acceptable. This style of presentation can be used for many different trends such as overall gross and net defect rates or even individual defect trends if sufficient data is available.

Defect name by severity example



This illustration shows defects by frequency and severity. This allows management to determine what processes should be assessed based on the number of defects and the associated risk. In this example, **4506-C – Incomplete** and **Liabilities – Undisclosed Liability** have the same frequency of occurrence, but since **Undisclosed Liability** has a higher severity, this defect should be reviewed first for process gaps.

Potential repurchase activity and financial exposure

Results summary | Defect rates and trends including comparison to targets and goals | Specific defect trends and severity distribution by review type (random and discretionary) | Potential repurchase activity and financial exposure | Action plans for correcting defects and defective processes

Providing a visual example of the risk of eligibility defects in the monthly QC reporting provides management with a way to tabulate the cost of poor quality. Much of QC reporting is focused on defect rates, so it can be easy to lose sight of the costs associated with a defect. Adding a simple table to the first page of the monthly reports can help call attention to the dollar cost associated with the defects.

Significant defects and financial exposure example

Origination month: February	# Final significant defects	% Final significant defects	Total loan amount of SDs	Estimated potential $ loss	Self-reported to investor
Post-closing random sample	**1**	**1.61%**	**$225,183**	**$45,288**	**1**
Conventional	1	1.92%	$225,183	$47,288	1
FHA	0	0.00%	$-	$-	0
VA	0	0.00%	$-	$-	0
USDA	0	0.00%	$-	$-	0
Retail	1	3.23%	$225,183	$47,288	1
Wholesale	0	0.00%	$-	$-	0
Correspondent	0	0.00%	$-	$-	0
Post-closing discretionary sample	**3**	**5.26%**	**$768,963**	**$161,486**	**3**
Discretionary full-file	2	5.13%	$426,825	$89,633	2
Targeted sample	1	5.56%	$342,158	$71,853	1
Other reviews					
Compliance / denied loan reviews	1	4.35%	$-	$-	0
Early payment default review	0	0.00%	$-	$-	0
Total estimated financial loss from self-reports				**$208,775**	**3**

This table reflects the final significant defects that were not remediated and require self-reporting to the applicable investor. A factor for determining estimated loss can be derived through historical and current market costs of repurchasing, holding, and selling at a discount. This factor can be determined through consultation with a lender's finance or capital markets teams. This is an effective method of translating QC defect rates into financial exposure. For this example, the average potential loss is about 21 basis points.

Action plans for defects and processes

Results summary | Defect rates and trends including comparison to targets and goals | Specific defect trends and severity distribution by review type (random and discretionary) | Potential repurchase activity and financial exposure | **Action plans for correcting defects and defective processes**

Action planning is a critical function of the QC reporting process and must be part of the monthly reporting. Hold monthly meetings to discuss the status of action plans and remediation actions and to confirm that you are achieving measurable progress. Action plans can be easy to start, but often fail without proper follow-through. Fannie Mae considers action planning to be a critical component for achieving quality, and we have numerous resources dedicated to the topic.

Post-closing action plan example

1- DEFINE PROBLEM TO BE SOLVED							2 - ASSESS ROOT CAUSE(S)		3 - DESIGN SOLUTIONS			4 - ESTABLISH AND EXECUTE SOLUTIONS			
Issue Number	Define Problem	Priority	Status	Date Opened	Defects Observed		Root Cause		Area Responsible for Solution	Solution Owner(s)	Solution(s)	Priority	Status	Solution Implementation Target Date	Target Metric(s)
					Internal Reports	Investor Reports									
1	37% of significant asset defects are related to gift funds	High	In Progress	5/15/22	Yes	Yes	80% of the gift fund defects did not document the transfer at closing	Deficient staff training regarding new policies/procedure	Training Department	C.Brown	Training for all Closers/Funders	High	In Progress	7/10/22	100% of impacted staff attend training and pass a knowledge test with 95% accuracy
								Missing or vague at close conditions related to gift funds	Underwriting	B.T.Builder	Update "At Closing" Gift Fund condition to reflect updated requirements.	High	In Progress	8/1/22	Prefunding sample defect rate < 1% of all asset defects
								No checks in place to prevent loans from funding with open *At Close* conditions	Closing	M.Mouse	Second-level review to prevent loans from advancing until systemic control is active	High	In Progress	7/10/22	100% of at closing conditions cleared prior to funding
								No checks in place to prevent loans from funding with open *At Close* conditions	IT	D. Explorer	System enhancement to prevent loans from funding that contain open "At Closing" conditions	High	In Progress	8/1/22	100% of at closing conditions cleared prior to funding
							15% of the gift fund defects did not document donor ability	Processor cleared *At Close* condition without proper authority				Low	Not Started		
								Missing or vague at close conditions related to gift funds				Low	Not Started		
								Internal guideline gap regarding donor ability requirements				Low	Not Started		
							5% of the gift fund defects are due to ineligible gift donor	Internal guideline gap regarding eligible donor criteria				Low	Not Started		

This example provides a detailed defect and remediation path to monitor and evaluate action plan steps. Examples of key elements include defect(s) needing action, status and status dates, root cause, planned action, action owner(s), success measures, and validation/retesting plan. It also highlights plans that are past due to ensure appropriate management attention. Refer to *Beyond the Guide* Section 7, Corrective Action and the Action Plan.

Bringing it all together

By combining the foundational skills of audience identification, tracking, and trending QC data to create actionable information and disseminating the right information at the right time, QC reporting becomes a critical tool to manage quality and risk. Below are examples that incorporate all the elements of creating QC reporting designed to meet the needs of each department and management level.

Senior management report examples

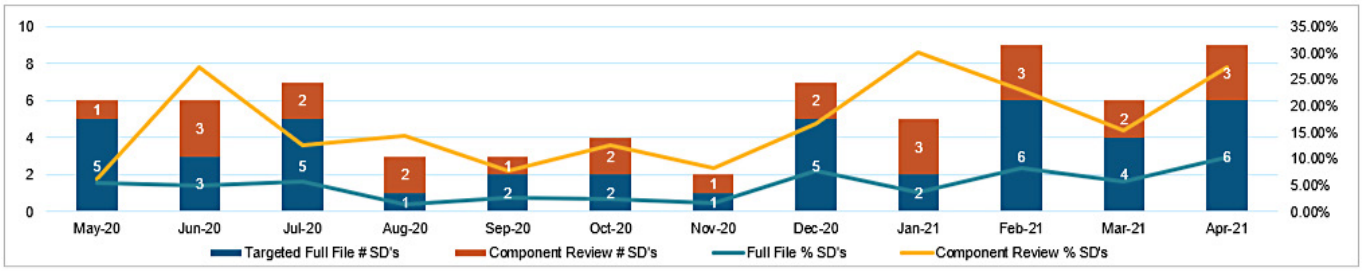
Prefunding executive summary example

Scope:

- The purpose of the prefunding sample is to identify any company or investor eligibility issues prior to closing. Prefunding samples are selected daily from loans with a clear-to-close status. All significant defects are corrected prior to closing. Results are analyzed for trends and may result in an action plan.

Prefunding Sample:

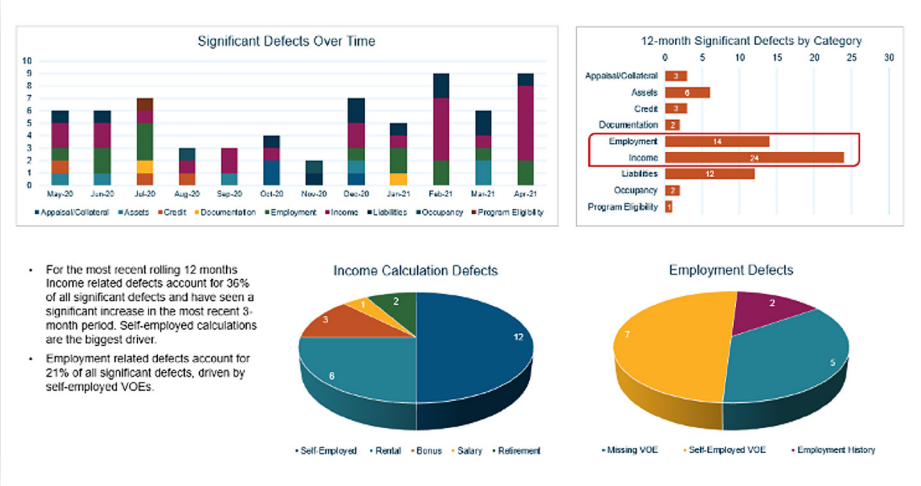
- Full file reviews are selected based on the following high-risk characteristics: Investment properties, Loans with DTI> 43%, High-risk fraud score, TPO lenders, on watch list, Underwriters hired within 90 days, and Underwriters on an action plan.
- Component targeted reviews were sampled with the following characteristics: Self-employed borrower, and loans triggered by the UDM tool.



Prefunding Sample	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	Rolling 3	Rolling 6	Rolling 12
Total Closed Loans	483	326	486	417	405	465	348	354	310	395	391	319	1105	2117	4699
Loans Reviewed	106	72	104	89	86	101	74	76	66	85	84	70	239	455	1013
Targeted Full File	90	61	88	75	73	85	62	64	56	72	71	59	202	384	856
Component Reviews	16	11	16	14	13	16	12	12	10	13	13	11	37	71	157
Targeted Full File															
# Significant Defects	5	3	5	1	2	2	1	5	2	6	4	6	16	24	42
% Significant Defects	5.56%	4.92%	5.68%	1.33%	2.74%	2.35%	1.61%	7.81%	3.57%	8.33%	5.63%	10.17%	7.92%	6.25%	4.91%
# Moderate Defects	3	3	12	8	11	4	12	6	7	4	6	8	18	43	84
% Moderate Defects	3.33%	4.92%	13.64%	10.67%	15.07%	4.71%	19.35%	9.38%	12.50%	5.56%	8.45%	13.56%	8.91%	11.20%	9.81%
Component Review															
# Significant Defects	1	3	2	2	1	2	1	2	3	3	2	3	8	14	25
% Significant Defects	6.25%	27.27%	12.50%	14.29%	7.69%	12.50%	8.33%	16.67%	30.00%	23.08%	15.38%	27.27%	21.62%	19.72%	15.92%

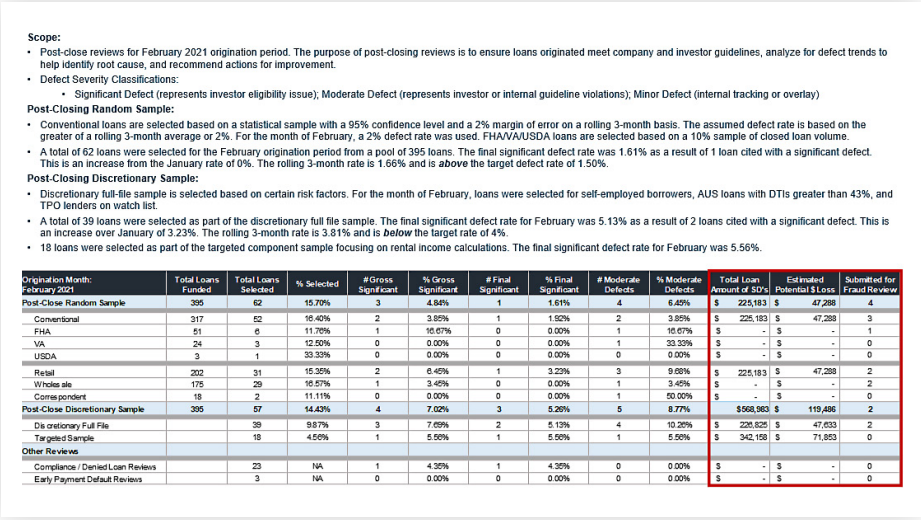
This prefunding senior management summary report contains audit description, sampling logic, current month's loan counts by funding, full-file and component sampling, and gross defect rates by review type. Additional elements are still necessary, but much of the required elements are displayed on one page.

