

Name (please type) First name Language Hospital code International Documentation and Evaluation System

Country code Zip code City Sex m f Patient No. **Primary THA** **A**

Street Telephone Date of birth day month year Hemiarthroplasty may also be documented right left

Occupation Height cm Weight kg Date of surgery day month year

Date of admission Date of discharge

Coded summary Mark for text entry

GENERAL Diagnosis (involved hip) **D** 1 OA 2 DDH 3 IA 4 FX 5 MISC Subdiagnosis: 1. 2. 3. 4. 5.

ad 1: OA 1. primary OA 2. protrusio 3. old Perthes 4. old SCFE 5. x

ad 2: DDH 1. dislocation high 2. dislocation low 3. subluxation high 4. subluxation low 5. other dysplasia

ad 3: IA 1. rheumatoid arthritis 2. juvenile arthritis 3. SLE 4. ankylosing spondylitis 5. x

ad 4: FX 1. acute acetabulum 2. acute neck/head 3. acute trochanteric 4. old acetabulum 5. old femur

ad 5: MISC 1. osteonecrosis 2. Paget 3. postseptic arthritis 4. tumor 5. x

Previous surgery (involved hip) 2 1 2 3 4 5 Infection: none internal fixation femur pelvis arthrodesis never previous present

Status contralateral hip 3 1 2 3 4 5 double cup/bipolar hemi-arthroplasty revision of THA Girdlestone

Status knees 4 1 2 3 4 5 normal abnormal, no op. osteotomy arthroplasty other op. normal abnormal, no op. osteotomy arthroplasty other op.

Other abnormal joints 5 1 2 3 4 5 Shoulder Elbow Hand/Wrist Ankle/Foot Spine

Systemic illnesses 6 1 2 3 4 5 6 7 8 9 10 11 12 13 14

CLINICAL EVALUATION OF AFFECTED HIP Level of activity 7 1 2 3 4 5 sedentary semi-sedentary light labor moderate heavy

Walking capacity restriction 8 1 2 3 4 5 none right hip left hip both hips other condition

Time walked without support 9 1 2 3 4 5 >60 min. 31-60 min. 10-30 min. <10 min. not possible

Time walked with support 10 1 2 3 4 5 none needed >60 min. 31-60 min. 10-30 min. <10 min. one cane/stick one crutch two canes/sticks two crutches walker

Hip pain degree 11 1 2 3 4 5 none mild moderate severe intolerable

Pain location 12 1 2 3 4 5 6 7 8 9 10 11 12 no pain buttock trochanter groin thigh knee lower leg back radicular

Flexion range 13 1 2 3 4 5 >90° 71-90° 30-70° <30° stiff

Apparent leg length discrepancy 14 1 2 3 4 5 equal length right left 1 cm 2 cm 3 cm 4 cm 5 cm 6 cm >6 cm

RANGE OF MOTION see back page

Right Side 15 Extension 10° 0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 90° stiff

Left Side 16 Flexion 10° 0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 90° stiff

Abduction 10° 0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 90° stiff

Adduction 10° 0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 90° stiff

External rotation 10° 0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 90° stiff

Internal rotation 10° 0° 10° 20° 30° 40° 50° 60° 70° 80° 90° 90° stiff

INDIVIDUAL CODIFICATION: A1 A2 A3 A4 A5 A6 A7 A8 A9 B1 B2 B3 B4 B5 B6 B7 B8 B9 C1 C2 C3 C4 P1 P2 P3 P4 P5

OPERATION

PROSTHETIC COMPONENTS Acetabular components - Material **Ac** 17 1 2 3 4 5 6 7 8 9 0 all PE all CoCr PE metal-backed PE coated PE Sulmesh PE+CoCr surface Ceramic PE CoCr surface other

- Augmentation 18 1 2 3 4 5 6 7 8 9 0 none screws only ARR APC ARB with hook Titanium alloys Threading metal shell solid central hole other

- Size in mm 19 40 42 44 46 48 50 52 54 56 58 60 62 64 other 22 24 26 28 30 32 37 42 other

