Assessing Children from Methamphetamine Homes: Process, Documentation & Preliminary Findings

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University of Central Oklahoma & Tulsa Police Department

National DEC & CCAN Conference
Oklahoma City, Oklahoma
November 18, 2013
Objectives

1. Describe key components to an effective nursing response to children removed from methamphetamine homes.

2. Provide information on how to identify appropriate evidence collection & documentation.

3. Demonstrate the value of forensic observational data for understanding the well-being & needs of children removed from methamphetamine homes.
How it works here
Two exam locations

HILLCREST MEDICAL CENTER

CHILDREN’S JUSTICE CENTER
Decontamination Issues

• Transport via EMS to ED if: Fire, explosion, or if child appears ill

• Otherwise:
  – Decontaminate per local protocol

KBell 2004
NATIONAL GUIDELINES FOR MEDICAL EVALUATION OF CHILDREN FOUND IN DRUG LABS

LAB SITE

IMMEDIATE STEPS ON-SITE

ACTIVATE

LAW ENFORCEMENT

DECONTAMINATION per local protocol when medically stable

NARCOTICS

MEDICAL FACILITY

1. Perform Medical Assessment/Screening
2. Collect Urine via Chain of Custody within 12 hours after removal

CHILD PROTECTIVE SERVICES

PLACEMENT per local protocol

Emergency Department
1. Neurological status
2. Respiratory status:
   - O2 sat
   - CXR
3. Blood:
   - CBC
   - Chemistry panel
   - LFT's
   - BUN/Cr
4. Urine toxicology via chain of custody

Within 24 to 72 hours

Follow-up

Conduct Forensic Interview jointly with CPS

Developmental & mental health assessment

Update databases

Medical follow-up: Within 30 days, 6 mos, 1 yr

If explosion, obvious chemical exposure, active lab, or child appears ill
TRANSPORT IMMEDIATELY VIA EMS
PERSONNEL DECONTAMINATION

Decontamination of the child should occur prior to transport to the medical facility as medically appropriate. Basic life support takes precedence over decontamination. Removal of clothing, cleansing of the skin and hair and use of soap are the minimum requirements of decontamination.

DO NOT USE VIDEI!

LAW ENFORCEMENT

Immediate

1. Document the quantity and types of chemicals present and document how found (e.g., snatched in the rain), so that the exposure of the child can be determined.
2. Document the condition of the home, Document odors and state of lab (actively cooking, burning stages, etc.) Document the people at the scene and those who also reside in the home. Share this information with medical facility.
3. Personnel on scene should be both a lab and IRC certified in order to be able to accurately collect, document, and photograph the scene to aid in the child endangerment prosecution (e.g., height of chemical, location of drugs, general state of children, porn, pornography).
4. Complete and submit all the required data to appropriate databases.
5. Transport child as per local DDC protocol in conjunction with CPS.

Within 24 to 72 Hours

1. Child needs to be interviewed by a personnel trained in the forensically correct method for children. Coordinate this process with CPS.
2. Update database as needed.

NATIONAL GUIDELINE FOR MEDICAL EVALUATION OF CHILDREN FOUND IN DRUG LABS

MEDICAL PERSONNEL

Symptomatic: Immediate

1. Head to toe exam of the children within 2 to 4 hours to ensure medical stability and document any acute findings that might need treatment or change over time. This may occur in an ED, physician’s office or by EMTs on scene. This should include but not limited to a good pulmonary exam, skin exam, neurologic exam, and affect (scared, happy, detached), they include observations by EMT’s, RN on scene, or other personnel to document the affect of the children.
2. Collect urine for toxicology. This should happen as soon as possible but must occur within 12 hours for optimal results. Submit to a lab that screens and reports for the level of detection of the test, not just at NDA standards. Chain of Evidence forms may be utilized or usual medical protocol for urine toxicology screens may be followed.
3. Blood tests. Can be done acutely or within 24 to 72 hours: a CBC, (hematocrit, cancer, thrombocytopenia), Chemistry Panel to include BUN/Cr, LFT’s (alkaline and liver damage, electrolyte imbalance), Hepatitis A and B and C panel.

Asymptomatic: Within 24 to 72 hours

1. A complete medical evaluation.
2. Blood tests as above.
3. Developmental evaluation using an age-appropriate standardized tool.
4. Mental health evaluation.
5. Dental evaluation.

Follow-up

1. Expect medical evaluation in 30 days, 6 mo or every 1 year.
2. Follow up developmental evaluations as needed based on the initial evaluation.
3. Follow up mental health interventions and assessments as needed.

