Every Picture Tells a Story—*Graphic Depictions and Planning and Evaluation*

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Today…

- Be able to define and decribe how to use key graphic techniques/approaches:
  - Logic models
  - Logical framework (Logframes)
  - Process maps/CPM
  - Flow charts
- Be able to construct high-level versions of each for simple cases

Every Picture Tells a Story

Defining Terms

Defining Evaluation

- ***Evaluation*** is the systematic investigation of the merit, worth, or significance of any *"object"*

  Michael Scriven

- ***Program*** is any organized public health action/activity implemented to achieve some result

These must be integrated…

- Continuous Quality Improvement (CQI) cycle.
  - **Planning**—*What* actions will best reach our goals and objectives.
  - **Performance measurement**— How are we doing?
  - **Evaluation**—W*hy* are we doing well or poorly?

Framework for Program Evaluation

FIGURE 1. Recommended framework for program evaluation

Graphic technique choice lives here

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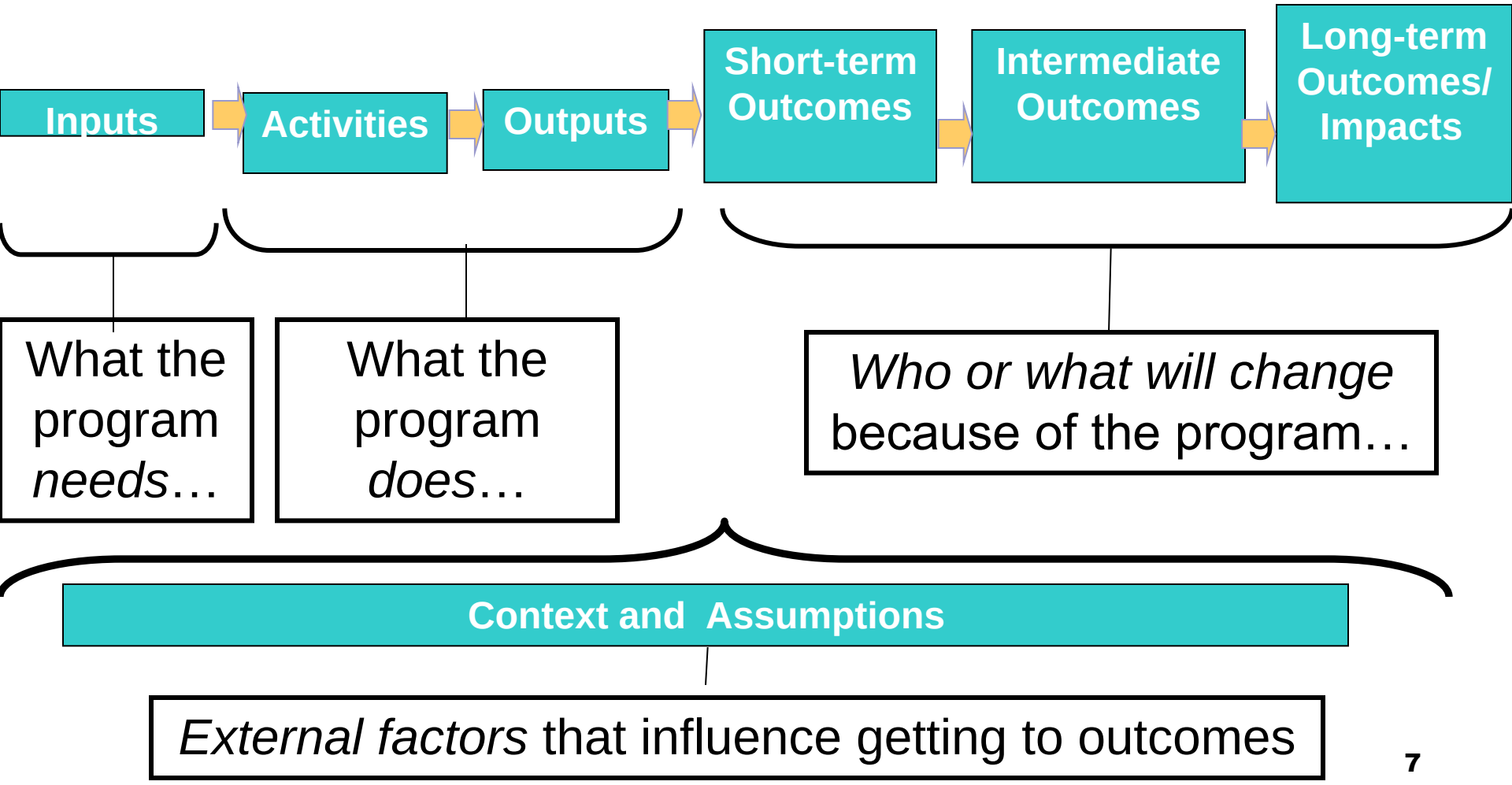
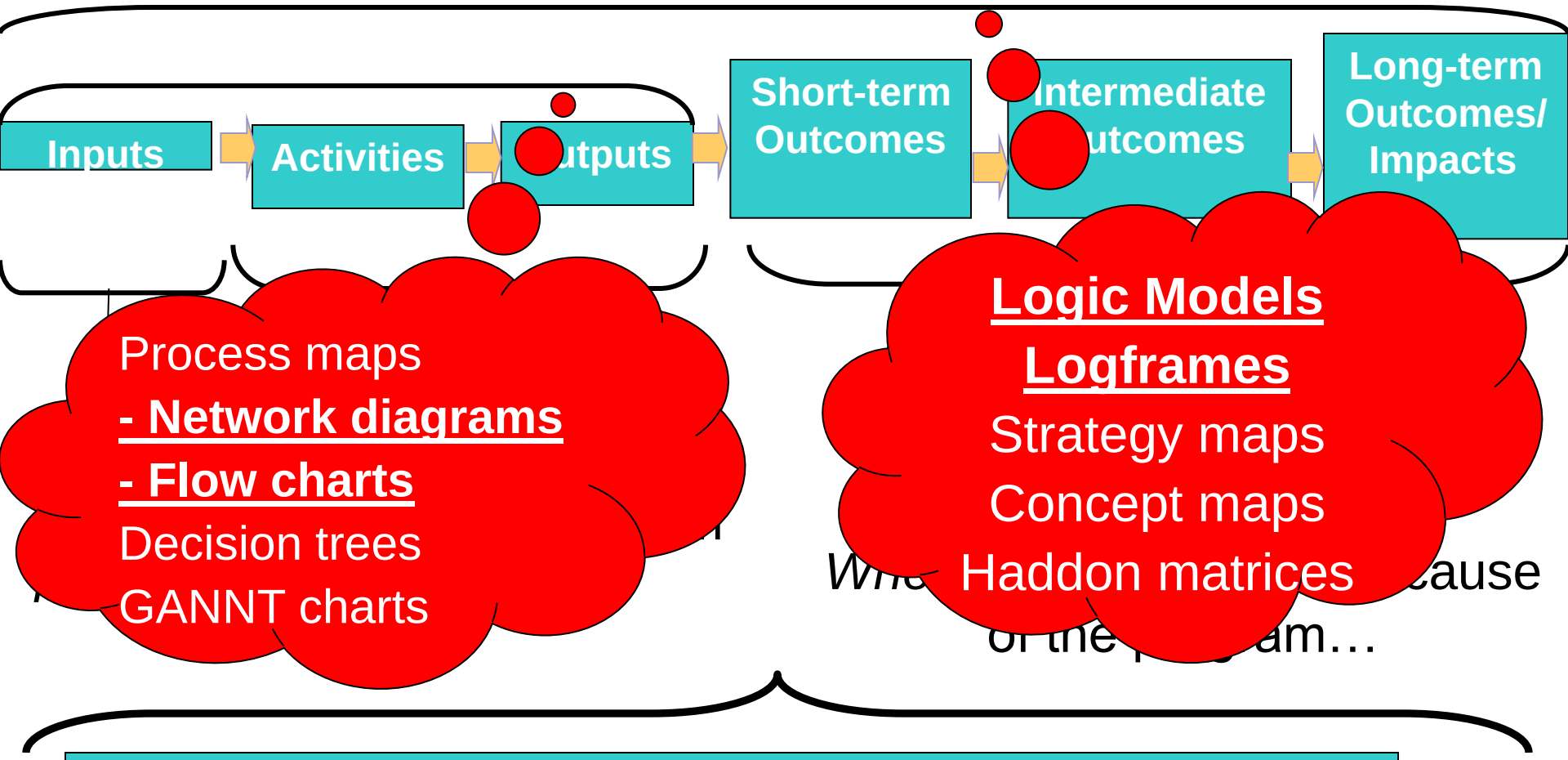
Typical Components of a Project/Program



Common Graphic Techniques



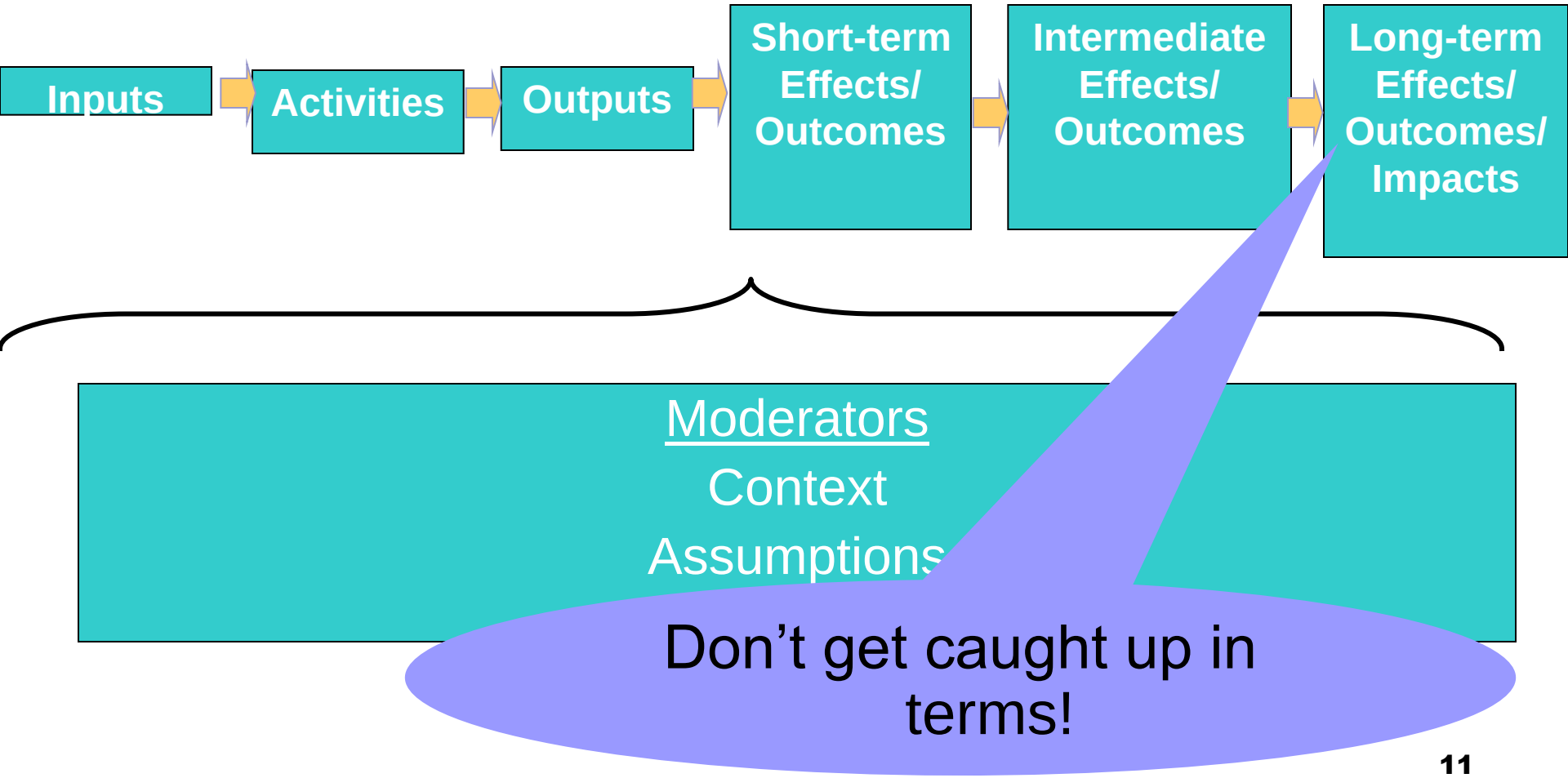
Every Picture Tells a Story

Logic Models

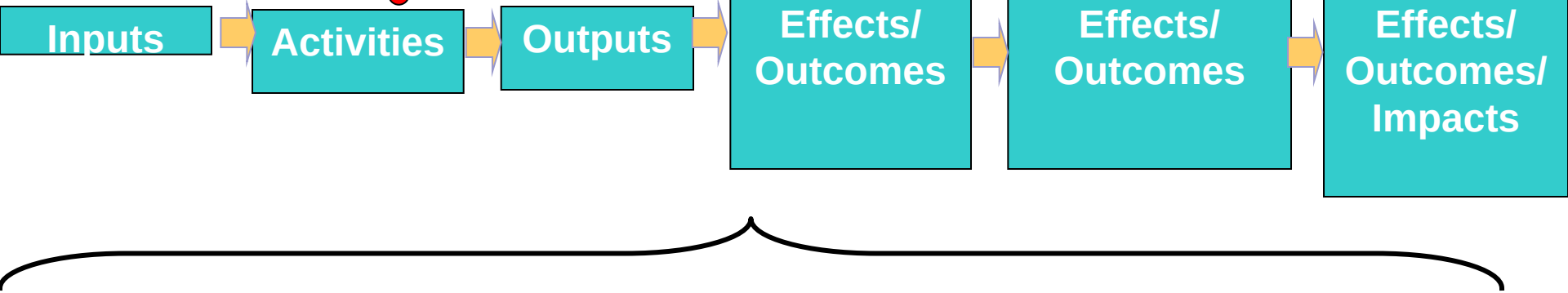
Logic Models and Program Description

- ***Logic Models :*** *Graphic depictions of the* ***relationship*** *between your program's activities and its* ***intended*** *effects*

Step 2: Describing the Program: Complete Logic Model

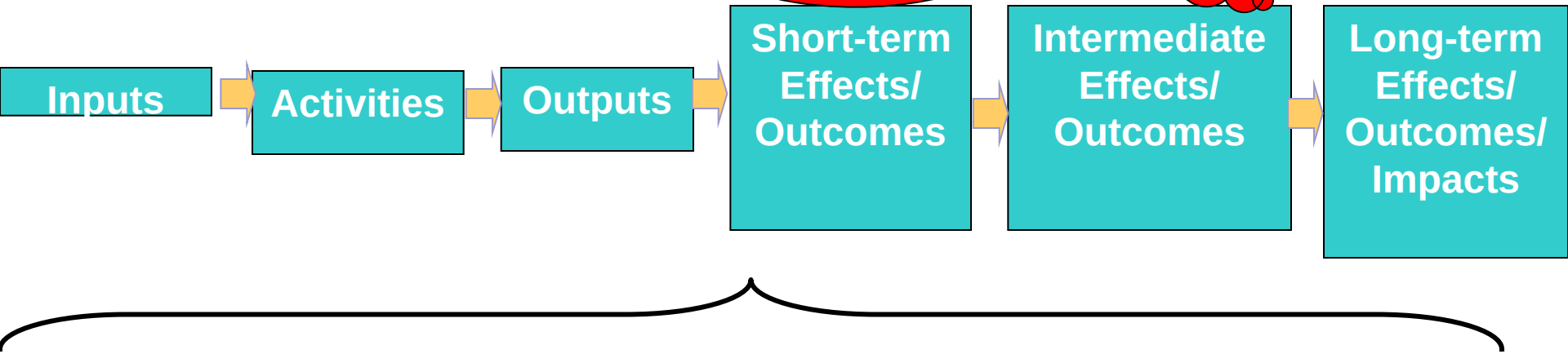


What the program and its staff actually do



Context
Assumptions

Results of activities: Who/what will change?



Context
Assumptions

Constructing Logic Models: *Identify Activities and Outcomes by….*

1. Examining program descriptions, MISSIONS, VISIONS, PLANS, ETC and extracting these from the narrative, ***OR***
2. ***Reverse mapping***—Starting with outcomes, ask "how to" in order to generate the activities which produce them, ***OR***
3. ***Forward mapping***—Starting with activities, ask "so what" in order to generate the outcomes that are expected to result

Then…Do Some Sequencing…

- Divide the ***activities*** into 2 or more columns based on their ***logical*** sequence. *Which activities have to occur before other activities can occur?*
- Do same with the ***outcomes***. *Which outcomes have to occur before other outcomes can occur?*

Example: Listing Activities and Outcomes for Lead Poisoning

Activities

- Outreach
- Screening
- Case management
- ***Referral*** for medical tx
- Identification of kids with elevated lead (EBLL)
- Environmental assessment
- ***Referral*** for env clean-up
- Family training

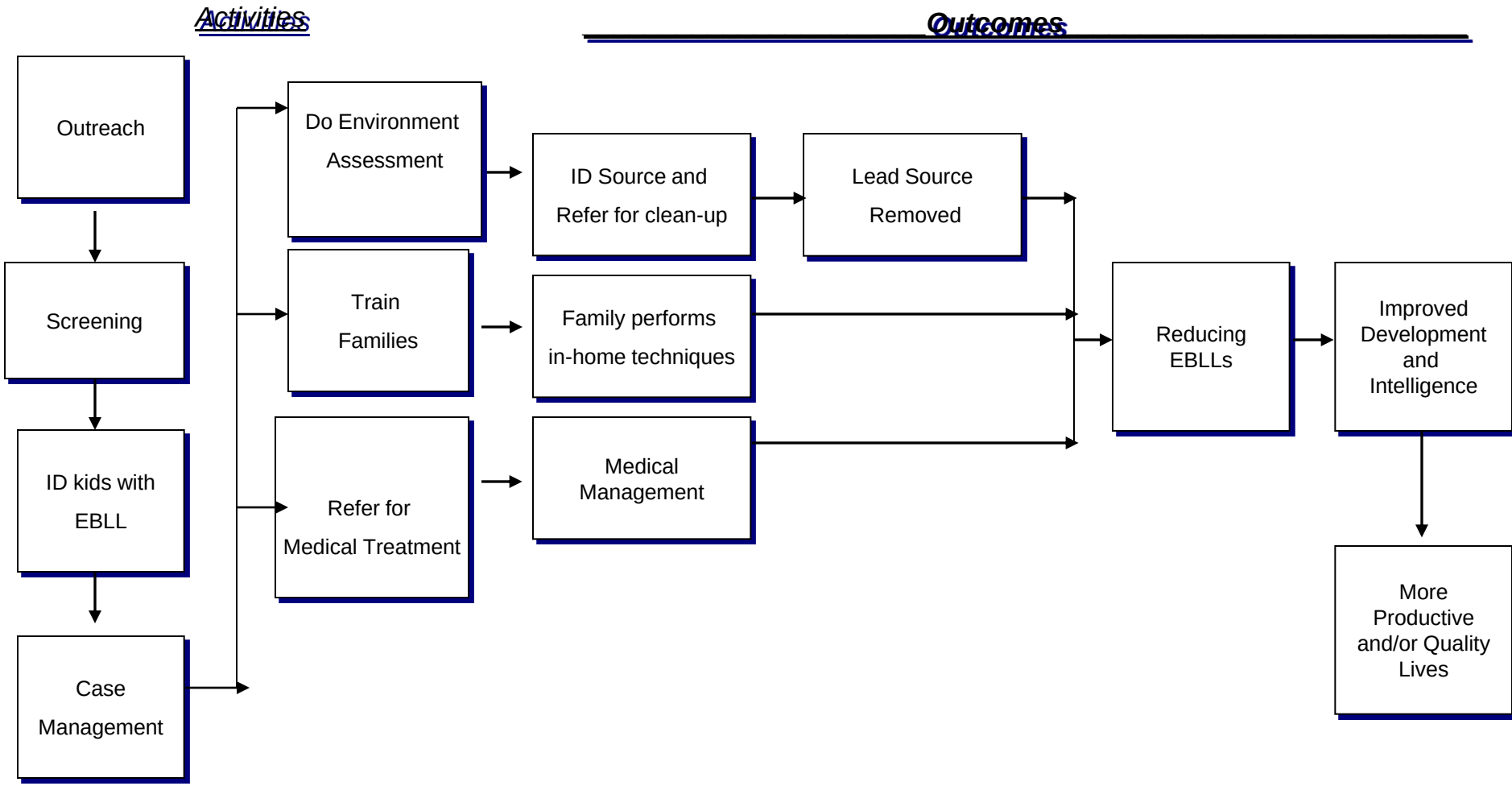
Effects/Outcomes

- Lead source identified
- ***Families*** adopt in-home techniques
- ***Providers*** treats EBLL kids
- ***Housing Authority*** eliminates lead source
- *EBLL reduced*
- *Developmental "slide" stopped*
- *Q of L improved*

Global Logic Model: Childhood Lead Poisoning Program

Early Activities	Later Activities	Early Outcomes	Later Outcomes
If we do…	***And we do…***	***Then….***	***And then…***
Outreach	Case mgmt of EBLL kids		
Screening	Refer EBLL kids for medical treatment	EBLL kids get medical treatment	EBLL reduced
ID of elevated kids	Train family in in-home techniques	Family performs in-home techniques	Develop'l slide stopped
			Quality of life improves
	Assess environment of EBLL child	Lead source identified	
	Refer environment for clean-up	Environment gets cleaned up/Lead source removed	