Prefunding executive summary example



This report example strikes a good balance, including defect trending and key learnings that identify areas requiring an action plan. These are senior management reports so the format should be concise, but some granularity is important.

Post-closing executive summary example



Scope:

- Post-close reviews for February 2021 origination period. The purpose of post-closing reviews is to ensure loans originated meet company and investor guidelines, analyze for defect trends to help identify root cause, and recommend actions for improvement.
- Defect Severity Classifications:
  - Significant Defect (represents investor eligibility issue); Moderate Defect (represents investor or internal guideline violations); Minor Defect (internal tracking or overlay)

Post-Closing Random Sample:

- Conventional loans are selected based on a statistical sample with a 95% confidence level and a 2% margin of error on a rolling 3-month basis. The assumed defect rate is based on the greater of a rolling 3-month average or 2%. For the month of February, a 2% defect rate was used. FHA/VA/USDA loans are selected based on a 10% sample of closed loan volume.
- A total of 62 loans were selected for the February origination period from a pool of 395 loans. The final significant defect rate was 1.61% as a result of 1 loan cited with a significant defect. This is an increase from the January rate of 0%. The rolling 3-month rate is 1.66% and is ***above*** the target defect rate of 1.50%.

Post-Closing Discretionary Sample:

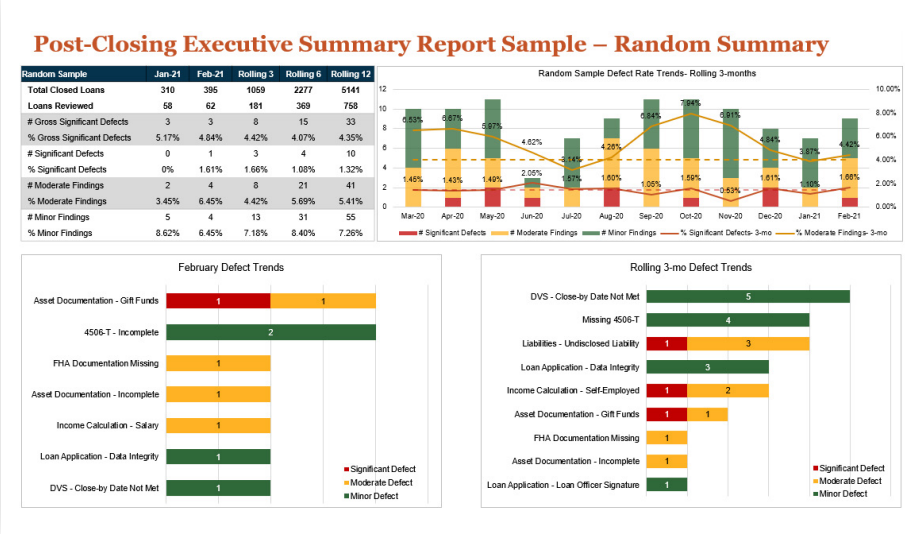
- Discretionary full-file sample is selected based on certain risk factors. For the month of February, loans were selected for self-employed borrowers, AUS loans with DTIs greater than 43%, and TPO lenders on watch list.
- A total of 39 loans were selected as part of the discretionary full file sample. The final significant defect rate for February was 5.13% as a result of 2 loans cited with a significant defect. This is an increase over January of 3.23%. The rolling 3-month rate is 3.81% and is ***below*** the target rate of 4%.
- 18 loans were selected as part of the targeted component sample focusing on rental income calculations. The final significant defect rate for February was 5.56%.

Origination Month: February 2021	Total Loans Funded	Total Loans Selected	% Selected	# Gross Significant	% Gross Significant	# Final Significant	% Final Significant	# Moderate Defects	% Moderate Defects	Total Loan Amount of SD's	Estimated Potential $ Loss	Submitted for Fraud Review
Post-Close Random Sample	395	62	15.70%	3	4.84%	1	1.61%	4	6.45%	$ 225,183	$ 47,288	4
Conventional	317	52	16.40%	2	3.85%	1	1.92%	2	3.85%	$ 225,183	$ 47,288	3
FHA	51	6	11.76%	1	16.67%	0	0.00%	1	16.67%	$ -	$ -	1
VA	24	3	12.50%	0	0.00%	0	0.00%	1	33.33%	$ -	$ -	0
USDA	3	1	33.33%	0	0.00%	0	0.00%	0	0.00%	$ -	$ -	0
Retail	202	31	15.35%	2	6.45%	1	3.23%	3	9.68%	$ 225,183	$ 47,288	2
Wholesale	175	29	16.57%	1	3.45%	0	0.00%	1	3.45%	$ -	$ -	2
Correspondent	18	2	11.11%	0	0.00%	0	0.00%	1	50.00%	$ -	$ -	0
Post-Close Discretionary Sample	395	57	14.43%	4	7.02%	3	5.26%	5	8.77%	$568,983	$ 119,486	2
Discretionary Full File		39	9.87%	3	7.69%	2	5.13%	4	10.26%	$ 226,825	$ 47,633	2
Targeted Sample		18	4.56%	1	5.56%	1	5.56%	1	5.56%	$ 342,158	$ 71,853	0
Other Reviews												
Compliance / Denied Loan Reviews		23	NA	1	4.35%	1	4.35%	0	0.00%	$ -	$ -	0
Early Payment Default Reviews		3	NA	0	0.00%	0	0.00%	0	0.00%	$ -	$ -	0

This post-closing report example contains elements of an executive summary for both random and discretionary reviews, including a comprehensive summary of the results from each sample with review types and defect classifications. Also included are gross and net defect rates, a description of sampling methods (10% or statistical), and a breakout between compliance and underwriting / eligibility defects.

This example also includes a best practice that displays estimated loss based on repurchase risks.

Post-closing executive summary report sample



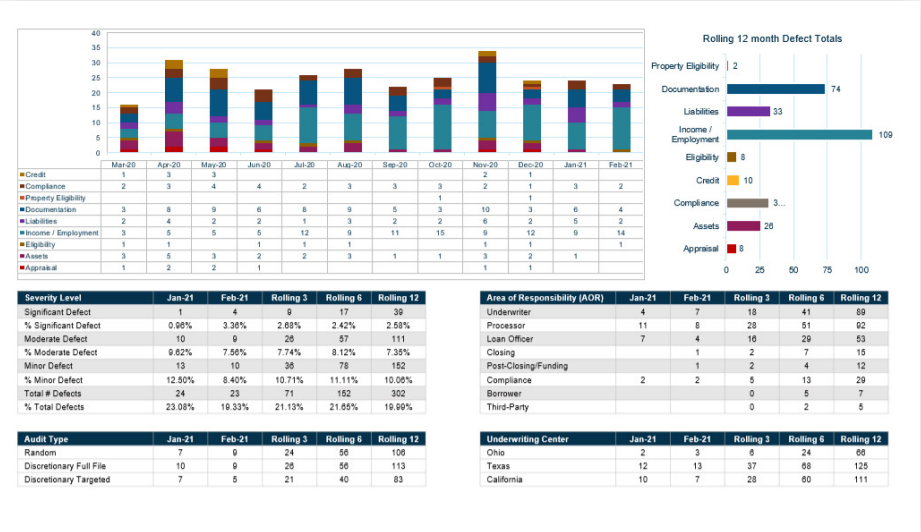
Random Sample	Jan-21	Feb-21	Rolling 3	Rolling 6	Rolling 12
Total Closed Loans	310	395	1059	2277	5141
Loans Reviewed	58	62	181	369	758
# Gross Significant Defects	3	3	8	15	33
% Gross Significant Defects	5.17%	4.84%	4.42%	4.07%	4.35%
# Significant Defects	0	1	3	4	10
% Significant Defects	0%	1.61%	1.66%	1.08%	1.32%
# Moderate Findings	2	4	8	21	41
% Moderate Findings	3.45%	6.45%	4.42%	5.69%	5.41%
# Minor Findings	5	4	13	31	55
% Minor Findings	8.62%	6.45%	7.18%	8.40%	7.26%

This random review summary includes a table of closed and reviewed loans with the number and percentage of defects for each severity level (upper left). Both the table and line graph are options for identifying defect trends over time.

The bottom left graph provides monthly tracking, and the bottom right graph shows three-month trending. Defect categories are clear, easily understood, and helpful for root cause analysis.

Departmental management report examples

Departmental management report – defect trends example



Severity Level	Jan-21	Feb-21	Rolling 3	Rolling 6	Rolling 12
Significant Defect	1	4	9	17	39
% Significant Defect	0.96%	3.36%	2.68%	2.42%	2.58%
Moderate Defect	10	9	25	57	111
% Moderate Defect	9.62%	7.56%	7.74%	8.12%	7.35%
Minor Defect	13	10	36	78	152
% Minor Defect	12.50%	8.40%	10.71%	11.11%	10.06%
Total # Defects	24	23	71	152	302
% Total Defects	23.08%	19.33%	21.13%	21.65%	19.99%

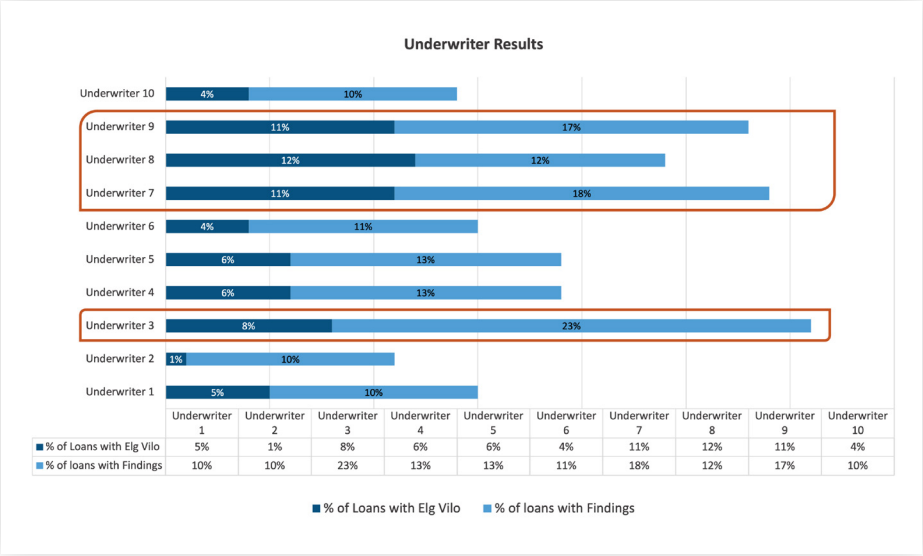
Area of Responsibility (AOR)	Jan-21	Feb-21	Rolling 3	Rolling 6	Rolling 12
Underwriter	4	7	18	41	89
Processor	11	8	28	51	92
Loan Officer	7	4	16	29	53
Closing		1	2	7	15
Post-Closing/Funding		1	2	4	12
Compliance	2	2	5	13	29
Borrower			0	5	7
Third-Party			0	2	5

