

WAREHOUSE INFORMATION SYSTEM ASSESSMENT

Management Sciences for Health

A multiple-choice, self-evaluation questionnaire and analysis guidelines designed to help determine the appropriateness of computerizing a health facility warehouse.

Objectives

This form is designed to help managers:

- assess the usefulness and feasibility of computerizing the warehouse in question
- identify the minimum management system requirements necessary for computerization.

If technical assistance is desired to help improve the logistics management information system and implement a computerized system, this form helps MSH:

- determine the criteria for selecting a software, if computerization is indicated;
- plan for visit to conduct a complete assessment and implement the selected software (determining the system improvements required prior to computerization, determining which departments would need to be available for training, whether any equipment is needed, etc.).

Use of Questionnaire

1. A *logistics consultant or manager within the organization* should meet with the warehouse staff and other implicated personnel to gather the necessary information.
2. Please fill in responses in the right-hand column. In most cases, simply check the appropriate option; sometimes you will need to write in a number or provide specific information.
3. Consult the analysis guidelines to determine if computerization would be useful or feasible, and to identify key management system requirements.
4. If you are interested in receiving technical assistance related to your logistics, MSH will conduct an in-depth assessment, including information flows, coding structures, form design, and reporting needs. Return the completed form to:

The Information for Management Program (INFORM)

Management Sciences for Health

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E-mail: mis@msh.org

URL: <http://www.msh.org>

WAREHOUSE INFORMATION SYSTEM ASSESSMENT

PERSONAL/CONTACT INFORMATION

Your name: _____

Your title: _____

Department: _____

Organization: _____

Street address: _____

City: _____

Country: _____

Telephone: _____

Fax: _____ E-mail: _____

How did you receive this form:

- A. _____ MSH print material.
- B. _____ MSH Web site.
- C. _____ MSH staff member or consultant.
- D. _____ Consultant (non-MSH).
- E. _____ Ministry of Health.
- F. _____ USAID.
- G. _____ WHO/PAHO.
- H. _____ Other (*specify*) _____

GENERAL INFORMATION ABOUT YOUR ORGANIZATION/PROGRAM

	<i>Check or answer each question:</i>
G1. What type of organization are you representing?	A. _____ Governmental. B. _____ Non-governmental.
G2. Which of the following best describes the focus of the organization you represent?	A. _____ Essential drugs. B. _____ Family planning. C. _____ Immunization (EPI). D. _____ MCH/FP. E. _____ Medical or integrated health services (including hospital). F. _____ Other (<i>specify</i>) _____
G3. Which of the following best describes your position in the organization?	A. _____ Member of the organization's senior management. B. _____ Manager of a department or program. C. _____ Manager of the warehouse. D. _____ Consultant. E. _____ Other (<i>specify</i>) _____
G4. Is there support from the organization's senior management for computerizing the warehouse?	A. _____ Yes, senior management is interested in computerizing the warehouse. B. _____ Senior management has not yet been consulted. C. _____ Other (<i>specify</i>) _____
G5. At which level of the organization are you interested in computerizing the warehouse function?	A. _____ National (including Central Medical Store) / NGO headquarters. B. _____ Regional or provincial level / NGO branch. C. _____ District level / hospital or clinic. D. _____ More than one level.

NOTE: This assessment form uses the term “product” to refer to all supplies or commodities managed by the organization, department, or store. In responding to questions about “products,” please consider both consumables and any equipment or other items that may be processed through the warehouse and would need to be computerized.

INFORMATION ABOUT YOUR STOCK

<p>S1. Does the warehouse wish to computerize the tracking of consumables/expendables in the warehouse only, or does it wish to track assets (especially equipment and vehicles) distributed to lower levels as well?</p>	<p>A. _____ Consumables/expendables only. B. _____ Consumables/expendables and equipment and/or vehicles.</p>
<p>S2. Into how many categories (e.g., essential drugs, contraceptives, educational materials) does the warehouse group its products?</p>	<p>A. _____ More than 50 categories of products. B. _____ 20-49. C. _____ 1-19. D. _____ Does not group products by type or category.</p>
<p>S3. How many products does the warehouse manage?</p>	<p>_____ Approximate number of products.</p>
<p>S4. For each product, does the warehouse use the same unit size during the procurement, receiving, and shipping stages? (E.g., if a product is procured by the carton, is it distributed by the carton rather than by the piece?)</p>	<p>A. _____ Yes, the unit size used to procure a product is the same as the unit size used in shipping the product out. B. _____ No, products may be procured by the carton (for example) but distributed in cycles or vials (for example).</p>
<p>S5. Does the warehouse try to keep all products on hand, or does it obtain products only on demand?</p>	<p>A. _____ Maintains stock of all products. B. _____ Maintains stock of some products, but obtains other products on demand. C. _____ Does not keep stock on hand, but obtains everything upon demand.</p>
<p>S6. Does the warehouse use a maximum/minimum system for monitoring stock levels?</p>	<p>A. _____ Maximum/minimum stock levels have been set and are monitored. B. _____ Max/min stock levels have been set but are not monitored. C. _____ No max/min stock levels have been set.</p>