EMERGENCY ACTIVATION

Transport immediately to the ED by emergency personnel if there is an explosion, active chemicals at the scene or the child appears ill. I.e., fast breathing, obvious burns, lethargy or somnolence.

CHILD PROTECTIVE SERVICES

Immediate

1. Activist law enforcement in the collection and documentation of the scene from the child’s perspective. Decide who will photograph scene.
2. Transport child to facility as designated in your local DDC protocols.
3. Placement of children in a safe environment as per local protocol. Within 24 to 72 Hours

1. There may have been other children in the family or home who were not present at the time of the seizure. All children who have lived in the home will need to be examined and their information collected for tracking.
2. The medical histories of the children need to be investigated and documented.

Follow-up

1. Input all the gathered information into a database as determined by the local, state and national protocols.

EMERGENCY DEPARTMENT

1. Complete medical evaluation to assess acute medical needs.
2. Specific attention to the pulmonary exam as the chemicals can cause acute respiratory problems. RR, O2 saturation and a CBC in the symptomatic child are the minimum required.
3. Blood tests as needed in addition to a CBC, Chemistry Panel to include BUN/Cr and LFT’s.
4. Collect urine for toxicology. This should happen as soon as possible but must occur within 12 hours for optimal results. This should be submitted to a lab that screens and reports for the level of detection of the test, not just at NDA standards. Chain of Evidence forms may be utilized or usual medical protocols for urine toxicology screens may be followed.
Medical Evaluation Protocol

• Child must be medically evaluated preferably within 2 but for sure within 4 hours of removal from lab site.
• Multi-disciplinary response is best
• Law enforcement, CPS to ensure safe placement of child.

P. Grant
TABLE 3
Reported signs and symptoms of methamphetamine exposure via ingestion in children
System Findings

CNS: mental status

<table>
<thead>
<tr>
<th>Findings</th>
</tr>
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<tbody>
<tr>
<td>Irritability24,25,27</td>
</tr>
<tr>
<td>Agitation23Q25</td>
</tr>
<tr>
<td>Inconsolable crying24</td>
</tr>
<tr>
<td>Hyperactivity23</td>
</tr>
<tr>
<td>Inconsolable25</td>
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CNS: movement

<table>
<thead>
<tr>
<th>Findings</th>
</tr>
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<tbody>
<tr>
<td>Ataxia24</td>
</tr>
<tr>
<td>Constant movement25</td>
</tr>
<tr>
<td>Seizure24</td>
</tr>
<tr>
<td>Flailing movements of head, neck and extremities25</td>
</tr>
<tr>
<td>Involuntary side-to-side head turning27</td>
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Ocular

<table>
<thead>
<tr>
<th>Findings</th>
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<tbody>
<tr>
<td>Roving eye movements24</td>
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<td>Cortical blindness27</td>
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Peripheral nervous system

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<tr>
<td>Hyperthermia24</td>
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<td>Hypertension25</td>
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Gastrointestinal

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Respiratory

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<td>Respiratory distress20,23</td>
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Musculoskeletal

<table>
<thead>
<tr>
<th>Findings</th>
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</thead>
<tbody>
<tr>
<td>Rhabdomyolysis24</td>
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</tbody>
</table>
Child Abuse

- Physical
- Emotional
- Sexual
Child Neglect:

Omission in care that results in actual or potential harm to the child.

- Physical
- Educational
- Emotional
- Medical

KBell 2004
Figure 12.4. Marks From Instruments

NO SCALE = NO CASE
General Observations

- Hungry
- Filthy
- Indiscriminate attachment
- Dental cavities
- Inadequate clothing
Symptomatic – Immediate
1. Head to toe exam of the children within 2 to 4 hours to ensure medical stability and document any acute findings that might need treatment or change over time. This may occur in an ED, physician’s office or by EMTs on scene. This should include but not be limited to a good pulmonary exam, skin exam, neurologic exam, and affect (scared, happy, detached). May include observations by EMTs, RN on scene, or other personnel to document the affect of the children.
Vital Signs

**resp rate, temp, heart rate**
# Height and Weight

<table>
<thead>
<tr>
<th>PHYSICAL EXAMINATION</th>
<th>Name:</th>
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<tbody>
<tr>
<td>IR:</td>
<td>RR:</td>
</tr>
<tr>
<td>TEMP: (oral is °F or °C)</td>
<td>HGT: (in inches)</td>
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<tr>
<td>HEENT:</td>
<td></td>
</tr>
<tr>
<td>Heart:</td>
<td></td>
</tr>
<tr>
<td>Lung Fields:</td>
<td></td>
</tr>
<tr>
<td>Abdomen:</td>
<td></td>
</tr>
<tr>
<td>Skin:</td>
<td></td>
</tr>
<tr>
<td>Extremities:</td>
<td></td>
</tr>
<tr>
<td>Neurologic:</td>
<td></td>
</tr>
<tr>
<td>Genitalia:</td>
<td></td>
</tr>
<tr>
<td>Development:</td>
<td></td>
</tr>
</tbody>
</table>