Audit Type	Jan-21	Feb-21	Rolling 3	Rolling 6	Rolling 12
Random	7	9	24	56	106
Discretionary Full File	10	9	26	56	113
Discretionary Targeted	7	5	21	40	83

Underwriting Center	Jan-21	Feb-21	Rolling 3	Rolling 6	Rolling 12
Ohio	2	3	6	24	66
Texas	12	13	37	68	125
California	10	7	28	60	111

This example illustrates how to look deeper into defect trends. The large graph on the top left is one example of pulling together trends at the defect category level. Monthly changes by category are visible in the 12-month view. The graph in the upper right shows the defect categories by count. Because these reports are designed to get to the root cause, graphing by the high-level category is just your starting point. Use this information to know where to dig deeper. The bottom tables provide more detail in a condensed table format, but still show trends over time.

Departmental management report – stack-ranking example

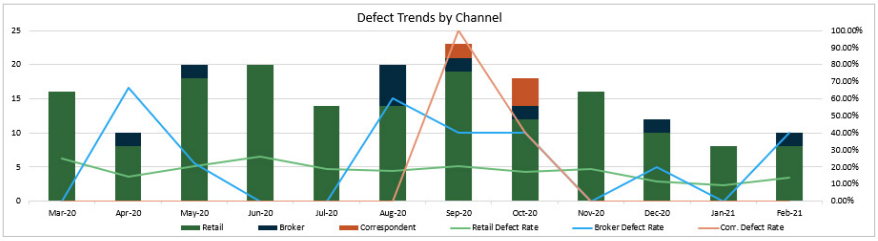


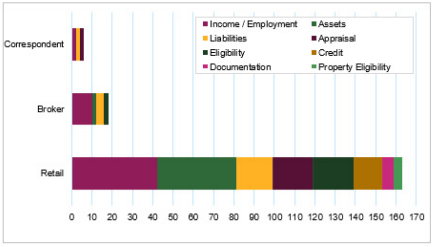
	Underwriter 1	Underwriter 2	Underwriter 3	Underwriter 4	Underwriter 5	Underwriter 6	Underwriter 7	Underwriter 8	Underwriter 9	Underwriter 10
% of Loans with Elg Vilo	5%	1%	8%	6%	6%	4%	11%	12%	11%	4%
% of loans with Findings	10%	10%	23%	13%	13%	11%	18%	12%	17%	10%

This is an example of results by underwriter, but can be leveraged for displaying other parties including brokers, correspondent lenders, processors, and loan officers.

In this example, underwriters 3, 7, 8, and 9 have higher significant defect percentages. By stacking those defects alongside the moderate findings, it is clear that a few underwriters are sticking out. This type of display highlights where there might be training opportunities. This data can also be used to adjust some targeted sampling in prefunding or post-closing discretionary reviews.

Departmental management report – defect trends example





Defect Severity	Retail	Broker	Correspondent	Grand Total
Significant Defects	**28**	**2**		**30**
Appraisal	4			4
Assets	4			4
Credit	8			8
Eligibility	2			2
Income / Employment	6	2		8
Liabilities	4			4
Moderate Defects	**135**	**16**	**6**	**157**
Appraisal	16		2	18
Assets	35	2		37
Credit	6			6
Documentation	6			6
Eligibility	18	2		20
Income / Employment	36	8	2	46
Liabilities	14	4	2	20
Property Eligibility	4			4
Grand Total	**163**	**18**	**6**	**187**

This example expands on the previous example by providing different cuts of data focusing on different origination channels. Other considerations for different cuts might be …

- loan purpose
- occupancy
- property type
- DTI, LTV, or credit score
- self-employed borrowers
- or any combination of these data points

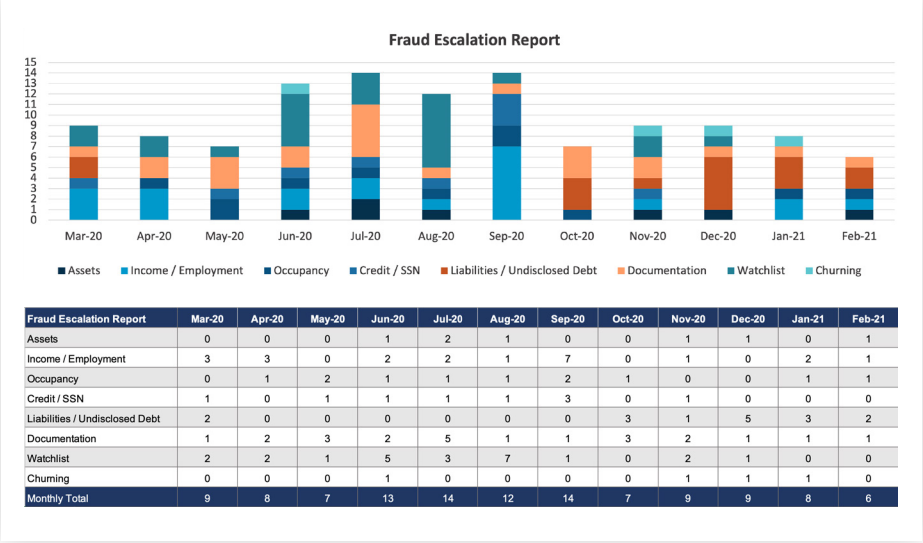
Departmental management report – loan level example

Closing Month	Sample	Loan Number	Area of Responsibility	Program Type	Channel	Defect Severity	Defect Category	Defect Description	Resolution
February-21	Random	456789103	Closing/Funding	Conventional	Retail	Significant Defect	Asset Documentation	Assets from the sale of borrower's prior residence was used as a source of the down payment. Prior to funding condition requested final CD from sale of home. Loan file did not include final CD. Missing document was requested and obtained from the borrower.	Resolved
February-21	Random	489789130	Underwriter	Conventional	Correspondent	Significant Defect	Income Calculation	The underwriter calculated the borrower's salary as $4300 per month. Post close QC calculated borrower's income as $3900 per month. Updated DTI exceeds AUS tolerance of 3%. Underwriting re-ran AUS with updated income and received an Approve/Eligible recommendation.	Resolved
February-21	Random	456789123	Underwriter	FHA	Retail	Significant Defect	Asset Documentation	The borrower received gift funds of $5,000, however, the gift fund documentation was not found in the loan file. When removing the gift funds from assets, borrower is short funds to close.	Unresolved
February-21	Discretionary	495315863	Underwriter	Conventional	Wholesale	Significant Defect	Income Calculation	The underwriter calculated the borrower's self-employed income as $8300 per month. Post close QC calculated the borrower's income as $7565 per month. Updated DTI exceeds 50%.	Unresolved
February-21	Discretionary	491325485	Borrower	Conventional	Retail	Significant Defect	Liability Eligibility	Undisclosed auto loan showing on post close QC credit report in the amount of $385 from Honda Financial. Borrower provided evidence they treaded in old car and old car loan removed from monthly liabilities. Updated DTI less that 3% tolerance.	Resolved
February-21	Discretionary	482256872	Underwriter	Conventional	Retail	Significant Defect	Credit Eligibility	Underwriting credit report reflected a Chapter 7 BK for borrower. 7 years had not elapsed since the BK was discharged.	Unresolved
February-21	Targeted	488663207	Underwriter	Conventional	Wholesale	Significant Defect	Income Calculation	The underwriter calculated rental income on property 123 Main St. to be $1180 per month. QC auditor calculated the rental income to $590. As a result, the calculated DTI is 63%.	Unresolved

This example contains loan-level summary data that departmental management can use for both action planning and developing individual scorecards. Including all gross significant defects and the resolution status of each loan, along with notes on how the loan was remedied, is a best practice. Providing this in a spreadsheet can also allow managers to sort the data as needed.

Consider weekly distribution for this reporting. Providing this data more frequently supports real-time feedback, faster resolutions, accelerated reporting timelines, and potentially reduced errors sooner.

Departmental management report – fraud summary example

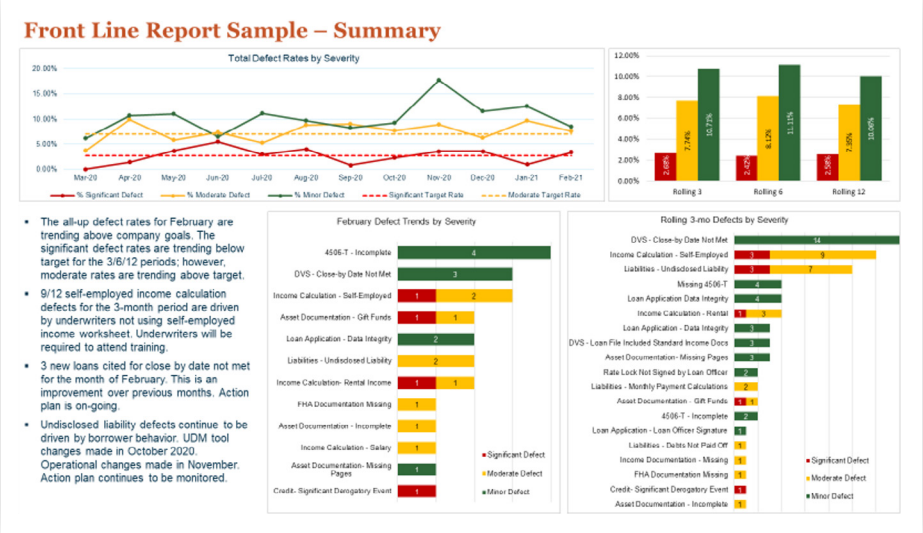


Fraud Escalation Report	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21
Assets	0	0	0	1	2	1	0	0	1	1	0	1
Income / Employment	3	3	0	2	2	1	7	0	1	0	2	1
Occupancy	0	1	2	1	1	1	2	1	0	0	1	1
Credit / SSN	1	0	1	1	1	1	3	0	1	0	0	0
Liabilities / Undisclosed Debt	2	0	0	0	0	0	0	3	1	5	3	2
Documentation	1	2	3	2	5	1	1	3	2	1	1	1
Watchlist	2	2	1	5	3	7	1	0	2	1	0	0
Churning	0	0	0	1	0	0	0	0	1	1	1	0
Monthly Total	9	8	7	13	14	12	14	7	9	9	8	6

Tracking and trending loans with confirmed or suspected fraud is a highly effective way to detect fraud patterns and identify areas of emerging fraud risks. This example provides month-over-month trending data of loans escalated to the fraud department, including the 3-month, 6-month, 12-month breakout. These categories are examples – lenders should define them based on organizational preference and need. Additional data points to track and trend include the third-party originator, loan officer, borrower, real estate professional, and geographic area.