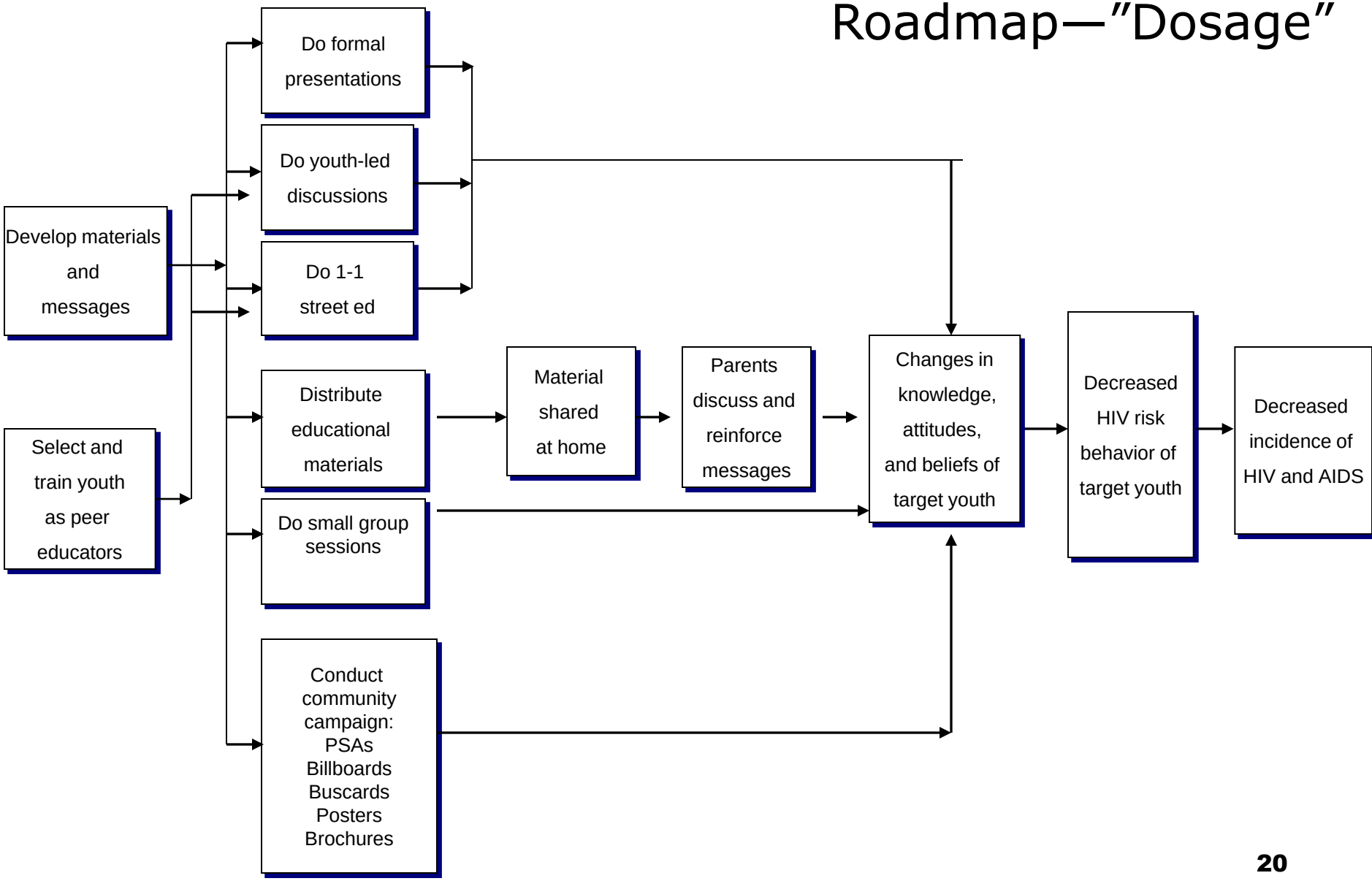
Lead Poisoning: "Causal" Roadmap



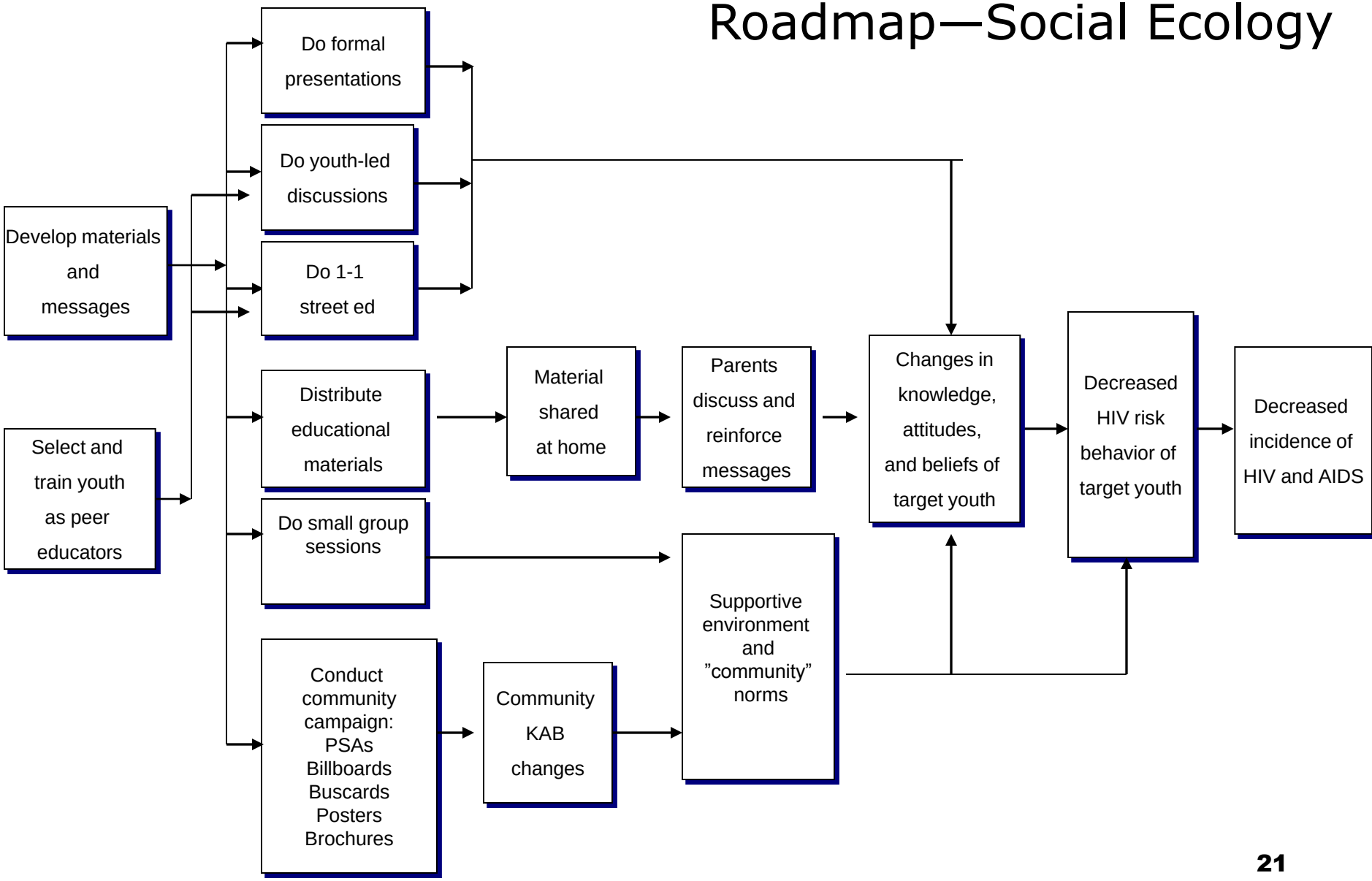
Global Logic Model: Eastside HIV/AIDS Prevention

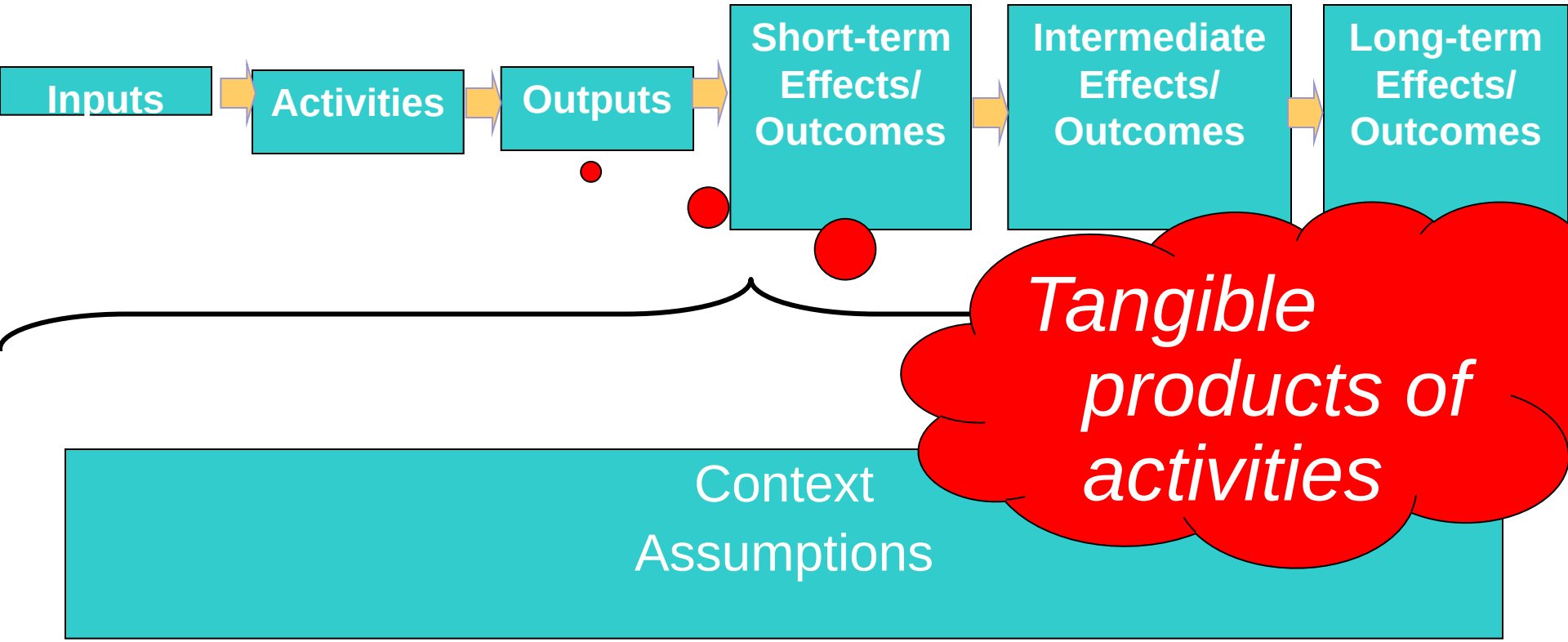
Early Activities	Later Activities	Early Outcomes	Later Outcomes
If we …	***And we…***	***Then….***	***And then…***
Develop materials and messages	Do formal classroom presentations	Educational materials are brought home and shared	Changes in youth knowledge, attitudes and beliefs
Select and train youth as peer educators	Do small group classroom discussions	*Parents reinforce messages*	Reduced HIV risk behavior
	Do youth-led community ed	*Community KAB change*	Reduced incidence of HIV
	Do 1-1 street ed	*Community supportive norms*	
	Distribute educational material		
	Conduct community campaign: -Buscards/billboards - Posters/brochures		

Eastside HIV/AIDS Prevention Program: "Causal" Roadmap—"Dosage"

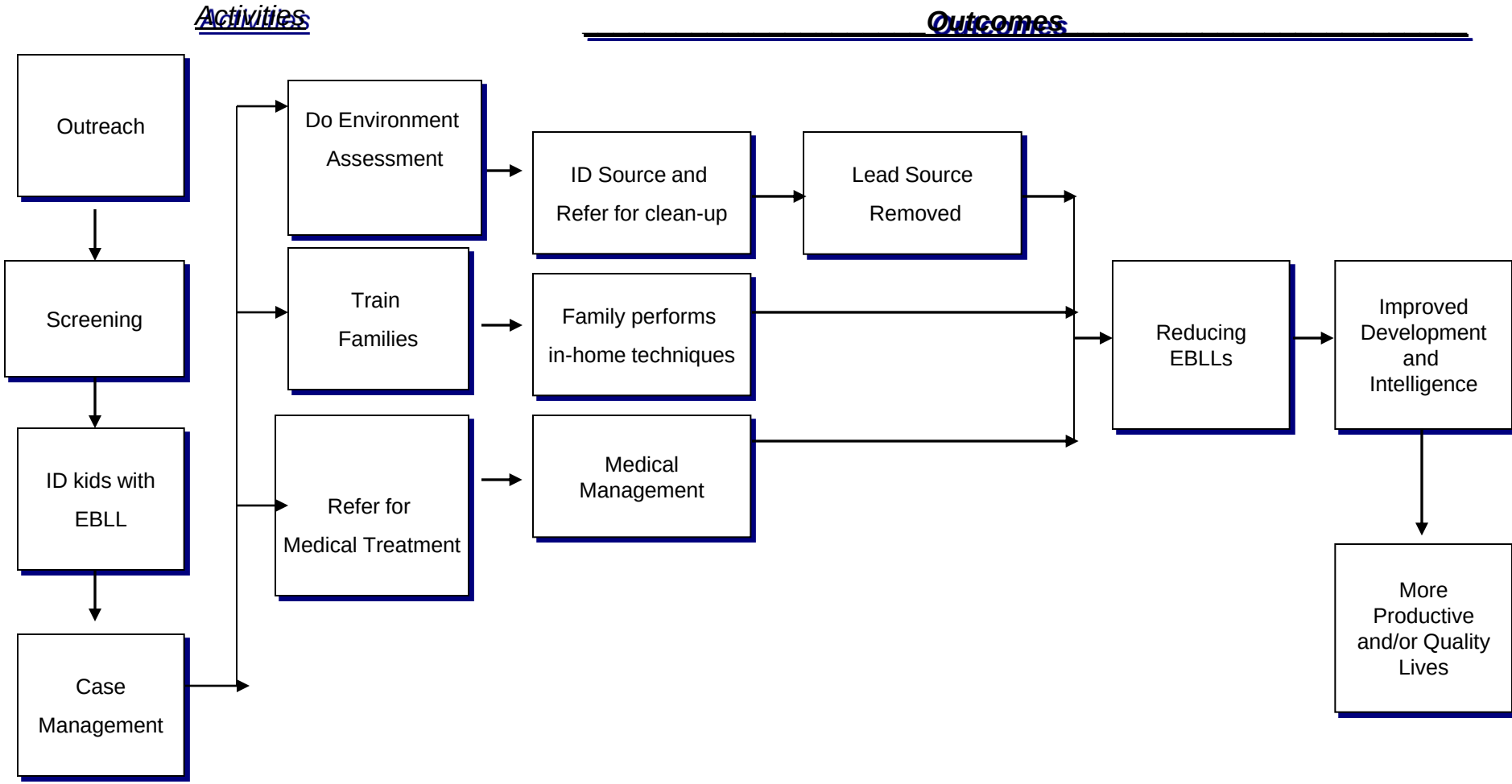


Eastside HIV/AIDS Prevention Program: "Causal" Roadmap—Social Ecology




Inputs
Activities
Outputs
Short-term Effects/ Outcomes
Intermediate Effects/ Outcomes
Long-term Effects/ Outcomes
Tangible products of activities
Context
Assumptions

Lead Poisoning: "Causal" Roadmap

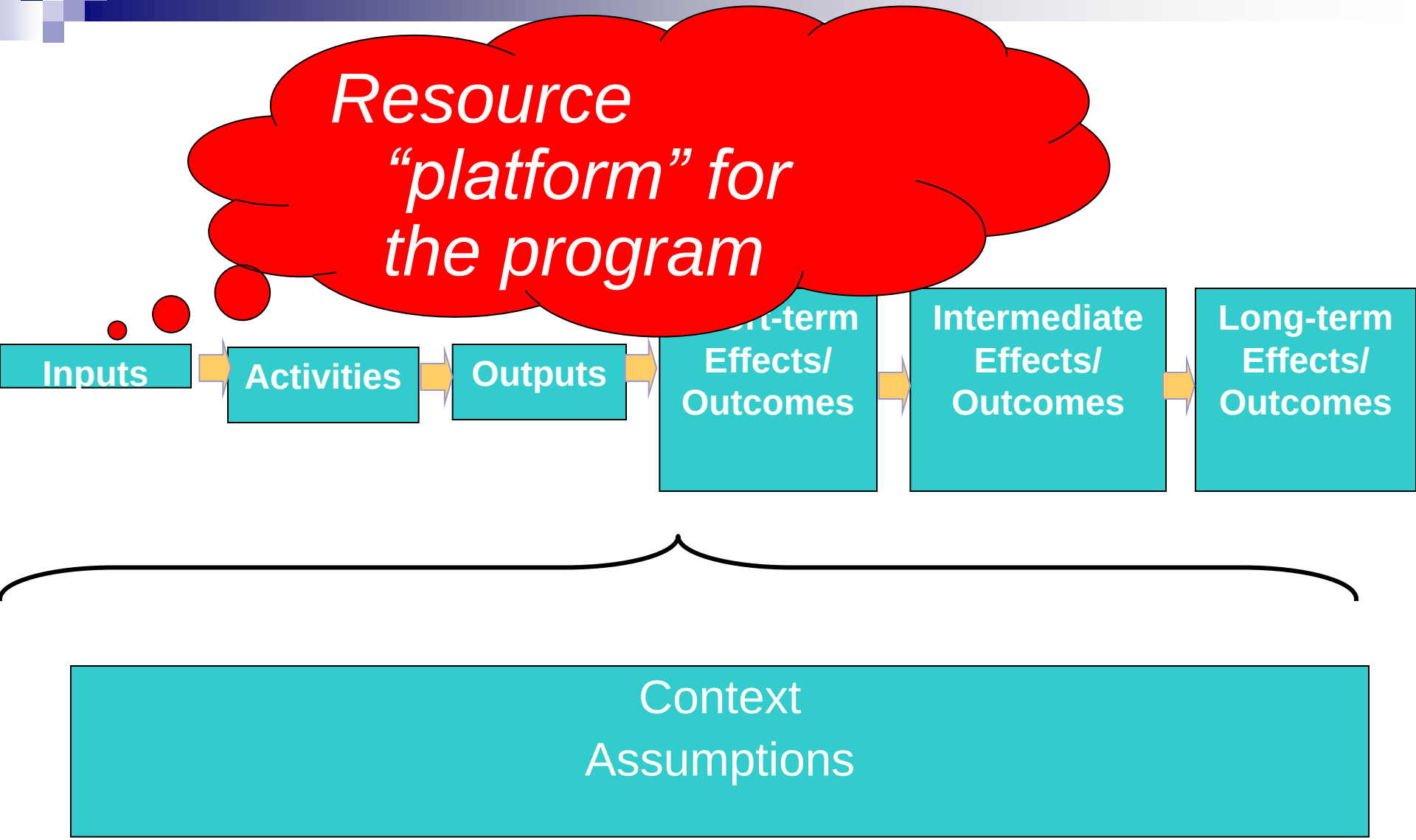


Lead Poisoning: "Upgraded" Outputs

- Pool (#) of screened kids *(meeting likely risk profile)*
- Pool (#) of eligible kids *(with lead level >XXd/ul)*
- Referrals (#) to *(qualified or willing)* medical treatment providers
- Pool (#) of assessed *("leaded")* homes
- Referrals (#) for clean-up *(to qualified or willing orgs)*

Global Logic Model: Childhood Lead Poisoning Program

Early Activities	Later Activities	Outputs	Early Outcomes—	Later Outcomes
Outreach	Do case mgmt	***Pool (#) of eligible kids***	EBLL kids get medical treatment	EBLL reduced
Screening	Refer for medical treatment	***Pool (#) of screened kids***	Family performs in-home techniques	Develop'l slide stopped
ID of elevated kids	Train family in in-home techniques	***Referrals (#) to medical treatment***	Lead source identified	Quality of life improves
	Assess environ't	***Pool (#) of "leaded" homes***	Environ cleaned up	
	Refer house for clean-up	***Referrals (#) for clean-up***	Lead source removed	


Resource
"platform" for
the program
Inputs
Activities
Outputs
Effects/
Outcomes
Intermediate
Effects/
Outcomes
Long-term
Effects/
Outcomes
Context
Assumptions

