

Improving Efficiency in Mass Dispensing:

How Exercising Can Strengthen
Mass Dispensing Strategies

Mass Antibiotic Dispensing Planning

Results of Minnesota Regional Planning - 8 regions in state

- Evaluated regional demographics
- Identified sites – sharing sites throughout the regions
- Identified throughput goals at each site

Planning Concerns

- Workforce resources – # nurses & pharmacists
- 1000/ hour throughputs
- Complex antibiotic screening
- Speed required to accomplish throughput
- Safety of screening

Mass Antibiotic Dispensing Planning in Minnesota

- Developed the forms and clinic design
- Exercised the forms and design
- Analyzed the accuracy of the forms and design
- Measured the efficiency of the forms and design
- Redesigned the forms and the design

Developing the Processes

- Triage – Minnesota continues to develop the processes and forms for symptoms and exposure
- Drug Screening – The focus of this presentation

Developing the Forms for Screening for Contraindications

- Doxycycline
- Ciprofloxacin
- Amoxicillin

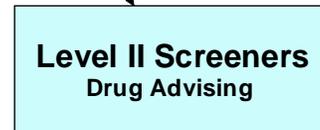
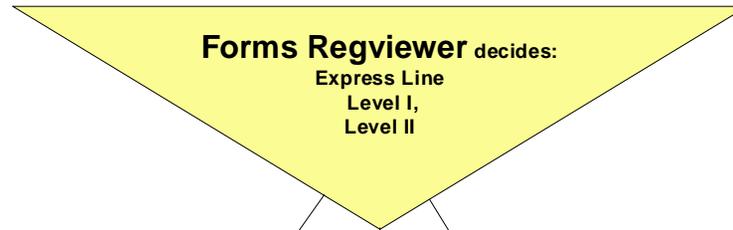
Clinical Decision Making in Antibiotic Mass Dispensing

- Which SNS antibiotics are safest for client and households?
- What interactions exist between medication the client is presently on and the SNS drugs available?
- What information does the client need to enhance the effectiveness and prevent adverse events?

Decision Assisting Tools

- Health history/registration forms
- Medical protocols
- Drug dispensing algorithms

Clinic Function Flow



Registration Forms/ Health Screening History

- Form asks persons to “self-screen” and provide limited, essential information
- Form asks only information that is necessary to give client doxycycline safely
- Forms “assist” staff persons decide where the client should go next
- Are Drug specific, not agent specific, can be used for anthrax, tularemia, and plague

Registration Form: 5 Initial Drug Screening Questions

1. Are you currently taking any of the following drugs:

- Accutane
- Methotrexate
- Lithium
- Probenecid
- Coumadin
- Digoxin

5 Initial Drug Questions

2. Are you taking medication for seizures, tuberculosis, or diabetes?
3. Are you pregnant or breastfeeding?
4. Are you currently taking, or allergic to any tetracycline antibiotics?
5. Do you weigh less than 99 pounds?

MDS Drug Screening Registration Form

MDH 10/2004

Registration Form for Dispensing Oral Medication – Doxycycline Primary DRAFT _____ MDS Clinic Code

Notice to Client: You are applying to receive services from the mass dispensing site (MDS). We will be asking you for information about yourself. The information will be used to determine whether to dispense medication to you, to follow-up on your health if medication is provided, to make health care referrals, and possibly to provide additional information to you. The information that we obtain about you will be kept private. Persons who may have access to this information are you, staff involved with the MDS, and MDS consultants.

The Minnesota Department of Health, local public health agencies, and the United States Department of Health and Human Services, which includes the Centers for Disease Control and Prevention, may also have access to these records for public health purposes. We will not provide the information to anyone else without your consent. There is no legal obligation to provide this private information to us. However, without it, the MDS may need to deny services.

Fill in the boxes in Section A, please print. Then read and follow the directions for Section B.

A	Last Name:		First Name:		Middle Initial:	Male (circle one) Female	
	Date of Birth (MM/DD/YYYY):			Best phone number to reach you:		Other number:	
Home Address: Street					City:		
State:		Zip:	County:		Mother's Maiden Name:		

B	Check (✓) YES or NO to answer questions 1 – 5. If you are picking up medication for others please complete Sections D, E, F, and G on the reverse side and omit this section (B).	YES	NO
	1. Are you currently taking any of the following medications - Accutane, methotrexate, lithium, probenecid, Coumadin, or digoxin?		
	2. Are you taking any medications for seizures, tuberculosis, or diabetes?		
	3. Are you pregnant or breast-feeding?		
	4. Are you currently taking, or are you allergic* to any tetracycline antibiotics? See list below #		
	5. Do you weigh less than 99 lbs.? If yes, how much do you weigh in pounds?		