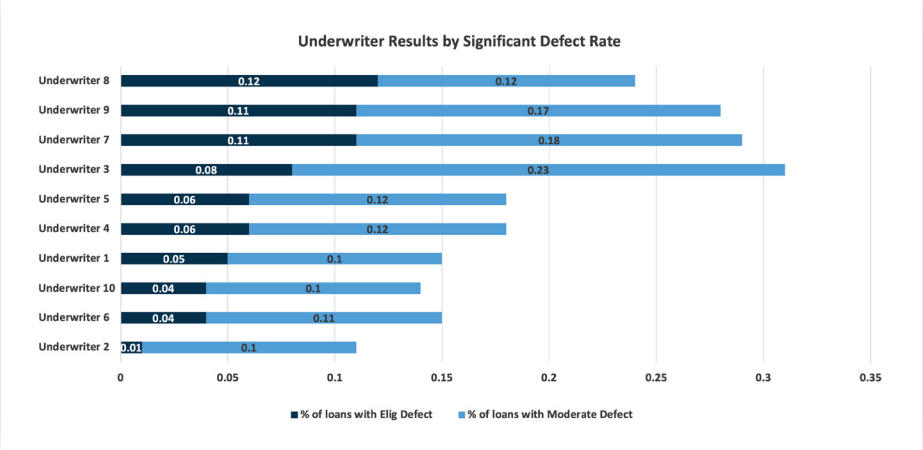
Front-line reporting examples

Front-line report summary example



This is an example of a one-page summary with some data points that are frequently observed and can be important for front-line staff. In addition to the defect rate and defect category trends, it provides a summary of key highlights or top defects, and possible drivers. This insight can help front-line employees compare their personal results with other employees' results, which can promote conversation or highlight training opportunities not otherwise visible in the loan-level data.

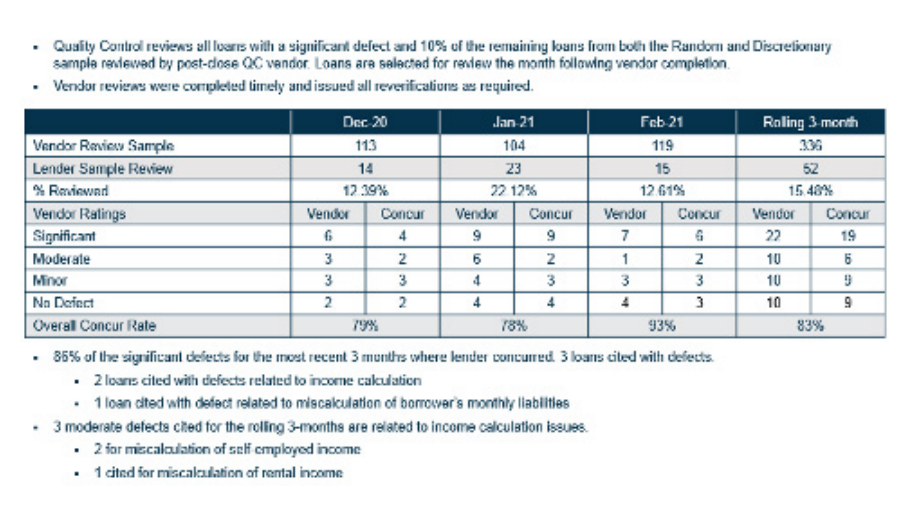
Front-line report peer stack-ranking example



This stack-ranking chart has dual benefits of allowing employees to see where they rank among peers and driving a desire for improved performance. As with previous examples of stack-ranking reports, these can be used for counterparties in third-party origination channels, origination, QC, or other operational functions.

Miscellaneous reports

Post-closing vendor review example



- Quality Control reviews all loans with a significant defect and 10% of the remaining loans from both the Random and Discretionary sample reviewed by post-close QC vendor. Loans are selected for review the month following vendor completion.
- Vendor reviews were completed timely and issued all reverifications as required.

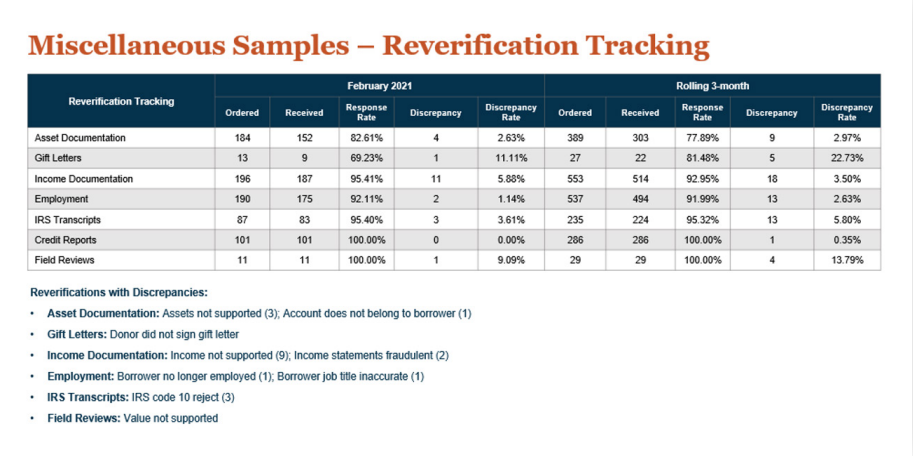
	Dec-20		Jan-21		Feb-21		Rolling 3-month	
Vendor Review Sample	113		104		119		336	
Lender Sample Review	14		23		15		52	
% Reviewed	12.39%		22.12%		12.61%		15.48%	
Vendor Ratings	Vendor	Concur	Vendor	Concur	Vendor	Concur	Vendor	Concur
Significant	6	4	9	9	7	6	22	19
Moderate	3	2	6	2	1	2	10	6
Minor	3	3	4	3	3	3	10	9
No Defect	2	2	4	4	4	3	10	9
Overall Concur Rate	79%		78%		93%		83%	

- 86% of the significant defects for the most recent 3 months where lender concurred. 3 loans cited with defects.
  - 2 loans cited with defects related to income calculation
  - 1 loan cited with defect related to miscalculation of borrower's monthly liabilities
- 3 moderate defects cited for the rolling 3-months are related to income calculation issues.
  - 2 for miscalculation of self-employed income
  - 1 cited for miscalculation of rental income

Lenders choosing to outsource their QC reviews to a vendor must produce a monthly report. This report should reflect the result of QC's review of a sample of the vendor reviews.

This example displays the minimum required elements in an easy-to-digest table that can drive lender action when trends of unacceptable accuracy are observed.

Reverification tracking example



Miscellaneous Samples – Reverification Tracking

Reverification Tracking	February 2021					Rolling 3-month				
	Ordered	Received	Response Rate	Discrepancy	Discrepancy Rate	Ordered	Received	Response Rate	Discrepancy	Discrepancy Rate
Asset Documentation	184	152	82.61%	4	2.63%	389	303	77.89%	9	2.97%
Gift Letters	13	9	69.23%	1	11.11%	27	22	81.48%	5	22.73%
Income Documentation	196	187	95.41%	11	5.88%	553	514	92.95%	18	3.50%
Employment	190	175	92.11%	2	1.14%	537	494	91.99%	13	2.63%
IRS Transcripts	87	83	95.40%	3	3.61%	235	224	95.32%	13	5.80%
Credit Reports	101	101	100.00%	0	0.00%	286	286	100.00%	1	0.35%
Field Reviews	11	11	100.00%	1	9.09%	29	29	100.00%	4	13.79%

Reverifications with Discrepancies:

- **Asset Documentation:** Assets not supported (3); Account does not belong to borrower (1)
- **Gift Letters:** Donor did not sign gift letter
- **Income Documentation:** Income not supported (9); Income statements fraudulent (2)
- **Employment:** Borrower no longer employed (1); Borrower job title inaccurate (1)
- **IRS Transcripts:** IRS code 10 reject (3)
- **Field Reviews:** Value not supported

QC must track all reverifications sent, but many benefits can be realized by providing monthly summaries of reverification results. This example displays numbers of reverifications sent by categories, response rates, and discrepancies. This can be valuable information for identifying irregularities in expected success rates. When broken down by loan officers or operations centers, it may identify outliers that reveal emerging concerns.

Self-report tracking

Lenders are responsible to self-report loans that do not meet the *Selling Guide* requirements. This process can fall to various areas within a lender's organization, but it is critically important to make sure self-reporting obligations do not fall through the cracks. Below is an example of self-reporting tracking. For this report, the dates are key and additional commentary may be necessary if there are delays in the process.

Self-reporting tracking						
Loan number	Investor	Defect date	Self-report deadline	Self-reporting responsible party	Completed date	Comments
45U704	Fannie Mae	12/30/20	1/31/21	Business Unit	Open	Business unit has not self-reported per investor guidelines and is unresponsive to requests. Escalated to Executive Vice President (EVP) - Risk for additional action.
12C456	Fannie Mae	1/31/21	2/28/21	EVP Risk	2/15/21	None
45B555	Freddie Mac	2/28/21	3/31/21	Business Unit		Business unit continuing to remediate. Follow up at deadline.

Final considerations

- Examine the format of your current reporting and ask yourself these questions:
  - Do our QC management reports target the different audiences within our organization?
  - Do the reports provide appropriate detail for each audience?
  - Are we identifying defects and addressing the root causes?
  - Are we implementing action plans to prevent the defects from occurring in the future?
- Discuss the reporting formats with each of the management teams to confirm they are getting actionable insights. If not, do not be afraid to ask for their assistance in designing new reports.

Resources

D1-3-06 Lender Post-Closing Quality Control Reporting Requirements

Reverification Tracker

Action Plan Template

Sample QC Vendor Management Documents

D1-1-01 Lender Quality Control Programs, Plans, and Processes

D1-2-01 Lender Prefunding Quality Control Review Process

D1-1-02 Lender Quality Control Staffing and Outsourcing of the Quality Control Process

Fannie Mae®

Beyond the Guide

Section 7

Corrective Action and the Action Plan

Fannie Mae

Section 7

Corrective Action and the Action Plan

Selling Guide D1-1-01

What does corrective action mean? Corrective action is the process of identifying and fixing the root cause of a problem to prevent it from happening again.

Common industry terminology for this process is problem-solving. This approach helps focus ideas, prioritize tasks, and allocate necessary resources to achieve goals. True corrective action goes beyond loan-level correction or system upgrades. It is a systematic method of using data to define the problem, assess the current state root cause(s), develop and execute solutions with defined success measures, and test and monitor the effectiveness of the implemented solutions.

What is an action plan?

