Recommendations & Implementation Strategies

Safe Use of Copy and Paste
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Acknowledgments

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Introduction

Copy and paste is not unique to a particular electronic health record (EHR) or software program, but is a function of the operating system, making the functionality both readily available and its use often difficult to limit. Copy and paste activities include those such as copying and pasting admission information, imaging study reports, or lab values from one location into another location. While there are benefits for the use of copy and paste (e.g., time-saving efficiencies, improved tracking of multiple problems for complex patients, continuity of medical decision making, completeness of documentation, and reduced transcription errors), its existence has also resulted in safety risks (e.g., propagation of inaccurate, inconsistent, outdated, irrelevant, or incorrect information; authorship questions; redundant information; diagnostic bias; excessively long and overwhelming notes; and regulatory concerns).

The Partnership for Health IT Patient Safety used data from safety events involving copy and paste, examined evidence-based literature, and looked at the ways technologies enable the reuse of information in producing the safe practice recommendations herein.

Overview

The implementation strategies emphasized by the safe practices are intended as a resource for developers of EHRs, clinicians, healthcare organizations, professional organizations, and other relevant stakeholders. The recommendations strive to allow providers the opportunity to evaluate the best ways to ensure safety when information is being copy and pasted.

This implementation guide reflects the recognition that some of the recommendations will take time to implement, particularly those that require technology changes.

Following the release of the Partnership’s Safe Practicing Recommendations, the National Institute of Standards and Technology conducted usability testing of those recommendations and in 2017 released NISTIR 8166: Examining the ‘Copy and Paste’ Function in the Use of Electronic Health Records, which provides support for recommendations with human factor components. Vendors and providers have worked to use these recommendations to improve the safe use of copy and paste.
Recommendations

Provide a mechanism to make copy and paste material easily identifiable

Ensure that the provenance of copy and paste material is readily available

Ensure adequate staff training and education regarding the appropriate and safe use of copy and paste

Ensure that copy and paste practices are regularly monitored, measured, and assessed

These safe practice recommendations were developed by the Partnership’s multidisciplinary collaboration looking at available evidence, reviewing data, and understanding available technologies in order to mitigate the patient safety risks that can occur when information is copied and pasted. The listed recommendations provide rationale and suggested implementation strategies for all stakeholders.

You can reference prior work on our website.
Provide a mechanism to make copy and paste materials easily identifiable

Rationale: Information that is copied should be easily identifiable to verify its accuracy and to facilitate review for edits.

What is technology's role?
For technology to enable safer use of copy and paste, it needs to leverage and optimize health information technology (IT) so copied and pasted material is easily identifiable.

What can stakeholders do?
Stakeholders can provide input to vendors about the types of information that are frequently copied to determine if there are alternative ways to reuse information. Organizations can create policy and procedures to identify areas that should be locked from copying (e.g., signature block of a completed note into a new note) and monitor for compliance. Having copy and paste actions easily identifiable will facilitate review and editing of copied text, minimizing the risk of including inaccurate or incorrect information.

How can this be done?
- Make copied material easily identifiable:
  - Use technology tools (e.g., information visible in a split screen, visible when hovering, appearing in a different format, distinct from newly created content)
  - Identify new ways to reuse information
Table 1. Provide a Mechanism to Make Copy and Paste Material Easily Identifiable

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHR developers</td>
<td>▪ Make technology available to enable visibility of copied information</td>
</tr>
<tr>
<td></td>
<td>▪ Identify and develop alternatives to certain uses of copying</td>
</tr>
<tr>
<td></td>
<td>▪ Conduct usability testing</td>
</tr>
<tr>
<td>Clinicians</td>
<td>▪ Abide by policies and procedures for documentation and reuse of information</td>
</tr>
<tr>
<td></td>
<td>▪ Provide input to vendors about the various ways of using copied information</td>
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<td></td>
<td>▪ Verify accuracy of copied information regardless of the source</td>
</tr>
<tr>
<td></td>
<td>▪ Strive for brevity (no unnecessary use of copied material)</td>
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<tr>
<td></td>
<td>▪ Acknowledge the original source of information</td>
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<tr>
<td></td>
<td>▪ Conduct usability testing</td>
</tr>
<tr>
<td>Healthcare organizations</td>
<td>▪ Educate and train on recommended practices</td>
</tr>
<tr>
<td></td>
<td>▪ Identify and enforce policies and procedures</td>
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<tr>
<td></td>
<td>▪ Enable copied information to be readily recognized as copied</td>
</tr>
<tr>
<td></td>
<td>▪ Monitor and track the use of copied and pasted information</td>
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<td></td>
<td>▪ Discuss alternatives to copying with all stakeholders</td>
</tr>
</tbody>
</table>

Human factor recommendations provided by the National Institute for Safety and Technology in NISTIR 8166

▪ EHR systems should enhance the visibility of information being selected to minimize the possibility of incomplete copying (truncation)
▪ EHRs should have a provision for efficient editing of copied and pasted materials
▪ Users should properly review and edit all of the information they have copied and pasted
▪ Never copy blood bank information
▪ Never copy and paste demographic information within the chart or outside of the EHR platform
▪ Never copy and paste dates or signatures
Ensure that the provenance of copy and paste material is readily available

**Rationale:** Knowing the source, context, author, time, and date from which the source information was copied (provenance) is important in ensuring the accuracy, reliability, and timeliness of information that will be used to make clinical decisions. Relying on information that is inaccurate, out of date, or from an unintended source (e.g., copied and pasted information from another patient) negatively impacts care and safety.