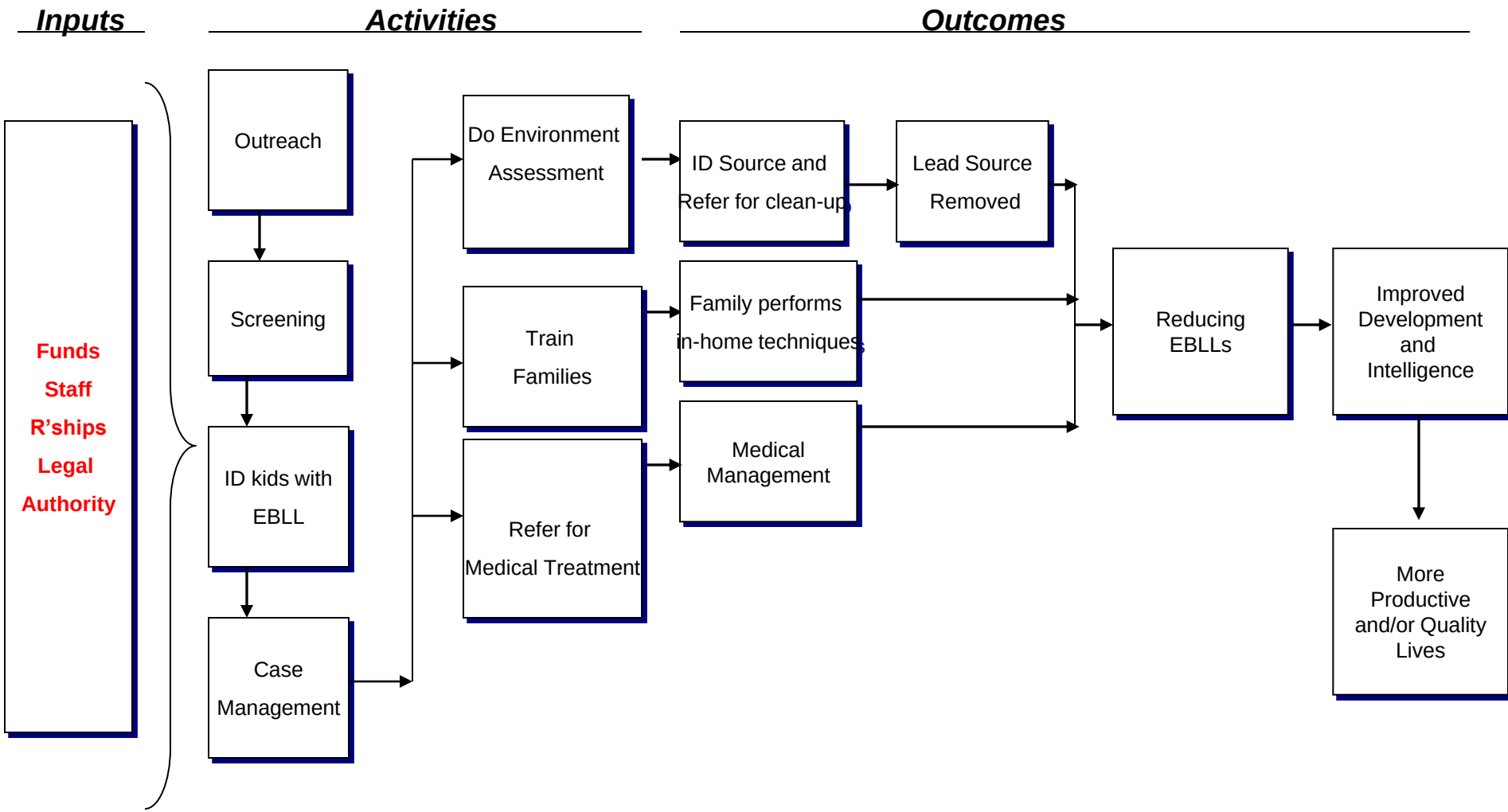
Lead Poisoning: Sample Inputs

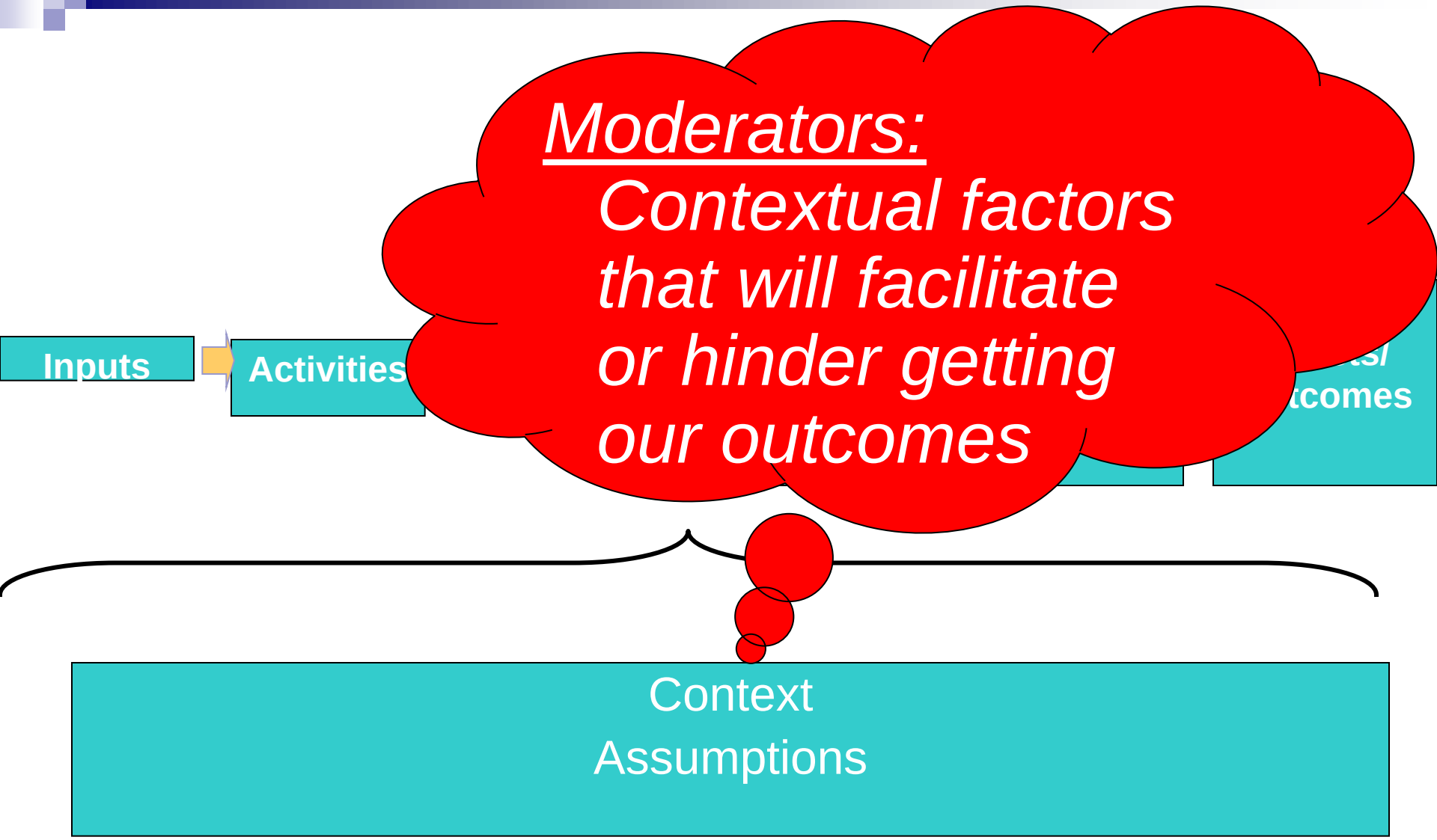
- Funds
- Trained staff
- Relationships with orgs for med tx and env clean-up
- Legal authority to screen

Global Logic Model: Childhood Lead Poisoning Program

Inputs	Early Activities	Later Activities	Outputs	Early Outcomes—	Later Outcomes
Funds	Outreach	Do case mgmt	*Pool (#) of eligible kids*	EBLL kids get medical treatment	EBLL reduced
Trained staff	Screening	Refer for medical treatment	*Pool (#) of screened kids*	Family performs in-home techniques	Develop'l slide stopped
R'ships with orgs for med tx and clean up	ID of elevated kids	Train family in in-home techniques	*Referrals (#) to medical treatment*	Lead source identified	Quality of life improves
Legal authority		Assess environ't	*Pool (#) of "leaded" homes*	Environ cleaned up	
		Refer house for clean-up	*Referrals (#) for clean-up*	Lead source removed	

Lead Poisoning: "Causal" Roadmap




Moderators:
Contextual factors that will facilitate or hinder getting our outcomes
Inputs
Activities
tcomes
Context
Assumptions

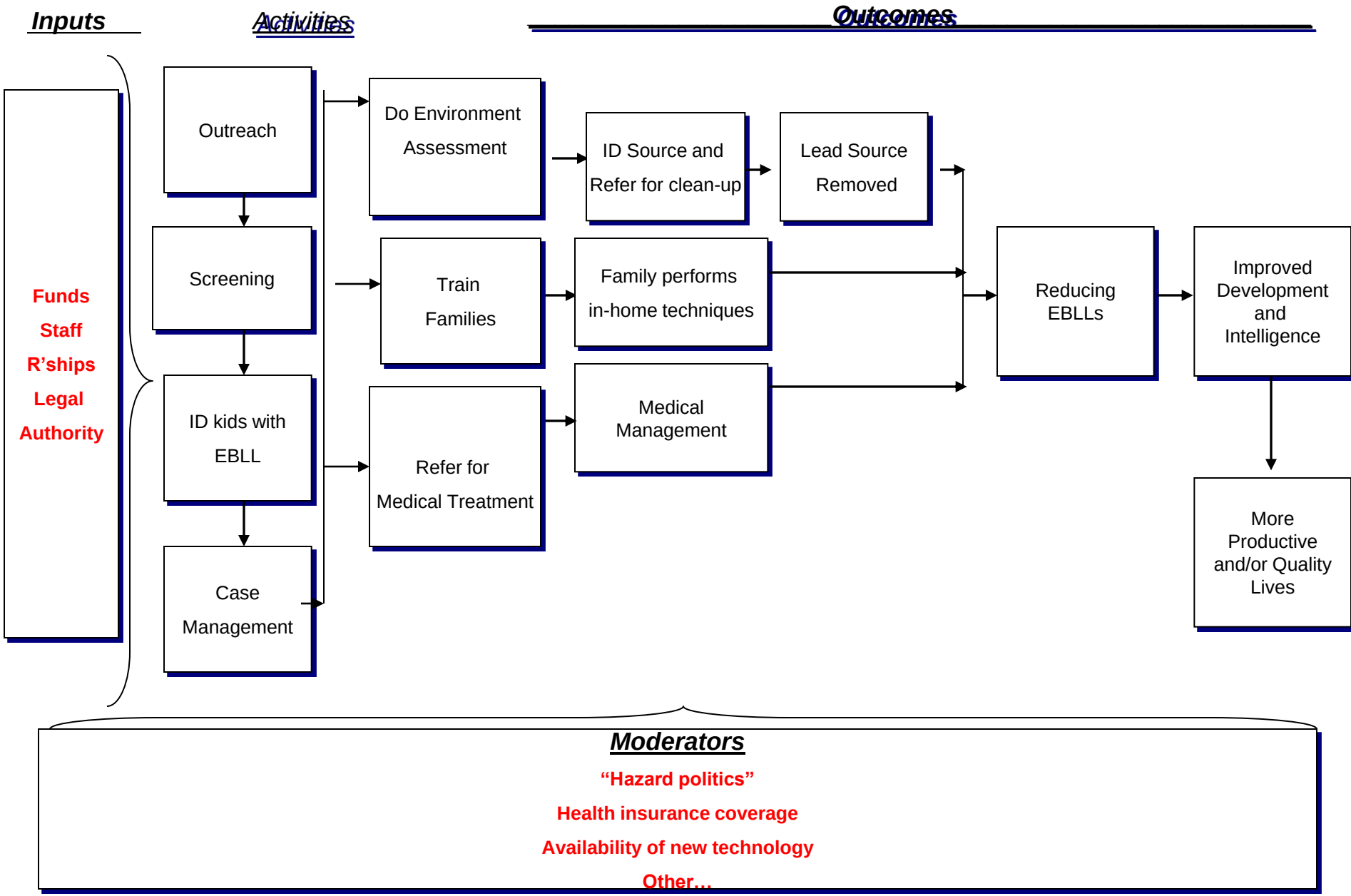
Contextual Factors

- ***P***olitical
- ***E***conomic
- ***S***ocial
- ***T***echnological

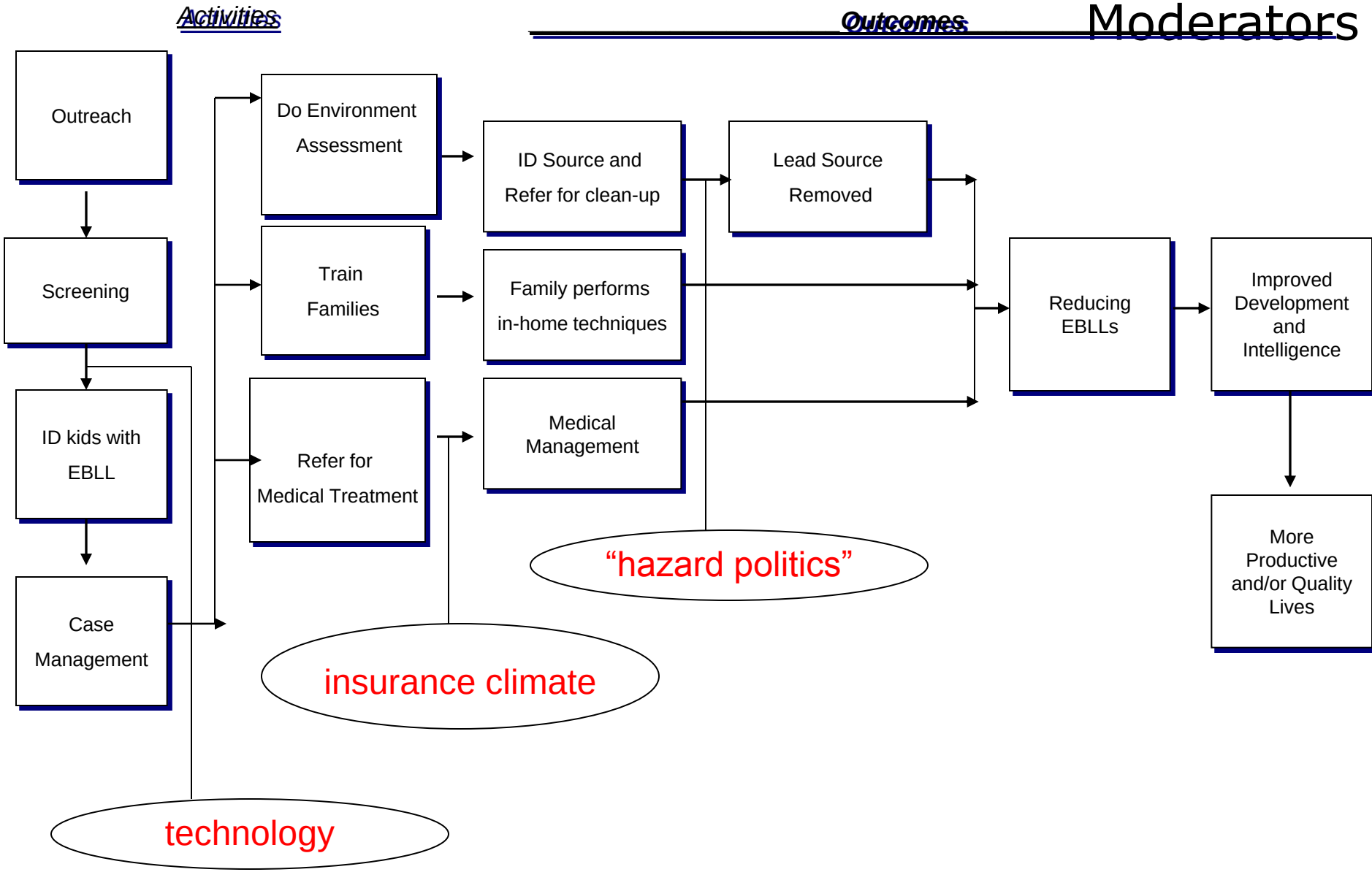
Moderators—Lead Poisoning

- ***P***olitical—*"Hazard" politics*
- ***E***conomic— *Health insurance*
- ***T***echnological— *Availability of hand-held technology*

Lead Poisoning: Full "Causal" Roadmap



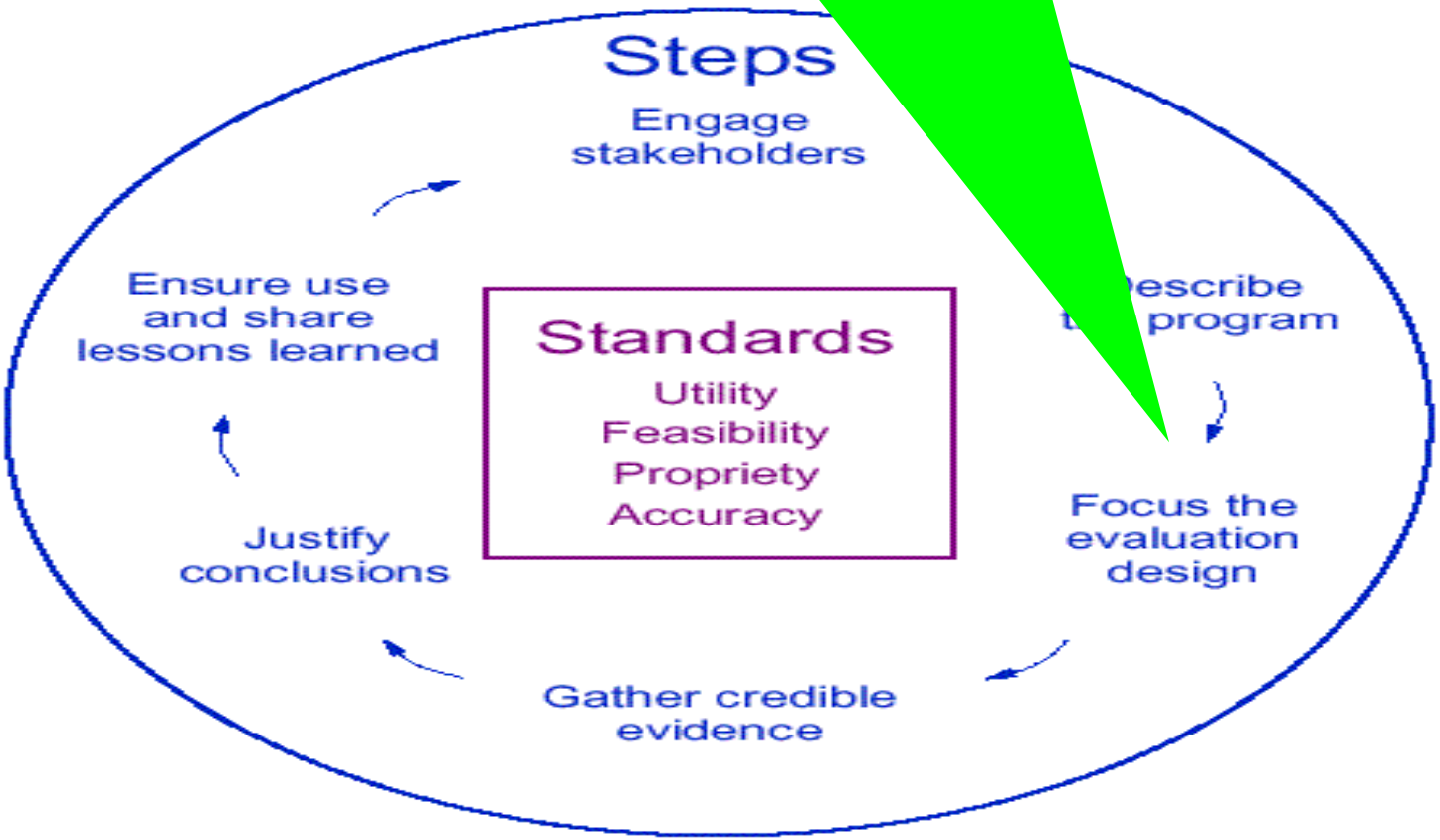
Lead Poisoning: "Causal" Roadmap and Moderators



Framework fo
Program

"Program description" stage frames decisions about evaluation focus

FIGURE 1. Recommended fra



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Utility Questions

- ***Purpose:*** Toward what end is the evaluation being conducted?
- ***User:*** Who wants the info and what are they interested in?
- ***Use:*** How will they use the info?