* Allergic reactions may include: hives, redness of the skin, difficulty breathing or wheezing, or worsening of the chronic condition, lupus.

#Tetracycline drugs include: demeclocycline, oxytetracycline, doxycycline, and minocycline
Trade names include: Achromycin, Declomycin, Dynacin, Doxy-Cap, Ledermycin, Lemtrex, Minocin, Minotab, Monodox, Periostat, Sumycin, Terramycin, Vibra-Tabs, Urobiotic-250, Vibramycin

I have received information about the illness and medications. I understand that the decision to take medications is voluntary. All of the information I have provided to the Clinic is true, correct and complete to the best of my knowledge. Please check only one box:

I agree to take the medications as prescribed. OR I have decided not to take the medications.

Signature _____ Date _____

For staff use only

Level I Screener:

1. Is the client taking ropinirole, cyclosporine, Glyburide, or theophylline?	YES	NO (If yes, circle which medication)
2. Is the client allergic to quinolones?	YES	NO
3. Does the client have kidney problems?	YES	NO

Dispenser:

Doxycycline 100 mg PO q 12 hrs, or _____ mg PO q 12 hours Place medication label or enter lot number here.

Ciprofloxacin 500 mg q 12 hrs, or _____ mg PO q 12 hours

Amoxicillin (dose) _____ mg PO (frequency) _____

Quantity Dispensed: 7 days 10 days 14 days Other: _____

Signature _____

Multiple Regimen Policy

- Persons can pick up medication for up to 10 related or unrelated persons
- Persons must have correct information on people they are picking up for
- Forms will be distributed in the community and persons will arrive with them filled out
- No proof of ID, citizenship or residency required

Persons who are picking up medications for others: Read and complete the unshaded areas (C,D,E,F) for all persons below. Print your name on line #1.

C I am picking up medications for myself, others who live in my household, and/or someone who is unable to pick up their own medications. No one in my residence is receiving additional medications at other mass dispensing clinics. I have received information about the illness and medications.

I understand that the decision to take medications is voluntary. I agree to take medications as prescribed and to provide medications and instructions to the individuals named here. I am authorized to sign for all of these individuals. All of the information I have provided to the clinic is true, correct and complete to the best of my knowledge.

D Signature of client

E Read questions 1-5 below carefully. Place a check (✓) in the box if the answer is YES. Leave blank if NO.

1. Medications: Are you currently taking Accutane, methotrexate, lithium, probenecid, Coumadin, or digoxin ?

2. Are you taking medication for seizures, tuberculosis, or diabetes?

3. Are you pregnant, breastfeeding, or under 6 months of age?

4. Are you currently taking or allergic* to any tetracycline antibiotics? (See the list below)

5. Do you weigh less than 99 lb? If yes, how much?

Staff use only-check (✓) appropriate boxes or fill in amount

Level 1 Screening Check if yes

Quantity Dispensed:
 7 days ? 10 days 14 days

Signature _____

	Standard	PEDS (enter ml/dose below)		Other	Label
1. Taking ropinirole, cyclosporine, Glyburide, or theophylline?	Doxycycline 100 mg BID	Doxycycline Oral Suspension 25 mg/5 ml	Cipro HCL Oral Suspension 250 mg/5 ml		
2. Allergic to quinolones?	Ciprofloxacin 500 mg BID			(write in antibiotic here)	
3. Kidney problems?					