**What is technology’s role?**

Technology can be optimized to allow for the provenance of the copied and pasted material to be readily available to help ensure providers are aware of authorship and when and where information originates.

**What can stakeholders do?**

Stakeholders can use care when copying and pasting information; acknowledging and updating information as needed to ensure accuracy, applicability, reliability, and timeliness. Careful selection of information to be copied will ensure brevity and accuracy of the documentation.

**How can this be done?**

- Make technology available to track the original source of the copied information (e.g., source window, hover features)
- Identify alternatives for the reuse of relevant information
### Table 2. Ensure That the Provenance of Copy and Paste Material is Readily Available

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>EHR developers</td>
<td>▪ Make technology available to track the original source of copied information, including the original author, date, time, and source</td>
</tr>
<tr>
<td></td>
<td>▪ Identify alternatives for the reuse of relevant information</td>
</tr>
<tr>
<td></td>
<td>▪ Enable easy review of copied information</td>
</tr>
<tr>
<td>Clinicians</td>
<td>▪ Verify that the information copied is accurate, timely, appropriate, and essential</td>
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<tr>
<td></td>
<td>▪ Determine if copied material will need to be edited in the context of the current use</td>
</tr>
<tr>
<td></td>
<td>▪ Appropriately select information to copy to ensure brevity, accuracy, and compliance with regulations and requirements</td>
</tr>
<tr>
<td>Healthcare organizations</td>
<td>▪ Monitor the use of copy and paste to facilitate compliance with regulations and other requirements</td>
</tr>
</tbody>
</table>

**Human factor recommendations provided by the National Institute for Safety and Technology in NISTIR 8166²**

- User interfaces must display a clear chain of custody indicating the exact source of the information. This information should not be displayed by default; it should be available on user demand
Ensure adequate staff training and education regarding the appropriate and safe use of copy and paste

**Rationale:** Providers are responsible for the content and accuracy of documentation. Improper use of copy and paste information can jeopardize patient safety, causing inaccurate, inappropriate, or outdated information to be used in clinical decision making. Training regarding the use of copy and paste should include information about the patient safety risks and benefits and should discuss compliance with all regulatory, legal, and compliance guidelines.

**What is technology’s role?**
Technology facilitates the ready reuse of previously documented information. Staff need to be trained and receive updated training on an ongoing basis to ensure awareness of the risk and benefits and impact on patient safety.

**What can stakeholders do?**
Competency-based, hands-on training upon hire and on a regular basis, or when new technology becomes available, will facilitate safe reuse of information. Regular feedback to those using this functionality can mitigate risks and ensure compliance with regulatory requirements.

**How can this be done?**
- Provide regular training
- Monitor the use of copied materials and feedback
- Provide training and instruction to users to “act with volition”—identifying what was intended to be copied and determining that the copied material is complete and accurate
- Use alternatives to copy and paste for the reuse of information
### Table 3. Ensure Adequate Staff Training and Education Regarding the Appropriate and Safe Use of Copy and Paste

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Requirements</th>
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</thead>
<tbody>
<tr>
<td>EHR developers</td>
<td>- Identify additional methods for the accurate reuse of information</td>
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<tr>
<td></td>
<td>- Provide information about safe ways or alternatives to copy and paste within the system</td>
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<tr>
<td></td>
<td>- Enable copied information to be easily updated</td>
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<tr>
<td>Clinicians</td>
<td>- Participate in training and regular updates to identify safe uses of copy and paste</td>
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<tr>
<td></td>
<td>- Learn about alternative methods for the reuse of information, and the safe use of any new technologies that become available</td>
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<tr>
<td>Healthcare organizations</td>
<td>- Ensure that staff receive the appropriate training and updates on the safe uses of copy and paste</td>
</tr>
<tr>
<td></td>
<td>- Identify and provide alternative methods for the reuse of information</td>
</tr>
<tr>
<td></td>
<td>- Explain and ensure compliance with regulatory and billing requirements related to copy and paste</td>
</tr>
</tbody>
</table>
Ensure that copy and paste practices are regularly monitored, measured, and assessed

**Rationale:** Monitoring the copy and paste functionality ensures the integrity of the clinical record, the quality and safety of the care rendered, and compliance with state and federal regulations.

**What is technology’s role?**

To improve safety, the copy and paste functionality needs to be regularly monitored, measured, and assessed. This will provide insight into the frequency of the use of the functionality and may encourage the development of alternatives for the reuse of information.