Femoral components - Head material **Fc** 20 1 2 3 4 5 6 7 8 9 0 stainless Cr/Co Titanium Titanium coated Ceramic short medium long extra long

- Stem design 21 1 2 3 4 5 6 7 8 9 0 Monobloc Modular head without collar with collar without collar with collar stem modular sleeve stainless casted CoCr forged CoCr Titanium alloy

- Stem surface 22 1 2 3 4 5 6 7 8 9 0 polished smooth rough micro macro Hydroxyapatite Coating partial complete

- Stem type (Example MEM system) 23 A B C D E F G H I J

- Stem size (Example MEM system) 24 1 2 3 4 5 6 7 8 9 0

Cement 25 1 2 3 4 5 6 7 8 9 0 no cement low high viscosity yes no antibiotics pressurized preop. planning operative report: at surgery same day retrospectively

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Fig. E-1A

Front side of the 1992 International Documentation and Evaluation System primary form for total hip arthroplasty.

Coded summary ▼ ▼ Mark for text entry			
OPERATIVE PROCEDURE	Type of hip arthroplasty	Op	26 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> Simultaneous <input type="checkbox"/> Fixation of components: <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/>
	Approach		27 Position of patient: <input type="checkbox"/> supine <input type="checkbox"/> lateral <input type="checkbox"/> straight lateral <input type="checkbox"/> antero-lateral <input type="checkbox"/> postero-lateral <input type="checkbox"/> Incision: <input type="checkbox"/> none <input type="checkbox"/> flat <input type="checkbox"/> chevron <input type="checkbox"/> Trochanter osteotomy: <input type="checkbox"/> none <input type="checkbox"/> flat <input type="checkbox"/> chevron <input type="checkbox"/> Metal removal: <input type="checkbox"/> acetabular <input type="checkbox"/> femoral
	– Deep structures incised		28 <input type="checkbox"/> trans-gluteal <input type="checkbox"/> Gluteus minimus <input type="checkbox"/> partial <input type="checkbox"/> all <input type="checkbox"/> Gluteus medius <input type="checkbox"/> partial <input type="checkbox"/> all <input type="checkbox"/> Piriformis <input type="checkbox"/> adductors <input type="checkbox"/> iliopsoas
	Acetabular side – Joint capsule		29 <input type="checkbox"/> normal <input type="checkbox"/> thick <1 cm <input type="checkbox"/> thick >1 cm <input type="checkbox"/> fixed to fem. head <input type="checkbox"/> none <input type="checkbox"/> partial <input type="checkbox"/> all <input type="checkbox"/> Capsulotomy: <input type="checkbox"/> posterior <input type="checkbox"/> anterior <input type="checkbox"/> Rim defect: <input type="checkbox"/> none <input type="checkbox"/> ≤1 cm <input type="checkbox"/> >1 cm <input type="checkbox"/> multiple cysts <input type="checkbox"/> osteopenia <input type="checkbox"/> protrusio <input type="checkbox"/> anterior <input type="checkbox"/> posterior <input type="checkbox"/> superior
	– Findings		30 <input type="checkbox"/> subchondral plate intact <input type="checkbox"/> One cyst <input type="checkbox"/> Size of graft <input type="checkbox"/> >2 cm <input type="checkbox"/> morsellized <input type="checkbox"/> rim encircling <input type="checkbox"/> caudal <input type="checkbox"/> cranial <input type="checkbox"/> ≤6 mm <input type="checkbox"/> >6 mm <input type="checkbox"/> Excision osteophytes: <input type="checkbox"/> rim encircling <input type="checkbox"/> caudal <input type="checkbox"/> cranial <input type="checkbox"/> ≤6 mm <input type="checkbox"/> >6 mm <input type="checkbox"/> Anchoring holes: <input type="checkbox"/> ≤6 mm <input type="checkbox"/> >6 mm