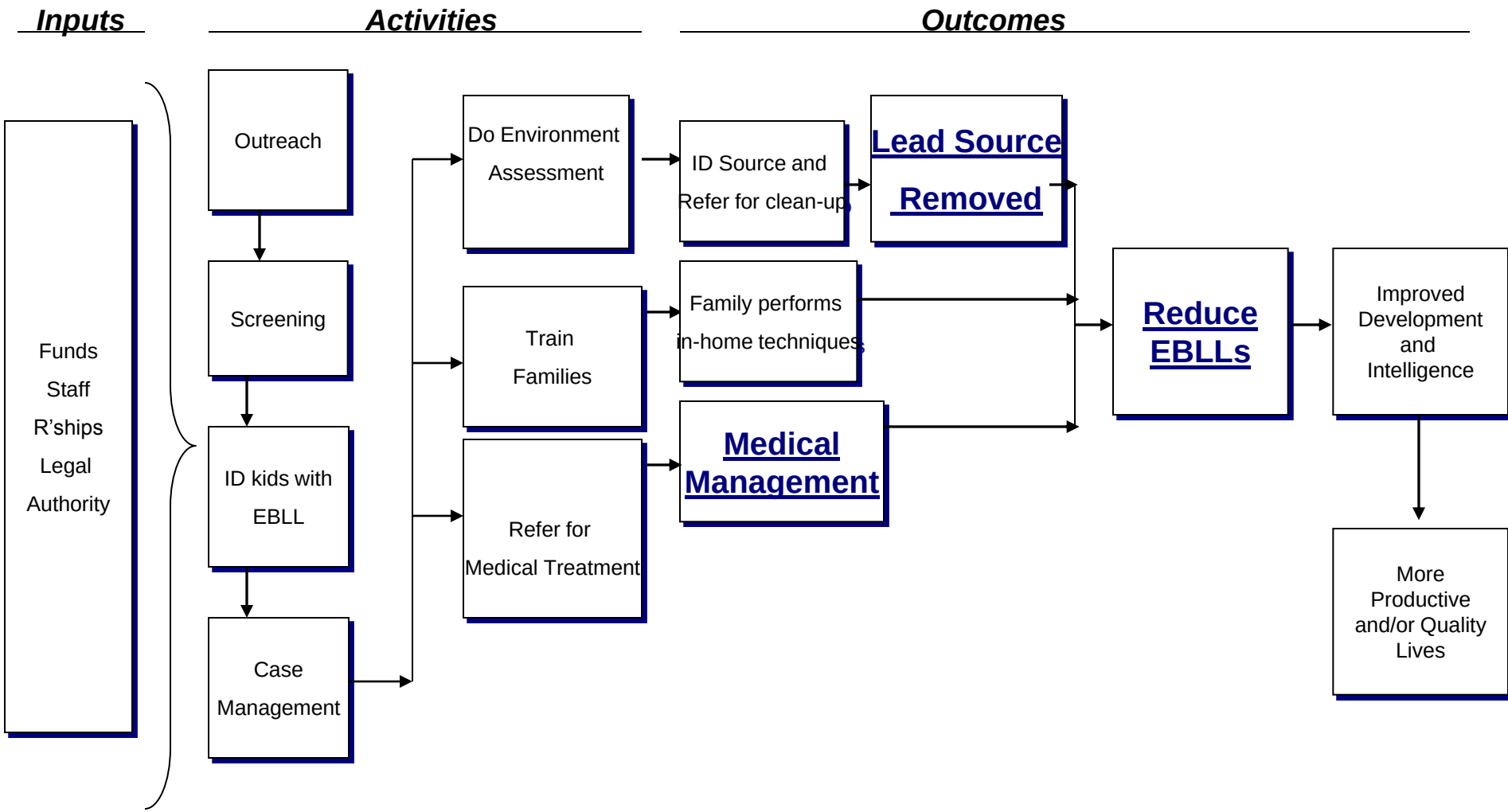
Feasibility Questions: *"Reality Checking" the Focus*

- **Questions that pass the "utility" test may be infeasible to include because:**
  - ***Stage of Development:*** How long has the program been in existence?
  - ***Program Intensity:*** How intense is the program? How much impact is reasonable to expect?
  - ***Resources:*** How much time, money, expertise are available?

(Some) Potential Purposes/ Uses

- **Show accountability**
- Test program implementation
- “Continuous” program improvement
- Increase the knowledge base
- Other…
- Other…

Lead Poisoning: "Causal" Roadmap



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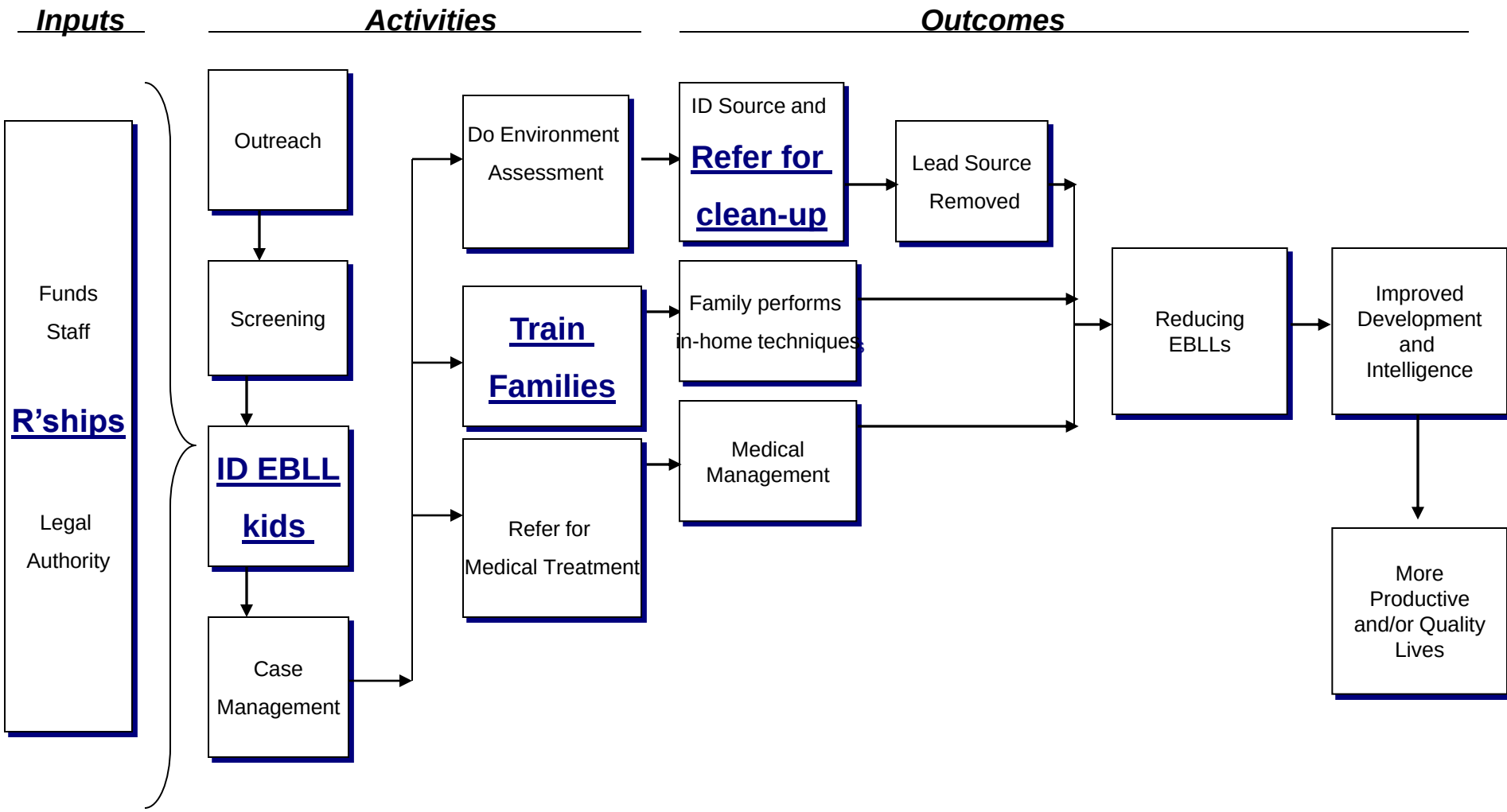
- Other…
- Other…

Lead Poisoning: "Causal" Roadmap



Evaluation Focus: Lead Poisoning

Project Structure	Indicators	Data Source	By When/By Whom
O: Sustained reduction in EBLL in children	XX% reduction in the number of children ages XX-XX with BLL exceeding 10 ul	County surveillance data	
O: Leaded environments are cleaned up	XX% of homes identified with a lead problem are "cleaned up"	Housing dept logs	
O: EBLL children receive medical management	XX% of EBLL kids with BLL <25 are in treatment with qualified MD	Health dept case management logs	
A: Refer for clean-up	Number of leaded homes referred	Health dept logs	
A: Train families	Number of trainings with EBLL families	Health dept logs	
A: ID EBLL kids	Number of kids with EBLL >10ul	Screening logs, surveillance reports, lab reports	
I: Relationships with env and med community	Number of providers able and willing to see EBLL kids Number of agencies able to do timely lead clean-up	Health dept logs Health dept logs	

A Logic Model Would Be (Most) Helpful When:

- Thinking through options for how to address a new problem
- Clarity on program “logic”/”theory
- Clarity on sequencing of outcomes
- Desire to bring stakeholders to consensus on program purpose and evaluation
- Frame decisions about evaluation focus
- Other?

Every Picture Tells a Story

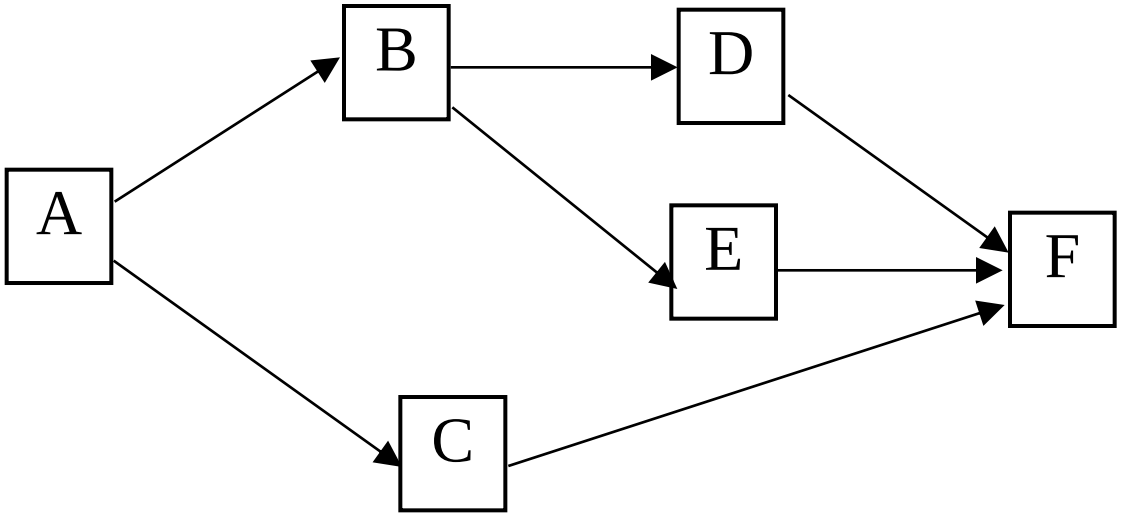
Process Mapping and Project Management

Process Mapping

- Structural analysis of a process flow, by distinguishing how work is actually done from how it should be done, and what functions a system should perform from how the system is built to perform those functions. Depicts main activities, information flows, interconnections, and measures are depicted as a graphic representation, allowing an observer to 'walk-through' the whole process and see it in its entirety.

Source: Business Dictionary.com

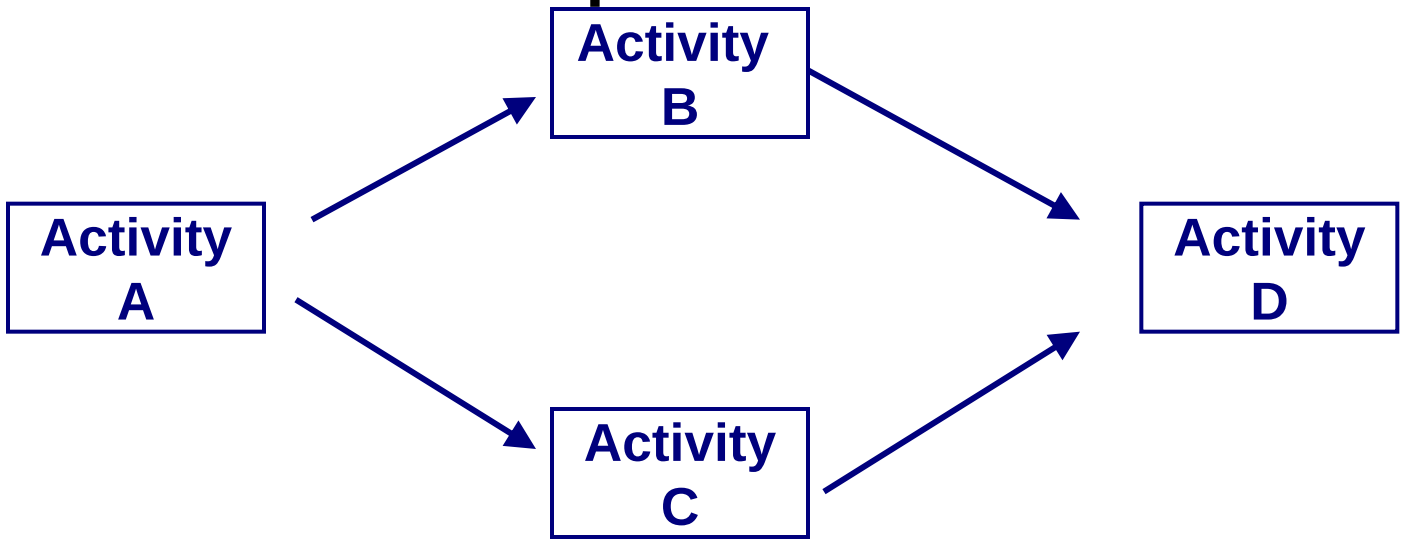
What is a Project?



1. Comprised of activities (tasks), requiring unique planning, to create a unique product/service.
2. Important inter-relationships among the activities.
3. Limited, finite life span, or duration.

1

Project Network Diagrams: Activity Interrelationships



Start-to-Finish Relationships:

- Activity A must finish before Activity B *or* Activity C can start.
- ***Both*** B and C must finish before D can start.
- "Project" is not completed until all four activities finish.

Why Use This Approach?

1. Forces discussion of activity interdependencies.
2. Reinforces focus on meeting project objectives.
3. IDs activities that can be executed in parallel
4. IDs missing activities
5. Provides
   - Consistent framework for planning.
   - Logical basis for determining project duration.
   - Framework for compressing project duration.

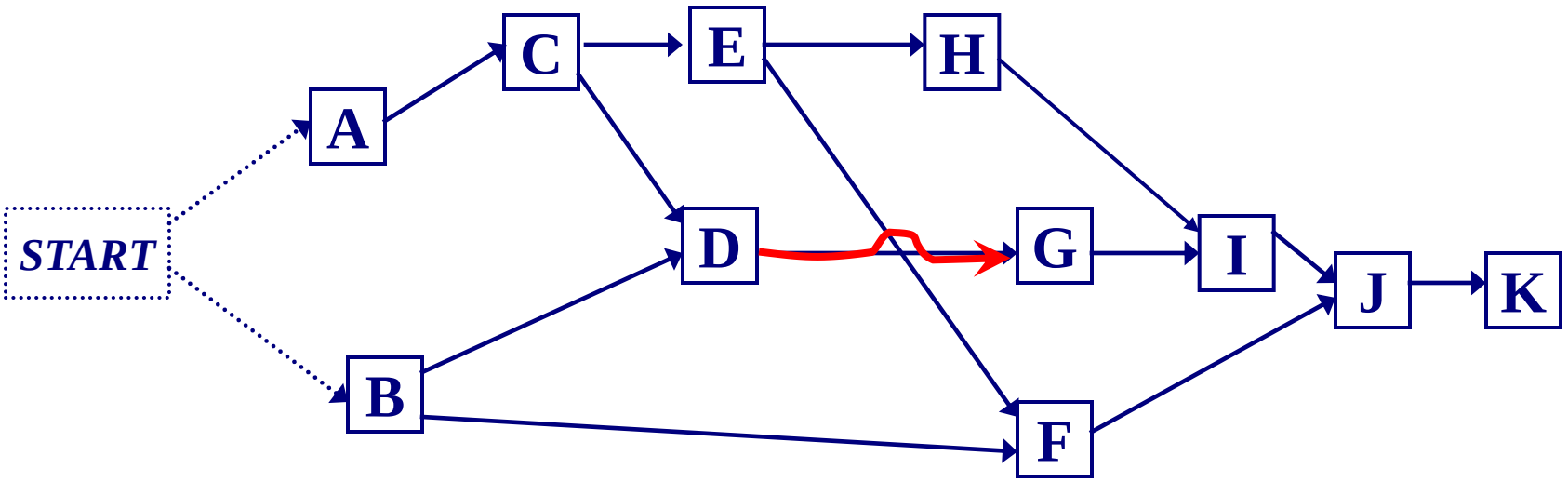
Drawing the Project Network Diagram

1. Draw from left to right: Place → from predecessor activity → successor activity
2. Include only "direct predecessors" for each activity (if A→B and B→C, then no need to show A→ C).
3. Use single arrow for each relationship – do not split/ combine arrows.
4. Crossing lines is okay (use an "overpass" sign to avoid confusion)
5. No need to "time- scale" the network diagram.

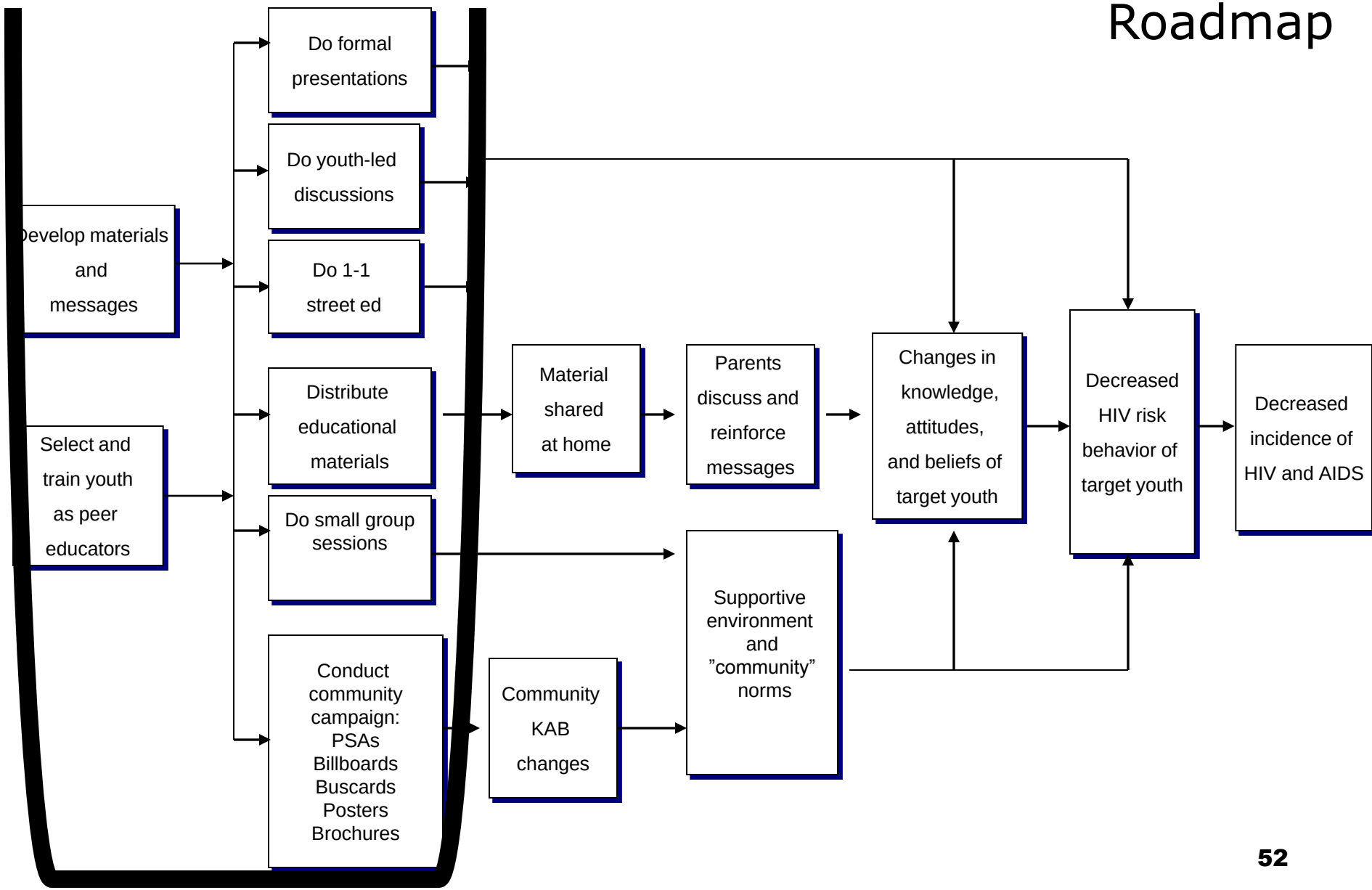
Exercise: Social Marketing Plan

This project involves the development and pilot demonstration of a plan for "social marketing" of a nutrition and exercise program for hard-to-reach youth in rural areas…The project will commence with **ACTIVITY A** (signing of the approval by the Executive Director) and **ACTIVITY B** (budget approval for the marketing plan). **ACTIVITY C** (the design of the promotion plan) can follow immediately after ACTIVITY A. When both ACTIVITY B and ACTIVITY C are complete, **ACTIVITY D** (the promotion survey) can be conducted. **ACTIVITY E** (the promotion plan conceptualization and brainstorming sessions) can commence after ACTIVITY C is complete. **ACTIVITY F** (contracting with a local agency) can start after ACTIVITY B and Activity E are complete. **ACTIVITY G** (the analysis of survey data) can commence after ACTIVITY D is complete. **ACTIVITY H** (the writing of the draft promotion plan) can commence after ACTIVITY E. **ACTIVITY I** (promotion materials development) can be accomplished after ACTIVITY G and ACTIVITY H are both complete. **ACTIVITY J** (marketing plan final draft and presentation to the advisory committee) can be undertaken after ACTIVITY F and ACTIVITY I are complete. **ACTIVITY K** (pilot testing of the promotion plan) can commence after Activity J is complete.