**What can stakeholders do?**

It is important to recognize how the copy and paste functionality is used. Create an audit policy and tool, monitor the use of copy and paste, and report findings to facilitate this understanding.

**How can this be done?**

- Identify what type of data will be tracked
- Identify a tracking log for copied material
- Identify any restrictions on who is able to see copied information
- Provide new opportunities for interoperability, negating the need to rely on copied information
- Determine if there should be a time limit on the ability to see copied information
- Identify a governance and feedback process
Table 4. Ensure That Copy and Paste Practices are Regularly Monitored, Measured, and Assessed

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Requirements</th>
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</thead>
<tbody>
<tr>
<td>EHR developers</td>
<td>- Identify methods to track copy and paste usage</td>
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<td>- Identify monitoring tools to determine if recommended practices are viable and appropriate</td>
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<tr>
<td></td>
<td>to achieve the identified goals</td>
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<tr>
<td></td>
<td>- Identify ways to make systems interoperable so that information flows and there is decreased</td>
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<tr>
<td></td>
<td>need to copy and paste information</td>
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<tr>
<td>Clinicians</td>
<td>- Use the copy functionality appropriately to achieve the benefits of copying and pasting,</td>
</tr>
<tr>
<td></td>
<td>and to minimize the risks and patient safety concerns</td>
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<tr>
<td></td>
<td>- Verify that correct information has been copied and pasted</td>
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<tr>
<td></td>
<td>- Update copied and pasted materials as necessary</td>
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<tr>
<td></td>
<td>- Review audit materials and assess self-performance</td>
</tr>
<tr>
<td>Healthcare organizations</td>
<td>- Track copy and paste activity</td>
</tr>
<tr>
<td></td>
<td>- Identify policies to discourage inappropriate use of copy and paste</td>
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<tr>
<td></td>
<td>- Identify areas in which copy and paste is frequently used and determine if alternatives exist</td>
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<tr>
<td></td>
<td>- Continue to identify alternatives for the reuse of information</td>
</tr>
<tr>
<td></td>
<td>- Monitor copy and paste activities, review audits and assess performance and provide feedback to staff</td>
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</table>
Summary

The following are additional considerations derived from human factor evaluation. These recommendations were provided by the National Institute for Safety and Technology following usability testing and application of use cases related to the Partnership’s safe practice recommendations. They observed that:

- Copying and pasting a medication with its dosing is much safer compared to selecting a medication from a dropdown menu, but copying and pasting new medication orders should be discouraged.
- Copying and pasting in a discharge summary often increases efficiency and efficacy.
- Time-stamping vital signs and including the time when the vital signs were measured, documented, signed, revised, or retrieved can help ensure the information’s relevance.
- Copying and pasting may ensure that the reused information is exact, but it is essential to review and edit extracted information to ensure that only the essential information is repeated.
- Using a mechanism to orient providers to the appropriate record will facilitate accurate reuse of information.

Conclusion

This implementation guide contains four safe practice recommendations for the safe use of copy and paste and is directed to all stakeholders including EHR developers, clinicians, healthcare organizations, professional organizations, and other relevant stakeholders. The recommendations and the NIST supplemental items identified during usability testing of the Partnership’s recommendations aim to minimize patient safety risks associated with the use of copy and paste; they do not aim to eliminate the practice or negate its benefits. Several of the recommendations contained within this guide have been implemented by EHR developers and organizations alike, but additional work remains. You can access the full complement of materials at hitsafety.org or at www.ecri.org/safepractices.
References


About ECRI Institute and the Partnership for Health IT Patient Safety

ECRI Institute is an independent, nonprofit organization improving the safety, quality, and cost effectiveness of care across all healthcare settings. The combination of evidence-based research, medical device testing, and knowledge of patient safety makes ECRI uniquely respected by healthcare leaders and agencies worldwide. For more than 50 years, ECRI Institute has had an unwavering dedication to transparency and strict conflict-of-interest policies. The organization has earned a reputation as the trusted voice of unbiased, research-based assurance for tens of thousands of members around the world using its solutions to minimize risk and improve patient care.

ECRI Institute has the only medical device testing labs in North America and the Asia Pacific where engineers conduct hands-on independent device testing for safety and human factors usability. ECRI Institute is designated an Evidence-based Practice Center by the U.S. Agency for Healthcare Research and Quality. ECRI Institute PSO is listed as a federally certified Patient Safety Organization by the U.S. Department of Health and Human Services. Visit ecri.org and follow @ECRI_Institute to learn more.

In 2013, ECRI Institute convened the Partnership for Health IT Patient Safety (Partnership), in part because of ECRI Institute’s long history of cutting-edge patient safety initiatives, and in part, in response to the growth in recognition that action was needed not only to fully realize the benefits of health information technology, but to involve the appropriate parties in the identification, classification, aggregation, analysis, and development of solutions to the ever-increasing concerns attributed to health information technology. The Partnership was established to make healthcare safer by understanding and mitigating health IT hazards and safety events. For more information on the Partnership, please visit our website.