Action plans are:

- tangible documents intended to identify the steps that need to be completed, track due dates and priorities, and record potential roadblocks and resources required
- required by Fannie Mae to be included in your monthly senior management reporting to help senior management know the progress of all your corrective action

Corrective action and action plans are *Selling Guide* requirements outlined in D1-1-01. This process is ***not*** optional. The *Selling Guide* also requires lenders' monthly QC reporting to include an action plan that addresses implemented corrective actions for top defect trends. The action plan needs to include corrective actions and intended remediation results.

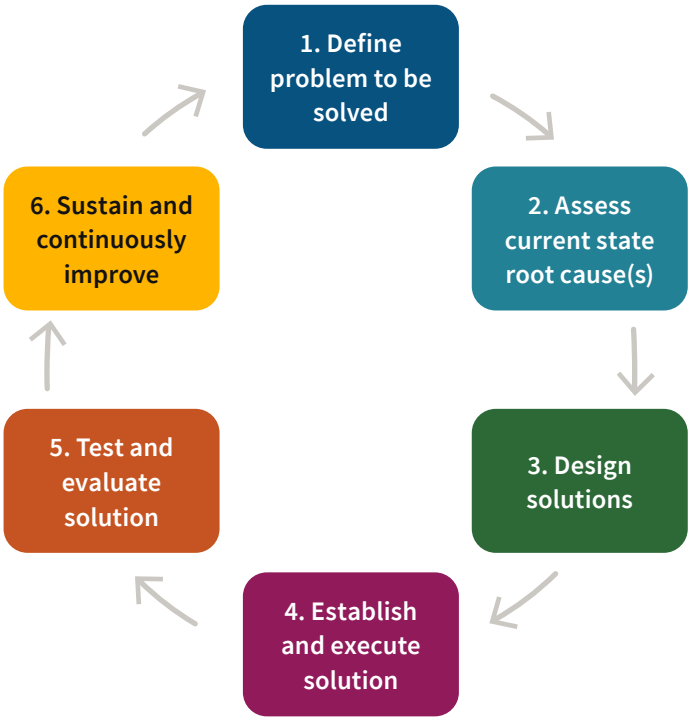
Shift the way we talk about corrective action

There is a distinct difference between filling in the blanks on the action plan document and completing all the steps necessary to effectively problem-solve and implement corrective action. Fannie Mae recognizes the need to shift the way we talk to lenders about corrective action, formerly referred to as action planning. The value is in the process of problem-solving while the action plan document facilitates communication and acts as an artifact to record previous and ongoing corrective action efforts.

Introducing the problem-solving process as a continuous cycle

Best practice organizations perform corrective action exercises as a regular ongoing process and are continuously working to address top defect drivers in their quality results. This approach reinforces an organization's commitment to producing high-quality loans.

Observations from the most recent loan volume surge (2019-2022) indicate that some lenders begin corrective action once a defect exceeds acceptable risk thresholds. By waiting, you greatly increase the risk of originating a stockpile of defective loans. Inaction can also cause the underlying issue to become pervasive and more difficult to remediate.



Stage 1: define the problem

> **"If I had an hour to solve a problem, I'd spend 55 minutes thinking about the problem and 5 minutes thinking about the solution"**
>
> *– Albert Einstein*

Gather and assess data – facts only

The most effective QC programs identify specific problems that enable your organization to take action to effectively mitigate risks and allocate resources accordingly.

Establishing a rigorous and disciplined approach to objectively analyze all factual data is necessary to reach unbiased conclusions. Do not fall victim to confirmation bias, which is best described as a tendency to look for, favor, and recall only information that confirms or supports previous beliefs or values. Resist coming to the table with "the solution" before reviewing the facts. It is crucial to leave opinions and assumptions out of this stage.

QC prefunding and post-closing reports, investor reports, and repurchase data all contain measurable, comprehensive, and complete factual data needed to identify and monitor risks within your organization. QC reporting converts factual data into concise, actionable information that identifies current and emerging risks for your business – leverage those results to define specific problems to solve.

State the problem specifically

Quantify the risk associated with the problem using language and metrics consistent with your organization's risk parameters and thresholds. A well-defined problem statement articulates to stakeholders within your organization the scope, the current impact, and future consequences of failing to solve the problem.

Identify and activate responsible parties: stakeholder and subject matter experts

QC leaders are entrusted and relied on to quantify and articulate problems to senior management across the organization in an actionable and timely way – this is accomplished through effective QC reporting containing metrics that indicate when action is needed to address specific problems.

Once QC reporting is issued to senior management, QC's role in the corrective action process becomes that of facilitator versus a responsible party. QC will support and collaborate with the business stakeholders when developing testing plans validating solutions' effectiveness and impact once implemented.

Leadership responsible for loan manufacturing owns the risk associated with the identified problem; they are accountable to determine root cause(s) and develop and implement sustainable solutions to cure the problem. Senior management must first identify and activate the team of stakeholders and subject matter experts (SMEs) who will be responsible for solving the identified problem.

	Stakeholders	Subject matter experts
Definition	• Anyone who is a part of, affected by, or a recipient of, a process or service	• A person who possesses a deep understanding of a particular job, process, software solution, or function
Roles and responsibilities	• Authorize / support the problem solve • Provide various levels of participation	• Provide insight to current processes and roadblocks • Support smoother acceptance of change
Participant examples	• Top and direct management • Internal customers / resource managers • Suppliers, vendors, and contractors	• Operations / underwriting team leads • Loan officers / processors • Closers / funders / post-closers • System / technology

QC's role is not limited to a facilitator and can extend beyond to add value as an effective challenger and thought leader in the problem-solving process. As effective challengers, QC can help frame alternative constructive ideas by uncovering gaps, risks, and disagreements while focusing on improving the initiative. Based on their expertise and industry perspective, QC can lead by offering unique guidance, inspiring innovation, and influencing more realistic and informed decisions.

Stage 2: root cause analysis

Root cause analysis (RCA) is the process of discovering the root cause of a problem to identify appropriate solutions and is a crucial step in ensuring the right changes are made to significantly reduce defects. The impact of poor root cause analysis can be devastating to your firm in the form of continued defects, non-value adding processes, revenue losses, and poor governance and controls.

Recognizing that there are *technical, human,* and *process* components to loan manufacturing, your RCA efforts should focus on gathering and assessing data from multiple sources, as well as by direct observation of processes. Data collection and analysis in this stage is different than in stage 1, where we used only QC and repurchase data, in that we are using different data sources and different means of data collection to narrow our focus to identify specific root causes.

For our purposes, *technical* data is defined as loan-level data housed in the loan origination system. This data can be extracted for analysis and provides a variety of loan-level characteristics and data points to assist in trending. This type of data is especially beneficial when analyzing defects impacting a large sample of loans. When analyzing this data, trends may emerge across product type, transaction purpose, property type, debt-to-income (DTI) ratio, origination branch, performer, etc.

Human error is a person's mistake rather than the failure of a machine. It is a deviation from intention, expectation, or desirability. Human error is unavoidable and is a valuable source of data when performing root cause analysis. Often the "plan" can be satisfactory, but the performance can be deficient. A highly encouraged and extremely effective method of gathering this data is by reviewing the population of defective loans identified in your QC data. The review is performed at the defect level on every defective loan. The results from this step are foundational for the data analysis and aid in identifying skills deficiency, training and coaching opportunities, and procedural gaps.

Observing a *process* is another rich source of data for root cause analysis. It allows you to see the actual process, understand the work, ask questions, and learn. Discovering process design failures, gaps, non-adherences to established procedures or guidelines, variation in execution of procedures, and gaps in loan origination system or loan document management system functionality are all great examples of learning through observation. Often, defects observed in this manner result in policy, procedure, process, and systemic enhancements.

Now that you have collected the data, what do you do with it? Data analysis is the practice of working with data to glean useful information. The more organized the data, the more likely you will be to identify all the root causes. Techniques such as sorting, pivoting, creating graphs, and quantifying defects will assist you in identifying trends and useful information. Successful organizations take a thoughtful approach to data collection and organization.

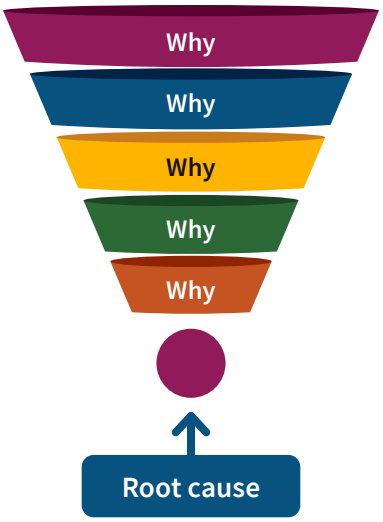
Once you have analyzed all your data, it's common for trends to become apparent and it can be tempting to start brainstorming potential solutions. Commit to the problem-solving process and avoid searching for solutions until you have determined the root cause or causes.

Finding the why?

Once the data has been analyzed, it is time to incorporate root cause analysis tools, which are methods used to identify and solve a given problem and also help to add structure and intention to your efforts.

Data analysis is the practice of working with data to glean useful information. The more organized the data, the more likely you will be to identify all the root causes.

Two popular root cause analysis tools are the 5 Whys and the Fishbone.