	– Bone graft		31 <input type="checkbox"/> none <input type="checkbox"/> autologous <input type="checkbox"/> allograft <input type="checkbox"/> >2 cm <input type="checkbox"/> morsellized <input type="checkbox"/> rim encircling <input type="checkbox"/> caudal <input type="checkbox"/> cranial <input type="checkbox"/> ≤6 mm <input type="checkbox"/> >6 mm <input type="checkbox"/> Excision osteophytes: <input type="checkbox"/> rim encircling <input type="checkbox"/> caudal <input type="checkbox"/> cranial <input type="checkbox"/> ≤6 mm <input type="checkbox"/> >6 mm <input type="checkbox"/> Anchoring holes: <input type="checkbox"/> ≤6 mm <input type="checkbox"/> >6 mm
	Femoral side – Plug		32 <input type="checkbox"/> none <input type="checkbox"/> synthetic material <input type="checkbox"/> bone <input type="checkbox"/> autologous <input type="checkbox"/> allograft <input type="checkbox"/> cement <input type="checkbox"/> no device <input type="checkbox"/> one plate <input type="checkbox"/> two plates <input type="checkbox"/> plates <input type="checkbox"/> other device <input type="checkbox"/> In medullary cavity: <input type="checkbox"/> <2 <input type="checkbox"/> >2 <input type="checkbox"/> Anteverision of stem: <input type="checkbox"/> <10° <input type="checkbox"/> 10–15° <input type="checkbox"/> >15°
	– Fixation of greater trochanter		33 <input type="checkbox"/> no troch. <input type="checkbox"/> one wire <input type="checkbox"/> several wires <input type="checkbox"/> screws <input type="checkbox"/> screws + wire <input type="checkbox"/> muscle reinsertion <input type="checkbox"/> retroversion <input type="checkbox"/> <10° <input type="checkbox"/> 10–15° <input type="checkbox"/> >15°
	Intra-operative complications	Compl. Op	34 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/>
	– Treatment		35 <input type="checkbox"/> none <input type="checkbox"/> wiring <input type="checkbox"/> screw <input type="checkbox"/> plate <input type="checkbox"/> femoral osteotomy <input type="checkbox"/> vascular repair <input type="checkbox"/> Change component <input type="checkbox"/> acetabular <input type="checkbox"/> femoral <input type="checkbox"/> other <input type="checkbox"/>
Duration of procedure (Time)	T	36 <input type="checkbox"/> <1 1/2 h <input type="checkbox"/> 1 1/2–2 1/4 h <input type="checkbox"/> 2 1/4–3 h <input type="checkbox"/> 3–4 h <input type="checkbox"/> >4 h <input type="checkbox"/> general <input type="checkbox"/> hypotensive <input type="checkbox"/> spinal <input type="checkbox"/> epidural <input type="checkbox"/> other <input type="checkbox"/>	
Operating room environment		37 <input type="checkbox"/> conventional OR <input type="checkbox"/> vertical <input type="checkbox"/> horizontal <input type="checkbox"/> greenhouse <input type="checkbox"/> body exhaust <input type="checkbox"/> histology <input type="checkbox"/> Bact. sample: <input type="checkbox"/> swab only <input type="checkbox"/> biopsy	
HOSPITAL COURSE			
After operation		38 <input type="checkbox"/> sim-ple bedrest <input type="checkbox"/> traction <input type="checkbox"/> cast <input type="checkbox"/> 1–2 days <input type="checkbox"/> >2 days <input type="checkbox"/> Intensive care <input type="checkbox"/> hetero-logic ossification <input type="checkbox"/> Prophylaxis <input type="checkbox"/> deep vein thrombosis <input type="checkbox"/> infection <input type="checkbox"/> Bact. result: <input type="checkbox"/> positive <input type="checkbox"/> negative	
Systemic complications	Sy	39 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/>	
Local complications	Lo	40 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/>	
– Therapy		41 <input type="checkbox"/> none <input type="checkbox"/> 1 aspiration <input type="checkbox"/> >1 aspiration <input type="checkbox"/> surgery <input type="checkbox"/> local <input type="checkbox"/> systemic <input type="checkbox"/> closed <input type="checkbox"/> open <input type="checkbox"/> wound <input type="checkbox"/> drainage <input type="checkbox"/> revision	
DISCHARGE STATUS			
Hip pain		42 <input type="checkbox"/> none <input type="checkbox"/> mild <input type="checkbox"/> moderate <input type="checkbox"/> severe <input type="checkbox"/> other pain <input type="checkbox"/> >90° <input type="checkbox"/> 71–90° <input type="checkbox"/> 30–70° <input type="checkbox"/> <30°	