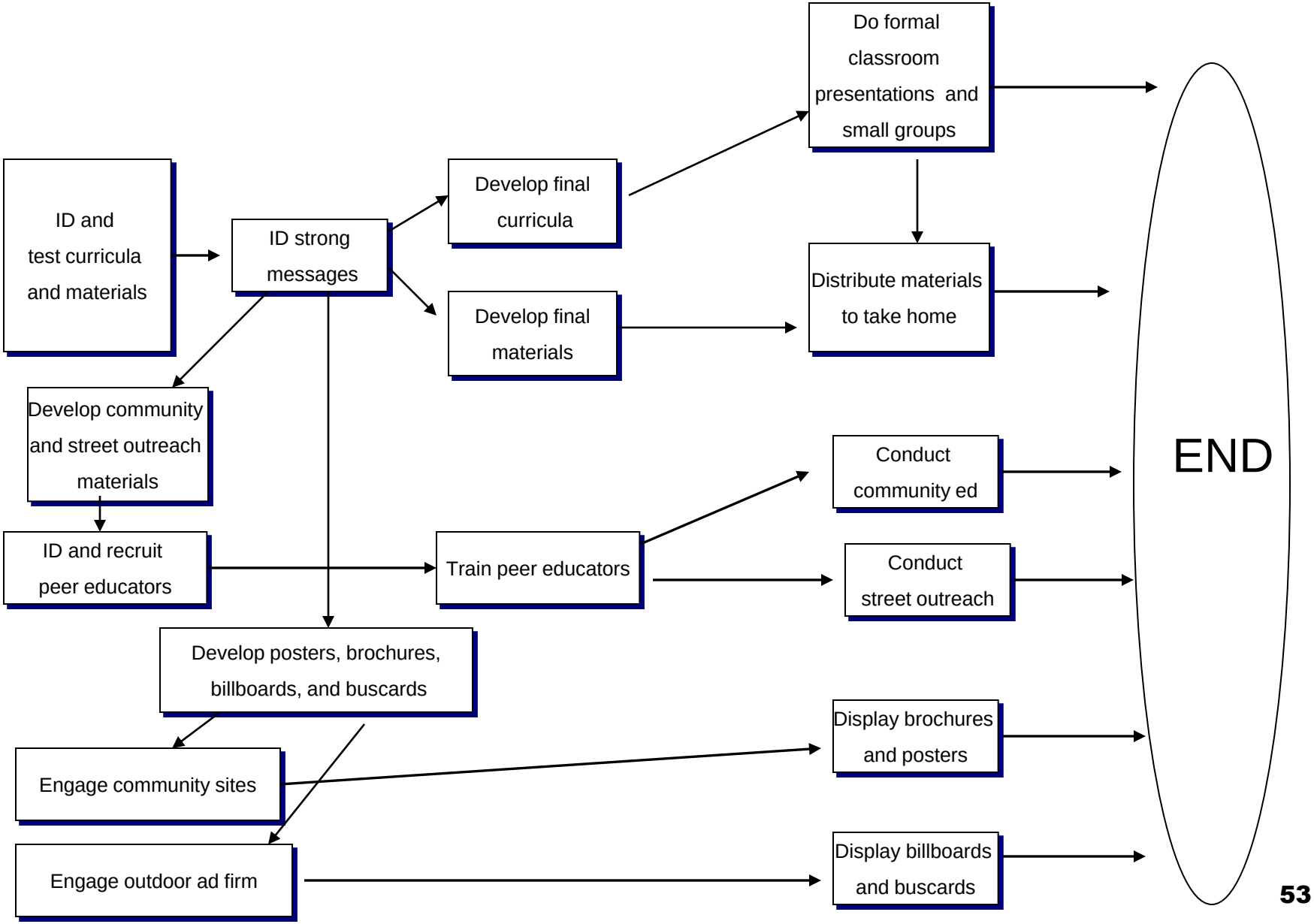
Solution – Project Network Diagram: Social Marketing Plan



Eastside HIV/AIDS Prevention Program: "Causal" Roadmap



Project Network Diagram—Eastside



Determining Critical Path

- Critical Path: The connected series of activities whose combined duration represents the longest path through the network.
- Why It Matters:
  - Determines the project duration.
  - If critical path activity is delayed, project is delayed.
  - To reduce project duration, must reduce time along critical path.
  - CP activities are leverage points

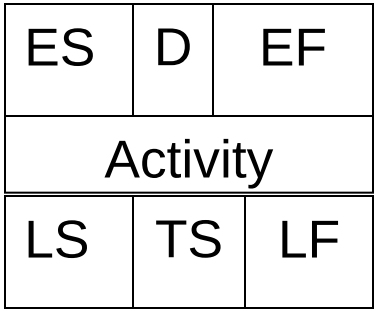
Critical Path—Key Definitions

ES: Estimated Start

D: Duration

EF: Estimated Finish

ES+D=EF

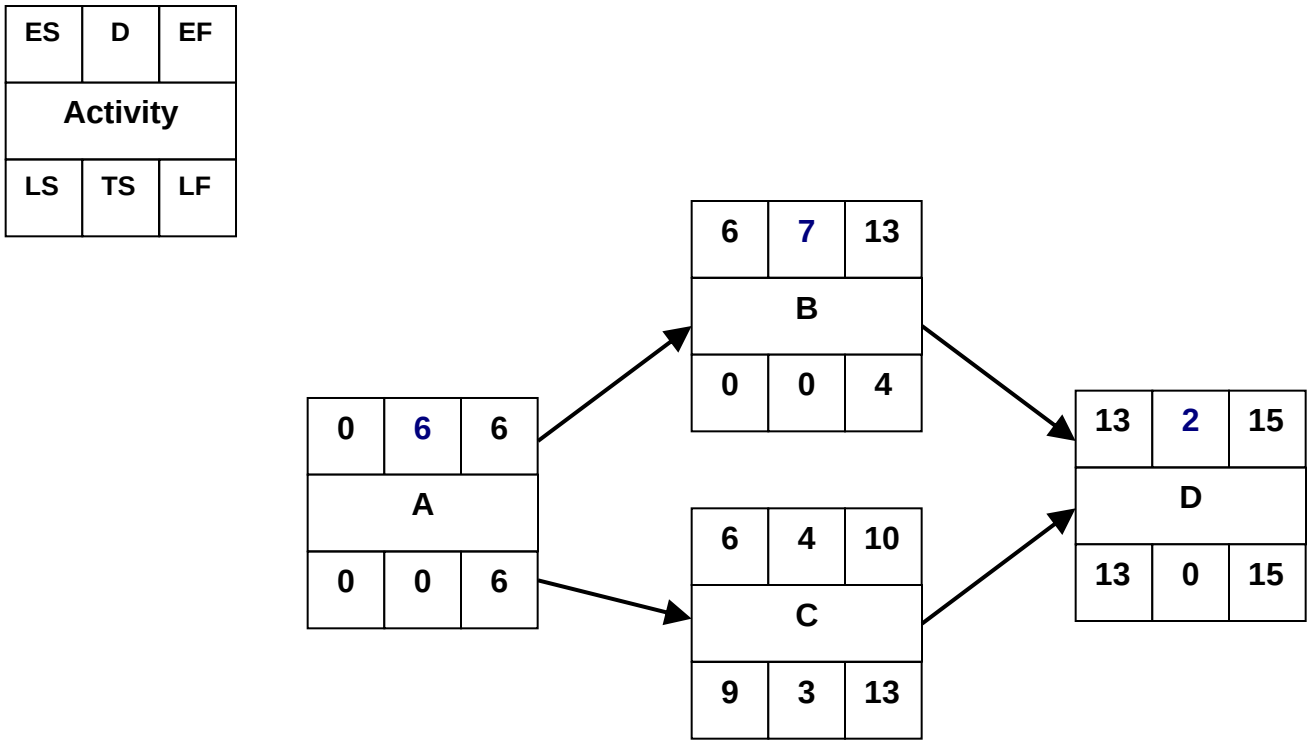


LS: Latest Allowable Start

TS: Total Slack (Float)

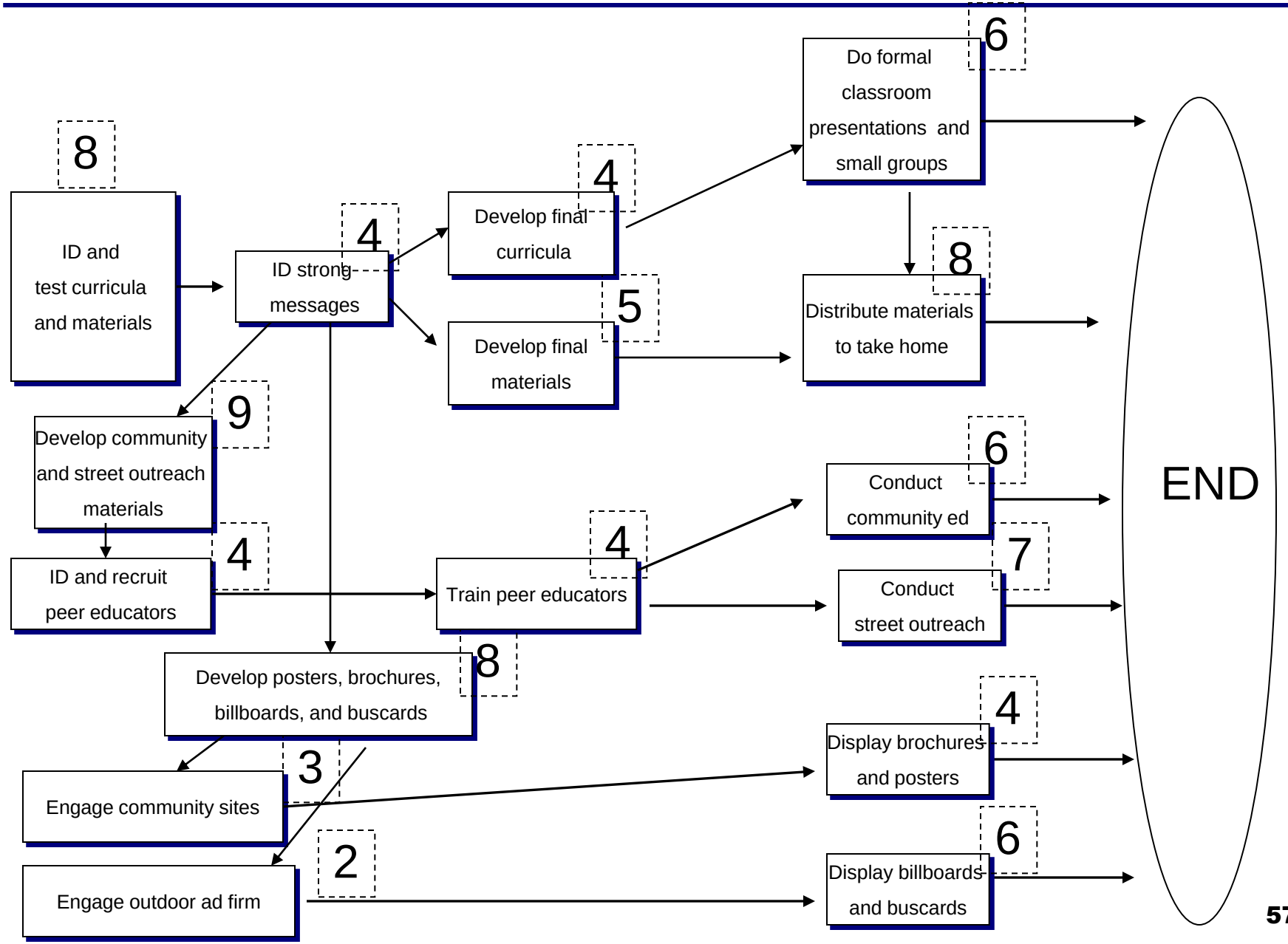
LF: Latest Allowable Finish

Project Durations and Critical Path

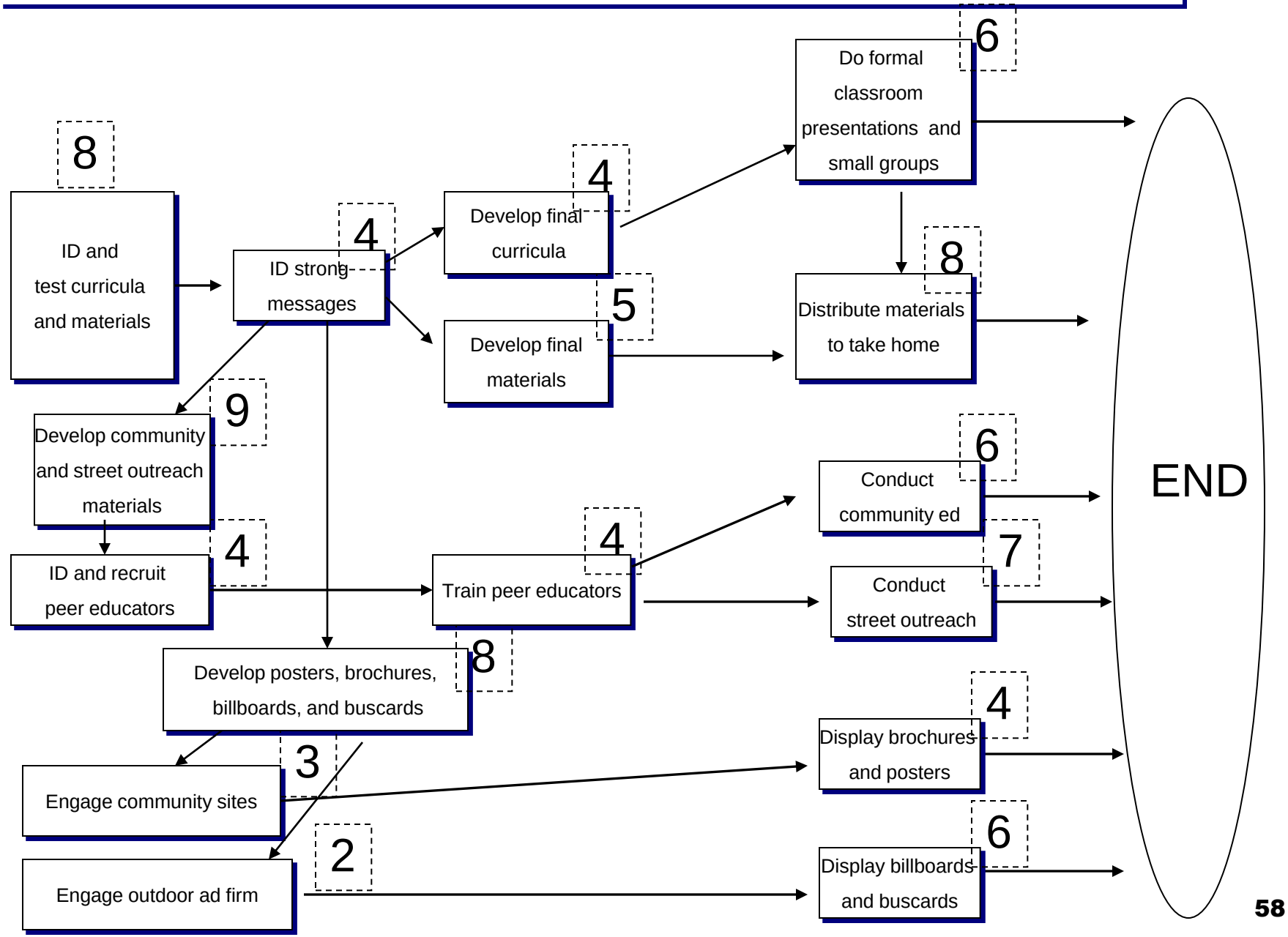


- Critical path activities A→B→D.
- CP = 15 days (6 + 7 + 2 = 15).
- Activities B and C can be undertaken concurrently.

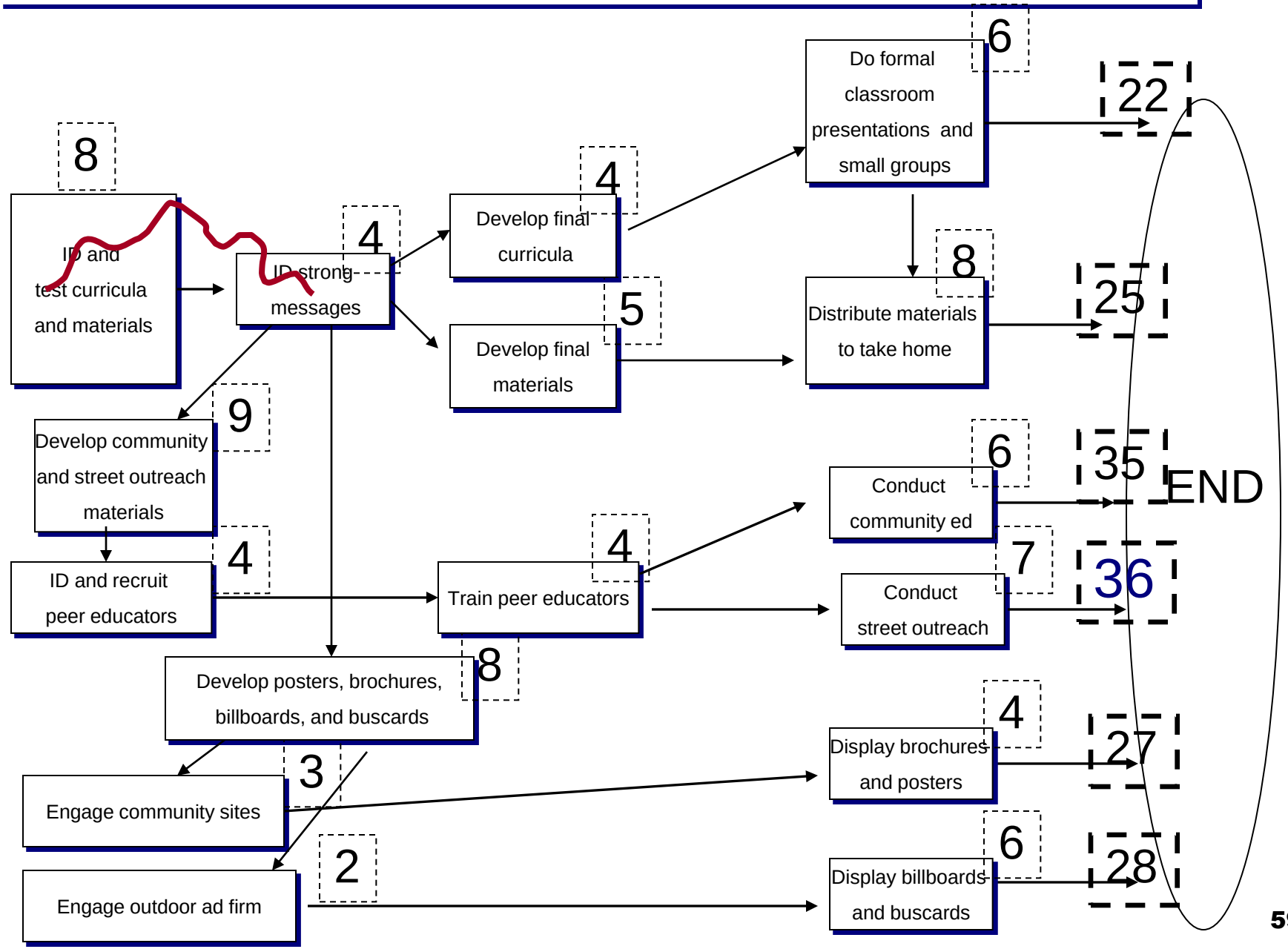
Activity Durations (Weeks)—Eastside



Critical Path Diagram—Eastside



Critical Path Diagram—Eastside



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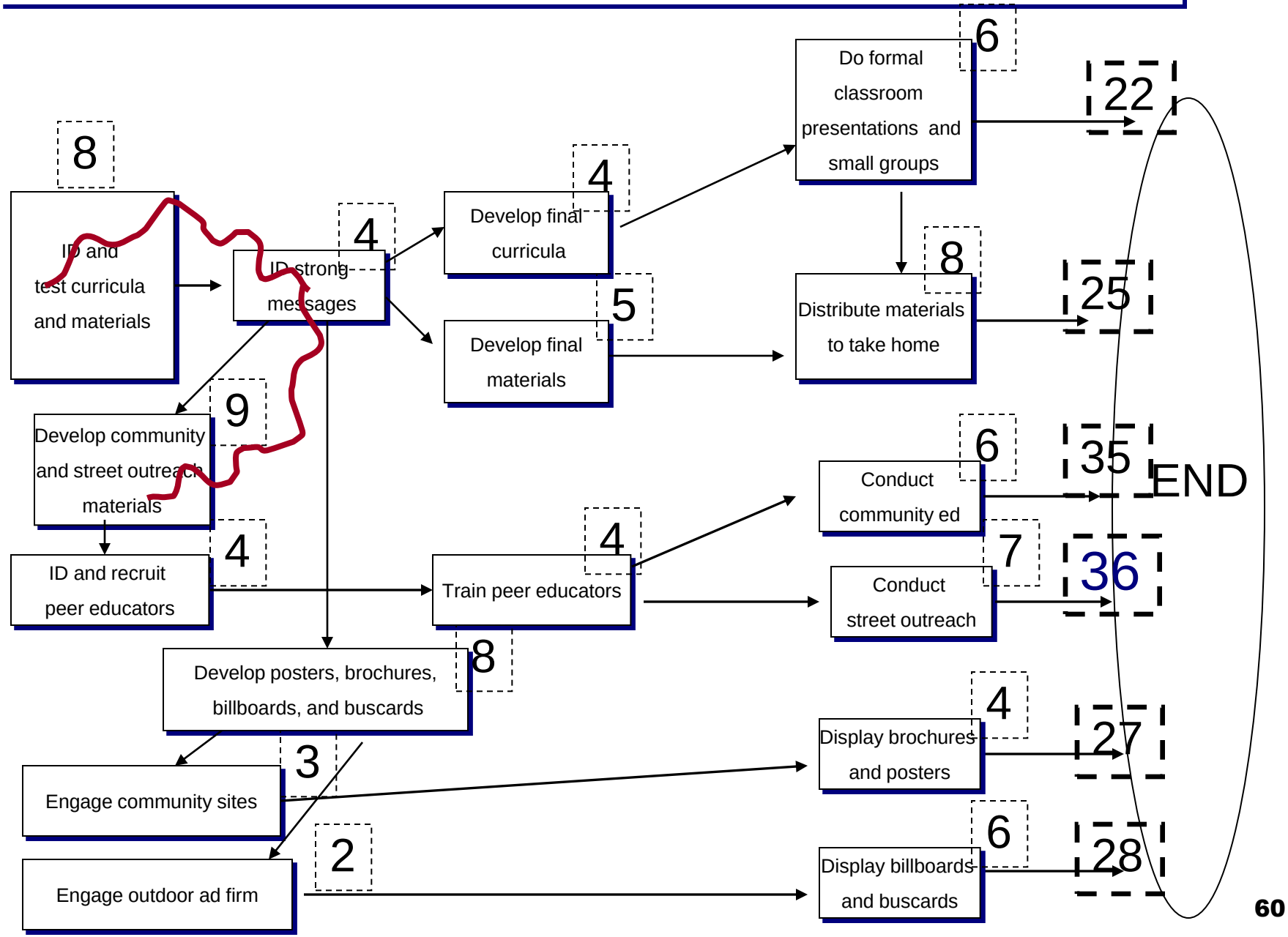