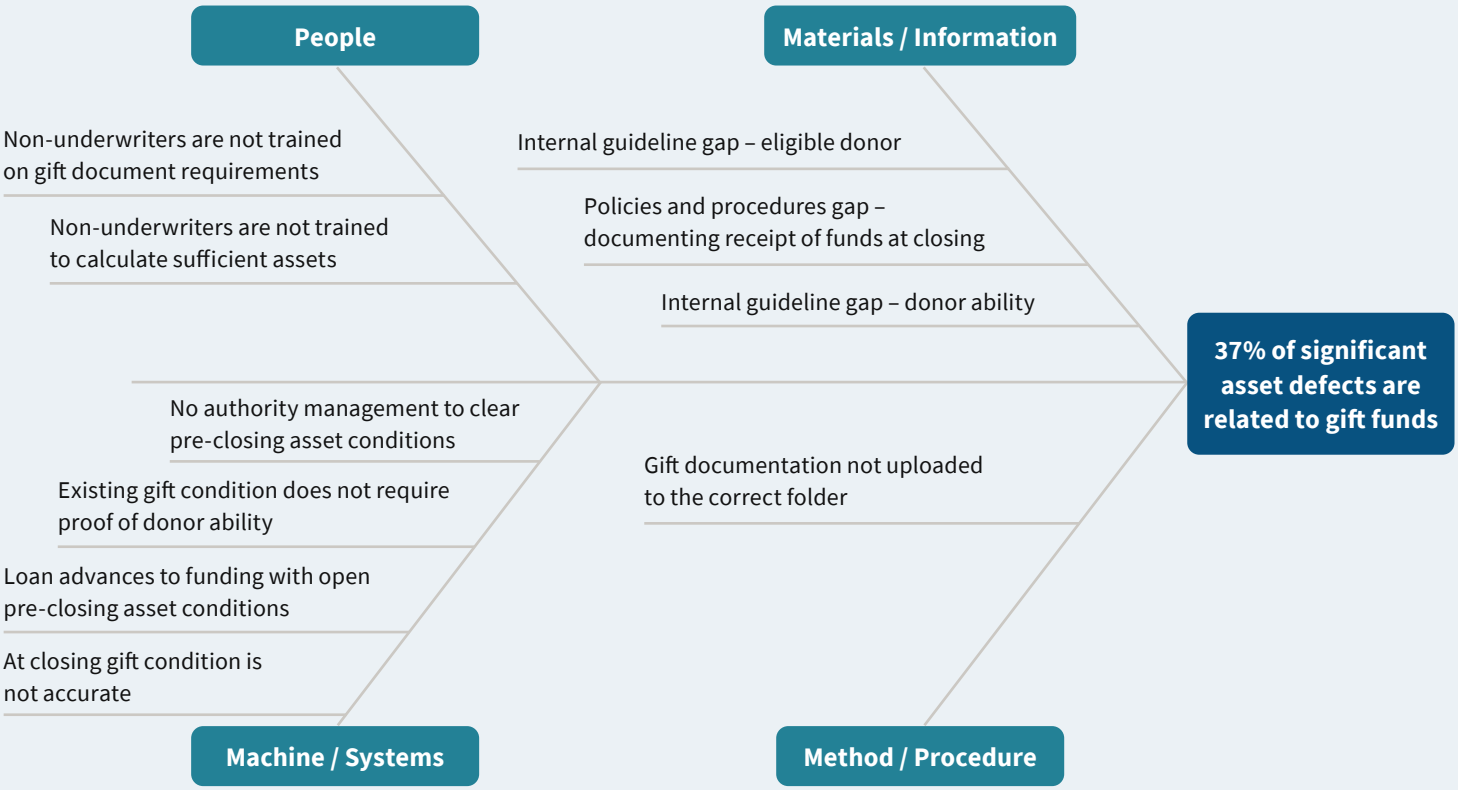


The 5 Whys problem-solving method is remarkably straightforward: when a problem occurs, you drill down to its root cause by asking "Why?" five times. Then, when a solution becomes apparent, you follow it through to prevent the issue from recurring. It's not uncommon to ask more than five "whys". Stopping too soon could prevent you from finding the true root cause. You may also end up with multiple series of "5 Whys".

Define the problem: Undisclosed debt is causing ineligible loans	
1	Why is it happening? **DTI is incorrect**
2	Why is that? **Not all liabilities are included in DTI at the time of funding**
3	Why is that? **Not all liabilities were open when the credit report was obtained**
4	Why didn't we know about the debt? **No inquiries on the credit report**
5	Why is that happening? **Credit report data is old**

A Fishbone is a cause-and-effect diagram that helps in brainstorming to identify possible causes of a problem (often used for more complex problems) and in sorting ideas into useful categories. The categories are people, information, systems, procedure.

Assess current state root cause(s)



It is common to identify multiple root causes for any given defect. The action plan template is a very effective method of organizing, prioritizing, and tracking multiple root causes through solution implementation.

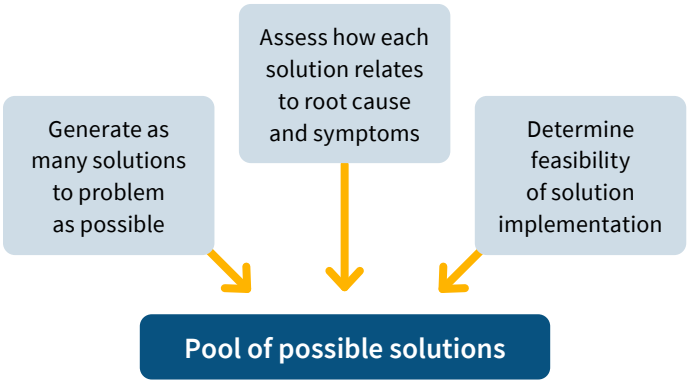
Stage 3: design solutions

The design stage of problem-solving has three phases:

1. develop potential solutions,
2. assess how each solution relates to the root cause(s), and
3. determine the feasibility of the solutions for prioritization and implementation.

Develop potential solutions

During the process of designing solutions, all business stakeholders and SMEs on the team should bring an open and creative mindset to the task. This is another opportunity for QC to engage as both an effective challenger and a thought leader. Each team member must focus on data gleaned from the current problem being solved. The current data and the root causes subsequently derived must be the basis for the possible solutions you design here. Resist the urge to fall back on prior control solutions developed for previous problems even if the problems were similar.



But there are a few things to keep in mind as you walk through this:

- *Include all involved stakeholders in generating possible solutions.* Have a diverse team. This stage works best with those with a more holistic view of the process generating the defects, like supervisors, mid-management, or technology. This does not mean SMEs cannot be a part of this step – let the problem and the process determine who is best for this exercise. The more diverse the group, the more likely they are to see something previously overlooked.
- *Find as many solutions to the problem as possible.* The best approach is to have a relaxed brainstorming session – make it fun! Avoid criticizing or rewarding ideas – this is not a competition. The objective is to open possibilities and break down incorrect assumptions about the problem. Encourage all participants to contribute fully - try to ensure everyone involved puts forth at least one solution. More options equal more potential for innovation.
- *Postpone evaluating solutions initially.* It is natural to end the brainstorming session once one or two promising ideas come forward, but you should be looking for the best solution. To find that, you need many options to pick from.

Assessing solutions to root causes

Once a robust pool of possible solutions has been created, compare each solution to the root cause(s) for the problem being solved. During the creative process of brainstorming, it is easy to have some solutions that do not line up with the root causes, which is ok.

Reintroducing the root causes after the brainstorming session allows for thoughtful consideration of whether each solution could effectively address the root cause of the problem. Remember, the root causes the team drafted are what is believed to be causing the problem. If a potential solution does not align with the root cause(s), it should be set aside but not discarded. This step is especially important for additional problem-solving in the future.

Determine solution feasibility

Solution feasibility is the last step in design solutions. This information is needed to prioritize desired solutions and gain stakeholder buy-in. Multiple factors can be considered in this analysis but these three are some of the most common:

- implementation time/effort,
- implementation costs, and
- dependencies.

Having the feasibility of each solution defined at this stage helps the team organize and identify solutions requiring temporary work-arounds due to delayed implementation. Any solution that will be delayed beyond an acceptable time limit must have a manual work-around implemented that can reduce defects until the ultimate solution is deployed.

For example, it is easy and low-cost to update policies and procedures, and conduct training, but unlikely to eliminate human error, so you may decide to add system hard stops. Since adding the system hard stops will take more effort (higher cost, higher effort, and policies and procedures dependent), a manual work-around to conduct processor/closer training in combination with creating a gift funds requirement checklist for closers (both low-cost and low effort) may be a great work-around to gain some quality lift while the system enhancements are being built.

Stage 4: establish and execute solutions

Prioritize solutions for implementation

Prioritize solutions aligned with your organization's overall quality and risk mitigation goals, which can be achieved by thoughtful consideration of the solutions identified and quantified feasibility of implementation and effectiveness.

Ensure solutions are appropriate based on the scope of the problem you are attempting to cure. This phase is a natural progression of the root cause analysis and solution design efforts you have completed so far, since much of the basis for solution prioritization is established as part of the solution design. Some guidelines to prioritize possible solutions include:

1. cost to implement
2. time to implement
3. effort to implement
    a. development effort
    b. operational effort
    c. implementation effort
4. sustainability

Gaining approval and buy-in from your collective problem-solving team is critical, since no one knows the process and the problems better than the SMEs and no one understands the big picture better than your stakeholders.

Establish an implementation plan

The goal of an implementation plan is to ensure that your team can answer who is responsible for what, when it is due, and how the solutions will be performed. In the simplest terms, it is the action plan that turns your solutions into concrete tasks. A well-designed implementation plan keeps everyone on track.

Before assigning an implementation date to your solution, consider all tasks that must be done to implement your solution. Determine which tasks can be completed concurrently and which tasks will have dependency on other tasks when developing your implementation plan. For optimum results, calculate the time required to complete individual tasks and the cumulative time needed to complete all tasks required to implement a solution.

Lastly, determine who will be responsible for what. Assigning responsibility for the solution is different than assigning responsibility for individual tasks. In most cases, two distinct groups will contribute to and have varying levels of responsibility for implementing a solution: action owners and stakeholders.

Action owners are responsible for completing tasks. When assigning action owners, match individuals with the necessary skill set required to complete the given task. Based on the solution's complexity, multiple tasks performed by various action owners may be needed to implement one solution.

Stakeholders are responsible for making sure that the action owners are on track to complete all tasks and the solution implementation time frame will be met. To ensure accountability, no more than one stakeholder should be assigned to a solution.

Track solutions in your action plan (template)

From the moment we defined the problem to solve to where we are right now, the determined root causes, defined solutions, assigned stakeholders, and key dates must be captured in the action plan template. Whether your organization utilizes Fannie Mae's action plan template or chooses your own design, ensure it sufficiently documents the stages, actions, responsible parties, and dates associated with the problem-solve process.

Fannie Mae offers an action plan template on our Loan Quality webpage for your reference.

1- DEFINE PROBLEM TO BE SOLVED							2 - ASSESS ROOT CAUSE(S)		3 - DESIGN SOLUTIONS			4 - ESTABLISH AND EXECUTE SOLUTIONS			
Issue Number	Define Problem	Priority	Status	Date Opened	Defects Observed		Root Cause		Area Responsible for Solution	Solution Owner(s)	Solution(s)	Priority	Status	Solution Implementation Target Date	Target Metric(s)
					Internal Reports	Investor Reports									
1	37% of significant asset defects are related to gift funds	High	In Progress	5/15/22	Yes	Yes	80% of the gift fund defects did not document the transfer at closing	Deficient staff training regarding new policies/procedure	Training Department	C.Brown	Training for all Closers/Funders	High	In Progress	7/10/22	100% of impacted staff attend training and pass a knowledge test with 95% accuracy
								Missing or vague at close conditions related to gift funds	Underwriting	B.T.Builder	Update "At Closing" Gift Fund condition to reflect updated requirements.	High	In Progress	8/1/22	Prefunding sample defect rate < 1% of all asset defects
								No checks in place to prevent loans from funding with open *At Close* conditions	Closing	M.Mouse	Second-level review to prevent loans from advancing until systemic control is active	High	In Progress	7/10/22	100% of at closing conditions cleared prior to funding
								No checks in place to prevent loans from funding with open *At Close* conditions	IT	D. Explorer	System enhancement to prevent loans from funding that contain open "At Closing" conditions	High	In Progress	8/1/22	100% of at closing conditions cleared prior to funding
							15% of the gift fund defects did not document donor ability	Processor cleared *At Close* condition without proper authority				Low	Not Started		
								Missing or vague at close conditions related to gift funds				Low	Not Started		
								Internal guideline gap regarding donor ability requirements				Low	Not Started		
							5% of the gift fund defects are due to ineligible gift donor	Internal guideline gap regarding eligible donor criteria				Low	Not Started		

Stage 5: test and evaluate solutions

Testing the performance of your solution(s) and evaluating the results of the test are critical elements of an effective problem-solving program. Without testing, it is difficult or impossible to understand what is working and what needs improvement. This stage is also important to monitor the process after implementing a solution to ensure no new problems emerge.