Apparent leg length discrepancy		43 <input type="checkbox"/> equal length <input type="checkbox"/> right <input type="checkbox"/> left <input type="checkbox"/> 1 cm <input type="checkbox"/> 2 cm <input type="checkbox"/> 3 cm <input type="checkbox"/> 4 cm <input type="checkbox"/> 5 cm <input type="checkbox"/> 6 cm <input type="checkbox"/> >6 cm	
Complications		44 <input type="checkbox"/> none <input type="checkbox"/> resolved <input type="checkbox"/> improving <input type="checkbox"/> persistent <input type="checkbox"/> death <input type="checkbox"/> none <input type="checkbox"/> resolved <input type="checkbox"/> improving <input type="checkbox"/> persistent	
X-ray Acetabular component Ac – Position		45 <input type="checkbox"/> <35° <input type="checkbox"/> 35° <input type="checkbox"/> 40° <input type="checkbox"/> 45° <input type="checkbox"/> 50° <input type="checkbox"/> >50° <input type="checkbox"/> retroversion <input type="checkbox"/> <10° <input type="checkbox"/> 10–15° <input type="checkbox"/> >15°	
– Cement/bone interface		46 <input type="checkbox"/> uncemented AC component <input type="checkbox"/> no lucent line <input type="checkbox"/> dis-tinct line <input type="checkbox"/> >5 mm thick <input type="checkbox"/> in pelvis <input type="checkbox"/> Cement: <input type="checkbox"/> no lucent line <input type="checkbox"/> dis-tinct line <input type="checkbox"/>	
X-ray Femoral component Fc		47 <input type="checkbox"/> neutral <input type="checkbox"/> valgus <input type="checkbox"/> varus <input type="checkbox"/> above tip <input type="checkbox"/> below tip <2 cm <input type="checkbox"/> below tip >2 cm <input type="checkbox"/> in situ <input type="checkbox"/> displaced <input type="checkbox"/> broken	
Additional proceedings		48 <input type="checkbox"/> re- port sent to MD <input type="checkbox"/> admission to another clinic <input type="checkbox"/> 3–5 months <input type="checkbox"/> 1 year <input type="checkbox"/> analog (*) <input type="checkbox"/> digitized (*) <input type="checkbox"/> videotape <input type="checkbox"/> intra-operatively X-rays <input type="checkbox"/> Slides: <input type="checkbox"/> suitable	
INDIVIDUAL CODIFICATION: <input type="checkbox"/> D1 <input type="checkbox"/> D2 <input type="checkbox"/> D3 <input type="checkbox"/> D4 <input type="checkbox"/> D5 <input type="checkbox"/> D6 <input type="checkbox"/> D7 <input type="checkbox"/> D8 <input type="checkbox"/> D9 <input type="checkbox"/> E1 <input type="checkbox"/> E2 <input type="checkbox"/> E3 <input type="checkbox"/> E4 <input type="checkbox"/> E5 <input type="checkbox"/> E6 <input type="checkbox"/> E7 <input type="checkbox"/> E8 <input type="checkbox"/> E9 <input type="checkbox"/> F1 <input type="checkbox"/> F2 <input type="checkbox"/> F3 <input type="checkbox"/> F4 <input type="checkbox"/> F5 <input type="checkbox"/> F6 <input type="checkbox"/> F7 <input type="checkbox"/> F8 <input type="checkbox"/> F9			
Comments or explanations:			
Row #	Row #		
During procedure: Blood loss ml Auto. blood given ml			
Cell saver return ml Bank blood given ml Cristalloid given ml			
After operation: Blood loss ml Drainage blood given ml			
Bank blood given ml			
Signature (discharge) Date			
RANGE OF MOTION: (Neutral-0-Method) Defining the range of motion: Neutral position of all joints is 0°. A normal value of hip extension/flexion is 10-0-110. The value 0-25-110 indicates fixed flexion of 25°. A value of 0-25-25 indicates a stiff hip in 25° flexion. Same principle for ab/adduction and rotation. Setting marks to record the range of motion: Two marks for limits of motion have to be set. If the hip is stiff, one mark is set as "stiff" the other records the angle of the fixed deformity. Therefore two marks are always required.			