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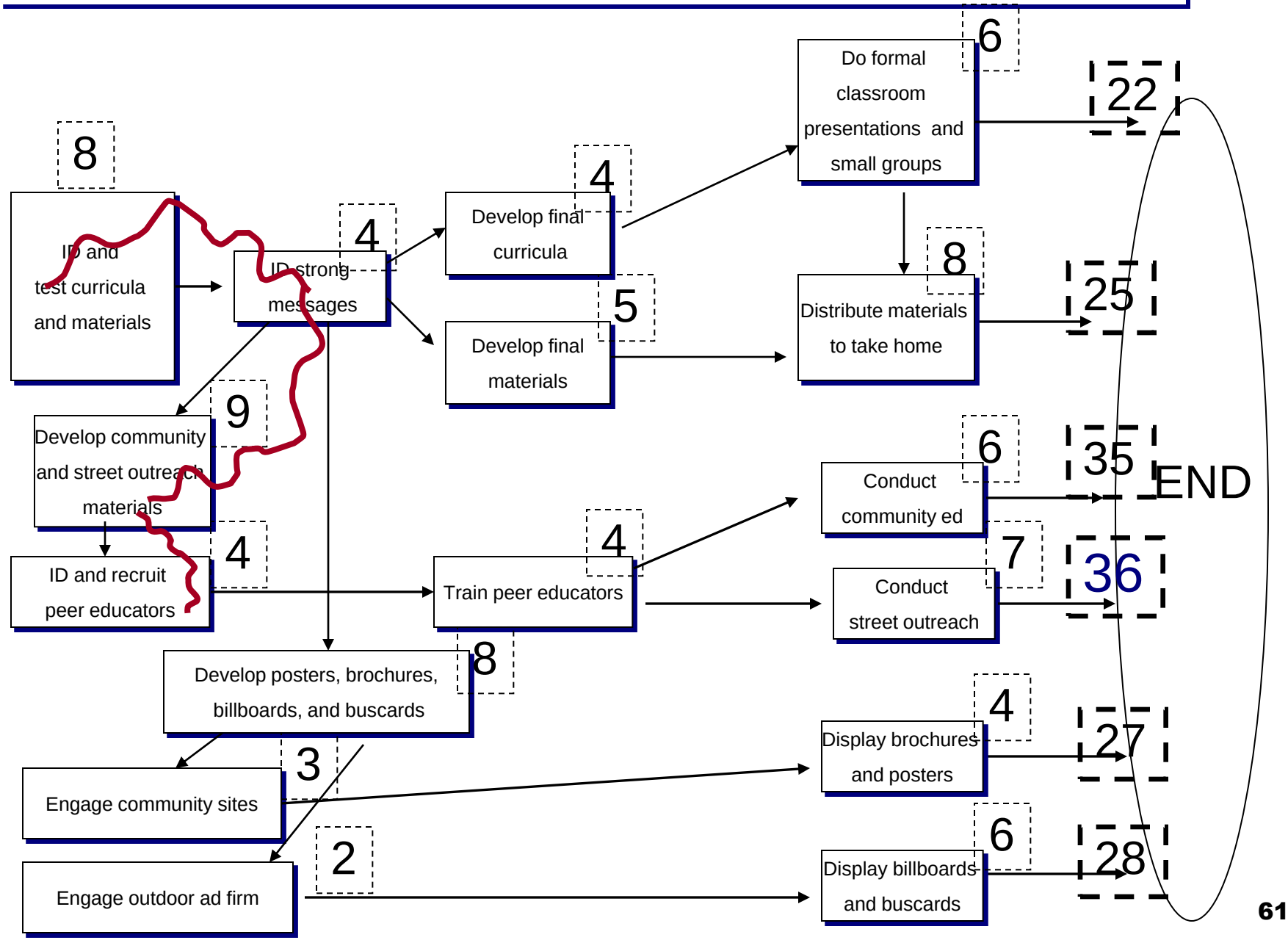

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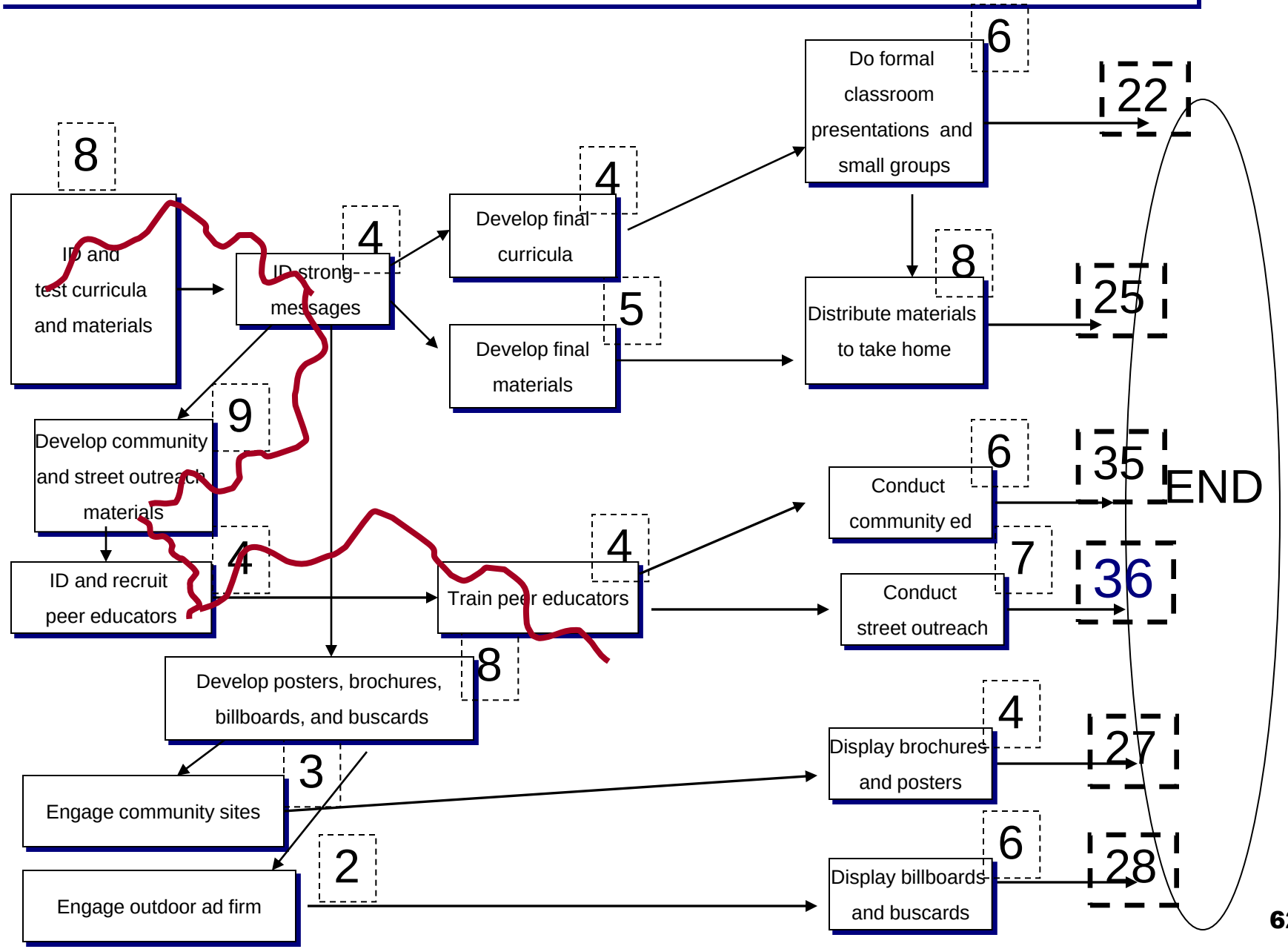

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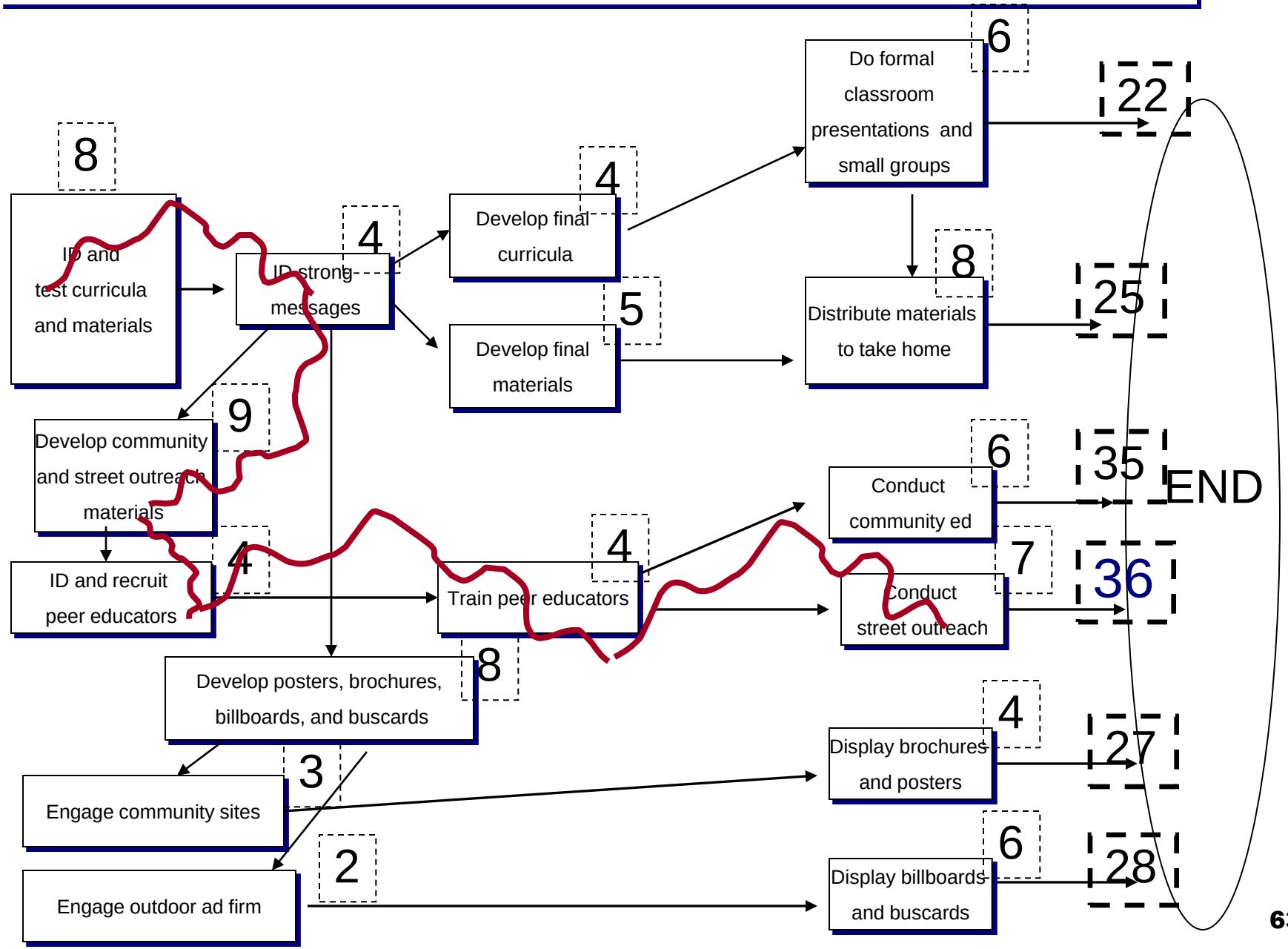


Network Diagrams/CPM Would Be (Most) Helpful When:

- Multi-faceted program
- Much interaction/interdependence among program activities
- Resources are scarce and/or time is of the essence
- Need to think through how to understand, control, and modify program duration
- Other?

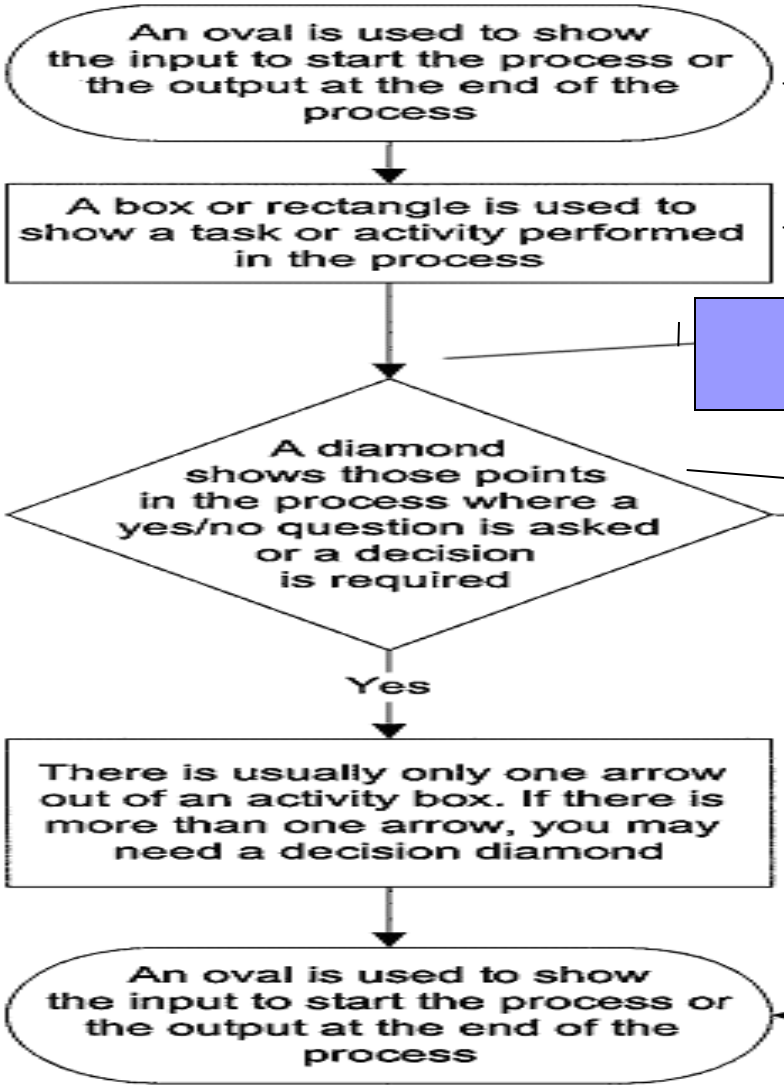
Every Picture Tells a Story

Flow Charts

What is a Flow Chart?

- A pictorial representation describing the steps of a process in detail including inputs and intended outputs, key decision points, and alternative actions for each branch of a decision point.

Flow Chart—Standard Symbols



Ovals—start/end

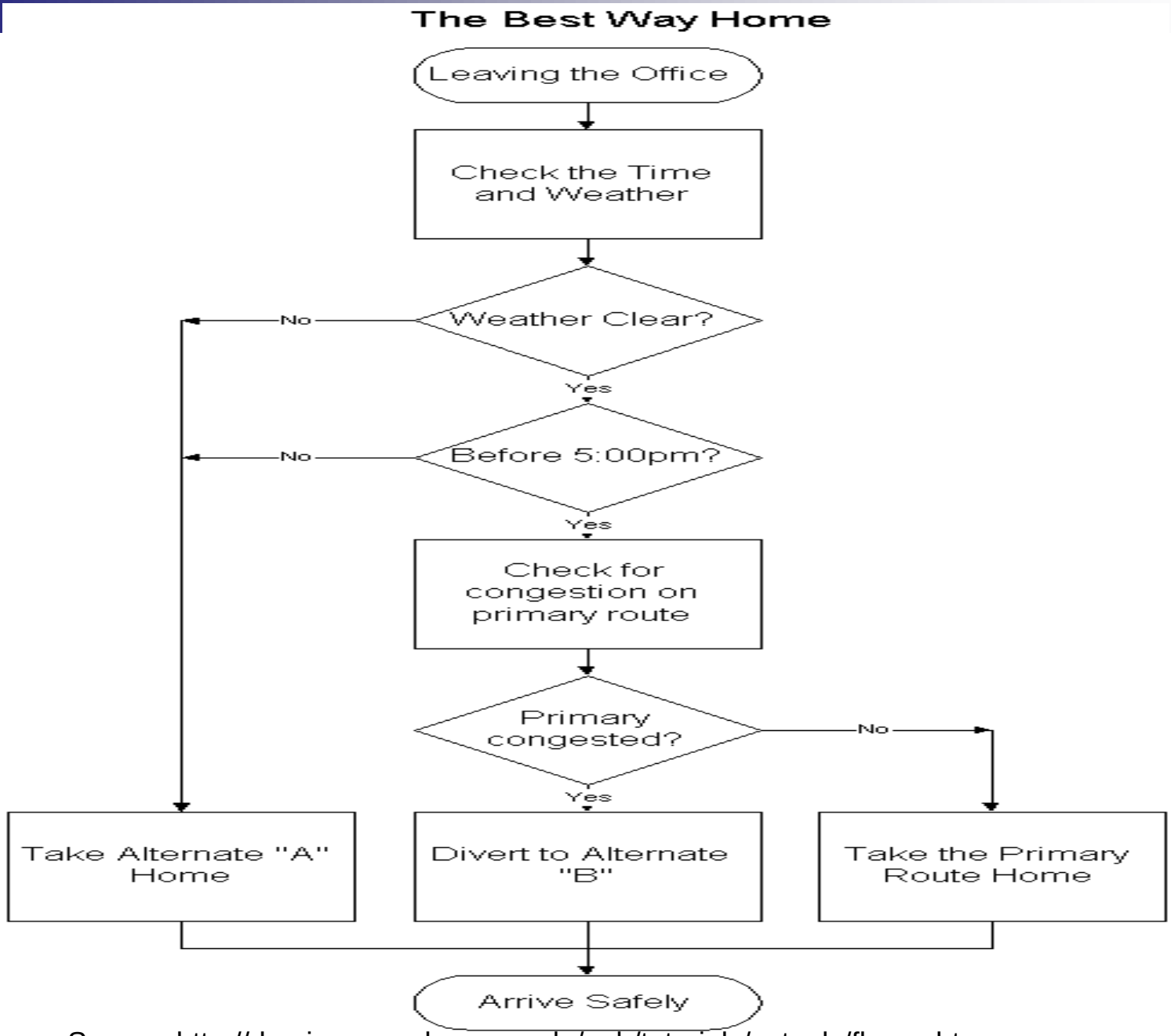
Boxes--activities

Arrows—direction of process

Diamonds—decision points

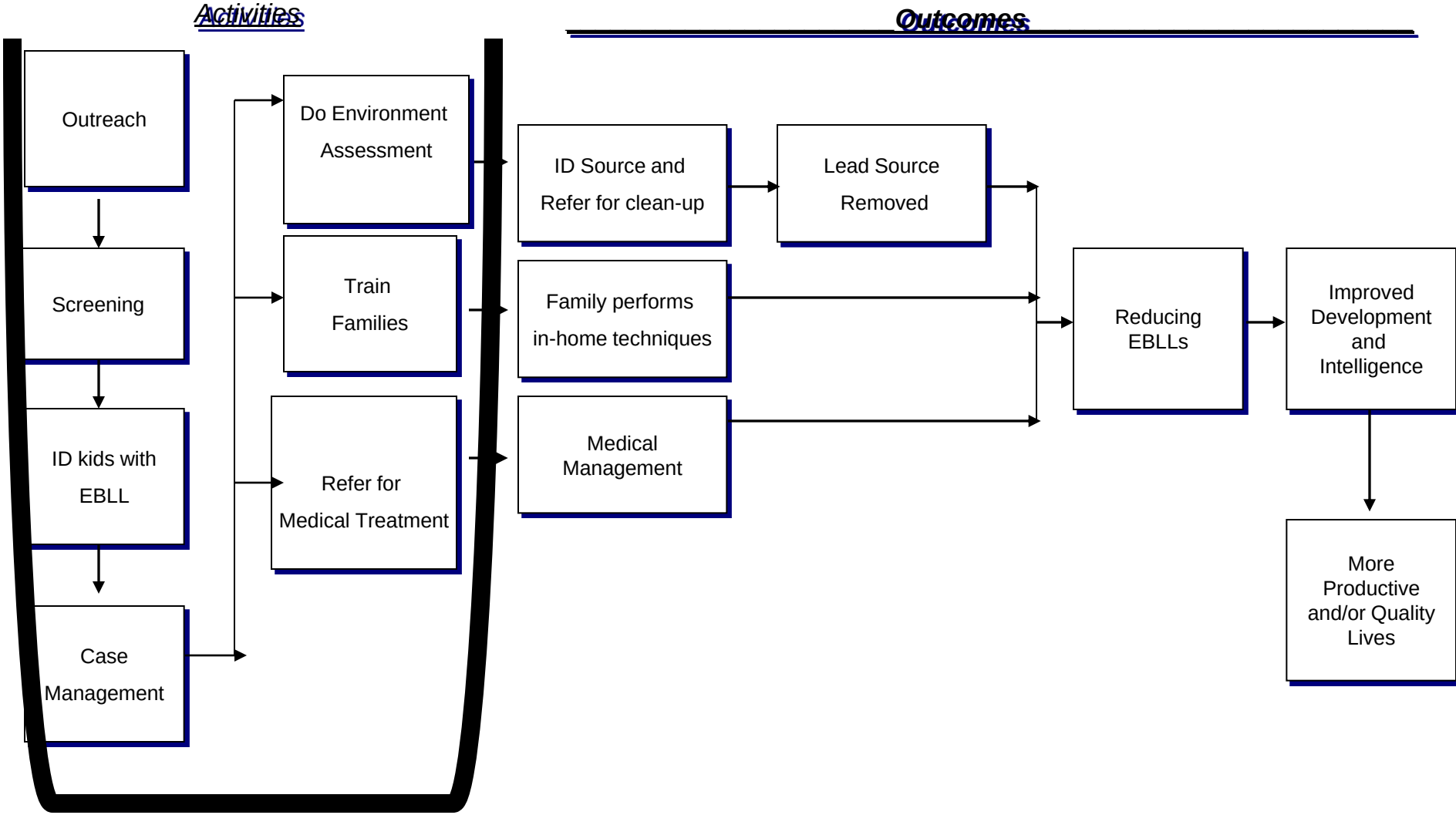
Make sure all paths are “closed”—take you either back or forward to another step!