1. 1. Name: Last, First (Please print)	Date of birth					lb				ml	ml	mg	
2.	/ /					lb				ml	ml	mg	
3.	/ /					lb				ml	ml	mg	
4.	/ /					lb				ml	ml	mg	
5.	/ /					lb				ml	ml	mg	
6.	/ /					lb				ml	ml	mg	
7.	/ /					lb				ml	ml	mg	
8.	/ /					lb				ml	ml	mg	
9.	/ /					lb				ml	ml	mg	
10.	/ /					lb				ml	ml	mg	

F For each person listed above, have you placed checkmarks (✓) in the boxes for every "yes" answer? **YES** **NO** **(CIRCLE ONE)**

* Allergic reactions may include: hives, redness of the skin, difficulty breathing or wheezing, or worsening of the chronic condition, lupus.
Tetracycline drugs include: demeclocycline, oxytetracycline, doxycycline, minocycline **Trade names include:** Achromycin, Declomycin, Dynacin, Doxy-Cap, Ledermycin, Lemtrex, Minocin, Minotab, Monodox, Periostat, Sumycin, Terramycin, Vibra-Tabs, Urobiotic-250, Vibramycin **Registration Form Side Two 8 5 04.doc**

Drug Dispensing Algorithm

- Part of the Medical Protocol
- It is a decision assisting tool for the drug screeners
- Blueprint for moving persons through a mass dispensing site
- Based on an “express dispensing” concept
- Included in Medical Protocol with rationale stated

MDS Clinic Dispensing Algorithm Prophylaxis with Doxycycline as Primary Drug

Doxy Dispenser
Express Line Screen (NA, LPN)

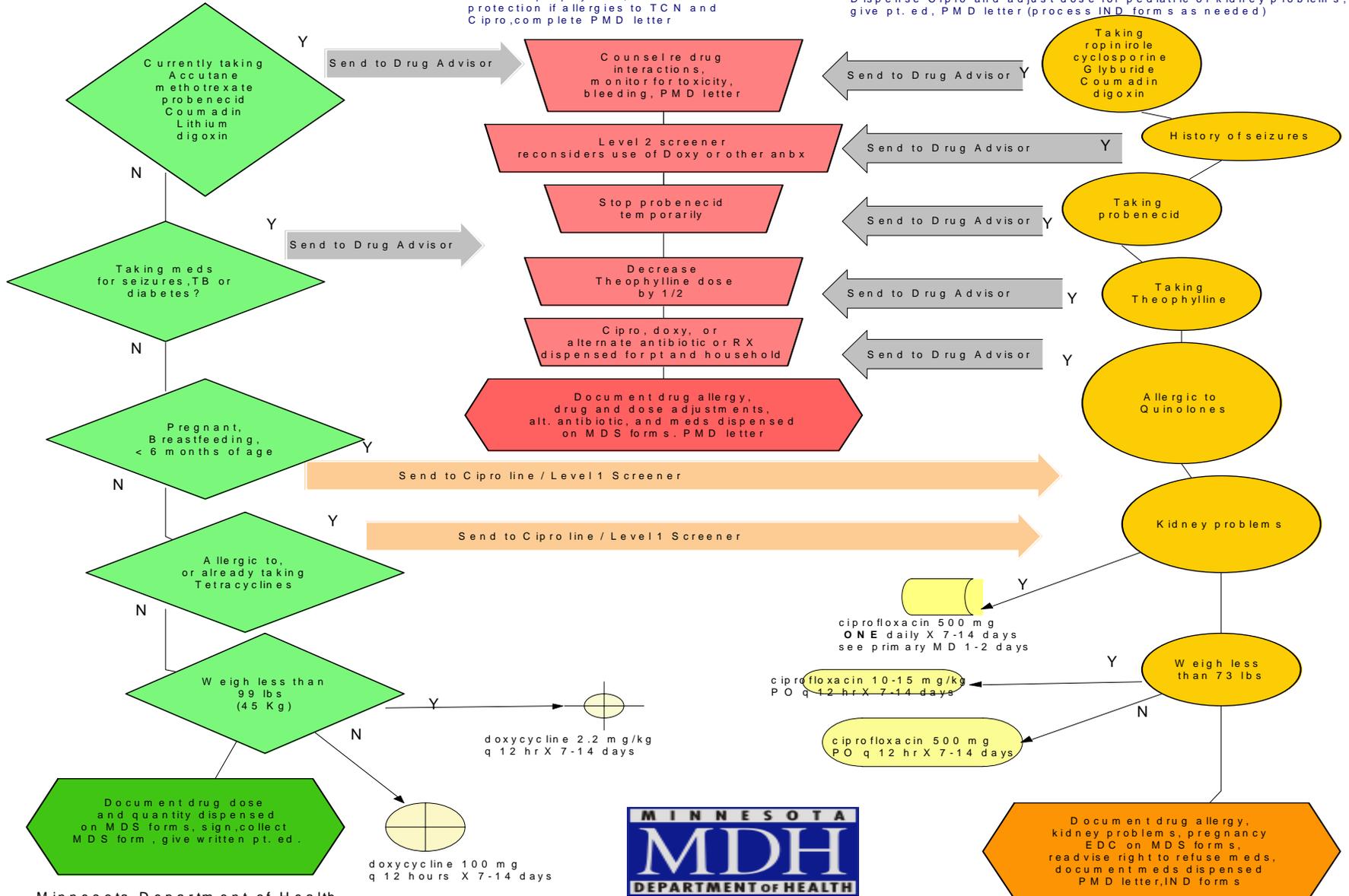
Check forms, send out of express line to Level 1 or 2 staff based on "Yes" answer