Fig. E-1B

Back side of the 1992 International Documentation and Evaluation System primary form for total hip arthroplasty. (Reprinted, with permission, from the Maurice E. Müller Foundation, Bern, Switzerland.)

Name (please type) First name Language Hospital code International Documentation and Evaluation System

Country code Zip code City Sex m f

Street Telephone

Occupation Height cm Weight kg

Date of last THA Right Left

THA Follow-up

Initial evaluation prior to revision
If last THA was performed elsewhere
Death is marked on last checkbox

Shaded area: coded summary one single mark only (exception row 29, 47: one to three marks). Other areas can have none, one or multiple marks. Boxes containing an "x" require a text entry, stating the precise qualification (< 20 characters) Use soft pencil for marking.

Coded summary Mark for text entry

GENERAL

Evaluation carried out by 1 surgeon other MD non MD only + X-ray X-ray only Evaluation of X-ray on: a-p pelvis a-p hip lateral hip retrospectively

Status right hip 2 normal abnor- mal, no op. inter- nal fixation osteotomy arthrodesis primary THR double cup/ bipolar hemi- arthroplasty revision THA Girdlestone

Status left hip 3 normal abnor- mal, no op. inter- nal fixation osteotomy arthrodesis primary THR double cup/ bipolar hemi- arthroplasty revision THA Girdlestone

Status knees 4 normal abnor- mal, no op. Right knee Left knee osteotomy arthroplasty other op. normal ab- normal, no op. osteotomy arthroplasty other op.

Other abnormal joints 5 Shoulder Elbow Hand/Wrist Ankle/Foot Spine none right left right left right left right left x

Persistent or new complications 6 none deep thrombosis neuropraxia infection other x none deep thrombosis neuropraxia infection other x

CLINICAL EVALUATION

Level of activity 7 sedentary semi- sedentary light labor moderate heavy 100% 75% 50% 25% 0% Work/activity capacity in last 3 months:

Walking capacity restriction 8 none right hip left hip both hips other condition none slight extreme unable Difficulty putting on shoes, socks:

Time walked without support 9 1 2 3 4 5 not possible normal assisted Ascending and descending stairs: 2 feet on each step any other method unable

Time walked with support 10 none needed >60 min. 31-60 min. 10-30 min. <10 min. one cane/stick one crutch two canes/sticks two crutches walker Usual support needed:

Intermalleolar spreading distance 11 >80 cm 61-80 cm 30-60 cm <30 cm easy difficult Sitting to standing: Pain medication: none occasionally regularly

Apparent leg length discrepancy 12 equal length shorter 1 cm 2 cm 3 cm 4 cm 5 cm 6 cm >6 cm Difference

RANGE OF MOTION: (Neutral-0-Method) see A form

Right Side Extension Flexion Abduction Adduction External rotation Internal rotation

Left Side

RIGHT HIP

Number of hip arthroplasties N 15 1 2 3 4 5 6 7 Of which operated elsewhere 1 2 >2

Years since last prosthesis 16 1 2 3-4 5-6 7-9 10-14 15-19 20-24 25-29 >29

Hip pain degree P 17 1 2 3 4 5 Occurrence: none mild moderate severe intolerable start-up after 30' walk with all walking at night at all times