Source: Iowa State University, Facilities and Management Planning

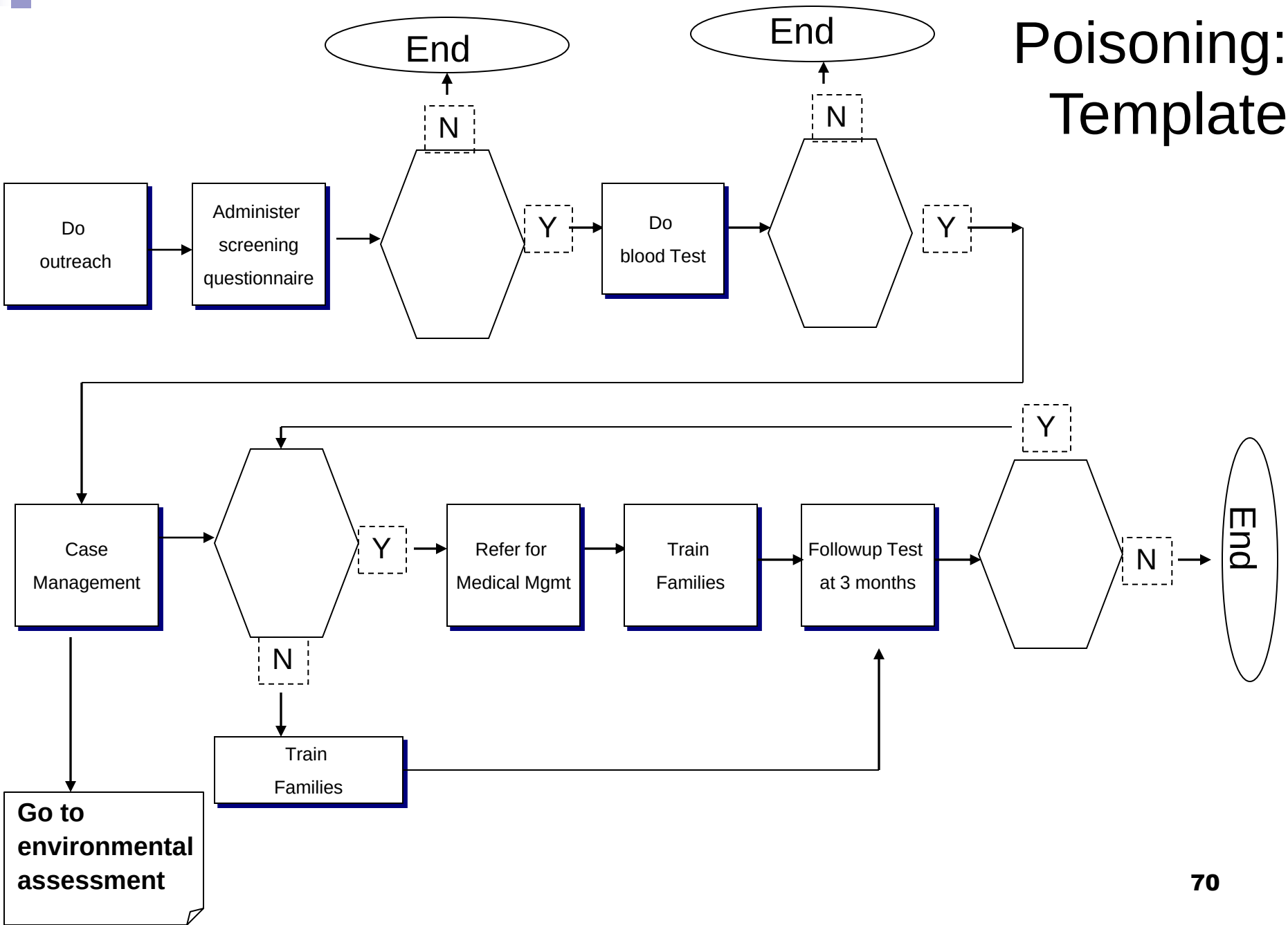


Source: http://deming.eng.clemson.edu/pub/tutorials/qctools/flowm.htm

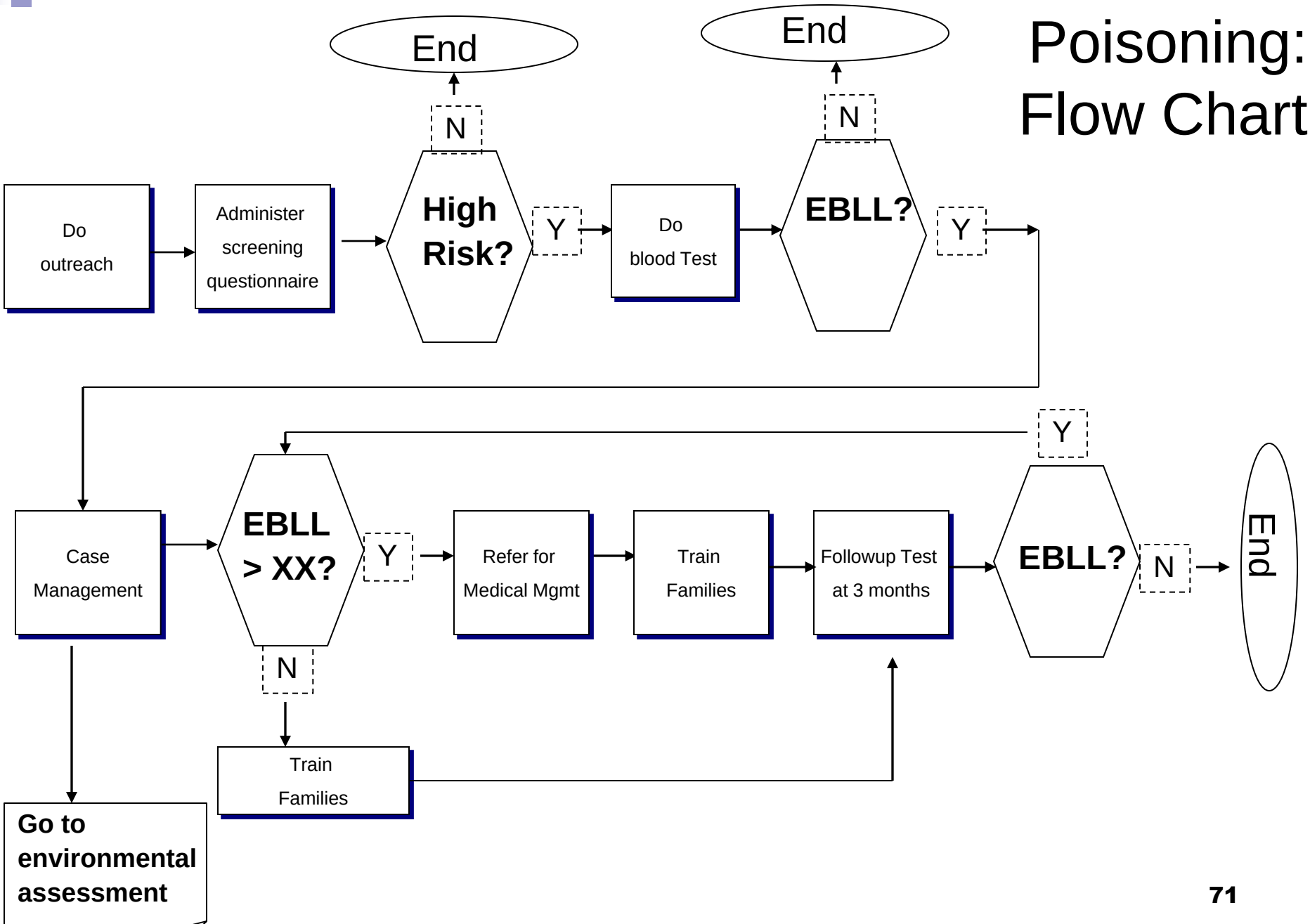
Lead Poisoning: "Causal" Roadmap



Lead Poisoning: Template



Lead Poisoning: Flow Chart



Flow Charts Would Be (Most) Helpful When:

- Much interaction/interdependence among program activities
- Sequencing matters
- Lots of “decision nodes”
- Need clarity on next steps for all instances of each decision
- Other?

Every Picture Tells a Story

Logical Framework Matrices (Logframes)

What is the Logical Framework Approach (LFA)?

- A structured and logical means for planning, implementing, monitoring and evaluating projects, programs and institutional workplans

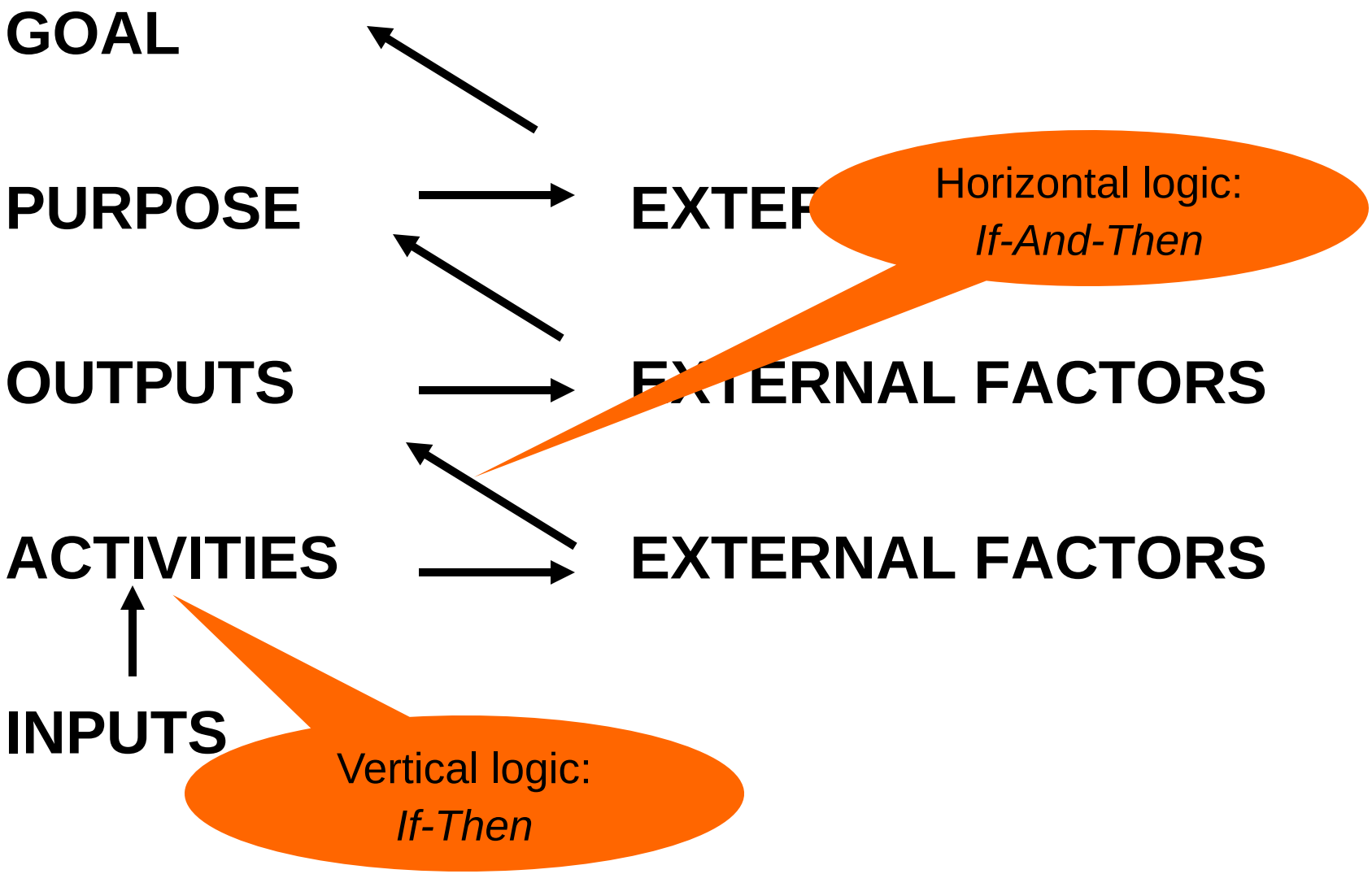
Origins of LFA

- USAID in 1960s
- Addressing related issues:
  - Projects failed to make impacts
  - Projects could not name intended impacts
  - Busted budgets and timelines
  - Monitoring and evaluation done in isolation from stakeholders and intended target audiences

Main Components: Logical Framework Matrix (Logframe)

- **Impact:** The intended result to which the institution or project aspires to contribute—specified as “goal” and “purpose(s)”.
- **Institution/ Project:** The outputs that will be produced to contribute to the desired impact. Activities to produce tangible outputs, and the inputs to mount activities.
- **The Operating Environment:** the many external factors which are needed for outputs to contribute to purposes and for purposes to contribute to goals

Logframe “Hierarchy”



Goal and Purpose

- Goal: Ultimate objective to which project is trying to contribute in the long term
- Purpose: (More) immediate effect or impact of the work of the institution/project
  - (Often) only one purpose in a logframe
  - Something that makes significant contribution to achieving goal
    - But, is (usually) outside of the immediate control of the institution

Outputs

- Products/services/capacities which the institution/project agrees to deliver
  - Feasible for **project** to deliver
  - Should include all outputs needed to reach the purpose
  - For international projects often found in in the “terms of reference”

Activities and Inputs

- Activities: Group of actions related to producing each output
  - Activities necessary to produce the output
    - Only activities the institution/project will do
- Inputs: People, funds, materials, services needed for activities to happen

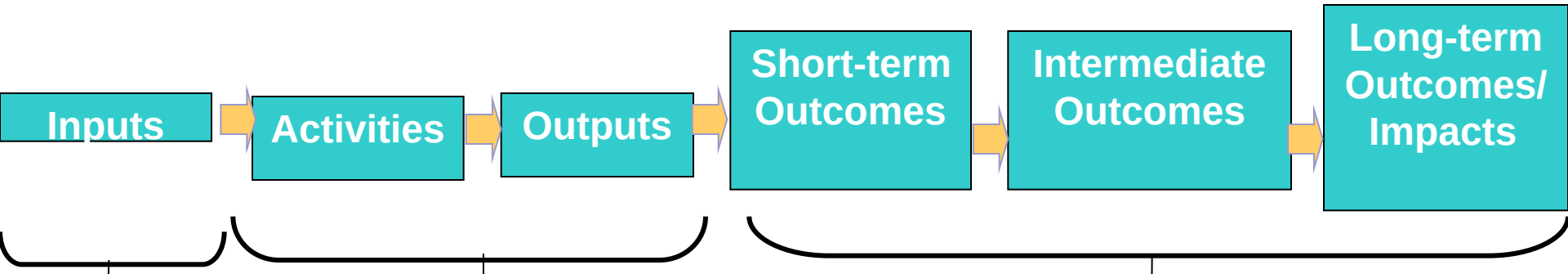
External Environment—Assumptions and Risks

- Assumptions—things which must exist for the project to succeed
- Risks—things which, if missing, jeopardize success of project
- Vertical logic: If→And→Then
  - "Killer assumptions"—project redesign required

Typical Logframe

Project Structure	**Objectively Verifiable Indicators (OVIs)**	**Means of Verification**	**Assumptions/ Risks**
Goal			
Purpose(s)			
Outputs			
Activities	Inputs		