S7. Does the warehouse distribute stock based on first-expiring, first-out (FEFO) / first-in, first-out (FIFO)?	A. _____ Yes, FEFO/FIFO is observed. B. _____ No, FEFO/FIFO is not observed.
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INFORMATION ABOUT YOUR PROCUREMENT PROCESS

P1. What is the warehouse's responsibility for the tendering process (competitive bidding)?	A. _____ There is no competitive bidding. B. _____ The warehouse manages the tendering process alone. C. _____ The warehouse manages the tendering process together with another department (<i>specify</i>): _____ D. _____ Another department is responsible for tendering (<i>specify</i>): _____
P2. Does procurement take place on a regular, scheduled basis, or <i>ad hoc</i> ?	A. _____ Procurement takes place on a scheduled basis (e.g., annually, quarterly). B. _____ Procurement is <i>ad hoc</i> .
P3. Approximately how many procurements were there last year? (Refer to number of purchase orders.)	_____ Number of purchase orders last year.
P4. How many suppliers does the warehouse use for procurement of products (not services)?	_____ Approximate number of suppliers.
P5. Does the warehouse treat different types of suppliers (e.g., local manufacturers, local retailers, foreign suppliers) differently (e.g., paying different rates and fees)?	A. _____ Yes, different types of suppliers are treated differently. <i>Explain:</i> _____ _____ _____ _____ B. _____ No, all types of suppliers are treated in the same way.

INFORMATION ABOUT RECEIVING

R1. How many shipments were received last year?	_____ Approximate number of shipments received last year.
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R2. Approximately how many times per year are donations received?	_____ Average number of times stock is donated in a year.
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INFORMATION ABOUT MANAGEMENT

M1. Does the warehouse record stock by lot?	A. _____ Yes, lot numbers are recorded. B. _____ No, lot numbers are not recorded.
M2. How does the warehouse keep track of quantities on hand of each product?	A. _____ Bin cards. B. _____ Ledgers. C. _____ Spreadsheet. D. _____ Database. E. _____ Combination of these options F. _____ Other option (<i>specify</i>) _____
M3. Does the warehouse record the location of each product and lot (e.g., by room and shelf)?	A. _____ Yes, location is recorded. B. _____ No, location is not recorded.
M4. Please provide information on the warehouse's physical inventory process, if any.	A. Frequency of physical inventory (if irregular, write N/A): _____ B. Date of last physical inventory report (month, year): ____/____ C. _____ No physical inventory report exists for the past two years.

INFORMATION ABOUT SHIPPING (DISTRIBUTION) PROCESS

D1. Does the warehouse ship products to facilities on a "push" or "pull" basis?	A. _____ Push system (the warehouse decides what and when to send to facilities). B. _____ Pull system (lower levels place orders with the warehouse).
D2. Does distribution to facilities take place on a regular, scheduled basis, or <i>ad hoc</i> ?	A. _____ Shipments to facilities are scheduled (e.g., annually, quarterly). B. _____ Shipments to facilities are <i>ad hoc</i> .
D3. Approximately how many shipments did the warehouse make last year? (Refer to number of store issues, invoices, or requisitions.)	_____ Number of store issues last year.
D4. How many facilities are supplied by the warehouse?	_____ Approximate number of facilities.

<p>D5. Does the warehouse treat different types of facilities differently? (For example, do NGOs pay different rates than hospitals do? Are some products, such as vaccines, distributed using a different invoice than products such as contraceptives?)</p>	<p>A. _____ Yes, different types of facilities are treated differently. <i>Explain:</i> _____ _____ _____ _____</p> <p>B. _____ No, all types of facilities are treated in the same way.</p>
<p>D6. Does the warehouse need to subtract the value of stock shipped from the facilities' budget allocations?</p>	<p>A. _____ Yes, the warehouse must track and update facility budgets at the time of shipping. B. _____ No, the warehouse is not involved in tracking and updating facility budget allocations.</p>
<p>D7. Does the warehouse need to be able to maintain a back-order system for incomplete shipments?</p>	<p>A. _____ Yes. B. _____ No, orders which cannot be filled must be re-ordered later.</p>

INFORMATION TECHNOLOGY

<p>T1. To what extent is the organization computerized and networked?</p>	<p>A. _____ There is a Local Area Network (LAN) connecting most or all of the computers in the organization, including the warehouse. B. _____ There is a LAN in the organization, but the warehouse is not connected. C. _____ There are computers throughout the organization, but no LAN. D. _____ The organization is not computerized.</p>
<p>T2. How many of each type of computer are in the warehouse where the stock would be computerized?</p>	<p><i>Fill in number of each type of computer:</i> A. _____ Pentium. B. _____ 486. C. _____ 386. D. _____ Apple. E. _____ Other (<i>specify</i>) _____</p>