**BEHAVIORAL OBSERVATIONS:** Check all exhibited by child during the exam.

- Cooperative
- Uncooperative
- Tearful
- Sobbing
- Yelling
- Loud
- Quiet
- Tense
- Fidgeting
- Trembling
- Controlled
- Agitated
- Listless
- Fearful
- Overly compliant
- Avoids eye contact
- Other (describe):

**OTHER OBSERVATIONS:** Check all that apply.

- Hygiene, Nutrition and Clothing appear adequate
- Hygiene inadequate
- Nutrition appears inadequate
- Clothing inadequate
- Other (describe):
- If any area is inadequate, explain:

**ANCILLARY TESTS:**

- Pulse Oximeter:
  - Finger:
  - Ear:
  - Other:

**DHS:**

- DHS notified: Yes [ ] No [ ] If not, why not?

- Report made to: 
- Time:

**OTHER COMMENTS:**
HEENT
Respiratory Abnormalities

- Abnormal respiratory rate:
- **Highest RR 64/min**: 3 month old sent to ED dx d ARI (urine + pseudo) (unable to obtain O2 sat)
- Abnormal oxygen saturation via pulse oximetry: N=51 no child w/O2< 93%
Abdomen
Skin/Extremities
Genitalia
Sexual Abuse

- Increased libido
- Increased violence
- Pornography
6 year old stated he “needed his privacy”
Neurologic/Development/Behavior
Development assessment

• Gross motor

• Fine motor

• Language

• Personal-social interaction
Development related abuse/neglect risks

- Crying
- Eating
- Sleeping
- Toilet training
- Saying no
- Crawling, walking & running

KBell 2004
Development

• Some children have been noted to indiscriminately attach with any adult figure or are indifferent.

• Trauma of being removed from their home may cause temporary regressions in development

• Development assessment should be repeated when the child has been in a stable environment for a while so that temporary delays have had an opportunity to resolve.
• 2 year old
  – Mine and no
• 3 year old
  – separation problems
  – cooperative
• 4 year old
  – uses language negatively
• 5 year old
  – last round of separation anxiety
• 6-7 year old
  – arrogant and flippant
  – moody and morose
Development

- $N=140$

- $N=38 = 27\%$ with developmental delay

- Speech/language most common delay identified

Penny Grant MD, personal communication
**Behavior/Demeanor**

<table>
<thead>
<tr>
<th>PHYSICAL EXAMINATION</th>
<th>Name:</th>
</tr>
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<tbody>
<tr>
<td>HR:</td>
<td>RE:</td>
</tr>
<tr>
<td>TEMP:</td>
<td>WGT:</td>
</tr>
</tbody>
</table>

**BEHAVIORAL OBSERVATIONS:** Check all exhibited by child during the exam.

- Cooperative
- Uncooperative
- Fearful
- Sobbing
- Crying
- Loud
- Quiet
- Tense
- Fighting
- Tumbling
- Curled Up
- Agitated
- Listless
- Fearful
- Overly compliant
- Avoid eye contact
- Other (describe)

**OTHER OBSERVATIONS:** Check all that apply.

- Hygiene, Nutrition and Clothing appear adequate
- Hygiene inadequate
- Nutrition appears inadequate
- Clothing inadequate
- Other (describe)

If any area is inadequate, explain:

**ANCILLARY TESTS:**

- Pulse: (Note)
- Fevers:
- Ear: (Note)
- Other:

**DHS:**

- DHS notified: Yes / No / If not, why not?

- Report made to: (Note)

**OTHER COMMENTS:**
Other Observations

<table>
<thead>
<tr>
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<th>Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR:</td>
<td></td>
</tr>
<tr>
<td>RR:</td>
<td></td>
</tr>
<tr>
<td>TEMP. (if necessary)</td>
<td></td>
</tr>
<tr>
<td>HGT. (in inches)</td>
<td></td>
</tr>
<tr>
<td>WGT. (kg or lbs)</td>
<td></td>
</tr>
</tbody>
</table>

| HEENT:                |       |
| Heart:                |       |
| Lung Fields:          |       |
| Abdomen:              |       |
| Skin:                 |       |
| Extremities:          |       |
| Neurologic:           |       |
| Genitals:             |       |
| Development:          |       |

**BEHAVIORAL OBSERVATIONS**: Check all exhibited by child during the exam.

- [ ] Cooperative
- [ ] Uncooperative
- [ ] Fearful
- [ ] Sobbing
- [ ] Yelling
- [ ] Loud
- [ ] Quiet
- [ ] Tense
- [ ] Fidgeting
- [ ] Trembling
- [ ] Controlled
- [ ] Agitated
- [ ] Listless
- [ ] Fearful
- [ ] Overly compliant
- [ ] Avoids eye contact
- [ ] Other (describe): ...