Drug Advisor
Level 2 Screen (MD, RPh, APN)

Advise client of critical drug interactions, adjust dose of maintenance meds or prophylaxis, select alternate protection if allergies to TCN and Cipro, complete PMD letter

Cipro Dispenser
Level 1 Screen (RN)

Interview client for pregnancy, kidney problems, other meds send to Level 2 advisor for certain med interactions. Dispense Cipro and adjust dose for pediatric or kidney problems, give pt. ed, PMD letter (process IND forms as needed)



Objectives of Exercise

- Test clinic design
- Analyze the function and accuracy of the forms and algorithms
- Analyze staff roles
- Do time and motion studies

Exercise Format

- Exercised a clinic $\frac{1}{4}$ the size of a 1000/hr throughput
- Drilled the Head of Household (HOH) form and the Individual form
- Training was done prior to the drill and *Just in Time Training* at drill
- Participants were county mass dispensing planners (half of state counties were represented)

Exercise Scenarios

- Client participants were given assigned scenarios
- 70% of client participants got meds dispensed in express line
- 30% of client participants got meds dispensed in Level I or Level II line

Forms & Design Analysis

- Screening Accuracy
- Dispensing Accuracy
- Overall Speed (Throughput)

Forms & Design Analysis

Screening Accuracy – Did the form get to correct staff person (Express Dispenser, Level I Screener or Level II Screener)?

- 99.5 – 100% accuracy in HOH form

Forms & Design Analysis

Dispensing Accuracy – How many persons/households were dispensed to correctly?

- 98 – 100 % accuracy for Express and Level I (Cipro)
- 72% accuracy for Level II