Pain location 18 no pain in buttock over trochanter groin thigh knee lower leg backache radicular

Pain on testing 19 none over trochanter on axial on internal rotation on external rotation >4 sec. neg. Duchenne >4 sec. pos. Duchenne <4 sec. not possible pos. Trendelenburg

Flexion range F 20 1 2 3 4 5 Limp without support: >90° 71-90° 30-70° <30° stiff none slight moderate severe

RADIOGRAPHIC EVALUATION

Ectopic periarticular ossification E 21 1 2 3 4 5 Ossification on trochanter: none slight moderate severe

Greater trochanter T 22 1 2 Healed 3 Non-union 4 5 Socket wear: not applicable <1 mm 1-2 mm >2 mm not applicable

Acetabular side: - Superior migration Ae 23 1 2 3 4 progressive tilt of socket 1 2 3 4 5 Medial migration: pre-tilt mild pre-tilt severe socket in pelvis

- Radiolucency 24 1 2 3 4 Bone graft: not applicable incorporated partially resorbed resorbed not applicable

Femoral side - Stem subsidence Fc 25 1 2 3 4 with cement in cement Radiolucency between stem and cement: not applicable none <1 mm 1-2 mm >2 mm

- Progressive tilt of stem 26 1 2 3 4 Radiolucency bone-cement or bone-stem interface: 1 2 3 4 proximal half distal half continuous

- Endosteal resorption (cavitation) 27 1 2 3 4 5 Resorption of medial neck (calcar): including less to less per trochanter per trochanter

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Fig. E-2A

Front side of the 1992 International Documentation and Evaluation System follow-up form for total hip arthroplasty

Coded summary ▼ ▼ Mark for text entry (Comment for mark set or explanation if no mark)