**OTHER OBSERVATIONS**: Check all that apply.

- [ ] Hygiene, Nutrition and Clothing appear adequate
- [ ] Hygiene inadequate
- [ ] Nutrition appears inadequate
- [ ] Clothing inadequate
- [ ] Other (describe): ...

If any area is inadequate, explain:

**ANCILLARY TESTS**:  
- Pulse Oximeter:  
- Finger:  
- Ear:  
- Other:  

**DHS**:  
- DHS notified: [ ] Yes  
- [ ] No  
- If not, why not?: ...

Report made to:  
- Time: ...

**OTHER COMMENTS**: ...
Photographs always taken
“Film is cheap, opportunities are few”

Unknown
Photographs should have:

- Orientation shot
- Close up with scale
- Close up without scale
2. Collect urine for toxicology. This should happen as soon as possible but must occur within 12 hours for optimal results. Submit to a lab that screens and reports for the level of detection of the test, not just at NIDA standards. Chain of Evidence forms may be utilized or usual medical protocols for urine toxicology screens may be followed.
Medical Evaluation Protocol

• Urine for methamphetamines and other drugs of abuse (*toxicology screen) should be obtained as quickly as possible; clean catch or bag.

• Do Not Cath these Kids Unless medically indicated.
  – (Convenience is not a reason)
Medical Evaluation Protocol

• Notify lab that will be performing the assay to identify ANY DETECTABLE LEVEL of drug, not to use the industrial cutoff.
  – The result in a child should be 0.
Can be done acutely or within 24 to 72 hours:
a CBC (anemia, cancers, thrombocytopenias), Chemistry Panel to include BUN/Cr and LFT’s (kidney and liver damage, electrolyte imbalances), Hepatitis B and C panels.

Asymptomatic - Within 24 to 72 hours
1. A complete medical evaluation.
2. If seen within 12 hours, collect urine for toxicology
3. Blood tests as above
4. Developmental evaluation using an age-appropriate standardized tool.
5. Mental health evaluation.
6. Dental evaluation.

Follow-Up
1. Repeat medical evaluation in 30 days, 6 mos & 1 year
2. Follow up developmental evaluations as needed based on the initial evaluations.
3. Follow up mental health interventions and assessments as needed.
Tricks of the trade

- Potty hats
- Cotton balls around the pedi bag.
- Force fluids
  - We will not cath these kids
Urine Toxicology Results

• 2000: N=21 no urine sent

• 2001: N=30: 21 samples sent: 40% + (1 pdg)

• 2002: N=50: 43 sent: 60% = 22/37 + methamphetamine, 6 + psuedo &/or ephedrine

• Jan-June 2003: N=24; (4 pdg) 89% =17/19 meth+
Oklahoma Data

- Retrospective chart review: SAS
- Children < 13 years removed from active clandestine methamphetamine laboratories
- Total children in database: 140
- Blood normative data: Harriet Lane 16th ed
- Blood work performed 34 hours mean time after removal

P. Grant
<table>
<thead>
<tr>
<th>DRUG EXPOSURE EXAMINATION:</th>
<th>Child Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVIDENCE COLLECTION:</td>
<td>Yes  No  If not, why not?</td>
</tr>
<tr>
<td>1. CLOTHING:</td>
<td>Yes  No</td>
</tr>
<tr>
<td>If yes, LIST ITEMS:</td>
<td></td>
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</tbody>
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2. URINE: 
- Yes  No
- Time obtained: 
- Comments: 

3. PHOTOGRAPHS: 
- Yes  No

4. HISTORY GIVEN BY CHILD:

5. MEDICATIONS: Has child taken any in the last week? 
- Yes  No
- If yes, LIST: (Include over-the-counter medications)

Nurse Signature: 
Date: 
“Top ten” list of interviewing
Preparing for Testimony

- Take good notes
- Take good notes
- Take good notes
- Take good notes
- Take good notes
- Take good notes
- Take good notes
- Take good notes
- Take good notes
Dimensions of the Methamphetamine Problem