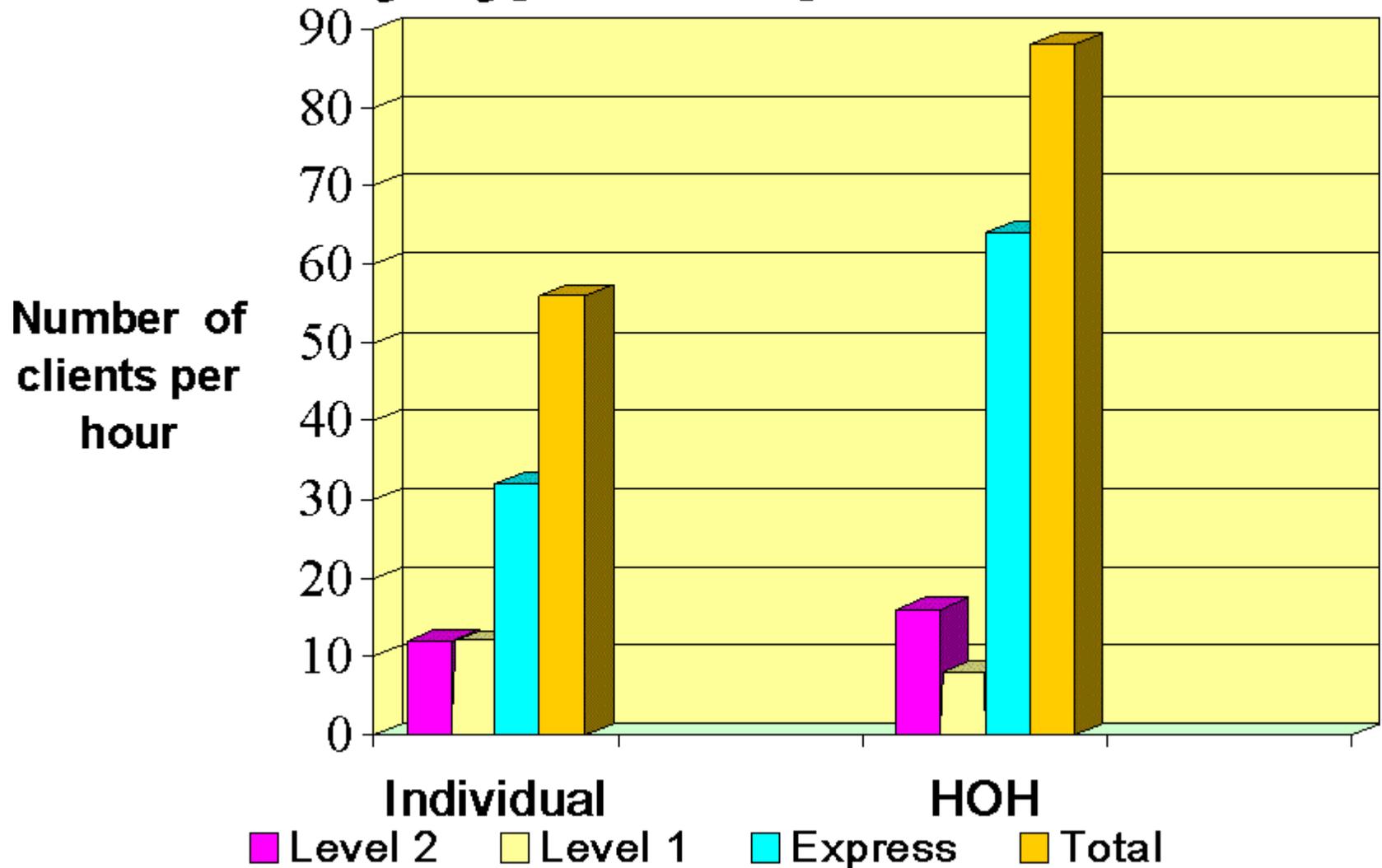
Forms Analysis

Overall Speed – Dispensing outcomes

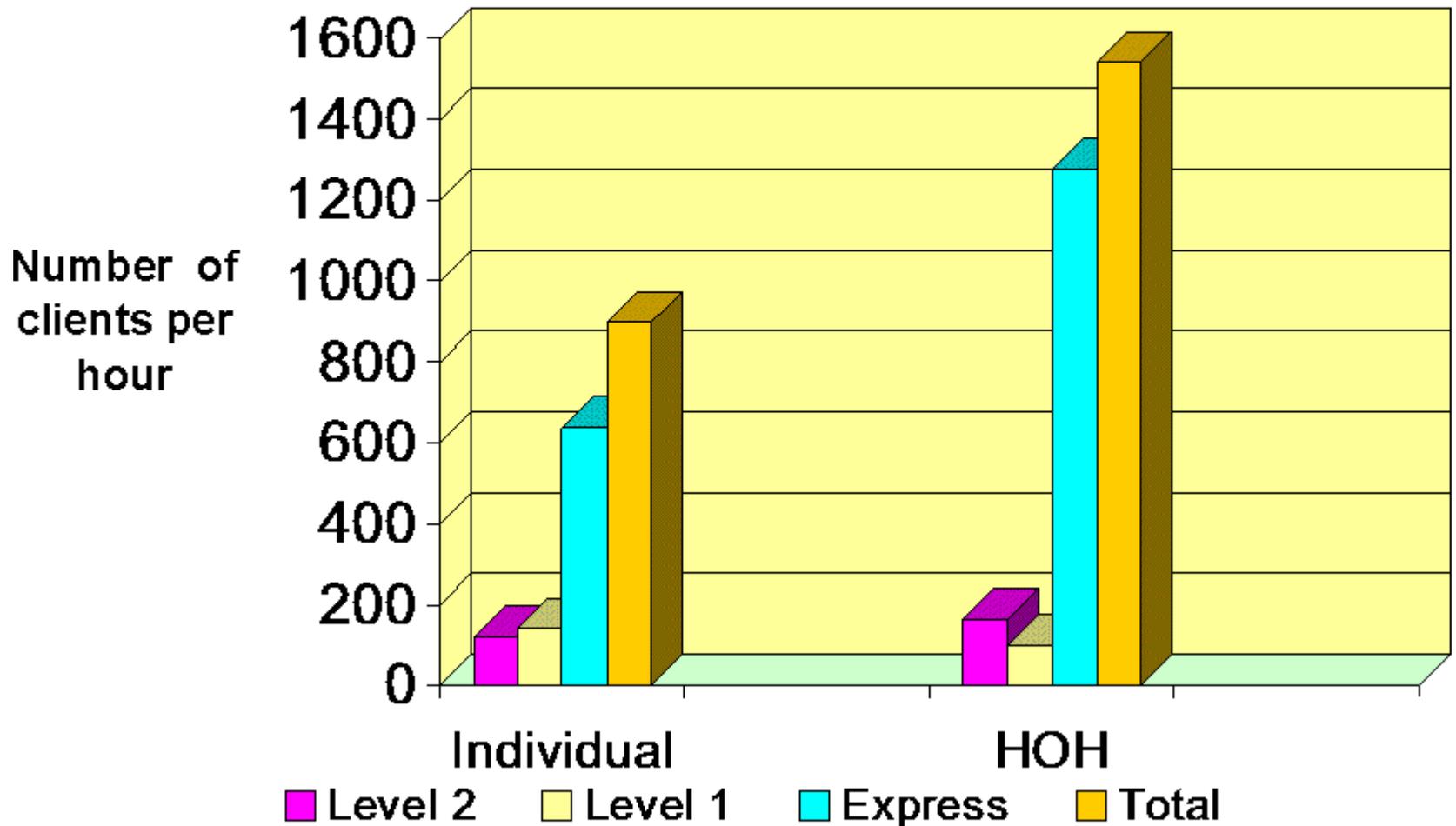
Throughputs

- Individual projected to large clinic 850 hour/hour
- HOH projected to large clinic 1550/hour

Antibiotic Dispensing Throughput by Type of Dispenser



Projected Antibiotic Dispensing Throughput



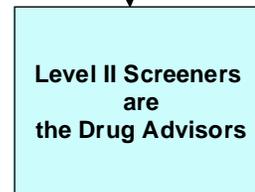
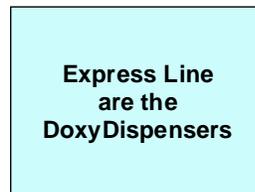
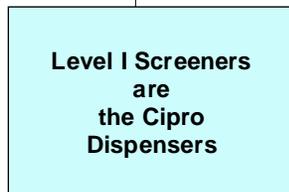
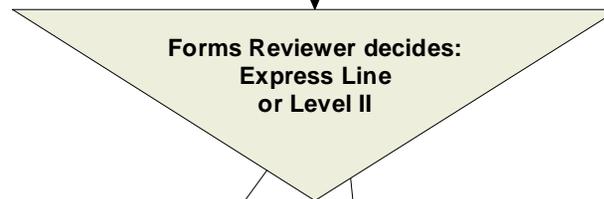
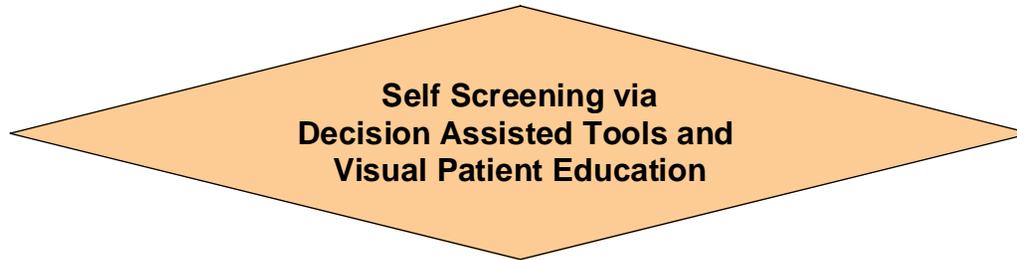
From Exercise to Revision

- Clinic design
- Form design
- Staffing roles and staffing ratios

Clinic Design

- Separate line for Cipro – allergic, pregnant, breastfeeding
- Separate line for Head of Household

Clinic Function Flow



Form Design

- Head of Household form became a one page form
- Design was made more “readable”, more intuitive
- Fewer persons put on each form (person may have to fill out two at mass dispensing site)

Staffing Roles and Ratios

- More Level I Screeners
- Many more Level II Screeners
- Pairing up Express & Level II Screeners
- Pharmacists available should serve as consultants for Level I and especially Level II Screeners
- Support staff to do the administrative work for Level I & Level II Screeners



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