Effective problem-solvers create testing plans before implementing solutions. Testing plans establish the testing parameters, define success measures, and align resources where needed. Leveraging a testing plan will help you align your project goals with your strategic objectives and provide a clear way to track and communicate your progress and achievements.

Action items to consider including in your testing plan:

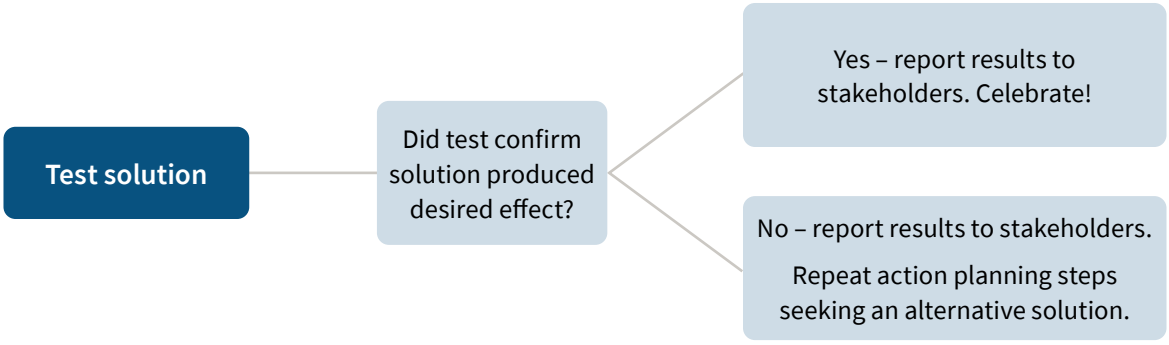
1. establish targets for determining success
2. define area(s) responsible for conducting the test
3. determine if the solution will require a pilot test or an in-production test
4. determine if a full-file review or component review is necessary
5. determine whether a new defect category or subcategory needs to be established
6. define the frequency and duration of the test
7. determine who will oversee the testing feedback loop
8. define when the results will be available
9. define who needs to receive the results

Success measures are another important part of this phase and offer visibility into whether our solution appears to be generating improvement. Measuring is simply the act or process of comparing objects or events with respect to a particular factor. Common measurements include time, money (cost or revenue), quality, satisfaction, productivity, and resources.

Loan manufacturing quality is typically measured by using a defect rate percentage. While we recommend establishing success metrics at the solution level, improved defect rates that are tied to your problem are the ultimate measure of success. Developing a target defect rate and aligning that target to your testing plan is foundational. Reduced defect rates may be an early indication a solution is working, but don't be lulled into a "set it and forget it" mentality; remain diligent in overseeing the progress of the solution by continuing to evaluate the results from the testing.

Monitoring is also an important step in our testing plan. Monitoring is the periodic assessment of activities related to our solution and is conducted to track the progress of the implemented solution. Monitoring can also be an early warning system that identifies, sooner rather than later, potential issues. After a solution has been reached and success measures have been established, it is important to evaluate the results to determine if the solution we implemented was the best possible solution to the problem.

What if your test doesn't resolve the issue? Problem-solving is also testing and learning, so if little or no progress is made toward reaching the goal, you shouldn't feel discouraged. If the solution doesn't appear to be working, it's simply time to reevaluate the approach. The solution may need a small adjustment. When solutions don't work as planned, review your data and alternative solutions and implement a new plan.



Stage 6: sustain and continuously improve

Continuous improvement

Improvement must be a constant part of our work. Having and maintaining a problem-solving discipline with fully documented action plans can deliver rewards every time you exercise it.

Culture is what makes organizations function in a certain way and comes from values set (who they are) to achieve its core mission (where they're going). These guiding values create a culture that directs employees' actions on a day-to-day basis. A strong corrective action culture is paramount for sustained success and is a priceless investment to navigate an ever-evolving environment. But an effective corrective action program doesn't occur organically and is not self-sustaining. Complete buy-in from leadership and management is necessary to build a culture where 'doing it right when no one is looking' is the standard.

The more your firm uses problem-solving discipline, the more everyone becomes familiar with the process, and the process becomes easier since everyone already knows what to expect.

Sustain

Once a solution has been implemented and tested, and has demonstrated sufficient improvement, it is critical to ensure the new improvement can be sustained. It would be nice to assume that tested solutions will always maintain their expected level of quality, but life happens — staff changes, volume fluctuates, and systems get updated. All these factors (and more) can disrupt your processes and may result in a departure from your newly established level of quality.

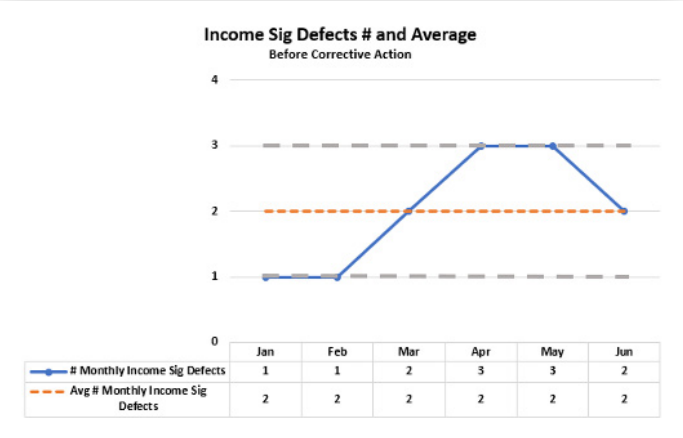
To prevent that from happening, you must implement a few safeguards to ensure you know how to control your new quality level, including:

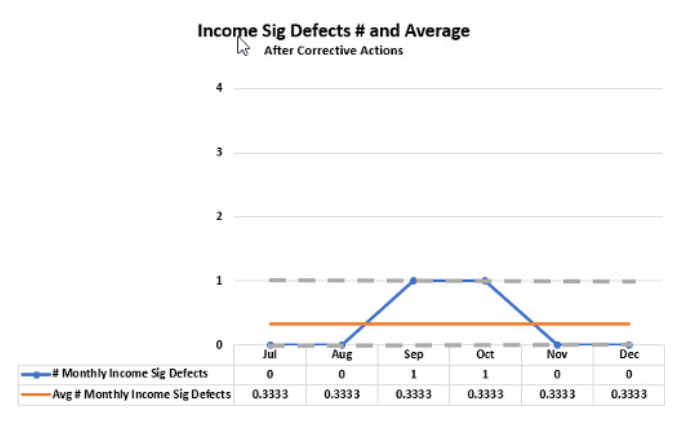
- create a method of monitoring for changes in quality,
- establish tolerances or thresholds that, when breached, trigger actions, and
- draft an escalation plan that identifies responsible parties and actions needed when breaches occur.

Monitor and control

To effectively monitor and control your new processes requires establishing acceptable ranges of quality metrics that will indicate when quality is deteriorating to a level requiring action. QC is generally focused on maintaining overall defect rates below target thresholds, which are typically expressed as a percentage (defect rate) of the population reviewed. This method works great because your company will already have target defect rates established by senior management. It is far less likely that lenders will have targets or thresholds defined at the category or subcategory level. If the problem being solved is for a specific type of defect, the overall target defect rate will not be sufficient to adequately monitor these defects. You must define a metric that will allow you to successfully monitor for the specific defect just solved. One method is to create control charts.

To effectively monitor and control your new processes requires establishing acceptable ranges of quality metrics that will indicate when quality is deteriorating to a level requiring action.





Control charts can be viewed as three-dimensional line graphs containing three data elements from charted occurrences over time:

1. The average (mean) number of occurrences over a period
2. The upper control limit, or threshold, representing the maximum range of expected defects
3. The lower control limit, or threshold, representing the minimum range of expected defects

The illustrations above show two graphs; one reflects the occurrence of defects prior to the problem-solve and the other reflects the occurrence of defects after the problem-solve. The graph on top shows that the defect occurrences ranged from 1 to 3 per month over a six-month period. The average number of defects during this time was 2 per month.

The upper and lower limits can be the highest and lowest number of monthly occurrences during that time. The output quality of the new process is now 0.33 or 1 every three months. The new control limits for this defect would be 1 and 0. Now that the control limits are known, you can consider what should be expected over time going forward. Since only 1 defect is expected every three months, one option would be to establish a control limit where any six-month period that shows more than two defects for this defect type requires the closing and underwriting managers to review the loans for process gaps or failures and report their findings to QC. That could be triggered by two defects in a month or one defect each month for three months. This control range would force review earlier if more defects are observed and later if fewer defects are observed.

Escalation plan

To keep quality within tolerance limits requires more than monitoring. An escalation plan must be in place to address the who, what, and when for taking corrective action in the event defects exceed expected levels. QC and the business will need to collaboratively complete this plan.

Things to consider are:

- Does one breach require action or does close monitoring take over until a predetermined number of breaches occurs?
- Who is tasked with monitoring: the business, prefunding, or post-closing QC?
- Who is responsible for launching action when the predetermined number of breaches occurs? Are multiple parties engaged in monitoring (e.g., the business and prefunding QC, or prefunding QC and post-closing QC)?
- Is the review process early enough to identify defects at or near the point of occurrence? The earlier process failures are discovered and addressed, the fewer loans will be at risk.

An escalation plan must be in place to address the who, what, and when for taking corrective action in the event defects exceed expected levels.

Ask yourself

- Does our QC program currently have a formal corrective action process that is kept up-to-date through periodic reviews and leverages the Fannie Mae action plan template?
- Are outstanding corrective action plans actively managed to drive remediation of observed defects, prevention of recurring defects, and reduction of repurchase risk?
- Do we have dedicated corrective action stakeholders from all key business groups?
- How effective are our root cause analysis practices?
- Do we routinely seek to obtain data from all three sources when finding the root cause?
- Could we benefit from the structure of a root cause analysis tool?
- Do we have the right people performing root cause analysis?
- Do we utilize a testing plan to support solution(s) testing?
- How effective are our testing plan practices?

- Do our QC reports reflect an increase in gross or net defects? If so, does our action planning strategy address the following:
  - Are timelines set to track when we expect to see improvements?
  - Has a responsible party for the actions been identified?
  - Do we retest a control after implementation?
- Was the solution that produced the desired level of quality the final solution or a temporary work-around?
  - If it was based on a temporary work-around, declaring the problem solved is premature. Sustained improvement is highly dependent on the sustainability of the solution. That means the solution used to achieve the improvement was a permanent solution and not a work-around.
- When an implemented solution does not fix the issue or yields less than expected progress, is it possible the fix compromised a process further down the manufacturing process? Consider how to watch for and capture those results.

Next steps

Effective corrective action is a key element in an organization's QC program, enabling lenders to improve their loan quality and maintain low defect rates. Your QC program is incomplete without a formal process for acting on your QC results.