OUTCOME EVALUATION RIGHT HIP	- Cortex: Change in density	28	1 none	2 hypertrophy localized	3 periprosthetic reaction	4 increased trabecular bone	5 atrophy	Porous coating of uncemented stem:	1 none	2 intact	3 dislodged	4 progressive loss	5 acetabulum
	Fracture of cement	29	1 no cement	2 none	3 acetabulum	4 above tip	5 below tip	Femur:	1 broken	2 bent	3 broken	4 broken	5 broken
	X-ray evaluation by surgeon	30	1 none	2 possible	3 probable	4 definitive	5 suspected infection	Loosening of femoral component:	1 none	2 possible	3 probable	4 definitive	5 suspected infection
	Evaluation by patient: Outcome of surgery	31	1 excellent	2 good	3 fair	4 poor	5 better	Same	1 worse	2 less pain	3 better function	4 less medication	5
DECISION	Follow-up	32	1 report to MD	2 reoperation foreseen	3 next 6 months	4 in 1 year	5 in 2-3 years	X-ray documentation:	1 analog (*)	2 digitized (*)	3 slides (*)	4 paper	5 publication**
LEFT HIP													
RADIOGRAPHIC EVALUATION	Number of hip arthroplasties	33	1 1	2 2	3 3	4 4	5 5	6 6	7 7	8 8	9 9	10 10	
	Years since last prosthesis	34	1 1	2 2	3 3	4 4	5 5	6 6	7 7	8 8	9 9	10 10	
	Hip pain degree	35	1 none	2 mild	3 moderate	4 severe	5 intolerable	6 start-up	7 after 30' walk	8 with all walking	9 at night	10 at all times	
	Pain location	36	1 no pain	2 in buttock	3 over trochanter	4 groin	5 thigh	6 knee	7 lower leg	8 backache	9 radicular	10	
	Pain on testing	37	1 none	2 over trochanter	3 on axial compression	4 on internal rotation	5 on external rotation	6 >4 sec. neg. Duchenne	7 >4 sec. pos. Duchenne	8 <4 sec. not possible	9 pos. Trendelenburg	10	
	Flexion range	38	1 >90°	2 71-90°	3 30-70°	4 <30°	5 stiff	6 none	7 slight	8 moderate	9 severe	10	
	Ectopic periarticular ossification	39	1 none	2 slight	3 moderate	4 severe	5 bridge	6 none	7 slight	8 moderate	9 severe	10	
	Greater trochanter	40	1 intact	2 not displaced	3 healed displaced	4 non-union displaced	5	6 not applicable	7 <1 mm	8 1-2 mm	9 >2 mm	10 applicable	
	Acetabular side: - Superior migration	41	1 none	2 <5 mm	3 5-10 mm	4 >10 mm	5 progressive tilt of socket	6 1 none	7 2 slight	8 3 moderate	4 4 severe	5 5 not in place	
	- Radiolucency	42	1 none	2 medial half	3 superior half	4 continuous	5 screws	6 not applicable	7 incorporated	8 partially resorbed	9 resorbed	10 applicable	
Femoral side: - Stem subsidence	43	1 none	2 <3 mm	3 >3 mm	4 with cement	5 in cement	6 not applicable	7 none	8 <1 mm	9 1-2 mm	10 >2 mm		
- Progressive tilt of stem	44	1 none	2 in valgus	3 in varus	4 out of the shaft	5 pedestal	6 1 none	7 2 proximal half	8 3 distal half	9 4 continuous	10		
- Endosteal resorption (cavitation)	45	1 none	2 Small cavities only	3 multiple	4 one	5 extensive	6 none	7 1-5 mm	8 >5 mm	9 in last year	10 last year		
- Cortex: Change in density	46	1 none	2 hypertrophy localized	3 periprosthetic reaction	4 increased trabecular bone	5 atrophy	Porous coating of uncemented stem:	1 none	2 intact	3 dislodged	4 progressive loss	5 acetabulum	
Fracture of cement	47	1 no cement	2 none	3 acetabulum	4 above tip	5 below tip	Femur:	1 broken	2 bent	3 broken	4 broken	5 broken	
OUTCOME EVALUATION LEFT HIP	X-ray evaluation by surgeon	48	1 none	2 possible	3 probable	4 definitive	5 suspected infection	Loosening of femoral component:	1 none	2 possible	3 probable	4 definitive	5 suspected infection
Evaluation by patient: Outcome of surgery	49	1 excellent	2 good	3 fair	4 poor	5 better	Same	1 worse	2 less pain	3 better function	4 less medication	5	
DECISION	Follow-up	50	1 report to MD	2 reoperation foreseen	3 next 6 months	4 in 1 year	5 in 2-3 years	X-ray documentation:	1 analog (*)	2 digitized (*)	3 slides (*)	4 paper	5 publication**

INDIVIDUAL CODIFICATION: A1 A2 A3 A4 A5 A6 A7 A8 A9 B1 B2 B3 B4 B5 B6 B7 B8 B9 C1 C2 C3 C4 C5 C6 C7 C8 C9 D1 D2 D3 D4 D5 D6 D7 D8 D9 E1 E2 E3 E4 E5 E6 E7 E8 E9 F1 F2 F3 F4 F5 death

Comments or explanations:

Row # _____ Row # _____

Signature (discharge) _____ Date _____

Measurement with MEM-Template

Right side Superior migration.....mm Medial migration.....mm Inclination of socket.....° Subsidence stem.....mm Head center offset.....mm

Left side Superior migration.....mm Medial migration.....mm Inclination of socket.....° Subsidence stem.....mm Head center offset.....mm

BDS 99/8985

Fig. E-2B

Back side of the 1992 International Documentation and Evaluation System follow-up form for total hip arthroplasty. (Reprinted, with permission, from the Maurice E. Müller Foundation, Bern, Switzerland.)