- Use
- Trafficking
- Clandestine Manufacturing
Methamphetamine-related Abuse, Neglect & Death

• 2011: 3 children die when trailer catches on fire

• 2012: 5-year old burned from father’s shake & bake meth lab

• 2013: Shake & bake apparatus under mattress where 2-year old sleeping
Methamphetamine as unique {DEC}

- **Use**
  - Highly addictive central nervous system stimulant
  - Binges / Meth psychosis

- **Clandestine Manufacturing**
  - Toxic & highly volatile
  - Contamination & exposure

- **Methamphetamine & manufacturing at forefront of DEC movement**
Emerging Literature on Methamphetamine & Children

- Prenatal exposure (Grant, 2007; Altshuler & Cleverly-Thomas, 2011)

- Health & medical risks (Arria et al., 2006)

- Poor parenting (Messina, Marinella-Casey, West & Rawson, 2006)

- Physical/sexual abuse & neglect (Hopper, 2006; Pennar et al., 2012)
Health Risks Related to Exposure

**Risks of Prenatal Exposure**
- Physiologic abnormalities
- Neurological damage
- Low birth weight
- Cleft lip
- Increased fetal pressure
- Cardiac abnormalities
- Fetal growth reduction

**Increased Risks**
- Respiratory disease
- Kidney & liver disease
- Neurological damage
- Impairment to immune system
- Cancer
Little is known about children removed from meth homes

“Children removed from methamphetamine laboratories are a severely understudied population despite the widespread deprivation parental methamphetamine abuse has on children, particularly in homes where methamphetamine is produced” (Pennar et al., 2012, p. 1777).

- Lack of reliable estimates of numbers exposed
- Limited comprehensive follow-up
- Short-term versus long-term effects
Present Research

• Collaborative exploratory research
  – Partially funded through UCO Regular Grant
  – Exempted IRB

• What indicators of abuse &/or neglect are evident among children removed from dwellings where manufacturing is occurring?

• What types of information can be gleaned from children's own perceptions of their situations?
Methodology

• **Data**
  - Forensic observation reports (2001-2010)
  - Children removed from dwellings where methamphetamine being manufactured

• **Preliminary Analysis**
  - Software: Excel & SPSS
  - Thematic analysis / Compare & contrast
Sample
(N = 107)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Sex</td>
<td>• 60 Males</td>
</tr>
<tr>
<td></td>
<td>• 47 Females</td>
</tr>
<tr>
<td>Age</td>
<td>• Average = 6.5 years old</td>
</tr>
<tr>
<td></td>
<td>• 3 weeks to 16 years old</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>• 77% Caucasian</td>
</tr>
<tr>
<td>Family</td>
<td>• 46% Sibling also in home</td>
</tr>
<tr>
<td></td>
<td>• 85% Living with mother</td>
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</table>
Physical Indicators: Neglect & Poor Health

• 71% some physical marking on body
• 27% inadequate hygiene
• 14% inadequate clothing
• 6% inadequate nutrition
“What happened that you came to see me?”

4 Themes

- **Neglect & Poor Health**
- **Knowledge:** Drugs, Manufacturing – related Activities & Crime
- **Antisocial or Delinquent Behaviors**
- **Exposure to Trauma & Violence**
Increased Knowledge of Drugs & Crime

• Drug-related terminology

• Mention chemicals, needles &/or manufacturing-related activities in home (e.g., bad smell)

• Others using drugs

• Criminal activities
• Inappropriate behavior &/or language

• Admit to involvement in drugs themselves
Exposure to Trauma & Violence

• Chaotic & dangerous home environment
  – Activities in home
  – Other people in & around home

• Experiences during law enforcement encounters

• Witnessing parents &/or caregivers being handcuffed
  – Knowledge caregivers arrested &/or going to jail
  – Separation from caregivers
Limitations of Research

• Small sample size

• Single jurisdiction

• Observation at single point in time
Preliminary Conclusions

- Children provided a great deal of information about their home environment & experiences

- Special services may be required to meet the unique needs of these children
  - Risk for antisocial & delinquent behaviors

- Follow-up of children is essential & critical
- Benefits of academic-practitioner collaborations
Future Research

• Better understand the needs of these children
  – Identify short & long term impacts of exposure

• Assess needs & exposure more systematically

• How to limit potential harms to children present while maintaining public & first responder safety
Acknowledgments

Special Thanks to...

• Tulsa Police Department
• UCO Office of Research & Grants for providing funding this research
• Ms. Kathryn Letourneau for assisting with the analyses
• Research assistants Jordan Crump, Emelia Chrisco, Shannon Jackson & David Cea
References


References (cont.)

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