<p>T3. What type(s) of printers are in the warehouse?</p>	<p><i>Fill in type(s) of printers in the warehouse:</i></p> <p>_____</p> <p>_____</p> <p>_____</p>
<p>T4. How reliable is the electrical supply at the warehouse?</p>	<p>A._____ Power outages occur rarely, if ever. B._____ Power outages occur once or twice a month. C._____ Power outages occur each week. D._____ Power outages occur almost every day.</p>
<p>T5. Is there a standby power supply such as a generator or UPS at the warehouse?</p>	<p>A._____ Generator. B._____ UPS. <i>How many?</i> _____ C._____ No standby power supply.</p>
<p>T6. How many people would be operating the computer? (Count both warehouse staff and any other staff member involved in the preparation of purchase orders and invoices.)</p>	<p>_____ Number of staff who would use the computer for stock management.</p>
<p>T7. How many among the staff who would operate the computer are at each of the following skill levels?</p>	<p><i>Fill in number of people at each skill level:</i></p> <p>A._____ Know how to program or have advanced knowledge of databases. B._____ Know how to use at least one software, such as word processor or spreadsheet. C._____ Have been introduced to basic computer operations, such as turning on/off, using the keyboard, DOS or Windows. D._____ Have used a typewriter. E._____ No experience with computers or typewriters.</p>
<p>T8. What type of advanced computer support is available to the warehouse?</p>	<p>A._____ In-house computer support person. B._____ Maintenance contract with external firm. C._____ None.</p>

If you are interested in technical assistance, please return this questionnaire to Management Sciences for Health. We will contact you once we have received it. Thank you!

ANALYSIS GUIDELINES

1. WOULD COMPUTERIZATION BE USEFUL?

Consider computerizing in cases where:

- The warehouse manages many stock items and/or clients, and/or handles a large number of transactions (receiving and distribution) in a year. [See questions S3, P3, P4, D3, D4.]

If the volume of stock items or transactions is not significant, computerization is not necessary.

2. WOULD COMPUTERIZATION BE FEASIBLE?

In general, the system should not be computerized if:

- Electricity is unreliable and there is no backup power source. [See T4, T5.]
- There is no computer and/or printer in good condition *in the warehouse*, or the computer and/or printer present in the warehouse are old and not expected to be replaced or upgraded. [See T2, T3.]
- Advanced computer support is not available. [See T8.]

If the information technology is adequate, continue the analysis.

3. ARE THE MANAGEMENT SYSTEMS READY TO BE COMPUTERIZED?

Computerization requires a rigorous stock management system. Ensure that:

- Stock management is based on lot numbers. [See M1, M2, M3.]
- Stock is distributed based on first-expiring, first-out (FEFO). [See S7.]
- Stock levels are monitored. [See S5, S6.]
- The unit size recorded on stock cards is the same as the unit size used for receiving and distributing stock. [See S4.]

If the management systems for receiving and distributing stock do not follow these procedures, it will be necessary to modify the manual systems before computerizing. Technical assistance can assist in implementing these changes¹.

¹ Consult the following references for suggestions on improving your logistics management information system:

Binzen, Suzanna. "Pocket Guide to Managing Contraceptive Supplies," Centers for Disease Control and Prevention, Atlanta, 1998.

Binzen, Suzanna C., Suttentfield, Linda J., Wolff, James A. "Getting Contraceptives to the Client," *The Family Planning Manager's Handbook: Basic Skills and Tools for Managing Family Planning Programs*, W. Hartford, CT: Kumarian Press, 1991.

Management Sciences for Health and the World Health Organization. *Managing Drug Supply: The Selection, Procurement, Distribution, and Use of Pharmaceuticals*. 2d.ed. W. Hartford, CT: Kumarian Press, 1997.

Technical assistance will also help determine the criteria for selection the most appropriate software. This evaluation will consider the type of program (G2), the types of financial reports needed (D6), the ways different suppliers are treated (P5) and the procedures and observations noted at the time of the analysis.

4. PLANNING FOR IMPLEMENTATION VISIT(S)

Take the following points into account when planning the technical assistance necessary for software implementation:

- Confirm that top management is interested in this project. [See G3 and G4.]
- If it seems that modifications to the manual system are necessary, consider an initial visit to launch these changes and a second visit for computerizing. [See question 3 above.]
- Determine the number of people to be trained. [See T1 and T6.]
- Determine the number of people who will require basic computer training. [See T7.]
- Determine the date of the last physical inventory to know if the data is recent enough to be used for developing the databases. It may be necessary for the warehouse to do a complete inventory before the final implementation visit. [See M4.]