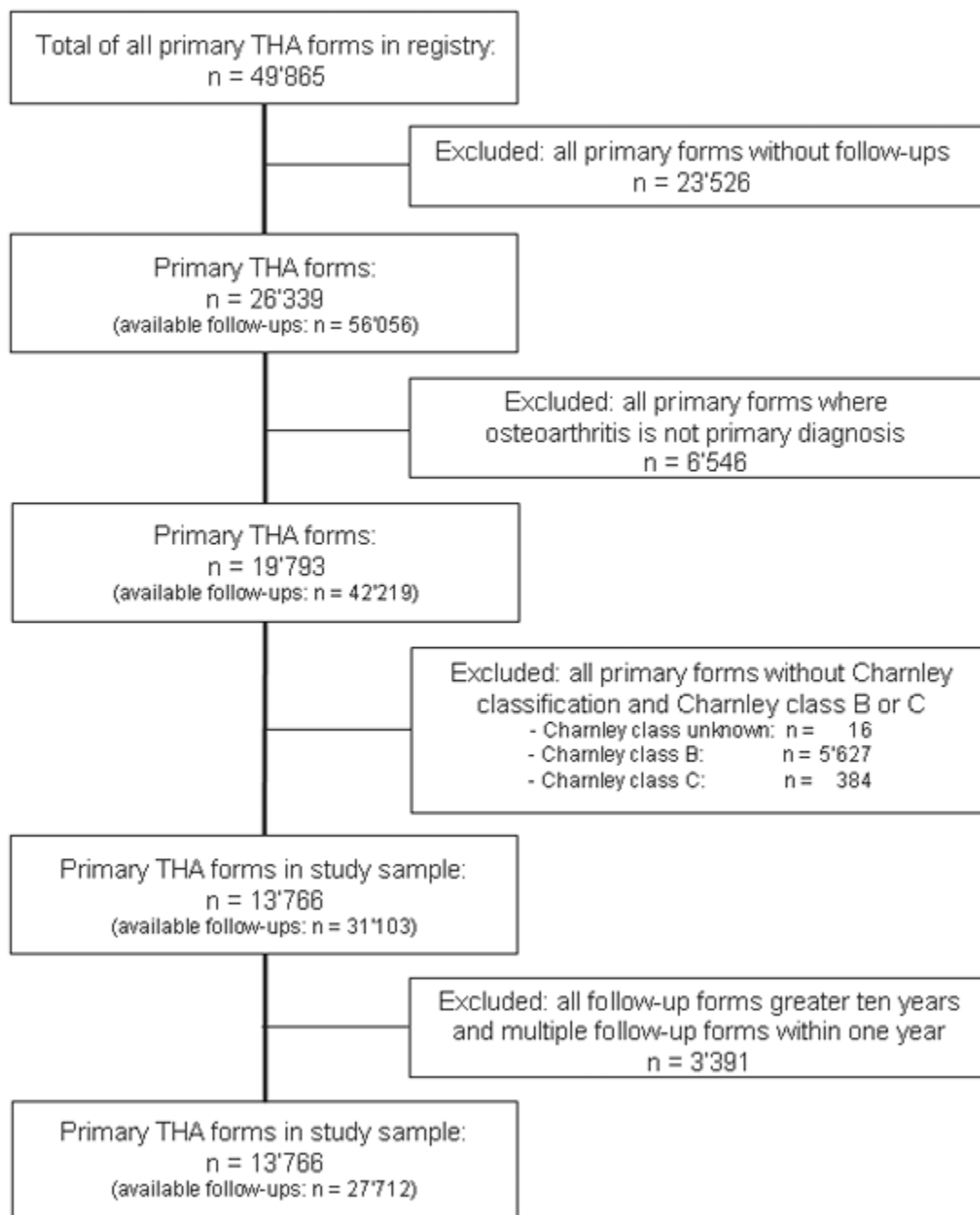


Fig. E-3
Illustration depicting the selection process.

TABLE E-1 Number and Percentage of Postoperative Follow-up Examinations Per Year After 13,766 Total Hip Arthroplasties

	Year										
	1	2	3	4	5	6	7	8	9	10	Total
Absolute	4621	8164	3961	1873	2347	2900	1424	866	915	641	27,712
Relative	33.5%	59.3%	28.8%	13.6%	17%	21%	10.3%	6.3%	6.6%	4.7%	