Introduction to Dentistry

- Unit IV
- Operating & Transfer Zones
Operating & Transfer Zones

- **Focal Point**
- mouth
- oral cavity is 12 o’clock
- **Optimal:**
- distance from operator's eyes/nose to patients eyes/nose.
Operating & Transfer Zones

- All operating zones:
  - procedure determines
  - visibility & access
  - reduction of class IV & V movements
Operating & Transfer Zones

- operators eyes to patient mouth
- 16-18 inches for proper positioning
- as close as possible for:
  - favorable access to operative field
  - good visibility
Operating & Transfer Zones

Clock Concept

Operators Zone = Dentist

R handed = seat @ R of pt = 7 – 12 o’clock
L handed = seated @ L of pt = 12 – 5
R handed 9-11 using indirect vision
12:00 o’clock for lingual anterior
Right handed operator

<table>
<thead>
<tr>
<th>Right-Handed Dentist</th>
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</thead>
<tbody>
<tr>
<td>Operator's zone</td>
<td>7 to 12 o'clock</td>
</tr>
<tr>
<td>Transfer zone</td>
<td>4 to 7 o'clock</td>
</tr>
<tr>
<td>Assistant's zone</td>
<td>2 to 4 o'clock</td>
</tr>
<tr>
<td>Static zone</td>
<td>12 to 2 o'clock</td>
</tr>
</tbody>
</table>
Left handed operator

<table>
<thead>
<tr>
<th>Zone</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator’s zone</td>
<td>12 to 5 o'clock</td>
</tr>
<tr>
<td>Transfer zone</td>
<td>5 to 8 o'clock</td>
</tr>
<tr>
<td>Assistant’s zone</td>
<td>8 to 10 o'clock</td>
</tr>
<tr>
<td>Static zone</td>
<td>10 to 12 o'clock</td>
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</tbody>
</table>
Transfer Zones

- Passing & receiving
- **Safe Zone**
  - over chest, chin level & past midline
  - R handed = 7 - 9 o’clock
  - L handed = 8 - 5 o’clock
Treatment Zones

- Assistant’s Zone
- Working with???
- **Rt handed**
  - seated @ left of patient 2-4 o’clock
- **Left handed**
  - seated @ right of patient 8-10 o’clock
Treatment Zones

- Static Zones

- Large/heavy instruments
- “scary” items
- 10 - 2 behind head of dental chair
- alternative:
- under patient’s chin over chest
Direct and Indirect Vision

Direct Vision
vision directly into oral cavity

Indirect Vision
vision into mirror reflecting areas in oral cavity
Retraction & Maintaining a Clear Mirror

- Retraction
  - to draw back
  - to retract tissue & tongue

using:
  - HVE
  - 3-way syringe
  - mouth mirror
  - finger
Retraction & Maintaining a Clear Mirror

- increases visibility
- do not block line of vision
- safety factor for patient
Retraction & Maintaining a Clear Mirror

- Mirror
- clean for indirect vision
- prevent fogging - constant air stream
- remove debris blow quick H₂O spray
- follow with "blast" of air
Oral Evacuation

demise of cuspidor when treatment in supine position

Oral Cavity

free from:

saliva, blood, H₂O & debris
Oral Evacuation

Patient Position

Unable to expectorate in supine and subsupine positions
Oral Evacuation

- Assistant Responsibilities:
  - clear, dry field
  - patient comfort
Oral Evacuation

- HVE
- High Volume Evacuator
- oral evacuator - vacuum
- pulls fluids/debris from mouth
- large, tube-like hose
Oral Evacuation

- **HVE:** Function
  - free of saliva, blood, H$_2$O & debris
  - Retraction - tongue/cheek
  - reduces bacterial aerosol
Oral Evacuation

- **HVE: Precautions**
  - damage tissue
  - prevention: keep tip/bevel at an angle
  - if tissue caught - rotate tip to free
  - turn vacuum off
Oral Evacuation

HVE: Oral Evacuation Controls

- rotary dial
- sliding valve,
  - lever, bullfrog
- turn on or off completely
- less noise, more power
Oral Evacuation

- **HVE: Types of Tips**
  - **Metal**: autoclavable
  - **Plastic**: disposable or autoclavable
  - Strong enough to retract
HVE Assortment
Oral Evacuation

Types of Tips

**Straight vs. Angled:**
- angled easier to position
- less blocking of light

**Bevel, slanted**
- anterior = bevel \( ^\wedge \) posterior bevel
- = oblique
Oral Evacuation

- HVE: Holding Technique
- Modified Pen Grasp
- Reverse Palm Grasp
- Ergonomics & need
Modified pen grasp
Reverse palm grasp
Oral Evacuation