Typical Components of a Project/Program



What the program *needs*…

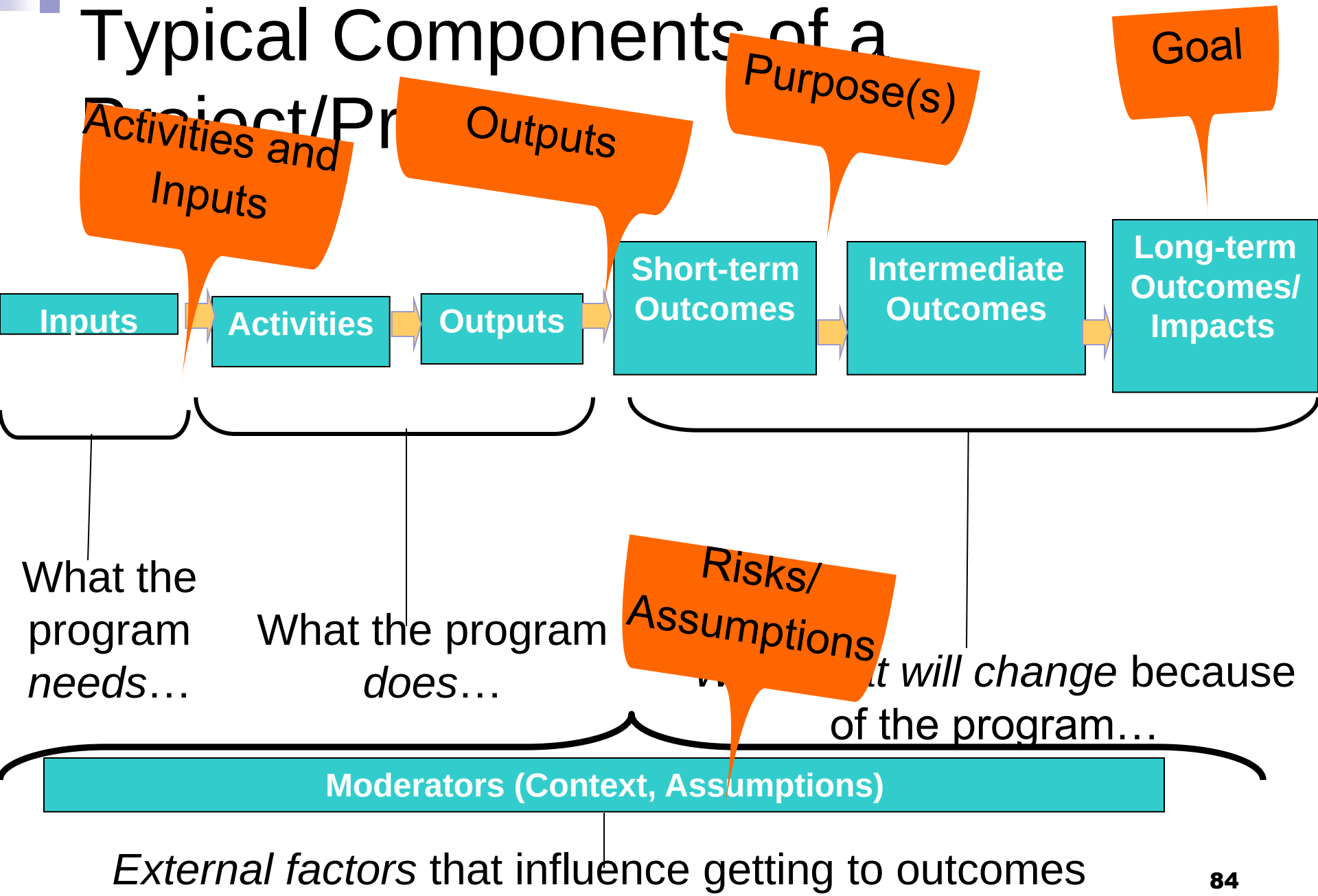
What the program *does*…

Who/what will change because of the program…

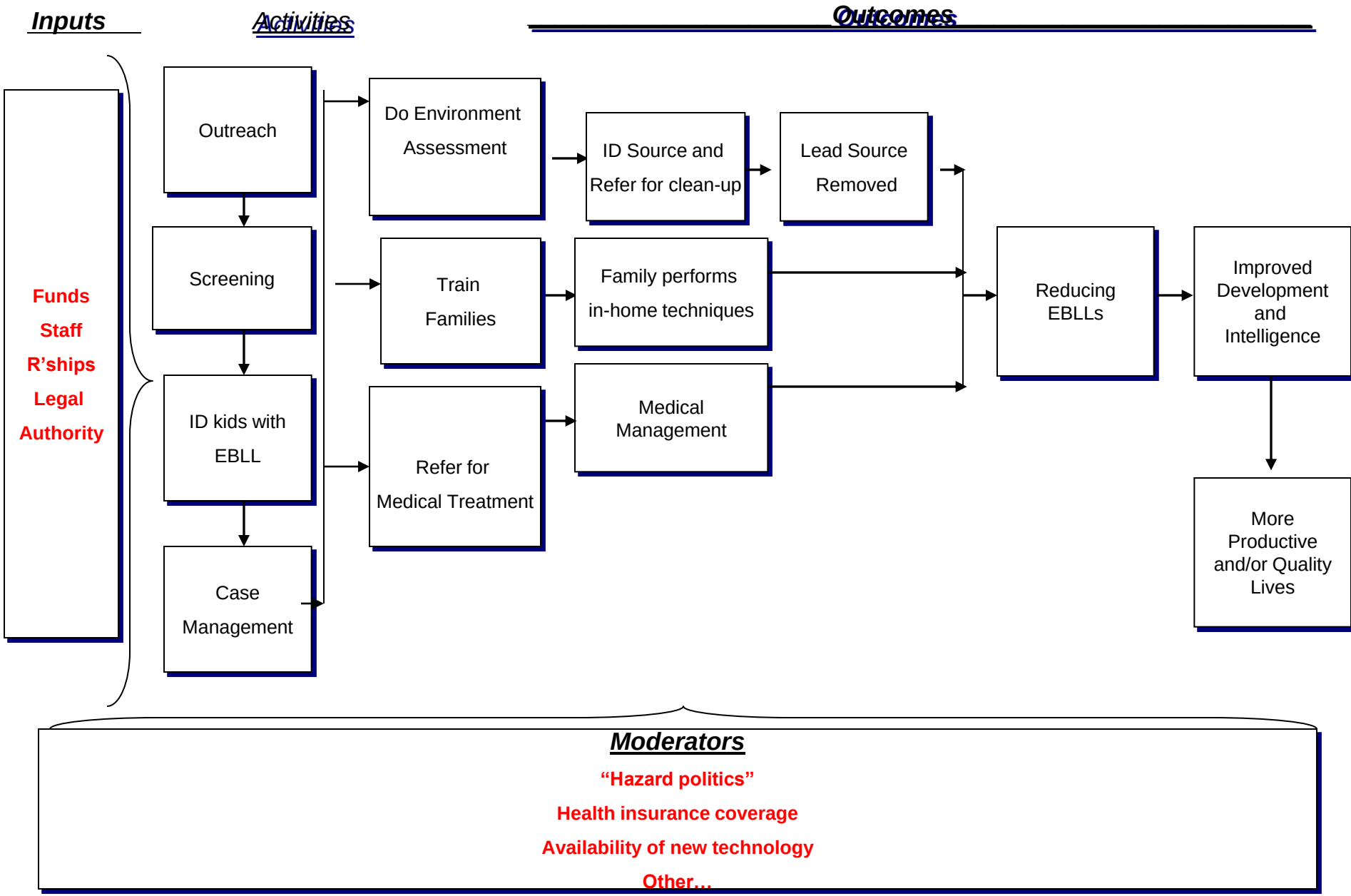
Moderators (Context, Assumptions)

External factors that influence getting to outcomes

Typical Components of a Project/Pr



Lead Poisoning: Full "Causal" Roadmap



Logframe—Lead Poisoning-1

Project Structure	Objectively Verifiable Indicators (OVIs)	Means of Verification	Assumptions/ Risks
Goal: Sustained reduction in EBLL in children			
Purpose(s): 1. Leaded environments are cleaned up 2. EBLL children receive medical treatment 3. Families adopt ameliorative nutrition and housekeeping behavior			1. Enough houses are reached to move pop-wide measure 2. Enough kids are reached to move pop-wide measure 3. Families accurately report their actions
Outputs: 1. Referrals of leaded homes 2. Referral of EBLL kids to medical care 3. In-home trainings with families of EBLL kids			1. Housing department has funds to clean up referred houses 2. Medical providers able to take on care of poor children 3. Families have motivation to implement recs
Activities: • Assess homes of EBLL Outreach • Screening • ID EBLL kids • Case manage kids	**Inputs:** • Funds • Staff • Legal authority • Relationships with env and med community		• Adequate relationships with env or med community • Enough staff • Trained staff • Targeting right n'hoods

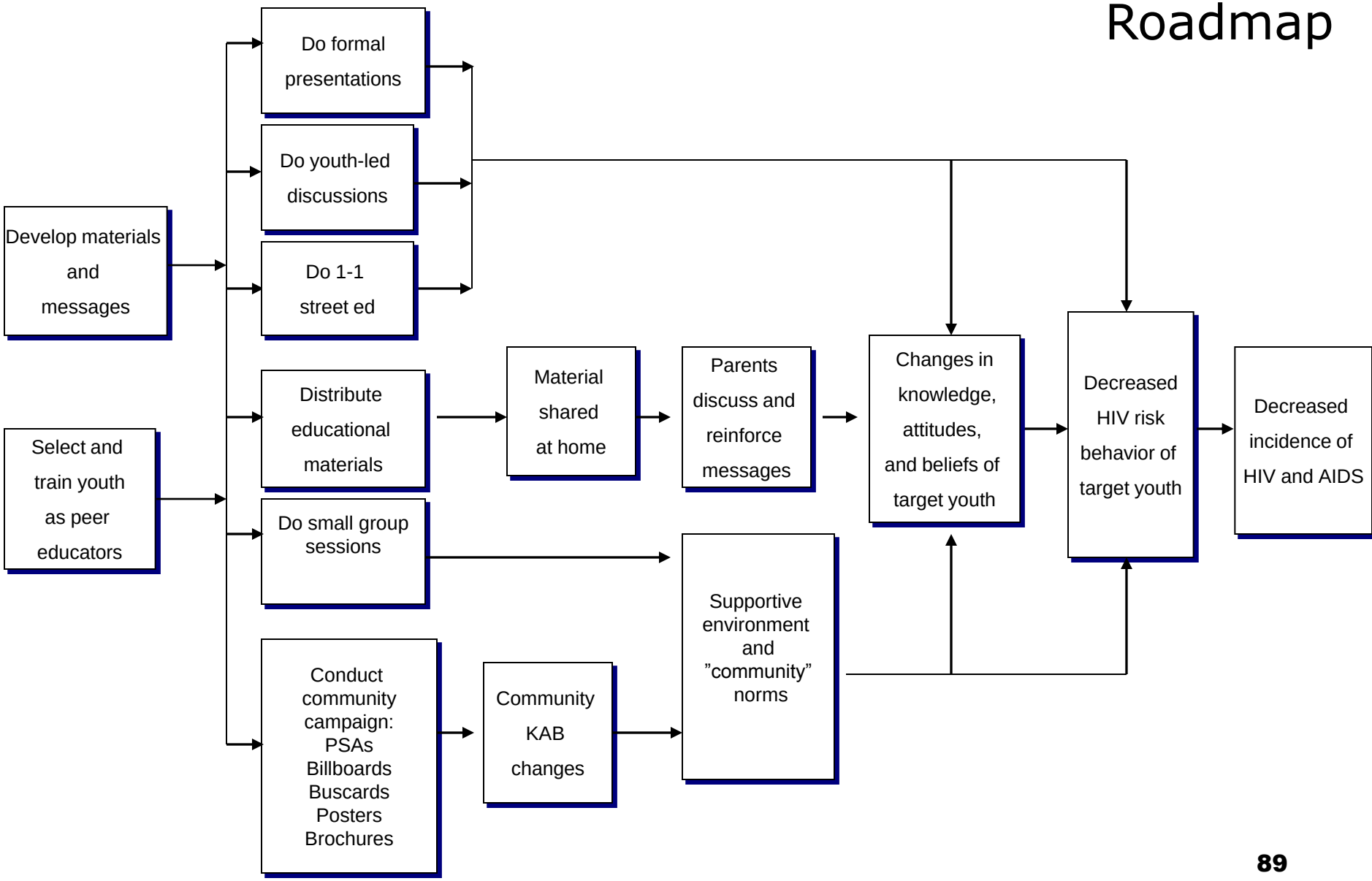
Objectively Verifiable Indicators (OVIs)

- OVIs measure achievement of goal, purpose and outputs
- Include ones that can be:
  - Verified at reasonable cost
  - Can be collected by project

Logframe—Lead Poisoning-2

Project Structure	Objectively Verifiable Indicators (OVIs)	Means of Verification	Assumptions/ Risks
Goal: Sustained reduction in EBLL in children	XX% reduction in the number of children ages XX-XX with BLL exceeding 10 ul	County surveillance data	
Purpose(s): 1. Leaded environments are cleaned up 2. EBLL children receive medical treatment 3. Families adopt ameliorative nutrition and housekeeping behavior	1. XX% of homes identified with a lead problem are "cleaned up" 2. XX% of EBLL kids with BLL <25 are in treatment with qualified MD 3. XX% of families with EBLL kids are adopting recs	1. Housing dept logs 2. Health dept case management logs 3. Self-report survey of families	1. Enough houses are reached to move pop-wide measure 2. Enough kids are reached to move pop-wide measure 3. Families accurately report their actions
Outputs: 1. Referrals of leaded homes 2. Referral of EBLL kids to medical care 3. In-home trainings with families of EBLL kids	1. Number of leaded homes referred 2. Number of referrals of kids to medical care 3. Number of trainings with EBLL families	1. Health dept logs 2. Health dept logs 3. Health dept logs	1. Housing department has funds to clean up referred houses 2. Medical providers able to take on care of poor children 3. Families have motivation to implement recs
Activities: 1 Assess homes of EBLL Outreach 2 Screening 3 ID EBLL kids 4 Case manage kids	**Inputs:** Funds Staff Legal authority Relationships with env and med community		Adequate relationships with env or med community Enough staff Trained staff Targeting right n'hoods

Eastside HIV/AIDS Prevention Program: "Causal" Roadmap



Eastside Logframe

- Using Eastside narrative and/or logic model, identify:
  - Goal
  - Purpose
  - Outputs
  - Activities
  - Inputs
- ID some key assumptions and risks

Logframes vs. Logic Models

Logframe pluses viz logic models:

- Succinct
- Integrates concept—measure—measurement from start
- Forces link between external environment and project
- Others?

Logframes vs. Logic Models

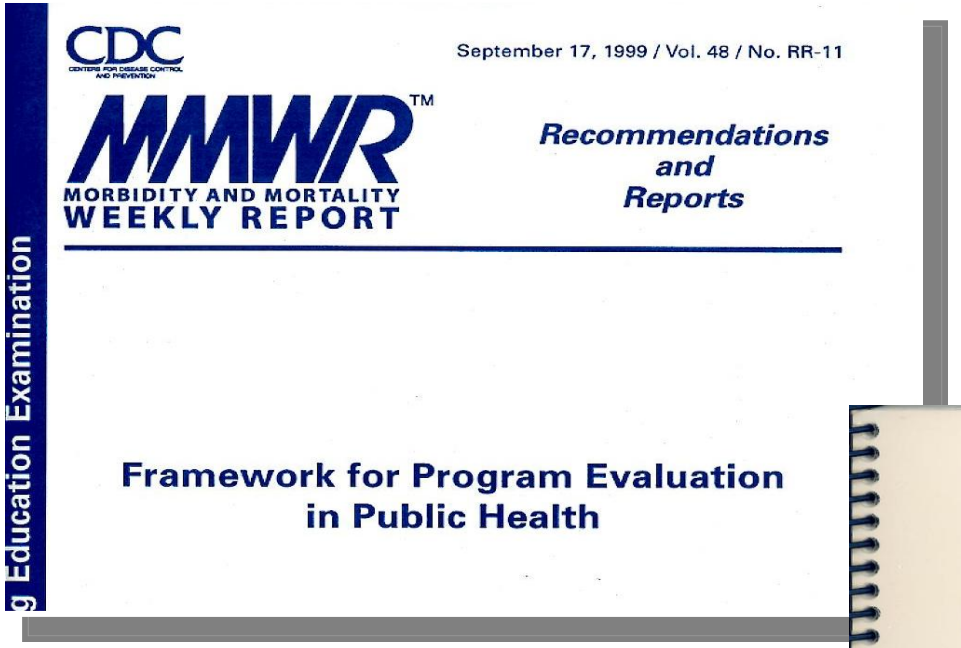
Logframe minuses viz logic models:

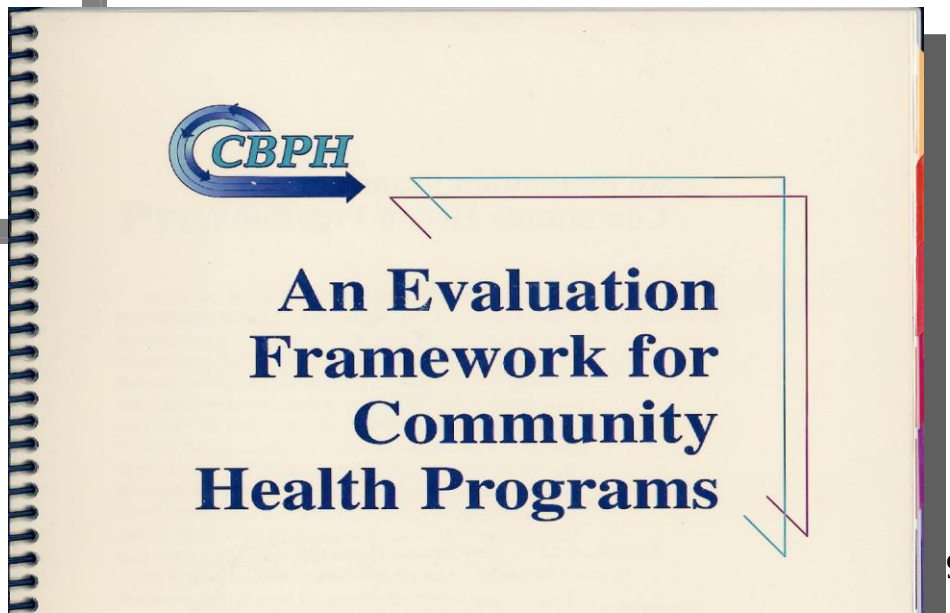
- Less attention to clear program theory—can lead to garbage in-garbage out
- (Often) focuses on single purpose
- Not good at handling “chains” of outcomes
- Use of “outputs” a little garbled
- External factors often a “rubbish” bin and not used strategically
- Others?

Every Picture Tells a Story

Life Post-Session

Helpful Publications @ www.cdc.gov/eval





Helpful Resources

- NEW! Intro to Program Evaluation for PH Programs—A Self-Study Guide: http://www.cdc.gov/eval/whatsnew.htm
- **Logic Model Web Sites**
  - Innovation Network: http://www.innonet.org/
  - Harvard Family Research Project: http://www.gse.harvard.edu/hfrp/
  - University of Wisconsin-Extension: http://www.uwex.edu/ces/lmcourse/
  - CDC/DASH:http://www.cdc.gov/healthyyouth/evaluation/resources.htm#4
  - CDC/STD: http://www.cdc.gov/std/program/progeval/TOC-PGprogeval.htm
- **Texts—Evaluation and Logic Models**
  - Kellogg Foundation Logic Model Development Guide: www.wkkf.org
  - W.K. Kellogg Foundation Evaluation Resources: http://www.wkkf.org/programming/overview.aspx?CID=281
  - Rogers et al. Program Theory in Evaluation. New Directions Series: Jossey-Bass, Fall 2000
  - Chen, H. Theory-Driven Evaluations. Sage. 1990

Helpful Resources

Process Mapping/Flow Charts

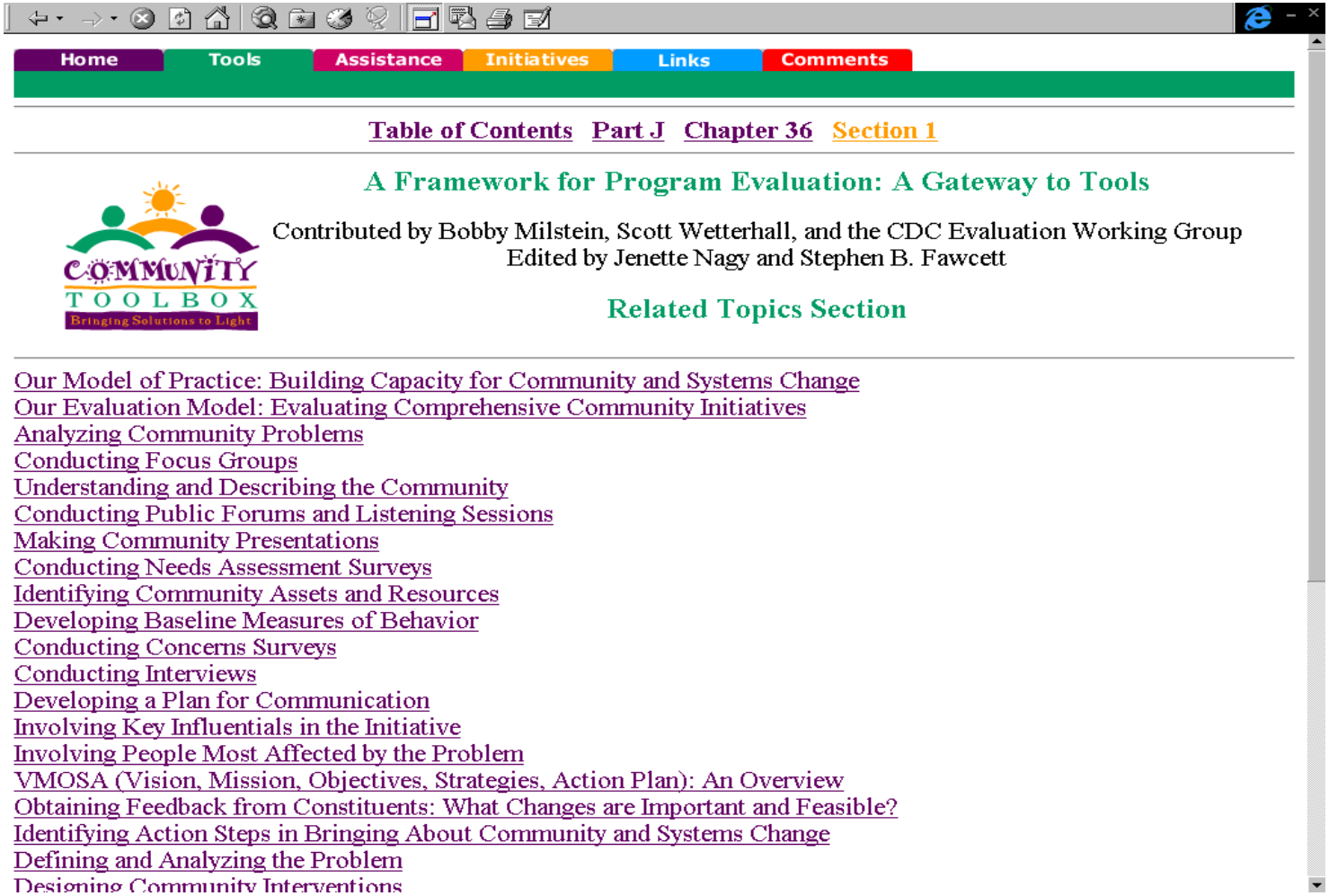
- Madison, Dan: *Process Mapping, Process Improvement, and Process Management*, Paton Press, 2005
- Joiner Associates: *Flowcharts: Plain & Simple: Learning & Application Guide* (Paperback), Oriel Inc. 1995
- Damielo, Robert: *The Basics of Process Mapping* (Paperback), Productivity Press, 1996

Logframes

- The Knowledge and Research (KaR) Programme on Disability and Healthcare Technologies: *Constructing a Logical Framework,* http://www.kar-dht.org/logframe.html
- International Fund for Ag Development (IFAD): *Linking Project Design, Annual Planning, and M&E,* http://www.ifad.org/evaluation/guide/3/3.htm
- Campell, Jock, Innovation Centre, University of Exeter: *Logical Frameworks*, http://www.innovation.ex.ac.uk/imm/GCRMN%20Logframe%20training.pdf

Community Tool Box

http://ctb.ku.edu



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