

I am going to tell you about a program of action research that aims to identify best practices for promoting **maternal health literacy**.

SLIDE 2 Using Renkert and Nutbeam's **definition**, we viewed MHL as a lifeskill needed to manage personal and family health and healthcare.

SLIDE 3 In **action research** practitioners collect data and use it to improve their practice. In these projects, the practitioners are home visitors. They are nurses, social workers, and most commonly trained paraprofessionals. They work in programs associated public health departments, school districts, or health insurance plans. They all serve socially and economically disadvantaged families with children to age 3. Their programs are located across the US.

We chose home visitors as a channel to promote MHL for several reasons, Chief among them:

- **Parents** participating in home visiting programs are **new healthcare decision makers** for growing at-risk families. **Successful efforts stand to benefit entire families** across their lifetimes, with short- and long term benefits extending to the healthcare system, the schools, the justice system, and the public health.
- Practitioners' **unique access and trusting relationships** position them to observe and to influence the complex interactions of multiple factors that determine a woman's MHL. These factors are not readily visible or modifiable in a clinical setting.

SLIDE 4 We trained the home visitors to provide direct assistance to personalize selected health education materials and information from healthcare providers; and to and apply it in vivid real life circumstances.

SLIDE 5 RE skills development, While the literature focuses strongly on basic skills for gaining knowledge (reading), and gives scant attention to interactive and reflective skills; we followed the lead of literacy scholars who describe **reflection** as the mind's strongest glue. They argue that reflective skills are so essential to make meaning from information and to use it in context that reflection ought to be classified as a basic skill. So in America we would say there are four Rs: reading, 'riting, 'rithmetic and reflection.

The primary teaching and empowerment strategy in this intervention is reflective questioning, or "Teaching by Asking". This is not to suggest that service providers should forget what they know. Rather, it means that they use their expertise to craft reflective questions and lead reflective conversations that facilitate *self*-discovery and *self*-teaching.

OK. Get ready. I'm going to give you a big dose of jargon and numbers.

Our initial study was funded jointly by AHRQ and NICHD. We conducted a two-year quasi-experimental seven-group cohort study using four waves of measurement and matched comparison groups. 72 home visitors collected data on nearly 3500 parent-child pairs over 6 to 36 months of service.

OK it's over.

SLIDE 6 Our primary data collection instrument and our measure of MHL is the **Life Skills Progression, known as the LSP**. The LSP is used widely in the US to demonstrate the effectiveness of home visitation services and to tailor interventions to particular families.

Since we viewed HL as an underlying construct, an idea; it cannot be measured directly. But, we can estimate MHL by what a mother actually does for health with the information and services and support available to them. In other words, by her health and healthcare actions, practices and behaviors. These

things are not health literacy in themselves. Rather, they are indicators of the skills and motivations that enable a person to obtain, understand and use information and services to improve or maintain health.

And so we derived from the LSP two scales to examine two aspects of maternal health literacy.

SLIDE 7 What we called **healthcare literacy** (others call it medical lit), - using health information and services - was measured as the combined score of these nine items from the LSP.

SLIDE 8 What we call **self-care literacy** (Others call it simply health literacy) – management of personal and child health at home- was measured as the combined score of these 7 items from the LSP.

SLIDE 9 Key finding is that overall parents in enhanced home visitation for 12-18 mo achieved significant improvement MHL, regardless of reading ability. **Those with lower estimated reading level made greater gains** than more skilled readers. **Teen parents** started at a big disadvantage, on nearly all indicators. But they made rapid gains in the first 6 months of service to close the gap between themselves and their more experienced matches.

And so we concluded that home visitation may indeed be an effective channel to promote maternal health literacy. And the intervention seems to reduce disparities related to age and to literacy.

SLIDE 10 The 2nd study using the same data was funded by US NLM. We examined links between **MHL and depression** in 750 parents who had 4 observations of depressive symptoms about 6 months apart.