HVE: Positioning

beveled end when setting up

Anterior: place before doctor, behind (lingual)

Posterior: use mirror or finger to retract
rest HVE on finger, mirror

tip close to prep as possible
Oral Evacuation

- **HVE: Positioning**
  - **Posterior:**
    - Assistant’s side: buccal
    - Doctor’s side: lingual
  - **Anterior Lingual:** Labial or incisal
  - **Anterior Labial:** Lingual or incisal
HVE: Hand Grasps
HVE: Anteriors
HVE: Posteriors
Rinsing the Oral Cavity

- **Limited Area:**
  - prep, around the prep
  - spray, dry
  - get in - get out
  - when operator pauses
Rinsing the Oral Cavity

- **Complete Mouth Rinse:**
  - purpose: eliminate spitting
  - freshens mouth
  - work time reduction by 15%
  - do not touch tissue
  - will dehydrate or lacerate
Rinsing the Oral Cavity

- **Swish & Spit Technique**
  - saliva ejector
  - patient swishes
  - forms an “O” with lips
  - kisses saliva ejector
  - prevent back suck
Instrument Transfer

Four main grasps:

- Pen Grasp
- Palm Grasp
- Palm-Thumb Grasp
- Reverse Palm Thumb Grasp
Instrument Transfer

- **Pen Grasp**
- held like a pen
Instrument Transfer

- Palm Grasp
- secure in palm of hand, thumb over fingers
Instrument Transfer

- Palm-Thumb Grasp
  - thumb above
  - fingers,
  - on instrument

Fig. 33—10 Basic instrument grasps. A, Pen grasp. B, Palm grasp. C, Palm-thumb grasp.
Instrument Transfer

- Reverse Palm Thumb (Nose-thumb)
- instrument held with thumb in to stabilize
Instrument Transfer

Fig. 33–10 Basic instrument grasps. A, Pen grasp. B, Palm grasp. C, Palm-thumb grasp.
Instrument Transfer

Position of Use

- pass in correct orientation
- ^ for maxillary
- v for mandible
Instrument Transfer

- **Fulcrum**
  - base of support
  - prevent injury
  - **point or support on which a lever turns**
  - position pad of ring and pinkie fingers
  - ***same arch, as close to tooth***
  - function: stabilize hand
Fulcrum
Instrument Transfer

Types of Grasps: Simultaneous Delivery

- mirror in left hand + explorer in right hand
- position in a “V” shape
- you “own” 1/4 of end toward you
Simultaneous Delivery
Instrument Transfer

Types of Grasps: One Handed

- left hand like a pen
- pick up with ring and pinkie fingers
- deliver with thumb, index & middle finger
- doctor will signal
Instrument Transfer

- Types of Grasps: Two Handed
  - take with right
  - give with left
  - use for heavier instrument exchange
  - doctor will signal
Instruments Transfer

- Types of Grasps: Palm Grasp
- handpieces
- 3-way syringe
- cotton pliers
- scissors and surgical instruments
- like a spear
Transfer Zone
Instrument Transfer

Common Problems
- presenting past midline
- retrieve instrument without Dr. looking
- crowding
- stay 8-10 inches away
- shorting
- grasp in middle of instrument
Instrument Transfer:

- Common Problems
  - tangling
  - keep handles parallel
  - orientation
  - position of use
  - large items
  - weight - don’t drop - use palm grasp

AVOID FAST MOVEMENTS!!
Delivery of Dental Materials

- Cements and Liners
  - hold pad w/ left hand
  - pinkie on tip of chin
  - dip instrument - hand to doctor
  - 2x2 in right hand to wipe
Delivery Positions

**FIGURE 14-49** Dental assistant holds paper pad with mixed cement close to the patient’s chin, ready for the operator’s use.

**FIGURE 14-50** Assistant holds 2 x 2 gauze open to receive instrument with debris on the working ends.
Delivery of Dental Materials

Material in Syringes

- pass in position of use
- assistant hold tip
- doctor gets handle
- rotate tip of barrel for “orientation”
Delivery of Dental Materials

- Amalgam
  - saves time & motion for auxiliary placement
  - amalgam placed in cavity prep
  - must be legal in state to perform
Five Principles of Instrument Delivery

1. Safety
2. No fast movements
3. Orientation
4. Secure the delivery
5. Use transfer zones