Pablo Picasso once said, "Action is the foundational key to all success." So, no action means no success.

Resources

Selling Guide D1-1-01

Selling Guide D1-3-06

Fannie Mae Action Plan template

Loan Quality page

Fannie Mae®

Beyond the Guide

Section 8

QC in a Data-Driven Environment

Fannie Mae

Section 8

QC in a Data-Driven Environment

Selling Guide D1-3-03

Technology is transforming the financial world around us, and quality control (QC) must find ways to adapt to the transformed landscape. New terminology, methods, and even currency have become accepted, and being "data-driven" is a necessity.

Fannie Mae regularly surveys the market to better understand its changes. A 2018 survey of mortgage lenders' leadership revealed the primary objectives of investing in artificial intelligence/machine learning (AI/ML) were to improve operational efficiency and enhance consumer/borrower experience. That focus is wise since a 2021 homebuyer survey[1] revealed that 62% of homebuyers were *'Somewhat Interested'* or *'Very Interested'* in a more digital or fully digital mortgage process. To compete and stay profitable, mortgage lenders must adapt and transform their way of working. In the past decade, many elements of the mortgage manufacturing process have become partially or fully automated.

Task		Technology solution
Document management	→	Scanners, optical character recognition (OCR) including AI/ML
Loan application data entry	→	Web-based e-forms that consumers complete
Executing disclosures, notes, and deeds of trust	→	Secure e-sign and e-note technology
Employment and income verification	→	Automated underwriting system (AUS) validation of income/employment data direct from source
Income processing and analysis	→	Income analysis software with upload and integration capability
Asset verification and payment calculations	→	Vendor and AUS software with AI that obtains and calculates sufficiency of assets to close and recurring payments for rent and other debts
Collateral risk management	→	Leverage standardized appraisal data (based on the Uniform Appraisal Dataset) to enable risk-based, data-centric approaches to real estate appraisals as well as reporting available in Collateral Underwriter® (CU®), like CU Risk Score, CU Risk Flags, and CU Messages, to understand your current pipeline risk.

These advances continue to improve methods of doing business and introduce new ways to think about loan manufacturing quality.

[1] National Housing Survey: COVID-19, Mortgage Digitization, and Borrower Satisfaction Q12021

Current state

QC testing is still performed largely to test physical or scanned copies of paper files. Through manual reverifications and reviews, QC is designed to ensure the AUS data is accurate and valid, and that the information relied upon for the loan decision is factual.

Future state

QC needs to evolve as industry practices do. QC testing should add new methods of testing data to traditional reverification practices as more loan data is received digitally from new and increasing sources. Caution should be used to ensure we are not lulled into assuming that because data is obtained electronically it meets the needs or expectations for data accuracy. QC should constantly evolve to test new risks, which includes understanding the accuracy and reliability of information that is digitally sourced. Once accuracy and reliability of new data sources are confirmed, data aggregation and data scanning techniques will allow for richer exception-based sampling. This enables a stronger ability to detect defects.

Data integrity

As more of the mortgage process migrates toward digital solutions, managing and testing data integrity becomes more critical to loan quality and QC processes. Before testing can occur, QC sampling processes rely on the lender origination loan data (e.g., loan product, purpose, channel, etc.) to ensure accurate sampling for post-closing reviews.

QC should constantly evolve to test new risks, which includes understanding the accuracy and reliability of information that is digitally sourced.

Data gaps or inaccuracies can cause insufficient sampling, resulting in adjusted testing, reporting, and investor noncompliance. An important part of the QC review is checking data integrity, which focuses primarily on confirming the correct information was entered into Desktop Underwriter® (DU®). As more digital solutions – like Fannie Mae's DU validation service – are introduced to the loan origination process, QC must reexamine what checking data integrity encompasses. The more data that is delivered via intermediary sources, the more opportunity exists for variation within the data.

Lenders with a high level of confidence in the accuracy of their data can feel comfortable that the testing and reporting based on that data is a true and accurate reflection of their risks and opportunities. For QC managers, understanding your organizations' loan data integrity confidence is critical to understanding data-quality risks and how to appropriately test for them.

Finding data

Lenders collect and house more loan data than ever before. Since much of it is standardized under the Uniform Mortgage Data Program® (UMDP), it can be used to help QC explore new methods of leveraging currently stored data to enhance overall loan quality. Having access to more data can provide a view of:

- patterns of activity between loan parties not visible from the loan-level view
- data discrepancies between segmented departments like origination, delivery, and servicing
- data that is inconsistent with expected results
- how data quality impacts costs

Since current and future technology systems are highly dependent on accurate data, the value of leveraging this stored data is contingent on its accuracy and standardization. QC practitioners must continue to increase and broaden their understanding of how data is obtained and stored so that testing keeps pace with the true sources of all data and how it impacts QC.

Leveraging stored data from third-party sources such as digital income/employment vendor reports is an excellent example of data that provides insight into loan manufacturing data accuracy and integrity. Study the linked materials in the Resources section to understand what standardized loan data is currently required of lenders delivering loans to Fannie Mae.

Internal data standardization

Data standardization is about making sure that data is internally consistent. This means each data type has the same label, format, and meaning. The implementation of UMDP streamlined data standardization for the mortgage industry, but lenders should be highly motivated to find more ways to standardize as much of their data as possible. Standardized values help track data that is not easy to compare. When the same address is formatted differently – such as 123 North Maple Street versus 123 N. Maple St. – this one data point becomes two. If property addresses are standardized by using a single source of truth when populating data into the origination system (e.g., U.S. Postal Service or title data), the advantages of standardized values become evident. Investing resources into the data standardization process provides benefits such as:

- Systematically testing origination files for compliance against established guidelines.
- Identifying correlations between the manufacturing loan quality of various new credit policies and the pricing implications.
- In conjunction with fraud detection software, identifying bad actors in transactions and stopping impacted loans from closing before human review.

These are only a fraction of the benefits of expanding data standardization beyond the industry minimum requirements established by UMDP.

QC's role in data integrity

QC's role in managing data integrity should be to identify instances and root causes of data discrepancies within the scope of QC's activities and to help the organization develop plans to mitigate or eliminate those discrepancies. A good example of new data sources that may need testing is digital third-party income/employment/asset reports. As lenders search for ways to gain efficiency while maintaining accuracy, management is more likely to expand their use of digital solutions. QC's testing methodology must evolve to identify potential types of new deficiencies that may not be visible on flat documents and to help create ways to remediate those deficiencies and underlying issues. This requires understanding the various considerations of digital source data used today.

QC and DU validation services

An excellent example of the balance between digital solutions and current state QC testing is DU validation services. Lenders that opt in to use the services may be relieved of certain QC requirements, which can result in reduced costs and improved efficiencies. It is important to note that lenders always remain fully responsible for reviewing the whole file and reconciling any contradictory or conflicting information. What does contradictory or conflicting information look like? Consider these examples that QC can identify:

- Output from data analysis tools conflicts with vendor employment or income report.
- Automated Clearing House payroll deposits on bank statements or vendor asset reports do not align with a report (such as from The Work Number) used by DU for income validation or paystubs in the loan file.

These examples help highlight when discrepancies are driven by information the system cannot read or assess versus actual data discrepancies. Day 1 Certainty® resources include eLearning examples, useful insights, and training.

Using QC data

Digital solutions and their potential efficiencies aren't exclusive to loan production or the consumer experience. QC must consider ways to leverage the digital environment and stored data to increase QC process efficiencies, identify quality issues more effectively, and reduce costs by managing and analyzing loan data in new ways. In recent years, increased use of Fannie Mae's standardized data sources has surfaced new benefits to lenders, such as:

- lenders using the DU validation service could see a reduction of some reverification costs, and
- decreased need for field reviews as a result of implementing strong collateral risk assessment practices.

These benefits are specific to Fannie Mae, but how can lenders find other ways to use QC data with their own resources and data?

Aggregate the data

Each lender houses volumes of loan data that may be stored and managed in various areas of an organization. Because most closed loan data must be standardized, aggregating the origination and QC data into a single location (database or spreadsheet) creates a powerful resource for identifying and assessing known and unknown risks. If you can supplement this data with investor reviews and their results, that resource becomes even richer.

Build rules

Leverage known risks such as common defects or layered credit risks to build rules to search the data for loans with similar attributes. Once identified, these loans can be tested sooner and more strategically to better identify loans with higher risks. This focuses limited QC resources on loans with the highest likelihood of having defects.

Leverage current tools to inform sampling

If OCR software with data scraping (text extraction) is currently used in operations or document management, consider repurposing the software for QC as a method of increasing confidence in loan data and targeted discretionary sampling, like this example:

- Run 100% of each month's loan production through OCR software to find loans containing both a verification of income and a borrower paystub. Use data scraping to capture the income amounts from both documents.
- Transfer the captured data to a calculator that reconciles the captured income amounts. Loans with discrepancies can be reviewed as part of a QC targeted component review.
- Loans run through the calculator without a discrepancy might be reported as having a higher income confidence level. As an added benefit, this process can measure the effectiveness of the OCR/data scraping software.

Design processes to address outliers

As rules are designed to sort loans more strategically for targeted sampling, specific methods of reviewing and testing can be designed to improve the effectiveness and efficiency of the targeted QC reviews.

QC must consider ways to leverage the digital environment and stored data to increase QC process efficiencies, identify quality issues more effectively, and reduce costs by managing and analyzing loan data in new ways.

Increase QC digital awareness

Numerous free resources exist that can help expand QC's understanding of the evolving digital market and how data analysis methods can be streamlined through more efficient ways of using readily available tools such as Excel and Power BI. Learning to use these tools can increase efficiency of analysis and reporting. Consider these methods:

- YouTube – search for Excel or Power BI training. Nearly all are free, and many can be completed in 30 minutes or less.
- Microsoft – offers free training for both Excel and Power BI.
- Industry publications – online mortgage publications and blogs can provide insight on new and emerging digital trends.
- Encourage staff to be curious – QC managers can create a constant learning environment by having each employee demonstrate a new technology skill or topic monthly or quarterly that is shared with the team as a part of employee goals.
- Fannie Mae's Loan Quality page – contains links to training, FAQs, and other resources that can expand knowledge and insight on navigating a digitized QC landscape.

Data-driven QC

A data-driven QC department maintains a focus on precision to identify and avoid current and future quality issues. QC should capture all available data, not just the data we use today. It has the power to inform business decisions by using data for continuous improvement. Data-driven insight helps inform action plans to reduce current defect levels and can also help identify QC opportunities when changes are on the horizon.

Data-driven insight helps inform action plans to reduce current defect levels and can also help identify QC opportunities when changes are on the horizon.

Resources

2018 survey "How Will Artificial Intelligence Shape Mortgage Lending?"

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Uniform Mortgage Data Program (UMDP)

Uniform Loan Delivery Dataset (ULDD)

Uniform Residential Loan Application (Form 1003)

Uniform Closing Dataset

Uniform Appraisal Dataset (UAD)

2022 Appraisal Modernization Article

Desktop Underwriter Validation Service

Day 1 Certainty resources

Loan Quality page