Key finding is that maternal health literacy and depression are very closely related.

Further, in opposition to our hypothesis, **depression did not interfere with visitors' ability to promote MHL.**

Slide 11 Here again we found that **lower functioning parents made the greatest gains.** Depressed parents (on the right in each of these graphs) reduced the gap between themselves and not-depressed parents; in part by obtaining treatment for their depression. Significant improvements in MHL occurred even where improvements in depression were minor. This suggests that the effects on MHL were separate from those on depression. This study was published in Oct 2011 in the Maternal and Child Health Journal. It is published as Open Access. So you can Google and find it online. Free Full text.

Slide 12 **The third study** with this cohort was also financed by NLM. It is just wrapping up. We examined the relation of Maternal Health Literacy and **Child Developmental Outcomes** in 1300 dyads who had at least 2 assessments of child development using the Ages & Stages Questionnaire. Preliminary findings suggest that **maternal health literacy strongly predicts child developmental outcomes**; so that mothers of children with delays are much more likely to have low health lit scores. **And HcLit - especially the Use of Information item predicts participation in Early Intervention services**, which are provided free of charge by the federal government. These findings suggest that MHL is a vital concern for any program that aims to promote child development.

SLIDE 13 A separate **4th study** with a different cohort is building on these findings. The **Parents as Teachers HL Demo Project**, funded by the MO Foundation for Health, trained parent educators in rural school districts in Butler County, MO, chosen for having the highest poverty rate and lowest literacy rate in the state, which is located in the middle of the US. These home visitors used the LSP to assess 113 parents/child dyads up to 3 times over 12-18 months. Learning from previous projects, we increased

training emphasis on the empowerment aspects of MHL (esp reflective skills), including a practical framework for designing reflective conversations that “activate patients” and enable them to be response-able for health.

SLIDE 14 Key finding is that parents significantly improved HcL and ScL. In fact, they achieved bigger improvements than we’ve seen previously. This was a lovely surprise. Our earlier studies showed a pattern of major improvement in the first 6 mo of service, and then leveling out. These Parents had already been in service on average 15 months at the start of the project. With that and the relatively small sample size and very challenging conditions, we were braced to detect little or no change. These parents’ striking, continuous improvement after the training increased our confidence that observed changes may indeed be attributable to the intervention.

A new finding in this group that we did not see previously, is that mothers who had a stronger relationship with the Visitor were more likely to achieve significant increase in HL scores, further increasing our confidence in the intervention.

These projects are designed to guide practice. To begin to visualize potential points of intervention and pathways to improve MHL, we plotted the statistically significant correlations between the MHL indicators and surrounding family conditions that are reported on the LSP. This is what we got.

SLIDE 15. This **Web of Interaction** demonstrates that HL is **massively multifactorial**. It is unlikely to be resolved by better info alone. From a research standpoint, it suggests that Randomized Control Trials, which seek to isolate the effects of a single element, will appear to prove that nothing works. Because what we are looking for is the combination of factors that will support progress in a particular family.

From a practice standpoint, this shows it is safe, it is feasible, it is effective to empower parents as health managers and “activated patients” **by asking them about and**

focusing efforts on their outcomes of interest. Because, whatever they are, it will serve our purposes for promoting health literacy. Conversely, the Web illustrates that ignoring the context in which we expect our information to be used **disempowers** the user and defeats our purposes.

Slide 16 In summary, so far this program of action research has demonstrated that:

- MHL can be promoted
- Reflective skills seem to be key to empowering parents to manage personal and child health and health care;
- Providing direct assistance to apply info, especially through reflective questioning, is a promising practice
- The LSP can be used to meaningfully measure MHL and to guide intervention
- Existing home-based programs in various models appear to be effective channels for promoting MHL

So I will leave you with the thought that it increasingly seems feasible to mount a national response, perhaps an international response to HL through the existing infrastructure of home based programs, and so address NCD at the very foundations of personal and public health.

Slide 17 Questions